

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
August 1, 2011

Permit 293240

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address TAP ROCK OPERATING, LLC 523 Park Point Drive Golden, CO 80401		2. OGRID Number 372043
		3. API Number 30-025-48656
4. Property Code 328891	5. Property Name APOLLO STATE COM	6. Well No. 171H

7. Surface Location

UL - Lot M	Section 21	Township 24S	Range 33E	Lot Idn M	Feet From 888	N/S Line S	Feet From 545	E/W Line W	County Lea
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8. Proposed Bottom Hole Location

UL - Lot D	Section 16	Township 24S	Range 33E	Lot Idn D	Feet From 30	N/S Line N	Feet From 331	E/W Line W	County Lea
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9. Pool Information

TRIPLE X;BONE SPRING, WEST	96674
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3534
16. Multiple N	17. Proposed Depth 19874	18. Formation Bone Spring	19. Contractor	20. Spud Date 12/1/2021
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	1220	1200	0
Int1	12.25	9.625	40	5200	1400	0
Prod	8.5	5.5	20	19870	2900	0

Casing/Cement Program: Additional Comments

Tap Rock will drill 8.75" hole down to KOP of approximately 9040 ft from 9-5/8" csg shoe then drill 8.5" curve and lateral.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	3500	
Double Ram	10000	5000	
Pipe	10000	5000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒ if applicable.		OIL CONSERVATION DIVISION	
Signature:			
Printed Name:	Electronically filed by Christian Combs	Approved By:	Paul F Kautz
Title:	Regulatory Manager	Title:	Geologist
Email Address:	ccombs@taprk.com	Approved Date:	4/16/2021
Date:	4/14/2021	Phone:	720-360-4028
		Expiration Date: 4/16/2023	
Conditions of Approval Attached			

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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 96674	³ Pool Name TRIPLE X;BONE SPRING, WEST
⁴ Property Code 328891	⁵ Property Name APOLLO STATE COM		⁶ Well Number 171H
⁷ OGRID No. #372043	⁸ Operator Name TAP ROCK OPERATING, LLC.		⁹ Elevation 3534'

¹⁰Surface Location

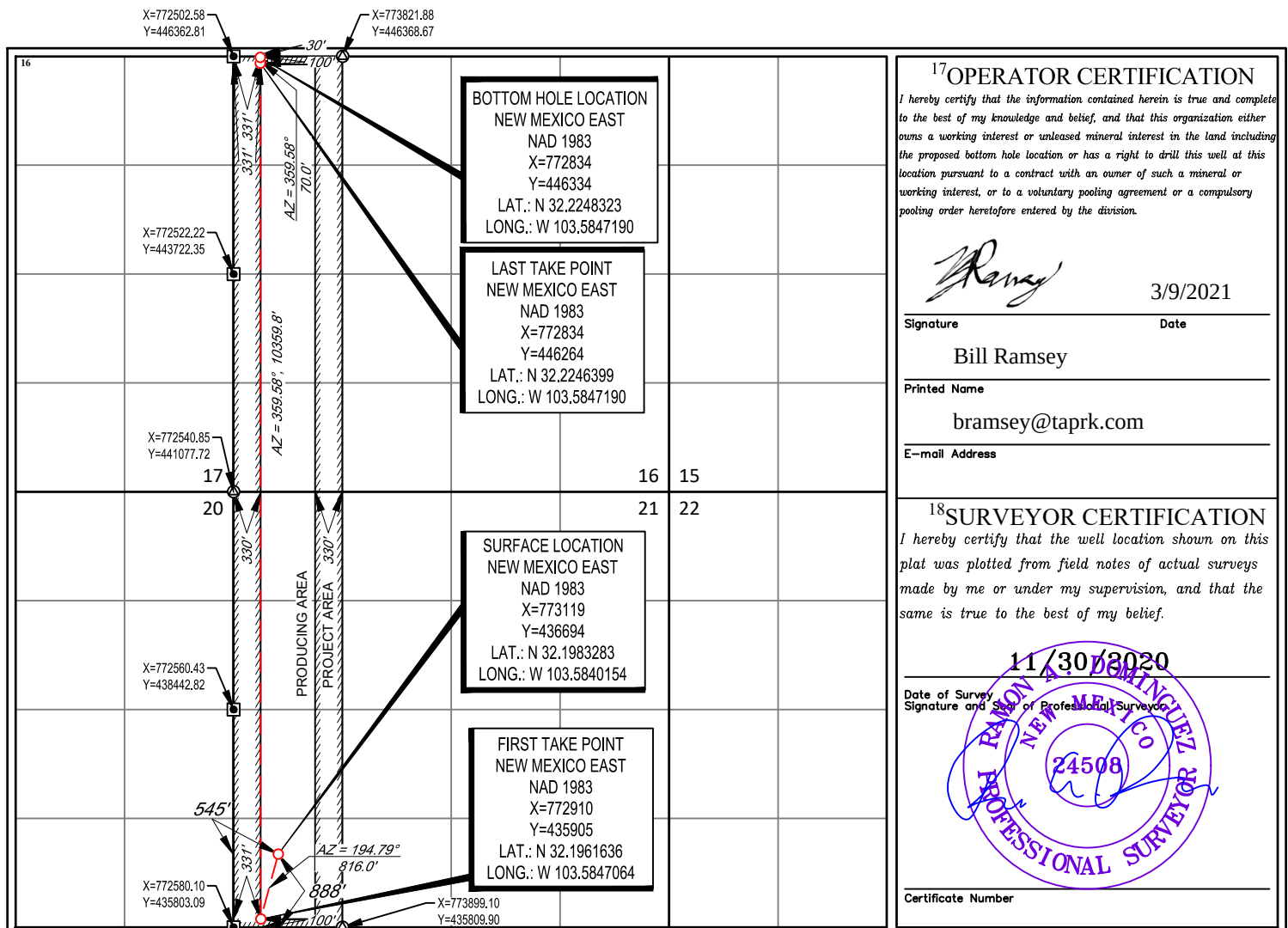
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	21	24-S	33-E	-	888'	SOUTH	545'	WEST	LEA

¹¹Bottom 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
D	16	24-S	33-E	-	30'	NORTH	331'	WEST	LEA

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

¹⁷OPERATOR 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.

Bill Ramsey

3/9/2021

Signature

Date

Bill Ramsey

Printed Name

bramsey@taprk.com

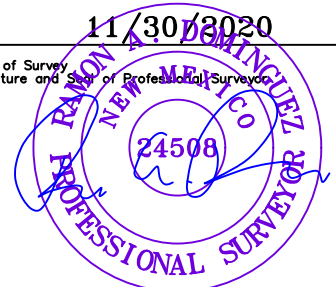
E-mail Address

¹⁸SURVEYOR 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 to the best of my belief.

11/30/2020

Date of Survey
Signature and Seal of Professional Surveyor



Certificate Number

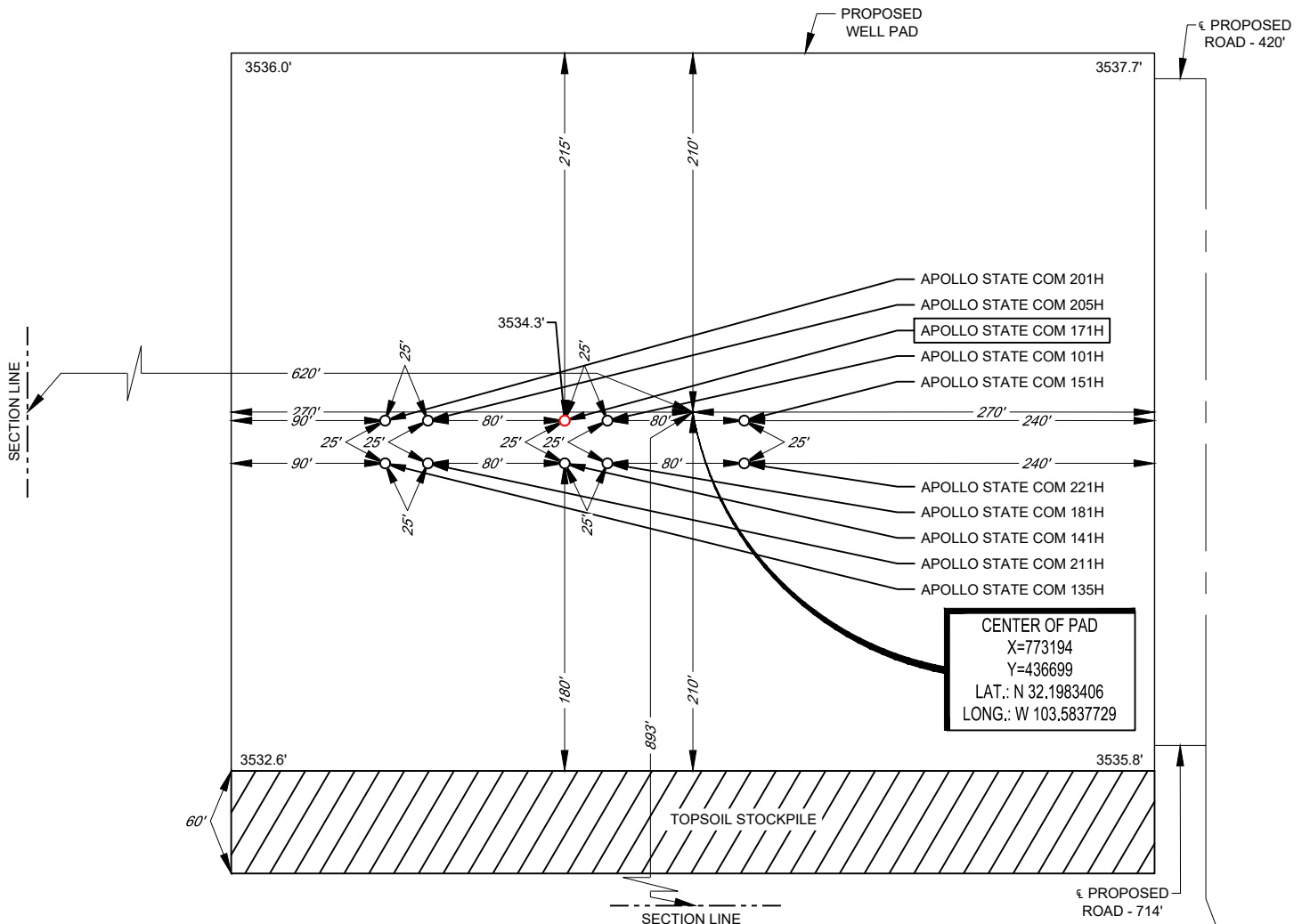


SECTION 21, TOWNSHIP 24-S, RANGE 33-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'

LEGEND

 SECTION LINE
 PROPOSED ROAD



LEASE NAME & WELL NO.: APOLLO STATE COM 171H
171H LATITUDE N 32.1983283 171H LONGITUDE W 103.5840154

CENTER OF PAD IS 893' FSL & 620' FWL



Ramon A. Dominguez, P.S. No. 24508

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET. ELEVATIONS USED ARE NAVD88, OBTAINED THROUGH AN OPUS SOLUTION.

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. ONLY THE DATA SHOWN ABOVE IS BEING CERTIFIED TO, ALL OTHER INFORMATION WAS INTENTIONALLY OMITTED. THIS PLAT IS ONLY INTENDED TO BE USED FOR A PERMIT AND IS NOT A BOUNDARY SURVEY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ORIGINAL DOCUMENT SIZE: 8.5" X 11"



1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

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GAS CAPTURE PLAN

Date: 4/16/2021

☒ Original

Operator & OGRID No.: [372043] TAP ROCK OPERATING, LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
APOLLO STATE COM #171H	30-025-48656	M-21-24S-33E	0888S 0545W	3000	Flared	Flared for 21 days

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LUCID ENERGY DELAWARE, LLC and will be connected to LUCID ENERGY DELAWARE, LLC High/Low Pressure gathering system located in Lea County, New Mexico. It will require 2500' of pipeline to connect the facility to High/Low Pressure gathering system. TAP ROCK OPERATING, LLC provides (periodically) to LUCID ENERGY DELAWARE, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, TAP ROCK OPERATING, LLC and LUCID ENERGY DELAWARE, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LUCID ENERGY DELAWARE, LLC Processing Plant located in Sec. 15, Twn. 24S, Rng. 33E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on LUCID ENERGY DELAWARE, LLC system at that time. Based on current information, it is TAP ROCK OPERATING, LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Conditions

Permit 293240

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: TAP ROCK OPERATING, LLC [372043] 523 Park Point Drive Golden, CO 80401	API Number: 30-025-48656
	Well: APOLLO STATE COM #171H

OCD Reviewer	Condition
pkautz	Notify OCD 24 hours prior to casing & cement
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
pkautz	1) SURFACE & INTERMEDIATE CASING - Cement must circulate to surface -- 2) PRODUCTION CASING - Cement must tie back into intermediate casing --
pkautz	If cement does not circulate to surface, must run temperature survey or other log to determine top of cement
pkautz	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water
pkautz	1)- The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
pkautz	It is the operator's responsibility to monitor cancellation dates of approved APDs. APD's are good for 2 years and may be extended for one year. Only one 1 year extension will be granted if submitted by C-103 before expiration date. After expiration date or after a 1 year extension must submit new APD. If an APD expires and if site construction has occurred, site remediation is required.
pkautz	Stage Tool 1) Must notify OCD Hobbs Office prior to running Stage Tool at 5753703186 2) If using Stage Tool on Surface casing, Stage Tool must be set greater than 350' from surface and a minimum of 200 feet above surface shoe. 3) When using a Stage Tool on Intermediate or Production Casing Stage must be a minimum of 50 feet below previous casing shoe.

Tap Rock Operating, LLC.

Lea County, NM (NAD83)

Apollo State COM

171H

OH

Plan: Plan #1

Standard Planning Report

02 March, 2021

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 171H
Company:	Tap Rock Operating, LLC.	TVD Reference:	WELL @ 3560.0usft (26' RKB)
Project:	Lea County, NM (NAD83)	MD Reference:	WELL @ 3560.0usft (26' RKB)
Site:	Apollo State COM	North Reference:	Grid
Well:	171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea 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	Apollo State COM				
Site Position:		Northing:	436,628.77 usft	Latitude:	32° 11' 53.336 N
From:	Lat/Long	Easting:	773,148.60 usft	Longitude:	103° 35' 2.112 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	171H					
Well Position	+N/-S	65.2 usft	Northing:	436,694.00 usft	Latitude:	32° 11' 53.984 N
	+E/-W	-29.6 usft	Easting:	773,119.00 usft	Longitude:	103° 35' 2.451 W
Position Uncertainty		2.0 usft	Wellhead Elevation:		Ground Level:	3,534.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/1/2021	6.58	59.89	47,507

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)	Direction (°)
	0.0	0.0	0.0	359.58

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	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,200.0	9.00	193.50	3,197.5	-45.7	-11.0	1.50	1.50	0.00	193.50	
8,300.0	9.00	193.50	8,234.7	-821.5	-197.2	0.00	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,832.3	-867.2	-208.2	1.50	-1.50	27.75	180.00	
9,039.7	0.00	0.00	8,972.0	-867.2	-208.2	0.00	0.00	0.00	0.00	
9,939.9	90.01	359.58	9,545.0	-294.1	-212.4	10.00	10.00	0.00	359.58	
9,980.2	90.01	359.58	9,545.0	-253.9	-212.7	0.01	0.00	0.00	-45.86	
19,804.3	90.01	359.58	9,543.0	9,570.0	-285.0	0.00	0.00	0.00	0.00	LTP_A171H
19,874.3	90.01	359.58	9,543.0	9,640.0	-285.5	0.00	0.00	0.00	0.00	PBHL_A171H

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 171H
Company:	Tap Rock Operating, LLC.	TVD Reference:	WELL @ 3560.0usft (26' RKB)
Project:	Lea County, NM (NAD83)	MD Reference:	WELL @ 3560.0usft (26' RKB)
Site:	Apollo State COM	North Reference:	Grid
Well:	171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,161.0	0.00	0.00	1,161.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler Anhydrite									
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
1,652.0	0.00	0.00	1,652.0	0.0	0.0	0.0	0.00	0.00	0.00
Top Salt									
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
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 1.50									
2,700.0	1.50	193.50	2,700.0	-1.3	-0.3	-1.3	1.50	1.50	0.00
2,800.0	3.00	193.50	2,799.9	-5.1	-1.2	-5.1	1.50	1.50	0.00
2,900.0	4.50	193.50	2,899.7	-11.4	-2.7	-11.4	1.50	1.50	0.00
3,000.0	6.00	193.50	2,999.3	-20.3	-4.9	-20.3	1.50	1.50	0.00
3,100.0	7.50	193.50	3,098.6	-31.8	-7.6	-31.7	1.50	1.50	0.00
3,200.0	9.00	193.50	3,197.5	-45.7	-11.0	-45.6	1.50	1.50	0.00
Start 5100.0 hold at 3200.0 MD									
3,300.0	9.00	193.50	3,296.3	-60.9	-14.6	-60.8	0.00	0.00	0.00
3,400.0	9.00	193.50	3,395.1	-76.2	-18.3	-76.0	0.00	0.00	0.00
3,500.0	9.00	193.50	3,493.8	-91.4	-21.9	-91.2	0.00	0.00	0.00
3,600.0	9.00	193.50	3,592.6	-106.6	-25.6	-106.4	0.00	0.00	0.00
3,700.0	9.00	193.50	3,691.4	-121.8	-29.2	-121.6	0.00	0.00	0.00
3,800.0	9.00	193.50	3,790.1	-137.0	-32.9	-136.8	0.00	0.00	0.00
3,900.0	9.00	193.50	3,888.9	-152.2	-36.5	-151.9	0.00	0.00	0.00
4,000.0	9.00	193.50	3,987.7	-167.4	-40.2	-167.1	0.00	0.00	0.00
4,100.0	9.00	193.50	4,086.5	-182.6	-43.8	-182.3	0.00	0.00	0.00
4,200.0	9.00	193.50	4,185.2	-197.8	-47.5	-197.5	0.00	0.00	0.00
4,300.0	9.00	193.50	4,284.0	-213.1	-51.1	-212.7	0.00	0.00	0.00
4,400.0	9.00	193.50	4,382.8	-228.3	-54.8	-227.9	0.00	0.00	0.00
4,500.0	9.00	193.50	4,481.5	-243.5	-58.5	-243.0	0.00	0.00	0.00
4,600.0	9.00	193.50	4,580.3	-258.7	-62.1	-258.2	0.00	0.00	0.00
4,700.0	9.00	193.50	4,679.1	-273.9	-65.8	-273.4	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 171H
Company:	Tap Rock Operating, LLC.	TVD Reference:	WELL @ 3560.0usft (26' RKB)
Project:	Lea County, NM (NAD83)	MD Reference:	WELL @ 3560.0usft (26' RKB)
Site:	Apollo State COM	North Reference:	Grid
Well:	171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.0	9.00	193.50	4,777.8	-289.1	-69.4	-288.6	0.00	0.00	0.00
4,900.0	9.00	193.50	4,876.6	-304.3	-73.1	-303.8	0.00	0.00	0.00
4,930.8	9.00	193.50	4,907.0	-309.0	-74.2	-308.4	0.00	0.00	0.00
Base Salt									
5,000.0	9.00	193.50	4,975.4	-319.5	-76.7	-319.0	0.00	0.00	0.00
5,100.0	9.00	193.50	5,074.1	-334.7	-80.4	-334.1	0.00	0.00	0.00
5,152.5	9.00	193.50	5,126.0	-342.7	-82.3	-342.1	0.00	0.00	0.00
Delaware Mountain Gp									
5,173.8	9.00	193.50	5,147.0	-346.0	-83.1	-345.3	0.00	0.00	0.00
Lamar									
5,200.0	9.00	193.50	5,172.9	-350.0	-84.0	-349.3	0.00	0.00	0.00
5,215.3	9.00	193.50	5,188.0	-352.3	-84.6	-351.6	0.00	0.00	0.00
Bell Canyon									
5,247.7	9.00	193.50	5,220.0	-357.2	-85.8	-356.6	0.00	0.00	0.00
Ramsey Sand									
5,300.0	9.00	193.50	5,271.7	-365.2	-87.7	-364.5	0.00	0.00	0.00
5,400.0	9.00	193.50	5,370.4	-380.4	-91.3	-379.7	0.00	0.00	0.00
5,500.0	9.00	193.50	5,469.2	-395.6	-95.0	-394.9	0.00	0.00	0.00
5,600.0	9.00	193.50	5,568.0	-410.8	-98.6	-410.1	0.00	0.00	0.00
5,700.0	9.00	193.50	5,666.8	-426.0	-102.3	-425.2	0.00	0.00	0.00
5,800.0	9.00	193.50	5,765.5	-441.2	-105.9	-440.4	0.00	0.00	0.00
5,900.0	9.00	193.50	5,864.3	-456.4	-109.6	-455.6	0.00	0.00	0.00
6,000.0	9.00	193.50	5,963.1	-471.6	-113.2	-470.8	0.00	0.00	0.00
6,100.0	9.00	193.50	6,061.8	-486.9	-116.9	-486.0	0.00	0.00	0.00
6,200.0	9.00	193.50	6,160.6	-502.1	-120.5	-501.2	0.00	0.00	0.00
6,211.5	9.00	193.50	6,172.0	-503.8	-121.0	-502.9	0.00	0.00	0.00
Cherry Canyon									
6,300.0	9.00	193.50	6,259.4	-517.3	-124.2	-516.4	0.00	0.00	0.00
6,400.0	9.00	193.50	6,358.1	-532.5	-127.8	-531.5	0.00	0.00	0.00
6,500.0	9.00	193.50	6,456.9	-547.7	-131.5	-546.7	0.00	0.00	0.00
6,600.0	9.00	193.50	6,555.7	-562.9	-135.1	-561.9	0.00	0.00	0.00
6,700.0	9.00	193.50	6,654.4	-578.1	-138.8	-577.1	0.00	0.00	0.00
6,800.0	9.00	193.50	6,753.2	-593.3	-142.4	-592.3	0.00	0.00	0.00
6,900.0	9.00	193.50	6,852.0	-608.5	-146.1	-607.5	0.00	0.00	0.00
7,000.0	9.00	193.50	6,950.8	-623.8	-149.8	-622.6	0.00	0.00	0.00
7,100.0	9.00	193.50	7,049.5	-639.0	-153.4	-637.8	0.00	0.00	0.00
7,200.0	9.00	193.50	7,148.3	-654.2	-157.1	-653.0	0.00	0.00	0.00
7,300.0	9.00	193.50	7,247.1	-669.4	-160.7	-668.2	0.00	0.00	0.00
7,400.0	9.00	193.50	7,345.8	-684.6	-164.4	-683.4	0.00	0.00	0.00
7,500.0	9.00	193.50	7,444.6	-699.8	-168.0	-698.6	0.00	0.00	0.00
7,600.0	9.00	193.50	7,543.4	-715.0	-171.7	-713.7	0.00	0.00	0.00
7,700.0	9.00	193.50	7,642.1	-730.2	-175.3	-728.9	0.00	0.00	0.00
7,708.0	9.00	193.50	7,650.0	-731.4	-175.6	-730.1	0.00	0.00	0.00
Brushy Canyon									
7,800.0	9.00	193.50	7,740.9	-745.4	-179.0	-744.1	0.00	0.00	0.00
7,900.0	9.00	193.50	7,839.7	-760.7	-182.6	-759.3	0.00	0.00	0.00
8,000.0	9.00	193.50	7,938.4	-775.9	-186.3	-774.5	0.00	0.00	0.00
8,100.0	9.00	193.50	8,037.2	-791.1	-189.9	-789.7	0.00	0.00	0.00
8,200.0	9.00	193.50	8,136.0	-806.3	-193.6	-804.8	0.00	0.00	0.00
8,300.0	9.00	193.50	8,234.7	-821.5	-197.2	-820.0	0.00	0.00	0.00
Start DLS 1.50 TFO 180.00									
8,400.0	7.50	193.50	8,333.7	-835.5	-200.6	-834.0	1.50	-1.50	0.00
8,500.0	6.00	193.50	8,433.0	-846.9	-203.3	-845.4	1.50	-1.50	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 171H
Company:	Tap Rock Operating, LLC.	TVD Reference:	WELL @ 3560.0usft (26' RKB)
Project:	Lea County, NM (NAD83)	MD Reference:	WELL @ 3560.0usft (26' RKB)
Site:	Apollo State COM	North Reference:	Grid
Well:	171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,600.0	4.50	193.50	8,532.6	-855.8	-205.5	-854.2	1.50	-1.50	0.00
8,700.0	3.00	193.50	8,632.4	-862.1	-207.0	-860.6	1.50	-1.50	0.00
8,800.0	1.50	193.50	8,732.3	-866.0	-207.9	-864.4	1.50	-1.50	0.00
8,900.0	0.00	0.00	8,832.3	-867.2	-208.2	-865.7	1.50	-1.50	166.50
Start 139.7 hold at 8900.0 MD									
9,000.0	0.00	0.00	8,932.3	-867.2	-208.2	-865.7	0.00	0.00	0.00
9,039.7	0.00	0.00	8,972.0	-867.2	-208.2	-865.7	0.00	0.00	0.00
Start Build 10.00									
9,050.0	1.03	359.58	8,982.3	-867.1	-208.2	-865.6	10.00	10.00	-4.08
9,100.0	6.03	359.58	9,032.2	-864.1	-208.2	-862.5	10.00	10.00	0.00
9,150.0	11.03	359.58	9,081.6	-856.6	-208.3	-855.1	10.00	10.00	0.00
9,185.3	14.55	359.58	9,116.0	-848.8	-208.3	-847.3	10.00	10.00	0.00
Bone Spring Lime									
9,200.0	16.03	359.58	9,130.2	-845.0	-208.4	-843.4	10.00	10.00	0.00
9,250.0	21.03	359.58	9,177.6	-829.1	-208.5	-827.5	10.00	10.00	0.00
9,297.3	25.76	359.58	9,221.0	-810.3	-208.6	-808.7	10.00	10.00	0.00
Upper Avalon									
9,300.0	26.03	359.58	9,223.4	-809.1	-208.6	-807.6	10.00	10.00	0.00
9,350.0	31.03	359.58	9,267.3	-785.3	-208.8	-783.7	10.00	10.00	0.00
9,400.0	36.03	359.58	9,309.0	-757.6	-209.0	-756.1	10.00	10.00	0.00
9,450.0	41.03	359.58	9,348.1	-726.5	-209.2	-725.0	10.00	10.00	0.00
9,500.0	46.02	359.58	9,384.4	-692.1	-209.5	-690.5	10.00	10.00	0.00
9,550.0	51.02	359.58	9,417.5	-654.6	-209.8	-653.1	10.00	10.00	0.00
9,596.1	55.64	359.58	9,445.0	-617.7	-210.0	-616.1	10.00	10.00	0.00
Middle Avalon									
9,600.0	56.02	359.58	9,447.2	-614.5	-210.1	-612.9	10.00	10.00	0.00
9,650.0	61.02	359.58	9,473.3	-571.8	-210.4	-570.3	10.00	10.00	0.00
9,700.0	66.02	359.58	9,495.6	-527.1	-210.7	-525.5	10.00	10.00	0.00
9,750.0	71.02	359.58	9,513.9	-480.6	-211.0	-479.0	10.00	10.00	0.00
9,800.0	76.02	359.58	9,528.0	-432.6	-211.4	-431.1	10.00	10.00	0.00
9,850.0	81.02	359.58	9,538.0	-383.7	-211.7	-382.1	10.00	10.00	0.00
9,900.0	86.02	359.58	9,543.6	-334.0	-212.1	-332.4	10.00	10.00	0.00
9,939.9	90.01	359.58	9,545.0	-294.1	-212.4	-292.6	10.00	10.00	0.00
EOC - 9939.9°MD, 90.01°INC, 359.58°AZI									
9,980.2	90.01	359.58	9,545.0	-253.9	-212.7	-252.3	0.01	0.00	0.00
10,000.0	90.01	359.58	9,545.0	-234.0	-212.8	-232.5	0.00	0.00	0.00
10,100.0	90.01	359.58	9,545.0	-134.0	-213.6	-132.5	0.00	0.00	0.00
10,200.0	90.01	359.58	9,544.9	-34.0	-214.3	-32.5	0.00	0.00	0.00
10,300.0	90.01	359.58	9,544.9	66.0	-215.1	67.5	0.00	0.00	0.00
10,400.0	90.01	359.58	9,544.9	166.0	-215.8	167.5	0.00	0.00	0.00
10,500.0	90.01	359.58	9,544.9	266.0	-216.5	267.5	0.00	0.00	0.00
10,600.0	90.01	359.58	9,544.9	366.0	-217.3	367.5	0.00	0.00	0.00
10,700.0	90.01	359.58	9,544.8	466.0	-218.0	467.5	0.00	0.00	0.00
10,800.0	90.01	359.58	9,544.8	565.9	-218.7	567.5	0.00	0.00	0.00
10,900.0	90.01	359.58	9,544.8	665.9	-219.5	667.5	0.00	0.00	0.00
11,000.0	90.01	359.58	9,544.8	765.9	-220.2	767.5	0.00	0.00	0.00
11,100.0	90.01	359.58	9,544.8	865.9	-220.9	867.5	0.00	0.00	0.00
11,200.0	90.01	359.58	9,544.7	965.9	-221.7	967.5	0.00	0.00	0.00
11,300.0	90.01	359.58	9,544.7	1,065.9	-222.4	1,067.5	0.00	0.00	0.00
11,400.0	90.01	359.58	9,544.7	1,165.9	-223.1	1,167.5	0.00	0.00	0.00
11,500.0	90.01	359.58	9,544.7	1,265.9	-223.9	1,267.5	0.00	0.00	0.00
11,600.0	90.01	359.58	9,544.7	1,365.9	-224.6	1,367.5	0.00	0.00	0.00
11,700.0	90.01	359.58	9,544.6	1,465.9	-225.4	1,467.5	0.00	0.00	0.00

Planning Report

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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)	
11,800.0	90.01	359.58	9,544.6	1,565.9	-226.1	1,567.5	0.00	0.00	0.00	
11,900.0	90.01	359.58	9,544.6	1,665.9	-226.8	1,667.5	0.00	0.00	0.00	
12,000.0	90.01	359.58	9,544.6	1,765.9	-227.6	1,767.5	0.00	0.00	0.00	
12,100.0	90.01	359.58	9,544.6	1,865.9	-228.3	1,867.5	0.00	0.00	0.00	
12,200.0	90.01	359.58	9,544.5	1,965.9	-229.0	1,967.5	0.00	0.00	0.00	
12,300.0	90.01	359.58	9,544.5	2,065.9	-229.8	2,067.5	0.00	0.00	0.00	
12,400.0	90.01	359.58	9,544.5	2,165.9	-230.5	2,167.5	0.00	0.00	0.00	
12,500.0	90.01	359.58	9,544.5	2,265.9	-231.2	2,267.5	0.00	0.00	0.00	
12,600.0	90.01	359.58	9,544.5	2,365.9	-232.0	2,367.5	0.00	0.00	0.00	
12,700.0	90.01	359.58	9,544.4	2,465.9	-232.7	2,467.5	0.00	0.00	0.00	
12,800.0	90.01	359.58	9,544.4	2,565.9	-233.5	2,567.5	0.00	0.00	0.00	
12,900.0	90.01	359.58	9,544.4	2,665.9	-234.2	2,667.5	0.00	0.00	0.00	
13,000.0	90.01	359.58	9,544.4	2,765.9	-234.9	2,767.5	0.00	0.00	0.00	
13,100.0	90.01	359.58	9,544.4	2,865.9	-235.7	2,867.5	0.00	0.00	0.00	
13,200.0	90.01	359.58	9,544.3	2,965.9	-236.4	2,967.5	0.00	0.00	0.00	
13,300.0	90.01	359.58	9,544.3	3,065.9	-237.1	3,067.5	0.00	0.00	0.00	
13,400.0	90.01	359.58	9,544.3	3,165.9	-237.9	3,167.5	0.00	0.00	0.00	
13,500.0	90.01	359.58	9,544.3	3,265.9	-238.6	3,267.5	0.00	0.00	0.00	
13,600.0	90.01	359.58	9,544.3	3,365.9	-239.3	3,367.5	0.00	0.00	0.00	
13,700.0	90.01	359.58	9,544.2	3,465.9	-240.1	3,467.5	0.00	0.00	0.00	
13,800.0	90.01	359.58	9,544.2	3,565.9	-240.8	3,567.5	0.00	0.00	0.00	
13,900.0	90.01	359.58	9,544.2	3,665.9	-241.5	3,667.5	0.00	0.00	0.00	
14,000.0	90.01	359.58	9,544.2	3,765.9	-242.3	3,767.5	0.00	0.00	0.00	
14,100.0	90.01	359.58	9,544.2	3,865.9	-243.0	3,867.5	0.00	0.00	0.00	
14,200.0	90.01	359.58	9,544.1	3,965.9	-243.8	3,967.5	0.00	0.00	0.00	
14,300.0	90.01	359.58	9,544.1	4,065.9	-244.5	4,067.5	0.00	0.00	0.00	
14,400.0	90.01	359.58	9,544.1	4,165.9	-245.2	4,167.5	0.00	0.00	0.00	
14,500.0	90.01	359.58	9,544.1	4,265.8	-246.0	4,267.5	0.00	0.00	0.00	
14,600.0	90.01	359.58	9,544.1	4,365.8	-246.7	4,367.5	0.00	0.00	0.00	
14,700.0	90.01	359.58	9,544.0	4,465.8	-247.4	4,467.5	0.00	0.00	0.00	
14,800.0	90.01	359.58	9,544.0	4,565.8	-248.2	4,567.5	0.00	0.00	0.00	
14,900.0	90.01	359.58	9,544.0	4,665.8	-248.9	4,667.5	0.00	0.00	0.00	
15,000.0	90.01	359.58	9,544.0	4,765.8	-249.6	4,767.5	0.00	0.00	0.00	
15,100.0	90.01	359.58	9,544.0	4,865.8	-250.4	4,867.5	0.00	0.00	0.00	
15,200.0	90.01	359.58	9,543.9	4,965.8	-251.1	4,967.5	0.00	0.00	0.00	
15,300.0	90.01	359.58	9,543.9	5,065.8	-251.9	5,067.5	0.00	0.00	0.00	
15,400.0	90.01	359.58	9,543.9	5,165.8	-252.6	5,167.5	0.00	0.00	0.00	
15,500.0	90.01	359.58	9,543.9	5,265.8	-253.3	5,267.5	0.00	0.00	0.00	
15,600.0	90.01	359.58	9,543.9	5,365.8	-254.1	5,367.5	0.00	0.00	0.00	
15,700.0	90.01	359.58	9,543.8	5,465.8	-254.8	5,467.5	0.00	0.00	0.00	
15,800.0	90.01	359.58	9,543.8	5,565.8	-255.5	5,567.5	0.00	0.00	0.00	
15,900.0	90.01	359.58	9,543.8	5,665.8	-256.3	5,667.5	0.00	0.00	0.00	
16,000.0	90.01	359.58	9,543.8	5,765.8	-257.0	5,767.5	0.00	0.00	0.00	
16,100.0	90.01	359.58	9,543.8	5,865.8	-257.7	5,867.5	0.00	0.00	0.00	
16,200.0	90.01	359.58	9,543.7	5,965.8	-258.5	5,967.5	0.00	0.00	0.00	
16,300.0	90.01	359.58	9,543.7	6,065.8	-259.2	6,067.5	0.00	0.00	0.00	
16,400.0	90.01	359.58	9,543.7	6,165.8	-259.9	6,167.5	0.00	0.00	0.00	
16,500.0	90.01	359.58	9,543.7	6,265.8	-260.7	6,267.5	0.00	0.00	0.00	
16,600.0	90.01	359.58	9,543.6	6,365.8	-261.4	6,367.5	0.00	0.00	0.00	
16,700.0	90.01	359.58	9,543.6	6,465.8	-262.2	6,467.5	0.00	0.00	0.00	
16,800.0	90.01	359.58	9,543.6	6,565.8	-262.9	6,567.5	0.00	0.00	0.00	
16,900.0	90.01	359.58	9,543.6	6,665.8	-263.6	6,667.5	0.00	0.00	0.00	
17,000.0	90.01	359.58	9,543.6	6,765.8	-264.4	6,767.5	0.00	0.00	0.00	
17,100.0	90.01	359.58	9,543.5	6,865.8	-265.1	6,867.5	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 171H
Company:	Tap Rock Operating, LLC.	TVD Reference:	WELL @ 3560.0usft (26' RKB)
Project:	Lea County, NM (NAD83)	MD Reference:	WELL @ 3560.0usft (26' RKB)
Site:	Apollo State COM	North Reference:	Grid
Well:	171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
17,200.0	90.01	359.58	9,543.5	6,965.8	-265.8	6,967.5	0.00	0.00	0.00	
17,300.0	90.01	359.58	9,543.5	7,065.8	-266.6	7,067.5	0.00	0.00	0.00	
17,400.0	90.01	359.58	9,543.5	7,165.8	-267.3	7,167.5	0.00	0.00	0.00	
17,500.0	90.01	359.58	9,543.5	7,265.8	-268.0	7,267.5	0.00	0.00	0.00	
17,600.0	90.01	359.58	9,543.4	7,365.8	-268.8	7,367.5	0.00	0.00	0.00	
17,700.0	90.01	359.58	9,543.4	7,465.8	-269.5	7,467.5	0.00	0.00	0.00	
17,800.0	90.01	359.58	9,543.4	7,565.8	-270.2	7,567.5	0.00	0.00	0.00	
17,900.0	90.01	359.58	9,543.4	7,665.8	-271.0	7,667.5	0.00	0.00	0.00	
18,000.0	90.01	359.58	9,543.4	7,765.8	-271.7	7,767.5	0.00	0.00	0.00	
18,100.0	90.01	359.58	9,543.3	7,865.8	-272.5	7,867.5	0.00	0.00	0.00	
18,200.0	90.01	359.58	9,543.3	7,965.7	-273.2	7,967.5	0.00	0.00	0.00	
18,300.0	90.01	359.58	9,543.3	8,065.7	-273.9	8,067.5	0.00	0.00	0.00	
18,400.0	90.01	359.58	9,543.3	8,165.7	-274.7	8,167.5	0.00	0.00	0.00	
18,500.0	90.01	359.58	9,543.3	8,265.7	-275.4	8,267.5	0.00	0.00	0.00	
18,600.0	90.01	359.58	9,543.2	8,365.7	-276.1	8,367.5	0.00	0.00	0.00	
18,700.0	90.01	359.58	9,543.2	8,465.7	-276.9	8,467.5	0.00	0.00	0.00	
18,800.0	90.01	359.58	9,543.2	8,565.7	-277.6	8,567.5	0.00	0.00	0.00	
18,900.0	90.01	359.58	9,543.2	8,665.7	-278.3	8,667.5	0.00	0.00	0.00	
19,000.0	90.01	359.58	9,543.2	8,765.7	-279.1	8,767.5	0.00	0.00	0.00	
19,100.0	90.01	359.58	9,543.1	8,865.7	-279.8	8,867.5	0.00	0.00	0.00	
19,200.0	90.01	359.58	9,543.1	8,965.7	-280.6	8,967.5	0.00	0.00	0.00	
19,300.0	90.01	359.58	9,543.1	9,065.7	-281.3	9,067.5	0.00	0.00	0.00	
19,400.0	90.01	359.58	9,543.1	9,165.7	-282.0	9,167.5	0.00	0.00	0.00	
19,500.0	90.01	359.58	9,543.1	9,265.7	-282.8	9,267.5	0.00	0.00	0.00	
19,600.0	90.01	359.58	9,543.0	9,365.7	-283.5	9,367.5	0.00	0.00	0.00	
19,700.0	90.01	359.58	9,543.0	9,465.7	-284.2	9,467.5	0.00	0.00	0.00	
19,804.3	90.01	359.58	9,543.0	9,570.0	-285.0	9,571.8	0.00	0.00	0.00	
19,874.3	90.01	359.58	9,543.0	9,640.0	-285.5	9,641.8	0.00	0.00	0.00	
TD at 19874.3										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
LTP_A171H - hit/miss target - Shape - Point	0.00	0.00	9,543.0	9,570.0	-285.0	446,264.00	772,834.00	32° 13' 28.701 N	103° 35' 4.992 W	
PBHL_A171H - plan misses target center by 0.5usft at 19874.3usft MD (9543.0 TVD, 9640.0 N, -285.5 E) - Point	0.00	0.00	9,543.0	9,640.0	-285.0	446,334.00	772,834.00	32° 13' 29.394 N	103° 35' 4.986 W	
FTP_A171H - plan misses target center by 184.1usft at 9533.8usft MD (9407.1 TVD, -667.1 N, -209.7 E) - Point	0.00	0.00	9,545.0	-789.0	-209.0	435,905.00	772,910.00	32° 11' 46.191 N	103° 35' 4.947 W	

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 171H
Company:	Tap Rock Operating, LLC.	TVD Reference:	WELL @ 3560.0usft (26' RKB)
Project:	Lea County, NM (NAD83)	MD Reference:	WELL @ 3560.0usft (26' RKB)
Site:	Apollo State COM	North Reference:	Grid
Well:	171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,161.0	1,161.0	Rustler Anhydrite				
1,652.0	1,652.0	Top Salt				
4,930.8	4,907.0	Base Salt				
5,152.5	5,126.0	Delaware Mountain Gp				
5,173.8	5,147.0	Lamar				
5,215.3	5,188.0	Bell Canyon				
5,247.7	5,220.0	Ramsey Sand				
6,211.5	6,172.0	Cherry Canyon				
7,708.0	7,650.0	Brushy Canyon				
9,185.3	9,116.0	Bone Spring Lime				
9,297.3	9,221.0	Upper Avalon				
9,596.1	9,445.0	Middle Avalon				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,600.0	2,600.0	0.0	0.0	Start Build 1.50	
3,200.0	3,197.5	-45.7	-11.0	Start 5100.0 hold at 3200.0 MD	
8,300.0	8,234.7	-821.5	-197.2	Start DLS 1.50 TFO 180.00	
8,900.0	8,832.3	-867.2	-208.2	Start 139.7 hold at 8900.0 MD	
9,039.7	8,972.0	-867.2	-208.2	Start Build 10.00	
9,939.9	9,545.0	-294.1	-212.4	EOC - 9939.9'MD, 90.01°INC, 359.58°AZI	
19,874.3	9,543.0	-253.9	-212.7	TD at 19874.3	