U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

07/12/2021

Well Name: POKER LAKE UNIT 18 BRUSHY DRAW

Well Location: T25S / R30E / SEC 18 / SENW / 32.131096 / -103.922559

County or Parish/State: EDDY / NM

Well Number: 124H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMNM120898

Unit or CA Name: POKER LAKE

Unit or CA Number: NMNM071016X, NMNM71016X

US Well Number: 3001544896

Well Status: Producing Gas Well

Operator: XTO PERMIAN OPERATING LLC

Notice of Intent

Type of Submission: Notice of Intent

Type of Action Other

Date Sundry Submitted: 07/09/2021

Time Sundry Submitted: 12:27

Date proposed operation will begin: 07/16/2021

Procedure Description: **Spacing, Casing/Cement, Drilling Variance Changes XTO Permian Operating, LLC requests permission to make the following changes to the original APD: No Additional Surface Disturbance Change BHL fr/200'FSL & 2310'FWL to 200'FSL & 1430'FWL Casing/Cement design per the attached drilling program. XTO also requests the following variances: Approval to utilize a spudder rig to pre-set surface casing per the attached description of operations. Batch drill this well if necessary. In doing so, XTO will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per recommendations, XTO will contact the BLM to skid the rig to drill the remaining wells on the pad. Once surface and intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells. ONLY test broken pressure seals on the BOP equipment per the attached procedure. A variance is requested to cement offline for the surface and intermediate casing strings. Attachments: C102 Drilling Program Directional Plan Multibowl Diagram 5MBOP/5MCM Spudder Rig Description of Operations BOP Break Test Procedure Offline Cementing Procedure

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

01_Sundry_Documents_20210709122732.pdf

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Operator: XTO PERMIAN OPERATING LLC

Conditions of Approval

Specialist Review

Conditions_of_Approval_20210709133452.pdf

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: CASSIE EVANS

Signed on: JUL 09, 2021 12:27 PM

Name: XTO PERMIAN OPERATING LLC

Title: Regulatory Analyst

Street Address: 6401 Holiday Hill Road, Bldg 5

City: Midland **State:** TX

Phone: (432) 218-3671

Email address: CASSIE.EVANS@EXXONMOBIL.COM

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

BLM Point of Contact

BLM POC Name: JENNIFER SANCHEZ

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5756270237

BLM POC Email Address: j1sanchez@blm.gov

Disposition: Approved

Disposition Date: 07/09/2021

Signature: Jennifer Sanchez

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION 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
30-015-44896	98220	Purple Sage; Wolfcamp

[4] Property Code	[5] Property Name	[6] Well Number
	POKER LAKE UNIT 18 BD	124H

[7] OGRID No.	[8] Operator Name	[9] Elevation
373075	XTO PERMIAN OPERATING, LLC.	3174'

[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
F	18	25 S	30 E		2,310	NORTH	2,120	WEST	EDDY

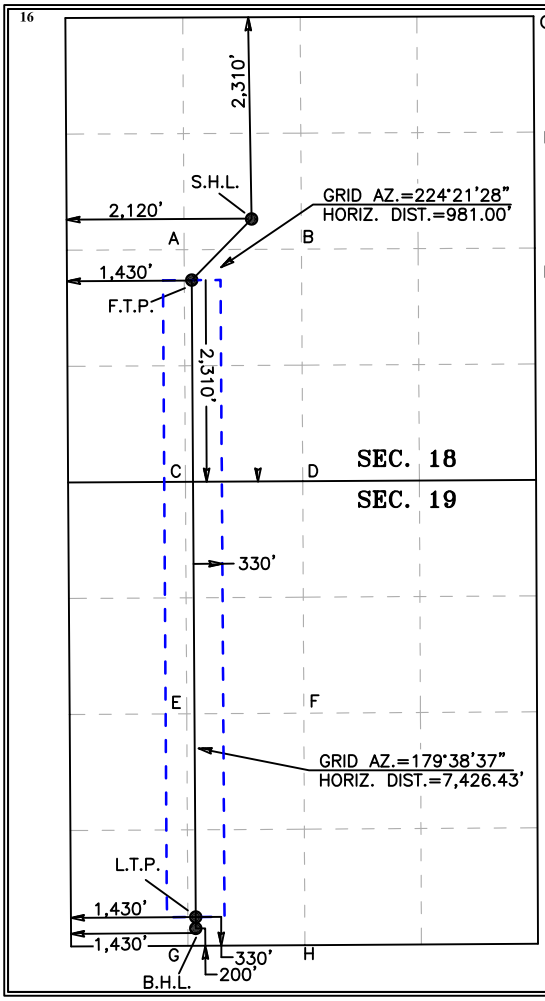
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	19	25 S	30 E		200	SOUTH	1,430	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
480			

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.

[16]



GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION
Y= 411,612.9
X= 627,306.9
LAT.= 32.130972°N
LONG.= 103.922075°W

GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION
Y= 411,671.2
X= 668,491.5
LAT.= 32.131096°N
LONG.= 103.922559°W

FIRST TAKE POINT NAD 27 NME
Y= 410,911.4
X= 626,621.1
LAT.= 32.129051°N
LONG.= 103.924299°W

FIRST TAKE POINT NAD 83 NME
Y= 410,969.9
X= 667,805.6
LAT.= 32.129176°N
LONG.= 103.924784°W

CORNER COORDINATES TABLE NAD 27 NME
A – Y= 411,260.5 N, X= 626,533.3 E
B – Y= 411,266.7 N, X= 627,877.5 E
C – Y= 408,601.2 N, X= 626,548.3 E
D – Y= 408,608.3 N, X= 627,892.5 E
E – Y= 405,943.0 N, X= 626,563.0 E
F – Y= 405,951.0 N, X= 627,904.5 E
G – Y= 403,285.0 N, X= 626,577.4 E
H – Y= 403,292.6 N, X= 627,916.6 E

CORNER COORDINATES TABLE NAD 83 NME
A – Y= 411,318.8 N, X= 667,717.9 E
B – Y= 411,325.0 N, X= 669,062.2 E
C – Y= 408,659.4 N, X= 667,733.0 E
D – Y= 408,666.5 N, X= 669,077.2 E
E – Y= 406,001.2 N, X= 667,747.8 E
F – Y= 406,009.2 N, X= 669,089.3 E
G – Y= 403,343.1 N, X= 667,762.3 E
H – Y= 403,350.7 N, X= 669,101.5 E

LAST TAKE POINT NAD 27 NME
Y= 403,615.2
X= 626,666.3
LAT.= 32.108994°N
LONG.= 103.924242°W

LAST TAKE POINT NAD 83 NME
Y= 403,673.6
X= 667,851.0
LAT.= 32.109119°N
LONG.= 103.924727°W

BOTTOM HOLE LOCATION NAD 27 NME
Y= 403,485.3
X= 626,667.0
LAT.= 32.108636°N
LONG.= 103.924241°W

BOTTOM HOLE LOCATION NAD 83 NME
Y= 403,543.6
X= 667,851.8
LAT.= 32.108761°N
LONG.= 103.924726°W

[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.

Cassie Evans 06/09/2021
Signature Date

Cassie Evnas
Printed Name

cassie.evans@exxonmobil.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 and correct to the best of my belief.

6-8-2021
Date of Survey

Signatue and Seal of Professional Surveyor:

MARK DILLON HARP NEW MEXICO 23786 PROFESSIONAL SURVEYOR

MARK DILLON HARP 23786
Certificate Number JC/AI 2017050638

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
PLU 18 BD 124H
Projected TD: 19817' MD / 11560' TVD
SHL: 2310' FNL & 2120' FWL , Section 18, T25S, R30E
BHL: 200' FSL & 1430' FWL , Section 19, T25S, R30E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	758'	Water
Top of Salt	1073'	Water
Base of Salt	3333'	Water
Delaware	3533'	Water
Brushy Canyon	6013'	Water/Oil/Gas
Bone Spring	7253'	Water
1st Bone Spring Ss	8238'	Water/Oil/Gas
2nd Bone Spring Ss	9078'	Water/Oil/Gas
3rd Bone Spring Ss	10158'	Water/Oil/Gas
Wolfcamp	10533'	Water/Oil/Gas
Wolfcamp X	10563'	Water/Oil/Gas
Wolfcamp Y	10628'	Water/Oil/Gas
Wolfcamp A	10673'	Water/Oil/Gas
Wolfcamp B	11063'	Water/Oil/Gas
Wolfcamp D	11463'	Water/Oil/Gas
Wolfcamp E	11623'	Water/Oil/Gas
Target/Land Curve	11560'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon
*** Groundwater depth 40’ (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 9.625 inch casing @ 973' (100' above the salt) and circulating cement back to surface. The intermediate will isolate from the top of salt down to the next casing seat by setting 7.625 inch casing at 10847' and cemented to surface. A 6.75 inch curve and 6.75 inch lateral hole will be drilled to 19817 MD/TD and 5.5 x 5 inch production casing will be set at TD and cemented back up to 2nd intermediate (estimated TOC 10547 feet).

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
12.25	0’ – 973'	9.625	40	J-55	BTC	New	1.28	5.84	16.19
8.75	0’ – 4000'	7.625	29.7	RY P-110	Flush Joint	New	2.16	2.65	1.73
8.75	4000' – 10847'	7.625	29.7	HC L-80	Flush Joint	New	1.57	1.85	2.00
6.75	0’ – 10747'	5.5	23	RY P-110	Semi-Premium	New	1.21	2.26	2.27
6.75	10747' - 11350'	5.5	23	RY P-110	Semi-Flush	New	1.21	2.14	8.13
6.75	11350' - 19817'	5	18	RY P-110	Semi-Premium	New	1.16	1.95	9.56

· XTO requests the option to utilize a spudder rig (Atlas Copco RD20 or Equivalent) to set and cement surface and intermediate 1 casing per this Sundry
· XTO requests to not utilize centralizers in the curve and lateral
· 7.625 Collapse analyzed using 50% evacuation based on regional experience.
· 5.5 Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35
· Test on Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

· XTO requests the option to use 5" BTC Float equipment for the the production casing

Wellhead:

Permanent Wellhead – Multibowl System

A. Starting Head: 13-5/8” 10M top flange x 9-5/8” SOW bottom

B. Tubing Head: 13-5/8” 10M bottom flange x 7-1/16” 15M top flange

· Wellhead will be installed by manufacturer’s representatives.

· Manufacturer will monitor welding process to ensure appropriate temperature of seal.

· Operator will test the 7-5/8" casing per BLM Onshore Order 2

· Wellhead Manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 9.625, 40 New BTC, J-55 casing to be set at +/- 973'

Lead: 220 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 130 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
Top of Cement: Surface
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing: 7.625, 29.7 New casing to be set at +/- 10847'
1st Stage
Optional Lead: 320 sxs Class C (mixed at 10.5 ppg, 2.77 ft3/sx, 15.59 gal/sx water)
TOC: Surface
Tail: 440 sxs Class C (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
TOC: Brushy Canyon @ 6013
Compressives: 12-hr = 900 psi 24 hr = 1150 psi

2nd Stage
Lead: 0 sxs Class C (mixed at 12.9 ppg, 2.16 ft3/sx, 9.61 gal/sx water)
Tail: 680 sxs Class C (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Top of Cement: 0
Compressives: 12-hr = 900 psi 24 hr = 1150 psi

XTO requests to pump a two stage cement job on the 7-5/8" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brush Canyon (6013') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If cement is not visually confirmed to circulate to surface, the final cement top after the second stage job will be verified by Echo-meter. If necessary, a top out consisting of 1,500 sack of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. If cement is still unable to circulate to surface, another Echo-meter run will be performed for cement top verification.

XTO will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

XTO will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.

XTO requests to pump an Optional Lead if well conditions dictate in an attempt to bring cement inside the first intermediate casing. If cement reaches the desired height, the BLM will be notified and the second stage bradenhead squeeze and subsequent TOC verification will be negated.

XTO requests the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval from BLM when unplanned remediation is needed and batch drilling is approved. In the event the bradenhead is conducted, we will ensure the first stage cement job is cemented properly and the well is static with floats holding and no pressure on the csg annulus as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

Production Casing: 5, 18 New Semi-Premium, RY P-110 casing to be set at +/- 19817'

Lead: 20 sxs NeoCem (mixed at 11.5 ppg, 2.69 ft3/sx, 15.00 gal/sx water) Top of Cement: 10547 feet
Tail: 830 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft3/sx, 8.38 gal/sx water) Top of Cement: 11047 feet
Compressives: 12-hr = 800 psi 24 hr = 1500 psi

XTO requests the option to offline cement and remediate (if needed) surface and intermediate casing strings where batch drilling is approved and if unplanned remediation is needed. XTO will ensure well is static with no pressure on the csg annulus, as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed when applicable per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops. Offline cement operations will then be conducted after the rig is moved off the current well to the next well in the batch sequence.

5. Pressure Control Equipment

Once the permanent WH is installed on the 9.625 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 4370 psi. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M).

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 9.625, 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nippling up on the 7.625, the BOP will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

XTO requests a variance to be able to batch drill this well if necessary. In doing so, XTO will set casing and ensure that the well is cemented properly (unless approval is given for offline cementing) and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per Cactus recommendations, XTO will contact the BLM to skid the rig to drill the remaining wells on the pad. Once surface and both intermediate strings are all completed, XTO will begin drilling the production

hole on each of the wells.

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. Based on discussions with the BLM on February 27th 2020, we will request permission to **ONLY** retest broken pressure seals if the following conditions are met: 1. After a full BOP test is conducted on the first well on the pad 2. When skidding to drill an intermediate section that does not penetrate into the Wolfcamp.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 973'	12.25	FW/Native	8.7-9.2	35-40	NC
973' - 10847'	8.75	FW / Cut Brine / Direct Emulsion	9.7-10.2	30-32	NC
10847' - 19817'	6.75	OBM	11.5-12	50-60	NC - 20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 9-5/8" surface casing with brine solution. A 9.7 ppg - 10.2 ppg cut brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

A. A Kelly cock will be in the drill string at all times.
B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
C. H2S monitors will be on location when drilling below the 9.625 casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below intermediate casing.

Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 180 to 200 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 6913 psi.

10. Anticipated Starting Date and Duration of Operations

Anticipated spud date will be after BLM approval. Move in operations and drilling is expected to take 40 days.

Well Plan Report - PLU 18 Brushy Draw 124H (164H)

Measured Depth:	19816.77 ft
TVD RKB:	11560.00 ft
Location	
Cartographic Reference System:	New Mexico East - NAD 27
Northing:	411613.12 ft
Easting:	627306.81 ft
RKB:	3200.00 ft
Ground Level:	3170.00 ft
North Reference:	Grid
Convergence Angle:	0.22 Deg
Site:	PLU 18 Brushy Draw
Slot:	PLU 18 Brushy Draw 163H

Plan Sections PLU 18 Brushy Draw 124H

Measured Depth (ft)	Inclination (Deg)	Azimuth (Deg)	TVD RKB (ft)	Y Offset (ft)	X Offset (ft)	Build Rate (Deg/100ft)	Turn Rate (Deg/100ft)	Dogleg Rate (Deg/100ft)	Target
0	0	0	0	0	0.01	0	0	0	
1500	0	0	1500	0	0.01	0	0	0	
1983.39	9.67	290.56	1981.1	14.29	-38.09	2	0	2	
6586.57	9.67	290.56	6518.9	285.71	-761.9	0	0	0	
7069.96	0	0	7000	300	-800	-2	0	2	
11046.96	0	0	10977	300	-800	0	0	0	
11546.96	50	163	11415.91	104.28	-740.16	10	0	10	
11974.71	90	179.62	11560.15	-284.5	-688.43	9.35	3.89	10	FTP 50
12390.43	90	179.62	11560	-700.22	-685.71	0	0	0	FTP 50
19686.57	90	179.62	11560	-7996.22	-640.51	0	0	0	LTP 29
19816.77	90	179.62	11560	-8126.42	-639.81	0	0	0	BHL 50

Position Uncertainty PLU 18 Brushy Draw 124H

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD RKB (ft)	Highside Error (ft)	Bias (ft)	Lateral Error (ft)	Bias (ft)	Vertical Error (ft)	Bias (ft)	Magnitude of Bias (ft)	Semi-major Error (ft)	Semi-minor Error (ft)	Semi-minor Azimuth (°)	Tool Used
0	0	0	0	0	0	0	0	2.297	0	0	0	0	0	MWD+IFR1+MS
100	0	0	100	0.468	0	0.468	0	2.299	0	0	0.556	0.358	135	MWD+IFR1+MS
200	0	0	200	0.983	0	0.983	0	2.307	0	0	1.191	0.717	135	MWD+IFR1+MS
300	0	0	300	1.403	0	1.403	0	2.321	0	0	1.668	1.075	135	MWD+IFR1+MS
400	0	0	400	1.797	0	1.797	0	2.34	0	0	2.099	1.434	135	MWD+IFR1+MS
500	0	0	500	2.179	0	2.179	0	2.364	0	0	2.507	1.792	135	MWD+IFR1+MS
600	0	0	600	2.554	0	2.554	0	2.394	0	0	2.902	2.151	135	MWD+IFR1+MS
700	0	0	700	2.925	0	2.925	0	2.428	0	0	3.289	2.509	135	MWD+IFR1+MS
800	0	0	800	3.293	0	3.293	0	2.467	0	0	3.669	2.868	135	MWD+IFR1+MS
900	0	0	900	3.659	0	3.659	0	2.511	0	0	4.046	3.226	135	MWD+IFR1+MS

1000	0	0	1000	4.024	0	4.024	0	2.56	0	0	4.42	3.585	135	MWD+IFR1+MS
1100	0	0	1100	4.388	0	4.388	0	2.613	0	0	4.791	3.943	135	MWD+IFR1+MS
1200	0	0	1200	4.751	0	4.751	0	2.67	0	0	5.161	4.302	135	MWD+IFR1+MS
1300	0	0	1300	5.113	0	5.113	0	2.731	0	0	5.529	4.66	135	MWD+IFR1+MS
1400	0	0	1400	5.475	0	5.475	0	2.797	0	0	5.896	5.019	135	MWD+IFR1+MS
1500	0	0	1500	5.836	0	5.836	0	2.866	0	0	6.262	5.377	135	MWD+IFR1+MS
1600	2	290.556	1599.98	5.961	0	6.468	0	2.939	0	0	6.571	5.85	133.369	MWD+IFR1+MS
1700	4	290.556	1699.838	6.705	0	6.804	0	3.016	0	0	6.899	6.618	-33.547	MWD+IFR1+MS
1800	6	290.556	1799.452	7.384	0	7.142	0	3.098	0	0	7.411	7.139	14.529	MWD+IFR1+MS
1900	8	290.556	1898.702	8.011	0	7.481	0	3.189	0	0	8.06	7.474	26.711	MWD+IFR1+MS
1983.39	9.668	290.556	1981.1	8.423	0	7.759	0	3.266	0	0	8.501	7.743	28.904	MWD+IFR1+MS
2000	9.668	290.556	1997.474	8.474	0	7.812	0	3.277	0	0	8.552	7.796	28.902	MWD+IFR1+MS
2100	9.668	290.556	2096.053	8.777	0	8.141	0	3.369	0	0	8.853	8.123	29.407	MWD+IFR1+MS
2200	9.668	290.556	2194.633	9.099	0	8.488	0	3.466	0	0	9.176	8.464	30.923	MWD+IFR1+MS
2300	9.668	290.556	2293.213	9.425	0	8.837	0	3.567	0	0	9.504	8.806	32.385	MWD+IFR1+MS
2400	9.668	290.556	2391.793	9.754	0	9.187	0	3.671	0	0	9.836	9.15	33.789	MWD+IFR1+MS
2500	9.668	290.556	2490.373	10.087	0	9.539	0	3.779	0	0	10.171	9.495	35.131	MWD+IFR1+MS
2600	9.668	290.556	2588.952	10.423	0	9.893	0	3.89	0	0	10.51	9.841	36.408	MWD+IFR1+MS
2700	9.668	290.556	2687.532	10.762	0	10.248	0	4.004	0	0	10.851	10.189	37.62	MWD+IFR1+MS
2800	9.668	290.556	2786.112	11.104	0	10.604	0	4.121	0	0	11.195	10.538	38.767	MWD+IFR1+MS
2900	9.668	290.556	2884.692	11.447	0	10.961	0	4.242	0	0	11.541	10.887	39.85	MWD+IFR1+MS
3000	9.668	290.556	2983.272	11.793	0	11.319	0	4.365	0	0	11.889	11.238	40.871	MWD+IFR1+MS
3100	9.668	290.556	3081.851	12.141	0	11.677	0	4.491	0	0	12.239	11.59	41.832	MWD+IFR1+MS
3200	9.668	290.556	3180.431	12.49	0	12.037	0	4.621	0	0	12.591	11.943	42.736	MWD+IFR1+MS
3300	9.668	290.556	3279.011	12.841	0	12.397	0	4.752	0	0	12.944	12.296	43.585	MWD+IFR1+MS
3400	9.668	290.556	3377.591	13.194	0	12.758	0	4.887	0	0	13.298	12.65	44.382	MWD+IFR1+MS
3500	9.668	290.556	3476.171	13.548	0	13.12	0	5.024	0	0	13.653	13.006	45.131	MWD+IFR1+MS
3600	9.668	290.556	3574.75	13.903	0	13.482	0	5.164	0	0	14.01	13.362	45.833	MWD+IFR1+MS
3700	9.668	290.556	3673.33	14.259	0	13.845	0	5.307	0	0	14.368	13.718	46.493	MWD+IFR1+MS
3800	9.668	290.556	3771.91	14.617	0	14.208	0	5.452	0	0	14.726	14.076	47.112	MWD+IFR1+MS
3900	9.668	290.556	3870.49	14.975	0	14.572	0	5.6	0	0	15.085	14.434	47.693	MWD+IFR1+MS
4000	9.668	290.556	3969.07	15.334	0	14.936	0	5.75	0	0	15.445	14.792	48.238	MWD+IFR1+MS
4100	9.668	290.556	4067.649	15.694	0	15.3	0	5.902	0	0	15.806	15.151	48.751	MWD+IFR1+MS
4200	9.668	290.556	4166.229	16.055	0	15.665	0	6.058	0	0	16.167	15.511	49.232	MWD+IFR1+MS
4300	9.668	290.556	4264.809	16.417	0	16.03	0	6.215	0	0	16.529	15.871	49.684	MWD+IFR1+MS
4400	9.668	290.556	4363.389	16.78	0	16.395	0	6.376	0	0	16.892	16.232	50.11	MWD+IFR1+MS
4500	9.668	290.556	4461.969	17.143	0	16.761	0	6.538	0	0	17.255	16.593	50.509	MWD+IFR1+MS
4600	9.668	290.556	4560.548	17.507	0	17.127	0	6.703	0	0	17.618	16.955	50.885	MWD+IFR1+MS
4700	9.668	290.556	4659.128	17.871	0	17.493	0	6.871	0	0	17.982	17.317	51.239	MWD+IFR1+MS
4800	9.668	290.556	4757.708	18.236	0	17.859	0	7.041	0	0	18.346	17.68	51.571	MWD+IFR1+MS
4900	9.668	290.556	4856.288	18.601	0	18.226	0	7.214	0	0	18.711	18.043	51.884	MWD+IFR1+MS
5000	9.668	290.556	4954.868	18.967	0	18.592	0	7.389	0	0	19.076	18.406	52.178	MWD+IFR1+MS
5100	9.668	290.556	5053.447	19.333	0	18.959	0	7.566	0	0	19.441	18.77	52.455	MWD+IFR1+MS
5200	9.668	290.556	5152.027	19.7	0	19.327	0	7.746	0	0	19.807	19.134	52.716	MWD+IFR1+MS
5300	9.668	290.556	5250.607	20.067	0	19.694	0	7.929	0	0	20.172	19.498	52.96	MWD+IFR1+MS
5400	9.668	290.556	5349.187	20.435	0	20.062	0	8.114	0	0	20.539	19.863	53.191	MWD+IFR1+MS
5500	9.668	290.556	5447.767	20.803	0	20.429	0	8.301	0	0	20.905	20.228	53.407	MWD+IFR1+MS
5600	9.668	290.556	5546.346	21.171	0	20.797	0	8.491	0	0	21.272	20.593	53.61	MWD+IFR1+MS
5700	9.668	290.556	5644.926	21.54	0	21.165	0	8.683	0	0	21.638	20.958	53.801	MWD+IFR1+MS

5800	9.668	290.556	5743.506	21.909	0	21.533	0	8.878	0	0	22.006	21.324	53.98	MWD+IFR1+MS
5900	9.668	290.556	5842.086	22.278	0	21.901	0	9.076	0	0	22.373	21.69	54.147	MWD+IFR1+MS
6000	9.668	290.556	5940.666	22.647	0	22.27	0	9.276	0	0	22.74	22.056	54.304	MWD+IFR1+MS
6100	9.668	290.556	6039.245	23.017	0	22.638	0	9.478	0	0	23.108	22.423	54.451	MWD+IFR1+MS
6200	9.668	290.556	6137.825	23.387	0	23.007	0	9.683	0	0	23.476	22.79	54.588	MWD+IFR1+MS
6300	9.668	290.556	6236.405	23.757	0	23.375	0	9.89	0	0	23.844	23.156	54.715	MWD+IFR1+MS
6400	9.668	290.556	6334.985	24.128	0	23.744	0	10.1	0	0	24.212	23.524	54.834	MWD+IFR1+MS
6500	9.668	290.556	6433.565	24.499	0	24.113	0	10.313	0	0	24.58	23.891	54.944	MWD+IFR1+MS
6586.565	9.668	290.556	6518.9	24.818	0	24.431	0	10.499	0	0	24.896	24.209	54.984	MWD+IFR1+MS
6600	9.399	290.556	6532.15	24.871	0	24.479	0	10.528	0	0	24.944	24.258	54.97	MWD+IFR1+MS
6700	7.399	290.556	6631.072	25.282	0	24.841	0	10.746	0	0	25.329	24.627	53.923	MWD+IFR1+MS
6800	5.399	290.556	6730.444	25.733	0	25.204	0	10.967	0	0	25.778	24.997	51.339	MWD+IFR1+MS
6900	3.399	290.556	6830.144	26.148	0	25.563	0	11.185	0	0	26.224	25.361	49.317	MWD+IFR1+MS
7000	1.399	290.556	6930.052	26.528	0	25.917	0	11.401	0	0	26.663	25.717	47.731	MWD+IFR1+MS
7069.955	0	0	7000	26.495	0	26.389	0	11.551	0	0	26.917	25.958	48.153	MWD+IFR1+MS
7100	0	0	7030.045	26.595	0	26.488	0	11.616	0	0	27.014	26.061	48.205	MWD+IFR1+MS
7200	0	0	7130.045	26.927	0	26.821	0	11.833	0	0	27.337	26.403	48.262	MWD+IFR1+MS
7300	0	0	7230.045	27.264	0	27.159	0	12.052	0	0	27.661	26.754	48.348	MWD+IFR1+MS
7400	0	0	7330.045	27.602	0	27.496	0	12.275	0	0	27.986	27.105	48.437	MWD+IFR1+MS
7500	0	0	7430.045	27.94	0	27.835	0	12.501	0	0	28.312	27.456	48.529	MWD+IFR1+MS
7600	0	0	7530.045	28.278	0	28.174	0	12.73	0	0	28.638	27.808	48.625	MWD+IFR1+MS
7700	0	0	7630.045	28.617	0	28.513	0	12.962	0	0	28.965	28.159	48.724	MWD+IFR1+MS
7800	0	0	7730.045	28.957	0	28.853	0	13.197	0	0	29.293	28.511	48.826	MWD+IFR1+MS
7900	0	0	7830.045	29.297	0	29.193	0	13.436	0	0	29.622	28.863	48.932	MWD+IFR1+MS
8000	0	0	7930.045	29.637	0	29.534	0	13.677	0	0	29.951	29.215	49.043	MWD+IFR1+MS
8100	0	0	8030.045	29.978	0	29.875	0	13.921	0	0	30.281	29.567	49.157	MWD+IFR1+MS
8200	0	0	8130.045	30.319	0	30.216	0	14.168	0	0	30.612	29.92	49.277	MWD+IFR1+MS
8300	0	0	8230.045	30.661	0	30.558	0	14.419	0	0	30.943	30.272	49.4	MWD+IFR1+MS
8400	0	0	8330.045	31.003	0	30.9	0	14.672	0	0	31.275	30.625	49.529	MWD+IFR1+MS
8500	0	0	8430.045	31.345	0	31.243	0	14.929	0	0	31.608	30.977	49.664	MWD+IFR1+MS
8600	0	0	8530.045	31.688	0	31.586	0	15.188	0	0	31.941	31.33	49.804	MWD+IFR1+MS
8700	0	0	8630.045	32.031	0	31.929	0	15.451	0	0	32.274	31.683	49.95	MWD+IFR1+MS
8800	0	0	8730.045	32.374	0	32.273	0	15.716	0	0	32.608	32.036	50.103	MWD+IFR1+MS
8900	0	0	8830.045	32.718	0	32.617	0	15.985	0	0	32.943	32.39	50.262	MWD+IFR1+MS
9000	0	0	8930.045	33.062	0	32.961	0	16.257	0	0	33.278	32.743	50.429	MWD+IFR1+MS
9100	0	0	9030.045	33.406	0	33.306	0	16.532	0	0	33.614	33.096	50.604	MWD+IFR1+MS
9200	0	0	9130.045	33.751	0	33.651	0	16.81	0	0	33.95	33.45	50.788	MWD+IFR1+MS
9300	0	0	9230.045	34.096	0	33.996	0	17.09	0	0	34.287	33.803	50.98	MWD+IFR1+MS
9400	0	0	9330.045	34.441	0	34.341	0	17.374	0	0	34.624	34.157	51.182	MWD+IFR1+MS
9500	0	0	9430.045	34.786	0	34.687	0	17.661	0	0	34.961	34.511	51.395	MWD+IFR1+MS
9600	0	0	9530.045	35.132	0	35.033	0	17.951	0	0	35.299	34.865	51.619	MWD+IFR1+MS
9700	0	0	9630.045	35.478	0	35.379	0	18.244	0	0	35.637	35.219	51.856	MWD+IFR1+MS
9800	0	0	9730.045	35.824	0	35.725	0	18.541	0	0	35.976	35.573	52.105	MWD+IFR1+MS
9900	0	0	9830.045	36.171	0	36.072	0	18.84	0	0	36.315	35.927	52.369	MWD+IFR1+MS
10000	0	0	9930.045	36.518	0	36.419	0	19.142	0	0	36.655	36.281	52.648	MWD+IFR1+MS
10100	0	0	10030.045	36.864	0	36.766	0	19.447	0	0	36.994	36.635	52.944	MWD+IFR1+MS
10200	0	0	10130.045	37.212	0	37.113	0	19.756	0	0	37.335	36.99	53.259	MWD+IFR1+MS
10300	0	0	10230.045	37.559	0	37.461	0	20.067	0	0	37.675	37.344	53.593	MWD+IFR1+MS
10400	0	0	10330.045	37.906	0	37.809	0	20.381	0	0	38.016	37.698	53.95	MWD+IFR1+MS

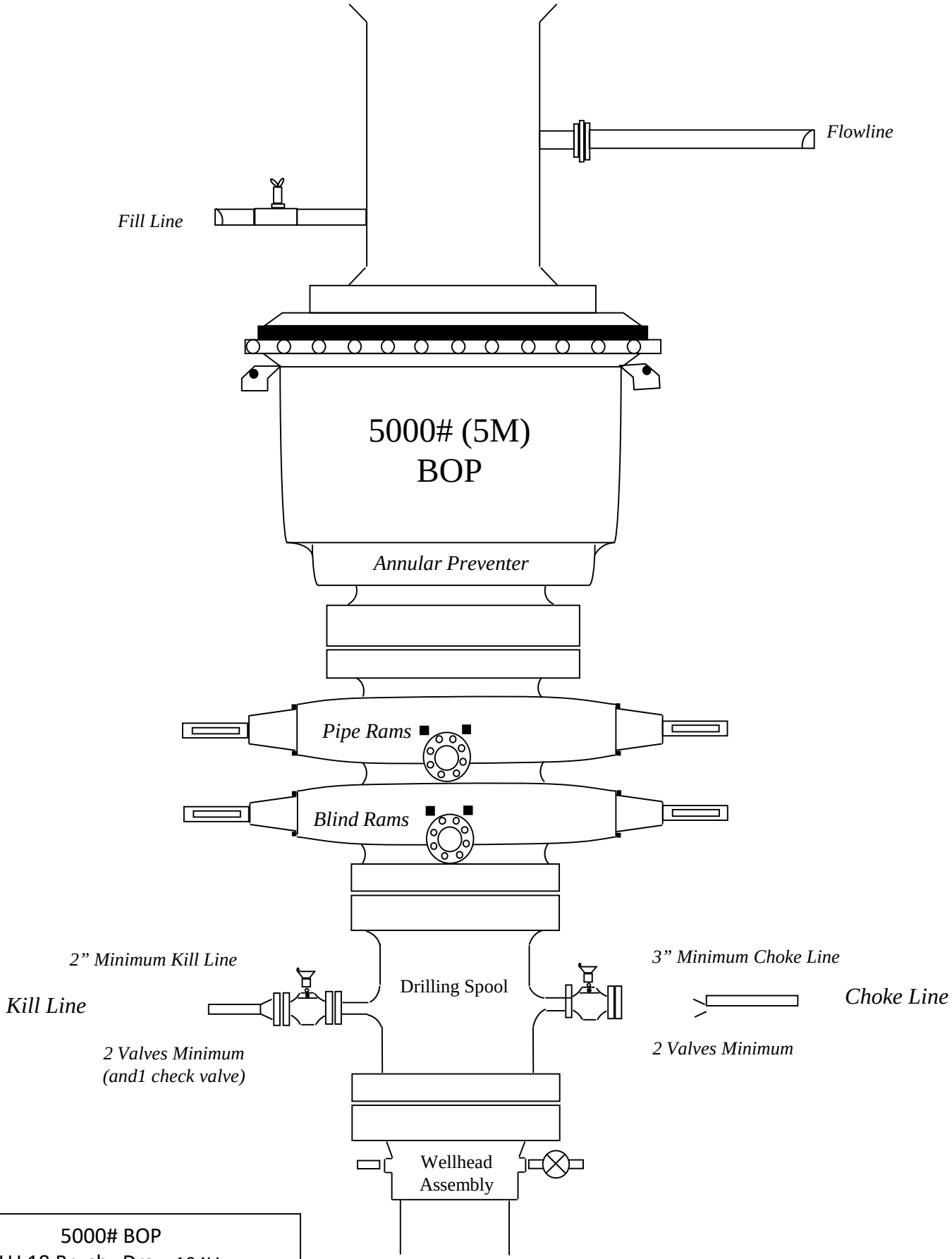
10500	0	0	10430.045	38.254	0	38.157	0	20.699	0	0	38.358	38.053	54.33	MWD+IFR1+MS
10600	0	0	10530.045	38.602	0	38.505	0	21.02	0	0	38.699	38.407	54.737	MWD+IFR1+MS
10700	0	0	10630.045	38.95	0	38.853	0	21.343	0	0	39.041	38.762	55.173	MWD+IFR1+MS
10800	0	0	10730.045	39.299	0	39.202	0	21.67	0	0	39.384	39.116	55.641	MWD+IFR1+MS
10900	0	0	10830.045	39.647	0	39.55	0	21.999	0	0	39.726	39.471	56.145	MWD+IFR1+MS
11000	0	0	10930.045	39.996	0	39.899	0	22.332	0	0	40.069	39.826	56.687	MWD+IFR1+MS
11046.955	0	0	10977	40.158	0	40.061	0	22.489	0	0	40.23	39.989	56.805	MWD+IFR1+MS
11100	5.304	163	11029.969	40.149	0	40.183	0	22.667	0	0	40.431	40.166	58.722	MWD+IFR1+MS
11200	15.304	163	11128.231	40.306	0	40.491	0	23.062	0	0	41.63	40.491	72.576	MWD+IFR1+MS
11300	25.304	163	11221.898	40.375	0	40.782	0	23.706	0	0	43.28	40.779	74.772	MWD+IFR1+MS
11400	35.304	163	11308.124	39.772	0	41.046	0	24.676	0	0	44.63	41.039	75.471	MWD+IFR1+MS
11500	45.304	163	11384.289	38.668	0	41.279	0	26.009	0	0	45.656	41.267	75.888	MWD+IFR1+MS
11546.955	50	163	11415.911	37.416	0	41.375	0	26.259	0	0	45.798	41.362	75.964	MWD+IFR1+MS
11600	54.844	165.73	11448.254	36.023	0	41.467	0	26.459	0	0	45.884	41.466	76.199	MWD+IFR1+MS
11700	64.112	170.1	11499.004	34.042	0	41.792	0	27.577	0	0	46.119	41.788	78.339	MWD+IFR1+MS
11800	73.492	173.825	11535.134	33.087	0	42.167	0	29.508	0	0	46.314	42.155	80.806	MWD+IFR1+MS
11900	82.931	177.202	11555.547	32.749	0	42.481	0	31.513	0	0	46.377	42.446	81.853	MWD+IFR1+MS
11974.708	90	179.625	11560.151	32.403	0	42.635	0	32.403	0	0	46.389	42.559	81.69	MWD+IFR1+MS
12000	90	179.625	11560.151	32.45	0	42.647	0	32.45	0	0	46.392	42.569	81.594	MWD+IFR1+MS
12100	90	179.625	11560.151	32.583	0	42.697	0	32.583	0	0	46.406	42.611	81.128	MWD+IFR1+MS
12200	90	179.625	11560.151	32.737	0	42.76	0	32.737	0	0	46.421	42.664	80.63	MWD+IFR1+MS
12300	90	179.625	11560.151	32.909	0	42.833	0	32.909	0	0	46.438	42.728	80.099	MWD+IFR1+MS
12390.432	90	179.625	11560	33.079	0	42.908	0	33.079	0	0	46.455	42.792	79.591	MWD+IFR1+MS
12400	90	179.625	11560	33.097	0	42.916	0	33.097	0	0	46.457	42.799	79.536	MWD+IFR1+MS
12500	90	179.625	11560	33.3	0	43.006	0	33.3	0	0	46.478	42.878	78.937	MWD+IFR1+MS
12600	90	179.625	11560	33.525	0	43.11	0	33.525	0	0	46.501	42.968	78.282	MWD+IFR1+MS
12700	90	179.625	11560	33.766	0	43.224	0	33.766	0	0	46.526	43.068	77.574	MWD+IFR1+MS
12800	90	179.625	11560	34.023	0	43.348	0	34.023	0	0	46.553	43.176	76.804	MWD+IFR1+MS
12900	90	179.625	11560	34.297	0	43.482	0	34.297	0	0	46.583	43.292	75.964	MWD+IFR1+MS
13000	90	179.625	11560	34.586	0	43.625	0	34.586	0	0	46.616	43.416	75.045	MWD+IFR1+MS
13100	90	179.625	11560	34.89	0	43.779	0	34.89	0	0	46.653	43.547	74.033	MWD+IFR1+MS
13200	90	179.625	11560	35.21	0	43.941	0	35.21	0	0	46.692	43.685	72.917	MWD+IFR1+MS
13300	90	179.625	11560	35.543	0	44.114	0	35.543	0	0	46.736	43.83	71.682	MWD+IFR1+MS
13400	90	179.625	11560	35.891	0	44.295	0	35.891	0	0	46.785	43.98	70.309	MWD+IFR1+MS
13500	90	179.625	11560	36.253	0	44.486	0	36.253	0	0	46.839	44.135	68.782	MWD+IFR1+MS
13600	90	179.625	11560	36.627	0	44.686	0	36.627	0	0	46.898	44.294	67.08	MWD+IFR1+MS
13700	90	179.625	11560	37.015	0	44.896	0	37.015	0	0	46.965	44.456	65.184	MWD+IFR1+MS
13800	90	179.625	11560	37.415	0	45.114	0	37.415	0	0	47.041	44.619	63.077	MWD+IFR1+MS
13900	90	179.625	11560	37.827	0	45.34	0	37.827	0	0	47.126	44.783	60.746	MWD+IFR1+MS
14000	90	179.625	11560	38.251	0	45.576	0	38.251	0	0	47.221	44.945	58.186	MWD+IFR1+MS
14100	90	179.625	11560	38.686	0	45.82	0	38.686	0	0	47.33	45.104	55.408	MWD+IFR1+MS
14200	90	179.625	11560	39.131	0	46.072	0	39.131	0	0	47.453	45.258	52.438	MWD+IFR1+MS
14300	90	179.625	11560	39.588	0	46.332	0	39.588	0	0	47.591	45.405	49.323	MWD+IFR1+MS
14400	90	179.625	11560	40.054	0	46.601	0	40.054	0	0	47.747	45.544	46.127	MWD+IFR1+MS
14500	90	179.625	11560	40.531	0	46.877	0	40.531	0	0	47.921	45.674	42.928	MWD+IFR1+MS
14600	90	179.625	11560	41.017	0	47.162	0	41.017	0	0	48.112	45.795	39.8	MWD+IFR1+MS
14700	90	179.625	11560	41.512	0	47.454	0	41.512	0	0	48.322	45.907	36.811	MWD+IFR1+MS
14800	90	179.625	11560	42.016	0	47.753	0	42.016	0	0	48.548	46.009	34.01	MWD+IFR1+MS
14900	90	179.625	11560	42.528	0	48.06	0	42.528	0	0	48.791	46.104	31.427	MWD+IFR1+MS

15000	90	179.625	11560	43.049	0	48.374	0	43.049	0	0	49.049	46.192	29.073	MWD+IFR1+MS
15100	90	179.625	11560	43.577	0	48.695	0	43.577	0	0	49.322	46.273	26.946	MWD+IFR1+MS
15200	90	179.625	11560	44.113	0	49.024	0	44.113	0	0	49.607	46.35	25.035	MWD+IFR1+MS
15300	90	179.625	11560	44.657	0	49.359	0	44.657	0	0	49.905	46.422	23.322	MWD+IFR1+MS
15400	90	179.625	11560	45.208	0	49.7	0	45.208	0	0	50.213	46.49	21.787	MWD+IFR1+MS
15500	90	179.625	11560	45.765	0	50.049	0	45.765	0	0	50.532	46.556	20.412	MWD+IFR1+MS
15600	90	179.625	11560	46.329	0	50.403	0	46.329	0	0	50.861	46.619	19.179	MWD+IFR1+MS
15700	90	179.625	11560	46.899	0	50.764	0	46.899	0	0	51.199	46.68	18.069	MWD+IFR1+MS
15800	90	179.625	11560	47.476	0	51.132	0	47.476	0	0	51.545	46.74	17.068	MWD+IFR1+MS
15900	90	179.625	11560	48.058	0	51.505	0	48.058	0	0	51.899	46.799	16.162	MWD+IFR1+MS
16000	90	179.625	11560	48.646	0	51.884	0	48.646	0	0	52.261	46.857	15.341	MWD+IFR1+MS
16100	90	179.625	11560	49.24	0	52.269	0	49.24	0	0	52.631	46.914	14.593	MWD+IFR1+MS
16200	90	179.625	11560	49.839	0	52.659	0	49.839	0	0	53.007	46.971	13.91	MWD+IFR1+MS
16300	90	179.625	11560	50.443	0	53.055	0	50.443	0	0	53.39	47.027	13.285	MWD+IFR1+MS
16400	90	179.625	11560	51.052	0	53.456	0	51.052	0	0	53.779	47.083	12.71	MWD+IFR1+MS
16500	90	179.625	11560	51.665	0	53.863	0	51.665	0	0	54.175	47.139	12.181	MWD+IFR1+MS
16600	90	179.625	11560	52.283	0	54.275	0	52.283	0	0	54.576	47.196	11.693	MWD+IFR1+MS
16700	90	179.625	11560	52.906	0	54.692	0	52.906	0	0	54.984	47.252	11.24	MWD+IFR1+MS
16800	90	179.625	11560	53.533	0	55.113	0	53.533	0	0	55.397	47.309	10.82	MWD+IFR1+MS
16900	90	179.625	11560	54.164	0	55.54	0	54.164	0	0	55.815	47.366	10.429	MWD+IFR1+MS
17000	90	179.625	11560	54.799	0	55.971	0	54.799	0	0	56.238	47.423	10.064	MWD+IFR1+MS
17100	90	179.625	11560	55.438	0	56.407	0	55.438	0	0	56.667	47.481	9.723	MWD+IFR1+MS
17200	90	179.625	11560	56.08	0	56.847	0	56.08	0	0	57.1	47.539	9.404	MWD+IFR1+MS
17300	90	179.625	11560	56.726	0	57.292	0	56.726	0	0	57.539	47.598	9.104	MWD+IFR1+MS
17400	90	179.625	11560	57.376	0	57.741	0	57.376	0	0	57.982	47.657	8.822	MWD+IFR1+MS
17500	90	179.625	11560	58.029	0	58.194	0	58.029	0	0	58.429	47.717	8.557	MWD+IFR1+MS
17600	90	179.625	11560	58.685	0	58.651	0	58.685	0	0	58.881	47.777	8.307	MWD+IFR1+MS
17700	90	179.625	11560	59.344	0	59.112	0	59.344	0	0	59.337	47.838	8.07	MWD+IFR1+MS
17800	90	179.625	11560	60.006	0	59.577	0	60.006	0	0	59.797	47.899	7.847	MWD+IFR1+MS
17900	90	179.625	11560	60.672	0	60.046	0	60.672	0	0	60.261	47.961	7.635	MWD+IFR1+MS
18000	90	179.625	11560	61.34	0	60.519	0	61.34	0	0	60.729	48.024	7.433	MWD+IFR1+MS
18100	90	179.625	11560	62.01	0	60.995	0	62.01	0	0	61.201	48.087	7.242	MWD+IFR1+MS
18200	90	179.625	11560	62.684	0	61.475	0	62.684	0	0	61.677	48.151	7.06	MWD+IFR1+MS
18300	90	179.625	11560	63.36	0	61.958	0	63.36	0	0	62.156	48.216	6.887	MWD+IFR1+MS
18400	90	179.625	11560	64.038	0	62.445	0	64.038	0	0	62.639	48.281	6.722	MWD+IFR1+MS
18500	90	179.625	11560	64.719	0	62.935	0	64.719	0	0	63.126	48.347	6.564	MWD+IFR1+MS
18600	90	179.625	11560	65.402	0	63.428	0	65.402	0	0	63.615	48.413	6.413	MWD+IFR1+MS
18700	90	179.625	11560	66.088	0	63.924	0	66.088	0	0	64.108	48.481	6.269	MWD+IFR1+MS
18800	90	179.625	11560	66.775	0	64.424	0	66.775	0	0	64.604	48.549	6.131	MWD+IFR1+MS
18900	90	179.625	11560	67.465	0	64.926	0	67.465	0	0	65.104	48.618	5.998	MWD+IFR1+MS
19000	90	179.625	11560	68.157	0	65.431	0	68.157	0	0	65.606	48.687	5.871	MWD+IFR1+MS
19100	90	179.625	11560	68.851	0	65.94	0	68.851	0	0	66.111	48.757	5.749	MWD+IFR1+MS
19200	90	179.625	11560	69.546	0	66.451	0	69.546	0	0	66.62	48.828	5.632	MWD+IFR1+MS
19300	90	179.625	11560	70.244	0	66.964	0	70.244	0	0	67.131	48.9	5.519	MWD+IFR1+MS
19400	90	179.625	11560	70.943	0	67.481	0	70.943	0	0	67.645	48.972	5.411	MWD+IFR1+MS
19500	90	179.625	11560	71.645	0	68	0	71.645	0	0	68.161	49.045	5.306	MWD+IFR1+MS
19600	90	179.625	11560	72.348	0	68.522	0	72.348	0	0	68.68	49.119	5.206	MWD+IFR1+MS
19686.572	90	179.625	11560	72.957	0	68.975	0	72.957	0	0	69.131	49.183	5.122	MWD+IFR1+MS
19700	90	179.625	11560	73.051	0	69.045	0	73.051	0	0	69.201	49.193	5.109	MWD+IFR1+MS

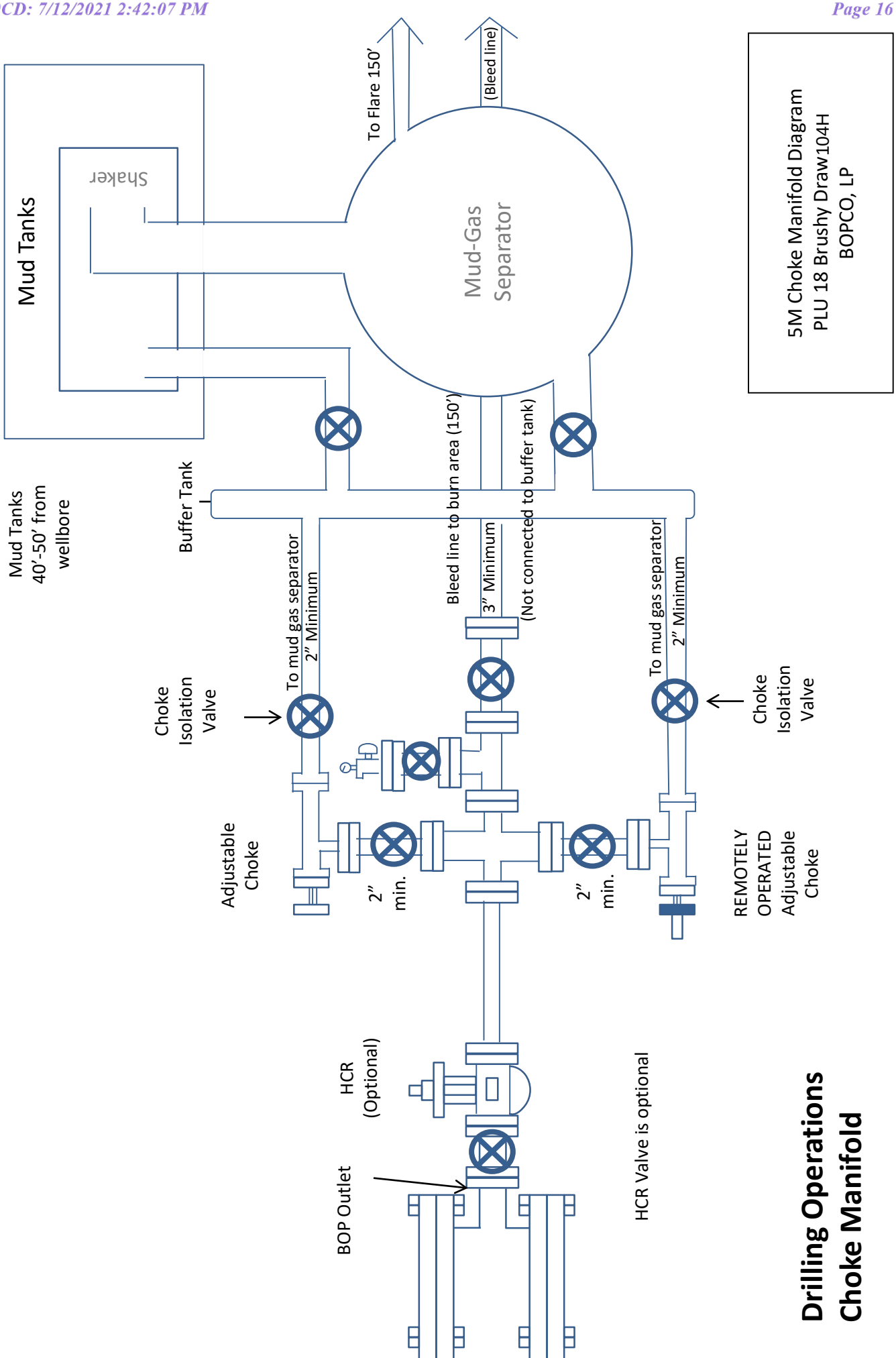
19800	90	179.625	11560	73.756	0	69.569	0	73.756	0	0	69.724	49.268	5.016 MWD+IFR1+ MS
19816.774	90	179.625	11560	73.874	0	69.657	0	73.874	0	0	69.811	49.281	5.001 MWD+IFR1+ MS

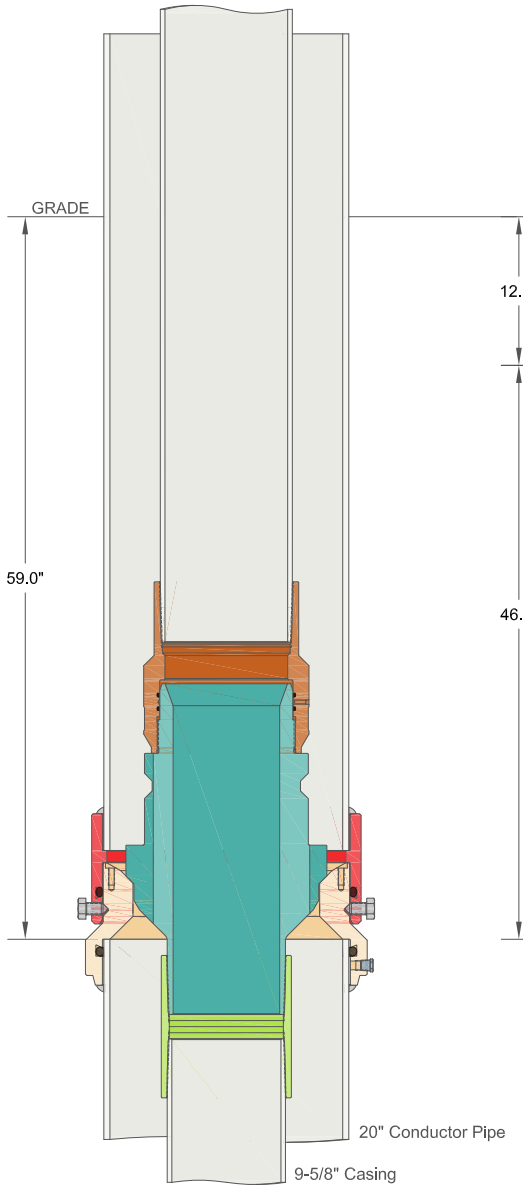
Plan Targets PLU 18 Brushy Draw 124H

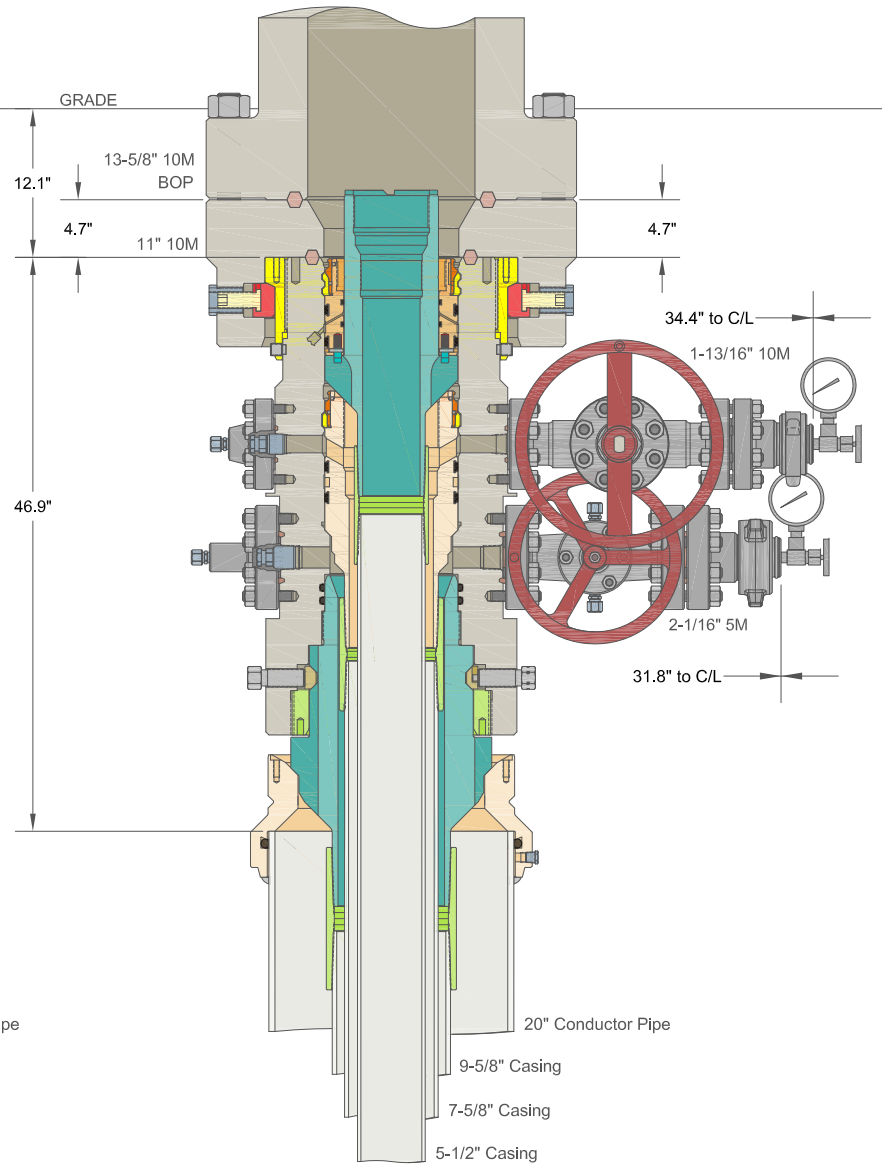
Target Name	Measured Depth (ft)	Grid Northing (ft)	Grid Easting (ft)	TVD MSL (ft)	Target Shape
FTP 50	12390.43	410912.9	626621.1	8360	CIRCLE
LTP 29	19686.61	403616.9	626666.3	8360	CIRCLE
BHL 50	19816.77	403486.7	626667	8360	CIRCLE

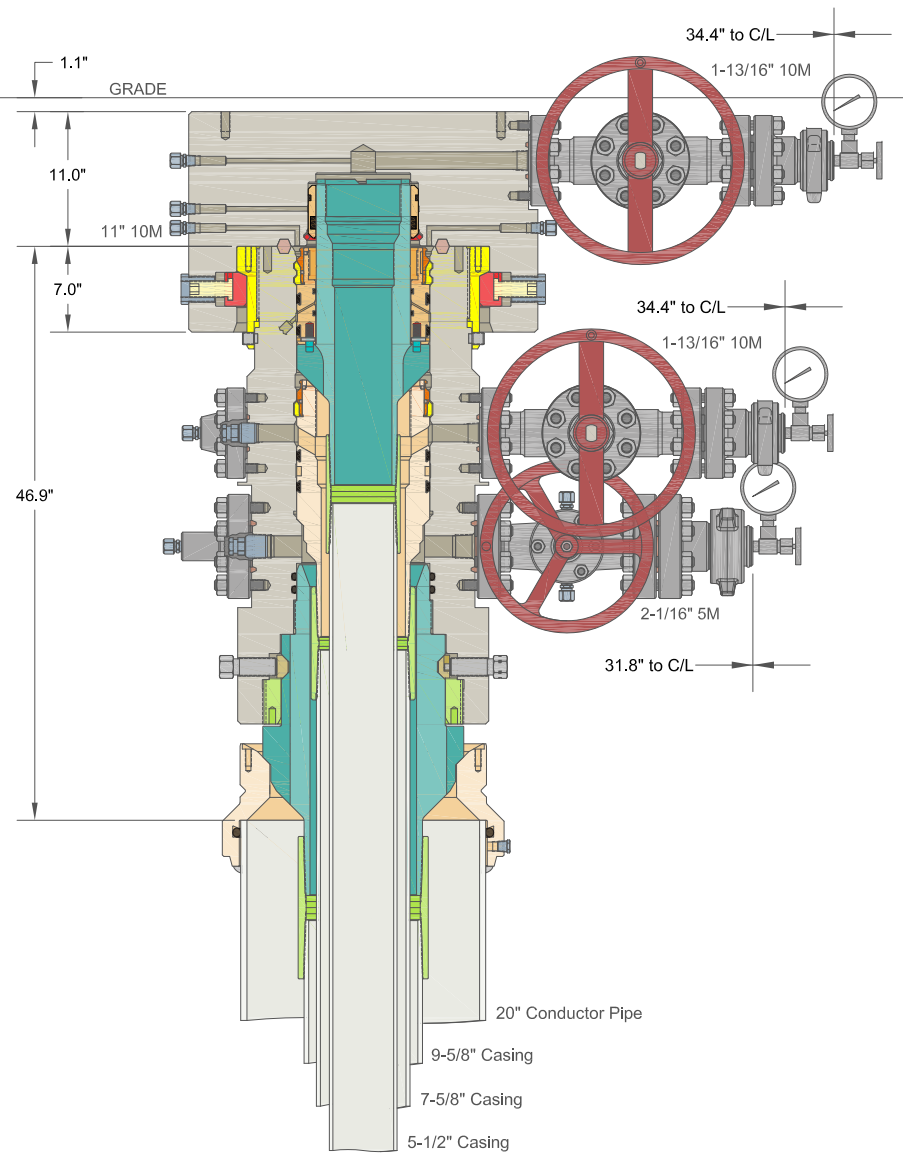


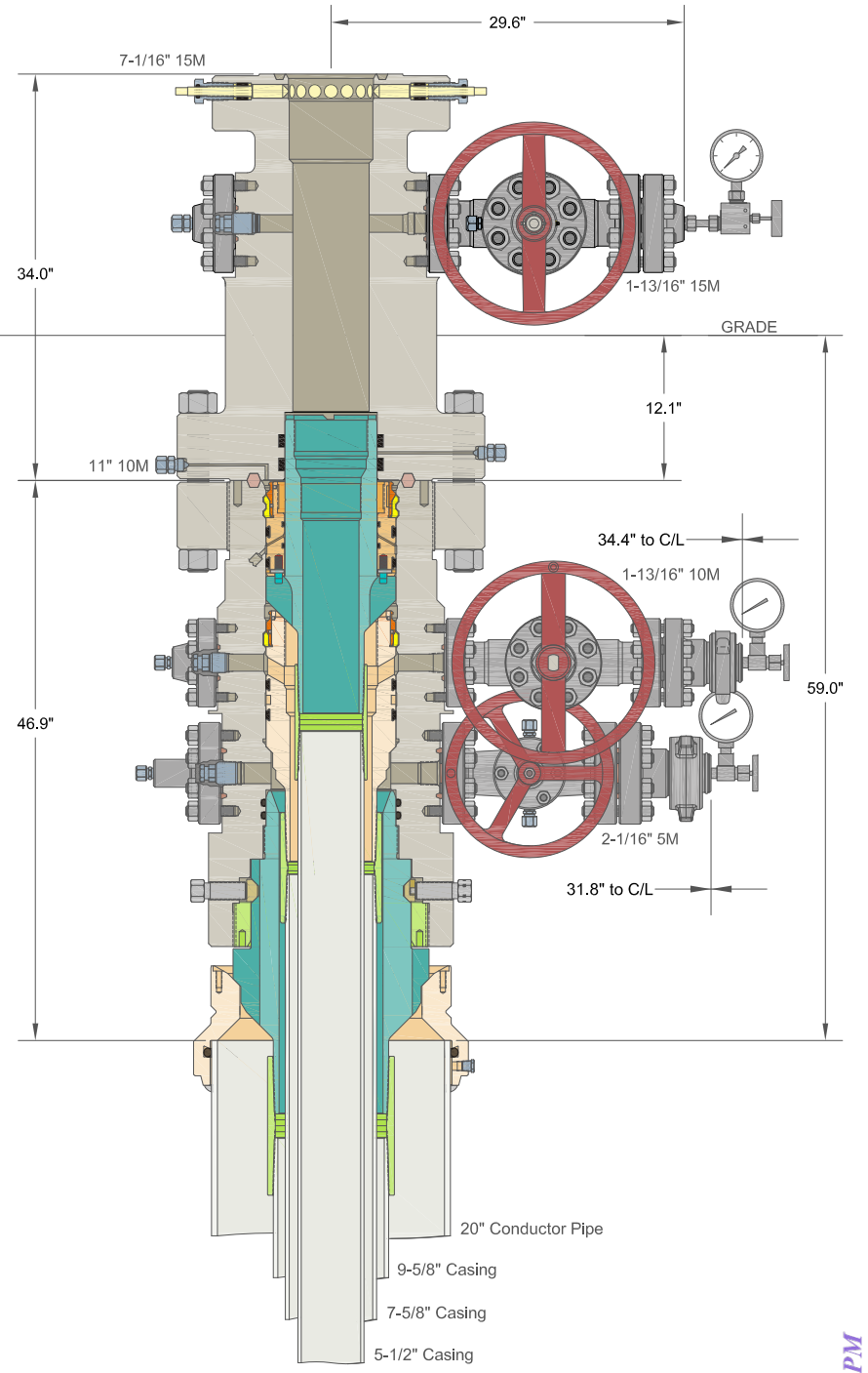
5000# BOP
PLU 18 Brushy Draw 104H
BOPCO, LP


Mud Tanks
Shaker
To Flare 150'
(Bleed line)
Mud-Gas Separator
5M Choke Manifold Diagram
PLU 18 Brushy Draw104H
BOPCO, LP
Mud Tanks 40'-50' from wellbore
Buffer Tank
Bleed line to burn area (150')
3" Minimum
(Not connected to buffer tank)
To mud gas separator
2" Minimum
To mud gas separator
2" Minimum
Choke Isolation Valve
Choke Isolation Valve
Adjustable Choke
2" min.
2" min.
REMOTELY OPERATED Adjustable Choke
HCR (Optional)
BOP Outlet
HCR Valve is optional
Drilling Operations
Choke Manifold









ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

20" x 9-5/8" x 7-5/8" x 5-1/2" MBU-T-CFL-R-DBLO Wellhead
With 11" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head
And 9-5/8", 7-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers

XTO ENERGY INC
ICARUS PAD

DRAWN	DLE	18JAN21
APPRV		
DRAWING NO.	HBE0000479	

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE)

XTO Energy requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

Background

Onshore Oil and Gas Order (OOGO) No. 2, Drilling Operations, Sections III.A.2.i.iv.B states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. OOGO No. 2, Section I.D.2 states, "Some situation may exist either on a well-by-well basis or field-wide basis whereby it is commonly accepted practice to vary a particular minimum standard(s) established in this order. This situation can be resolved by requesting a variance…". XTO Energy feels the break testing the BOPE is such a situation. Therefore, as per OOGO No. 2, Section IV., XTO Energy submits this request for the variance.

Supporting Documentation

OOGO No. 2 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time there have been significant changes in drilling technology. BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since OOGO No. 2 was originally released. The XTO Energy drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

Figure 1: Winch System attached to BOP Stack

Figure 2: BOP Winch System

American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. OOGO No. 2 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, *Well Control Equipment Systems for Drilling Wells* (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component." See Table C.4 below for reference.

62 API STANDARD 53

Table C.4—Initial Pressure Testing, Surface BOP Stacks

Component to be Pressure Tested	Pressure Test—Low Pressure[ac] psig (MPa)	Pressure Test—High Pressure[ac]	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer[b]	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers[bd]	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes[e]	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes[e]	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	

[a] Pressure test evaluation periods shall be a minimum of five minutes.
No visible leaks.
The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure.

[b] Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

[c] For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

[d] For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually.

[e] Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

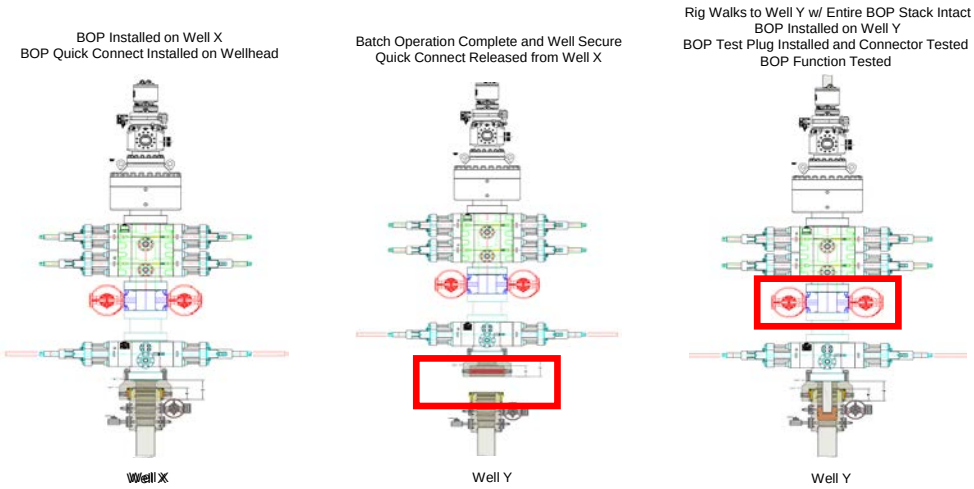
XTO Energy feels break testing and our current procedures meet the intent of OOGO No. 2 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. XTO Energy's internal standards requires complete BOPE tests more often than that of OOGO No. 2 (Every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, XTO Energy performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of the OOGO No.2.

Procedures

1. XTO Energy will use this document for our break testing plan for New Mexico Delaware basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
2. XTO Energy will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
    a. A full BOP test will be conducted on the first well on the pad.
    b. The first intermediate hole section drilled on the pad will be the deepest. All of the remaining hole sections will be the same depth or shallower.
        i. Our Lower WC targets set the intermediate casing shoe no deeper than the Wolfcamp B.
        ii. Our Upper WC targets set the intermediate casing shoe shallower than the Wolfcamp B.
    c. A Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
    d. A full BOP test will be required prior to drilling any production hole.
3. After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
    a. Between the HCV valve and choke line connection
    b. Between the BOP quick connect and the wellhead
4. The BOP is then lifted and removed from the wellhead by a hydraulic system.
5. After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
6. The connections mentioned in 3a and 3b will then be reconnected.
7. Install test plug into the wellhead using test joint or drill pipe.
8. A shell test is performed against the upper pipe rams testing the two breaks.
9. The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
10. Function test will be performed on the following components: lower pipe rams, blind rams, and annular.

11. For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
12. A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

Note: Picture below highlights BOP components that will be tested during batch operations



Summary

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

Based on discussions with the BLM on February 27th 2020 and the supporting documentation submitted to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

1. After a full BOP test is conducted on the first well on the pad.

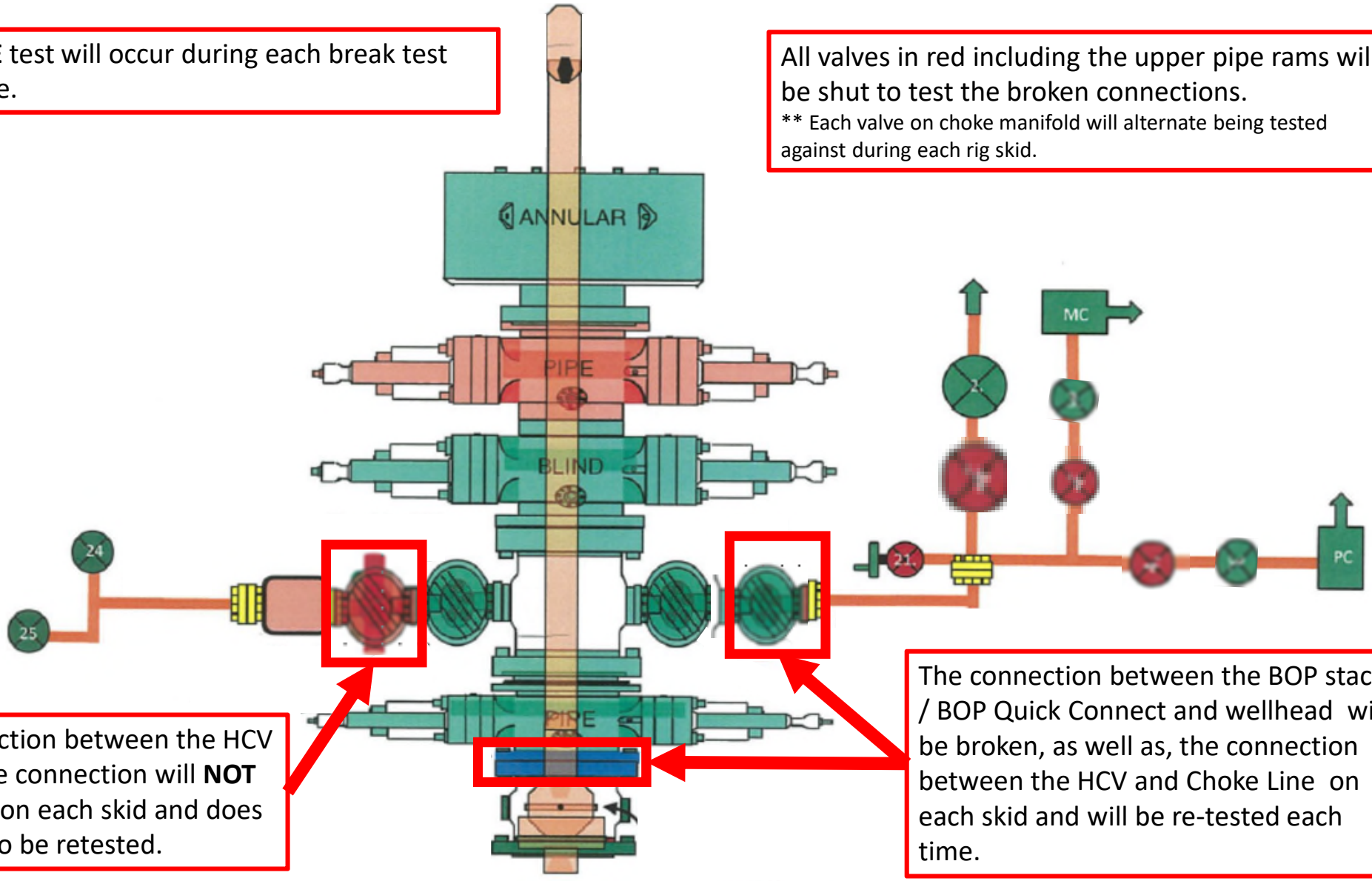
2. The first intermediate hole section drilled on the pad will be the deepest. All of the remaining hole sections will be the same depth or shallower.

3. Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.

4. Full BOP test will be required prior to drilling the production hole.

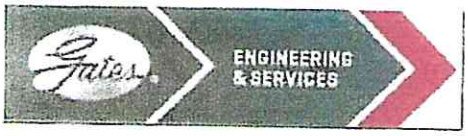
Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.
** Each valve on choke manifold will alternate being tested against during each rig skid.



The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.



GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

GRADE D PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA

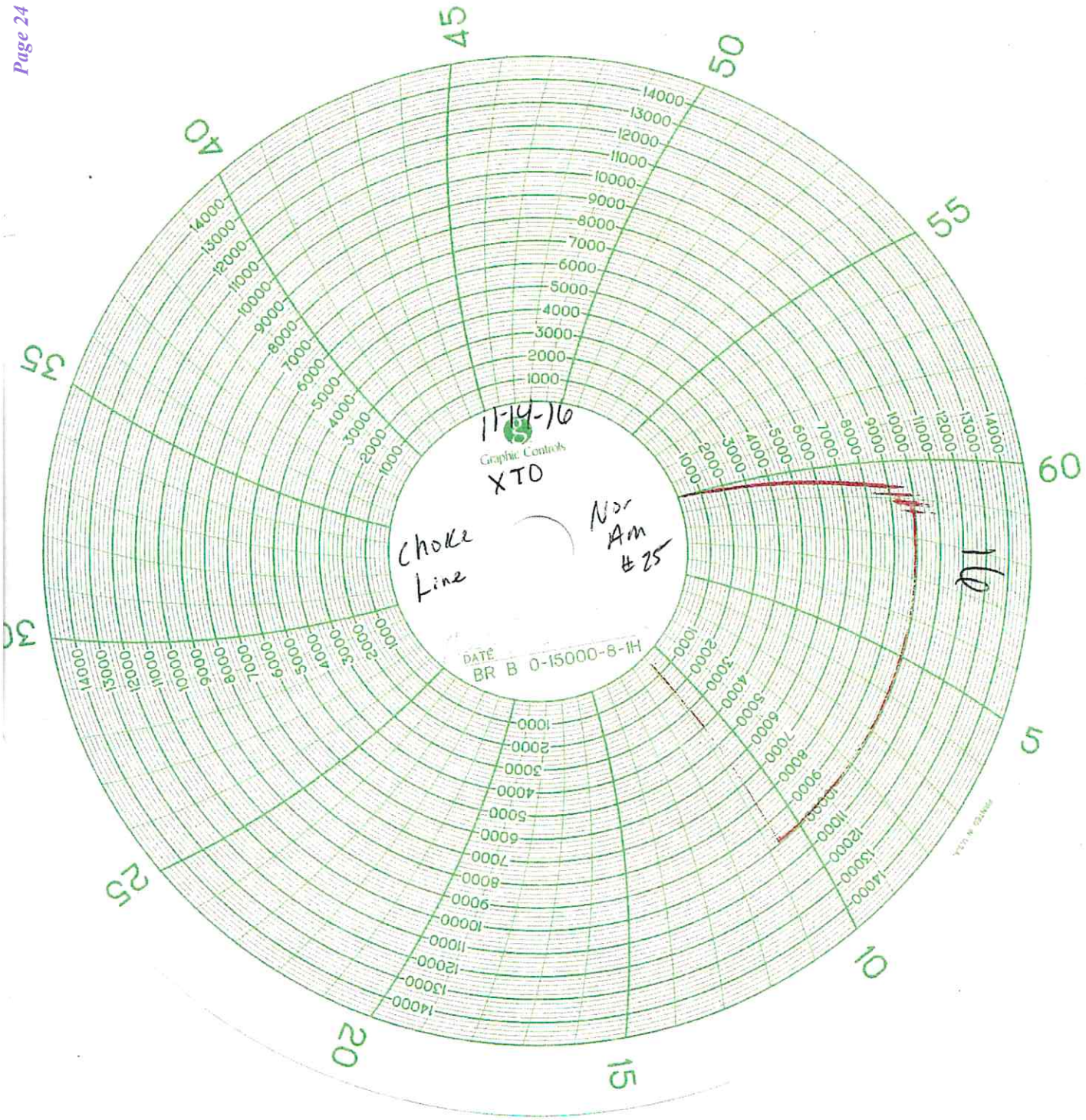
Product Description:	FD3.042.0R41/16.5KFLGE/E LE

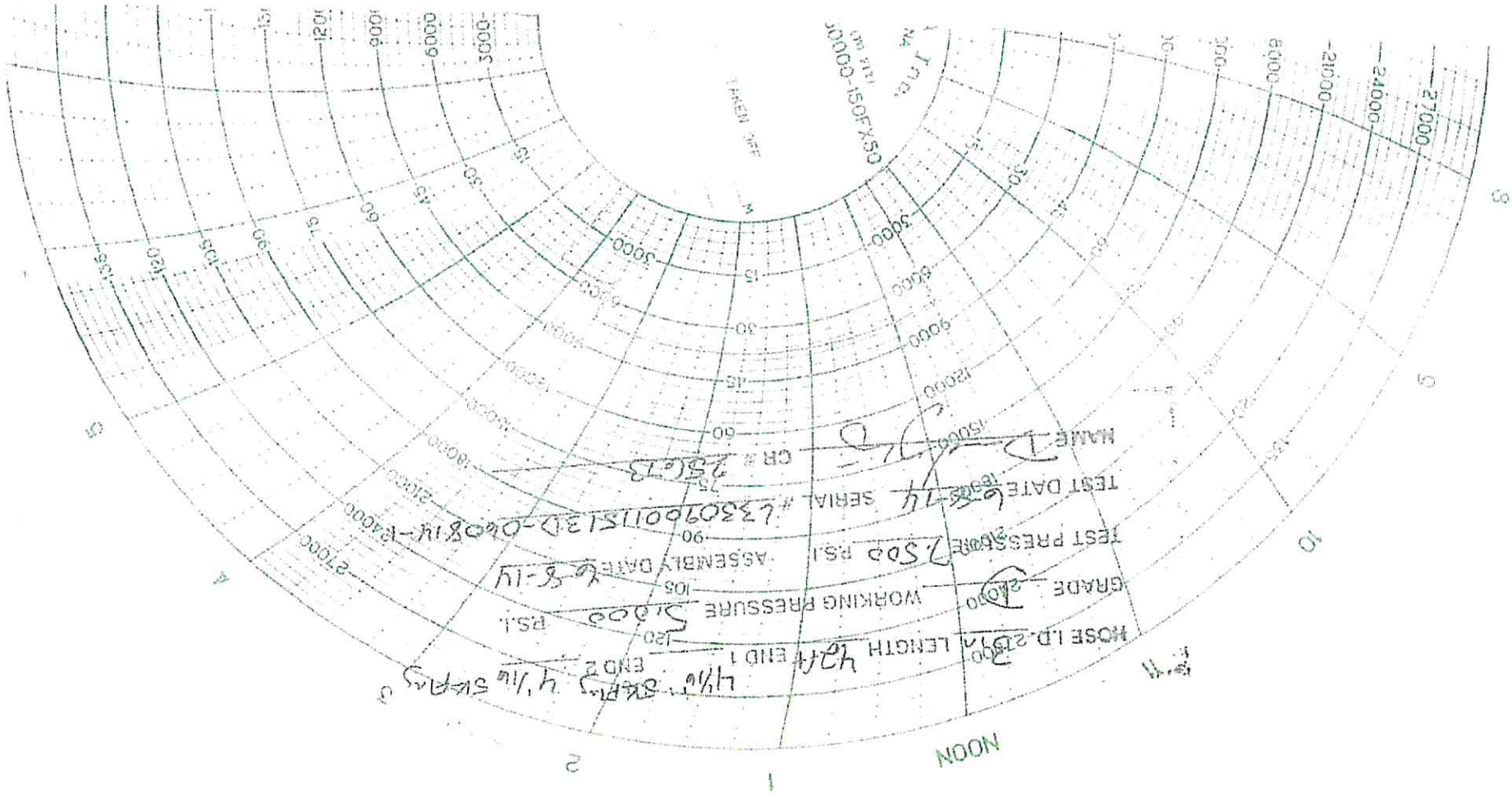
End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011513D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality:	QUALITY	Technical Supervisor :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :		Signature :	

Form PTC - 01 Rev.0 2




NOON
HOSE I.D. 3"
LENGTH
END 1
END 2
GRADE
WORKING PRESSURE
ASSEMBLY DATE
SERIAL #
CR #
MAKE
TEST DATE
TEST PRESSURE
P.S.I.
TAKEN OFF
PUT ON

XTO respectfully requests approval to utilize a spudder rig to pre-set surface casing.

Description of Operations:

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
    a. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and tested as soon as the surface casing is cut off and WOC time has been reached.
3. A blind flange at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wing valves.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling Operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nippled up and tested on the wellhead before drilling operations resume on each well.
    a. The larger rig will move back onto the location within 180 days from the point at which the wells are secured and the spudder rig is moved off location.
    b. The BLM will be notified 24 hours before the larger rig moves back on the pre-set locations
7. XTO will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, XTO will secure the wellhead area by placing a guard rail around the cellar area.

XTO Permian Operating, LLC Offline Cementing Variance Request

XTO requests the option to cement the surface and intermediate casing strings offline as a prudent batch drilling efficiency of acreage development.

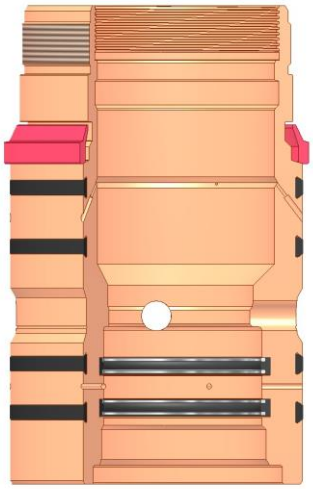
1. Cement Program

No changes to the cement program will take place for offline cementing.

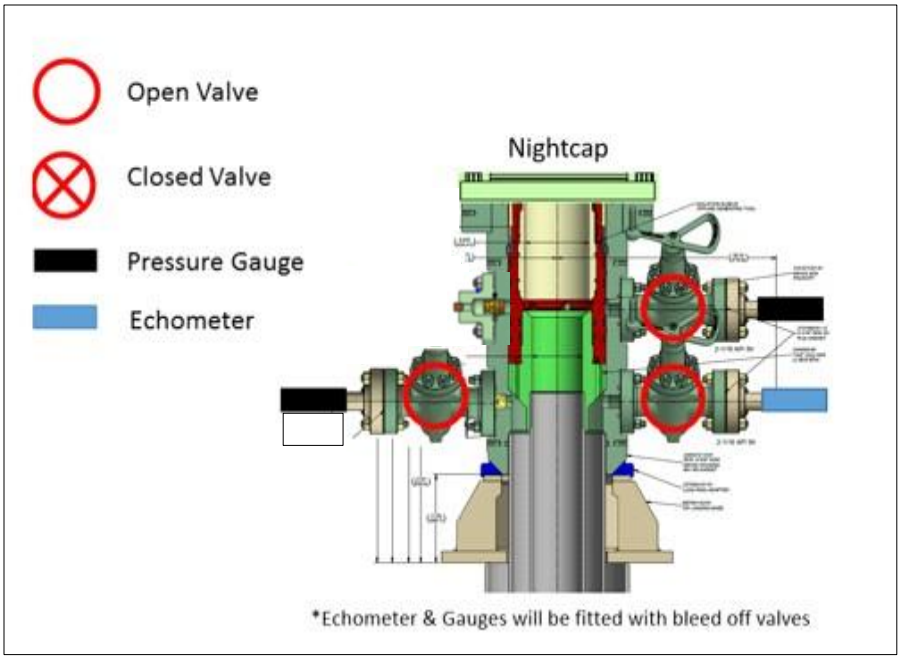
2. Offline Cementing Procedure

The operational sequence will be as follows. If a well control event occurs, the BLM will be contacted for approval prior to conducting offline cementing operations.

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe)
2. Land casing with mandrel
3. Fill pipe with kill weight fluid, do not circulate through floats and confirm well is static
4. Set annular packoff shown below and pressure test to confirm integrity of the seal. Pressure ratings of wellhead components and valves is 5,000 psi.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange.
    a. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed with cement 500ft above the highest formation capable of flow with kill weight mud above or after it has achieved 50-psi compressive strength if kill weight fluid cannot be verified.



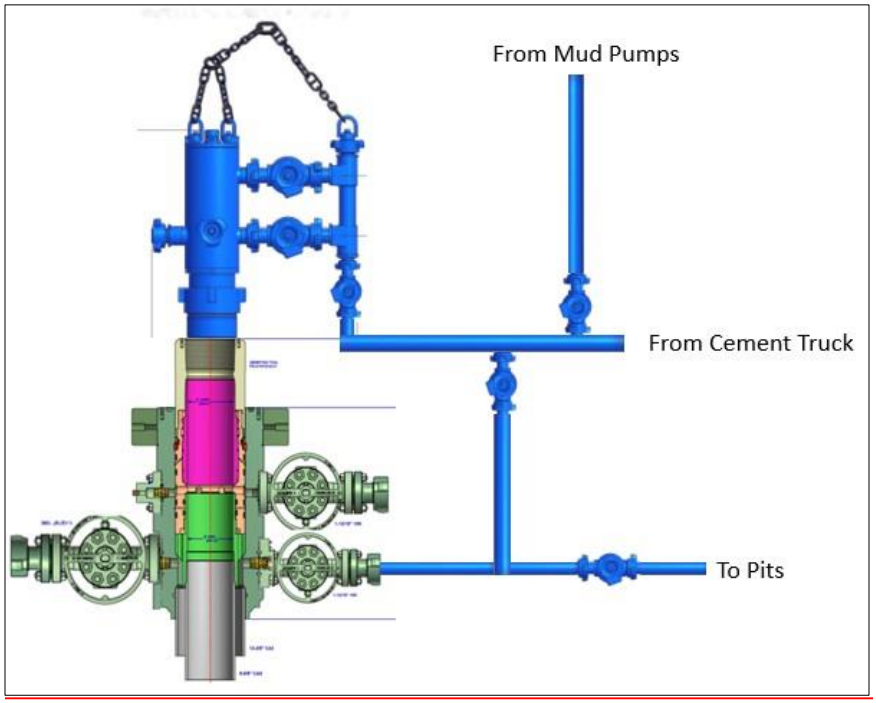
Annular packoff with both external and internal seals



Wellhead diagram during skidding operations

6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange, flange will not be removed and offline cementing operations will not commence until well is under control. If well is not static, casing outlet valves will provide access to both the casing ID and annulus. Rig or third party pump truck will kill well prior to cementing or nippling up for further remediation.
    a. Well Control Plan
        i. The Drillers Method will be the primary well control method to regain control of the wellbore prior to cementing, if wellbore conditions do not permit the drillers method other methods of well control may be used
        ii. Rig pumps or a 3rd party pump will be tied into the upper casing valve to pump down the casing ID
        iii. A high pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
        iv. Once influx is circulated out of the hole, kill weight mud will be circulated
        v. Well will be confirmed static
        vi. Once confirmed static, cap flange will be removed to allow for offline cementing operations to commence
8. Install offline cement tool
9. Rig up cement equipment

XTO Permian Operating, LLC Offline Cementing Variance Request



Wellhead diagram during offline cementing operations

10. Circulate bottoms up with cement truck
    a. If gas is present on bottoms up, well will be shut in and returns rerouted through gas buster to handle entrained gas
    b. Max anticipated time before circulating with cement truck is 6 hrs
11. Perform cement job taking returns from the annulus wellhead valve
12. Confirm well is static and floats are holding after cement job
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

XTO Permian Operating, LLC Offline Cementing Variance Request

XTO requests the option to cement the surface and intermediate casing strings offline as a prudent batch drilling efficiency of acreage development.

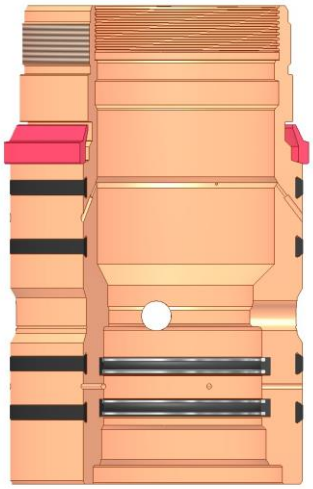
1. Cement Program

No changes to the cement program will take place for offline cementing.

2. Offline Cementing Procedure

The operational sequence will be as follows. If a well control event occurs, the BLM will be contacted for approval prior to conducting offline cementing operations.

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe)
2. Land casing with mandrel
3. Fill pipe with kill weight fluid, do not circulate through floats and confirm well is static
4. Set annular packoff shown below and pressure test to confirm integrity of the seal. Pressure ratings of wellhead components and valves is 5,000 psi.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange.
    a. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed with cement 500ft above the highest formation capable of flow with kill weight mud above or after it has achieved 50-psi compressive strength if kill weight fluid cannot be verified.



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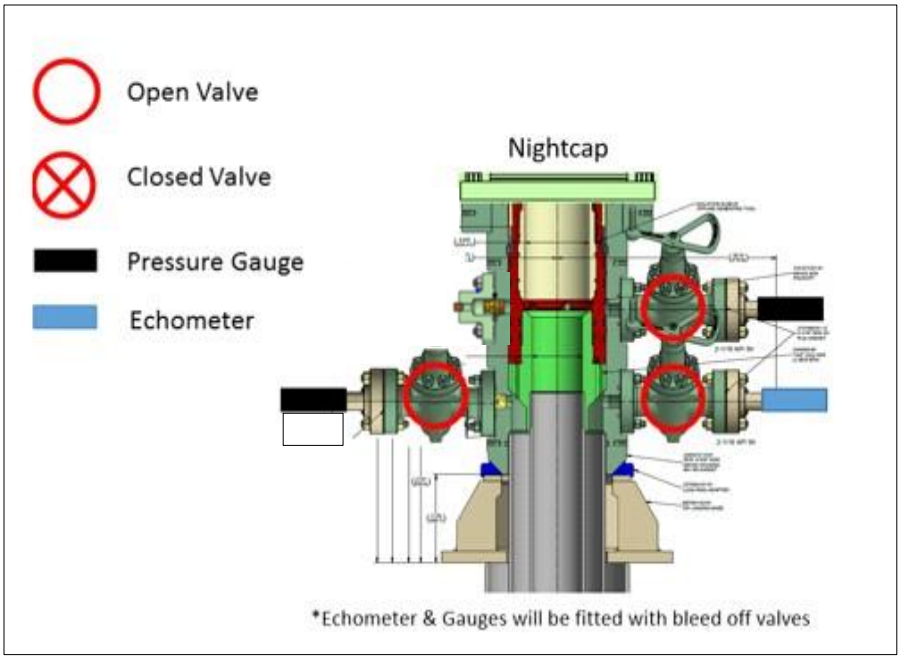

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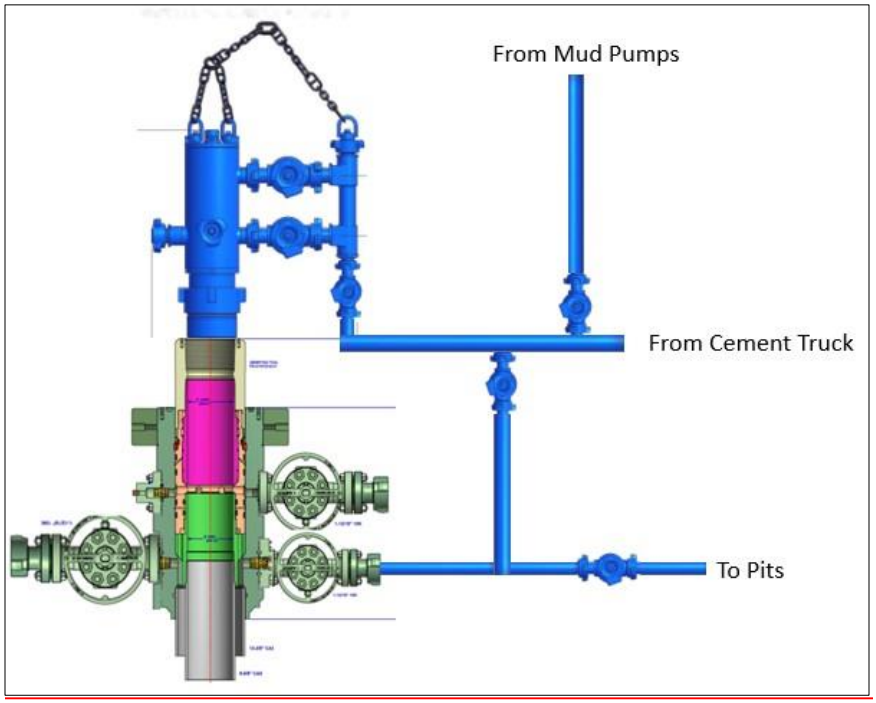
        iv. Once influx is circulated out of the hole, kill weight mud will be circulated
        v. Well will be confirmed static
        vi. Once confirmed static, cap flange will be removed to allow for offline cementing operations to commence
8. Install offline cement tool
9. Rig up cement equipment

XTO Permian Operating, LLC Offline Cementing Variance Request



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PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**BOPCO, L.P.**
LEASE NO.:	**NMNM-120898**
WELL NAME & NO.:	**Poker Lake Unit 18 BD 124H**
SURFACE HOLE FOOTAGE:	**2310' FNL & 2120' FWL**
BOTTOM HOLE FOOTAGE	**0200' FSL & 1430' FWL Sec. 19, T. 25 S., R 30 E.**
LOCATION:	**Section 18, T. 25 S., R 30 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

Possibility of water flows in the Castile and Salado.
Possibility of lost circulation in the Red beds, Rustler, and Delaware.
Abnormal pressures may be encountered when penetrating the 3rd Bone Spring Formation and all subsequent formations.

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **9-5/8** inch surface casing shall be set at approximately **820** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

    Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

    - Cement as proposed. Report Echo meter results on subsequent sundry.

3. The minimum required fill of cement behind the **5-1/2 X 5** inch production casing is:

    - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

BOP Break Testing Variance

- Shelll testing is not approved for any portion of the hole with a MASP of 5000 psi or greater.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer prior to the commencement of any BOP Break Testing operations.
- A full BOP test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOP test will be required.

D. SPECIAL REQUIREMENT (S)

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

5. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

6. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 07092021

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

COMMENTS

Action 36061

COMMENTS

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 36061
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
jagarcia	Accepted for record	7/23/2021

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jagarcia	None	7/23/2021