

RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DISTRICT-ARTESIA O.C.D.
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
☒ AS DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
	98220	Purple Sage Wolfcamp (Gas)
⁴ Property Code	⁵ Property Name	⁶ Well Number
	PLINY THE ELDER FEE	215H
⁷ GRID No.	⁸ Operator Name	⁹ Elevation
372043	TAP ROCK OPERATING, LLC.	3150'

¹⁰Surface Location

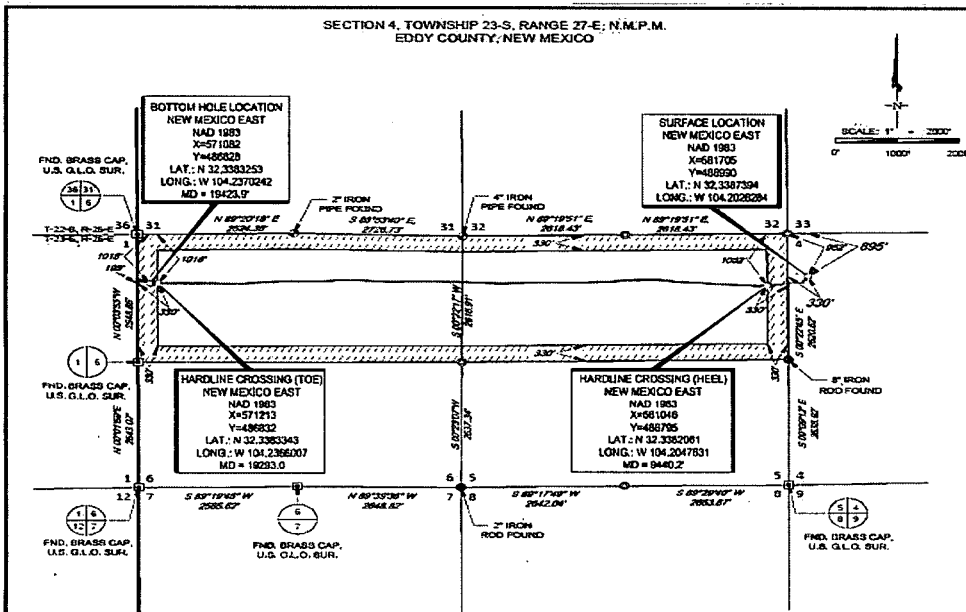
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	4	23-S	27-E	-	895'	NORTH	330'	WEST	EDDY

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
4	6	23-S	27-E	-	990'	NORTH	200'	WEST	EDDY

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

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



LEASE NAME & WELL NO.: PLINY THE ELDER 215H
SECTION 4 TWP 23-S RGE 27-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM ELEVATION 3149'
DESCRIPTION 895' FNL & 330' FWL

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
6400 EVERMAN PARKWAY, SUITE 140, FT. WORTH, TEXAS 76149
TEL: (817) 335-1111 FAX: (817) 335-1112
3000 NORTH EL PASO STREET, EL PASO, TEXAS 79905
TELEPHONE: (940) 843-1200 OR (940) 843-1201 FAX: (940) 843-1201
WWW.TOPOGRAPHIC.COM

TAP ROCK

INTERNAL
PRE-COMPLETION
PLAT

PLINY THE ELDER 215H PRE-COMPLETION	REVISION:
DATE: 07/12/2019	
FILE: C:\PLINY THE ELDER_FEE_215H	
DRAWN BY: IMU	
SHEET: 1 OF 1	

NOTES:
1. ORIGINAL DOCUMENT SIZE 8 1/2" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOLIO AND THE DATA OF SURVEY, AND DATA PREPARED BY TAP ROCK OPERATING, LLC. 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.

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 undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *Rachel Bierma* Date: 12-18-18

Printed Name: Rachel Bierma

E-mail Address: rbierma@taprock.com

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.

Date of Survey: 11/27/2018
Signature and Seal of Professional Surveyor: *Michael Brown*
Certificate Number: 18329



RECEIVED

DEC 09 2019

DISTRICT/ARTESIA O.C.D.

Tap Rock Operating, LLC

Eddy County, NM (NAD 83)

Pliny The Elder Fee

215H

OH

Design: OH

Standard Survey Report

21 January, 2019

A Certified Directional Survey should be
submitted as required by NMOCD Rule
19.15.16.14 NMAC



PRODIRECTIONAL



Pro Directional
Survey Report



Company:	Tap Rock Operating, LLC	Local Co-ordinate Reference:	Well 215H
Project:	Eddy County, NM (NAD 83)	TVD Reference:	Well @ 3176.50usft (GL:3150' + KB: 26.5' (H&P 422))
Site:	Pliny The Elder Fee	MD Reference:	Well @ 3176.50usft (GL:3150' + KB: 26.5' (H&P 422))
Well:	215H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WellPlanner1

Project	Eddy County, NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Pliny The Elder Fee				
Site Position:		Northing:	486,990.00 usft	Latitude:	32.338739
From:	Map	Easting:	581,705.00 usft	Longitude:	-104.202628
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.07 °

Well		215H				
Well Position	+N/-S	0.00 usft	Northing:	486,990.00 usft	Latitude:	32.338739
	+E/-W	0.00 usft	Easting:	581,705.00 usft	Longitude:	-104.202628
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,150.00 usft	

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/15/2019	7.27	60.05	47,936.30

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	269.83	

Survey Program	Date	1/21/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
187.00	19,426.00	OH (OH)	MWD+HDGM	OWSG MWD + HRGM	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
187.00	0.70	339.40	187.00	1.07	-0.40	0.40	0.37	0.37	0.00	
249.00	1.00	20.80	248.99	1.93	-0.34	0.34	1.07	0.48	66.77	
338.00	2.60	41.80	337.94	4.16	1.28	-1.29	1.92	1.80	23.60	
518.00	3.50	75.80	517.70	8.55	9.33	-9.35	1.10	0.50	18.89	
582.00	3.20	82.40	581.59	9.27	12.99	-13.02	0.76	-0.47	10.31	
702.00	2.20	84.50	701.46	9.93	18.60	-18.63	0.84	-0.83	1.75	
792.00	0.90	128.80	791.42	9.65	20.87	-20.90	1.86	-1.44	49.22	
883.00	2.20	199.50	882.40	7.56	20.85	-20.87	2.29	1.43	77.69	



Pro Directional
Survey Report



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WellPlanner1

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)
973.00	3.70	217.70	972.28	3.63	18.50	-18.51	1.94	1.67	20.22
1,063.00	3.80	226.70	1,062.08	-0.71	14.55	-14.55	0.66	0.11	10.00
1,154.00	3.90	227.70	1,152.88	-4.86	10.07	-10.05	0.13	0.11	1.10
1,244.00	3.80	219.10	1,242.68	-9.23	5.92	-5.89	0.65	-0.11	-9.56
1,334.00	2.80	207.10	1,332.53	-13.51	3.04	-3.00	1.34	-1.11	-13.33
1,429.00	2.20	214.90	1,427.44	-17.07	0.94	-0.89	0.72	-0.63	8.21
1,523.00	2.30	201.90	1,521.36	-20.30	-0.80	0.86	0.55	0.11	-13.83
1,618.00	2.20	180.40	1,616.29	-23.89	-1.52	1.59	0.89	-0.11	-22.63
1,713.00	1.50	190.10	1,711.24	-26.94	-1.75	1.83	0.80	-0.74	10.21
1,807.00	1.90	223.80	1,805.20	-29.27	-3.05	3.13	1.12	0.43	35.85
1,901.00	2.00	227.30	1,899.15	-31.51	-5.33	5.42	0.17	0.11	3.72
1,996.00	2.60	231.30	1,994.07	-33.98	-8.23	8.33	0.65	0.63	4.21
2,010.00	2.60	232.60	2,008.06	-34.37	-8.73	8.83	0.42	0.00	9.29
2,163.00	2.00	231.70	2,160.93	-38.14	-13.58	13.70	0.39	-0.39	-0.59
2,257.00	1.90	226.40	2,254.88	-40.23	-16.00	16.12	0.22	-0.11	-5.64
2,351.00	3.70	227.20	2,348.76	-43.36	-19.35	19.48	1.92	1.91	0.85
2,446.00	3.50	228.70	2,443.58	-47.36	-23.78	23.92	0.23	-0.21	1.58
2,540.00	3.70	228.30	2,537.39	-51.27	-28.20	28.35	0.21	0.21	-0.43
2,635.00	3.70	228.00	2,632.19	-55.36	-32.77	32.93	0.02	0.00	-0.32
2,729.00	3.70	226.30	2,726.00	-59.49	-37.21	37.39	0.12	0.00	-1.81
2,824.00	3.50	224.80	2,820.81	-63.66	-41.47	41.66	0.23	-0.21	-1.58
2,918.00	3.50	225.20	2,914.63	-67.72	-45.53	45.73	0.03	0.00	0.43
3,013.00	3.60	224.10	3,009.45	-71.90	-49.66	49.88	0.13	0.11	-1.16
3,107.00	3.60	223.50	3,103.27	-76.16	-53.75	53.97	0.04	0.00	-0.64
3,202.00	3.70	223.30	3,198.07	-80.56	-57.90	58.14	0.11	0.11	-0.21
3,296.00	3.60	221.60	3,291.88	-84.97	-61.94	62.20	0.16	-0.11	-1.81
3,391.00	3.50	221.10	3,386.70	-89.39	-65.83	66.09	0.11	-0.11	-0.53
3,485.00	3.40	221.60	3,480.53	-93.63	-69.57	69.84	0.11	-0.11	0.53
3,580.00	1.70	223.90	3,575.43	-96.76	-72.41	72.70	1.79	-1.79	2.42
3,674.00	1.50	225.00	3,669.40	-98.63	-74.25	74.54	0.22	-0.21	1.17
3,768.00	0.30	267.10	3,763.38	-99.51	-75.37	75.66	1.38	-1.28	44.79
3,863.00	0.30	351.70	3,858.38	-99.28	-75.65	75.95	0.43	0.00	89.05
3,957.00	0.30	350.10	3,952.38	-98.79	-75.73	76.02	0.01	0.00	-1.70
4,051.00	0.20	315.90	4,046.38	-98.43	-75.89	76.18	0.19	-0.11	-36.38
4,146.00	0.30	297.00	4,141.38	-98.20	-76.22	76.51	0.14	0.11	-19.89
4,240.00	0.40	286.60	4,235.38	-98.00	-76.76	77.05	0.13	0.11	-11.06
4,335.00	0.50	276.20	4,330.37	-97.86	-77.49	77.78	0.14	0.11	-10.95
4,429.00	0.50	271.70	4,424.37	-97.80	-78.30	78.59	0.04	0.00	-4.79
4,522.00	0.60	92.70	4,517.37	-97.81	-78.22	78.51	1.18	0.11	-192.47
4,617.00	0.80	102.80	4,612.36	-97.98	-77.08	77.37	0.25	0.21	10.63
4,712.00	0.70	107.40	4,707.35	-98.30	-75.88	76.17	0.12	-0.11	4.84
4,806.00	0.50	112.90	4,801.35	-98.63	-74.95	75.25	0.22	-0.21	5.85



Pro Directional Survey Report



Company:	Tap Rock Operating, LLC	Local Co-ordinate Reference:	Well 215H
Project:	Eddy County, NM (NAD 83)	TVD Reference:	Well @ 3176.50usft (GL:3150' + KB: 26.5' (H&P 422))
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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WellPlanner1

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)
4,901.00	0.30	135.50	4,896.35	-98.97	-74.40	74.69	0.26	-0.21	23.79
4,995.00	0.30	144.00	4,990.34	-99.35	-74.08	74.37	0.05	0.00	9.04
5,090.00	0.30	163.60	5,085.34	-99.79	-73.86	74.16	0.11	0.00	20.63
5,184.00	0.40	179.20	5,179.34	-100.35	-73.79	74.09	0.15	0.11	16.60
5,373.00	0.60	189.10	5,368.33	-101.99	-73.94	74.24	0.11	0.11	5.24
5,468.00	0.80	179.20	5,463.33	-103.14	-74.01	74.31	0.25	0.21	-10.42
5,563.00	1.00	168.70	5,558.32	-104.62	-73.83	74.14	0.27	0.21	-11.05
5,657.00	0.70	169.30	5,652.31	-105.99	-73.57	73.88	0.32	-0.32	0.64
5,752.00	0.30	148.40	5,747.30	-106.77	-73.33	73.65	0.46	-0.42	-22.00
5,846.00	0.60	142.50	5,841.30	-107.37	-72.90	73.22	0.32	0.32	-6.28
5,941.00	0.50	156.60	5,936.29	-108.14	-72.43	72.75	0.18	-0.11	14.84
6,035.00	1.30	182.40	6,030.28	-109.59	-72.31	72.64	0.93	0.85	27.45
6,130.00	1.90	186.10	6,125.24	-112.23	-72.53	72.86	0.64	0.63	3.89
6,224.00	2.10	187.10	6,219.19	-115.49	-72.91	73.25	0.22	0.21	1.06
6,318.00	2.40	187.00	6,313.11	-119.15	-73.36	73.71	0.32	0.32	-0.11
6,413.00	0.90	157.90	6,408.07	-121.82	-73.32	73.68	1.76	-1.58	-30.63
6,508.00	1.40	185.40	6,503.06	-123.66	-73.15	73.52	0.77	0.53	28.95
6,602.00	1.50	199.00	6,597.03	-125.97	-73.66	74.03	0.38	0.11	14.47
6,697.00	0.70	148.30	6,692.01	-127.64	-73.76	74.14	1.25	-0.84	-53.37
6,791.00	1.00	140.40	6,786.00	-128.76	-72.93	73.31	0.34	0.32	-8.40
6,885.00	1.80	107.20	6,879.97	-129.83	-71.00	71.38	1.18	0.85	-35.32
6,980.00	2.30	125.20	6,974.91	-131.37	-68.02	68.41	0.85	0.53	18.95
7,075.00	2.20	127.30	7,069.84	-133.57	-65.01	65.40	0.14	-0.11	2.21
7,169.00	1.10	109.80	7,163.80	-134.97	-62.72	63.12	1.27	-1.17	-18.62
7,264.00	0.40	47.80	7,258.79	-135.06	-61.62	62.02	1.03	-0.74	-65.26
7,358.00	0.30	349.90	7,352.79	-134.59	-61.42	61.82	0.37	-0.11	-61.60
7,453.00	0.80	283.60	7,447.78	-134.19	-62.11	62.51	0.77	0.53	-69.79
7,547.00	1.50	279.80	7,541.77	-133.83	-63.96	64.36	0.75	0.74	-4.04
7,642.00	2.50	289.20	7,636.71	-132.94	-67.14	67.54	1.10	1.05	9.89
7,736.00	2.20	296.00	7,730.63	-131.47	-70.70	71.09	0.44	-0.32	7.23
7,831.00	2.00	274.40	7,825.57	-130.54	-73.99	74.38	0.85	-0.21	-22.74
7,926.00	1.30	260.90	7,920.53	-130.59	-76.71	77.09	0.84	-0.74	-14.21
8,020.00	1.50	271.70	8,014.50	-130.72	-78.99	79.38	0.35	0.21	11.49
8,115.00	1.50	207.50	8,109.47	-131.79	-80.81	81.20	1.68	0.00	-67.58
8,209.00	1.90	194.10	8,203.43	-134.39	-81.76	82.15	0.60	0.43	-14.26
8,304.00	1.80	199.80	8,298.38	-137.32	-82.64	83.05	0.22	-0.11	6.00
8,382.00	1.70	204.30	8,376.34	-139.53	-83.54	83.95	0.22	-0.13	5.77
8,453.00	1.30	215.90	8,447.32	-141.14	-84.44	84.86	0.70	-0.56	16.34
8,504.00	1.20	226.90	8,498.31	-141.97	-85.17	85.59	0.51	-0.20	21.57
8,598.00	13.40	274.00	8,591.39	-141.88	-96.80	97.22	13.42	12.98	50.11
8,692.00	26.10	279.50	8,679.69	-137.69	-128.19	128.60	13.64	13.51	5.85
8,786.00	31.00	274.50	8,762.25	-132.38	-172.75	173.14	5.80	5.21	-5.32



Pro Directional Survey Report



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8,880.00	34.20	268.10	8,841.45	-131.35	-223.31	223.70	5.00	3.40	-6.81
8,974.00	35.80	262.10	8,918.47	-136.01	-276.97	277.37	4.04	1.70	-6.38
9,067.00	41.50	259.00	8,991.08	-145.64	-334.21	334.64	6.47	6.13	-3.33
9,160.00	50.90	260.50	9,055.38	-157.50	-400.20	400.66	10.17	10.11	1.61
9,255.00	64.90	262.30	9,105.74	-169.41	-479.58	480.08	14.82	14.74	1.89
9,348.00	79.40	261.60	9,134.17	-181.79	-566.99	567.53	15.61	15.59	-0.75
9,442.00	90.20	262.30	9,142.68	-194.88	-659.55	660.12	11.51	11.49	0.74
9,536.00	94.10	267.90	9,139.15	-202.90	-753.08	753.68	7.26	4.15	5.96
9,630.00	92.50	274.60	9,133.73	-200.85	-846.85	847.44	7.32	-1.70	7.13
9,723.00	90.90	273.80	9,130.97	-194.04	-939.55	940.12	1.92	-1.72	-0.86
9,817.00	91.80	272.80	9,128.76	-188.63	-1,033.37	1,033.92	1.43	0.96	-1.06
9,911.00	93.60	273.00	9,124.33	-183.88	-1,127.14	1,127.68	1.93	1.91	0.21
10,005.00	92.30	274.10	9,119.49	-178.07	-1,220.83	1,221.36	1.81	-1.38	1.17
10,098.00	89.60	274.50	9,117.95	-171.10	-1,313.55	1,314.05	2.93	-2.90	0.43
10,192.00	90.20	273.90	9,118.11	-164.22	-1,407.30	1,407.78	0.90	0.64	-0.64
10,286.00	91.90	272.50	9,116.39	-158.97	-1,501.13	1,501.59	2.34	1.81	-1.49
10,380.00	92.30	274.40	9,112.95	-153.32	-1,594.89	1,595.34	2.06	0.43	2.02
10,474.00	90.20	274.00	9,110.90	-146.43	-1,688.61	1,689.04	2.27	-2.23	-0.43
10,568.00	89.60	273.10	9,111.06	-140.61	-1,782.43	1,782.84	1.15	-0.64	-0.96
10,661.00	91.00	271.50	9,110.57	-136.88	-1,875.35	1,875.74	2.29	1.51	-1.72
10,755.00	91.70	274.30	9,108.36	-132.13	-1,969.19	1,969.57	3.07	0.74	2.98
10,850.00	89.40	276.60	9,107.45	-123.11	-2,063.74	2,064.10	3.42	-2.42	2.42
10,944.00	89.10	277.20	9,108.68	-111.82	-2,157.05	2,157.38	0.71	-0.32	0.64
11,038.00	90.40	277.50	9,109.09	-99.79	-2,250.28	2,250.56	1.42	1.38	0.32
11,132.00	93.00	277.50	9,106.30	-87.53	-2,343.43	2,343.67	2.77	2.77	0.00
11,225.00	91.00	274.30	9,103.05	-77.98	-2,435.86	2,436.08	4.06	-2.15	-3.44
11,319.00	88.20	269.50	9,103.71	-74.86	-2,529.77	2,529.98	5.91	-2.98	-5.11
11,413.00	88.20	268.50	9,106.66	-76.50	-2,623.71	2,623.92	1.06	0.00	-1.06
11,508.00	92.40	267.30	9,106.16	-79.98	-2,718.62	2,718.84	4.60	4.42	-1.26
11,602.00	91.30	266.60	9,103.13	-84.98	-2,812.43	2,812.67	1.39	-1.17	-0.74
11,695.00	89.10	266.10	9,102.81	-90.90	-2,905.24	2,905.50	2.43	-2.37	-0.54
11,789.00	91.80	265.90	9,102.07	-97.46	-2,999.00	2,999.28	2.88	2.87	-0.21
11,883.00	91.80	265.30	9,099.11	-104.66	-3,092.68	3,092.97	0.64	0.00	-0.64
11,978.00	89.80	266.10	9,097.79	-111.79	-3,187.39	3,187.71	2.27	-2.11	0.84
12,071.00	92.40	266.00	9,096.00	-118.19	-3,280.15	3,280.48	2.80	2.80	-0.11
12,165.00	89.90	266.20	9,093.72	-125.94	-3,393.85	3,394.21	2.20	-2.19	0.18
12,279.00	86.20	266.80	9,096.91	-131.68	-3,487.60	3,487.98	3.99	-3.94	0.64
12,373.00	91.40	267.10	9,098.88	-136.67	-3,581.42	3,581.81	5.54	5.53	0.32
12,467.00	96.90	268.70	9,092.08	-140.11	-3,675.07	3,675.47	6.09	5.85	1.70
12,561.00	95.20	268.20	9,082.17	-142.64	-3,768.51	3,768.92	1.88	-1.81	-0.53
12,655.00	95.60	269.00	9,073.33	-144.93	-3,862.06	3,862.48	0.95	0.43	0.85
12,749.00	95.60	270.00	9,064.15	-145.75	-3,955.61	3,956.02	1.06	0.00	1.06



Pro Directional Survey Report



Company:	Tap Rock Operating, LLC	Local Co-ordinate Reference:	Well 215H
Project:	Eddy County, NM (NAD 83)	TVD Reference:	Well @ 3176.50usft (GL:3150' + KB: 26.5' (H&P 422))
Site:	Pliny The Elder Fee	MD Reference:	Well @ 3176.50usft (GL:3150' + KB: 26.5' (H&P 422))
Well:	215H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WellPlanner1

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,843.00	92.20	270.80	9,057.76	-145.09	-4,049.37	4,049.79	3.72	-3.62	0.85	
12,937.00	90.60	271.00	9,055.47	-143.61	-4,143.33	4,143.74	1.72	-1.70	0.21	
13,032.00	91.40	270.10	9,053.81	-142.70	-4,238.31	4,238.72	1.27	0.84	-0.95	
13,126.00	89.30	270.30	9,053.23	-142.37	-4,332.30	4,332.71	2.24	-2.23	0.21	
13,220.00	88.80	269.50	9,054.79	-142.54	-4,426.29	4,426.69	1.00	-0.53	-0.85	
13,316.00	88.80	268.90	9,056.80	-143.88	-4,522.26	4,522.67	0.62	0.00	-0.63	
13,410.00	90.70	268.30	9,057.21	-146.17	-4,616.23	4,616.64	2.12	2.02	-0.64	
13,504.00	95.80	268.00	9,051.89	-149.20	-4,709.99	4,710.42	5.43	5.43	-0.32	
13,598.00	94.90	268.20	9,043.12	-152.30	-4,803.53	4,803.96	0.98	-0.96	0.21	
13,692.00	94.80	269.10	9,035.17	-154.51	-4,897.17	4,897.61	0.96	-0.11	0.96	
13,787.00	92.80	271.10	9,028.88	-154.34	-4,991.95	4,992.39	2.97	-2.11	2.11	
13,881.00	92.60	271.90	9,024.45	-151.89	-5,085.81	5,086.24	0.88	-0.21	0.85	
13,976.00	89.30	272.80	9,022.87	-147.99	-5,180.71	5,181.12	3.60	-3.47	0.95	
14,071.00	89.20	273.30	9,024.12	-142.94	-5,275.56	5,275.96	0.54	-0.11	0.53	
14,164.00	89.00	273.50	9,025.58	-137.42	-5,368.39	5,368.77	0.30	-0.22	0.22	
14,258.00	90.40	272.80	9,026.07	-132.26	-5,462.24	5,462.61	1.67	1.49	-0.74	
14,353.00	90.50	270.50	9,025.32	-129.52	-5,557.19	5,557.55	2.42	0.11	-2.42	
14,447.00	92.40	271.00	9,022.95	-128.29	-5,651.15	5,651.51	2.09	2.02	0.53	
14,541.00	92.70	272.00	9,018.76	-125.83	-5,745.02	5,745.37	1.11	0.32	1.06	
14,634.00	90.80	271.50	9,015.92	-123.00	-5,837.93	5,838.27	2.11	-2.04	-0.54	
14,729.00	90.80	270.80	9,014.60	-121.09	-5,932.90	5,933.24	0.74	0.00	-0.74	
14,822.00	89.40	272.50	9,014.43	-118.41	-6,025.86	6,026.18	2.37	-1.51	1.83	
14,916.00	88.70	272.00	9,015.99	-114.72	-6,119.77	6,120.09	0.92	-0.74	-0.53	
15,009.00	87.60	270.70	9,019.00	-112.53	-6,212.69	6,213.00	1.83	-1.18	-1.40	
15,104.00	90.90	269.10	9,020.24	-112.70	-6,307.67	6,307.98	3.86	3.47	-1.68	
15,198.00	90.40	267.20	9,019.17	-115.73	-6,401.61	6,401.93	2.09	-0.53	-2.02	
15,292.00	94.50	267.10	9,015.15	-120.40	-6,495.39	6,495.72	4.36	4.36	-0.11	
15,387.00	94.50	267.80	9,007.70	-124.61	-6,590.00	6,590.34	0.73	0.00	0.74	
15,480.00	94.90	271.00	9,000.08	-125.59	-6,682.67	6,683.01	3.46	0.43	3.44	
15,574.00	90.50	271.20	8,995.65	-123.78	-6,776.53	6,776.86	4.69	-4.68	0.21	
15,668.00	93.20	273.00	8,992.62	-120.34	-6,870.40	6,870.73	3.45	2.87	1.91	
15,768.00	93.40	274.60	8,985.71	-112.40	-6,989.93	6,990.24	1.34	0.17	1.33	
15,862.00	92.90	274.30	8,980.54	-105.12	-7,083.51	7,083.79	0.62	-0.53	-0.32	
15,975.00	92.40	272.90	8,976.24	-99.29	-7,176.22	7,176.49	1.60	-0.54	-1.51	
16,070.00	90.70	271.30	8,973.67	-95.81	-7,271.12	7,271.37	2.46	-1.79	-1.68	
16,164.00	92.80	271.10	8,970.80	-93.84	-7,365.05	7,365.30	2.24	2.23	-0.21	
16,258.00	93.80	270.70	8,965.39	-92.37	-7,458.88	7,459.12	1.15	1.06	-0.43	
16,353.00	89.90	267.30	8,962.33	-94.03	-7,553.78	7,554.03	5.44	-4.11	-3.58	
16,446.00	89.00	265.50	8,963.22	-99.87	-7,646.59	7,646.85	2.16	-0.97	-1.94	
16,540.00	89.20	266.00	8,964.69	-106.83	-7,740.32	7,740.60	0.57	0.21	0.53	
16,634.00	90.40	266.90	8,965.02	-112.65	-7,834.14	7,834.44	1.60	1.28	0.96	
16,728.00	96.80	270.30	8,959.12	-114.95	-7,927.86	7,928.17	7.71	6.81	3.62	



Pro Directional
Survey Report



Company:	Tap Rock Operating, LLC	Local Co-ordinate Reference:	Well 215H
Project:	Eddy County, NM (NAD 83)	TVD Reference:	Well @ 3176.50usft (GL:3150' + KB: 26.5' (H&P 422))
Site:	Pliny The Elder Fee	MD Reference:	Well @ 3176.50usft (GL:3150' + KB: 26.5' (H&P 422))
Well:	215H	North Reference:	Grid'
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WellPlanner1

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,821.00	94.50	269.80	8,949.97	-114.87	-8,020.40	8,020.71	2.53	-2.47	-0.54	
16,916.00	95.40	269.90	8,941.77	-115.12	-8,115.05	8,115.35	0.95	0.95	0.11	
17,009.00	92.00	270.10	8,935.77	-115.12	-8,207.84	8,208.15	3.66	-3.66	0.22	
17,103.00	90.40	269.90	8,933.80	-115.12	-8,301.82	8,302.12	1.72	-1.70	-0.21	
17,196.00	89.80	268.50	8,933.64	-116.42	-8,394.80	8,395.11	1.64	-0.65	-1.51	
17,291.00	89.10	266.60	8,934.55	-120.48	-8,489.71	8,490.03	2.13	-0.74	-2.00	
17,386.00	90.70	265.80	8,934.72	-126.77	-8,584.50	8,584.83	1.88	1.68	-0.84	
17,480.00	89.40	264.60	8,934.63	-134.64	-8,678.16	8,678.52	1.88	-1.38	-1.28	
17,573.00	88.20	266.90	8,936.58	-141.53	-8,770.88	8,771.26	2.79	-1.29	2.47	
17,667.00	87.60	266.90	8,940.03	-146.61	-8,864.68	8,865.07	0.64	-0.64	0.00	
17,761.00	90.80	266.80	8,941.34	-151.77	-8,958.51	8,958.92	3.41	3.40	-0.11	
17,855.00	90.80	266.20	8,940.03	-157.51	-9,052.33	9,052.76	0.64	0.00	-0.64	
17,949.00	90.90	268.60	8,938.63	-161.77	-9,146.21	9,146.65	2.56	0.11	2.55	
18,043.00	91.40	269.30	8,936.74	-163.50	-9,240.18	9,240.62	0.92	0.53	0.74	
18,137.00	92.50	271.80	8,933.55	-162.60	-9,334.11	9,334.55	2.90	1.17	2.66	
18,231.00	90.60	271.00	8,931.00	-160.30	-9,428.04	9,428.48	2.19	-2.02	-0.85	
18,325.00	90.00	270.60	8,930.51	-158.99	-9,522.03	9,522.46	0.77	-0.64	-0.43	
18,419.00	90.10	270.30	8,930.43	-158.25	-9,616.03	9,616.46	0.34	0.11	-0.32	
18,514.00	89.70	270.30	8,930.59	-157.75	-9,711.03	9,711.45	0.42	-0.42	0.00	
18,608.00	89.40	269.60	8,931.33	-157.83	-9,805.02	9,805.45	0.81	-0.32	-0.74	
18,702.00	90.30	271.10	8,931.58	-157.26	-9,899.02	9,899.44	1.86	0.96	1.60	
18,796.00	90.50	271.50	8,930.92	-155.13	-9,992.99	9,993.41	0.48	0.21	0.43	
18,890.00	90.00	270.20	8,930.51	-153.73	-10,086.98	10,087.39	1.48	-0.53	-1.38	
18,985.00	89.00	270.30	8,931.34	-153.32	-10,181.97	10,182.38	1.06	-1.05	0.11	
19,079.00	87.60	269.30	8,934.13	-153.65	-10,275.93	10,276.34	1.83	-1.49	-1.06	
19,172.00	89.30	268.10	8,936.65	-155.76	-10,368.86	10,369.28	2.24	1.83	-1.29	
19,266.00	90.30	269.30	8,936.97	-157.89	-10,462.84	10,463.26	1.66	1.06	1.28	
19,350.00	89.80	268.30	8,936.90	-159.65	-10,546.82	10,547.24	1.33	-0.60	-1.19	
Final Survey, 19350.00' MD, 8936.90' TVD										
19,426.00	89.80	268.30	8,937.17	-161.90	-10,622.78	10,623.22	0.00	0.00	0.00	
PTB, 19426.00' MD, 8937.17' TVD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
19,350.00	8,936.90	-159.65	-10,546.82	Final Survey, 19350.00' MD, 8936.90' TVD	
19,426.00	8,937.17	-161.90	-10,622.78	PTB, 19426.00' MD, 8937.17' TVD	

Checked By: _____ Approved By: _____ Date: _____