

Well Name: WTG FED COM	Well Location: T26S / R29E / SEC 27 / NWNW /	County or Parish/State:
Well Number: 241H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM38636	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001548190	Well Status: Approved Application for Permit to Drill	Operator: TAP ROCK OPERATING LLC

Notice of Intent

Type of Submission: Notice of Intent

Type of Action Other

Date Sundry Submitted: 07/07/2021

Time Sundry Submitted: 04:38

Date proposed operation will begin: 07/07/2021

Procedure Description: Tap Rock would like to alter the casing plan for the WTG Fed Com 241H. Tap Rock is requesting permission to: Run one of the two options listed in the attached drill plan - A three or four string design. Alter the second intermediate string from 7.625 inch 29.7 lb P-110 W-513 to 7.625 inch 29.7 P-110 W-441 casing. Casing spec has been attached. Alter the production casing string from 5.5 inch 20 lb P-110 TXP by 5.0 inch 18 lb P-110 W-521 to 5.5 inch 20 lb P-110 TXP by 5.5 inch 20 lb P-110 W-441 casing. Casing spec has been attached. Tap Rock would also like to have the option of running a DV tool during cementing operations. If no DV tool is ran, we would like to cement the intermediate section in a single stage.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- Tap_Rock_Operating___WTG_Fed_Com_241H___Plan_1_RPT_20210707161416.pdf
- 5.5_20_P110_TXP_20210707161358.pdf
- 5.5_20_P110_IC_W441_20210707161358.pdf
- 7.625_29.7_P110_IC_W441_20210707161358.pdf
- WTG_Fed_Com_241H_APD_6.28.21_20210707161348.pdf

Well Name: WTG FED COM	Well Location: T26S / R29E / SEC 27 / NWNW /	County or Parish/State:
Well Number: 241H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
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Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: BILL RAMSEY **Signed on:** JUL 07, 2021 04:38 PM

Name: TAP ROCK OPERATING LLC

Title: Regulatory Analyst

Street Address: 523 PARK POINT DRIVE SUITE 200

City: GOLDEN **State:** CO

Phone: (720) 360-4028

Email address: BRAMSEY@TAPRK.COM

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS **BLM POC Title:** Petroleum Engineer

BLM POC Phone: 5752342234 **BLM POC Email Address:** cwalls@blm.gov

Disposition: Approved **Disposition Date:** 07/29/2021

Signature: Chris Walls



Wedge 441™



Coupling	Pipe Body
Grade: P110-IC	Grade: P110-IC
Body: White	1st Band: White
1st Band: -	2nd Band: Pale Green
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	7.625 in.	Wall Thickness	0.375 in.	Grade	P110-IC
Min. Wall Thickness	90.00 %	Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	7.625 in.	Wall Thickness	0.375 in.	Body Yield Strength	940 x1000 lb
Nominal Weight	29.70 lb/ft	Plain End Weight	29.06 lb/ft	Min. Internal Yield Pressure	9740 psi
Drift	6.750 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	6.875 in.			Collapse Pressure	7360 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	7.900 in.	Tension Efficiency	75 %	Minimum	22,000 ft-lb
Coupling Length	8.666 in.	Joint Yield Strength	705 x1000 lb	Optimum	23,000 ft-lb
Connection ID	6.875 in.	Internal Pressure Capacity	9740 psi	Maximum	27,000 ft-lb
Make-up Loss	3.750 in.	Compression Efficiency	75 %	Operation Limit Torques	
Threads per inch	3.43	Compression Strength	705 x1000 lb	Operating Torque	37,000 ft-lb
Connection OD Option	Regular	Max. Allowable Bending	49 °/100 ft	Yield Torque	43,000 ft-lb
		External Pressure Capacity	7360 psi	Buck-On	
				Minimum	26,000 ft-lb
				Maximum	27,000 ft-lb

Notes

For the latest performance data, always visit our website: www.tenaris.com

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Data Sheet

TH DS-19.0478 23 October 2019
Rev 01

5.500" 20.00 lb/ft P110-IC TenarisHydril Wedge 441™



PIPE BODY DATA					
GEOMETRY					
Nominal OD	5.500 in.	Nominal Weight	20.00 lbs/ft	Standard Drift Diameter	4.653 in.
Nominal ID	4.778 in.	Wall Thickness	0.361 in.	Special Drift Diameter	N/A
Plain End Weight	19.83 lbs/ft				
PERFORMANCE					
Body Yield Strength	641 x 1000 lbs	Internal Yield	12640 psi	Collapse	12100 psi

CONNECTION DATA					
GEOMETRY					
Connection OD	5.852 in.	Connection ID	4.778 in.	Make-up Loss	3.780 in.
Coupling Length	8.214 in.	Threads per in.	3.40		
PERFORMANCE					
Tension Efficiency	81.5%	Joint Yield Strength	522 x 1000 lbs	Internal Yield	12640 psi
Compression Efficiency	81.5%	Compression Strength	522 x 1000 lbs	Collapse	12100 psi
Bending	75 °/100 ft				
MAKE-UP TORQUES					
Minimum	14000 ft-lbs	Optimum	15000 ft-lbs	Maximum	18000 ft-lbs
BUCK-ON TORQUES					
Minimum	21600 ft-lbs			Maximum	23100 ft-lbs
OPERATIONAL LIMIT TORQUES					
Operating Torque	25000 ft-lbs			Yield Torque	29000 ft-lbs

*If you need to use torque values that are higher than the maximum indicated, please contact a local Tenaris technical sales representative

5.5", 20#, P-110, TXP connection (modified buttress connection that provides a torque rating of nearly 24000ft-lbs)



[SHARE](#) | [EXPORT DATA](#) | [PRINT](#)



Outside Diameter 5.500 in. Wall Thickness 0.361 in. Grade P110	Min. Wall Thickness 87.5% Drift API Standard Type Casing Connection OD Option REGULAR
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Clear Filters

Compare

Request Info

CONNECTION INFORMATION

- [> Blanking Dimensions](#)
- [> Connection's Page](#)
- [> Brochure](#)
- [> Datasheet Manual](#)

PIPE BODY DATA

GEOMETRY

Nominal OD	5.500 in.	Nominal Weight	20 lbs/ft	Drift	4.653 in.
Nominal ID	4.778 in.	Wall Thickness	0.361 in.	Plain End Weight	19.83 lbs/ft
OD Tolerance	API				

PERFORMANCE

Body Yield Strength	641 x1000 lbs	Internal Yield	12640 psi	SMYS	110000 psi
Collapse	11100 psi				

CONNECTION DATA

GEOMETRY

Connection OD	6.100 in.	Coupling Length	9.450 in.	Connection ID	4.766 in.
Make-up Loss	4.204 in.	Threads per in	5	Connection OD Option	REGULAR

PERFORMANCE

Tension Efficiency	100.0 %	Joint Yield Strength	641.000 x1000 lbs	Internal Pressure Capacity ^[1]	12640.000 psi
Compression Efficiency	100 %	Compression Strength	641.000 x1000 lbs	Max. Allowable Bending	92 °/100 ft
External Pressure Capacity	11100.000 psi				

MAKE-UP TORQUES

Minimum	11270 ft-lbs	Optimum	12520 ft-lbs	Maximum	13770 ft-lbs
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OPERATION LIMIT TORQUES

Operating Torque	21500 ft-lbs	Yield Torque	23900 ft-lbs		
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Drilling Operations Plan
WTG Fed Com 241H
Tap Rock Operating, LLC
SHL 381' FNL & 543' FWL, Sec. 27
BHL 30' FSL & 331' FWL, Sec. 34
T. 26S., R. 29E, Eddy County, NM

Elevation above Sea Level: 2883'

DRILLING PROGRAM

1. Estimated Tops

Formation	TVD	MD	Lithologies	Bearing
Quaternary Deposits	0	0	Surface	None
Rustler Anhydrite	650	650		Salt
Salado	1150	1150	Salt	Salt
Base Salt	2695	2698		Salt
Lamar	2900	2903	Limestone	None
Bell Canyon	2940	2944	Sandstone	Hydrocarbons
Cherry Canyon	3840	3847	Sandstone	Hydrocarbons
Brushy Canyon	5050	5062	Sandstone	Hydrocarbons
Bone Spring	6660	6677	Limestone	Hydrocarbons
1st Bone Spring	7570	7587	Sandstone	Hydrocarbons
2nd Bone Spring	7840	7857	Sandstone	Hydrocarbons
3rd Bone Spring	8820	8837	Sandstone	Hydrocarbons
KOP	10400	10,417	Sandstone	Hydrocarbons
Wolfcamp	9770	9,787	Shale	Hydrocarbons
TD	10925	18281	Shale	Hydrocarbons

2. Notable Zones

Wolfcamp is the target formation.

3. Pressure Control

Pressure Control Equipment (See Schematics):

A 15,000', 5,000 psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A top drive check valve and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. The wellhead will be a multi-bowl speed head.

BOP Test procedure will be as follows:



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After surface casing is set and the BOP is nipped up, the BOP pressure tests will be made with a third party tester to 250 psi low, 5000 psi high, and the annular preventer will be tested to 2,500 psi. The BOP will be tested in this manner after nipple-up if any break of the stack occurs.

Variance Requests:

Tap Rock requests a variance to run a multi-bowl speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Tap Rock requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Tap Rock requests a variance to have the option of batch drilling this well with other wells on the same pad. In the event that this well is batch drilled, after drilling surface, 1st intermediate, and 2nd intermediate hole sections and cementing 2nd intermediate casing, a 10M dry hole cap with bleed off valve will be installed. The rig will then walk to another well on the pad. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test.

Tap Rock requests approval to possibly utilize a spudder rig to drill and set casing for the surface interval on this well. The spudder rig will be possibly utilized in order to reduce cost and save time. The wellhead will be installed and tested as soon as the surface casing is cut off per the existing COAs. A blind flange with the same pressure rating as the wellhead will be installed on the well. Once the spudder rig is removed, Tap Rock will secure the wellhead area by placing a guard rail around the cellar. Pressure will be monitored and a means for intervention will be maintained while the drilling rig is not over the well. Spudder rig operations are expected to take 2-3 days per well. Three wells on the pad will have surface casing set by the spudder rig as a part of this operation. The BLM will be notified 24 hours prior to commencing spudder rig operations. Within 90 days of the departure of the spudder rig, drilling operations will recommence on these wells. This rig will have a BOP stack equal or greater to the pressure rating required in the COAs. The BLM will be notified 24 hours before the larger rig moves on the pre-set wells. Tap Rock will have supervision on the spudder rig to ensure compliance with all BLM and NMOCD regulations.

If a DV tool is ran, the depth will be adjusted depending on current hole conditions. Cement volumes will be adjusted proportionally. 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 cement job, the 2nd stage will be pumped as planned. If cement does not return to surface on the 2nd stage the BLM will be notified immediately.



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4. Casing & Cement

All Casing will be new.

Section	Hole Size	Casing Size	Standard	Tapered	Top MD	Bottom MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Surface	17.5	13.375	API	No	0	725	0	725	J-55	54.5	BUTT	1.13	1.15	1.6
1st Intermediate	12.25	9.625	API	No	0	2953	0	2950	J-55	40	BUTT	1.13	1.15	1.6
2nd Intermediate	8.75	7.625	API	No	0	2653	0	2650	P-110	29.7	BUTT	1.13	1.15	1.6
2nd Intermediate	8.75	7.625	NON API	Yes	2653	10317	2650	10300	P-110	29.7	W441	1.13	1.15	1.6
Production	6.75	5.5	NON API	No	0	10117	0	10100	P-110	20	TXP	1.13	1.15	1.6
Production	6.75	5.5	NON API	No	10117	18281	10100	10925	P-110	20	W441	1.13	1.15	1.6

Section	Drilled Interval			Casing Size	Standard	Tapered	Casing Set Depths				Casing Details					
	Hole Size	Top	Btm				Top MD	Bottom MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Surface	17.5	0	735	13.375	API	No	0	725	0	725	J-55	54.5	BUTT	1.13	1.15	1.6
Intermediate	9.875	735	4500	7.625	API	No	0	4200	0	4188	P-110	29.7	BUTT	1.13	1.15	1.6
	8.75	4500	10327	7.625	NON API	Yes	4200	10317	4188	10300	P-110	29.7	W441	1.13	1.15	1.6
Production	6.75	10327	18281	5.5	NON API	No	0	10117	0	10100	P-110	20	TXP	1.13	1.15	1.6
Production	6.75			5.5	NON API	No	10117	18281	10100	10925	P-110	20	W441	1.13	1.15	1.6

*OPTION TO RUN 3 STRING OR 4 STRING DESIGN

Name	Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface	Lead	0	543	1.65	896	13.5	100%	C	5% NCI + LCM
	Tail	641	361	1.35	487	14.8	100%	C	5% NCI + LCM
1st Intermediate	Lead	0	560	2.18	1221	12.7	65%	C	Bentonite + 1% CaCl ₂ + 8% NaCl + LCM
	Tail	2363	229	1.33	305	14.8	65%	C	5% NaCl + LCM
2nd Intermediate	Lead	2653	315	2.87	904	11.5	35%	TXI	Fluid Loss + Dispersant + Retarder + LCM
	Tail	9317	87	1.56	136	13.2	35%	H	Fluid Loss + Dispersant + Retarder + LCM
Production	Tail	9817	517	1.71	884	14.2	25%	H	Fluid Loss + Dispersant + Retarder + LCM

Name		Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface		Lead	0	543	1.65	896	13.5	100%	C	5% NCI + LCM
		Tail	641	361	1.35	487	14.8	100%	C	5% NCI + LCM
Intermediate	Stage 1	Lead	0	997	2.4	2393	11.5	65%	C	Fluid Loss + Dispersant + Retarder + LCM
		Tail	9317	106	1.56	166	13.2	65%	C	Fluid Loss + Dispersant + Retarder + LCM
	Stage 2	Primary	0	744	2.4	1786	11.5	65%	C	Bentonite + 1% CaCl2 + 8% NaCl + LCM
		DVT	5050							
Production		Primary	9817	517	1.71	884	14.2	25%	H	Fluid Loss + Dispersant + Retarder + LCM

*OPTION TO RUN DV TOOL IF NECESSARY

5. Mud Program

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	725	FW Spud Mud	8.30	28	NC
Intermediate	725	2953	Brine Water	10.00	30-32	NC
Intermediate 2	2953	10317	FW/Cut Brine	9.00	30-32	NC
Production	10317	18281	Oil Base Mud	11.50	50-70	<10

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	725	FW Gel	8.30	28	NC
Intermediate	725	10327	DBE/Cut Brine	9.00	30-32	NC
Production	10327	18281	Oil Base Mud	11.50	55-75	<10



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Electronic Pason mud monitor system complying with Onshore Order 1 will be used. All necessary mud products (e. g., barite, cedar bark) for weight addition and fluid loss control will always be on site. Mud program is subject to change due to hole conditions. A closed loop system will be used.

6. Cores, Tests, & Logs

- Electric Logging Program: No open-hole logs are planned at this time for the pilot hole.
- GR will be collected while drilling through the MWD tools from 9.625" casing shoe to TD.
- A 2-person mud logging program will be used from 9.625" casing shoe to TD.
- No DSTs or cores are planned at this time.
- CBL w/ CCL from as far as gravity will let it fall to TOC.

7. Down Hole Conditions

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is $\approx 6,533$ psi. Expected bottom hole temperature is $\approx 170^{\circ}$ F.

Tap Rock does not anticipate that there will be enough H₂S from the surface to the Wolfcamp formations to meet the BLM's Onshore Order 6 requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Tap Rock has an H₂S safety package on all wells and an "H₂S Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be safely flared. All personnel will be familiar with all aspects of safe operation of equipment being used.

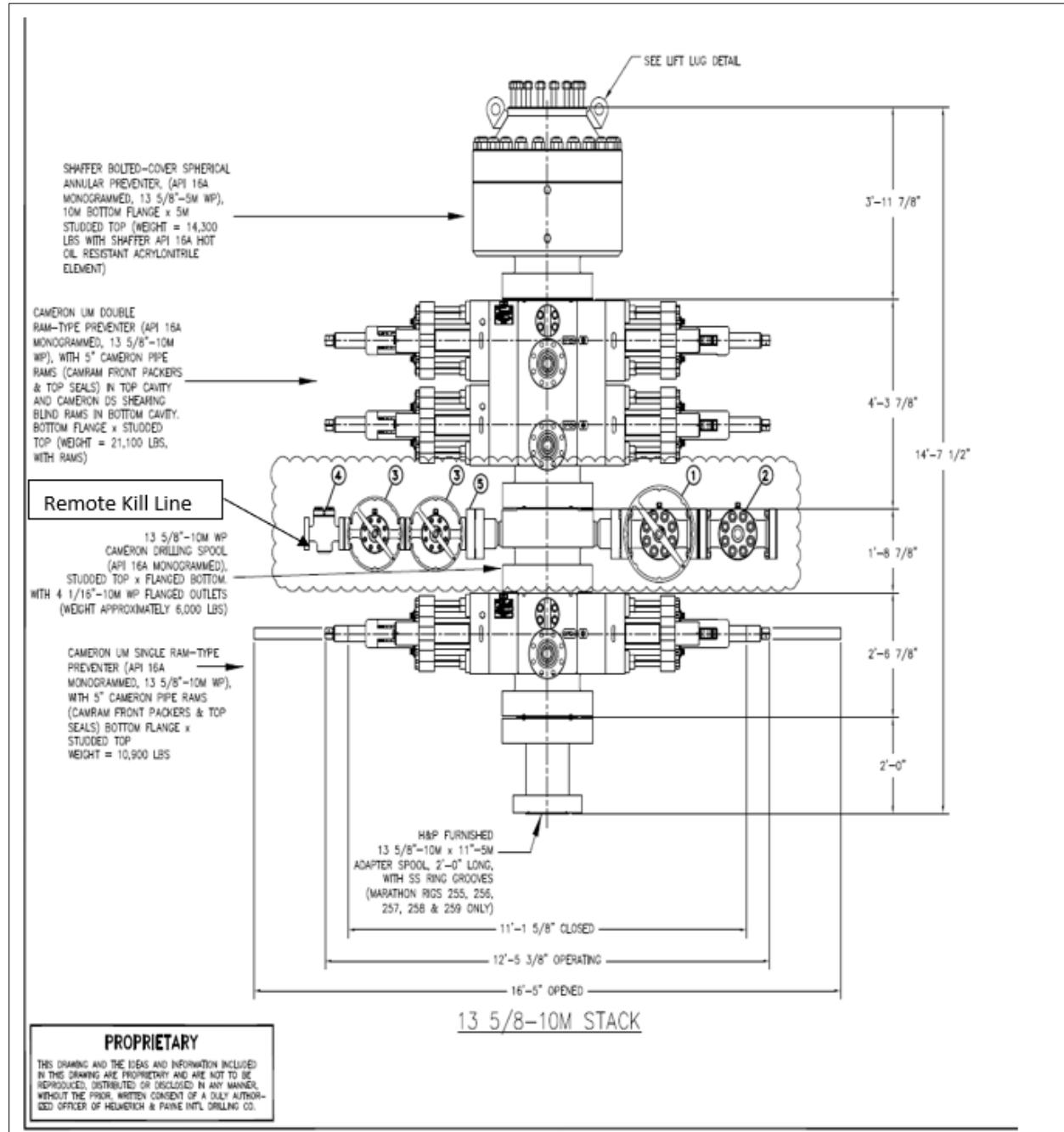
8. Other

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 30 days. If production casing is run an additional 60 days will be required to complete and construct surface facilities.



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5,000 psi BOP Stack





Drilling Operations Plan

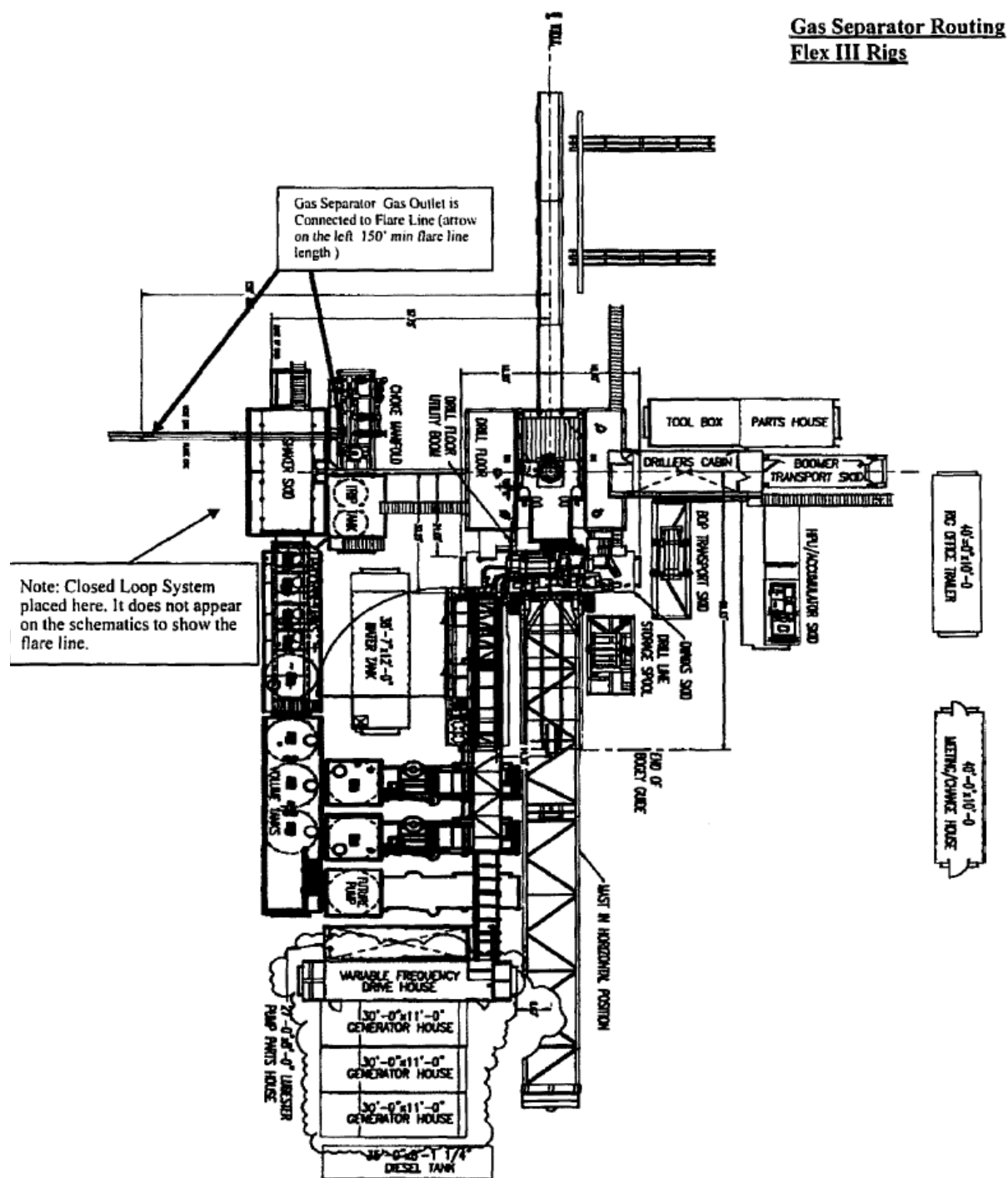
WTG Fed Com 241H

Tap Rock Operating, LLC

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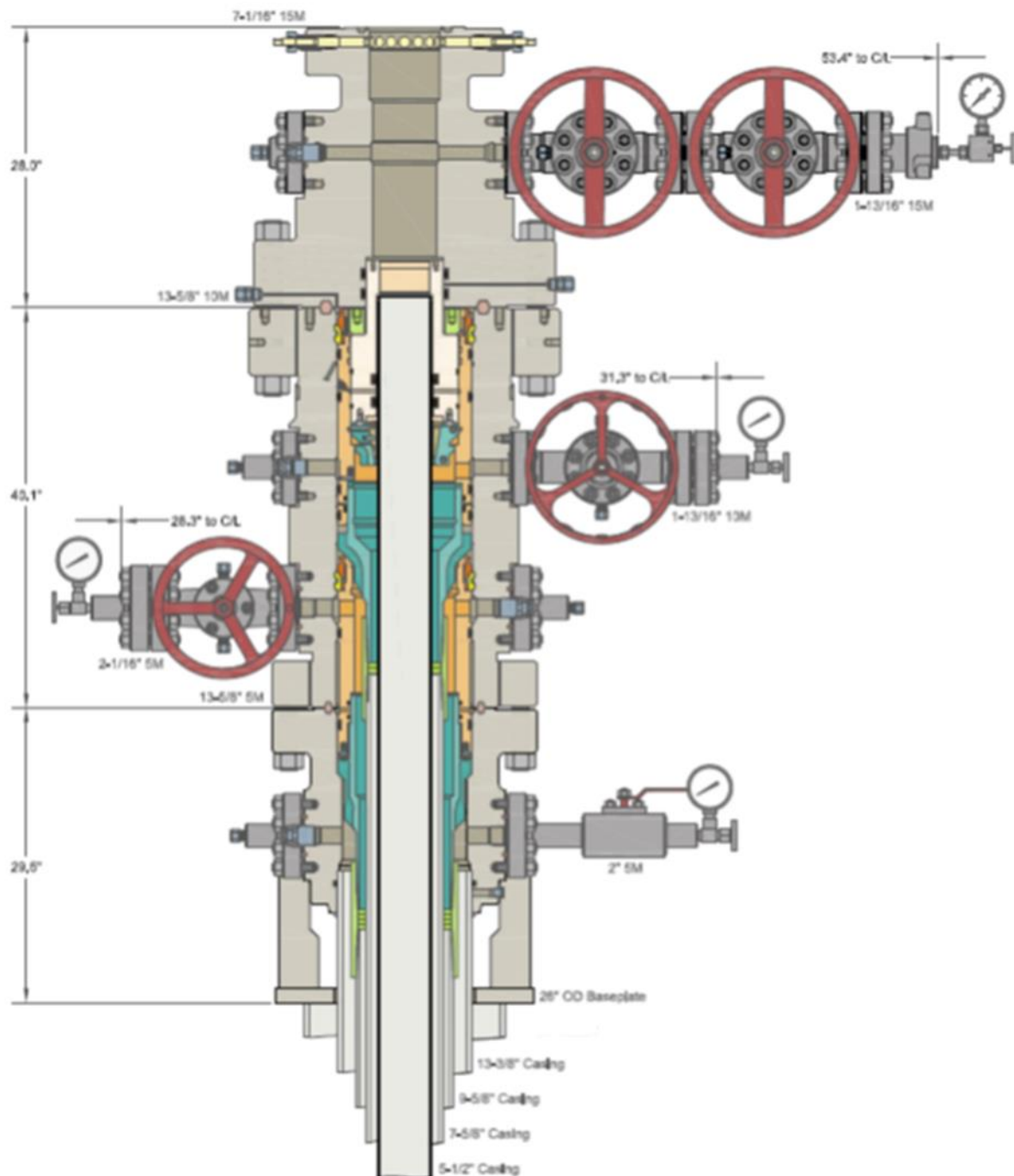
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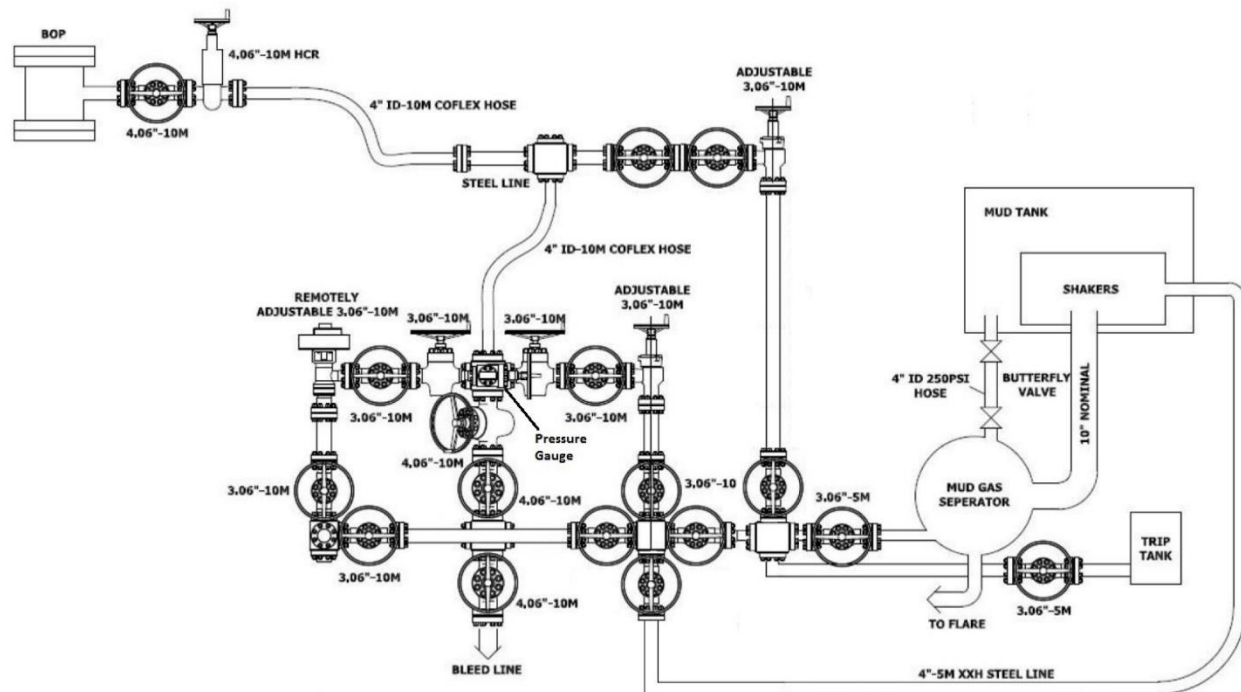
Multi-bowl Wellhead





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10M Choke Layout



Tap Rock Operating, LLC.

Eddy County, NM (NAD83)

WTG Fed Com

241H

OH

Plan: Plan #1

Standard Planning Report

31 March, 2020

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	WTG Fed Com		
Site Position:		Northing:	370,913.55 usft
From:	Lat/Long	Easting:	653,952.90 usft
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 9.123 N
		Longitude:	103° 58' 11.889 W
		Grid Convergence:	0.19 °

Well	241H		
Well Position	+N/-S	228.1 usft	Northing:
	+E/-W	-2,746.3 usft	Easting:
Position Uncertainty	2.0 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	3/31/2020	6.83
			Dip Angle
			(°)
			Field Strength
			(nT)
			47,492.31554534

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			179.88

Plan Survey Tool Program	Date	3/31/2020		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(usft)	(usft)			
1	0.0	18,281.5 Plan #1 (OH)	MWD	
			MWD - Standard	

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,133.3	5.00	340.00	2,132.9	13.7	-5.0	1.50	1.50	0.00	340.00	
6,333.3	5.00	340.00	6,316.9	357.6	-130.2	0.00	0.00	0.00	0.00	
6,666.7	0.00	0.00	6,649.8	371.3	-135.1	1.50	-1.50	0.00	180.00	
10,416.8	0.00	0.00	10,400.0	371.3	-135.1	0.00	0.00	0.00	0.00	
11,320.9	90.40	187.05	10,973.0	-201.4	-206.0	10.00	10.00	0.00	187.05	
11,586.5	90.40	181.74	10,971.1	-466.0	-226.3	2.00	0.00	-2.00	-89.98	
15,958.0	90.40	181.74	10,940.6	-4,835.4	-358.9	0.00	0.00	0.00	0.00	27/34 Sect Cross_24'
16,052.6	90.40	179.84	10,939.9	-4,930.1	-360.2	2.00	0.00	-2.00	-90.11	
18,211.5	90.40	179.84	10,925.0	-7,088.8	-354.4	0.00	0.00	0.00	0.00	LTP_WTG.241H
18,281.5	90.40	179.84	10,924.5	-7,158.8	-354.2	0.00	0.00	0.00	0.00	PBHL_WTG.241H

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
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler Anhydrite									
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.0	0.00	0.00	0.00
Top Salt									
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
Start Build 1.50									
1,900.0	1.50	340.00	1,900.0	1.2	-0.4	-1.2	1.50	1.50	0.00
2,000.0	3.00	340.00	1,999.9	4.9	-1.8	-4.9	1.50	1.50	0.00
2,100.0	4.50	340.00	2,099.7	11.1	-4.0	-11.1	1.50	1.50	0.00
2,133.3	5.00	340.00	2,132.9	13.7	-5.0	-13.7	1.50	1.50	0.00
Start 4200.0 hold at 2133.3 MD									
2,200.0	5.00	340.00	2,199.3	19.1	-7.0	-19.1	0.00	0.00	0.00
2,300.0	5.00	340.00	2,298.9	27.3	-9.9	-27.3	0.00	0.00	0.00
2,400.0	5.00	340.00	2,398.6	35.5	-12.9	-35.5	0.00	0.00	0.00
2,500.0	5.00	340.00	2,498.2	43.7	-15.9	-43.7	0.00	0.00	0.00
2,600.0	5.00	340.00	2,597.8	51.9	-18.9	-51.9	0.00	0.00	0.00
2,697.6	5.00	340.00	2,695.0	59.9	-21.8	-59.9	0.00	0.00	0.00
Base Salt									
2,700.0	5.00	340.00	2,697.4	60.1	-21.9	-60.1	0.00	0.00	0.00
2,800.0	5.00	340.00	2,797.0	68.3	-24.8	-68.3	0.00	0.00	0.00
2,878.3	5.00	340.00	2,875.0	74.7	-27.2	-74.7	0.00	0.00	0.00
Lamar									
2,900.0	5.00	340.00	2,896.7	76.4	-27.8	-76.5	0.00	0.00	0.00
2,903.4	5.00	340.00	2,900.0	76.7	-27.9	-76.8	0.00	0.00	0.00
Delaware Mountain Gp									
2,943.5	5.00	340.00	2,940.0	80.0	-29.1	-80.1	0.00	0.00	0.00
Bell Canyon									
2,958.6	5.00	340.00	2,955.0	81.2	-29.6	-81.3	0.00	0.00	0.00
Ramsey Sand									
3,000.0	5.00	340.00	2,996.3	84.6	-30.8	-84.7	0.00	0.00	0.00
3,100.0	5.00	340.00	3,095.9	92.8	-33.8	-92.9	0.00	0.00	0.00
3,200.0	5.00	340.00	3,195.5	101.0	-36.8	-101.1	0.00	0.00	0.00
3,300.0	5.00	340.00	3,295.1	109.2	-39.7	-109.3	0.00	0.00	0.00
3,400.0	5.00	340.00	3,394.8	117.4	-42.7	-117.5	0.00	0.00	0.00
3,500.0	5.00	340.00	3,494.4	125.6	-45.7	-125.7	0.00	0.00	0.00
3,600.0	5.00	340.00	3,594.0	133.8	-48.7	-133.9	0.00	0.00	0.00
3,700.0	5.00	340.00	3,693.6	142.0	-51.7	-142.1	0.00	0.00	0.00
3,800.0	5.00	340.00	3,793.2	150.2	-54.7	-150.3	0.00	0.00	0.00
3,846.9	5.00	340.00	3,840.0	154.0	-56.1	-154.1	0.00	0.00	0.00
Cherry Canyon									
3,900.0	5.00	340.00	3,892.9	158.3	-57.6	-158.5	0.00	0.00	0.00
4,000.0	5.00	340.00	3,992.5	166.5	-60.6	-166.7	0.00	0.00	0.00
4,100.0	5.00	340.00	4,092.1	174.7	-63.6	-174.9	0.00	0.00	0.00
4,200.0	5.00	340.00	4,191.7	182.9	-66.6	-183.1	0.00	0.00	0.00
4,300.0	5.00	340.00	4,291.3	191.1	-69.6	-191.3	0.00	0.00	0.00
4,400.0	5.00	340.00	4,391.0	199.3	-72.5	-199.4	0.00	0.00	0.00
4,500.0	5.00	340.00	4,490.6	207.5	-75.5	-207.6	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)	
4,600.0	5.00	340.00	4,590.2	215.7	-78.5	-215.8	0.00	0.00	0.00	
4,700.0	5.00	340.00	4,689.8	223.9	-81.5	-224.0	0.00	0.00	0.00	
4,800.0	5.00	340.00	4,789.4	232.1	-84.5	-232.2	0.00	0.00	0.00	
4,900.0	5.00	340.00	4,889.0	240.2	-87.4	-240.4	0.00	0.00	0.00	
5,000.0	5.00	340.00	4,988.7	248.4	-90.4	-248.6	0.00	0.00	0.00	
5,061.6	5.00	340.00	5,050.0	253.5	-92.3	-253.7	0.00	0.00	0.00	
Brushy Canyon										
5,100.0	5.00	340.00	5,088.3	256.6	-93.4	-256.8	0.00	0.00	0.00	
5,200.0	5.00	340.00	5,187.9	264.8	-96.4	-265.0	0.00	0.00	0.00	
5,300.0	5.00	340.00	5,287.5	273.0	-99.4	-273.2	0.00	0.00	0.00	
5,400.0	5.00	340.00	5,387.1	281.2	-102.3	-281.4	0.00	0.00	0.00	
5,500.0	5.00	340.00	5,486.8	289.4	-105.3	-289.6	0.00	0.00	0.00	
5,600.0	5.00	340.00	5,586.4	297.6	-108.3	-297.8	0.00	0.00	0.00	
5,700.0	5.00	340.00	5,686.0	305.8	-111.3	-306.0	0.00	0.00	0.00	
5,800.0	5.00	340.00	5,785.6	314.0	-114.3	-314.2	0.00	0.00	0.00	
5,900.0	5.00	340.00	5,885.2	322.1	-117.3	-322.4	0.00	0.00	0.00	
6,000.0	5.00	340.00	5,984.9	330.3	-120.2	-330.6	0.00	0.00	0.00	
6,100.0	5.00	340.00	6,084.5	338.5	-123.2	-338.8	0.00	0.00	0.00	
6,200.0	5.00	340.00	6,184.1	346.7	-126.2	-347.0	0.00	0.00	0.00	
6,300.0	5.00	340.00	6,283.7	354.9	-129.2	-355.2	0.00	0.00	0.00	
6,333.3	5.00	340.00	6,316.9	357.6	-130.2	-357.9	0.00	0.00	0.00	
Start Drop -1.50										
6,400.0	4.00	340.00	6,383.4	362.6	-132.0	-362.8	1.50	-1.50	0.00	
6,500.0	2.50	340.00	6,483.2	367.9	-133.9	-368.2	1.50	-1.50	0.00	
6,600.0	1.00	340.00	6,583.2	370.7	-134.9	-371.0	1.50	-1.50	0.00	
6,666.7	0.00	0.00	6,649.8	371.3	-135.1	-371.6	1.50	-1.50	0.00	
Start 3750.2 hold at 6666.7 MD										
6,676.8	0.00	0.00	6,660.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
Bone Spring Lime										
6,700.0	0.00	0.00	6,683.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
6,771.8	0.00	0.00	6,755.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
Upper Avalon										
6,800.0	0.00	0.00	6,783.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,883.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,000.0	0.00	0.00	6,983.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,083.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,146.8	0.00	0.00	7,130.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
Middle Avalon										
7,200.0	0.00	0.00	7,183.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,283.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,376.8	0.00	0.00	7,360.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
Lower Avalon										
7,400.0	0.00	0.00	7,383.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,483.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,586.8	0.00	0.00	7,570.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
1st Bone Spring Sand										
7,600.0	0.00	0.00	7,583.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,683.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,783.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
7,856.8	0.00	0.00	7,840.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
2nd Bone Spring Carb										
7,900.0	0.00	0.00	7,883.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,983.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,083.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,183.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,281.8	0.00	0.00	8,265.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
2nd Bone Spring Sand										
8,300.0	0.00	0.00	8,283.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,383.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,483.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,583.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,683.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,783.2	371.3	-135.1	-371.6	0.00	0.00	0.00	
8,836.8	0.00	0.00	8,820.0	371.3	-135.1	-371.6	0.00	0.00	0.00	
3rd Bone Spring Carb										
8,900.0	0.00	0.00	8,883.2	371.3	-135.1	-371.6	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)
9,000.0	0.00	0.00	8,983.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,100.0	0.00	0.00	9,083.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,200.0	0.00	0.00	9,183.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,300.0	0.00	0.00	9,283.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,400.0	0.00	0.00	9,383.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,436.8	0.00	0.00	9,420.0	371.3	-135.1	-371.6	0.00	0.00	0.00
3rd Bone Spring Sand									
9,500.0	0.00	0.00	9,483.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,600.0	0.00	0.00	9,583.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,691.8	0.00	0.00	9,675.0	371.3	-135.1	-371.6	0.00	0.00	0.00
3rd BS W Sand									
9,700.0	0.00	0.00	9,683.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,786.8	0.00	0.00	9,770.0	371.3	-135.1	-371.6	0.00	0.00	0.00
Wolfcamp A X Sand									
9,800.0	0.00	0.00	9,783.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,881.8	0.00	0.00	9,865.0	371.3	-135.1	-371.6	0.00	0.00	0.00
Wolfcamp A Y Sand									
9,900.0	0.00	0.00	9,883.2	371.3	-135.1	-371.6	0.00	0.00	0.00
9,986.8	0.00	0.00	9,970.0	371.3	-135.1	-371.6	0.00	0.00	0.00
Wolfcamp A Lower									
10,000.0	0.00	0.00	9,983.2	371.3	-135.1	-371.6	0.00	0.00	0.00
10,100.0	0.00	0.00	10,083.2	371.3	-135.1	-371.6	0.00	0.00	0.00
10,196.8	0.00	0.00	10,180.0	371.3	-135.1	-371.6	0.00	0.00	0.00
Wolfcamp B									
10,200.0	0.00	0.00	10,183.2	371.3	-135.1	-371.6	0.00	0.00	0.00
10,300.0	0.00	0.00	10,283.2	371.3	-135.1	-371.6	0.00	0.00	0.00
10,400.0	0.00	0.00	10,383.2	371.3	-135.1	-371.6	0.00	0.00	0.00
10,416.8	0.00	0.00	10,400.0	371.3	-135.1	-371.6	0.00	0.00	0.00
Start Build 10.00									
10,450.0	3.32	187.05	10,433.2	370.3	-135.3	-370.6	10.00	10.00	0.00
10,500.0	8.32	187.05	10,482.9	365.3	-135.9	-365.6	10.00	10.00	0.00
10,527.5	11.07	187.05	10,510.0	360.7	-136.4	-361.0	10.00	10.00	0.00
Wolfcamp B1									
10,550.0	13.32	187.05	10,532.0	356.0	-137.0	-356.3	10.00	10.00	0.00
10,600.0	18.32	187.05	10,580.1	342.5	-138.7	-342.8	10.00	10.00	0.00
10,650.0	23.31	187.05	10,626.8	324.9	-140.9	-325.2	10.00	10.00	0.00
10,700.0	28.31	187.05	10,671.8	303.3	-143.6	-303.6	10.00	10.00	0.00
10,750.0	33.31	187.05	10,714.7	277.8	-146.7	-278.2	10.00	10.00	0.00
10,800.0	38.31	187.05	10,755.2	248.8	-150.3	-249.1	10.00	10.00	0.00
10,850.0	43.31	187.05	10,793.1	216.4	-154.3	-216.7	10.00	10.00	0.00
10,859.6	44.27	187.05	10,800.0	209.8	-155.1	-210.1	10.00	10.00	0.00
Wolfcamp C									
10,900.0	48.31	187.05	10,827.9	180.8	-158.7	-181.2	10.00	10.00	0.00
10,950.0	53.31	187.05	10,859.5	142.4	-163.5	-142.7	10.00	10.00	0.00
11,000.0	58.31	187.05	10,887.6	101.3	-168.5	-101.7	10.00	10.00	0.00
11,050.0	63.31	187.05	10,912.0	58.0	-173.9	-58.4	10.00	10.00	0.00
11,072.3	65.54	187.05	10,921.6	38.1	-176.3	-38.5	10.00	10.00	0.00
FTP_WTG.241H									
11,100.0	68.31	187.05	10,932.4	12.8	-179.5	-13.2	10.00	10.00	0.00
11,150.0	73.31	187.05	10,948.9	-34.1	-185.3	33.7	10.00	10.00	0.00
11,200.0	78.31	187.05	10,961.1	-82.2	-191.2	81.8	10.00	10.00	0.00
11,250.0	83.31	187.05	10,969.1	-131.1	-197.3	130.7	10.00	10.00	0.00
11,300.0	88.31	187.05	10,972.8	-180.6	-203.4	180.2	10.00	10.00	0.00
11,320.9	90.40	187.05	10,973.0	-201.4	-206.0	200.9	10.00	10.00	0.00
EOC 11320.9 MD, 10973 TVD									
11,400.0	90.40	185.47	10,972.4	-280.0	-214.6	279.5	2.00	0.00	-2.00
11,500.0	90.40	183.47	10,971.7	-379.7	-222.4	379.2	2.00	0.00	-2.00
11,586.5	90.40	181.74	10,971.1	-466.0	-226.3	465.6	2.00	0.00	-2.00
Start 4371.5 hold at 11586.5 MD									
11,600.0	90.40	181.74	10,971.0	-479.6	-226.7	479.1	0.00	0.00	0.00
11,700.0	90.40	181.74	10,970.4	-579.5	-229.7	579.0	0.00	0.00	0.00
11,800.0	90.40	181.74	10,969.7	-679.5	-232.8	679.0	0.00	0.00	0.00
11,900.0	90.40	181.74	10,969.0	-779.4	-235.8	778.9	0.00	0.00	0.00
12,000.0	90.40	181.74	10,968.3	-879.4	-238.8	878.9	0.00	0.00	0.00
12,100.0	90.40	181.74	10,967.6	-979.3	-241.9	978.8	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)
12,200.0	90.40	181.74	10,966.9	-1,079.3	-244.9	1,078.7	0.00	0.00	0.00
12,300.0	90.40	181.74	10,966.2	-1,179.2	-247.9	1,178.7	0.00	0.00	0.00
12,400.0	90.40	181.74	10,965.5	-1,279.2	-251.0	1,278.6	0.00	0.00	0.00
12,500.0	90.40	181.74	10,964.8	-1,379.1	-254.0	1,378.6	0.00	0.00	0.00
12,600.0	90.40	181.74	10,964.1	-1,479.1	-257.0	1,478.5	0.00	0.00	0.00
12,700.0	90.40	181.74	10,963.4	-1,579.0	-260.1	1,578.5	0.00	0.00	0.00
12,800.0	90.40	181.74	10,962.7	-1,679.0	-263.1	1,678.4	0.00	0.00	0.00
12,900.0	90.40	181.74	10,962.0	-1,778.9	-266.2	1,778.4	0.00	0.00	0.00
13,000.0	90.40	181.74	10,961.3	-1,878.9	-269.2	1,878.3	0.00	0.00	0.00
13,100.0	90.40	181.74	10,960.6	-1,978.8	-272.2	1,978.2	0.00	0.00	0.00
13,200.0	90.40	181.74	10,959.9	-2,078.8	-275.3	2,078.2	0.00	0.00	0.00
13,300.0	90.40	181.74	10,959.2	-2,178.7	-278.3	2,178.1	0.00	0.00	0.00
13,400.0	90.40	181.74	10,958.5	-2,278.7	-281.3	2,278.1	0.00	0.00	0.00
13,500.0	90.40	181.74	10,957.8	-2,378.6	-284.4	2,378.0	0.00	0.00	0.00
13,600.0	90.40	181.74	10,957.1	-2,478.6	-287.4	2,478.0	0.00	0.00	0.00
13,700.0	90.40	181.74	10,956.4	-2,578.5	-290.4	2,577.9	0.00	0.00	0.00
13,800.0	90.40	181.74	10,955.7	-2,678.5	-293.5	2,677.9	0.00	0.00	0.00
13,900.0	90.40	181.74	10,955.0	-2,778.4	-296.5	2,777.8	0.00	0.00	0.00
14,000.0	90.40	181.74	10,954.3	-2,878.4	-299.5	2,877.8	0.00	0.00	0.00
14,100.0	90.40	181.74	10,953.6	-2,978.3	-302.6	2,977.7	0.00	0.00	0.00
14,200.0	90.40	181.74	10,952.9	-3,078.3	-305.6	3,077.6	0.00	0.00	0.00
14,300.0	90.40	181.74	10,952.2	-3,178.2	-308.6	3,177.6	0.00	0.00	0.00
14,400.0	90.40	181.74	10,951.5	-3,278.2	-311.7	3,277.5	0.00	0.00	0.00
14,500.0	90.40	181.74	10,950.8	-3,378.1	-314.7	3,377.5	0.00	0.00	0.00
14,600.0	90.40	181.74	10,950.1	-3,478.1	-317.7	3,477.4	0.00	0.00	0.00
14,700.0	90.40	181.74	10,949.4	-3,578.0	-320.8	3,577.4	0.00	0.00	0.00
14,800.0	90.40	181.74	10,948.7	-3,678.0	-323.8	3,677.3	0.00	0.00	0.00
14,900.0	90.40	181.74	10,948.0	-3,778.0	-326.8	3,777.3	0.00	0.00	0.00
15,000.0	90.40	181.74	10,947.3	-3,877.9	-329.9	3,877.2	0.00	0.00	0.00
15,100.0	90.40	181.74	10,946.6	-3,977.9	-332.9	3,977.1	0.00	0.00	0.00
15,200.0	90.40	181.74	10,945.9	-4,077.8	-335.9	4,077.1	0.00	0.00	0.00
15,300.0	90.40	181.74	10,945.2	-4,177.8	-339.0	4,177.0	0.00	0.00	0.00
15,400.0	90.40	181.74	10,944.5	-4,277.7	-342.0	4,277.0	0.00	0.00	0.00
15,500.0	90.40	181.74	10,943.8	-4,377.7	-345.0	4,376.9	0.00	0.00	0.00
15,600.0	90.40	181.74	10,943.1	-4,477.6	-348.1	4,476.9	0.00	0.00	0.00
15,700.0	90.40	181.74	10,942.4	-4,577.6	-351.1	4,576.8	0.00	0.00	0.00
15,800.0	90.40	181.74	10,941.7	-4,677.5	-354.1	4,676.8	0.00	0.00	0.00
15,900.0	90.40	181.74	10,941.0	-4,777.5	-357.2	4,776.7	0.00	0.00	0.00
15,958.0	90.40	181.74	10,940.6	-4,835.4	-358.9	4,834.6	0.00	0.00	0.00
Start DLS 2.00 TFO -90.11 - 27/34 Sect Cross_241H									
16,000.0	90.40	180.90	10,940.3	-4,877.4	-359.9	4,876.7	2.00	0.00	-2.00
16,052.6	90.40	179.84	10,939.9	-4,930.1	-360.2	4,929.3	2.00	0.00	-2.00
Start 2158.8 hold at 16052.6 MD									
16,100.0	90.40	179.84	10,939.6	-4,977.4	-360.1	4,976.7	0.00	0.00	0.00
16,200.0	90.40	179.84	10,938.9	-5,077.4	-359.8	5,076.7	0.00	0.00	0.00
16,300.0	90.40	179.84	10,938.2	-5,177.4	-359.6	5,176.7	0.00	0.00	0.00
16,400.0	90.40	179.84	10,937.5	-5,277.4	-359.3	5,276.6	0.00	0.00	0.00
16,500.0	90.40	179.84	10,936.8	-5,377.4	-359.0	5,376.6	0.00	0.00	0.00
16,600.0	90.40	179.84	10,936.2	-5,477.4	-358.8	5,476.6	0.00	0.00	0.00
16,700.0	90.40	179.84	10,935.5	-5,577.4	-358.5	5,576.6	0.00	0.00	0.00
16,800.0	90.40	179.84	10,934.8	-5,677.4	-358.2	5,676.6	0.00	0.00	0.00
16,900.0	90.40	179.84	10,934.1	-5,777.4	-357.9	5,776.6	0.00	0.00	0.00
17,000.0	90.40	179.84	10,933.4	-5,877.4	-357.7	5,876.6	0.00	0.00	0.00
17,100.0	90.40	179.84	10,932.7	-5,977.4	-357.4	5,976.6	0.00	0.00	0.00
17,200.0	90.40	179.84	10,932.0	-6,077.4	-357.1	6,076.6	0.00	0.00	0.00
17,300.0	90.40	179.84	10,931.3	-6,177.4	-356.9	6,176.6	0.00	0.00	0.00
17,400.0	90.40	179.84	10,930.6	-6,277.4	-356.6	6,276.6	0.00	0.00	0.00
17,500.0	90.40	179.84	10,929.9	-6,377.4	-356.3	6,376.6	0.00	0.00	0.00
17,600.0	90.40	179.84	10,929.2	-6,477.4	-356.0	6,476.6	0.00	0.00	0.00
17,700.0	90.40	179.84	10,928.5	-6,577.4	-355.8	6,576.6	0.00	0.00	0.00
17,800.0	90.40	179.84	10,927.8	-6,677.4	-355.5	6,676.6	0.00	0.00	0.00
17,900.0	90.40	179.84	10,927.2	-6,777.4	-355.2	6,776.6	0.00	0.00	0.00
18,000.0	90.40	179.84	10,926.5	-6,877.4	-355.0	6,876.6	0.00	0.00	0.00
18,100.0	90.40	179.84	10,925.8	-6,977.4	-354.7	6,976.6	0.00	0.00	0.00
18,200.0	90.40	179.84	10,925.1	-7,077.4	-354.4	7,076.6	0.00	0.00	0.00
18,211.5	90.40	179.84	10,925.0	-7,088.8	-354.4	7,088.1	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)
Start 70.0 hold at 18211.5 MD - LTP_WTG.241H									
18,281.5	90.40	179.84	10,924.5	-7,158.8	-354.2	7,158.1	0.00	0.00	0.00
TD at 18281.5 - PBHL_WTG.241H									

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
PBHL_WTG.241H - plan hits target center - Point	0.00	0.00	10,924.5	-7,158.8	-354.2	363,982.80	650,852.40	32° 0' 0.637 N	103° 58' 48.166 W
LTP_WTG.241H - plan hits target center - Point	0.00	0.00	10,925.0	-7,088.8	-354.4	364,052.83	650,852.23	32° 0' 1.330 N	103° 58' 48.166 W
27/34 Sect Cross_241H - plan hits target center - Point	0.00	0.00	10,940.6	-4,835.4	-358.9	366,306.26	650,847.69	32° 0' 23.630 N	103° 58' 48.133 W
FTP_WTG.241H - plan misses target center by 69.4usft at 11072.3usft MD (10921.6 TVD, 38.1 N, -176.3 E) - Point	0.00	0.00	10,975.0	66.5	-210.3	371,208.11	650,996.30	32° 1' 12.135 N	103° 58' 46.221 W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
650.0	650.0	Rustler Anhydrite				
1,150.0	1,150.0	Top Salt				
2,697.6	2,695.0	Base Salt				
2,878.3	2,875.0	Lamar				
2,903.4	2,900.0	Delaware Mountain Gp				
2,943.5	2,940.0	Bell Canyon				
2,958.6	2,955.0	Ramsey Sand				
3,846.9	3,840.0	Cherry Canyon				
5,061.6	5,050.0	Brushy Canyon				
6,676.8	6,660.0	Bone Spring Lime				
6,771.8	6,755.0	Upper Avalon				
7,146.8	7,130.0	Middle Avalon				
7,376.8	7,360.0	Lower Avalon				
7,586.8	7,570.0	1st Bone Spring Sand				
7,856.8	7,840.0	2nd Bone Spring Carb				
8,281.8	8,265.0	2nd Bone Spring Sand				
8,836.8	8,820.0	3rd Bone Spring Carb				
9,436.8	9,420.0	3rd Bone Spring Sand				
9,691.8	9,675.0	3rd BS W Sand				
9,786.8	9,770.0	Wolfcamp A X Sand				
9,881.8	9,865.0	Wolfcamp A Y Sand				
9,986.8	9,970.0	Wolfcamp A Lower				
10,196.8	10,180.0	Wolfcamp B				
10,527.5	10,510.0	Wolfcamp B1				
10,859.6	10,800.0	Wolfcamp C				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,800.0	1,800.0	0.0	0.0	Start Build 1.50
2,133.3	2,132.9	13.7	-5.0	Start 4200.0 hold at 2133.3 MD
6,333.3	6,316.9	357.6	-130.2	Start Drop -1.50
6,666.7	6,649.8	371.3	-135.1	Start 3750.2 hold at 6666.7 MD
10,416.8	10,400.0	371.3	-135.1	Start Build 10.00
11,320.9	10,973.0	-201.4	-206.0	EOC 11320.9 MD, 10973 TVD
11,586.5	10,971.1	-466.0	-226.3	Start 4371.5 hold at 11586.5 MD
15,958.0	10,940.6	-4,835.4	-358.9	Start DLS 2.00 TFO -90.11
16,052.6	10,939.9	-4,930.1	-360.2	Start 2158.8 hold at 16052.6 MD
18,211.5	10,925.0	-7,088.8	-354.4	Start 70.0 hold at 18211.5 MD
18,281.5	10,924.5	-7,158.8	-354.2	TD at 18281.5

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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

CONDITIONS

Action 38841

CONDITIONS

Operator: TAP ROCK OPERATING, LLC 523 Park Point Drive Golden, CO 80401	OGRID: 372043
	Action Number: 38841
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
jagarcia	None	8/6/2021