

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 272136

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

1. Operator Name and Address TAP ROCK OPERATING, LLC 602 Park Point Drive Golden, CO 80401		2. OGRID Number 372043
4. Property Code 326121		3. API Number 30-015-46289
5. Property Name DELIRIUM STATE COM		6. Well No. 244H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
P	13	25S	27E	P	384	S	941	E	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
A	13	25S	27E	A	200	N	750	E	Eddy

9. Pool Information

PURPLE SAGE;WOLFCAMP (GAS)	98220
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Additional Well Information

11. Work Type New Well	12. Well Type GAS	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3088
16. Multiple N	17. Proposed Depth 15130	18. Formation Wolfcamp	19. Contractor	20. Spud Date 8/16/2020
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	13.378	54.5	750	775	0
Int1	12.25	9.625	40	2420	650	0
Int2	8.75	7.625	29.7	9650	420	2120
Prod	6.75	5.5	20	9450	0	8650
Prod	6.75	5	18	15130	520	8950

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	1500	
Double Ram	10000	5000	
Blind	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:	OIL CONSERVATION DIVISION
Printed Name: Electronically filed by Christian Combs Title: Regulatory Manager Email Address: ccombs@taprk.com Date: 9/20/2019	Approved By: Raymond Podany Title: Geologist Approved Date: 9/20/2019 Expiration Date: 9/20/2021 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		³ Pool Name			
⁴ Property Code		⁵ Property Name DELIRIUM STATE COM				⁶ Well Number 244H	
⁷ OGRID No.		⁸ Operator Name TAP ROCK OPERATING, LLC.				⁹ Elevation 3088'	

¹⁰Surface Location

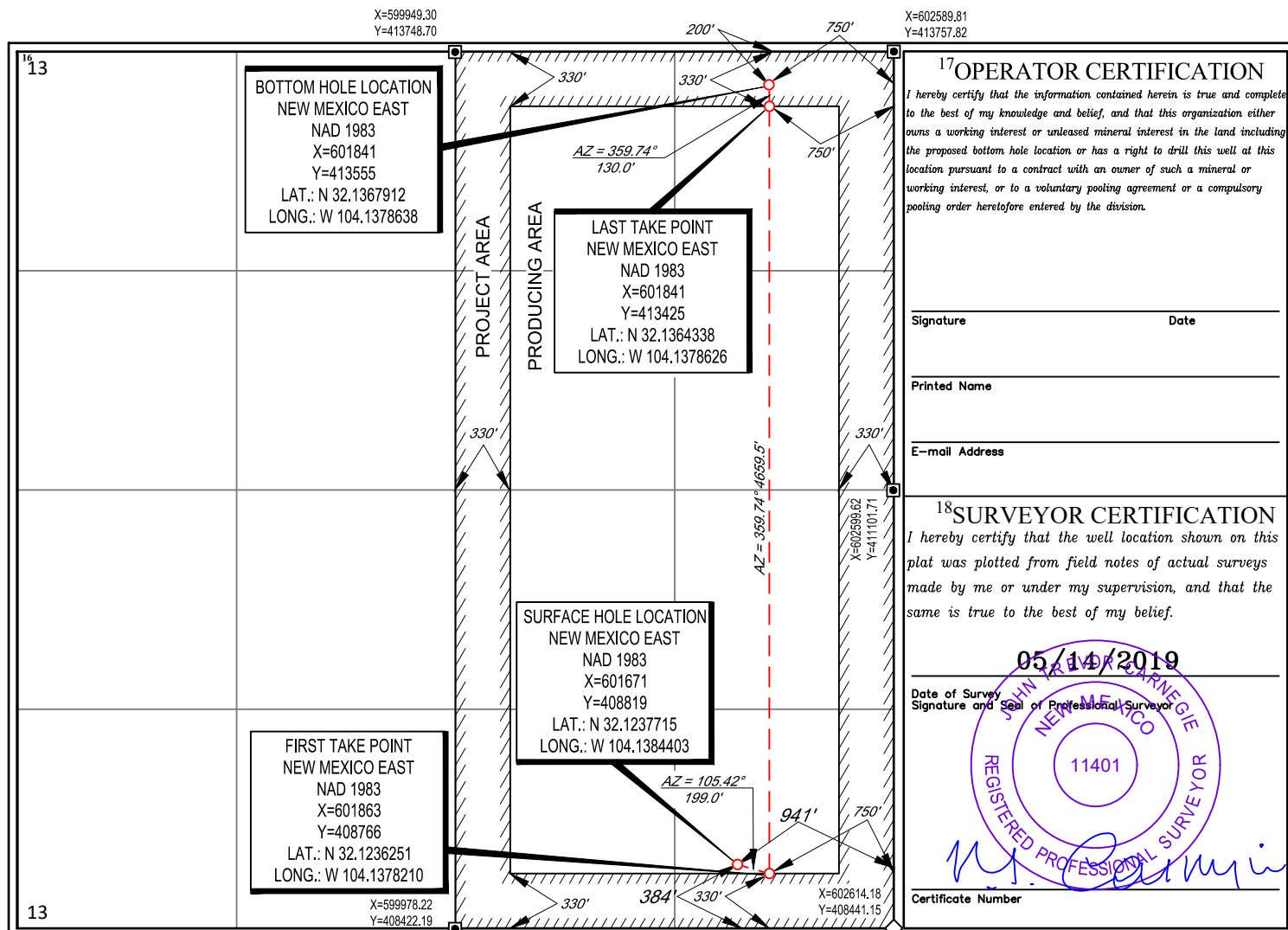
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	13	25-S	27-E	-	384'	SOUTH	941'	EAST	EDDY

¹¹Bottom Hole Location If Different From Surface

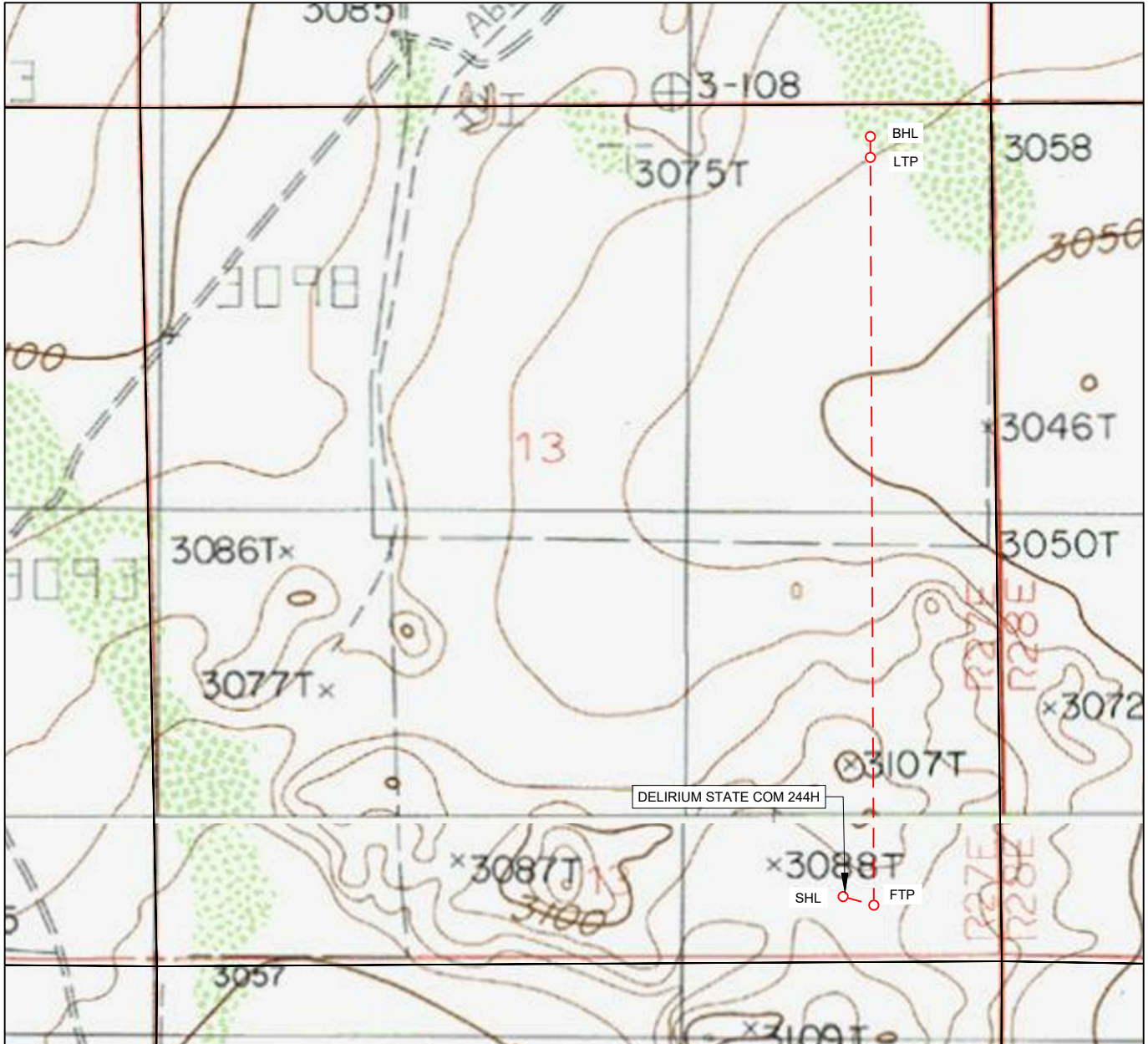
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	13	25-S	27-E	-	200'	NORTH	750'	EAST	EDDY

¹² Dedicated Acres	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.



LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME & WELL NO.: DELIRIUM STATE COM 244H

SECTION 13 TWP 25-S RGE 27-E SURVEY N.M.P.M.
 COUNTY EDDY STATE NM ELEVATION 3088'
 DESCRIPTION 384' FSL & 941' FEL

LATITUDE N 32.1237715 LONGITUDE W 104.1384403



SCALE: 1" = 1000'
 0' 500' 1000'

THIS EASEMENT/SERVITUDE 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. 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.

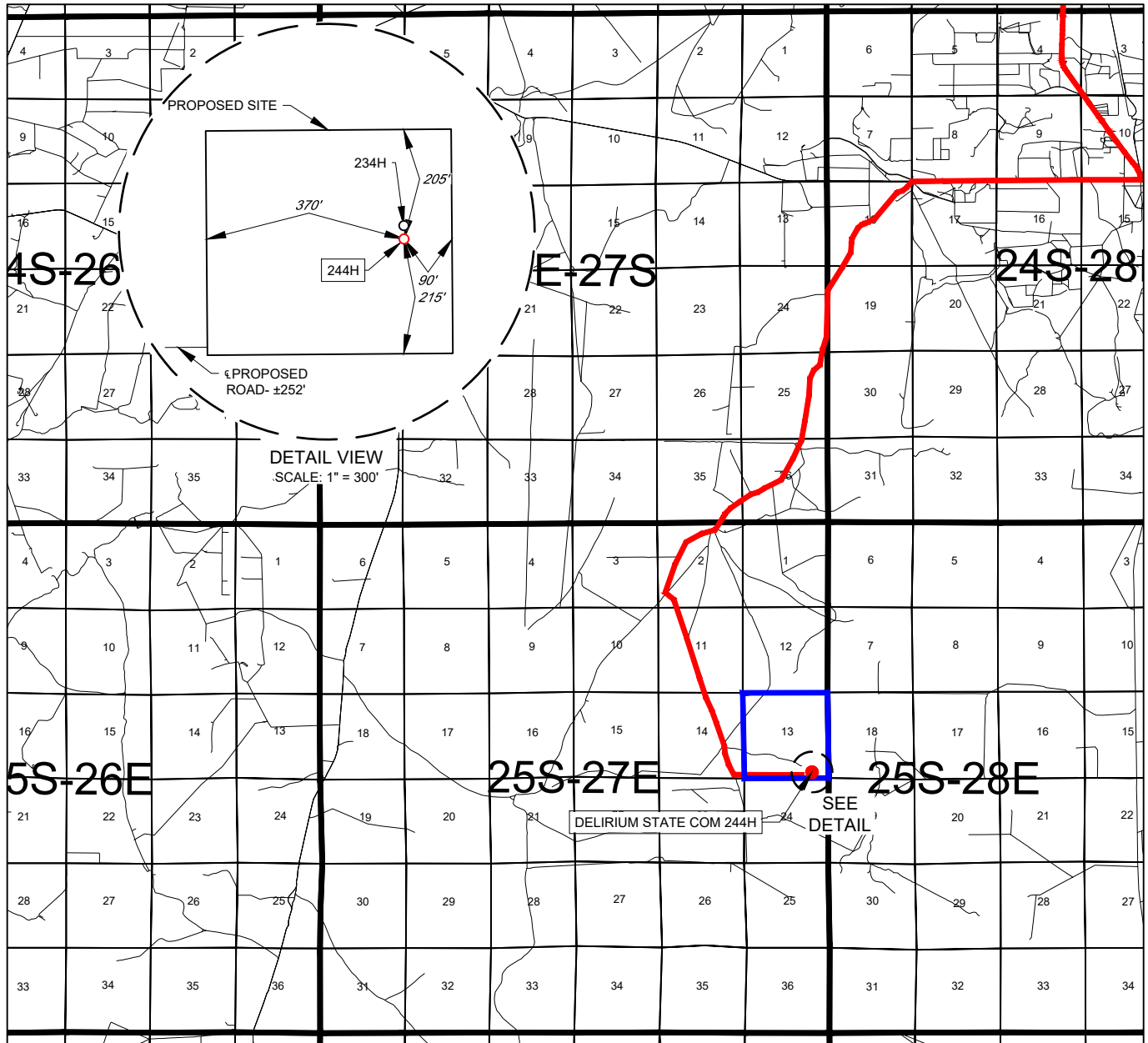
ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.



TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY

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

EXHIBIT 2 VICINITY MAP



LEASE NAME & WELL NO.: DELIRIUM STATE COM 244H

SECTION 13 TWP 25-S RGE 27-E SURVEY N.M.P.M.
 COUNTY EDDY STATE NM
 DESCRIPTION 384' FSL & 941' FEL

DISTANCE & DIRECTION

FROM INT. OF US-285 & BLACK RIVER VILLAGE RD., HEAD WEST ON BLACK RIVER VILLAGE RD. ±2.7 MILES, THENCE LEFT ONTO ROADRUNNER RD. ±6.1 MILES, THENCE LEFT ON LEASE RD. ±2.4 MILES, THENCE LEFT ON A LEASE RD. ±0.8 MILE, THENCE LEFT ON A PROPOSED RD. ±252 FEET TO A POINT ±421 FEET SOUTHWEST OF THE LOCATION.



SCALE: 1" = 10000'
 0' 5000' 10000'



TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY

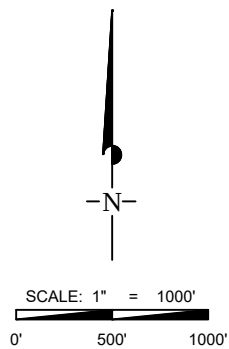
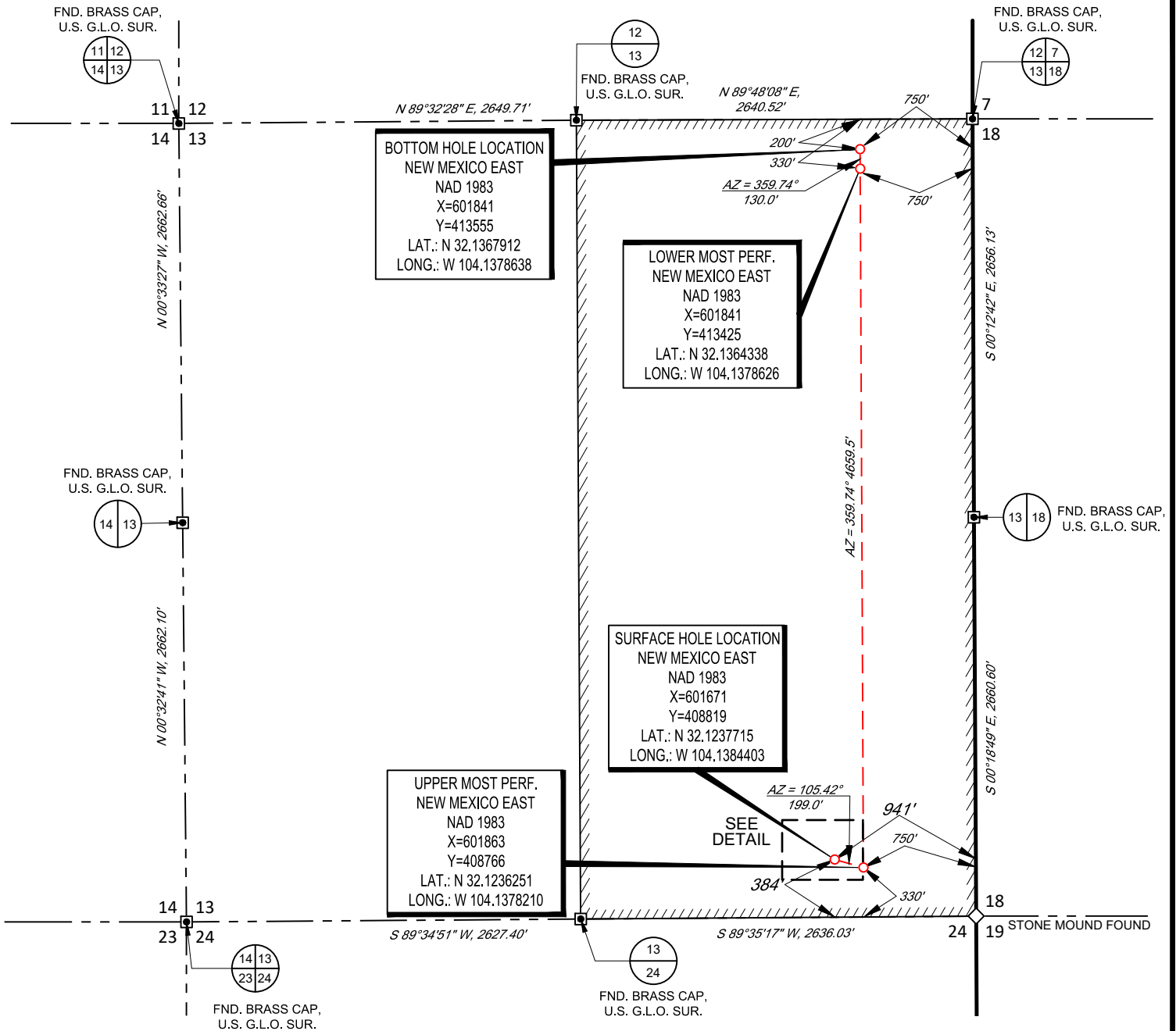
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TAP
ROCK
EXHIBIT 2A

SECTION 13, TOWNSHIP 25-S, RANGE 27-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



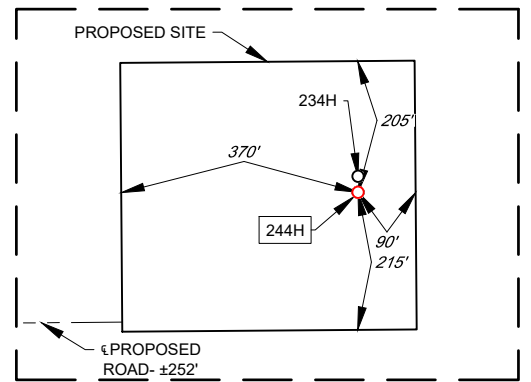
LEASE NAME & WELL NO.: _____ DELIRIUM STATE COM 244H

SECTION 13 TWP 25-S RGE 27-E SURVEY N.M.P.M.
COUNTY EDDY STATE NM
DESCRIPTION 384' FSL & 941' FEL

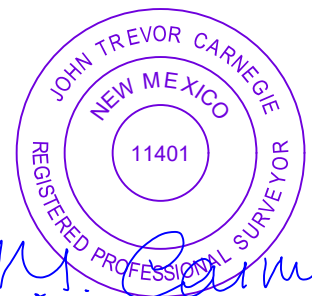
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ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.

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DETAIL VIEW
SCALE: 1" = 300'



John Trevor Carnegie, P.S. No. 11401
MAY 14, 2019

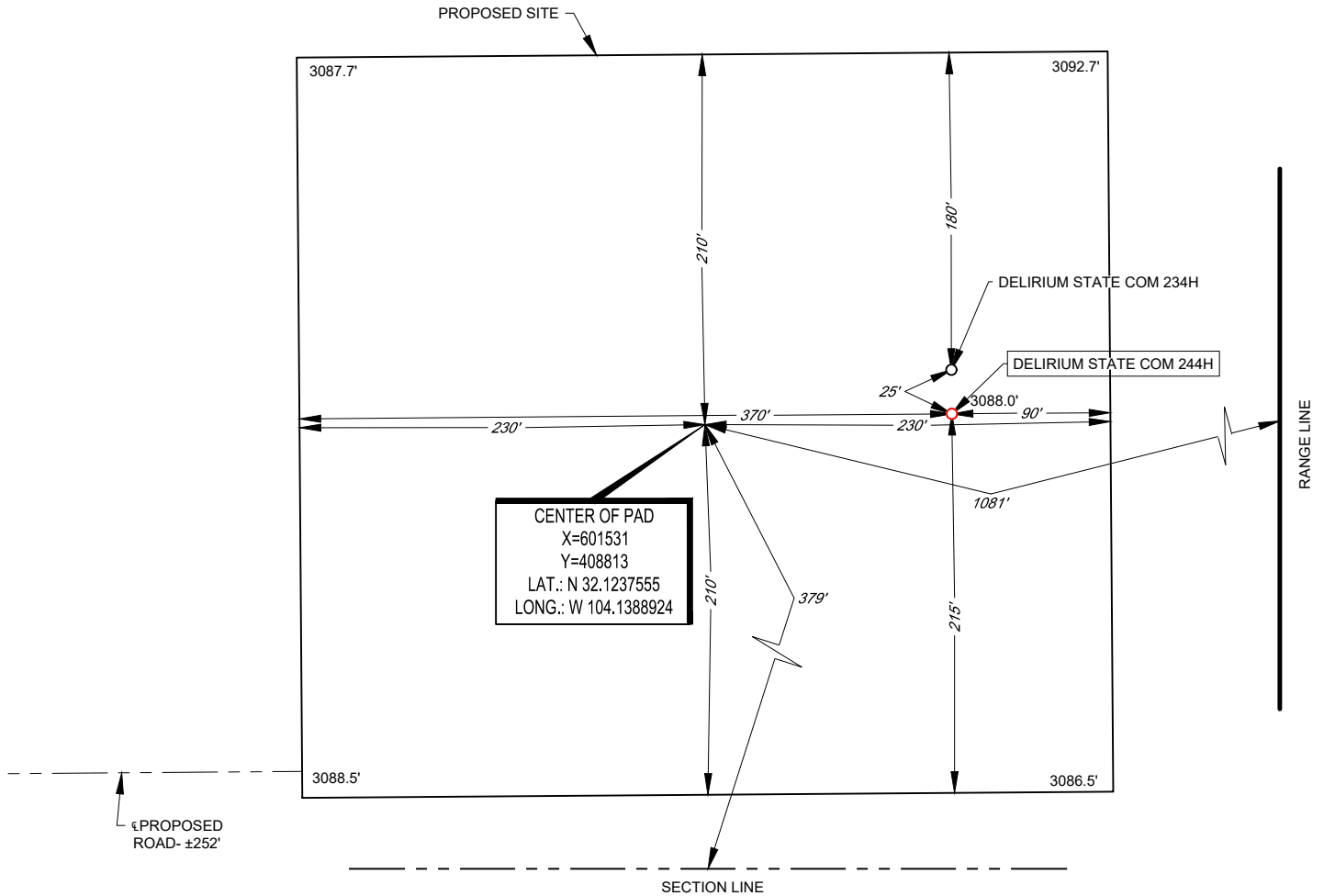
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EXHIBIT 2B



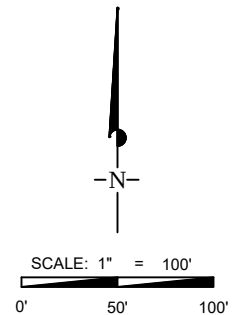
SECTION 13, TOWNSHIP 25-S, RANGE 27-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: DELIRIUM STATE COM 244H
244H LATITUDE N 32.1237715 244H LONGITUDE W 104.1384403

CENTER OF PAD IS 379' FSL & 1081' FEL



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.

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. 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.

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Santa Fe, NM 87505

GAS CAPTURE PLAN

Date: 9/20/2019

☒ 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
DELIRIUM STATE COM #244H	30-015-46289	P-13-25S-27E	0384S 0941E	2000	None	

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 ARM Midstream Management, LLC and will be connected to ARM Midstream Management, LLC High Pressure gathering system located in Eddy County, New Mexico. It will require 100' of pipeline to connect the facility to High Pressure gathering system. TAP ROCK OPERATING, LLC provides (periodically) to ARM Midstream Management, 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 ARM Midstream Management, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at ARM Midstream Management, LLC Processing Plant located in Sec. 13, Twn. 25S, Rng. 27E, Eddy 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 ARM Midstream Management, 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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Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 272136

PERMIT COMMENTS

Operator Name and Address: TAP ROCK OPERATING, LLC [372043] 602 Park Point Drive Golden, CO 80401		API Number: 30-015-46289
		Well: DELIRIUM STATE COM #244H

Created By	Comment	Comment Date
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Santa Fe, NM 87505

Form APD Conditions

Permit 272136

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: TAP ROCK OPERATING, LLC [372043] 602 Park Point Drive Golden, CO 80401		API Number: 30-015-46289
		Well: DELIRIUM STATE COM #244H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	



Tap Rock Operating, LLC.

Eddy County, NM (NAD83)

Delirium State Com

244H

OH

Plan: Plan #1

Standard Planning Report

17 June, 2019

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

Site	Delirium State Com		
Site Position:		Northing:	408,843.65 usft
From:	Lat/Long	Easting:	601,670.57 usft
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 7' 25.825 N
		Longitude:	104° 8' 18.387 W
		Grid Convergence:	0.10 °

Well	244H		
Well Position	+N/-S	-25.0 usft	Northing:
	+E/-W	0.2 usft	Easting:
Position Uncertainty	2.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 7' 25.577 N
		Longitude:	104° 8' 18.385 W
		Ground Level:	3,088.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/17/2019	6.99	59.86	47,616

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	359.74

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,333.3	5.00	152.10	1,332.9	-12.8	6.8	1.50	1.50	0.00	152.10	
5,733.3	5.00	152.10	5,716.2	-351.8	186.2	0.00	0.00	0.00	0.00	
6,066.7	0.00	0.00	6,049.1	-364.6	193.0	1.50	-1.50	0.00	180.00	
9,699.6	0.00	0.00	9,682.0	-364.6	193.0	0.00	0.00	0.00	0.00	
10,596.6	89.69	359.74	10,255.0	205.3	190.5	10.00	10.00	0.00	359.74	
14,997.9	89.69	359.74	10,278.8	4,606.6	170.5	0.00	0.00	0.00	0.00	LTP (244H)
15,128.0	89.69	359.74	10,279.5	4,736.6	169.9	0.00	0.00	0.00	0.00	PBHL (244H)

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
Build to 5° Inc, 152.1° Azm									
1,100.0	1.50	152.10	1,100.0	-1.2	0.6	-1.2	1.50	1.50	0.00
1,200.0	3.00	152.10	1,199.9	-4.6	2.4	-4.6	1.50	1.50	0.00
1,300.0	4.50	152.10	1,299.7	-10.4	5.5	-10.4	1.50	1.50	0.00
1,333.3	5.00	152.10	1,332.9	-12.8	6.8	-12.9	1.50	1.50	0.00
1,400.0	5.00	152.10	1,399.3	-18.0	9.5	-18.0	0.00	0.00	0.00
1,500.0	5.00	152.10	1,498.9	-25.7	13.6	-25.7	0.00	0.00	0.00
1,600.0	5.00	152.10	1,598.6	-33.4	17.7	-33.5	0.00	0.00	0.00
1,700.0	5.00	152.10	1,698.2	-41.1	21.8	-41.2	0.00	0.00	0.00
1,800.0	5.00	152.10	1,797.8	-48.8	25.8	-48.9	0.00	0.00	0.00
1,900.0	5.00	152.10	1,897.4	-56.5	29.9	-56.6	0.00	0.00	0.00
2,000.0	5.00	152.10	1,997.0	-64.2	34.0	-64.3	0.00	0.00	0.00
2,100.0	5.00	152.10	2,096.7	-71.9	38.1	-72.1	0.00	0.00	0.00
2,140.5	5.00	152.10	2,137.0	-75.0	39.7	-75.2	0.00	0.00	0.00
Bae of Salt									
2,200.0	5.00	152.10	2,196.3	-79.6	42.1	-79.8	0.00	0.00	0.00
2,300.0	5.00	152.10	2,295.9	-87.3	46.2	-87.5	0.00	0.00	0.00
2,341.3	5.00	152.10	2,337.0	-90.5	47.9	-90.7	0.00	0.00	0.00
Lamar									
2,364.3	5.00	152.10	2,360.0	-92.3	48.8	-92.5	0.00	0.00	0.00
Bell Canyon									
2,400.0	5.00	152.10	2,395.5	-95.0	50.3	-95.2	0.00	0.00	0.00
2,500.0	5.00	152.10	2,495.1	-102.7	54.4	-103.0	0.00	0.00	0.00
2,600.0	5.00	152.10	2,594.8	-110.4	58.5	-110.7	0.00	0.00	0.00
2,700.0	5.00	152.10	2,694.4	-118.1	62.5	-118.4	0.00	0.00	0.00
2,800.0	5.00	152.10	2,794.0	-125.8	66.6	-126.1	0.00	0.00	0.00
2,900.0	5.00	152.10	2,893.6	-133.5	70.7	-133.8	0.00	0.00	0.00
3,000.0	5.00	152.10	2,993.2	-141.2	74.8	-141.6	0.00	0.00	0.00
3,100.0	5.00	152.10	3,092.9	-148.9	78.9	-149.3	0.00	0.00	0.00
3,200.0	5.00	152.10	3,192.5	-156.6	82.9	-157.0	0.00	0.00	0.00
3,300.0	5.00	152.10	3,292.1	-164.3	87.0	-164.7	0.00	0.00	0.00
3,400.0	5.00	152.10	3,391.7	-172.0	91.1	-172.4	0.00	0.00	0.00
3,451.5	5.00	152.10	3,443.0	-176.0	93.2	-176.4	0.00	0.00	0.00
Cherry Canyon									
3,500.0	5.00	152.10	3,491.3	-179.7	95.2	-180.2	0.00	0.00	0.00
3,600.0	5.00	152.10	3,591.0	-187.4	99.2	-187.9	0.00	0.00	0.00
3,700.0	5.00	152.10	3,690.6	-195.1	103.3	-195.6	0.00	0.00	0.00
3,800.0	5.00	152.10	3,790.2	-202.8	107.4	-203.3	0.00	0.00	0.00
3,900.0	5.00	152.10	3,889.8	-210.5	111.5	-211.0	0.00	0.00	0.00
4,000.0	5.00	152.10	3,989.4	-218.2	115.6	-218.8	0.00	0.00	0.00
4,100.0	5.00	152.10	4,089.0	-225.9	119.6	-226.5	0.00	0.00	0.00
4,200.0	5.00	152.10	4,188.7	-233.7	123.7	-234.2	0.00	0.00	0.00
4,300.0	5.00	152.10	4,288.3	-241.4	127.8	-241.9	0.00	0.00	0.00
4,400.0	5.00	152.10	4,387.9	-249.1	131.9	-249.7	0.00	0.00	0.00
4,414.1	5.00	152.10	4,402.0	-250.1	132.4	-250.7	0.00	0.00	0.00
Brushy Canyon									
4,500.0	5.00	152.10	4,487.5	-256.8	135.9	-257.4	0.00	0.00	0.00
4,600.0	5.00	152.10	4,587.1	-264.5	140.0	-265.1	0.00	0.00	0.00
4,700.0	5.00	152.10	4,686.8	-272.2	144.1	-272.8	0.00	0.00	0.00
4,800.0	5.00	152.10	4,786.4	-279.9	148.2	-280.5	0.00	0.00	0.00
4,900.0	5.00	152.10	4,886.0	-287.6	152.3	-288.3	0.00	0.00	0.00
5,000.0	5.00	152.10	4,985.6	-295.3	156.3	-296.0	0.00	0.00	0.00
5,100.0	5.00	152.10	5,085.2	-303.0	160.4	-303.7	0.00	0.00	0.00
5,200.0	5.00	152.10	5,184.9	-310.7	164.5	-311.4	0.00	0.00	0.00
5,300.0	5.00	152.10	5,284.5	-318.4	168.6	-319.1	0.00	0.00	0.00

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,400.0	5.00	152.10	5,384.1	-326.1	172.7	-326.9	0.00	0.00	0.00	
5,500.0	5.00	152.10	5,483.7	-333.8	176.7	-334.6	0.00	0.00	0.00	
5,600.0	5.00	152.10	5,583.3	-341.5	180.8	-342.3	0.00	0.00	0.00	
5,700.0	5.00	152.10	5,683.0	-349.2	184.9	-350.0	0.00	0.00	0.00	
5,733.3	5.00	152.10	5,716.1	-351.8	186.2	-352.6	0.00	0.00	0.00	
Drop to Vert @ 5733.3' MD										
5,800.0	4.00	152.10	5,782.6	-356.4	188.7	-357.2	1.50	-1.50	0.00	
5,900.0	2.50	152.10	5,882.5	-361.4	191.3	-362.3	1.50	-1.50	0.00	
6,000.0	1.00	152.10	5,982.4	-364.1	192.8	-365.0	1.50	-1.50	0.00	
6,066.7	0.00	0.00	6,049.1	-364.6	193.0	-365.5	1.50	-1.50	0.00	
6,088.6	0.00	0.00	6,071.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
BS Lime										
6,100.0	0.00	0.00	6,082.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,172.6	0.00	0.00	6,155.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
Avalon										
6,200.0	0.00	0.00	6,182.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,282.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,382.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,482.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,582.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,682.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,782.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,882.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
6,929.6	0.00	0.00	6,912.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
1st BS Sand										
7,000.0	0.00	0.00	6,982.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,082.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,182.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,282.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,382.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,482.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,546.6	0.00	0.00	7,529.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
2nd BS Sand										
7,600.0	0.00	0.00	7,582.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,682.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,782.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,882.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,982.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,082.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,182.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,282.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,382.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,482.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,582.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,682.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,782.6	0.00	0.00	8,765.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
3rd BS Sand										
8,800.0	0.00	0.00	8,782.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,882.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,982.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,082.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,117.6	0.00	0.00	9,100.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
WCA X Sand										
9,179.6	0.00	0.00	9,162.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
WCA Y Sand										
9,200.0	0.00	0.00	9,182.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,282.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,382.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,487.6	0.00	0.00	9,470.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
WCB										
9,500.0	0.00	0.00	9,482.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,582.4	-364.6	193.0	-365.5	0.00	0.00	0.00	
9,699.6	0.00	0.00	9,682.0	-364.6	193.0	-365.5	0.00	0.00	0.00	
KOP @ 9682 TVD										
9,750.0	5.04	359.74	9,732.3	-362.4	193.0	-363.3	10.00	10.00	0.00	

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,780.9	8.13	359.74	9,763.0	-358.8	193.0	-359.7	10.00	10.00	0.00
WCB1									
9,800.0	10.04	359.74	9,781.9	-355.8	193.0	-356.7	10.00	10.00	0.00
9,850.0	15.04	359.74	9,830.7	-345.0	193.0	-345.8	10.00	10.00	0.00
9,900.0	20.04	359.74	9,878.3	-329.9	192.9	-330.8	10.00	10.00	0.00
9,950.0	25.04	359.74	9,924.5	-310.8	192.8	-311.6	10.00	10.00	0.00
10,000.0	30.04	359.74	9,968.8	-287.6	192.7	-288.5	10.00	10.00	0.00
10,003.7	30.40	359.74	9,972.0	-285.8	192.7	-286.7	10.00	10.00	0.00
WCC									
10,050.0	35.04	359.74	10,011.0	-260.8	192.6	-261.6	10.00	10.00	0.00
10,100.0	40.04	359.74	10,050.6	-230.3	192.4	-231.2	10.00	10.00	0.00
10,150.0	45.04	359.74	10,087.4	-196.5	192.3	-197.4	10.00	10.00	0.00
10,200.0	50.04	359.74	10,121.2	-159.6	192.1	-160.5	10.00	10.00	0.00
10,250.0	55.04	359.74	10,151.6	-120.0	191.9	-120.8	10.00	10.00	0.00
10,300.0	60.04	359.74	10,178.4	-77.8	191.7	-78.7	10.00	10.00	0.00
10,350.0	65.04	359.74	10,201.5	-33.4	191.5	-34.3	10.00	10.00	0.00
10,400.0	70.03	359.74	10,220.6	12.7	191.3	11.9	10.00	10.00	0.00
10,450.0	75.03	359.74	10,235.6	60.4	191.1	59.6	10.00	10.00	0.00
10,500.0	80.03	359.74	10,246.4	109.2	190.9	108.4	10.00	10.00	0.00
10,550.0	85.03	359.74	10,252.9	158.8	190.7	157.9	10.00	10.00	0.00
10,596.6	89.69	359.74	10,255.0	205.3	190.5	204.4	10.00	10.00	0.00
10,596.9	89.69	359.74	10,255.0	205.6	190.5	204.8	0.00	0.00	0.00
EOC - 89.69° Inc, 10255' TVD									
10,600.0	89.69	359.74	10,255.0	208.7	190.4	207.9	0.00	0.00	0.00
10,700.0	89.69	359.74	10,255.6	308.7	190.0	307.9	0.00	0.00	0.00
10,800.0	89.69	359.74	10,256.1	408.7	189.5	407.9	0.00	0.00	0.00
10,900.0	89.69	359.74	10,256.6	508.7	189.1	507.9	0.00	0.00	0.00
11,000.0	89.69	359.74	10,257.2	608.7	188.6	607.9	0.00	0.00	0.00
11,100.0	89.69	359.74	10,257.7	708.7	188.2	707.9	0.00	0.00	0.00
11,200.0	89.69	359.74	10,258.3	808.7	187.7	807.9	0.00	0.00	0.00
11,300.0	89.69	359.74	10,258.8	908.7	187.3	907.9	0.00	0.00	0.00
11,400.0	89.69	359.74	10,259.3	1,008.7	186.8	1,007.9	0.00	0.00	0.00
11,500.0	89.69	359.74	10,259.9	1,108.7	186.4	1,107.9	0.00	0.00	0.00
11,600.0	89.69	359.74	10,260.4	1,208.7	185.9	1,207.9	0.00	0.00	0.00
11,700.0	89.69	359.74	10,261.0	1,308.7	185.5	1,307.8	0.00	0.00	0.00
11,800.0	89.69	359.74	10,261.5	1,408.7	185.0	1,407.8	0.00	0.00	0.00
11,900.0	89.69	359.74	10,262.1	1,508.7	184.5	1,507.8	0.00	0.00	0.00
12,000.0	89.69	359.74	10,262.6	1,608.7	184.1	1,607.8	0.00	0.00	0.00
12,100.0	89.69	359.74	10,263.1	1,708.7	183.6	1,707.8	0.00	0.00	0.00
12,200.0	89.69	359.74	10,263.7	1,808.7	183.2	1,807.8	0.00	0.00	0.00
12,300.0	89.69	359.74	10,264.2	1,908.7	182.7	1,907.8	0.00	0.00	0.00
12,400.0	89.69	359.74	10,264.8	2,008.7	182.3	2,007.8	0.00	0.00	0.00
12,500.0	89.69	359.74	10,265.3	2,108.7	181.8	2,107.8	0.00	0.00	0.00
12,600.0	89.69	359.74	10,265.8	2,208.7	181.4	2,207.8	0.00	0.00	0.00
12,700.0	89.69	359.74	10,266.4	2,308.7	180.9	2,307.8	0.00	0.00	0.00
12,800.0	89.69	359.74	10,266.9	2,408.7	180.5	2,407.8	0.00	0.00	0.00
12,900.0	89.69	359.74	10,267.5	2,508.7	180.0	2,507.8	0.00	0.00	0.00
13,000.0	89.69	359.74	10,268.0	2,608.7	179.6	2,607.8	0.00	0.00	0.00
13,100.0	89.69	359.74	10,268.5	2,708.7	179.1	2,707.8	0.00	0.00	0.00
13,200.0	89.69	359.74	10,269.1	2,808.7	178.6	2,807.8	0.00	0.00	0.00
13,300.0	89.69	359.74	10,269.6	2,908.7	178.2	2,907.8	0.00	0.00	0.00
13,400.0	89.69	359.74	10,270.2	3,008.7	177.7	3,007.8	0.00	0.00	0.00
13,500.0	89.69	359.74	10,270.7	3,108.7	177.3	3,107.8	0.00	0.00	0.00
13,600.0	89.69	359.74	10,271.2	3,208.7	176.8	3,207.8	0.00	0.00	0.00
13,700.0	89.69	359.74	10,271.8	3,308.7	176.4	3,307.8	0.00	0.00	0.00
13,800.0	89.69	359.74	10,272.3	3,408.7	175.9	3,407.8	0.00	0.00	0.00
13,900.0	89.69	359.74	10,272.9	3,508.6	175.5	3,507.8	0.00	0.00	0.00
14,000.0	89.69	359.74	10,273.4	3,608.6	175.0	3,607.8	0.00	0.00	0.00
14,100.0	89.69	359.74	10,274.0	3,708.6	174.6	3,707.8	0.00	0.00	0.00
14,108.3	89.69	359.74	10,274.0	3,716.9	174.5	3,716.1	0.00	0.00	0.00
WCD									
14,200.0	89.69	359.74	10,274.5	3,808.6	174.1	3,807.8	0.00	0.00	0.00
14,300.0	89.69	359.74	10,275.0	3,908.6	173.7	3,907.8	0.00	0.00	0.00
14,400.0	89.69	359.74	10,275.6	4,008.6	173.2	4,007.8	0.00	0.00	0.00
14,500.0	89.69	359.74	10,276.1	4,108.6	172.7	4,107.8	0.00	0.00	0.00
14,600.0	89.69	359.74	10,276.7	4,208.6	172.3	4,207.8	0.00	0.00	0.00

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,700.0	89.69	359.74	10,277.2	4,308.6	171.8	4,307.8	0.00	0.00	0.00
14,800.0	89.69	359.74	10,277.7	4,408.6	171.4	4,407.8	0.00	0.00	0.00
14,900.0	89.69	359.74	10,278.3	4,508.6	170.9	4,507.8	0.00	0.00	0.00
14,997.9	89.69	359.74	10,278.8	4,606.6	170.5	4,605.7	0.00	0.00	0.00
15,000.0	89.69	359.74	10,278.8	4,608.6	170.5	4,607.8	0.00	0.00	0.00
15,100.0	89.69	359.74	10,279.4	4,708.6	170.0	4,707.8	0.00	0.00	0.00
15,128.0	89.69	359.74	10,279.5	4,736.6	169.9	4,735.8	0.00	0.00	0.00
TD @ 15128' MD, 10280' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
FTP (244H)	0.00	0.00	10,255.0	-52.9	191.8	408,765.74	601,862.58	32° 7' 25.050 N	104° 8' 16.156 W
- plan misses target center by 56.8usft at 10352.5usft MD (10202.5 TVD, -31.2 N, 191.5 E)									
- Point									
LTP (244H)	0.00	0.00	10,279.0	4,606.6	170.5	413,425.23	601,841.25	32° 8' 11.162 N	104° 8' 16.305 W
- plan misses target center by 0.2usft at 14998.0usft MD (10278.8 TVD, 4606.6 N, 170.5 E)									
- Point									
PBHL (244H)	0.00	0.00	10,279.7	4,736.6	169.9	413,555.24	601,840.64	32° 8' 12.448 N	104° 8' 16.310 W
- plan misses target center by 0.2usft at 15128.0usft MD (10279.5 TVD, 4736.6 N, 169.9 E)									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,140.5	2,137.0	Bae of Salt		0.00		
2,341.3	2,337.0	Lamar		0.00		
2,364.3	2,360.0	Bell Canyon		0.00		
3,451.5	3,443.0	Cherry Canyon		0.00		
4,414.1	4,402.0	Brushy Canyon		0.00		
6,088.6	6,071.0	BS Lime		0.00		
6,172.6	6,155.0	Avalon		0.00		
6,929.6	6,912.0	1st BS Sand		0.00		
7,546.6	7,529.0	2nd BS Sand		0.00		
8,782.6	8,765.0	3rd BS Sand		0.00		
9,117.6	9,100.0	WCA X Sand		0.00		
9,179.6	9,162.0	WCA Y Sand		0.00		
9,487.6	9,470.0	WCB		0.00		
9,780.9	9,763.0	WCB1		0.00		
10,003.7	9,972.0	WCC		0.00		
14,108.3	10,274.0	WCD		0.00		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,000.0	1,000.0	0.0	0.0	Build to 5° Inc, 152.1° Azm
5,733.3	5,716.1	-351.8	186.2	Drop to Vert @ 5733.3' MD
9,699.6	9,682.0	-364.6	193.0	KOP @ 9682 TVD
10,596.9	10,255.0	205.6	190.5	EOC - 89.69° Inc, 10255' TVD
15,128.0	10,279.5	4,736.6	169.9	TD @ 15128' MD, 10280' TVD