

Well Name: CYPRESS 33 FED COM	Well Location: T23S / R29E / SEC 28 / SWSE / 32.268634 / -103.985864	County or Parish/State: EDDY / NM
Well Number: 206H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM086024	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001547861	Well Status: Approved Application for Permit to Drill	Operator: TAP ROCK OPERATING LLC

Notice of Intent

Sundry ID: 2640558

Type of Submission: Notice of Intent

Date Sundry Submitted: 10/19/2021

Date proposed operation will begin: 10/19/2021

Type of Action: Other

Time Sundry Submitted: 09:56

Procedure Description: Tap Rock would like to alter the casing plan for the Cypress 33 Fed Com #206H. Tap Rock is requesting permission to run one of the two options listed in the attached drill plan - A three or four string design. Tap Rock would also like to have the option of running a DV tool during cementing operations. If no DV tool is ran, we would like to cement the intermediate section in a single stage. Please see the attached Drill Plan for more detail.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Cypress_33_Federal_206H_Sundry_10.13.21_20211019095603.pdf

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Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: BILL RAMSEY	Signed on: OCT 19, 2021 09:56 AM
Name: TAP ROCK OPERATING LLC	
Title: Regulatory Analyst	
Street Address: 523 PARK POINT DRIVE SUITE 200	
City: GOLDEN	State: CO
Phone: (720) 360-4028	
Email address: BRAMSEY@TAPRK.COM	

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 11/05/2021
Signature: Chris Walls	



Drilling Operations Plan
Cypress 33 Fed Com 206H
Tap Rock Operating, LLC
SHL 14' FSL & 1444' FEL, Sec. 28
BHL 30' FSL & 1650' FEL, Sec. 33
T. 23S., R. 29E, Eddy County, NM

Elevation above Sea Level: 3,002'

DRILLING PROGRAM

1. Estimated Tops

Formation	TVD	MD	Lithologies	Bearing
Quaternary Deposits	0	0	Surface	None
Rustler Anhydrite	235	235		Salt
Salado	655	655	Salt	Salt
Base Salt	2835	2835		Salt
Lamar	3035	3035	Limestone	None
Bell Canyon	3045	3045	Sandstone	Hydrocarbons
Cherry Canyon	3915	3916	Sandstone	Hydrocarbons
Brushy Canyon	5090	5093	Sandstone	Hydrocarbons
Bone Spring	6740	6745	Limestone	Hydrocarbons
1st Bone Spring	7705	7710	Sandstone	Hydrocarbons
2nd Bone Spring	7980	7985	Sandstone	Hydrocarbons
3rd Bone Spring	8825	8830	Sandstone	Hydrocarbons
KOP	9525	9530	Sandstone	Hydrocarbons
Wolfcamp	9965	10032	Shale	Hydrocarbons
TD	10088	15100	Shale	Hydrocarbons

2. Notable Zones

Wolfcamp upper is the target formation.

3. Pressure Control

Pressure Control Equipment (See Schematics):

A 15,000', 5,000 psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A top drive check valve and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. The wellhead will be a multi-bowl speed head.

BOP Test procedure will be as follows:



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After surface casing is set and the BOP is nipped up, the BOP pressure tests will be made with a third party tester to 250 psi low, 5000 psi high, and the annular preventer will be tested to 2,500 psi. The BOP will be tested in this manner after nipple-up if any break of the stack occurs.

Variance Requests:

Tap Rock requests a variance to run a multi-bowl speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Tap Rock requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Tap Rock requests a variance to have the option of batch drilling this well with other wells on the same pad. In the event that this well is batch drilled, after drilling surface, 1st intermediate, and 2nd intermediate hole sections and cementing 2nd intermediate casing, a 10M dry hole cap with bleed off valve will be installed. The rig will then walk to another well on the pad. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test. Due to the Potash, Tap Rock will cement the 7-5/8" string to surface.

Tap Rock requests approval to possibly utilize a spudder rig to drill and set casing for the surface interval on this well. The spudder rig will be possibly utilized in order to reduce cost and save time. The wellhead will be installed and tested as soon as the surface casing is cut off per the existing COAs. A blind flange with the same pressure rating as the wellhead will be installed on the well. Once the spudder rig is removed, Tap Rock will secure the wellhead area by placing a guard rail around the cellar. Pressure will be monitored and a means for intervention will be maintained while the drilling rig is not over the well. Spudder rig operations are expected to take 2-3 days per well. Three wells on the pad will have surface casing set by the spudder rig as a part of this operation. The BLM will be notified 24 hours prior to commencing spudder rig operations. Within 90 days of the departure of the spudder rig, drilling operations will recommence on these wells. This rig will have a BOP stack equal or greater to the pressure rating required in the COAs. The BLM will be notified 24 hours before the larger rig moves on the pre-set wells. Tap Rock will have supervision on the spudder rig to ensure compliance with all BLM and NMOCD regulations.

If a DV tool is ran, the depth will be adjusted depending on current hole conditions. Cement volumes will be adjusted proportionally. The DV tool will be set a minimum of 50' below the previous casing shoe and at least 200' above the current casing shoe. If cement is not circulated to surface on the 1st cement job, the 2nd stage will be pumped as planned. If cement does not return to surface on the 2nd stage the BLM will be notified immediately.



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4. Casing & Cement

All Casing will be new.

Name	Hole Size	Casing Size	Standard	Top MD	Bottom MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Surface	17.5	13.375	API	0	350	0	350	J-55	54.5	BUTT	1.13	1.15	1.6
1st Intermediate	12.25	9.625	API	0	3085	0	3085	J-55	40	BUTT	1.13	1.15	1.6
2nd Intermediate	8.75	7.625	NON API	0	9430	0	9425	P-110	29.7	W441	1.13	1.15	1.6
Production	6.75	5.5	NON API	0	9230	0	9225	P-110	20	TXP	1.13	1.15	1.6
Production	6.75	5.5	NON API	9230	15100	9225	10088	P-110	20	W441	1.13	1.15	1.6

Section	Drilled Interval			Casing Size	Standard	Casing Set Depths				Casing Details					
	Hole Size	Top	Btm			Top MD	Bottom MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Surface	17.5	0	360	13.375	API	0	350	0	350	J-55	54.5	BUTT	1.13	1.15	1.6
Intermediate	9.875	360	7500	7.625	API	0	7200	0	7188	P-110	29.7	BUTT	1.13	1.15	1.6
	8.75	7500	9440	7.625	NON API	7200	9430	7188	9425	P-110	29.7	W441	1.13	1.15	1.6
Production	6.75	9440	15100	5.5	NON API	0	9230	0	9225	P-110	20	TXP	1.13	1.15	1.6
Production	6.75			5.5	NON API	9230	15100	9225	10088	P-110	20	W441	1.13	1.15	1.6

*OPTION TO RUN 3 STRING OR 4 STRING DESIGN

Name	Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface	Tail	0	360	1.35	486	14.8	100%	C	5% NCI + LCM
1st Intermediate	Lead	0	548	2.18	1196	12.7	65%	C	Bentonite + 1% CaCL2 + 8% NaCl + LCM
	Tail	2314	300	1.33	399	14.8	65%	C	5% NaCl + LCM
2nd Intermediate	Lead	0	476	2.4	1143	11.5	35%	TXI	Fluid Loss + Dispersant + Retarder + LCM
	Tail	8430	87	1.56	136	13.2	35%	H	Fluid Loss + Dispersant + Retarder + LCM
Production	Tail	8930	377	1.71	644	14.2	25%	H	Fluid Loss + Dispersant + Retarder + LCM

Name		Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface		Tail	0	360	1.35	486	14.8	100%	C	5% NCI + LCM
Intermediate	Stage 1	Lead	0	1172	2.4	2812	11.5	65%	C	Fluid Loss + Dispersant + Retarder + LCM
		Tail	8430	106	1.56	166	13.2	65%	C	Fluid Loss + Dispersant + Retarder + LCM
	Stage 2	Primary	0	690	2.4	1655	11.5	65%	C	Bentonite + 1% CaCL2 + 8% NaCl + LCM
		DVT	3235							
Production		Primarv	8930	377	1.71	644	14.2	25%	H	Fluid Loss + Dispersant + Retarder + LCM

*OPTION TO RUN DV TOOL IF NECESSARY

5. Mud Program

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	350	FW Spud Mud	8.30	28	NC
Intermediate	350	3085	Brine Water	10.00	30-32	NC
Intermediate 2	3085	9430	FW/Cut Brine	9.00	30-32	NC
Production	9430	15100	Oil Base Mud	11.50	50-70	<10

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	350	FW Gel	8.30	28	NC
Intermediate	350	9440	DBE/Cut Brine	9.00	30-32	NC
Production	9440	15100	Oil Base Mud	11.50	55-75	<10

Electronic Pason mud monitor system complying with Onshore Order 1 will be used. All necessary mud products (e. g., barite, cedar bark) for weight addition and fluid loss control will always be on site. Mud program is subject to change due to hole conditions. A closed loop system will be used.



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6. Cores, Tests, & Logs

- Electric Logging Program: No open-hole logs are planned at this time for the pilot hole.
- GR will be collected while drilling through the MWD tools from 9.625" casing shoe to TD.
- A 2-person mud logging program will be used from 9.625" casing shoe to TD.
- No DSTs or cores are planned at this time.
- CBL w/ CCL from as far as gravity will let it fall to TOC.

7. Down Hole Conditions

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is $\approx 6,030$ psi. Expected bottom hole temperature is $\approx 170^{\circ}$ F.

Tap Rock does not anticipate that there will be enough H₂S from the surface to the Wolfcamp formations to meet the BLM's Onshore Order 6 requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Tap Rock has an H₂S safety package on all wells and an "H₂S Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be safely flared. All personnel will be familiar with all aspects of safe operation of equipment being used.

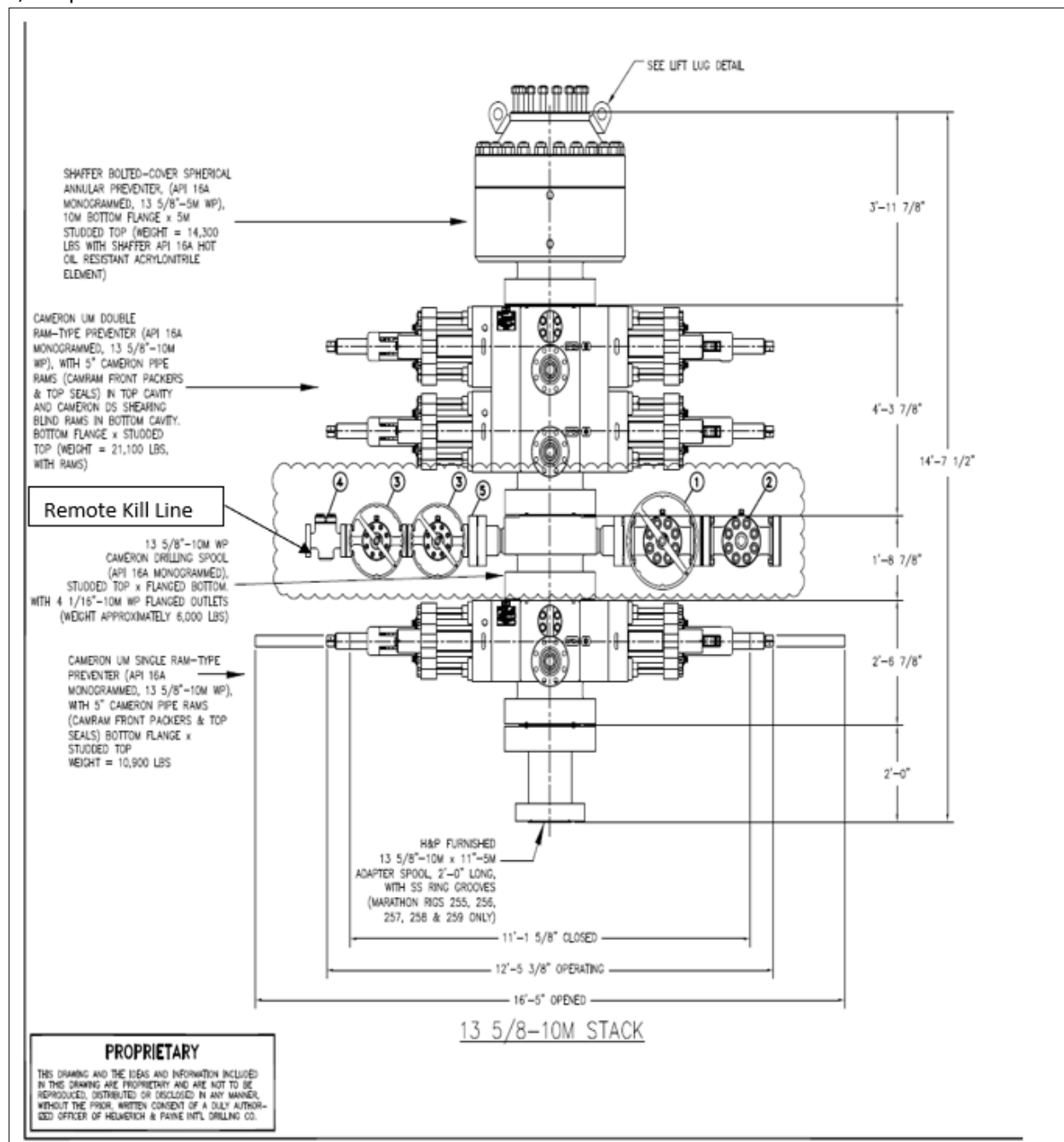
8. Other

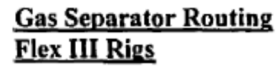
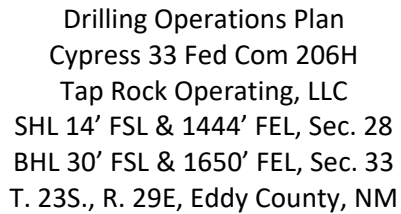
Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 30 days. If production casing is run an additional 60 days will be required to complete and construct surface facilities.



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5,000 psi BOP Stack

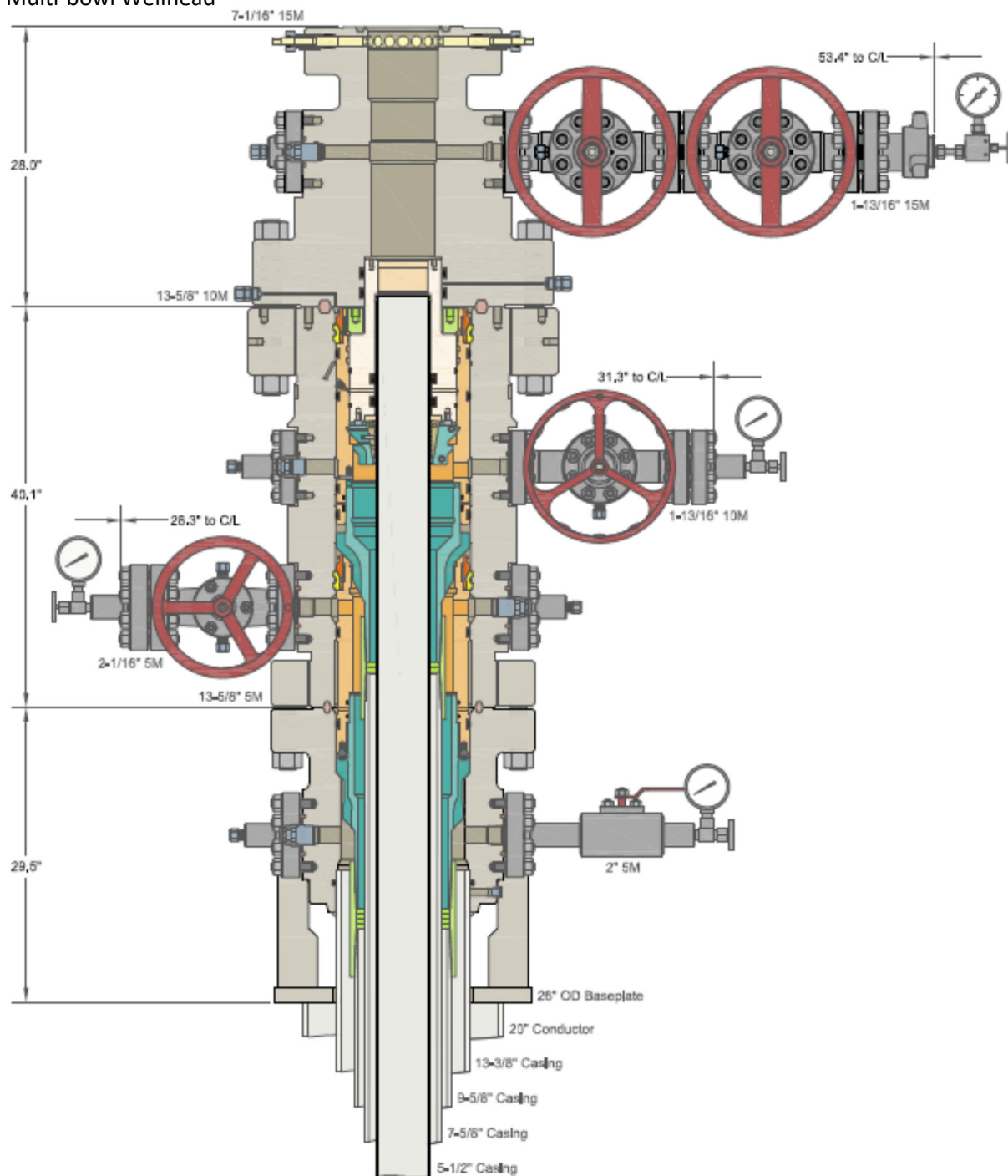






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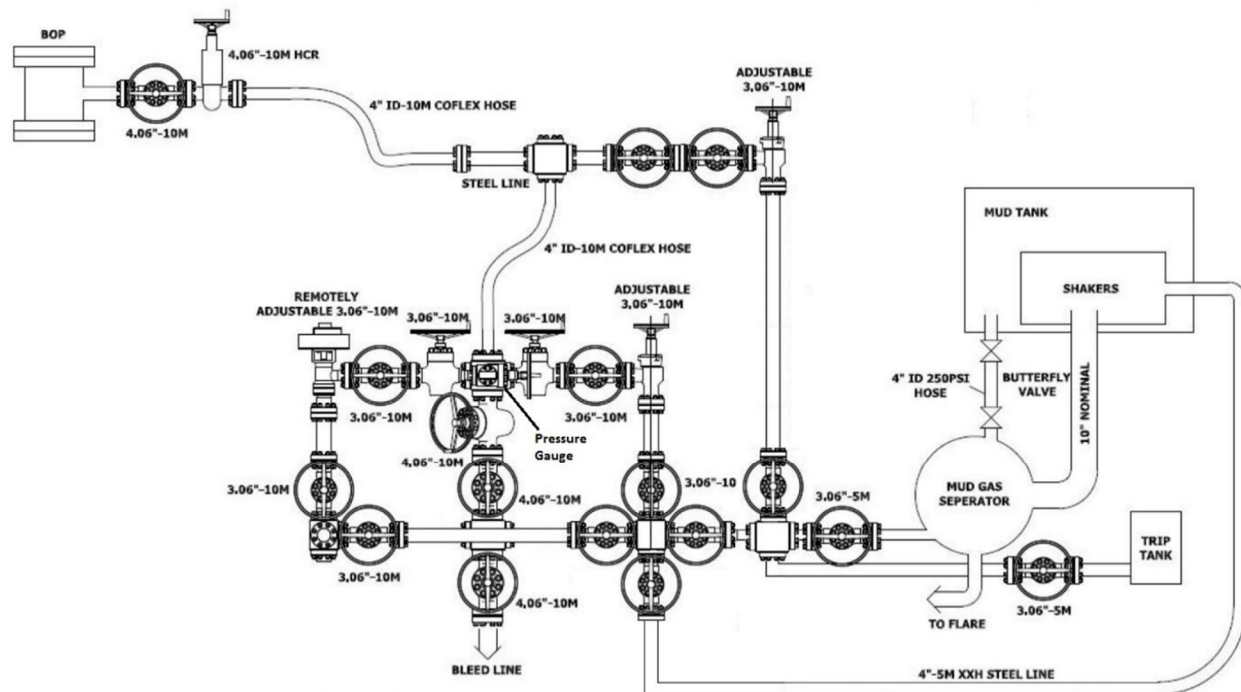
Multi-bowl Wellhead





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10M Choke Layout



Tap Rock Operating, LLC.

Eddy County, NM (NAD83)

Cypress 33 Fed Com

206H

OH

Plan: Plan #1

Standard Planning Report

10 December, 2019

Project	Eddy County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Cypress 33 Fed Com		
Site Position:		Northing:	461,635.94 usft
From:	Lat/Long	Easting:	648,733.91 usft
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 16' 7.082 N
		Longitude:	103° 59' 9.110 W
		Grid Convergence:	0.19 °

Well	206H		
Well Position	+N/-S	0.0 usft	Northing: 461,635.94 usft
	+E/-W	0.0 usft	Easting: 648,733.91 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 32° 16' 7.082 N
			Longitude: 103° 59' 9.110 W
			Ground Level: 3,002.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	12/4/2019	6.88
			Dip Angle (°)
			60.01
			Field Strength (nT)
			47,670.57529023

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			179.08

Plan Survey Tool Program	Date	12/10/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	15,103.4 Plan #1 (OH)	MWD	
			MWD - Standard	

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	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,700.0	3.00	260.00	2,699.9	-0.9	-5.2	1.50	1.50	0.00	260.00	
6,500.0	3.00	260.00	6,494.7	-35.4	-201.0	0.00	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,694.6	-36.4	-206.2	1.50	-1.50	0.00	180.00	
9,530.4	0.00	0.00	9,525.0	-36.4	-206.2	0.00	0.00	0.00	0.00	
10,431.5	90.11	179.08	10,098.0	-610.4	-196.9	10.00	10.00	19.87	179.08	
15,033.4	90.11	179.08	10,089.0	-5,211.6	-123.0	0.00	0.00	0.00	0.00	LTP_C33.206H
15,103.4	90.11	179.08	10,088.9	-5,281.6	-121.8	0.00	0.00	0.00	0.00	PBHL_C33.206H

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
235.0	0.00	0.00	235.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler Anhydrite									
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
655.0	0.00	0.00	655.0	0.0	0.0	0.0	0.00	0.00	0.00
Top Salt									
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Nudge to 3° Inc, 260° Azm									
2,600.0	1.50	260.00	2,600.0	-0.2	-1.3	0.2	1.50	1.50	0.00
2,700.0	3.00	260.00	2,699.9	-0.9	-5.2	0.8	1.50	1.50	0.00
2,800.0	3.00	260.00	2,799.8	-1.8	-10.3	1.7	0.00	0.00	0.00
2,835.3	3.00	260.00	2,835.0	-2.1	-12.1	1.9	0.00	0.00	0.00
Base Salt									
2,900.0	3.00	260.00	2,899.6	-2.7	-15.5	2.5	0.00	0.00	0.00
3,000.0	3.00	260.00	2,999.5	-3.6	-20.6	3.3	0.00	0.00	0.00
3,025.5	3.00	260.00	3,025.0	-3.9	-21.9	3.5	0.00	0.00	0.00
Delaware Mountain Gp									
3,035.6	3.00	260.00	3,035.0	-4.0	-22.4	3.6	0.00	0.00	0.00
Lamar									
3,045.6	3.00	260.00	3,045.0	-4.0	-23.0	3.7	0.00	0.00	0.00
Bell Canyon									
3,070.6	3.00	260.00	3,070.0	-4.3	-24.3	3.9	0.00	0.00	0.00
Ramsey Sand									
3,100.0	3.00	260.00	3,099.4	-4.5	-25.8	4.1	0.00	0.00	0.00
3,200.0	3.00	260.00	3,199.2	-5.5	-30.9	5.0	0.00	0.00	0.00
3,300.0	3.00	260.00	3,299.1	-6.4	-36.1	5.8	0.00	0.00	0.00
3,400.0	3.00	260.00	3,398.9	-7.3	-41.2	6.6	0.00	0.00	0.00
3,500.0	3.00	260.00	3,498.8	-8.2	-46.4	7.4	0.00	0.00	0.00
3,600.0	3.00	260.00	3,598.7	-9.1	-51.5	8.3	0.00	0.00	0.00
3,700.0	3.00	260.00	3,698.5	-10.0	-56.7	9.1	0.00	0.00	0.00
3,800.0	3.00	260.00	3,798.4	-10.9	-61.9	9.9	0.00	0.00	0.00
3,900.0	3.00	260.00	3,898.3	-11.8	-67.0	10.7	0.00	0.00	0.00
3,916.8	3.00	260.00	3,915.0	-12.0	-67.9	10.9	0.00	0.00	0.00
Cherry Canyon									
4,000.0	3.00	260.00	3,998.1	-12.7	-72.2	11.6	0.00	0.00	0.00
4,100.0	3.00	260.00	4,098.0	-13.6	-77.3	12.4	0.00	0.00	0.00
4,200.0	3.00	260.00	4,197.9	-14.5	-82.5	13.2	0.00	0.00	0.00
4,300.0	3.00	260.00	4,297.7	-15.4	-87.6	14.0	0.00	0.00	0.00
4,400.0	3.00	260.00	4,397.6	-16.4	-92.8	14.9	0.00	0.00	0.00
4,500.0	3.00	260.00	4,497.4	-17.3	-97.9	15.7	0.00	0.00	0.00
4,600.0	3.00	260.00	4,597.3	-18.2	-103.1	16.5	0.00	0.00	0.00
4,700.0	3.00	260.00	4,697.2	-19.1	-108.2	17.3	0.00	0.00	0.00
4,800.0	3.00	260.00	4,797.0	-20.0	-113.4	18.2	0.00	0.00	0.00

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)	
4,900.0	3.00	260.00	4,896.9	-20.9	-118.5	19.0	0.00	0.00	0.00	
5,000.0	3.00	260.00	4,996.8	-21.8	-123.7	19.8	0.00	0.00	0.00	
5,093.4	3.00	260.00	5,090.0	-22.7	-128.5	20.6	0.00	0.00	0.00	
Brushy Canyon										
5,100.0	3.00	260.00	5,096.6	-22.7	-128.9	20.6	0.00	0.00	0.00	
5,200.0	3.00	260.00	5,196.5	-23.6	-134.0	21.5	0.00	0.00	0.00	
5,300.0	3.00	260.00	5,296.3	-24.5	-139.2	22.3	0.00	0.00	0.00	
5,400.0	3.00	260.00	5,396.2	-25.4	-144.3	23.1	0.00	0.00	0.00	
5,500.0	3.00	260.00	5,496.1	-26.4	-149.5	24.0	0.00	0.00	0.00	
5,600.0	3.00	260.00	5,595.9	-27.3	-154.6	24.8	0.00	0.00	0.00	
5,700.0	3.00	260.00	5,695.8	-28.2	-159.8	25.6	0.00	0.00	0.00	
5,800.0	3.00	260.00	5,795.7	-29.1	-164.9	26.4	0.00	0.00	0.00	
5,900.0	3.00	260.00	5,895.5	-30.0	-170.1	27.3	0.00	0.00	0.00	
6,000.0	3.00	260.00	5,995.4	-30.9	-175.2	28.1	0.00	0.00	0.00	
6,100.0	3.00	260.00	6,095.2	-31.8	-180.4	28.9	0.00	0.00	0.00	
6,200.0	3.00	260.00	6,195.1	-32.7	-185.5	29.7	0.00	0.00	0.00	
6,300.0	3.00	260.00	6,295.0	-33.6	-190.7	30.6	0.00	0.00	0.00	
6,400.0	3.00	260.00	6,394.8	-34.5	-195.9	31.4	0.00	0.00	0.00	
6,500.0	3.00	260.00	6,494.7	-35.4	-201.0	32.2	0.00	0.00	0.00	
Drop to Vert 6494.7 TVD										
6,600.0	1.50	260.00	6,594.6	-36.1	-204.9	32.8	1.50	-1.50	0.00	
6,700.0	0.00	0.00	6,694.6	-36.4	-206.2	33.0	1.50	-1.50	0.00	
6,745.4	0.00	0.00	6,740.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
Bone Spring Lime										
6,800.0	0.00	0.00	6,794.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
6,805.4	0.00	0.00	6,800.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
Upper Avalon										
6,900.0	0.00	0.00	6,894.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,994.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,094.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,180.4	0.00	0.00	7,175.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
Middle Avalon										
7,200.0	0.00	0.00	7,194.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,294.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,394.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,494.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,550.4	0.00	0.00	7,545.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
Lower Avalon										
7,600.0	0.00	0.00	7,594.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,694.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,710.4	0.00	0.00	7,705.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
1st Bone Spring Sand										
7,800.0	0.00	0.00	7,794.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,894.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
7,985.4	0.00	0.00	7,980.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
2nd Bone Spring Carb										
8,000.0	0.00	0.00	7,994.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,094.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,194.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,294.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,305.4	0.00	0.00	8,300.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
2nd Bone Spring Sand										
8,400.0	0.00	0.00	8,394.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,494.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,594.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,694.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,794.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
8,830.4	0.00	0.00	8,825.0	-36.4	-206.2	33.0	0.00	0.00	0.00	
3rd Bone Spring Carb										
8,900.0	0.00	0.00	8,894.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,994.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,094.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,194.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,294.6	-36.4	-206.2	33.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,394.6	-36.4	-206.2	33.0	0.00	0.00	0.00	

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)
9,500.0	0.00	0.00	9,494.6	-36.4	-206.2	33.0	0.00	0.00	0.00
9,530.4	0.00	0.00	9,525.0	-36.4	-206.2	33.0	0.00	0.00	0.00
KOP - 9530.4 MD, 9525 TVD									
9,550.0	1.96	179.08	9,544.6	-36.7	-206.2	33.4	10.00	10.00	0.00
9,600.0	6.96	179.08	9,594.4	-40.6	-206.1	37.3	10.00	10.00	0.00
9,646.2	11.58	179.08	9,640.0	-48.0	-206.0	44.7	10.00	10.00	0.00
3rd Bone Spring Sand									
9,650.0	11.96	179.08	9,643.7	-48.8	-206.0	45.5	10.00	10.00	0.00
9,700.0	16.96	179.08	9,692.1	-61.3	-205.8	58.0	10.00	10.00	0.00
9,750.0	21.96	179.08	9,739.3	-77.9	-205.5	74.6	10.00	10.00	0.00
9,800.0	26.96	179.08	9,784.8	-98.6	-205.2	95.3	10.00	10.00	0.00
9,850.0	31.96	179.08	9,828.3	-123.2	-204.8	119.9	10.00	10.00	0.00
9,900.0	36.96	179.08	9,869.5	-151.5	-204.3	148.2	10.00	10.00	0.00
9,950.0	41.96	179.08	9,908.1	-183.2	-203.8	179.9	10.00	10.00	0.00
9,952.6	42.22	179.08	9,910.0	-185.0	-203.8	181.7	10.00	10.00	0.00
3rd BS W Sand									
10,000.0	46.96	179.08	9,943.8	-218.2	-203.2	215.0	10.00	10.00	0.00
10,032.1	50.17	179.08	9,965.0	-242.3	-202.9	239.0	10.00	10.00	0.00
Wolfcamp A X Sand									
10,050.0	51.96	179.08	9,976.3	-256.2	-202.6	252.9	10.00	10.00	0.00
10,100.0	56.96	179.08	10,005.3	-296.9	-202.0	293.6	10.00	10.00	0.00
10,150.0	61.96	179.08	10,030.7	-339.9	-201.3	336.7	10.00	10.00	0.00
10,200.0	66.96	179.08	10,052.3	-385.0	-200.6	381.8	10.00	10.00	0.00
10,250.0	71.96	179.08	10,069.8	-431.8	-199.8	428.6	10.00	10.00	0.00
10,267.6	73.73	179.08	10,075.0	-448.7	-199.5	445.4	10.00	10.00	0.00
Wolfcamp A Y Sand									
10,300.0	76.96	179.08	10,083.2	-480.0	-199.0	476.7	10.00	10.00	0.00
10,350.0	81.96	179.08	10,092.3	-529.1	-198.2	525.9	10.00	10.00	0.00
10,400.0	86.96	179.08	10,097.2	-578.9	-197.4	575.6	10.00	10.00	0.00
10,431.5	90.11	179.08	10,098.0	-610.3	-196.9	607.1	10.00	10.00	0.00
EOC - 10098 TVD, 90.11 Inc									
10,500.0	90.11	179.08	10,097.8	-678.8	-195.8	675.6	0.00	0.00	0.00
10,600.0	90.11	179.08	10,097.6	-778.8	-194.2	775.6	0.00	0.00	0.00
10,700.0	90.11	179.08	10,097.4	-878.8	-192.6	875.6	0.00	0.00	0.00
10,800.0	90.11	179.08	10,097.2	-978.8	-191.0	975.6	0.00	0.00	0.00
10,900.0	90.11	179.08	10,097.0	-1,078.8	-189.4	1,075.6	0.00	0.00	0.00
11,000.0	90.11	179.08	10,096.9	-1,178.8	-187.8	1,175.6	0.00	0.00	0.00
11,100.0	90.11	179.08	10,096.7	-1,278.8	-186.2	1,275.6	0.00	0.00	0.00
11,200.0	90.11	179.08	10,096.5	-1,378.7	-184.6	1,375.6	0.00	0.00	0.00
11,300.0	90.11	179.08	10,096.3	-1,478.7	-183.0	1,475.6	0.00	0.00	0.00
11,400.0	90.11	179.08	10,096.1	-1,578.7	-181.4	1,575.6	0.00	0.00	0.00
11,500.0	90.11	179.08	10,095.9	-1,678.7	-179.8	1,675.6	0.00	0.00	0.00
11,600.0	90.11	179.08	10,095.7	-1,778.7	-178.2	1,775.6	0.00	0.00	0.00
11,700.0	90.11	179.08	10,095.5	-1,878.7	-176.5	1,875.6	0.00	0.00	0.00
11,800.0	90.11	179.08	10,095.3	-1,978.7	-174.9	1,975.6	0.00	0.00	0.00
11,900.0	90.11	179.08	10,095.1	-2,078.7	-173.3	2,075.6	0.00	0.00	0.00
12,000.0	90.11	179.08	10,094.9	-2,178.6	-171.7	2,175.6	0.00	0.00	0.00
12,100.0	90.11	179.08	10,094.7	-2,278.6	-170.1	2,275.6	0.00	0.00	0.00
12,200.0	90.11	179.08	10,094.5	-2,378.6	-168.5	2,375.6	0.00	0.00	0.00
12,300.0	90.11	179.08	10,094.3	-2,478.6	-166.9	2,475.6	0.00	0.00	0.00
12,400.0	90.11	179.08	10,094.1	-2,578.6	-165.3	2,575.6	0.00	0.00	0.00
12,500.0	90.11	179.08	10,093.9	-2,678.6	-163.7	2,675.6	0.00	0.00	0.00
12,600.0	90.11	179.08	10,093.7	-2,778.6	-162.1	2,775.6	0.00	0.00	0.00
12,700.0	90.11	179.08	10,093.5	-2,878.5	-160.5	2,875.6	0.00	0.00	0.00
12,800.0	90.11	179.08	10,093.3	-2,978.5	-158.9	2,975.6	0.00	0.00	0.00
12,900.0	90.11	179.08	10,093.2	-3,078.5	-157.2	3,075.6	0.00	0.00	0.00
13,000.0	90.11	179.08	10,093.0	-3,178.5	-155.6	3,175.6	0.00	0.00	0.00
13,100.0	90.11	179.08	10,092.8	-3,278.5	-154.0	3,275.6	0.00	0.00	0.00
13,200.0	90.11	179.08	10,092.6	-3,378.5	-152.4	3,375.6	0.00	0.00	0.00
13,300.0	90.11	179.08	10,092.4	-3,478.5	-150.8	3,475.6	0.00	0.00	0.00
13,400.0	90.11	179.08	10,092.2	-3,578.5	-149.2	3,575.6	0.00	0.00	0.00
13,500.0	90.11	179.08	10,092.0	-3,678.4	-147.6	3,675.6	0.00	0.00	0.00
13,600.0	90.11	179.08	10,091.8	-3,778.4	-146.0	3,775.6	0.00	0.00	0.00
13,700.0	90.11	179.08	10,091.6	-3,878.4	-144.4	3,875.6	0.00	0.00	0.00
13,800.0	90.11	179.08	10,091.4	-3,978.4	-142.8	3,975.6	0.00	0.00	0.00
13,900.0	90.11	179.08	10,091.2	-4,078.4	-141.2	4,075.6	0.00	0.00	0.00

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)	
14,000.0	90.11	179.08	10,091.0	-4,178.4	-139.6	4,175.6	0.00	0.00	0.00	
14,100.0	90.11	179.08	10,090.8	-4,278.4	-138.0	4,275.6	0.00	0.00	0.00	
14,200.0	90.11	179.08	10,090.6	-4,378.4	-136.3	4,375.6	0.00	0.00	0.00	
14,300.0	90.11	179.08	10,090.4	-4,478.3	-134.7	4,475.6	0.00	0.00	0.00	
14,400.0	90.11	179.08	10,090.2	-4,578.3	-133.1	4,575.6	0.00	0.00	0.00	
14,500.0	90.11	179.08	10,090.0	-4,678.3	-131.5	4,675.6	0.00	0.00	0.00	
14,600.0	90.11	179.08	10,089.8	-4,778.3	-129.9	4,775.6	0.00	0.00	0.00	
14,700.0	90.11	179.08	10,089.6	-4,878.3	-128.3	4,875.6	0.00	0.00	0.00	
14,800.0	90.11	179.08	10,089.5	-4,978.3	-126.7	4,975.6	0.00	0.00	0.00	
14,900.0	90.11	179.08	10,089.3	-5,078.3	-125.1	5,075.6	0.00	0.00	0.00	
15,000.0	90.11	179.08	10,089.1	-5,178.2	-123.5	5,175.6	0.00	0.00	0.00	
15,033.4	90.11	179.08	10,089.0	-5,211.6	-123.0	5,209.0	0.00	0.00	0.00	
15,103.4	90.11	179.08	10,088.9	-5,281.6	-121.8	5,279.0	0.00	0.00	0.00	
TD @ 15103.4 MD, 10088.9 TVD, 5279 VS										

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										
PBHL_C33.206H	0.00	0.00	10,088.9	-5,281.6	-121.9	456,354.34	648,612.05	32° 15' 14.820 N	103° 59' 10.729 W	
- plan hits target center										
- Point										
LTP_C33.206H	0.00	0.00	10,089.0	-5,211.6	-123.0	456,424.33	648,610.96	32° 15' 15.513 N	103° 59' 10.739 W	
- plan hits target center										
- Point										
FTP_C33.206H	0.00	0.00	10,098.0	-114.9	-204.4	461,521.05	648,529.54	32° 16' 5.952 N	103° 59' 11.495 W	
- plan misses target center by 183.9usft at 10024.6usft MD (9960.2 TVD, -236.6 N, -202.9 E)										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
235.0	235.0	Rustler Anhydrite				
655.0	655.0	Top Salt				
2,835.3	2,835.0	Base Salt				
3,025.5	3,025.0	Delaware Mountain Gp				
3,035.6	3,035.0	Lamar				
3,045.6	3,045.0	Bell Canyon				
3,070.6	3,070.0	Ramsey Sand				
3,916.8	3,915.0	Cherry Canyon				
5,093.4	5,090.0	Brushy Canyon				
6,745.4	6,740.0	Bone Spring Lime				
6,805.4	6,800.0	Upper Avalon				
7,180.4	7,175.0	Middle Avalon				
7,550.4	7,545.0	Lower Avalon				
7,710.4	7,705.0	1st Bone Spring Sand				
7,985.4	7,980.0	2nd Bone Spring Carb				
8,305.4	8,300.0	2nd Bone Spring Sand				
8,830.4	8,825.0	3rd Bone Spring Carb				
9,646.2	9,640.0	3rd Bone Spring Sand				
9,952.6	9,910.0	3rd BS W Sand				
10,032.1	9,965.0	Wolfcamp A X Sand				
10,267.6	10,075.0	Wolfcamp A Y Sand				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,500.0	2,500.0	0.0	0.0	Nudge to 3° Inc, 260° Azm
6,500.0	6,494.7	-35.4	-201.0	Drop to Vert 6494.7 TVD
9,530.4	9,525.0	-36.4	-206.2	KOP - 9530.4 MD, 9525 TVD
10,431.5	10,098.0	-610.3	-196.9	EOC - 10098 TVD, 90.11 Inc
15,103.4	10,088.9	-5,281.6	-121.8	TD @ 15103.4 MD, 10088.9 TVD, 5279 VS

District I

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811 S. First St., Artesia, NM 88210
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District IV

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Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 60781

COMMENTS

Operator: TAP ROCK OPERATING, LLC 523 Park Point Drive Golden, CO 80401	OGRID: 372043
	Action Number: 60781
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
jagarcia	Approved, John Garcia, Petroleum Engineer	11/17/2021

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CONDITIONS

Action 60781

CONDITIONS

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	Action Number: 60781
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
jagarcia	Adhere to all previous COAS	11/17/2021