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 305351

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

1. Operator Name and Address		2. OGRID Number
TAP ROCK OPERATING, LLC 523 Park Point Drive Golden, CO 80401		372043
		3. API Number 30-015-49176
4. Property Code 332044	5. Property Name Hamms State	6. Well No. 223H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
M	34	23S	27E		1071	S	495	W	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
I	34	23S	27E	I	1980	S	330	E	Eddy

9. Pool Information

PURPLE SAGE;WOLFCAMP (GAS)	98220

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	GAS		State	3189
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	14409	Wolfcamp		1/31/2022
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	325	330	0
Int1	12.25	9.625	40	2405	645	0
Int2	8.75	7.625	29.7	9162	375	2105
Prod	6.75	5.5	20	14409	350	8662

Casing/Cement Program: Additional Comments

Tap Rock Operating LLC would like to request permission to have the option to run either a three or four string design for the Hamms State 223H. Additionally, Tap Rock requests the option of switching to a two stage cement job on the 7-5/8'' intermediate casing string with the first stage lead and tail being pumped conventionally with the calculated top of cement to surface. If necessary, the second stage will be performed as a bradenhead squeeze with planned cement from the Brushy Canyon (anticipated loss zone) to surface if cement is not circulated to surface during the first stage. Additionally, a top out consisting of Class C cement will be executed as needed after the first two stages. Tap Rock also requests the option to run a DV tool, the depth will be adjusted depending on current hole conditions. Cement volumes will be adjusted accordingly. The DV tool will be set a minimum of 50' below the previous casing shoe and a maximum of 200' above the current casing shoe. If cement is

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	2500	
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.

Signature:

Printed Name:	Electronically filed by Christian Combs	Approved By:	Katherine Pickford
Title:	Regulatory Manager	Title:	Geoscientist
Email Address:	ccombs@taprk.com	Approved Date:	12/28/2021
Date:	12/21/2021	Phone: 720-360-4028	Expiration Date: 12/28/2023
		Conditions of Approval Attached	

OIL CONSERVATION DIVISION

District I
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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	[3]Pool Name
30-015-49176	98220	PURPLE SAGE; WOLFCAMP

[4]Property Code	[5]Property Name	[6]Well Number
332044	HAMMS STATE	223H

[7]OGRID No.	[8]Operator Name	[9]Elevation
#372043	TAP ROCK OPERATING, LLC.	3189'

[10]Surface Location

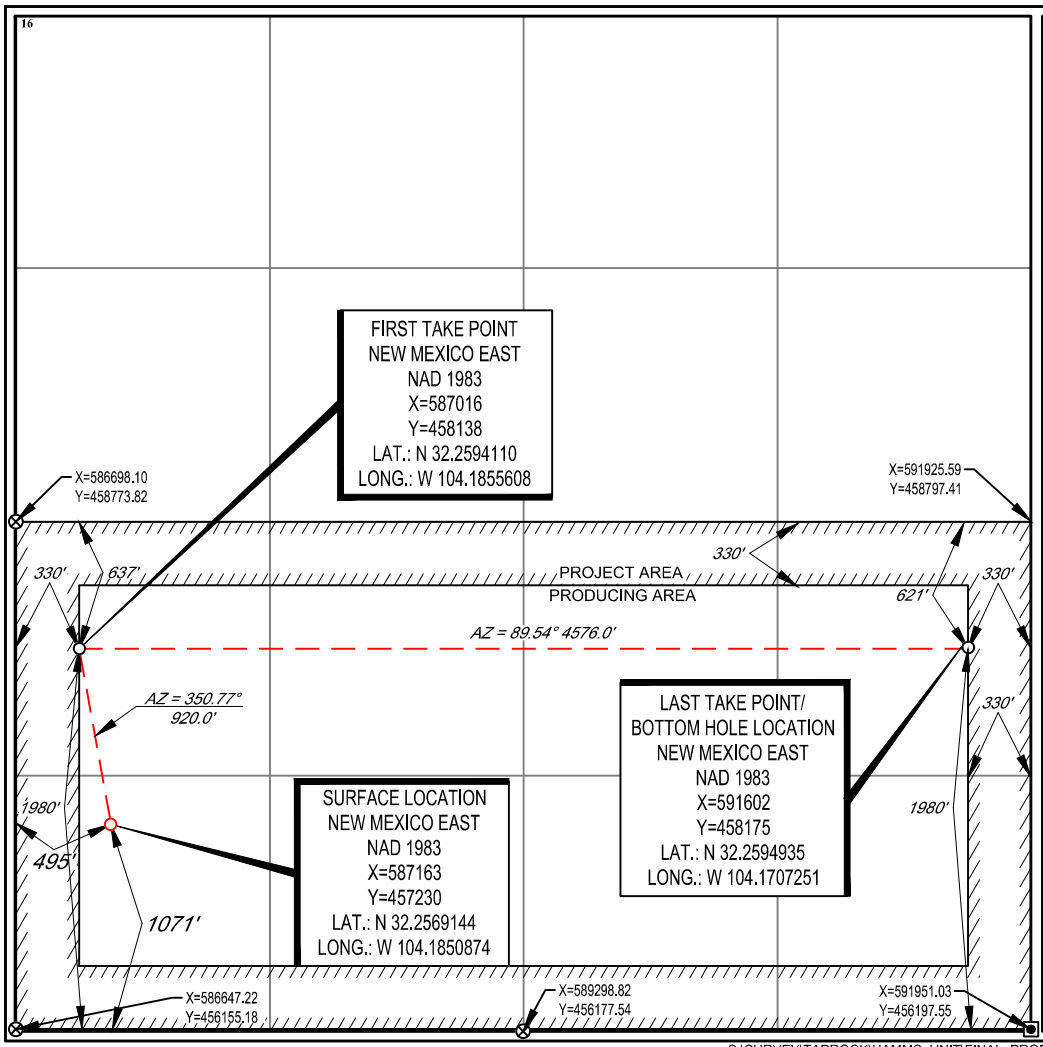
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	34	23-S	27-E	-	1071'	SOUTH	495'	WEST	EDDY

[11]Bottom 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
I	34	23-S	27-E	-	1980'	SOUTH	330'	EAST	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.



[17]OPERATOR 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.

11/20/2021
Signature Date

Jeff Trlica
Printed Name

jtrlica@taprk.com
E-mail Address

[18]SURVEYOR 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.

12/05/2021
Date of Survey
Signature and Seal of Professional Surveyor

RAMON A. DOMINGUEZ NEW MEXICO 24508 PROFESSIONAL SURVEYOR

Certificate Number

S:\SURVEY\TAPROCK\HAMMS_UNIT\FINAL_PRODUCTS\LO_HAMMS_STATE_223H.DWG 12/13/2021 2:31:32 PM kmatheny

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

Form APD Conditions

Permit 305351

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
TAP ROCK OPERATING, LLC [372043] 523 Park Point Drive Golden, CO 80401	30-015-49176
	Well: Hamms State #223H

OCD Reviewer	Condition
kpickford	Surface casing must be set 25' below top of Rustler Anhydrite or other competent layer in order to seal off protectable water
kpickford	Notify OCD 24 hours prior to casing & cement
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
kpickford	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
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system

HAMMS STATE #223H

Interval	Hole Size	Casing OD	Casing Weight	Casing Grade	Set Depth	Sacks of Cement	Planned TOC	Mud Type
Surface	17.5	13.375	54.5	J-55	325	331	0	Fresh Water
Intermediate	9.875	7.625	29.7	P-110	5610	1182	0	Diesel Brine
	8.75	7.625	29.7	P-110	9162			
Production	6.75	5.5	20	P-110	14409	413	8962	OBM

Intermediate mud system will be the direct brine emulsion fluid (brine based with diesel emulsified in it). Tap Rock requests the option of switching to a two stage cement job on the 7-5/8'' intermediate casing string with the first stage lead and tail being pumped conventionally with the calculated top of cement to surface. If necessary, the second stage will be performed as a bradenhead squeeze with planned cement from the Brushy Canyon (anticipated loss zone) to surface if cement is not circulated to surface during the first stage. Additionally, a top out consisting of Class C cement will be executed as needed after the first two stages. Tap Rock also requests the option to run a DV tool, the depth will be adjusted depending on current hole conditions. Cement volumes will be adjusted accordingly. The DV tool will be set a minimum of 50' below the previous casing shoe and a maximum of 200' above the current casing shoe. If cement is not circulated to surface on the 1st stage job, the 2nd stage will be pumped as planned. The DVT set depth will be between 5,000-6,000'.

Tap Rock Resources, LLC

Eddy County, NM (NAD 83 NME)
(Hamms State W2) Sec-34_T-23-S_R-27-E
Hamms State W2 #223H

OWB

Plan: Plan #1

Standard Survey Report

15 December, 2021

Intrepid
Survey Report

Company:	Tap Rock Resources, LLC	**Local Co-ordinate Reference:**	Well Hamms State W2 #223H
Project:	Eddy County, NM (NAD 83 NME)	**TVD Reference:**	KB @ 3215.0usft
Site:	(Hamms State W2) Sec-34_T-23-S_R-27-E	**MD Reference:**	KB @ 3215.0usft
Well:	Hamms State W2 #223H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**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 (Hamms State W2) Sec-34_T-23-S_R-27-E

Site Position:		**Northing:**	457,205.00 usft	**Latitude:**	32° 15' 24.641 N
From:	Map	**Easting:**	587,164.00 usft	**Longitude:**	104° 11' 6.308 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.08 °

Well Hamms State W2 #223H

Well Position	**+N/-S**	0.0 usft	**Northing:**	457,230.00 usft	**Latitude:**	32° 15' 24.889 N
	+E/-W	0.0 usft	**Easting:**	587,163.00 usft	**Longitude:**	104° 11' 6.319 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,189.0 usft

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/13/21	6.75	59.94	47,434.00287586

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	89.54

Survey Tool Program **Date** 12/15/21

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,408.8	Plan #1 (OWB)	MWD	OWSG MWD - Standard

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

Intrepid
Survey Report

Company:	Tap Rock Resources, LLC	**Local Co-ordinate Reference:**	Well Hamms State W2 #223H
Project:	Eddy County, NM (NAD 83 NME)	**TVD Reference:**	KB @ 3215.0usft
Site:	(Hamms State W2) Sec-34_T-23-S_R-27-E	**MD Reference:**	KB @ 3215.0usft
Well:	Hamms State W2 #223H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.15 Single User Db

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)
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	1.00	337.25	1,900.0	0.8	-0.3	-0.3	1.00	1.00	0.00
2,000.0	2.00	337.25	2,000.0	3.2	-1.3	-1.3	1.00	1.00	0.00
2,100.0	3.00	337.25	2,099.9	7.2	-3.0	-3.0	1.00	1.00	0.00
2,200.0	4.00	337.25	2,199.7	12.9	-5.4	-5.3	1.00	1.00	0.00
2,300.0	5.00	337.25	2,299.4	20.1	-8.4	-8.3	1.00	1.00	0.00
2,400.0	6.00	337.25	2,398.9	28.9	-12.1	-11.9	1.00	1.00	0.00
2,500.0	7.00	337.25	2,498.3	39.4	-16.5	-16.2	1.00	1.00	0.00
2,600.0	8.00	337.25	2,597.4	51.4	-21.6	-21.2	1.00	1.00	0.00
2,700.0	9.00	337.25	2,696.3	65.1	-27.3	-26.8	1.00	1.00	0.00
2,799.9	10.00	337.25	2,794.8	80.2	-33.7	-33.0	1.00	1.00	0.00
2,900.0	10.00	337.25	2,893.4	96.3	-40.4	-39.6	0.00	0.00	0.00
3,000.0	10.00	337.25	2,991.9	112.3	-47.1	-46.2	0.00	0.00	0.00
3,100.0	10.00	337.25	3,090.4	128.3	-53.8	-52.8	0.00	0.00	0.00
3,200.0	10.00	337.25	3,188.9	144.3	-60.5	-59.4	0.00	0.00	0.00
3,300.0	10.00	337.25	3,287.3	160.3	-67.2	-66.0	0.00	0.00	0.00
3,400.0	10.00	337.25	3,385.8	176.3	-74.0	-72.5	0.00	0.00	0.00
3,500.0	10.00	337.25	3,484.3	192.3	-80.7	-79.1	0.00	0.00	0.00
3,600.0	10.00	337.25	3,582.8	208.4	-87.4	-85.7	0.00	0.00	0.00
3,700.0	10.00	337.25	3,681.3	224.4	-94.1	-92.3	0.00	0.00	0.00
3,800.0	10.00	337.25	3,779.7	240.4	-100.8	-98.9	0.00	0.00	0.00
3,900.0	10.00	337.25	3,878.2	256.4	-107.5	-105.5	0.00	0.00	0.00
4,000.0	10.00	337.25	3,976.7	272.4	-114.3	-112.1	0.00	0.00	0.00
4,100.0	10.00	337.25	4,075.2	288.4	-121.0	-118.6	0.00	0.00	0.00
4,200.0	10.00	337.25	4,173.7	304.4	-127.7	-125.2	0.00	0.00	0.00
4,300.0	10.00	337.25	4,272.1	320.4	-134.4	-131.8	0.00	0.00	0.00
4,400.0	10.00	337.25	4,370.6	336.5	-141.1	-138.4	0.00	0.00	0.00
4,500.0	10.00	337.25	4,469.1	352.5	-147.8	-145.0	0.00	0.00	0.00
4,600.0	10.00	337.25	4,567.6	368.5	-154.5	-151.6	0.00	0.00	0.00
4,700.0	10.00	337.25	4,666.1	384.5	-161.3	-158.2	0.00	0.00	0.00
4,800.0	10.00	337.25	4,764.6	400.5	-168.0	-164.8	0.00	0.00	0.00
4,900.0	10.00	337.25	4,863.0	416.5	-174.7	-171.3	0.00	0.00	0.00
5,000.0	10.00	337.25	4,961.5	432.5	-181.4	-177.9	0.00	0.00	0.00
5,100.0	10.00	337.25	5,060.0	448.5	-188.1	-184.5	0.00	0.00	0.00
5,200.0	10.00	337.25	5,158.5	464.5	-194.8	-191.1	0.00	0.00	0.00
5,300.0	10.00	337.25	5,257.0	480.6	-201.6	-197.7	0.00	0.00	0.00

Intrepid
Survey Report

Company:	Tap Rock Resources, LLC	**Local Co-ordinate Reference:**	Well Hamms State W2 #223H
Project:	Eddy County, NM (NAD 83 NME)	**TVD Reference:**	KB @ 3215.0usft
Site:	(Hamms State W2) Sec-34_T-23-S_R-27-E	**MD Reference:**	KB @ 3215.0usft
Well:	Hamms State W2 #223H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.15 Single User Db

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)
5,400.0	10.00	337.25	5,355.4	496.6	-208.3	-204.3	0.00	0.00	0.00
5,500.0	10.00	337.25	5,453.9	512.6	-215.0	-210.9	0.00	0.00	0.00
5,600.0	10.00	337.25	5,552.4	528.6	-221.7	-217.5	0.00	0.00	0.00
5,700.0	10.00	337.25	5,650.9	544.6	-228.4	-224.0	0.00	0.00	0.00
5,800.0	10.00	337.25	5,749.4	560.6	-235.1	-230.6	0.00	0.00	0.00
5,900.0	10.00	337.25	5,847.8	576.6	-241.8	-237.2	0.00	0.00	0.00
6,000.0	10.00	337.25	5,946.3	592.6	-248.6	-243.8	0.00	0.00	0.00
6,100.0	10.00	337.25	6,044.8	608.6	-255.3	-250.4	0.00	0.00	0.00
6,200.0	10.00	337.25	6,143.3	624.7	-262.0	-257.0	0.00	0.00	0.00
6,300.0	10.00	337.25	6,241.8	640.7	-268.7	-263.6	0.00	0.00	0.00
6,400.0	10.00	337.25	6,340.3	656.7	-275.4	-270.1	0.00	0.00	0.00
6,500.0	10.00	337.25	6,438.7	672.7	-282.1	-276.7	0.00	0.00	0.00
6,600.0	10.00	337.25	6,537.2	688.7	-288.9	-283.3	0.00	0.00	0.00
6,700.0	10.00	337.25	6,635.7	704.7	-295.6	-289.9	0.00	0.00	0.00
6,800.0	10.00	337.25	6,734.2	720.7	-302.3	-296.5	0.00	0.00	0.00
6,900.0	10.00	337.25	6,832.7	736.7	-309.0	-303.1	0.00	0.00	0.00
7,000.0	10.00	337.25	6,931.1	752.7	-315.7	-309.7	0.00	0.00	0.00
7,100.0	10.00	337.25	7,029.6	768.8	-322.4	-316.3	0.00	0.00	0.00
7,200.0	10.00	337.25	7,128.1	784.8	-329.2	-322.8	0.00	0.00	0.00
7,300.0	10.00	337.25	7,226.6	800.8	-335.9	-329.4	0.00	0.00	0.00
7,400.0	10.00	337.25	7,325.1	816.8	-342.6	-336.0	0.00	0.00	0.00
7,456.0	10.00	337.25	7,380.2	825.8	-346.3	-339.7	0.00	0.00	0.00
7,500.0	9.56	337.25	7,423.6	832.6	-349.2	-342.5	1.00	-1.00	0.00
7,600.0	8.56	337.25	7,522.3	847.2	-355.3	-348.5	1.00	-1.00	0.00
7,700.0	7.56	337.25	7,621.3	860.1	-360.7	-353.8	1.00	-1.00	0.00
7,800.0	6.56	337.25	7,720.6	871.4	-365.5	-358.5	1.00	-1.00	0.00
7,900.0	5.56	337.25	7,820.0	881.2	-369.6	-362.5	1.00	-1.00	0.00
8,000.0	4.56	337.25	7,919.6	889.3	-373.0	-365.8	1.00	-1.00	0.00
8,100.0	3.56	337.25	8,019.4	895.8	-375.7	-368.5	1.00	-1.00	0.00
8,200.0	2.56	337.25	8,119.2	900.7	-377.8	-370.5	1.00	-1.00	0.00
8,300.0	1.56	337.25	8,219.2	904.0	-379.2	-371.9	1.00	-1.00	0.00
8,400.0	0.56	337.25	8,319.1	905.7	-379.9	-372.6	1.00	-1.00	0.00
8,455.9	0.00	0.00	8,375.0	906.0	-380.0	-372.7	1.00	-1.00	0.00
8,500.0	0.00	0.00	8,419.1	906.0	-380.0	-372.7	0.00	0.00	0.00
8,600.0	0.00	0.00	8,519.1	906.0	-380.0	-372.7	0.00	0.00	0.00
8,700.0	0.00	0.00	8,619.1	906.0	-380.0	-372.7	0.00	0.00	0.00
8,800.0	0.00	0.00	8,719.1	906.0	-380.0	-372.7	0.00	0.00	0.00
8,900.0	0.00	0.00	8,819.1	906.0	-380.0	-372.7	0.00	0.00	0.00
9,000.0	0.00	0.00	8,919.1	906.0	-380.0	-372.7	0.00	0.00	0.00
9,100.0	0.00	0.00	9,019.1	906.0	-380.0	-372.7	0.00	0.00	0.00
9,200.0	0.00	0.00	9,119.1	906.0	-380.0	-372.7	0.00	0.00	0.00
9,262.4	0.00	0.00	9,181.5	906.0	-380.0	-372.7	0.00	0.00	0.00
9,300.0	3.76	89.54	9,219.1	906.0	-378.8	-371.5	10.00	10.00	0.00

Intrepid
Survey Report

Company:	Tap Rock Resources, LLC	**Local Co-ordinate Reference:**	Well Hamms State W2 #223H
Project:	Eddy County, NM (NAD 83 NME)	**TVD Reference:**	KB @ 3215.0usft
Site:	(Hamms State W2) Sec-34_T-23-S_R-27-E	**MD Reference:**	KB @ 3215.0usft
Well:	Hamms State W2 #223H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.15 Single User Db

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)
9,350.0	8.76	89.54	9,268.8	906.1	-373.3	-366.0	10.00	10.00	0.00
9,400.0	13.76	89.54	9,317.8	906.1	-363.5	-356.3	10.00	10.00	0.00
9,450.0	18.76	89.54	9,365.8	906.2	-349.5	-342.3	10.00	10.00	0.00
9,500.0	23.76	89.54	9,412.4	906.4	-331.4	-324.1	10.00	10.00	0.00
9,550.0	28.76	89.54	9,457.2	906.6	-309.3	-302.0	10.00	10.00	0.00
9,600.0	33.76	89.54	9,499.9	906.8	-283.4	-276.1	10.00	10.00	0.00
9,650.0	38.76	89.54	9,540.2	907.0	-253.8	-246.5	10.00	10.00	0.00
9,700.0	43.76	89.54	9,577.8	907.3	-220.8	-213.5	10.00	10.00	0.00
9,750.0	48.76	89.54	9,612.4	907.6	-184.7	-177.4	10.00	10.00	0.00
9,800.0	53.76	89.54	9,643.6	907.9	-145.7	-138.4	10.00	10.00	0.00
9,850.0	58.76	89.54	9,671.4	908.2	-104.2	-96.9	10.00	10.00	0.00
9,900.0	63.76	89.54	9,695.4	908.6	-60.3	-53.0	10.00	10.00	0.00
9,950.0	68.76	89.54	9,715.6	909.0	-14.6	-7.3	10.00	10.00	0.00
10,000.0	73.76	89.54	9,731.6	909.3	32.8	40.1	10.00	10.00	0.00
10,050.0	78.76	89.54	9,743.5	909.7	81.3	88.6	10.00	10.00	0.00
10,100.0	83.76	89.54	9,751.1	910.1	130.7	138.0	10.00	10.00	0.00
10,152.4	89.00	89.54	9,754.4	910.6	182.9	190.3	10.00	10.00	0.00
10,200.0	89.00	89.54	9,755.2	910.9	230.6	237.9	0.00	0.00	0.00
10,300.0	89.00	89.54	9,756.9	911.8	330.6	337.9	0.00	0.00	0.00
10,400.0	89.00	89.54	9,758.7	912.6	430.5	437.9	0.00	0.00	0.00
10,500.0	89.00	89.54	9,760.4	913.4	530.5	537.8	0.00	0.00	0.00
10,600.0	89.00	89.54	9,762.2	914.2	630.5	637.8	0.00	0.00	0.00
10,700.0	89.00	89.54	9,763.9	915.0	730.5	737.8	0.00	0.00	0.00
10,800.0	89.00	89.54	9,765.7	915.8	830.5	837.8	0.00	0.00	0.00
10,900.0	89.00	89.54	9,767.4	916.6	930.4	937.8	0.00	0.00	0.00
11,000.0	89.00	89.54	9,769.2	917.4	1,030.4	1,037.8	0.00	0.00	0.00
11,100.0	89.00	89.54	9,770.9	918.2	1,130.4	1,137.7	0.00	0.00	0.00
11,200.0	89.00	89.54	9,772.6	919.0	1,230.4	1,237.7	0.00	0.00	0.00
11,300.0	89.00	89.54	9,774.4	919.8	1,330.4	1,337.7	0.00	0.00	0.00
11,400.0	89.00	89.54	9,776.1	920.7	1,430.4	1,437.7	0.00	0.00	0.00
11,500.0	89.00	89.54	9,777.9	921.5	1,530.3	1,537.7	0.00	0.00	0.00
11,600.0	89.00	89.54	9,779.6	922.3	1,630.3	1,637.7	0.00	0.00	0.00
11,700.0	89.00	89.54	9,781.4	923.1	1,730.3	1,737.7	0.00	0.00	0.00
11,800.0	89.00	89.54	9,783.1	923.9	1,830.3	1,837.6	0.00	0.00	0.00
11,900.0	89.00	89.54	9,784.9	924.7	1,930.3	1,937.6	0.00	0.00	0.00
12,000.0	89.00	89.54	9,786.6	925.5	2,030.2	2,037.6	0.00	0.00	0.00
12,100.0	89.00	89.54	9,788.3	926.3	2,130.2	2,137.6	0.00	0.00	0.00
12,200.0	89.00	89.54	9,790.1	927.1	2,230.2	2,237.6	0.00	0.00	0.00
12,300.0	89.00	89.54	9,791.8	927.9	2,330.2	2,337.6	0.00	0.00	0.00
12,400.0	89.00	89.54	9,793.6	928.7	2,430.2	2,437.5	0.00	0.00	0.00
12,500.0	89.00	89.54	9,795.3	929.6	2,530.2	2,537.5	0.00	0.00	0.00
12,600.0	89.00	89.54	9,797.1	930.4	2,630.1	2,637.5	0.00	0.00	0.00
12,700.0	89.00	89.54	9,798.8	931.2	2,730.1	2,737.5	0.00	0.00	0.00

Intrepid
Survey Report

Company:	Tap Rock Resources, LLC	**Local Co-ordinate Reference:**	Well Hamms State W2 #223H
Project:	Eddy County, NM (NAD 83 NME)	**TVD Reference:**	KB @ 3215.0usft
Site:	(Hamms State W2) Sec-34_T-23-S_R-27-E	**MD Reference:**	KB @ 3215.0usft
Well:	Hamms State W2 #223H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.15 Single User Db

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)
12,800.0	89.00	89.54	9,800.5	932.0	2,830.1	2,837.5	0.00	0.00	0.00
12,900.0	89.00	89.54	9,802.3	932.8	2,930.1	2,937.5	0.00	0.00	0.00
13,000.0	89.00	89.54	9,804.0	933.6	3,030.1	3,037.5	0.00	0.00	0.00
13,100.0	89.00	89.54	9,805.8	934.4	3,130.0	3,137.4	0.00	0.00	0.00
13,200.0	89.00	89.54	9,807.5	935.2	3,230.0	3,237.4	0.00	0.00	0.00
13,300.0	89.00	89.54	9,809.3	936.0	3,330.0	3,337.4	0.00	0.00	0.00
13,400.0	89.00	89.54	9,811.0	936.8	3,430.0	3,437.4	0.00	0.00	0.00
13,500.0	89.00	89.54	9,812.8	937.6	3,530.0	3,537.4	0.00	0.00	0.00
13,600.0	89.00	89.54	9,814.5	938.5	3,629.9	3,637.4	0.00	0.00	0.00
13,700.0	89.00	89.54	9,816.2	939.3	3,729.9	3,737.4	0.00	0.00	0.00
13,800.0	89.00	89.54	9,818.0	940.1	3,829.9	3,837.3	0.00	0.00	0.00
13,900.0	89.00	89.54	9,819.7	940.9	3,929.9	3,937.3	0.00	0.00	0.00
14,000.0	89.00	89.54	9,821.5	941.7	4,029.9	4,037.3	0.00	0.00	0.00
14,100.0	89.00	89.54	9,823.2	942.5	4,129.9	4,137.3	0.00	0.00	0.00
14,200.0	89.00	89.54	9,825.0	943.3	4,229.8	4,237.3	0.00	0.00	0.00
14,300.0	89.00	89.54	9,826.7	944.1	4,329.8	4,337.3	0.00	0.00	0.00
14,409.2	89.00	89.54	9,828.6	945.0	4,439.0	4,446.4	0.00	0.00	0.00

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
FTP (Hamms State W	0.00	0.00	9,751.0	908.0	-147.0	458,138.00	587,016.00	32° 15' 33.876 N	104° 11' 8.017 W
- plan misses target center by 90.4usft at 9850.7usft MD (9671.8 TVD, 908.2 N, -103.6 E)									
- Point									
PBHL (Hamms State '	1.00	89.54	9,828.6	945.0	4,439.0	458,175.00	591,602.00	32° 15' 34.177 N	104° 10' 14.606 W
- plan hits target center									
- Rectangle (sides W100.0 H4,585.0 D30.0)									

Intrepid
Survey Report

Company:	Tap Rock Resources, LLC	**Local Co-ordinate Reference:**	Well Hamms State W2 #223H
Project:	Eddy County, NM (NAD 83 NME)	**TVD Reference:**	KB @ 3215.0usft
Site:	(Hamms State W2) Sec-34_T-23-S_R-27-E	**MD Reference:**	KB @ 3215.0usft
Well:	Hamms State W2 #223H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.15 Single User Db

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
275.0	275.0	Rustler Anhydrite			
510.0	510.0	Top Salt			
1,965.0	1,965.0	Base Salt			
2,175.3	2,175.0	Delaware Mountain Gp			
2,250.5	2,250.0	Lamar			
2,255.5	2,255.0	Bell Canyon			
2,355.9	2,355.0	Ramsey Sand			
3,048.8	3,040.0	Cherry Canyon			
4,145.5	4,120.0	Brushy Canyon			
5,658.5	5,610.0	Bone Spring Lime			
5,688.9	5,640.0	Upper Avalon			
6,085.0	6,030.0	Middle Avalon			
6,450.5	6,390.0	Lower Avalon			
6,760.2	6,695.0	1st Bone Spring Sand			
7,009.0	6,940.0	2nd Bone Spring Carb			
7,349.2	7,275.0	2nd Bone Spring Sand			
7,542.0	7,465.0	3rd Bone Spring Carb			
8,725.9	8,645.0	3rd Bone Spring Sand			
9,030.9	8,950.0	3rd BS W Sand			
9,095.9	9,015.0	Wolfcamp A X Sand			
9,155.9	9,075.0	Wolfcamp A Y Sand			
9,225.9	9,145.0	Wolfcamp A Lower			
9,459.7	9,375.0	Wolfcamp B			
9,738.9	9,605.0	Wolfcamp B1			
10,761.8	9,765.0	Wolfcamp C			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1800	1800	0	0	NUDGE - Build 1.00
2800	2795	80	-34	HOLD - 4656.1 at 2799.9 MD
7456	7380	826	-346	DROP - -1.00
8456	8375	906	-380	HOLD - 806.5 at 8455.9 MD
9262	9182	906	-380	KOP - DLS 10.00 TFO 89.54
10,152	9754	911	183	EOC - 4256.8 hold at 10152.4 MD
14,409	9829	945	4439	TD at 14409.2

Checked By: _____ Approved By: _____ Date: _____

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: _____Tap Rock Operating LLC_____ **OGRID:** _____372043_____ **Date:** _12/21/2021_

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water
Hamms State #223H		Sec 34, T23S R 27E	1071 FSL, 495 FWL	565	4760	2746

IV. Central Delivery Point Name: ___Hamms State CDP_____ [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Hamms State #223H		3/17/22	3/25/22	5/19/22	5/25/22	6/16/22

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Jeffrey Trlica
Title: Regulatory Analyst
E-mail Address: jtrlica@taprk.com
Date: 12/21/2021
Phone: 720-772-5910

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

VI. **Separation Equipment:** Attach a complete description of how Operator will size separation equipment to optimize gas capture:

Each surface facility design includes the following process equipment: 3-phase separators (1 separator per well), a sales gas scrubber, one or two 3-phase heater treaters, a vapor recovery tower (VRT), a VRU compressor, multiple water and oil tanks, as well as flare knockouts (HP & LP), and flares (HP & LP). All process vessels will be sized to separate oil, water, gas based upon typical/historical & predicted well performance. Each process vessel will be fitted with an appropriately sized PSV as per ASME code requirements to mitigate vessel rupture and loss of containment. Additionally, the process vessels will be fitted with pressure transmitters tied to the facility control system which will allow operations to monitor pressures and when necessary, shut-in the facility to avoid vessel over-pressure and the potential vent of natural gas. Natural gas will preferentially be sold to pipeline, and only during upset/emergency conditions will gas be directed to the HP flare system. Flash gas from both the 3-phase heater treater and the VRT will be recompressed using a VRU compressor and this gas will also preferentially be directed to the gas sales pipeline. Oil tanks & water tanks will be fitted with 16 oz thief hatches as well as PVRVs to protect the tanks from rupture/collapse. Additionally, the tank vapor outlets and tank vapor capture system will be sized to keep tank pressures below 12 oz. The tank vapor capture system will include a tank vapor blower & knockout as well as a low-pressure flare and knockout. Tank vapors will preferentially be directed to the VRU and the sales gas pipeline. Only during process upsets/emergency conditions will tank vapors be directed to the LP flare system.

VII. **Operational Practices:** Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC. ← See attached reg for requirements.

- During drilling operations- Gas meters will be installed at the shakers and Volume Totalizers will be installed on the pits. In the event that elevated gas levels, or a pit gain are observed, returns will be diverted to a gas buster. Gas coming off the gas buster will be combusted at the flare stack. A 10’ or taller flare will be located at least 100’ from the SHL.

- During completions operations, including stimulation and frac plug drill out operations, hydrocarbon production to surface is minimized. When gas production does occur, gas will be combusted at a flare stack. A 10’ or taller flare will be located at least 100’ from the SHL.

- During production operations, all process vessels (separators, heater treaters, VRTs, Tanks) will recompress (where necessary) and route gas outlets into the natural gas gathering pipeline. Gas will preferentially be routed to natural gas gathering pipeline and the flare system will be used only during emergency, malfunction, or if the gas does not meet pipeline specifications. In the event of flaring off-specification gas, operations will pull gas samples twice a week and will also route gas back to pipeline as soon as the gas meets specification. Exceptions to this will include only those qualified exceptions per the regulation 19.15.27.8 Subsection D.

- To comply with state performance standards, separation and storage equipment will be designed to handle the maximum anticipated throughput and pressure to minimize waste and reduce the likelihood of venting gas to atmosphere. Additionally, each storage atmospheric tank (Oil & Water) will be fitted with a level transmitter to facilitate gauging of the tank without opening of the thief hatch. Any gas collected through the tank vent system is expected to be recompressed and routed to sales. However, in the event of an emergency, the tank vapor capture system will be designed to combust the gas using a flare stack fitted with a continuous or automatic ignitor. The flare stack will be properly anchored and will be located a minimum of 100 feet from the well and storage tanks. Operators will conduct weekly AVO inspections. These AVO inspection records will be stored for the required 5-year period and will be made available upon Division request.

VIII. **Best Management Practices:** Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- When performing routine or preventive maintenance on a vessel or tank, initially all inlet valves are closed, and the vessel or tank is allowed to depressurize through the normal outlet connections to gas sales and/or liquid tanks. Once the vessel or tank is depressurized to lowest acceptable sales outlet pressure, usually around 20 psig, a temporary low-pressure flowline is connected from the vessel or tank to the Vapor Recovery Unit (VRU) for further pressure reduction. Once depressurized to less than 1-2 psig, the remaining natural gas in the vessel or tank is vented to atmosphere through a controlled pressure relief valve. Once the vessel or tank is depressurized to atmospheric pressure, the vessel or tank can be safely opened, and maintenance performed.