

Santa Fe Main Office
Phone: (505) 476-3441
General Information
Phone: (505) 629-6116

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

Online Phone Directory Visit:
<https://www.emnrd.nm.gov/ocd/contact-us/>

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well ☐ Gas Well ☒ Other		WELL API NO. 30-015-55677
2. Name of Operator Permian Resources Operating LLC		5. Indicate Type of Lease STATE ☒ FEE ☐
3. Address of Operator 300 N. Marienfield St, Ste 1000, Midland, Texas 797010		6. State Oil & Gas Lease No.
4. Well Location Unit Letter <u>E</u> : <u>2474</u> feet from the <u>North</u> line and <u>483</u> feet from the <u>West</u> line Section <u>8</u> Township <u>22S</u> Range <u>27E</u> NMPM County <u>Eddy</u>		7. Lease Name or Unit Agreement Name Caveman
		8. Well Number <u>421H</u>
		9. OGRID Number <u>372165</u>
		10. Pool name or Wildcat <u>98220 Purple Sage; Wolfcamp</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>3100'</u>		

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☒	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Permian Resources Operating, LLC requests permission to make the following changes to the original Permit: Change our Setbacks from 330' to 100'. The offset operator (Mewbourne) has granted us permission to Permian Resource Operating to allow our Caveman Purple Sage; Wolfcamp Project to have 100' setbacks instead of the normal 330' setbacks.

Change TD/MD From: 9367'TVD/19,425'MD
Change TD/MD To: 9367'TVD/19655'MD

Updated Directional Plan and Drilling Program for the TVD/MD depth changes attached.

Attachments:

1. Updated C102
2. Drilling Program
3. Directional Plan

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE _____ TITLE Regulatory Supervisor _____ DATE 1/21/25

Type or print name Cassie Evans E-mail address: Cassie.Evans@permianres.com PHONE: 432-313-1732

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____

Conditions of Approval (if any):

C-102 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024	
		Submittal Type:	☐ Initial Submittal
			☒ Amended Report
		☐ As Drilled	

WELL LOCATION INFORMATION

API Number 30-015-55677	Pool Code 98220	Pool Name Purple Sage; Wolfcamp
Property Code 335404	Property Name CAVEMAN	Well Number 421H
OGRID No. 372165	Operator Name PERMIAN RESOURCES OPERATING, LLC	Ground Level Elevation 3,097.00'
Surface Owner: ☐ State ☒ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☐ State ☒ Fee ☐ Tribal ☐ Federal

Surface Location

UL E	Section 8	Township 22S	Range 27E	Lot	Ft. from N/S 2,474' FNL	Ft. from E/W 483' FWL	Latitude 32.407746°	Longitude -104.218739°	County EDDY
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Bottom Hole Location

UL E	Section 12	Township 22S	Range 26E	Lot	Ft. from N/S 1,330' FNL	Ft. from E/W 100' FWL	Latitude 32.410829°	Longitude -104.254706°	County EDDY
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Dedicated Acres 640	Infill or Defining Well Infill	Defining Well API 30-015-55675	Overlapping Spacing Unit (Y/N)	Consolidation Code
Order Numbers.			Well setbacks are under Common Ownership: ☐ Yes ☐ No	

Kick Off Point (KOP)

UL E	Section 8	Township 22S	Range 27E	Lot	Ft. from N/S 2,474' FNL	Ft. from E/W 483' FWL	Latitude 32.407746°	Longitude -104.218739°	County EDDY
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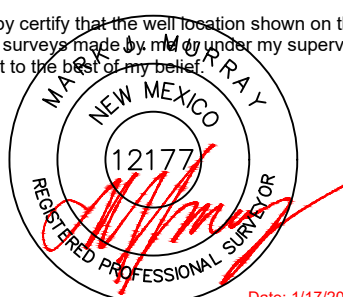
First Take Point (FTP)

UL H	Section 7	Township 22S	Range 27E	Lot	Ft. from N/S 1,330' FNL	Ft. from E/W 100' FEL	Latitude 32.410874°	Longitude -104.220643°	County EDDY
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Last Take Point (LTP)

UL E	Section 12	Township 22S	Range 26E	Lot	Ft. from N/S 1,330' FNL	Ft. from E/W 100' FWL	Latitude 32.410829°	Longitude -104.254706°	County EDDY
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Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:
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OPERATOR CERTIFICATIONS I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.		SURVEYOR CERTIFICATIONS I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  Date: 1/17/2025	
Signature <i>Cassie Evans</i> Date 1/19/25		Signature and Seal of Professional Surveyor	
Printed Name Cassie Evans		Certificate Number 12177	Date of Survey 1/17/2025
Email Address Cassie.Evans@permianres.com			

Note: 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.

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

[illegible]

NAD 83 X = 565,601.74'
NAD 83 Y = 513,199.83'
NAD 83 LAT = 32.410829°
NAD 83 LONG = -104.254706°
NAD 27 X = 524,420.59'
NAD 27 Y = 513,140.18'
NAD 27 LAT = 32.410711°
NAD 27 LONG = -104.254201°

Permian Resources - Caveman 421H

1. Geologic Formations

Formation	Elevation	TVD	Lithology	Target
Rustler	2855	275	Sandstone	No
Top of Salt	NP	NP	Salt	No
Lamar	1370	1760	Anhydrite/Shale	No
Capitan	2780	350	Anhydrite/Shale	No
Bell Canyon	1080	2050	Limestone	No
Cherry Canyon	270	2860	Limestone	No
Brushy Canyon	-585	3715	Limestone	No
Bone Spring Lime	-2020	5150	Limestone	No
1st Bone Spring Sand	-3211	6341	Sandstone	Yes
2nd Bone Spring Sand	-3821	6951	Sandstone	No
3rd Bone Spring Sand	-5242	8372	Limestone/Shale	No
Wolfcamp	-5533	8663	Sandstone/Limestone/Shale	No
#REF!	#REF!	#REF!	Sandstone/Limestone/Shale	#REF!
#REF!	#REF!	#REF!	Sandstone/Limestone/Shale	#REF!
#REF!	#REF!	#REF!	Shale	#REF!

2. Blowout Prevention

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12.25	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
8.75	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		

Equipment: BOPE will meet all requirements for above listed system per 43 CFR 3172. BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The system may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all of the components installed will be functional, tested, and will meet all requirements per 43 CFR 3172. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing of the surface x intermediate annulus without breaking the connection between the BOP & wellhead. A variance is requested to utilize a flexible choke line (flexhose) from the BOP to choke manifold.

Requesting Variance? YES

Variance request: Multibowl Wellhead, Flexhose, Breaktesting, Offline Cementing Variances. Attachments in Section 8.

Testing Procedure: Operator requests to ONLY test broken pressure seals per API Standard 53 and the attachments in Section 8. The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed, b. whenever any seal subject to test pressure is broken, c. following related repairs, d. at 21-day intervals. Testing of the ram type preventer(s) and annular type preventer(s) shall be tested per 43 CFR 3172. The BOPE configuration, choke manifold layout, and accumulator system will be in compliance with 43 CFR 3172. Bleed lines will discharge 100' from wellhead in non-H2S scenarios and 150' from wellhead in H2S scenarios.

DV Tool Contingency Plan Request

Anticipated DVT Placement: ~1450' Cement Details – Cement volumes will be adjusted accordingly based on DVT Placement. Planned TOC: Surface. Stage 1 (Intermediate Shoe to DVT) Lead: 100sx (54.3bbbl) CI C, 11ppg, 3.05 cf/sx cmt (120% excess) Additives: 100% ProLiteCH+5PPS Plexcredit

STE+2%SMS+0.1% R-1300+0.25% MagBond+3PPS Gilsonite+0.005GPS TOC: 1450' (DVT) Tail: 255sx (62.2bbbl) CI C, 14.8ppg, 1.37cf/sx cmt (30% excess) Additives: +5% Salt+0.25% MagBond+0.005GPS TOC: 1500' Stage 2 (DVT to Surface) Lead: 270sx (5146.7bbbls) CI C, 11ppg, 3.05 cf/sx cmt (300% excess) Additives: 100% ProLiteCH+5PPS Plexcredit STE+2%SMS+0.1% R-1300+0.25% MagBond+3PPS Gilsonite+0.005GPS TOC: Surface Tail: 165sx (39.1bbbl) CI C, 14.8ppg, 1.33cf/sx cmt (40% excess) Additives: +5% Salt+0.25% MagBond+0.005GPS TOC: 1450' (DVT)

Choke Diagram Attachment: 5 M Choke Manifold

BOP Diagram Attachment: BOP Schematic

3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	300	0	300	300	J55	54.5	BTC	7.62	###	Dry	7.81	Dry	7.33
Intermediate	12.25	9.625	0	1975	0	1975	1975	J55	36	BTC	2.44	1.52	Dry	3.73	Dry	3.30
Production	8.75	5.5	0	9761	0	9367	9761	P110RY	17	GeoConn	1.54	1.60	Dry	2.11	Dry	2.11
Production	7.875	5.5	9761	19655	9367	9367	9894	P110RY	17	GeoConn	1.54	1.60	Dry	2.11	Dry	2.11
BLM Min Safety Factor											1.125	1		1.6		1.6

Non API casing spec sheets and casing design assumptions attached.

4. Cement

String	Lead/Tail	Top MD	Bottom MD	Quantity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	300	240	1.34	14.8	320	50%	Class C	Accelerator
Intermediate	Lead	0	1580	350	2.08	12.7	720	50%	Class C	Salt, Extender, and LCM
Intermediate	Tail	1580	1975	150	1.34	14.8	190	50%	Class C	Accelerator
Production	Lead	1475	8941	760	3.45	10.7	2600	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	8941	19655	1400	1.73	12.5	2410	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

Please review the DV Tool Contingency above

5. Circulating Medium

Mud System Type: Closed

Will an air or gas system be used: No

Describe what will be on location to control well or mitigate other conditions: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

Cuttings Volume: 8480 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	300	Spud Mud	8.6	9.5
300	1975	Salt Saturated	10	10
1975	19038	Oil Based Mud	9	10

6. Test, Logging, Coring

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

Will utilize MWD/LWD from intermediate hole to TD of the well.

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

DIRECTIONAL SURVEY

Coring operation description for the well:

7. Pressure

Anticipated Bottom Hole Pressure	4880	psi
Anticipated Surface Pressure	2810.1	psi
Anticipated Bottom Hole Temperature	150	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

NEW MEXICO

**(SP) EDDY
CAVEMAN PROJECT
CAVEMAN 421H**

OWB

Plan: PWP0

Standard Planning Report - Geographic

20 January, 2025

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well CAVEMAN421H
Company:	NEW MEXICO	TVD Reference:	KB @ 3130.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3130.0usft
Site:	CAVEMAN PROJECT	North Reference:	Grid
Well:	CAVEMAN 421H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project	(SP) EDDY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		CAVEMAN PROJECT			
Site Position:		Northing:	512,055.14 usft	Latitude:	32° 24' 27.558 N
From:	Map	Easting:	576,702.31 usft	Longitude:	104° 13' 7.460 W
Position Uncertainty:		0.0 usft	Slot Radius:	13-3/16 "	

Well	CAVEMAN 421H					
Well Position	+N/-S	0.0 usft	Northing:	512,088.14 usft	Latitude:	32° 24' 27.885 N
	+E/-W	0.0 usft	Easting:	576,702.42 usft	Longitude:	104° 13' 7.459 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,100.0 usft
Grid Convergence:	0.06 °					

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.06	60.30	48,833.35748421

Design	PWP0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	275.72

Plan Survey Tool Program	Date	1/20/2025		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	19,654.7 PWP0 (OWB)	MWD	
			OWSG_Rev2_ MWD - Star	

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,524.6	10.49	327.34	1,521.7	40.3	-25.8	2.00	2.00	0.00	327.34	
8,416.5	10.49	327.34	8,298.3	1,097.0	-703.1	0.00	0.00	0.00	0.00	
8,941.1	0.00	0.00	8,820.0	1,137.3	-728.9	2.00	-2.00	0.00	180.00	
9,010.6	0.00	0.00	8,889.5	1,137.3	-728.9	0.00	0.00	0.00	0.00	
9,760.6	90.00	269.86	9,367.0	1,136.1	-1,206.4	12.00	12.00	-12.02	269.86	
19,654.9	90.00	269.86	9,367.0	1,111.7	-11,100.7	0.00	0.00	0.00	0.00	BHL-CAVEMAN 42

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well CAVEMAN421H
Company:	NEW MEXICO	TVD Reference:	KB @ 3130.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3130.0usft
Site:	CAVEMAN PROJECT	North Reference:	Grid
Well:	CAVEMAN 421H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
100.0	0.00	0.00	100.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
200.0	0.00	0.00	200.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
300.0	0.00	0.00	300.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
400.0	0.00	0.00	400.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
500.0	0.00	0.00	500.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
600.0	0.00	0.00	600.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
700.0	0.00	0.00	700.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
800.0	0.00	0.00	800.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
900.0	0.00	0.00	900.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	512,088.14	576,702.42	32° 24' 27.885 N	104° 13' 7.459 W
Start Build 2.00									
1,100.0	2.00	327.34	1,100.0	1.5	-0.9	512,089.61	576,701.48	32° 24' 27.899 N	104° 13' 7.470 W
1,200.0	4.00	327.34	1,199.8	5.9	-3.8	512,094.02	576,698.66	32° 24' 27.943 N	104° 13' 7.503 W
1,300.0	6.00	327.34	1,299.5	13.2	-8.5	512,101.35	576,693.95	32° 24' 28.015 N	104° 13' 7.557 W
1,400.0	8.00	327.34	1,398.7	23.5	-15.0	512,111.61	576,687.38	32° 24' 28.117 N	104° 13' 7.634 W
1,500.0	10.00	327.34	1,497.5	36.6	-23.5	512,124.78	576,678.94	32° 24' 28.247 N	104° 13' 7.732 W
1,524.6	10.49	327.34	1,521.7	40.3	-25.8	512,128.47	576,676.58	32° 24' 28.284 N	104° 13' 7.760 W
Start 6891.9 hold at 1524.6 MD									
1,600.0	10.49	327.34	1,595.8	51.9	-33.3	512,140.03	576,669.17	32° 24' 28.398 N	104° 13' 7.846 W
1,700.0	10.49	327.34	1,694.1	67.2	-43.1	512,155.36	576,659.34	32° 24' 28.550 N	104° 13' 7.961 W
1,800.0	10.49	327.34	1,792.5	82.6	-52.9	512,170.69	576,649.52	32° 24' 28.702 N	104° 13' 8.075 W
1,900.0	10.49	327.34	1,890.8	97.9	-62.7	512,186.02	576,639.69	32° 24' 28.854 N	104° 13' 8.189 W
2,000.0	10.49	327.34	1,989.1	113.2	-72.6	512,201.36	576,629.86	32° 24' 29.006 N	104° 13' 8.304 W
2,100.0	10.49	327.34	2,087.5	128.5	-82.4	512,216.69	576,620.04	32° 24' 29.158 N	104° 13' 8.418 W
2,200.0	10.49	327.34	2,185.8	143.9	-92.2	512,232.02	576,610.21	32° 24' 29.309 N	104° 13' 8.533 W
2,300.0	10.49	327.34	2,284.1	159.2	-102.0	512,247.35	576,600.39	32° 24' 29.461 N	104° 13' 8.647 W
2,400.0	10.49	327.34	2,382.4	174.5	-111.9	512,262.68	576,590.56	32° 24' 29.613 N	104° 13' 8.762 W
2,500.0	10.49	327.34	2,480.8	189.9	-121.7	512,278.01	576,580.73	32° 24' 29.765 N	104° 13' 8.876 W
2,600.0	10.49	327.34	2,579.1	205.2	-131.5	512,293.35	576,570.91	32° 24' 29.917 N	104° 13' 8.990 W
2,700.0	10.49	327.34	2,677.4	220.5	-141.3	512,308.68	576,561.08	32° 24' 30.068 N	104° 13' 9.105 W
2,800.0	10.49	327.34	2,775.7	235.9	-151.2	512,324.01	576,551.25	32° 24' 30.220 N	104° 13' 9.219 W
2,900.0	10.49	327.34	2,874.1	251.2	-161.0	512,339.34	576,541.43	32° 24' 30.372 N	104° 13' 9.334 W
3,000.0	10.49	327.34	2,972.4	266.5	-170.8	512,354.67	576,531.60	32° 24' 30.524 N	104° 13' 9.448 W
3,100.0	10.49	327.34	3,070.7	281.9	-180.6	512,370.00	576,521.78	32° 24' 30.676 N	104° 13' 9.563 W
3,200.0	10.49	327.34	3,169.1	297.2	-190.5	512,385.34	576,511.95	32° 24' 30.828 N	104° 13' 9.677 W
3,300.0	10.49	327.34	3,267.4	312.5	-200.3	512,400.67	576,502.12	32° 24' 30.979 N	104° 13' 9.791 W
3,400.0	10.49	327.34	3,365.7	327.9	-210.1	512,416.00	576,492.30	32° 24' 31.131 N	104° 13' 9.906 W
3,500.0	10.49	327.34	3,464.0	343.2	-220.0	512,431.33	576,482.47	32° 24' 31.283 N	104° 13' 10.020 W
3,600.0	10.49	327.34	3,562.4	358.5	-229.8	512,446.66	576,472.64	32° 24' 31.435 N	104° 13' 10.135 W
3,700.0	10.49	327.34	3,660.7	373.9	-239.6	512,461.99	576,462.82	32° 24' 31.587 N	104° 13' 10.249 W
3,800.0	10.49	327.34	3,759.0	389.2	-249.4	512,477.33	576,452.99	32° 24' 31.738 N	104° 13' 10.364 W
3,900.0	10.49	327.34	3,857.4	404.5	-259.3	512,492.66	576,443.17	32° 24' 31.890 N	104° 13' 10.478 W
4,000.0	10.49	327.34	3,955.7	419.8	-269.1	512,507.99	576,433.34	32° 24' 32.042 N	104° 13' 10.593 W
4,100.0	10.49	327.34	4,054.0	435.2	-278.9	512,523.32	576,423.51	32° 24' 32.194 N	104° 13' 10.707 W
4,200.0	10.49	327.34	4,152.3	450.5	-288.7	512,538.65	576,413.69	32° 24' 32.346 N	104° 13' 10.821 W
4,300.0	10.49	327.34	4,250.7	465.8	-298.6	512,553.99	576,403.86	32° 24' 32.498 N	104° 13' 10.936 W
4,400.0	10.49	327.34	4,349.0	481.2	-308.4	512,569.32	576,394.04	32° 24' 32.649 N	104° 13' 11.050 W
4,500.0	10.49	327.34	4,447.3	496.5	-318.2	512,584.65	576,384.21	32° 24' 32.801 N	104° 13' 11.165 W
4,600.0	10.49	327.34	4,545.7	511.8	-328.0	512,599.98	576,374.38	32° 24' 32.953 N	104° 13' 11.279 W
4,700.0	10.49	327.34	4,644.0	527.2	-337.9	512,615.31	576,364.56	32° 24' 33.105 N	104° 13' 11.394 W
4,800.0	10.49	327.34	4,742.3	542.5	-347.7	512,630.64	576,354.73	32° 24' 33.257 N	104° 13' 11.508 W
4,900.0	10.49	327.34	4,840.6	557.8	-357.5	512,645.98	576,344.90	32° 24' 33.409 N	104° 13' 11.622 W
5,000.0	10.49	327.34	4,939.0	573.2	-367.3	512,661.31	576,335.08	32° 24' 33.560 N	104° 13' 11.737 W

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well CAVEMAN421H
Company:	NEW MEXICO	TVD Reference:	KB @ 3130.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3130.0usft
Site:	CAVEMAN PROJECT	North Reference:	Grid
Well:	CAVEMAN 421H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,100.0	10.49	327.34	5,037.3	588.5	-377.2	512,676.64	576,325.25	32° 24' 33.712 N	104° 13' 11.851 W	
5,200.0	10.49	327.34	5,135.6	603.8	-387.0	512,691.97	576,315.43	32° 24' 33.864 N	104° 13' 11.966 W	
5,300.0	10.49	327.34	5,233.9	619.2	-396.8	512,707.30	576,305.60	32° 24' 34.016 N	104° 13' 12.080 W	
5,400.0	10.49	327.34	5,332.3	634.5	-406.6	512,722.63	576,295.77	32° 24' 34.168 N	104° 13' 12.195 W	
5,500.0	10.49	327.34	5,430.6	649.8	-416.5	512,737.97	576,285.95	32° 24' 34.319 N	104° 13' 12.309 W	
5,600.0	10.49	327.34	5,528.9	665.2	-426.3	512,753.30	576,276.12	32° 24' 34.471 N	104° 13' 12.423 W	
5,700.0	10.49	327.34	5,627.3	680.5	-436.1	512,768.63	576,266.30	32° 24' 34.623 N	104° 13' 12.538 W	
5,800.0	10.49	327.34	5,725.6	695.8	-446.0	512,783.96	576,256.47	32° 24' 34.775 N	104° 13' 12.652 W	
5,900.0	10.49	327.34	5,823.9	711.2	-455.8	512,799.29	576,246.64	32° 24' 34.927 N	104° 13' 12.767 W	
6,000.0	10.49	327.34	5,922.2	726.5	-465.6	512,814.62	576,236.82	32° 24' 35.079 N	104° 13' 12.881 W	
6,100.0	10.49	327.34	6,020.6	741.8	-475.4	512,829.96	576,226.99	32° 24' 35.230 N	104° 13' 12.996 W	
6,200.0	10.49	327.34	6,118.9	757.1	-485.3	512,845.29	576,217.16	32° 24' 35.382 N	104° 13' 13.110 W	
6,300.0	10.49	327.34	6,217.2	772.5	-495.1	512,860.62	576,207.34	32° 24' 35.534 N	104° 13' 13.225 W	
6,400.0	10.49	327.34	6,315.6	787.8	-504.9	512,875.95	576,197.51	32° 24' 35.686 N	104° 13' 13.339 W	
6,500.0	10.49	327.34	6,413.9	803.1	-514.7	512,891.28	576,187.69	32° 24' 35.838 N	104° 13' 13.453 W	
6,600.0	10.49	327.34	6,512.2	818.5	-524.6	512,906.62	576,177.86	32° 24' 35.990 N	104° 13' 13.568 W	
6,700.0	10.49	327.34	6,610.5	833.8	-534.4	512,921.95	576,168.03	32° 24' 36.141 N	104° 13' 13.682 W	
6,800.0	10.49	327.34	6,708.9	849.1	-544.2	512,937.28	576,158.21	32° 24' 36.293 N	104° 13' 13.797 W	
6,900.0	10.49	327.34	6,807.2	864.5	-554.0	512,952.61	576,148.38	32° 24' 36.445 N	104° 13' 13.911 W	
7,000.0	10.49	327.34	6,905.5	879.8	-563.9	512,967.94	576,138.56	32° 24' 36.597 N	104° 13' 14.026 W	
7,100.0	10.49	327.34	7,003.8	895.1	-573.7	512,983.27	576,128.73	32° 24' 36.749 N	104° 13' 14.140 W	
7,200.0	10.49	327.34	7,102.2	910.5	-583.5	512,998.61	576,118.90	32° 24' 36.900 N	104° 13' 14.255 W	
7,300.0	10.49	327.34	7,200.5	925.8	-593.3	513,013.94	576,109.08	32° 24' 37.052 N	104° 13' 14.369 W	
7,400.0	10.49	327.34	7,298.8	941.1	-603.2	513,029.27	576,099.25	32° 24' 37.204 N	104° 13' 14.483 W	
7,500.0	10.49	327.34	7,397.2	956.5	-613.0	513,044.60	576,089.42	32° 24' 37.356 N	104° 13' 14.598 W	
7,600.0	10.49	327.34	7,495.5	971.8	-622.8	513,059.93	576,079.60	32° 24' 37.508 N	104° 13' 14.712 W	
7,700.0	10.49	327.34	7,593.8	987.1	-632.7	513,075.26	576,069.77	32° 24' 37.660 N	104° 13' 14.827 W	
7,800.0	10.49	327.34	7,692.1	1,002.5	-642.5	513,090.60	576,059.95	32° 24' 37.811 N	104° 13' 14.941 W	
7,900.0	10.49	327.34	7,790.5	1,017.8	-652.3	513,105.93	576,050.12	32° 24' 37.963 N	104° 13' 15.056 W	
8,000.0	10.49	327.34	7,888.8	1,033.1	-662.1	513,121.26	576,040.29	32° 24' 38.115 N	104° 13' 15.170 W	
8,100.0	10.49	327.34	7,987.1	1,048.4	-672.0	513,136.59	576,030.47	32° 24' 38.267 N	104° 13' 15.284 W	
8,200.0	10.49	327.34	8,085.5	1,063.8	-681.8	513,151.92	576,020.64	32° 24' 38.419 N	104° 13' 15.399 W	
8,300.0	10.49	327.34	8,183.8	1,079.1	-691.6	513,167.25	576,010.82	32° 24' 38.570 N	104° 13' 15.513 W	
8,400.0	10.49	327.34	8,282.1	1,094.4	-701.4	513,182.59	576,000.99	32° 24' 38.722 N	104° 13' 15.628 W	
8,416.5	10.49	327.34	8,298.3	1,097.0	-703.1	513,185.11	575,999.37	32° 24' 38.747 N	104° 13' 15.647 W	
Start Drop -2.00										
8,500.0	8.82	327.34	8,380.7	1,108.8	-710.6	513,196.91	575,991.81	32° 24' 38.864 N	104° 13' 15.735 W	
8,600.0	6.82	327.34	8,479.7	1,120.2	-718.0	513,208.37	575,984.47	32° 24' 38.978 N	104° 13' 15.820 W	
8,700.0	4.82	327.34	8,579.2	1,128.8	-723.4	513,216.91	575,978.99	32° 24' 39.062 N	104° 13' 15.884 W	
8,800.0	2.82	327.34	8,679.0	1,134.4	-727.0	513,222.52	575,975.40	32° 24' 39.118 N	104° 13' 15.926 W	
8,900.0	0.82	327.34	8,778.9	1,137.1	-728.7	513,225.19	575,973.68	32° 24' 39.144 N	104° 13' 15.946 W	
8,941.1	0.00	0.00	8,820.0	1,137.3	-728.9	513,225.44	575,973.52	32° 24' 39.147 N	104° 13' 15.948 W	
Start 69.5 hold at 8941.1 MD										
9,000.0	0.00	0.00	8,878.9	1,137.3	-728.9	513,225.44	575,973.52	32° 24' 39.147 N	104° 13' 15.948 W	
9,010.6	0.00	0.00	8,889.5	1,137.3	-728.9	513,225.44	575,973.52	32° 24' 39.147 N	104° 13' 15.948 W	
Start DLS 12.00 TFO 269.86										
9,025.0	1.73	269.86	8,903.9	1,137.3	-729.1	513,225.44	575,973.31	32° 24' 39.147 N	104° 13' 15.950 W	
9,050.0	4.73	269.86	8,928.9	1,137.3	-730.5	513,225.44	575,971.90	32° 24' 39.147 N	104° 13' 15.967 W	
9,075.0	7.73	269.86	8,953.7	1,137.3	-733.2	513,225.43	575,969.19	32° 24' 39.147 N	104° 13' 15.998 W	
9,100.0	10.73	269.86	8,978.4	1,137.3	-737.2	513,225.42	575,965.18	32° 24' 39.147 N	104° 13' 16.045 W	
9,125.0	13.73	269.86	9,002.8	1,137.3	-742.5	513,225.41	575,959.88	32° 24' 39.146 N	104° 13' 16.107 W	
9,150.0	16.73	269.86	9,026.9	1,137.3	-749.1	513,225.39	575,953.31	32° 24' 39.146 N	104° 13' 16.183 W	
9,175.0	19.73	269.86	9,050.7	1,137.2	-756.9	513,225.37	575,945.50	32° 24' 39.146 N	104° 13' 16.275 W	
9,200.0	22.73	269.86	9,074.0	1,137.2	-766.0	513,225.35	575,936.44	32° 24' 39.146 N	104° 13' 16.380 W	

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well CAVEMAN421H
Company:	NEW MEXICO	TVD Reference:	KB @ 3130.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3130.0usft
Site:	CAVEMAN PROJECT	North Reference:	Grid
Well:	CAVEMAN 421H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,225.0	25.73	269.86	9,096.8	1,137.2	-776.2	513,225.32	575,926.19	32° 24' 39.146 N	104° 13' 16.500 W	
9,250.0	28.73	269.86	9,119.0	1,137.2	-787.7	513,225.30	575,914.75	32° 24' 39.146 N	104° 13' 16.633 W	
9,275.0	31.73	269.86	9,140.6	1,137.1	-800.3	513,225.27	575,902.16	32° 24' 39.146 N	104° 13' 16.780 W	
9,300.0	34.73	269.86	9,161.5	1,137.1	-814.0	513,225.23	575,888.46	32° 24' 39.145 N	104° 13' 16.940 W	
9,325.0	37.73	269.86	9,181.7	1,137.1	-828.7	513,225.19	575,873.69	32° 24' 39.145 N	104° 13' 17.112 W	
9,350.0	40.73	269.86	9,201.0	1,137.0	-844.5	513,225.16	575,857.88	32° 24' 39.145 N	104° 13' 17.297 W	
9,375.0	43.73	269.86	9,219.5	1,137.0	-861.3	513,225.11	575,841.08	32° 24' 39.145 N	104° 13' 17.493 W	
9,400.0	46.73	269.86	9,237.2	1,136.9	-879.1	513,225.07	575,823.34	32° 24' 39.145 N	104° 13' 17.700 W	
9,425.0	49.73	269.86	9,253.8	1,136.9	-897.7	513,225.02	575,804.69	32° 24' 39.144 N	104° 13' 17.917 W	
9,450.0	52.73	269.86	9,269.5	1,136.8	-917.2	513,224.98	575,785.20	32° 24' 39.144 N	104° 13' 18.145 W	
9,475.0	55.73	269.86	9,284.1	1,136.8	-937.5	513,224.93	575,764.92	32° 24' 39.144 N	104° 13' 18.381 W	
9,500.0	58.73	269.86	9,297.6	1,136.7	-958.5	513,224.87	575,743.90	32° 24' 39.143 N	104° 13' 18.626 W	
9,525.0	61.73	269.86	9,310.0	1,136.7	-980.2	513,224.82	575,722.21	32° 24' 39.143 N	104° 13' 18.879 W	
9,550.0	64.73	269.86	9,321.3	1,136.6	-1,002.5	513,224.77	575,699.89	32° 24' 39.143 N	104° 13' 19.140 W	
9,575.0	67.73	269.86	9,331.3	1,136.6	-1,025.4	513,224.71	575,677.01	32° 24' 39.142 N	104° 13' 19.407 W	
9,600.0	70.73	269.86	9,340.2	1,136.5	-1,048.8	513,224.65	575,653.64	32° 24' 39.142 N	104° 13' 19.679 W	
9,625.0	73.73	269.86	9,347.8	1,136.5	-1,072.6	513,224.59	575,629.83	32° 24' 39.142 N	104° 13' 19.957 W	
9,650.0	76.73	269.86	9,354.2	1,136.4	-1,096.8	513,224.53	575,605.66	32° 24' 39.141 N	104° 13' 20.239 W	
9,675.0	79.73	269.86	9,359.3	1,136.3	-1,121.2	513,224.47	575,581.19	32° 24' 39.141 N	104° 13' 20.524 W	
9,700.0	82.73	269.86	9,363.1	1,136.3	-1,145.9	513,224.41	575,556.49	32° 24' 39.141 N	104° 13' 20.813 W	
9,725.0	85.73	269.86	9,365.6	1,136.2	-1,170.8	513,224.35	575,531.62	32° 24' 39.140 N	104° 13' 21.103 W	
9,750.0	88.73	269.86	9,366.8	1,136.1	-1,195.8	513,224.29	575,506.65	32° 24' 39.140 N	104° 13' 21.394 W	
9,760.6	90.00	269.86	9,367.0	1,136.1	-1,206.4	513,224.26	575,496.06	32° 24' 39.140 N	104° 13' 21.518 W	
Start 9894.3 hold at 9760.6 MD										
9,800.0	90.00	269.86	9,367.0	1,136.0	-1,245.8	513,224.17	575,456.65	32° 24' 39.139 N	104° 13' 21.977 W	
9,900.0	90.00	269.86	9,367.0	1,135.8	-1,345.8	513,223.92	575,356.65	32° 24' 39.138 N	104° 13' 23.144 W	
10,000.0	90.00	269.86	9,367.0	1,135.5	-1,445.8	513,223.67	575,256.65	32° 24' 39.137 N	104° 13' 24.310 W	
10,100.0	90.00	269.86	9,367.0	1,135.3	-1,545.8	513,223.42	575,156.65	32° 24' 39.135 N	104° 13' 25.477 W	
10,200.0	90.00	269.86	9,367.0	1,135.0	-1,645.8	513,223.18	575,056.65	32° 24' 39.134 N	104° 13' 26.644 W	
10,300.0	90.00	269.86	9,367.0	1,134.8	-1,745.8	513,222.93	574,956.65	32° 24' 39.132 N	104° 13' 27.810 W	
10,400.0	90.00	269.86	9,367.0	1,134.5	-1,845.8	513,222.68	574,856.65	32° 24' 39.131 N	104° 13' 28.977 W	
10,500.0	90.00	269.86	9,367.0	1,134.3	-1,945.8	513,222.44	574,756.65	32° 24' 39.129 N	104° 13' 30.143 W	
10,600.0	90.00	269.86	9,367.0	1,134.0	-2,045.8	513,222.19	574,656.65	32° 24' 39.128 N	104° 13' 31.310 W	
10,700.0	90.00	269.86	9,367.0	1,133.8	-2,145.8	513,221.94	574,556.65	32° 24' 39.126 N	104° 13' 32.476 W	
10,800.0	90.00	269.86	9,367.0	1,133.6	-2,245.8	513,221.70	574,456.65	32° 24' 39.125 N	104° 13' 33.643 W	
10,900.0	90.00	269.86	9,367.0	1,133.3	-2,345.8	513,221.45	574,356.65	32° 24' 39.124 N	104° 13' 34.810 W	
11,000.0	90.00	269.86	9,367.0	1,133.1	-2,445.8	513,221.20	574,256.65	32° 24' 39.122 N	104° 13' 35.976 W	
11,100.0	90.00	269.86	9,367.0	1,132.8	-2,545.8	513,220.96	574,156.65	32° 24' 39.121 N	104° 13' 37.143 W	
11,200.0	90.00	269.86	9,367.0	1,132.6	-2,645.8	513,220.71	574,056.65	32° 24' 39.119 N	104° 13' 38.309 W	
11,300.0	90.00	269.86	9,367.0	1,132.3	-2,745.8	513,220.46	573,956.65	32° 24' 39.118 N	104° 13' 39.476 W	
11,400.0	90.00	269.86	9,367.0	1,132.1	-2,845.8	513,220.21	573,856.65	32° 24' 39.116 N	104° 13' 40.642 W	
11,500.0	90.00	269.86	9,367.0	1,131.8	-2,945.8	513,219.97	573,756.66	32° 24' 39.115 N	104° 13' 41.809 W	
11,600.0	90.00	269.86	9,367.0	1,131.6	-3,045.8	513,219.72	573,656.66	32° 24' 39.113 N	104° 13' 42.975 W	
11,700.0	90.00	269.86	9,367.0	1,131.3	-3,145.8	513,219.47	573,556.66	32° 24' 39.112 N	104° 13' 44.142 W	
11,800.0	90.00	269.86	9,367.0	1,131.1	-3,245.8	513,219.23	573,456.66	32° 24' 39.110 N	104° 13' 45.309 W	
11,900.0	90.00	269.86	9,367.0	1,130.8	-3,345.8	513,218.98	573,356.66	32° 24' 39.109 N	104° 13' 46.475 W	
12,000.0	90.00	269.86	9,367.0	1,130.6	-3,445.8	513,218.73	573,256.66	32° 24' 39.107 N	104° 13' 47.642 W	
12,100.0	90.00	269.86	9,367.0	1,130.3	-3,545.8	513,218.49	573,156.66	32° 24' 39.106 N	104° 13' 48.808 W	
12,200.0	90.00	269.86	9,367.0	1,130.1	-3,645.8	513,218.24	573,056.66	32° 24' 39.104 N	104° 13' 49.975 W	
12,300.0	90.00	269.86	9,367.0	1,129.9	-3,745.8	513,217.99	572,956.66	32° 24' 39.103 N	104° 13' 51.141 W	
12,400.0	90.00	269.86	9,367.0	1,129.6	-3,845.8	513,217.75	572,856.66	32° 24' 39.101 N	104° 13' 52.308 W	
12,500.0	90.00	269.86	9,367.0	1,129.4	-3,945.8	513,217.50	572,756.66	32° 24' 39.100 N	104° 13' 53.475 W	
12,600.0	90.00	269.86	9,367.0	1,129.1	-4,045.8	513,217.25	572,656.66	32° 24' 39.098 N	104° 13' 54.641 W	
12,700.0	90.00	269.86	9,367.0	1,128.9	-4,145.8	513,217.00	572,556.66	32° 24' 39.097 N	104° 13' 55.808 W	

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well CAVEMAN421H
Company:	NEW MEXICO	TVD Reference:	KB @ 3130.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3130.0usft
Site:	CAVEMAN PROJECT	North Reference:	Grid
Well:	CAVEMAN 421H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
12,800.0	90.00	269.86	9,367.0	1,128.6	-4,245.8	513,216.76	572,456.66	32° 24' 39.095 N	104° 13' 56.974 W	
12,900.0	90.00	269.86	9,367.0	1,128.4	-4,345.8	513,216.51	572,356.66	32° 24' 39.094 N	104° 13' 58.141 W	
13,000.0	90.00	269.86	9,367.0	1,128.1	-4,445.8	513,216.26	572,256.66	32° 24' 39.092 N	104° 13' 59.307 W	
13,100.0	90.00	269.86	9,367.0	1,127.9	-4,545.8	513,216.02	572,156.66	32° 24' 39.091 N	104° 14' 0.474 W	
13,200.0	90.00	269.86	9,367.0	1,127.6	-4,645.8	513,215.77	572,056.66	32° 24' 39.089 N	104° 14' 1.641 W	
13,300.0	90.00	269.86	9,367.0	1,127.4	-4,745.8	513,215.52	571,956.66	32° 24' 39.088 N	104° 14' 2.807 W	
13,400.0	90.00	269.86	9,367.0	1,127.1	-4,845.8	513,215.28	571,856.66	32° 24' 39.086 N	104° 14' 3.974 W	
13,500.0	90.00	269.86	9,367.0	1,126.9	-4,945.8	513,215.03	571,756.66	32° 24' 39.085 N	104° 14' 5.140 W	
13,600.0	90.00	269.86	9,367.0	1,126.6	-5,045.8	513,214.78	571,656.66	32° 24' 39.083 N	104° 14' 6.307 W	
13,700.0	90.00	269.86	9,367.0	1,126.4	-5,145.8	513,214.54	571,556.66	32° 24' 39.082 N	104° 14' 7.473 W	
13,800.0	90.00	269.86	9,367.0	1,126.1	-5,245.8	513,214.29	571,456.66	32° 24' 39.080 N	104° 14' 8.640 W	
13,900.0	90.00	269.86	9,367.0	1,125.9	-5,345.8	513,214.04	571,356.66	32° 24' 39.079 N	104° 14' 9.806 W	
14,000.0	90.00	269.86	9,367.0	1,125.7	-5,445.8	513,213.79	571,256.66	32° 24' 39.077 N	104° 14' 10.973 W	
14,100.0	90.00	269.86	9,367.0	1,125.4	-5,545.8	513,213.55	571,156.66	32° 24' 39.076 N	104° 14' 12.140 W	
14,200.0	90.00	269.86	9,367.0	1,125.2	-5,645.8	513,213.30	571,056.66	32° 24' 39.074 N	104° 14' 13.306 W	
14,300.0	90.00	269.86	9,367.0	1,124.9	-5,745.8	513,213.05	570,956.66	32° 24' 39.072 N	104° 14' 14.473 W	
14,400.0	90.00	269.86	9,367.0	1,124.7	-5,845.8	513,212.81	570,856.66	32° 24' 39.071 N	104° 14' 15.639 W	
14,500.0	90.00	269.86	9,367.0	1,124.4	-5,945.8	513,212.56	570,756.66	32° 24' 39.069 N	104° 14' 16.806 W	
14,600.0	90.00	269.86	9,367.0	1,124.2	-6,045.8	513,212.31	570,656.66	32° 24' 39.068 N	104° 14' 17.972 W	
14,700.0	90.00	269.86	9,367.0	1,123.9	-6,145.8	513,212.07	570,556.66	32° 24' 39.066 N	104° 14' 19.139 W	
14,800.0	90.00	269.86	9,367.0	1,123.7	-6,245.8	513,211.82	570,456.67	32° 24' 39.065 N	104° 14' 20.306 W	
14,900.0	90.00	269.86	9,367.0	1,123.4	-6,345.8	513,211.57	570,356.67	32° 24' 39.063 N	104° 14' 21.472 W	
15,000.0	90.00	269.86	9,367.0	1,123.2	-6,445.8	513,211.33	570,256.67	32° 24' 39.061 N	104° 14' 22.639 W	
15,100.0	90.00	269.86	9,367.0	1,122.9	-6,545.8	513,211.08	570,156.67	32° 24' 39.060 N	104° 14' 23.805 W	
15,200.0	90.00	269.86	9,367.0	1,122.7	-6,645.8	513,210.83	570,056.67	32° 24' 39.058 N	104° 14' 24.972 W	
15,300.0	90.00	269.86	9,367.0	1,122.4	-6,745.8	513,210.58	569,956.67	32° 24' 39.057 N	104° 14' 26.138 W	
15,400.0	90.00	269.86	9,367.0	1,122.2	-6,845.8	513,210.34	569,856.67	32° 24' 39.055 N	104° 14' 27.305 W	
15,500.0	90.00	269.86	9,367.0	1,121.9	-6,945.8	513,210.09	569,756.67	32° 24' 39.054 N	104° 14' 28.472 W	
15,600.0	90.00	269.86	9,367.0	1,121.7	-7,045.8	513,209.84	569,656.67	32° 24' 39.052 N	104° 14' 29.638 W	
15,700.0	90.00	269.86	9,367.0	1,121.5	-7,145.8	513,209.60	569,556.67	32° 24' 39.050 N	104° 14' 30.805 W	
15,800.0	90.00	269.86	9,367.0	1,121.2	-7,245.8	513,209.35	569,456.67	32° 24' 39.049 N	104° 14' 31.971 W	
15,900.0	90.00	269.86	9,367.0	1,121.0	-7,345.8	513,209.10	569,356.67	32° 24' 39.047 N	104° 14' 33.138 W	
16,000.0	90.00	269.86	9,367.0	1,120.7	-7,445.8	513,208.86	569,256.67	32° 24' 39.046 N	104° 14' 34.304 W	
16,100.0	90.00	269.86	9,367.0	1,120.5	-7,545.8	513,208.61	569,156.67	32° 24' 39.044 N	104° 14' 35.471 W	
16,200.0	90.00	269.86	9,367.0	1,120.2	-7,645.8	513,208.36	569,056.67	32° 24' 39.042 N	104° 14' 36.637 W	
16,300.0	90.00	269.86	9,367.0	1,120.0	-7,745.8	513,208.12	568,956.67	32° 24' 39.041 N	104° 14' 37.804 W	
16,400.0	90.00	269.86	9,367.0	1,119.7	-7,845.8	513,207.87	568,856.67	32° 24' 39.039 N	104° 14' 38.971 W	
16,500.0	90.00	269.86	9,367.0	1,119.5	-7,945.8	513,207.62	568,756.67	32° 24' 39.037 N	104° 14' 40.137 W	
16,600.0	90.00	269.86	9,367.0	1,119.2	-8,045.8	513,207.37	568,656.67	32° 24' 39.036 N	104° 14' 41.304 W	
16,700.0	90.00	269.86	9,367.0	1,119.0	-8,145.8	513,207.13	568,556.67	32° 24' 39.034 N	104° 14' 42.470 W	
16,800.0	90.00	269.86	9,367.0	1,118.7	-8,245.8	513,206.88	568,456.67	32° 24' 39.033 N	104° 14' 43.637 W	
16,900.0	90.00	269.86	9,367.0	1,118.5	-8,345.8	513,206.63	568,356.67	32° 24' 39.031 N	104° 14' 44.803 W	
17,000.0	90.00	269.86	9,367.0	1,118.2	-8,445.8	513,206.39	568,256.67	32° 24' 39.029 N	104° 14' 45.970 W	
17,100.0	90.00	269.86	9,367.0	1,118.0	-8,545.8	513,206.14	568,156.67	32° 24' 39.028 N	104° 14' 47.137 W	
17,200.0	90.00	269.86	9,367.0	1,117.8	-8,645.8	513,205.89	568,056.67	32° 24' 39.026 N	104° 14' 48.303 W	
17,300.0	90.00	269.86	9,367.0	1,117.5	-8,745.7	513,205.65	567,956.67	32° 24' 39.024 N	104° 14' 49.470 W	
17,400.0	90.00	269.86	9,367.0	1,117.3	-8,845.7	513,205.40	567,856.67	32° 24' 39.023 N	104° 14' 50.636 W	
17,500.0	90.00	269.86	9,367.0	1,117.0	-8,945.7	513,205.15	567,756.67	32° 24' 39.021 N	104° 14' 51.803 W	
17,600.0	90.00	269.86	9,367.0	1,116.8	-9,045.7	513,204.91	567,656.67	32° 24' 39.019 N	104° 14' 52.969 W	
17,700.0	90.00	269.86	9,367.0	1,116.5	-9,145.7	513,204.66	567,556.67	32° 24' 39.018 N	104° 14' 54.136 W	
17,800.0	90.00	269.86	9,367.0	1,116.3	-9,245.7	513,204.41	567,456.67	32° 24' 39.016 N	104° 14' 55.302 W	
17,900.0	90.00	269.86	9,367.0	1,116.0	-9,345.7	513,204.16	567,356.67	32° 24' 39.015 N	104° 14' 56.469 W	
18,000.0	90.00	269.86	9,367.0	1,115.8	-9,445.7	513,203.92	567,256.67	32° 24' 39.013 N	104° 14' 57.636 W	
18,100.0	90.00	269.86	9,367.0	1,115.5	-9,545.7	513,203.67	567,156.68	32° 24' 39.011 N	104° 14' 58.802 W	
18,200.0	90.00	269.86	9,367.0	1,115.3	-9,645.7	513,203.42	567,056.68	32° 24' 39.010 N	104° 14' 59.969 W	

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well CAVEMAN421H
Company:	NEW MEXICO	TVD Reference:	KB @ 3130.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3130.0usft
Site:	CAVEMAN PROJECT	North Reference:	Grid
Well:	CAVEMAN 421H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,300.0	90.00	269.86	9,367.0	1,115.0	-9,745.7	513,203.18	566,956.68	32° 24' 39.008 N	104° 15' 1.135 W	
18,400.0	90.00	269.86	9,367.0	1,114.8	-9,845.7	513,202.93	566,856.68	32° 24' 39.006 N	104° 15' 2.302 W	
18,500.0	90.00	269.86	9,367.0	1,114.5	-9,945.7	513,202.68	566,756.68	32° 24' 39.004 N	104° 15' 3.468 W	
18,600.0	90.00	269.86	9,367.0	1,114.3	-10,045.7	513,202.44	566,656.68	32° 24' 39.003 N	104° 15' 4.635 W	
18,700.0	90.00	269.86	9,367.0	1,114.0	-10,145.7	513,202.19	566,556.68	32° 24' 39.001 N	104° 15' 5.802 W	
18,800.0	90.00	269.86	9,367.0	1,113.8	-10,245.7	513,201.94	566,456.68	32° 24' 38.999 N	104° 15' 6.968 W	
18,900.0	90.00	269.86	9,367.0	1,113.6	-10,345.7	513,201.70	566,356.68	32° 24' 38.998 N	104° 15' 8.135 W	
19,000.0	90.00	269.86	9,367.0	1,113.3	-10,445.7	513,201.45	566,256.68	32° 24' 38.996 N	104° 15' 9.301 W	
19,100.0	90.00	269.86	9,367.0	1,113.1	-10,545.7	513,201.20	566,156.68	32° 24' 38.994 N	104° 15' 10.468 W	
19,200.0	90.00	269.86	9,367.0	1,112.8	-10,645.7	513,200.95	566,056.68	32° 24' 38.993 N	104° 15' 11.634 W	
19,300.0	90.00	269.86	9,367.0	1,112.6	-10,745.7	513,200.71	565,956.68	32° 24' 38.991 N	104° 15' 12.801 W	
19,400.0	90.00	269.86	9,367.0	1,112.3	-10,845.7	513,200.46	565,856.68	32° 24' 38.989 N	104° 15' 13.968 W	
19,500.0	90.00	269.86	9,367.0	1,112.1	-10,945.7	513,200.21	565,756.68	32° 24' 38.988 N	104° 15' 15.134 W	
19,600.0	90.00	269.86	9,367.0	1,111.8	-11,045.7	513,199.97	565,656.68	32° 24' 38.986 N	104° 15' 16.301 W	
19,654.9	90.00	269.86	9,367.0	1,111.7	-11,100.7	513,199.83	565,601.74	32° 24' 38.985 N	104° 15' 16.942 W	
TD at 19654.9										

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										
BHL-CAVEMAN 421H	0.00	0.00	9,367.0	1,111.7	-11,100.7	513,199.83	565,601.74	32° 24' 38.985 N	104° 15' 16.942 W	
- plan hits target center										
- Point										
FTP-CAVEMAN 421H	0.00	0.00	9,367.0	1,137.3	-588.9	513,225.48	576,113.56	32° 24' 39.146 N	104° 13' 14.314 W	
- plan misses target center by 303.1usft at 9325.0usft MD (9181.7 TVD, 1137.1 N, -828.7 E)										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,000.0	1,000.0	0.0	0.0	Start Build 2.00	
1,524.6	1,521.7	40.3	-25.8	Start 6891.9 hold at 1524.6 MD	
8,416.5	8,298.3	1,097.0	-703.1	Start Drop -2.00	
8,941.1	8,820.0	1,137.3	-728.9	Start 69.5 hold at 8941.1 MD	
9,010.6	8,889.5	1,137.3	-728.9	Start DLS 12.00 TFO 269.86	
9,760.6	9,367.0	1,136.1	-1,206.4	Start 9894.3 hold at 9760.6 MD	
19,654.9	9,367.0	1,111.7	-11,100.7	TD at 19654.9	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 422591

CONDITIONS

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 422591
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
dmcclure	If cement is not circulated to surface during cementing operations, a Cement Bond Log (CBL) is required.	11/21/2025
dmcclure	NSL-8946 approved	11/21/2025