

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

OCD – Artesia – REC'D 4/8/2020

Form C-104
Revised August 1, 2011

Submit one copy to appropriate District Office

☒ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address TAP ROCK OPERATING, LLC 602 PARK POINT DR, STE 200 GOLDEN, CO 80401		² OGRID Number 372043
		³ Reason for Filing Code/ Effective Date RT/October 2019
⁴ API Number 30-015-45641	⁵ Pool Name PURPLE SAGE WOLFCAMP (GAS)	⁶ Pool Code 98220
⁷ Property Code 323012	⁸ Property Name PLINY THE ELDER FEE	⁹ Well Number 202H

II. ¹⁰ Surface Location

UL or lot no. E	Section 4	Township 23S	Range 27E	Lot Idn	Feet from the 2276’	North/South Line North	Feet from the 566’	East/West line West	County Eddy
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¹¹ Bottom Hole Location

UL or lot no. E	Section 6	Township 23S	Range 27E	Lot Idn 5	Feet from the 1650’	North/South line North	Feet from the 200’	East/West line West	County Eddy
¹² Lse Code P	¹³ Producing Method Code F	¹⁴ Gas Connection Date 11/27/2019	¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date		

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
373554	SALT CREEK MIDSTREAM, LLC 20329 STATE HIGHWAY 249 HOUSTON, TX U.S.A. 77070	O
373554	SALT CREEK MIDSTREAM, LLC 20329 STATE HIGHWAY 249 HOUSTON, TX U.S.A. 77070	G

IV. Well Completion Data

²¹ Spud Date 7/25/2019	²² Ready Date 9/14/2019	²³ TD 19218’	²⁴ PBTD 19090	²⁵ Perforations 9214’ – 18810’	²⁶ DHC, MC
²⁷ Hole Size		²⁸ Casing & Tubing Size		²⁹ Depth Set	
17.5”		13-3/8”		610’	
12-1/4”		9-5/8”		2109’	
8-3/4”		7-5/8”		8347’	
6-3/4”		5-1/2”		8037’	
6-3/4”		5”		19179’	
				1238	

V. Well Test Data

³¹ Date New Oil	³² Gas Delivery Date	³³ Test Date	³⁴ Test Length	³⁵ Tbg. Pressure	³⁶ Csg. Pressure
³⁷	³⁸ Oil	³⁹ Water	⁴⁰ Gas		⁴¹ Test Method
⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: 			OIL CONSERVATION DIVISION		
Printed name: Bill Ramsey			Approved by: DENIED		
Title: Regulatory Analyst			Title:		
E-mail Address: bramsey@taprk.com			Approval Date:		
Date: 4/8/2020			RT EXPIRED: 12/14/2019		
Phone: 720 360 4028					

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

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

☒ AMENDED REPORT
☒ AS DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
⁴ Property Code	⁵ Property Name PLINY THE ELDER FEE	
⁷ OGRID No.	⁸ Operator Name TAP ROCK OPERATING, LLC.	⁶ Well Number 202H
		⁹ Elevation 3151'

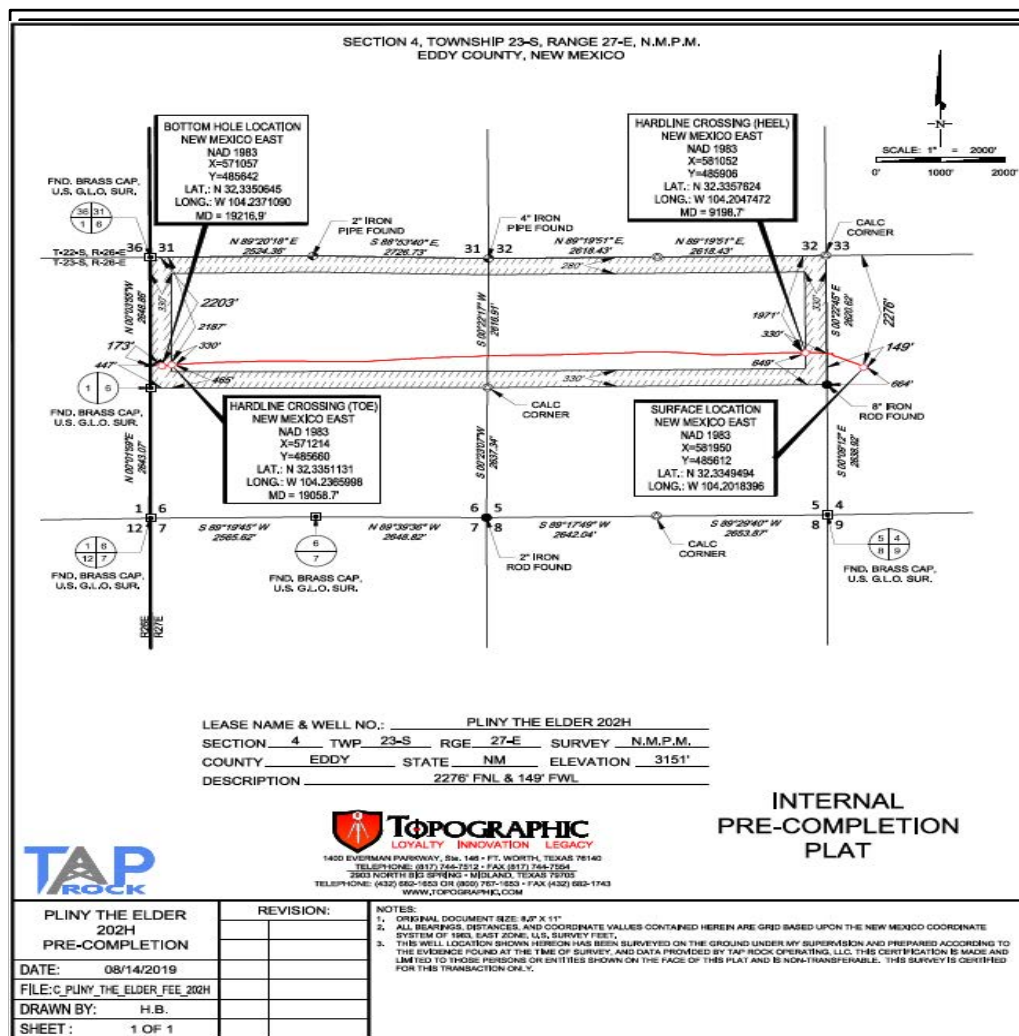
¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	4	23-S	27-E	-	2276'	NORTH	566'	WEST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
5	6	23-S	27-E	-	1650'	NORTH	200'	WEST	EDDY

¹² Dedicated Acres 635.02	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.

Rachel Bierma 01/18/2019
Signature Date

Rachel Bierma
Printed Name
rbierma@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.

12/12/2018
Date of Survey
Signature and Seal of Professional Surveyor
MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR
Certificate Number



Tap Rock Resources, LLC

Eddy County, NM (NAD 83 NME)

(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E

Pliny The Elder Fee #202H

OWB

Design: AWB

Standard Survey Report

13 August, 2019





Operator: TapRock Resources LLC
Well Name: Pliny The Elder #202H
County: Eddy
State: New Mexico
Rig Name: H&P 245
API Number: 30-015-45641

Intrepid Directional Drilling Specialists certifies that the surveys performed on the above referenced well are true and correct MWD surveys, data provided as follows:

Surveyor: Intrepid Directional Drilling Specialists
Survey Depths: 53.1' MD – 19,133' MD
Projection to Bit: 19,218' MD
Dates Performed: 07/29/2019 – 08/14/2019
Type of Survey: MWD

Sincerely,

A handwritten signature in blue ink, appearing to read "James Burleson".

James Burleson
Vice President of MWD Operations
Intrepid Directional Drilling Specialists



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3177.5usft (H&P 245)
Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Eddy County, NM (NAD 83 NME)		
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) Sec-4_T-23-S_R-27-E		
Site Position:		Northing:	485,612.00 usft
From:	Map	Easting:	581,950.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 20' 5.822 N
		Longitude:	104° 12' 6.624 W
		Grid Convergence:	0.07 °

Well	Pliny The Elder Fee #202H		
Well Position	+N/-S	0.0 usft	Northing: 485,612.00 usft
	+E/-W	0.0 usft	Easting: 581,950.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 20' 5.822 N
		Longitude:	104° 12' 6.624 W
		Ground Level:	3,151.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2019/07/24	7.03	60.04	47,722.76949530

Design	AWB				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	269.82	

Survey Program	Date	2019/08/13			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
53.1	2,012.0	VES Gyro (OWB)	GYRO-NS	OWSG Gyrocompass Gyro	
2,196.0	19,218.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	

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	
53.1	0.18	351.76	53.1	0.1	0.0	0.0	0.34	0.34	0.00	
146.4	0.25	349.08	146.4	0.4	-0.1	0.1	0.08	0.08	-2.87	
239.7	0.39	2.87	239.7	0.9	-0.1	0.1	0.17	0.15	14.78	
333.0	0.31	84.29	333.0	1.3	0.2	-0.2	0.49	-0.09	87.29	
426.2	0.34	137.34	426.2	1.1	0.6	-0.6	0.31	0.03	56.87	
519.5	0.76	201.70	519.5	0.3	0.6	-0.6	0.73	0.45	69.00	
612.8	1.43	234.58	612.8	-0.9	-0.6	0.6	0.96	0.72	35.25	
706.1	1.10	273.62	706.0	-1.5	-2.4	2.5	0.97	-0.35	41.85	
799.4	0.69	254.26	799.3	-1.6	-3.9	3.9	0.54	-0.44	-20.75	

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Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
892.6	0.54	164.68	892.6	-2.2	-4.3	4.3	0.94	-0.16	-96.03
985.9	0.15	115.99	985.9	-2.7	-4.1	4.1	0.49	-0.42	-52.20
1,079.2	0.37	146.10	1,079.1	-3.0	-3.8	3.8	0.27	0.24	32.28
1,172.5	0.79	97.27	1,172.4	-3.3	-3.0	3.0	0.66	0.45	-52.35
1,265.8	1.20	65.75	1,265.7	-3.0	-1.5	1.5	0.72	0.44	-33.79
1,359.0	1.37	54.69	1,358.9	-2.0	0.3	-0.3	0.32	0.18	-11.86
1,452.3	0.73	91.37	1,452.2	-1.3	1.8	-1.8	0.96	-0.69	39.32
1,545.6	0.64	77.42	1,545.5	-1.2	2.9	-2.9	0.20	-0.10	-14.95
1,638.9	1.40	47.86	1,638.7	-0.3	4.3	-4.3	0.97	0.81	-31.69
1,732.2	1.46	82.09	1,732.0	0.6	6.3	-6.3	0.90	0.06	36.70
1,825.4	1.20	113.57	1,825.2	0.4	8.4	-8.4	0.82	-0.28	33.75
1,918.7	0.81	126.83	1,918.5	-0.4	9.8	-9.8	0.48	-0.42	14.22
2,012.0	0.95	153.12	2,011.8	-1.5	10.7	-10.7	0.45	0.15	28.18
2,196.0	1.93	9.51	2,195.8	0.2	11.9	-11.9	1.50	0.53	-78.05
2,289.0	4.88	330.49	2,288.6	5.2	10.2	-10.2	3.86	3.17	-41.96
2,383.0	6.95	328.29	2,382.1	13.5	5.2	-5.3	2.21	2.20	-2.34
2,476.0	9.10	314.58	2,474.2	23.4	-3.0	2.9	3.08	2.31	-14.74
2,569.0	11.08	304.03	2,565.7	33.6	-15.6	15.5	2.90	2.13	-11.34
2,661.0	11.30	291.99	2,656.0	41.9	-31.3	31.2	2.55	0.24	-13.09
2,754.0	12.09	289.62	2,747.1	48.6	-48.9	48.8	0.99	0.85	-2.55
2,847.0	10.55	296.91	2,838.3	55.7	-65.7	65.5	2.26	-1.66	7.84
2,940.0	10.64	295.59	2,929.7	63.3	-81.0	80.8	0.28	0.10	-1.42
3,034.0	10.81	295.15	3,022.0	70.8	-96.8	96.6	0.20	0.18	-0.47
3,128.0	11.12	296.38	3,114.3	78.6	-112.9	112.7	0.41	0.33	1.31
3,221.0	11.38	296.56	3,205.5	86.6	-129.2	128.9	0.28	0.28	0.19
3,315.0	11.52	295.15	3,297.7	94.8	-146.0	145.7	0.33	0.15	-1.50
3,408.0	11.47	290.76	3,388.8	102.0	-163.0	162.7	0.94	-0.05	-4.72
3,502.0	11.69	291.20	3,480.9	108.8	-180.6	180.3	0.25	0.23	0.47
3,596.0	11.91	288.74	3,572.9	115.3	-198.7	198.3	0.58	0.23	-2.62
3,689.0	11.30	297.97	3,664.0	122.7	-215.8	215.4	2.10	-0.66	9.92
3,783.0	11.82	297.88	3,756.1	131.5	-232.5	232.1	0.55	0.55	-0.10
3,876.0	11.56	296.82	3,847.2	140.2	-249.2	248.8	0.36	-0.28	-1.14
3,969.0	11.65	296.82	3,938.3	148.6	-265.9	265.4	0.10	0.10	0.00
4,063.0	10.81	295.77	4,030.5	156.7	-282.3	281.8	0.92	-0.89	-1.12
4,156.0	10.15	289.53	4,121.9	163.2	-297.9	297.4	1.41	-0.71	-6.71
4,250.0	10.46	297.61	4,214.4	170.0	-313.3	312.7	1.57	0.33	8.60
4,343.0	10.37	297.44	4,305.9	177.7	-328.2	327.6	0.10	-0.10	-0.18
4,437.0	9.49	297.53	4,398.5	185.2	-342.5	342.0	0.94	-0.94	0.10
4,529.0	9.76	297.35	4,489.2	192.3	-356.2	355.6	0.30	0.29	-0.20
4,622.0	10.51	297.53	4,580.7	199.9	-370.7	370.1	0.81	0.81	0.19
4,715.0	9.93	296.30	4,672.2	207.3	-385.4	384.8	0.67	-0.62	-1.32
4,809.0	9.45	290.67	4,764.9	213.6	-399.9	399.2	1.13	-0.51	-5.99
4,902.0	9.23	282.94	4,856.7	218.0	-414.3	413.6	1.37	-0.24	-8.31

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Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
4,994.0	8.92	284.25	4,947.5	221.4	-428.4	427.7	0.40	-0.34	1.42
5,087.0	8.18	286.01	5,039.5	225.0	-441.8	441.1	0.84	-0.80	1.89
5,181.0	5.93	307.46	5,132.8	229.8	-452.1	451.3	3.65	-2.39	22.82
5,275.0	4.18	322.58	5,226.4	235.5	-458.0	457.3	2.32	-1.86	16.09
5,369.0	3.52	324.25	5,320.2	240.6	-461.8	461.0	0.71	-0.70	1.78
5,463.0	3.52	315.54	5,414.0	245.0	-465.5	464.7	0.57	0.00	-9.27
5,556.0	2.07	287.42	5,506.9	247.5	-469.1	468.3	2.10	-1.56	-30.24
5,650.0	1.41	239.43	5,600.9	247.4	-471.7	470.9	1.64	-0.70	-51.05
5,743.0	1.19	253.76	5,693.9	246.6	-473.6	472.8	0.42	-0.24	15.41
5,836.0	0.97	246.20	5,786.8	246.0	-475.3	474.5	0.28	-0.24	-8.13
5,930.0	1.71	10.39	5,880.8	247.0	-475.7	475.0	2.55	0.79	132.12
6,023.0	2.46	6.70	5,973.8	250.4	-475.3	474.5	0.82	0.81	-3.97
6,117.0	2.37	0.28	6,067.7	254.3	-475.0	474.2	0.30	-0.10	-6.83
6,211.0	2.11	336.99	6,161.6	257.9	-475.7	474.9	1.00	-0.28	-24.78
6,304.0	1.67	350.88	6,254.6	260.8	-476.6	475.7	0.68	-0.47	14.94
6,397.0	1.67	2.48	6,347.5	263.5	-476.7	475.9	0.36	0.00	12.47
6,490.0	1.93	347.71	6,440.5	266.4	-477.0	476.1	0.57	0.28	-15.88
6,583.0	2.02	1.33	6,533.4	269.5	-477.3	476.4	0.51	0.10	14.65
6,676.0	1.58	25.86	6,626.4	272.3	-476.7	475.8	0.94	-0.47	26.38
6,769.0	0.84	14.25	6,719.4	274.1	-476.0	475.1	0.83	-0.80	-12.48
6,862.0	1.23	320.99	6,812.3	275.6	-476.4	475.6	1.07	0.42	-57.27
6,956.0	1.36	334.18	6,906.3	277.4	-477.5	476.7	0.34	0.14	14.03
7,049.0	1.14	354.22	6,999.3	279.3	-478.1	477.2	0.52	-0.24	21.55
7,142.0	0.62	303.94	7,092.3	280.5	-478.6	477.7	0.95	-0.56	-54.06
7,236.0	0.88	298.58	7,186.3	281.1	-479.7	478.8	0.29	0.28	-5.70
7,329.0	1.23	293.92	7,279.3	281.8	-481.2	480.3	0.39	0.38	-5.01
7,423.0	1.36	300.95	7,373.2	282.8	-483.1	482.2	0.22	0.14	7.48
7,517.0	1.01	35.61	7,467.2	284.1	-483.6	482.7	1.87	-0.37	100.70
7,611.0	1.10	37.11	7,561.2	285.5	-482.5	481.6	0.10	0.10	1.60
7,704.0	1.19	85.62	7,654.2	286.3	-481.0	480.1	1.02	0.10	52.16
7,797.0	0.97	128.16	7,747.2	285.8	-479.5	478.6	0.87	-0.24	45.74
7,890.0	1.36	151.54	7,840.2	284.4	-478.3	477.4	0.65	0.42	25.14
7,984.0	1.14	168.06	7,934.1	282.5	-477.6	476.7	0.45	-0.23	17.57
8,078.0	1.27	172.37	8,028.1	280.5	-477.3	476.4	0.17	0.14	4.59
8,172.0	1.63	192.94	8,122.1	278.2	-477.4	476.5	0.67	0.38	21.88
8,300.0	1.41	199.00	8,250.0	274.9	-478.3	477.5	0.21	-0.17	4.73
8,386.0	0.84	212.80	8,336.0	273.4	-479.0	478.2	0.73	-0.66	16.05
8,479.0	1.27	204.01	8,429.0	271.9	-479.8	479.0	0.49	0.46	-9.45
8,526.0	9.93	276.34	8,475.8	271.9	-484.1	483.2	20.47	18.43	153.89
8,573.0	16.40	278.72	8,521.5	273.3	-494.7	493.8	13.81	13.77	5.06
8,620.0	20.57	279.95	8,566.1	275.8	-509.4	508.5	8.91	8.87	2.62
8,666.0	22.51	280.56	8,608.9	278.8	-526.0	525.1	4.25	4.22	1.33
8,713.0	24.53	280.04	8,651.9	282.1	-544.4	543.5	4.32	4.30	-1.11

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3177.5usft (H&P 245)
Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
8,760.0	27.74	280.30	8,694.1	285.8	-564.8	563.9	6.83	6.83	0.55
8,807.0	33.01	276.34	8,734.7	289.1	-588.3	587.4	11.99	11.21	-8.43
8,853.0	39.38	273.18	8,771.8	291.3	-615.4	614.4	14.43	13.85	-6.87
8,900.0	46.24	271.34	8,806.2	292.6	-647.3	646.3	14.83	14.60	-3.91
8,946.0	50.15	270.10	8,836.9	293.0	-681.5	680.6	8.73	8.50	-2.70
8,993.0	53.49	269.93	8,866.0	293.0	-718.5	717.6	7.11	7.11	-0.36
9,040.0	55.60	269.75	8,893.2	292.9	-756.8	755.8	4.50	4.49	-0.38
9,087.0	60.22	270.37	8,918.2	292.9	-796.6	795.6	9.89	9.83	1.32
9,133.0	64.70	271.07	8,939.4	293.5	-837.3	836.4	9.83	9.74	1.52
9,180.0	69.01	271.25	8,957.9	294.3	-880.5	879.6	9.18	9.17	0.38
9,199.0	70.66	271.07	8,964.5	294.7	-898.4	897.4	8.74	8.69	-0.97
FTP @ 9199'MD, 649.6'FSL & 330'FEL									
9,226.0	73.01	270.81	8,972.9	295.1	-924.0	923.1	8.74	8.70	-0.95
9,273.0	77.63	270.54	8,984.8	295.6	-969.5	968.5	9.85	9.83	-0.57
9,320.0	83.34	269.58	8,992.5	295.7	-1,015.8	1,014.9	12.31	12.15	-2.04
9,412.0	91.65	270.98	8,996.6	296.1	-1,107.6	1,106.7	9.16	9.03	1.52
9,505.0	92.18	269.84	8,993.5	296.8	-1,200.6	1,199.6	1.35	0.57	-1.23
9,599.0	89.41	267.56	8,992.2	294.7	-1,294.5	1,293.6	3.82	-2.95	-2.43
9,692.0	89.98	267.20	8,992.6	290.4	-1,387.4	1,386.5	0.72	0.61	-0.39
9,785.0	91.74	267.12	8,991.3	285.8	-1,480.3	1,479.4	1.89	1.89	-0.09
9,879.0	90.42	266.59	8,989.5	280.7	-1,574.1	1,573.3	1.51	-1.40	-0.56
9,972.0	90.11	266.76	8,989.0	275.3	-1,667.0	1,666.1	0.38	-0.33	0.18
10,065.0	92.22	268.61	8,987.2	271.5	-1,759.9	1,759.0	3.02	2.27	1.99
10,159.0	89.76	268.43	8,985.5	269.1	-1,853.8	1,853.0	2.62	-2.62	-0.19
10,252.0	90.51	266.94	8,985.3	265.3	-1,946.7	1,945.9	1.79	0.81	-1.60
10,346.0	91.03	266.94	8,984.1	260.3	-2,040.6	2,039.8	0.55	0.55	0.00
10,439.0	88.26	267.38	8,984.6	255.7	-2,133.5	2,132.7	3.02	-2.98	0.47
10,533.0	89.76	269.31	8,986.3	253.0	-2,227.4	2,226.6	2.60	1.60	2.05
10,626.0	90.59	272.74	8,986.0	254.6	-2,320.4	2,319.6	3.79	0.89	3.69
10,719.0	90.77	275.64	8,984.9	261.4	-2,413.1	2,412.3	3.12	0.19	3.12
10,812.0	93.27	275.64	8,981.6	270.6	-2,505.6	2,504.7	2.69	2.69	0.00
10,906.0	95.08	276.96	8,974.7	280.9	-2,598.8	2,597.9	2.38	1.93	1.40
10,999.0	92.18	274.32	8,968.9	290.0	-2,691.1	2,690.2	4.21	-3.12	-2.84
11,093.0	92.35	272.57	8,965.1	295.6	-2,784.9	2,783.9	1.87	0.18	-1.86
11,186.0	92.92	272.65	8,960.9	299.9	-2,877.7	2,876.7	0.62	0.61	0.09
11,280.0	94.64	272.92	8,954.7	304.4	-2,971.4	2,970.4	1.85	1.83	0.29
11,374.0	92.92	273.62	8,948.5	309.8	-3,065.0	3,064.0	1.97	-1.83	0.74
11,468.0	93.14	273.27	8,943.5	315.4	-3,158.7	3,157.7	0.44	0.23	-0.37
11,561.0	91.60	271.69	8,939.7	319.4	-3,251.5	3,250.5	2.37	-1.66	-1.70
11,654.0	87.74	267.64	8,940.2	318.9	-3,344.5	3,343.5	6.02	-4.15	-4.35
11,747.0	85.41	265.62	8,945.7	313.4	-3,437.2	3,436.2	3.31	-2.51	-2.17
11,841.0	88.18	265.71	8,951.0	306.3	-3,530.7	3,529.8	2.95	2.95	0.10
11,934.0	88.92	265.27	8,953.4	299.0	-3,623.4	3,622.5	0.93	0.80	-0.47
12,027.0	89.58	267.12	8,954.6	292.8	-3,716.2	3,715.3	2.11	0.71	1.99

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
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Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
12,121.0	88.97	267.69	8,955.8	288.6	-3,810.1	3,809.2	0.89	-0.65	0.61
12,215.0	91.38	269.75	8,955.5	286.5	-3,904.1	3,903.1	3.37	2.56	2.19
12,308.0	89.19	268.08	8,955.0	284.7	-3,997.0	3,996.1	2.96	-2.35	-1.80
12,402.0	91.82	268.79	8,954.2	282.2	-4,091.0	4,090.1	2.90	2.80	0.76
12,530.0	91.12	267.64	8,950.9	278.2	-4,218.9	4,218.0	1.05	-0.55	-0.90
12,624.0	91.43	267.73	8,948.8	274.4	-4,312.8	4,311.9	0.34	0.33	0.10
12,717.0	90.81	266.85	8,947.0	270.0	-4,405.7	4,404.8	1.16	-0.67	-0.95
12,810.0	90.68	266.59	8,945.8	264.7	-4,498.5	4,497.6	0.31	-0.14	-0.28
12,904.0	90.02	268.26	8,945.2	260.4	-4,592.4	4,591.6	1.91	-0.70	1.78
12,997.0	91.74	269.40	8,943.8	258.5	-4,685.4	4,684.5	2.22	1.85	1.23
13,091.0	89.54	267.82	8,942.7	256.3	-4,779.3	4,778.5	2.88	-2.34	-1.68
13,184.0	89.89	268.00	8,943.2	252.9	-4,872.3	4,871.4	0.42	0.38	0.19
13,278.0	92.62	270.19	8,941.1	251.4	-4,966.2	4,965.4	3.72	2.90	2.33
13,372.0	94.59	269.23	8,935.2	250.9	-5,060.0	5,059.2	2.33	2.10	-1.02
13,466.0	94.02	269.14	8,928.2	249.6	-5,153.7	5,152.9	0.61	-0.61	-0.10
13,559.0	93.32	269.31	8,922.2	248.3	-5,246.5	5,245.7	0.77	-0.75	0.18
13,652.0	93.98	269.84	8,916.3	247.6	-5,339.3	5,338.5	0.91	0.71	0.57
13,746.0	92.09	268.70	8,911.3	246.4	-5,433.2	5,432.4	2.35	-2.01	-1.21
13,839.0	90.02	268.87	8,909.6	244.5	-5,526.2	5,525.4	2.23	-2.23	0.18
13,933.0	91.47	268.79	8,908.4	242.5	-5,620.1	5,619.3	1.54	1.54	-0.09
14,026.0	92.00	268.35	8,905.6	240.2	-5,713.1	5,712.3	0.74	0.57	-0.47
14,120.0	90.59	267.64	8,903.4	236.9	-5,807.0	5,806.2	1.68	-1.50	-0.76
14,213.0	88.00	266.24	8,904.6	232.0	-5,899.8	5,899.1	3.17	-2.78	-1.51
14,307.0	87.87	265.36	8,908.0	225.1	-5,993.5	5,992.8	0.95	-0.14	-0.94
14,400.0	87.38	265.36	8,911.8	217.6	-6,086.1	6,085.4	0.53	-0.53	0.00
14,494.0	86.77	267.91	8,916.6	212.1	-6,179.8	6,179.1	2.79	-0.65	2.71
14,587.0	92.84	270.02	8,916.9	210.4	-6,272.8	6,272.1	6.91	6.53	2.27
14,681.0	91.21	268.70	8,913.6	209.3	-6,366.7	6,366.0	2.23	-1.73	-1.40
14,774.0	90.68	268.08	8,912.1	206.7	-6,459.6	6,459.0	0.88	-0.57	-0.67
14,867.0	90.02	266.76	8,911.5	202.5	-6,552.5	6,551.9	1.59	-0.71	-1.42
14,961.0	91.78	267.12	8,910.0	197.5	-6,646.4	6,645.7	1.91	1.87	0.38
15,055.0	91.25	266.50	8,907.6	192.3	-6,740.2	6,739.6	0.87	-0.56	-0.66
15,148.0	91.91	265.71	8,905.0	186.0	-6,833.0	6,832.3	1.11	0.71	-0.85
15,242.0	92.84	265.71	8,901.1	179.0	-6,926.6	6,926.0	0.99	0.99	0.00
15,336.0	92.09	265.18	8,897.1	171.5	-7,020.2	7,019.7	0.98	-0.80	-0.56
15,430.0	92.04	266.76	8,893.7	164.9	-7,113.9	7,113.4	1.68	-0.05	1.68
15,523.0	91.12	266.24	8,891.1	159.2	-7,206.7	7,206.2	1.14	-0.99	-0.56
15,617.0	93.01	266.68	8,887.7	153.4	-7,300.5	7,300.0	2.06	2.01	0.47
15,710.0	92.35	265.89	8,883.4	147.4	-7,393.2	7,392.7	1.11	-0.71	-0.85
15,804.0	91.12	264.57	8,880.5	139.6	-7,486.8	7,486.3	1.92	-1.31	-1.40
15,898.0	91.74	265.18	8,878.2	131.2	-7,580.4	7,580.0	0.93	0.66	0.65
15,991.0	90.99	265.89	8,876.0	124.0	-7,673.1	7,672.7	1.11	-0.81	0.76
16,084.0	92.22	266.94	8,873.4	118.1	-7,765.9	7,765.5	1.74	1.32	1.13

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
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Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
16,178.0	92.26	270.10	8,869.7	115.7	-7,859.8	7,859.4	3.36	0.04	3.36
16,272.0	91.74	269.23	8,866.4	115.2	-7,953.7	7,953.3	1.08	-0.55	-0.93
16,367.0	92.44	269.31	8,862.9	114.0	-8,048.6	8,048.2	0.74	0.74	0.08
16,461.0	90.42	269.05	8,860.6	112.6	-8,142.6	8,142.2	2.17	-2.15	-0.28
16,555.0	90.42	269.14	8,859.9	111.1	-8,236.6	8,236.2	0.10	0.00	0.10
16,648.0	91.43	271.42	8,858.4	111.6	-8,329.6	8,329.2	2.68	1.09	2.45
16,741.0	90.55	272.65	8,856.8	114.9	-8,422.5	8,422.1	1.63	-0.95	1.32
16,835.0	92.18	272.48	8,854.6	119.1	-8,516.4	8,515.9	1.74	1.73	-0.18
16,928.0	93.58	272.21	8,849.9	122.9	-8,609.2	8,608.7	1.53	1.51	-0.29
17,022.0	93.14	271.77	8,844.4	126.2	-8,702.9	8,702.5	0.66	-0.47	-0.47
17,116.0	91.69	271.34	8,840.4	128.7	-8,796.8	8,796.4	1.61	-1.54	-0.46
17,209.0	92.79	270.54	8,836.8	130.2	-8,889.7	8,889.3	1.46	1.18	-0.86
17,303.0	90.95	269.75	8,833.7	130.5	-8,983.7	8,983.2	2.13	-1.96	-0.84
17,396.0	92.48	270.10	8,830.9	130.3	-9,076.6	9,076.2	1.69	1.65	0.38
17,490.0	92.84	269.40	8,826.6	129.9	-9,170.5	9,170.1	0.84	0.38	-0.74
17,583.0	92.26	268.52	8,822.4	128.2	-9,263.4	9,263.0	1.13	-0.62	-0.95
17,677.0	90.99	268.17	8,819.8	125.5	-9,357.3	9,356.9	1.40	-1.35	-0.37
17,770.0	93.10	268.08	8,816.4	122.5	-9,450.2	9,449.8	2.27	2.27	-0.10
17,864.0	87.96	266.15	8,815.6	117.8	-9,544.1	9,543.6	5.84	-5.47	-2.05
17,957.0	88.57	266.68	8,818.4	111.9	-9,636.8	9,636.4	0.87	0.66	0.57
18,050.0	90.51	268.43	8,819.1	108.0	-9,729.7	9,729.4	2.81	2.09	1.88
18,143.0	92.44	268.96	8,816.7	105.9	-9,822.7	9,822.3	2.15	2.08	0.57
18,236.0	95.78	269.67	8,810.1	104.8	-9,915.4	9,915.0	3.67	3.59	0.76
18,328.0	94.07	268.17	8,802.2	103.0	-10,007.1	10,006.7	2.47	-1.86	-1.63
18,422.0	91.34	266.76	8,797.7	98.9	-10,100.9	10,100.5	3.27	-2.90	-1.50
18,515.0	90.33	265.53	8,796.4	92.6	-10,193.6	10,193.3	1.71	-1.09	-1.32
18,608.0	94.42	266.94	8,792.5	86.5	-10,286.3	10,286.0	4.65	4.40	1.52
18,702.0	91.52	265.53	8,787.7	80.4	-10,380.0	10,379.7	3.43	-3.09	-1.50
18,795.0	92.75	265.09	8,784.2	72.8	-10,472.6	10,472.3	1.40	1.32	-0.47
18,889.0	92.92	264.66	8,779.5	64.4	-10,566.1	10,565.9	0.49	0.18	-0.46
18,982.0	91.82	264.74	8,775.7	55.8	-10,658.6	10,658.4	1.19	-1.18	0.09
19,059.6	91.71	263.95	8,773.3	48.1	-10,735.8	10,735.6	1.03	-0.14	-1.02
LTP @ 19059.6'MD, 464.9'FSL & 330'FWL									
19,076.0	91.69	263.78	8,772.8	46.4	-10,752.1	10,751.9	1.03	-0.14	-1.02
19,133.0	91.12	263.42	8,771.4	40.0	-10,808.8	10,808.6	1.18	-1.00	-0.63
LAST SVY									
19,218.0	91.12	263.42	8,769.8	30.3	-10,893.2	10,893.0	0.00	0.00	0.00
Projection to TD @ 19218'MD, 447.4'FSL & 172.6'FWL									

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Pliny The Elder Fee #202H
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Site:	(Pliny The Elder Fee) Sec-4_T-23-S_R-27-E	MD Reference:	KB @ 3177.5usft (H&P 245)
Well:	Pliny The Elder Fee #202H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LTP (Pliny The Elder I - actual wellpath misses target center by 32.9usft at 19059.9usft MD (8773.3 TVD, 48.1 N, -10736.1 E) - Point	-2.60	269.82	8,741.0	54.4	-10,735.8	485,666.40	571,214.16	32° 20' 6.474 N	104° 14' 11.759 W
PBHL (Pliny The Elde - actual wellpath misses target center by 21.6usft at 19187.9usft MD (8770.4 TVD, 33.7 N, -10863.3 E) - Rectangle (sides W100.0 H1,347.3 D30.0)	-1.50	267.81	8,785.0	49.4	-10,865.4	485,661.45	571,084.64	32° 20' 6.426 N	104° 14' 13.269 W
9000'VS (Pliny The EI - actual wellpath misses target center by 9.6usft at 17319.7usft MD (8833.4 TVD, 130.4 N, -9000.4 E) - Point	0.00	0.00	8,834.0	120.8	-9,000.4	485,732.82	572,949.60	32° 20' 7.115 N	104° 13' 51.530 W
FTP (Pliny The Elder I - actual wellpath misses target center by 38.8usft at 9210.8usft MD (8968.3 TVD, 294.9 N, -909.6 E) - Point	0.00	0.00	9,004.0	285.0	-898.0	485,897.00	581,052.00	32° 20' 8.653 N	104° 12' 17.087 W

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,199.0	8,964.5	294.7	-898.4	FTP @ 9199'MD, 649.6'FSL & 330'FEL
19,059.6	8,773.3	48.1	-10,735.8	LTP @ 19059.6'MD, 464.9'FSL & 330'FWL
19,133.0	8,771.4	40.0	-10,808.8	LAST SVY
19,218.0	8,769.8	30.3	-10,893.2	Projection to TD @ 19218'MD, 447.4'FSL & 172.6'FWL

Checked By: _____ Approved By: _____ Date: _____