Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EMNRD-OCD ARTESIA
REC'D: 6/04/2020

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMLC065431

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM68294X

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
BIG EDDY UNIT 5E HAN SOLO 102H

2. Name of Operator
XTO PERMIAN OPERATING LLC
Contact: KELLY KARDOS
E-Mail: kelly_kardos@xtoenergy.com

9. API Well No.
30-015-46833

3a. Address
6401 HOLIDAY HILL RD BLDG 5
MIDLAND, TX 79707

3b. Phone No. (include area code)
Ph: 432-620-4374

10. Field and Pool or Exploratory Area
WILDCAT BONE SPRING

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 27 T20S R31E Mer NMP SWNE ~~1950FNL 1873FEL~~ 1670FNL 1915FEL

11. County or Parish, State
EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

XTO Permian Operating, LLC requests permission to make the following changes to the original APD:

Change the SHL from 1950FNL & 1873FEL to 1670FNL & 1915FEL *NO SURFACE DISTURBANCE*

Change the BHL from 660FNL & 200FEL to 660FNL & 50FEL

Change the casing/cement design per the attached drilling program.

XTO requests the following variances:

Approval to utilize a spudder rig to pre-set surface casing per the attached Description of Operations.

Surface good 6-3-20 Same COA's JR
96/03/20 - AM All COAs apply. Add. COAs regarding shell testing attatched

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #515567 verified by the BLM Well Information System
For XTO PERMIAN OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 05/15/2020 ()

Name *(Printed/Typed)* KELLY KARDOS — Title REGULATORY COORDINATOR

Signature (Electronic Submission) — Date 05/15/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By — Title AFM-Resources — Date 03 Jun 2020

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office LCNMP02000

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.

(Instructions on page 2)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Additional data for EC transaction #515567 that would not fit on the form

32. Additional remarks, continued

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 GE 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.

Attachments:
C102 & Supplement
Casing/Cement Design
Directional Plan
Spudder Rig Description of Operations
BOP Testing Variance

Conditions of Approval
Big Eddy Unit 5E Han Solo 102H
30-015-46833

BOP Break Testing Variance (Note: Shell 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.

EMNRD-OCD ARTESIA
REC'D: 6/04/2020

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
30-015-46833	98232	WC-015 G-06 S203127G;BONE SPRING

[4] Property Code	[5] Property Name	[6] Well Number
	BIG EDDY UNIT 5E HAN SOLO	102H

[7] OGRID No.	[8] Operator Name	[9] Elevation
373075	XTO PERMIAN OPERATING, LLC.	3,525'

[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
G	27	20 S	31 E		1,670	NORTH	1,915	EAST	EDDY

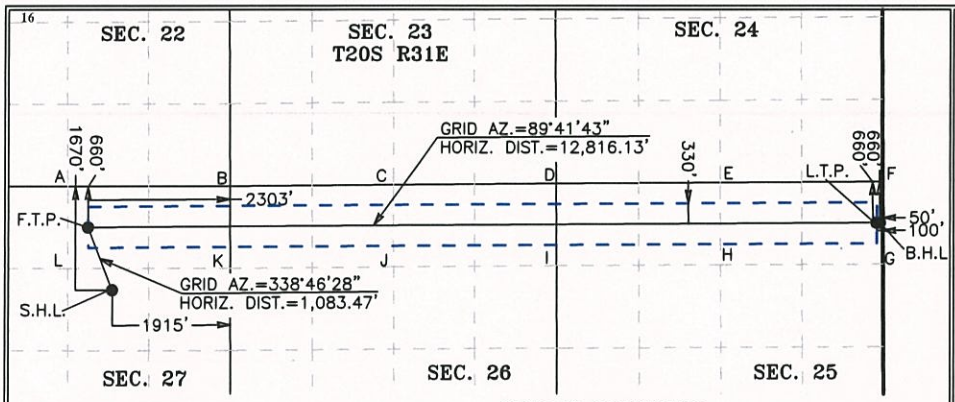
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	25	20 S	31 E		660	NORTH	50	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
400			

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
SURFACE LOCATION
NAD 83 NME
Y= 563,039.7
X= 688,834.7
LAT.= 32.546942°N
LONG.= 103.854657°W

LAST TAKE POINT
NAD 83 NME
Y= 564,117.6
X= 701,208.4
LAT.= 32.549746°N
LONG.= 103.814484°W

FIRST TAKE POINT
NAD 83 NME
Y= 564,049.7
X= 688,442.4
LAT.= 32.549723°N
LONG.= 103.855915°W

BOTTOM HOLE LOCATION
NAD 83 NME
Y= 564,117.9
X= 701,258.4
LAT.= 32.549746°N
LONG.= 103.814322°W

CORNER COORDINATES TABLE
NAD 83 NME
A – Y= 564,709.7 N, X= 688,110.7 E
B – Y= 564,709.8 N, X= 690,743.0 E
C – Y= 564,730.7 N, X= 693,379.8 E
D – Y= 564,751.9 N, X= 696,017.7 E
E – Y= 564,765.8 N, X= 698,661.1 E
F – Y= 564,778.1 N, X= 701,304.8 E
G – Y= 563,453.2 N, X= 701,312.0 E
H – Y= 563,440.6 N, X= 698,668.7 E
I – Y= 563,427.3 N, X= 696,025.1 E
J – Y= 563,407.4 N, X= 693,386.3 E
K – Y= 563,387.7 N, X= 690,748.3 E
L – Y= 563,387.7 N, X= 688,114.1 E

GEODETIC COORDINATES
SURFACE LOCATION
NAD 27 NME
Y= 562,987.1
X= 647,654.8
LAT.= 32.546822°N
LONG.= 103.854156°W

LAST TAKE POINT
NAD 27 NME
Y= 564,056.0
X= 660,028.5
LAT.= 32.549625°N
LONG.= 103.813985°W

FIRST TAKE POINT
NAD 27 NME
Y= 563,988.1
X= 647,262.5
LAT.= 32.549603°N
LONG.= 103.855414°W

BOTTOM HOLE LOCATION
NAD 27 NME
Y= 564,056.3
X= 660,078.5
LAT.= 32.549625°N
LONG.= 103.813822°W

CORNER COORDINATES TABLE
NAD 27 NME
A – Y= 564,648.1 N, X= 646,930.1 E
B – Y= 564,648.2 N, X= 649,563.1 E
C – Y= 564,669.1 N, X= 652,199.9 E
D – Y= 564,690.3 N, X= 654,837.8 E
E – Y= 564,704.2 N, X= 657,481.2 E
F – Y= 564,716.5 N, X= 660,125.0 E
G – Y= 563,391.6 N, X= 660,132.1 E
H – Y= 563,379.0 N, X= 657,488.8 E
I – Y= 563,365.7 N, X= 654,845.2 E
J – Y= 563,345.8 N, X= 652,206.4 E
K – Y= 563,326.1 N, X= 649,568.4 E
L – Y= 563,326.1 N, X= 646,934.2 E

[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.

Kelly Kardos — 5-15-20
Signature — Date

Kelly Kardos
Printed Name

kelly_kardos@xtoenergy.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.

4-29-2020
Date of Survey

Signatue and Seal of Professional Surveyor:

MARK DILLON HARP NEW MEXICO 23786 PROFESSIONAL SURVEYOR

MARK DILLON HARP 23786
Certificate Number — RR — 2017081345

RWP 6/11/2020

P:\PROJECTS\2017\2017081345-XTO-BIG_EDDY_UNIT_5E_HAN_SOLO_102H-EDDY\DWG\2017081345-XTO-BIG_EDDY_UNIT_5E_HAN_SOLO_102H_C102.dwg

Intent [X] As Drilled [ ]

API #
30-015-46833

Operator Name:	Property Name:	Well Number
XTO PERMIAN OPERATING, LLC	Big Eddy Unit 5E Han Solo	102H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
G	27	20S	31E		1670	North	1815	East	Eddy

Latitude	Longitude	NAD
32.546942	-103.854657	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
B	27	20S	31E		660	North	2303	East	Eddy

Latitude	Longitude	NAD
32.549723	-103.855915	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
A	25	20S	31E		660	North	100	East	Eddy

Latitude	Longitude	NAD
32.549746	-103.814484	83

Is this well the defining well for the Horizontal Spacing Unit? [Y]

Is this well an infill well? [ ]

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number
XTO PERMIAN OPERATING, LLC		

KZ 06/29/2018

Big Eddy Unit 5E Han Solo 102H
Projected TD: 22379' MD / 9523' TVD
SHL: 1670' FNL & 1915' FEL , Section 27, T20S, R31E
BHL: 660' FNL & 50' FEL , Section 25, T20S, R31E
Eddy County, NM

Casing Design

The surface fresh water sands will be protected by setting 18-5/8 inch casing @ 810' (139' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8 inch casing at 2757' and circulating cement to surface. The Capitan Reef zone will be isolated by setting 9-5/8 inch casing at 4050'. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to the 13-3/8 inch casing shoe.

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' – 810'	18-5/8"	87.5#	STC	H-40	New	1.90	1.70	7.89
17-1/2"	0' – 2757'	13-3/8"	54.5#	STC	J-55	New	2.90	1.30	3.42
12-1/4"	0' – 4050'	9-5/8"	36#	LTC	J-55	New	1.35	2.11	3.11
8-3/4" x 8-1/2"	0' – 22379'	5-1/2"	17#	BTC	P-110	New	1.12	1.59	2.24

XTO requests to not utilize centralizers in the curve and lateral
13-3/8 & 9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35.

WELLHEAD:

Temporary Wellhead

- 18-5/8" SOW bottom x 21-1/4" 2M top flange.

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M 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 9-5/8" casing per Onshore Order 2.
   - Wellhead manufacturer representative may not be present for BOP test plug installation

Cement Program

Surface Casing:

Lead: 680 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 550 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

1st Intermediate Casing:

Lead: 1590 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 620 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing:

ECP/DV Tool to be set at 2790'

1st Stage

Lead: 80 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft3/sx, 9.61 gal/sx water)
Tail: 470 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1151 psi

2nd Stage

Lead: 10 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft3/sx, 9.61 gal/sx water)
Tail: 230 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1151 psi

Production Casing:

Lead: 730 sxs NeoCem (mixed at 10.5 ppg, 2.69 ft3/sx, 12.26 gal/sx water)
Tail: 2580 sxs VersaCem (mixed at 13.2 ppg, 1.61 ft3/sx, 8.38 gal/sx water)
Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

Mud Circulation Program

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 810'	24"	FW/Native	8.3 - 9.5	35-40	NC
810' - 2757'	17-1/2"	Brine	9.8-10.2	30-35	NC
2757' to 4050'	12-1/4"	FW / Cut Brine	8.3-9.0	30-32	NC
4050' to 22379'	8-3/4" x 8-1/2"	FW / Cut Brine / Polymer/ OBM	9.2 - 9.5	29-32	NC - 20

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

XTO Energy Inc.
BEU 5E Han Solo 102H
Projected TD: 22379' MD / 9523' TVD
SHL: 1670' FNL & 1915' FEL , Section 27, T20S, R31E
BHL: 660' FNL & 50' FEL , Section 25, T20S, R31E
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	673'	Water
Top of Salt	949'	Water
Base of Salt	2657'	Water
Capitan	2861'	Water
Delaware	3943'	Water
Bone Spring	8404'	Water/Oil/Gas
1st Bone Spring Ss	8743'	Water/Oil/Gas
2nd Bone Spring Ss	9365'	Water/Oil/Gas
2nd Bone Spring Ss B	9553'	Water/Oil/Gas
Target/Land Curve	9523'	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 18-5/8 inch casing @ 810' (139' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8 inch casing at 2757' and circulating cement to surface. The Capitan Reef zone will be isolated by setting 9-5/8 inch casing at 4050'. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to the 13-3/8 inch casing shoe.

Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' – 810'	18-5/8"	87.5#	STC	H-40	New	1.90	1.70	7.89
17-1/2"	0' – 2757'	13-3/8"	54.5#	STC	J-55	New	2.90	1.30	3.42
12-1/4"	0' – 4050'	9-5/8"	36#	LTC	J-55	New	1.35	2.11	3.11
8-3/4" x 8-1/2"	0' – 22379'	5-1/2"	17#	BTC	P-110	New	1.12	1.59	2.24

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 13-3/8" & 9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

Temporary Wellhead

- 18-5/8" SOW bottom x 21-1/4" 2M top flange.

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M 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 9-5/8" casing per BLM Onshore Order 2

- Wellhead manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 18-5/8", 87.5# New H-40, STC casing to be set at +/- 810'

Lead: 680 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 550 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

1st Intermediate Casing: 13-3/8", 54.5# New J-55, STC casing to be set at +/- 2757'

Lead: 1590 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft3/sx, 10.13 gal/sx water)
Tail: 620 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing: 9-5/8", 36# New J-55, LTC casing to be set at +/- 4050'
ECP/DV Tool to be set at 2790'
1st Stage
Lead: 80 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft3/sx, 9.61 gal/sx water)
Tail: 470 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Stage
Lead: 10 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft3/sx, 9.61 gal/sx water)
Tail: 230 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing: 5-1/2", 17# New P-110, BTC casing to be set at +/- 22379'

Lead: 730 sxs NeoCem (mixed at 10.5 ppg, 2.69 ft3/sx, 12.26 gal/sx water)
Tail: 2580 sxs VersaCem (mixed at 13.2 ppg, 1.61 ft3/sx, 8.38 gal/sx water)
Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

5. Pressure Control Equipment

The blow out preventer equipment (BOP) for on surf casing / temp. wellhead will consist of a 21-1/4" minimum 2M Hydril. MASP should not exceed 856 psi.

Once the permanent WH is installed on the 13-3/8 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 3M 3-Ram BOP. MASP should not exceed 2609 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 but no greater than casing 70% burst. When nippling up on the 13-5/8" 3M bradenhead and flange, the BOP test will be limited to 3000 psi. When nippling up on the 9-5/8", the BOP will be tested to a minimum of 3000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M 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.

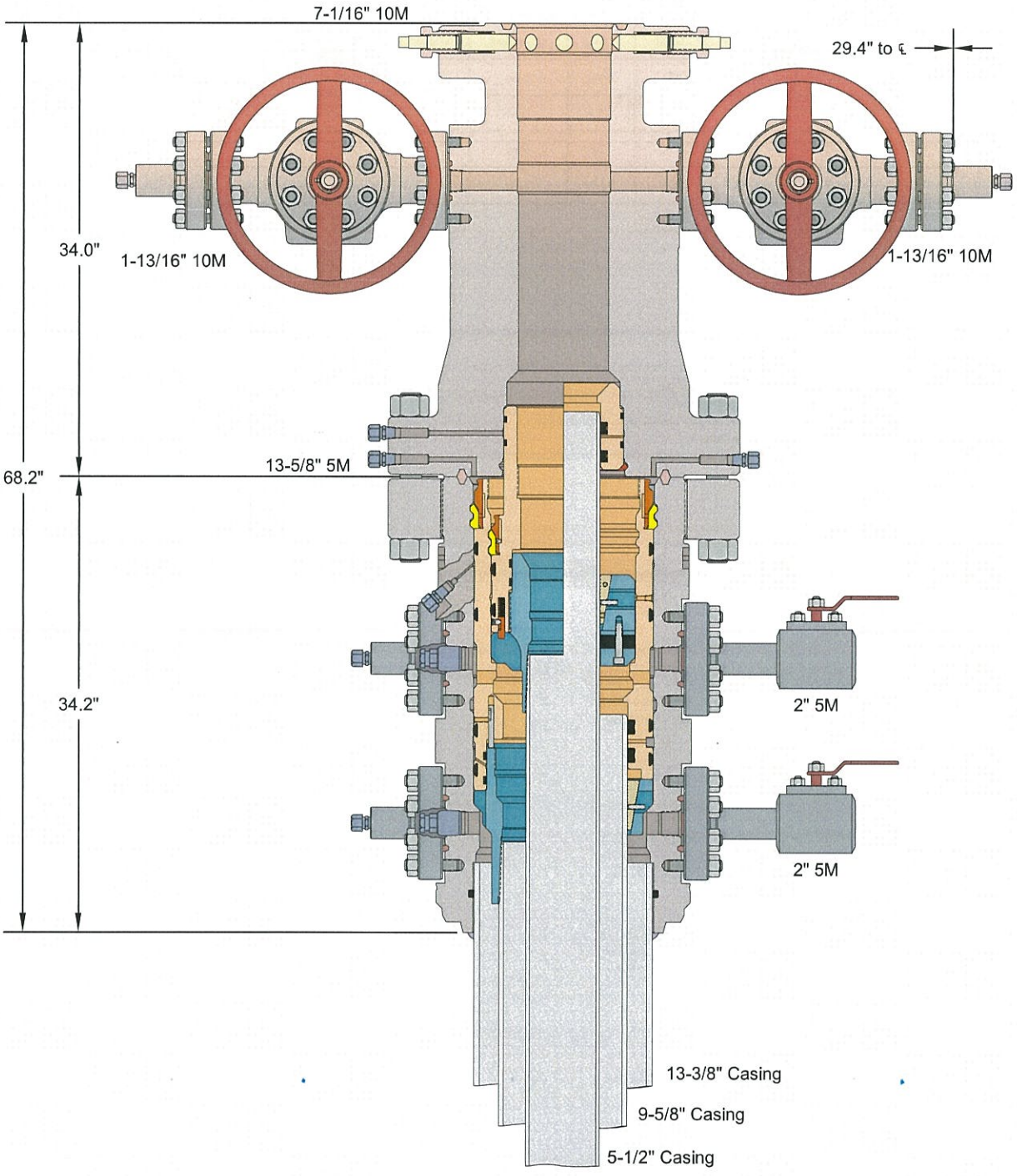
6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 810'	24"	FW/Native	8.3 - 9.5	35-40	NC
810' - 2757'	17-1/2”	Brine	9.8-10.2	30-35	NC
2757' to 4050'	12-1/4”	FW / Cut Brine	8.3-9.0	30-32	NC
4050' to 22379'	8-3/4” x 8-1/2”	FW / Cut Brine / Polymer/ OBM	9.2 - 9.5	29-32	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 18-5/8” surface casing with brine solution. A 9.8ppg-10.2ppg 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.

GE Oil & Gas



ALL DIMENSIONS ARE APPROXIMATE

XTO ENERGY, INC.

13-3/8" x 9-5/8" x 5-1/2" 10M RSH-2 Wellhead Assembly, With T-EBS-F Tubing Head

DRAWN	VJK	16FEB17
APPRV	KN	16FEB17

FOR REFERENCE ONLY
DRAWING NO. 10012842

Delaware Basin Asset

New Mexico, XTO
Big Eddy DI5
BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H

BEU 5E HAN SOLO 102H

Plan: BEU 5E HAN SOLO 102H

Standard Planning Report - Geographic

07 April, 2020

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Project	New Mexico, XTO		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Big Eddy DI5				
Site Position:		**Northing:**	562,560.46 usft	**Latitude:**	32° 32' 44.282 N
From:	Map	**Easting:**	688,097.24 usft	**Longitude:**	103° 51' 25.405 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.26 °

Well	BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H					
Well Position	**+N/-S**	0.0 usft	**Northing:**	563,040.03 usft	**Latitude:**	32° 32' 48.995 N
	+E/-W	0.0 usft	**Easting:**	688,835.50 usft	**Longitude:**	103° 51' 16.754 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,525.0 usft

Wellbore	BEU 5E HAN SOLO 102H				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2020	4/7/2020	6.84	60.19	47,778.72537710

Design	BEU 5E HAN SOLO 102H				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	85.04	

Plan Survey Tool Program **Date** 4/7/2020

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	4,000.0	BEU 5E HAN SOLO 102H (BEU	OWSG GYRO-NS OWSG Gyrocompass Gyro	
2	4,000.0	22,379.4	BEU 5E HAN SOLO 102H (BEU	MWD+IFR1+MS OWSG MWD + IFR1 + Multi-S	

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00		
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.00	0.00	0.00	0.00		
2,850.0	3.00	325.00	2,849.9	3.2	-2.3	2.00	2.00	0.00	325.00		
3,000.0	0.00	0.00	2,999.9	6.4	-4.5	2.00	-2.00	0.00	180.00		
5,500.0	0.00	0.00	5,499.9	6.4	-4.5	0.00	0.00	0.00	0.00		
6,389.4	17.79	330.19	6,375.1	125.3	-72.6	2.00	2.00	0.00	330.19		
9,057.0	17.79	330.19	8,915.1	832.4	-477.7	0.00	0.00	0.00	0.00		
10,043.5	90.00	89.70	9,550.0	1,012.7	87.8	10.00	7.32	12.11	118.32	FTP	15-1
22,379.4	90.00	89.70	9,550.0	1,078.0	12,423.5	0.00	0.00	0.00	0.00	BHL	15-1

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
100.0	0.00	0.00	100.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
200.0	0.00	0.00	200.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
300.0	0.00	0.00	300.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
400.0	0.00	0.00	400.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
500.0	0.00	0.00	500.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
600.0	0.00	0.00	600.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
700.0	0.00	0.00	700.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
800.0	0.00	0.00	800.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
900.0	0.00	0.00	900.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	563,040.03	688,835.50	32° 32' 48.995 N	103° 51' 16.754 W
Start Build 2.00									
2,800.0	2.00	325.00	2,800.0	1.4	-1.0	563,041.46	688,834.50	32° 32' 49.009 N	103° 51' 16.766 W
2,850.0	3.00	325.00	2,849.9	3.2	-2.3	563,043.24	688,833.25	32° 32' 49.027 N	103° 51' 16.781 W
Start Drop -2.00									
2,900.0	2.00	325.00	2,899.9	5.0	-3.5	563,045.03	688,832.00	32° 32' 49.044 N	103° 51' 16.795 W
3,000.0	0.00	0.00	2,999.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
Start 2500.0 hold at 3000.0 MD									
3,100.0	0.00	0.00	3,099.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,200.0	0.00	0.00	3,199.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,300.0	0.00	0.00	3,299.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,400.0	0.00	0.00	3,399.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,500.0	0.00	0.00	3,499.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,600.0	0.00	0.00	3,599.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,700.0	0.00	0.00	3,699.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,800.0	0.00	0.00	3,799.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
3,900.0	0.00	0.00	3,899.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,000.0	0.00	0.00	3,999.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,100.0	0.00	0.00	4,099.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,200.0	0.00	0.00	4,199.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,300.0	0.00	0.00	4,299.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,400.0	0.00	0.00	4,399.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,500.0	0.00	0.00	4,499.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,600.0	0.00	0.00	4,599.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,700.0	0.00	0.00	4,699.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,800.0	0.00	0.00	4,799.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
4,900.0	0.00	0.00	4,899.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
5,000.0	0.00	0.00	4,999.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
5,100.0	0.00	0.00	5,099.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
5,200.0	0.00	0.00	5,199.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
5,300.0	0.00	0.00	5,299.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
5,400.0	0.00	0.00	5,399.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
5,500.0	0.00	0.00	5,499.9	6.4	-4.5	563,046.46	688,831.00	32° 32' 49.059 N	103° 51' 16.807 W
Start Build 2.00									
5,600.0	2.00	330.19	5,599.8	7.9	-5.4	563,047.97	688,830.13	32° 32' 49.074 N	103° 51' 16.817 W
5,700.0	4.00	330.19	5,699.7	12.5	-8.0	563,052.52	688,827.53	32° 32' 49.119 N	103° 51' 16.847 W
5,800.0	6.00	330.19	5,799.3	20.0	-12.3	563,060.08	688,823.20	32° 32' 49.194 N	103° 51' 16.897 W
5,900.0	8.00	330.19	5,898.6	30.6	-18.4	563,070.65	688,817.14	32° 32' 49.299 N	103° 51' 16.967 W
6,000.0	10.00	330.19	5,997.3	44.2	-26.1	563,084.23	688,809.36	32° 32' 49.433 N	103° 51' 17.058 W
6,100.0	12.00	330.19	6,095.5	60.8	-35.6	563,100.78	688,799.88	32° 32' 49.598 N	103° 51' 17.167 W
6,200.0	14.00	330.19	6,192.9	80.3	-46.8	563,120.30	688,788.70	32° 32' 49.791 N	103° 51' 17.297 W
6,300.0	16.00	330.19	6,289.5	102.7	-59.7	563,142.76	688,775.83	32° 32' 50.014 N	103° 51' 17.446 W
6,389.4	17.79	330.19	6,375.1	125.3	-72.6	563,165.30	688,762.92	32° 32' 50.238 N	103° 51' 17.596 W
Start 2667.6 hold at 6389.4 MD									
6,400.0	17.79	330.19	6,385.1	128.1	-74.2	563,168.11	688,761.31	32° 32' 50.265 N	103° 51' 17.615 W
6,500.0	17.79	330.19	6,480.4	154.6	-89.4	563,194.61	688,746.12	32° 32' 50.528 N	103° 51' 17.791 W
6,600.0	17.79	330.19	6,575.6	181.1	-104.6	563,221.12	688,730.94	32° 32' 50.791 N	103° 51' 17.967 W
6,700.0	17.79	330.19	6,670.8	207.6	-119.8	563,247.63	688,715.75	32° 32' 51.054 N	103° 51' 18.143 W
6,800.0	17.79	330.19	6,766.0	234.1	-134.9	563,274.14	688,700.56	32° 32' 51.317 N	103° 51' 18.319 W
6,900.0	17.79	330.19	6,861.2	260.6	-150.1	563,300.65	688,685.38	32° 32' 51.580 N	103° 51' 18.495 W
7,000.0	17.79	330.19	6,956.5	287.1	-165.3	563,327.16	688,670.19	32° 32' 51.843 N	103° 51' 18.671 W
7,100.0	17.79	330.19	7,051.7	313.6	-180.5	563,353.66	688,655.01	32° 32' 52.106 N	103° 51' 18.847 W
7,200.0	17.79	330.19	7,146.9	340.1	-195.7	563,380.17	688,639.82	32° 32' 52.369 N	103° 51' 19.023 W
7,300.0	17.79	330.19	7,242.1	366.7	-210.9	563,406.68	688,624.63	32° 32' 52.632 N	103° 51' 19.199 W
7,400.0	17.79	330.19	7,337.3	393.2	-226.1	563,433.19	688,609.45	32° 32' 52.895 N	103° 51' 19.375 W
7,500.0	17.79	330.19	7,432.5	419.7	-241.2	563,459.70	688,594.26	32° 32' 53.158 N	103° 51' 19.551 W
7,600.0	17.79	330.19	7,527.8	446.2	-256.4	563,486.20	688,579.07	32° 32' 53.421 N	103° 51' 19.727 W
7,700.0	17.79	330.19	7,623.0	472.7	-271.6	563,512.71	688,563.89	32° 32' 53.684 N	103° 51' 19.903 W
7,800.0	17.79	330.19	7,718.2	499.2	-286.8	563,539.22	688,548.70	32° 32' 53.947 N	103° 51' 20.079 W
7,900.0	17.79	330.19	7,813.4	525.7	-302.0	563,565.73	688,533.51	32° 32' 54.210 N	103° 51' 20.255 W
8,000.0	17.79	330.19	7,908.6	552.2	-317.2	563,592.24	688,518.33	32° 32' 54.473 N	103° 51' 20.431 W
8,100.0	17.79	330.19	8,003.9	578.7	-332.4	563,618.74	688,503.14	32° 32' 54.736 N	103° 51' 20.607 W
8,200.0	17.79	330.19	8,099.1	605.2	-347.5	563,645.25	688,487.96	32° 32' 54.999 N	103° 51' 20.783 W
8,300.0	17.79	330.19	8,194.3	631.7	-362.7	563,671.76	688,472.77	32° 32' 55.262 N	103° 51' 20.959 W
8,400.0	17.79	330.19	8,289.5	658.2	-377.9	563,698.27	688,457.58	32° 32' 55.525 N	103° 51' 21.135 W
8,500.0	17.79	330.19	8,384.7	684.7	-393.1	563,724.78	688,442.40	32° 32' 55.788 N	103° 51' 21.311 W
8,600.0	17.79	330.19	8,480.0	711.3	-408.3	563,751.28	688,427.21	32° 32' 56.051 N	103° 51' 21.487 W
8,700.0	17.79	330.19	8,575.2	737.8	-423.5	563,777.79	688,412.02	32° 32' 56.314 N	103° 51' 21.663 W
8,800.0	17.79	330.19	8,670.4	764.3	-438.7	563,804.30	688,396.84	32° 32' 56.577 N	103° 51' 21.839 W
8,900.0	17.79	330.19	8,765.6	790.8	-453.9	563,830.81	688,381.65	32° 32' 56.840 N	103° 51' 22.015 W
9,000.0	17.79	330.19	8,860.8	817.3	-469.0	563,857.32	688,366.47	32° 32' 57.103 N	103° 51' 22.191 W
9,057.0	17.79	330.19	8,915.1	832.4	-477.7	563,872.43	688,357.81	32° 32' 57.253 N	103° 51' 22.292 W
Start DLS 10.00 TFO 118.32									
9,100.0	16.18	343.89	8,956.3	843.9	-482.6	563,883.89	688,352.88	32° 32' 57.366 N	103° 51' 22.349 W
9,200.0	16.57	19.88	9,052.4	870.7	-481.6	563,910.75	688,353.86	32° 32' 57.632 N	103° 51' 22.336 W

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,300.0	21.96	45.86	9,147.0	897.2	-463.3	563,937.25	688,372.17	32° 32' 57.894 N	103° 51' 22.121 W
9,400.0	29.74	60.44	9,237.0	922.5	-428.3	563,962.57	688,407.25	32° 32' 58.143 N	103° 51' 21.709 W
9,500.0	38.49	69.14	9,319.8	945.9	-377.5	563,985.95	688,458.04	32° 32' 58.372 N	103° 51' 21.115 W
9,600.0	47.67	74.96	9,392.7	966.6	-312.5	564,006.67	688,522.98	32° 32' 58.574 N	103° 51' 20.355 W
9,700.0	57.08	79.28	9,453.7	984.1	-235.4	564,024.11	688,600.12	32° 32' 58.743 N	103° 51' 19.453 W
9,800.0	66.60	82.76	9,500.9	997.7	-148.4	564,037.74	688,687.09	32° 32' 58.874 N	103° 51' 18.436 W
9,900.0	76.19	85.76	9,532.8	1,007.1	-54.2	564,047.14	688,781.27	32° 32' 58.963 N	103° 51' 17.335 W
10,000.0	85.81	88.52	9,548.4	1,012.0	44.3	564,052.03	688,879.80	32° 32' 59.007 N	103° 51' 16.184 W
10,043.5	90.00	89.70	9,550.0	1,012.7	87.8	564,052.70	688,923.30	32° 32' 59.012 N	103° 51' 15.676 W
Start 12335.9 hold at 10043.5 MD									
10,100.0	90.00	89.70	9,550.0	1,013.0	144.2	564,053.00	688,979.75	32° 32' 59.012 N	103° 51' 15.016 W
10,200.0	90.00	89.70	9,550.0	1,013.5	244.2	564,053.53	689,079.75	32° 32' 59.013 N	103° 51' 13.848 W
10,300.0	90.00	89.70	9,550.0	1,014.0	344.2	564,054.06	689,179.75	32° 32' 59.014 N	103° 51' 12.679 W
10,400.0	90.00	89.70	9,550.0	1,014.6	444.2	564,054.59	689,279.75	32° 32' 59.014 N	103° 51' 11.511 W
10,500.0	90.00	89.70	9,550.0	1,015.1	544.2	564,055.12	689,379.74	32° 32' 59.015 N	103° 51' 10.343 W
10,600.0	90.00	89.70	9,550.0	1,015.6	644.2	564,055.65	689,479.74	32° 32' 59.016 N	103° 51' 9.174 W
10,700.0	90.00	89.70	9,550.0	1,016.1	744.2	564,056.18	689,579.74	32° 32' 59.017 N	103° 51' 8.006 W
10,800.0	90.00	89.70	9,550.0	1,016.7	844.2	564,056.71	689,679.74	32° 32' 59.017 N	103° 51' 6.838 W
10,900.0	90.00	89.70	9,550.0	1,017.2	944.2	564,057.24	689,779.74	32° 32' 59.018 N	103° 51' 5.669 W
11,000.0	90.00	89.70	9,550.0	1,017.7	1,044.2	564,057.77	689,879.74	32° 32' 59.019 N	103° 51' 4.501 W
11,100.0	90.00	89.70	9,550.0	1,018.3	1,144.2	564,058.29	689,979.74	32° 32' 59.020 N	103° 51' 3.333 W
11,200.0	90.00	89.70	9,550.0	1,018.8	1,244.2	564,058.82	690,079.73	32° 32' 59.020 N	103° 51' 2.164 W
11,300.0	90.00	89.70	9,550.0	1,019.3	1,344.2	564,059.35	690,179.73	32° 32' 59.021 N	103° 51' 0.996 W
11,400.0	90.00	89.70	9,550.0	1,019.9	1,444.2	564,059.88	690,279.73	32° 32' 59.022 N	103° 50' 59.828 W
11,500.0	90.00	89.70	9,550.0	1,020.4	1,544.2	564,060.41	690,379.73	32° 32' 59.023 N	103° 50' 58.659 W
11,600.0	90.00	89.70	9,550.0	1,020.9	1,644.2	564,060.94	690,479.73	32° 32' 59.023 N	103° 50' 57.491 W
11,700.0	90.00	89.70	9,550.0	1,021.4	1,744.2	564,061.47	690,579.73	32° 32' 59.024 N	103° 50' 56.323 W
11,800.0	90.00	89.70	9,550.0	1,022.0	1,844.2	564,062.00	690,679.73	32° 32' 59.025 N	103° 50' 55.154 W
11,900.0	90.00	89.70	9,550.0	1,022.5	1,944.2	564,062.53	690,779.72	32° 32' 59.026 N	103° 50' 53.986 W
12,000.0	90.00	89.70	9,550.0	1,023.0	2,044.2	564,063.06	690,879.72	32° 32' 59.026 N	103° 50' 52.818 W
12,100.0	90.00	89.70	9,550.0	1,023.6	2,144.2	564,063.59	690,979.72	32° 32' 59.027 N	103° 50' 51.649 W
12,200.0	90.00	89.70	9,550.0	1,024.1	2,244.2	564,064.12	691,079.72	32° 32' 59.028 N	103° 50' 50.481 W
12,300.0	90.00	89.70	9,550.0	1,024.6	2,344.2	564,064.65	691,179.72	32° 32' 59.029 N	103° 50' 49.313 W
12,400.0	90.00	89.70	9,550.0	1,025.1	2,444.2	564,065.18	691,279.72	32° 32' 59.029 N	103° 50' 48.144 W
12,500.0	90.00	89.70	9,550.0	1,025.7	2,544.2	564,065.71	691,379.72	32° 32' 59.030 N	103° 50' 46.976 W
12,600.0	90.00	89.70	9,550.0	1,026.2	2,644.2	564,066.23	691,479.71	32° 32' 59.031 N	103° 50' 45.808 W
12,700.0	90.00	89.70	9,550.0	1,026.7	2,744.2	564,066.76	691,579.71	32° 32' 59.031 N	103° 50' 44.639 W
12,800.0	90.00	89.70	9,550.0	1,027.3	2,844.2	564,067.29	691,679.71	32° 32' 59.032 N	103° 50' 43.471 W
12,900.0	90.00	89.70	9,550.0	1,027.8	2,944.2	564,067.82	691,779.71	32° 32' 59.033 N	103° 50' 42.303 W
13,000.0	90.00	89.70	9,550.0	1,028.3	3,044.2	564,068.35	691,879.71	32° 32' 59.033 N	103° 50' 41.134 W
13,100.0	90.00	89.70	9,550.0	1,028.9	3,144.2	564,068.88	691,979.71	32° 32' 59.034 N	103° 50' 39.966 W
13,200.0	90.00	89.70	9,550.0	1,029.4	3,244.2	564,069.41	692,079.71	32° 32' 59.035 N	103° 50' 38.798 W
13,300.0	90.00	89.70	9,550.0	1,029.9	3,344.2	564,069.94	692,179.70	32° 32' 59.036 N	103° 50' 37.629 W
13,400.0	90.00	89.70	9,550.0	1,030.4	3,444.2	564,070.47	692,279.70	32° 32' 59.036 N	103° 50' 36.461 W
13,500.0	90.00	89.70	9,550.0	1,031.0	3,544.2	564,071.00	692,379.70	32° 32' 59.037 N	103° 50' 35.293 W
13,600.0	90.00	89.70	9,550.0	1,031.5	3,644.2	564,071.53	692,479.70	32° 32' 59.038 N	103° 50' 34.124 W
13,700.0	90.00	89.70	9,550.0	1,032.0	3,744.2	564,072.06	692,579.70	32° 32' 59.038 N	103° 50' 32.956 W
13,800.0	90.00	89.70	9,550.0	1,032.6	3,844.2	564,072.59	692,679.70	32° 32' 59.039 N	103° 50' 31.788 W
13,900.0	90.00	89.70	9,550.0	1,033.1	3,944.2	564,073.12	692,779.70	32° 32' 59.040 N	103° 50' 30.619 W
14,000.0	90.00	89.70	9,550.0	1,033.6	4,044.2	564,073.65	692,879.69	32° 32' 59.040 N	103° 50' 29.451 W
14,100.0	90.00	89.70	9,550.0	1,034.1	4,144.2	564,074.17	692,979.69	32° 32' 59.041 N	103° 50' 28.283 W
14,200.0	90.00	89.70	9,550.0	1,034.7	4,244.2	564,074.70	693,079.69	32° 32' 59.042 N	103° 50' 27.115 W

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,300.0	90.00	89.70	9,550.0	1,035.2	4,344.2	564,075.23	693,179.69	32° 32' 59.042 N	103° 50' 25.946 W
14,400.0	90.00	89.70	9,550.0	1,035.7	4,444.2	564,075.76	693,279.69	32° 32' 59.043 N	103° 50' 24.778 W
14,500.0	90.00	89.70	9,550.0	1,036.3	4,544.2	564,076.29	693,379.69	32° 32' 59.044 N	103° 50' 23.610 W
14,600.0	90.00	89.70	9,550.0	1,036.8	4,644.2	564,076.82	693,479.69	32° 32' 59.044 N	103° 50' 22.441 W
14,700.0	90.00	89.70	9,550.0	1,037.3	4,744.2	564,077.35	693,579.69	32° 32' 59.045 N	103° 50' 21.273 W
14,800.0	90.00	89.70	9,550.0	1,037.9	4,844.2	564,077.88	693,679.68	32° 32' 59.046 N	103° 50' 20.105 W
14,900.0	90.00	89.70	9,550.0	1,038.4	4,944.2	564,078.41	693,779.68	32° 32' 59.046 N	103° 50' 18.936 W
15,000.0	90.00	89.70	9,550.0	1,038.9	5,044.2	564,078.94	693,879.68	32° 32' 59.047 N	103° 50' 17.768 W
15,100.0	90.00	89.70	9,550.0	1,039.4	5,144.2	564,079.47	693,979.68	32° 32' 59.047 N	103° 50' 16.600 W
15,200.0	90.00	89.70	9,550.0	1,040.0	5,244.2	564,080.00	694,079.68	32° 32' 59.048 N	103° 50' 15.431 W
15,300.0	90.00	89.70	9,550.0	1,040.5	5,344.2	564,080.53	694,179.68	32° 32' 59.049 N	103° 50' 14.263 W
15,400.0	90.00	89.70	9,550.0	1,041.0	5,444.2	564,081.06	694,279.68	32° 32' 59.049 N	103° 50' 13.095 W
15,500.0	90.00	89.70	9,550.0	1,041.6	5,544.2	564,081.59	694,379.67	32° 32' 59.050 N	103° 50' 11.926 W
15,600.0	90.00	89.70	9,550.0	1,042.1	5,644.2	564,082.11	694,479.67	32° 32' 59.051 N	103° 50' 10.758 W
15,700.0	90.00	89.70	9,550.0	1,042.6	5,744.2	564,082.64	694,579.67	32° 32' 59.051 N	103° 50' 9.590 W
15,800.0	90.00	89.70	9,550.0	1,043.1	5,844.2	564,083.17	694,679.67	32° 32' 59.052 N	103° 50' 8.421 W
15,900.0	90.00	89.70	9,550.0	1,043.7	5,944.2	564,083.70	694,779.67	32° 32' 59.052 N	103° 50' 7.253 W
16,000.0	90.00	89.70	9,550.0	1,044.2	6,044.2	564,084.23	694,879.67	32° 32' 59.053 N	103° 50' 6.085 W
16,100.0	90.00	89.70	9,550.0	1,044.7	6,144.2	564,084.76	694,979.67	32° 32' 59.054 N	103° 50' 4.916 W
16,200.0	90.00	89.70	9,550.0	1,045.3	6,244.2	564,085.29	695,079.66	32° 32' 59.054 N	103° 50' 3.748 W
16,300.0	90.00	89.70	9,550.0	1,045.8	6,344.2	564,085.82	695,179.66	32° 32' 59.055 N	103° 50' 2.580 W
16,400.0	90.00	89.70	9,550.0	1,046.3	6,444.2	564,086.35	695,279.66	32° 32' 59.055 N	103° 50' 1.411 W
16,500.0	90.00	89.70	9,550.0	1,046.9	6,544.2	564,086.88	695,379.66	32° 32' 59.056 N	103° 50' 0.243 W
16,600.0	90.00	89.70	9,550.0	1,047.4	6,644.2	564,087.41	695,479.66	32° 32' 59.057 N	103° 49' 59.075 W
16,700.0	90.00	89.70	9,550.0	1,047.9	6,744.2	564,087.94	695,579.66	32° 32' 59.057 N	103° 49' 57.906 W
16,800.0	90.00	89.70	9,550.0	1,048.4	6,844.2	564,088.47	695,679.66	32° 32' 59.058 N	103° 49' 56.738 W
16,900.0	90.00	89.70	9,550.0	1,049.0	6,944.2	564,089.00	695,779.65	32° 32' 59.058 N	103° 49' 55.570 W
17,000.0	90.00	89.70	9,550.0	1,049.5	7,044.1	564,089.53	695,879.65	32° 32' 59.059 N	103° 49' 54.401 W
17,100.0	90.00	89.70	9,550.0	1,050.0	7,144.1	564,090.05	695,979.65	32° 32' 59.060 N	103° 49' 53.233 W
17,200.0	90.00	89.70	9,550.0	1,050.6	7,244.1	564,090.58	696,079.65	32° 32' 59.060 N	103° 49' 52.065 W
17,300.0	90.00	89.70	9,550.0	1,051.1	7,344.1	564,091.11	696,179.65	32° 32' 59.061 N	103° 49' 50.896 W
17,400.0	90.00	89.70	9,550.0	1,051.6	7,444.1	564,091.64	696,279.65	32° 32' 59.061 N	103° 49' 49.728 W
17,500.0	90.00	89.70	9,550.0	1,052.1	7,544.1	564,092.17	696,379.65	32° 32' 59.062 N	103° 49' 48.560 W
17,600.0	90.00	89.70	9,550.0	1,052.7	7,644.1	564,092.70	696,479.64	32° 32' 59.062 N	103° 49' 47.391 W
17,700.0	90.00	89.70	9,550.0	1,053.2	7,744.1	564,093.23	696,579.64	32° 32' 59.063 N	103° 49' 46.223 W
17,800.0	90.00	89.70	9,550.0	1,053.7	7,844.1	564,093.76	696,679.64	32° 32' 59.064 N	103° 49' 45.055 W
17,900.0	90.00	89.70	9,550.0	1,054.3	7,944.1	564,094.29	696,779.64	32° 32' 59.064 N	103° 49' 43.886 W
18,000.0	90.00	89.70	9,550.0	1,054.8	8,044.1	564,094.82	696,879.64	32° 32' 59.065 N	103° 49' 42.718 W
18,100.0	90.00	89.70	9,550.0	1,055.3	8,144.1	564,095.35	696,979.64	32° 32' 59.065 N	103° 49' 41.550 W
18,200.0	90.00	89.70	9,550.0	1,055.8	8,244.1	564,095.88	697,079.64	32° 32' 59.066 N	103° 49' 40.381 W
18,300.0	90.00	89.70	9,550.0	1,056.4	8,344.1	564,096.41	697,179.63	32° 32' 59.066 N	103° 49' 39.213 W
18,400.0	90.00	89.70	9,550.0	1,056.9	8,444.1	564,096.94	697,279.63	32° 32' 59.067 N	103° 49' 38.045 W
18,500.0	90.00	89.70	9,550.0	1,057.4	8,544.1	564,097.47	697,379.63	32° 32' 59.067 N	103° 49' 36.876 W
18,600.0	90.00	89.70	9,550.0	1,058.0	8,644.1	564,097.99	697,479.63	32° 32' 59.068 N	103° 49' 35.708 W
18,700.0	90.00	89.70	9,550.0	1,058.5	8,744.1	564,098.52	697,579.63	32° 32' 59.068 N	103° 49' 34.540 W
18,800.0	90.00	89.70	9,550.0	1,059.0	8,844.1	564,099.05	697,679.63	32° 32' 59.069 N	103° 49' 33.371 W
18,900.0	90.00	89.70	9,550.0	1,059.6	8,944.1	564,099.58	697,779.63	32° 32' 59.069 N	103° 49' 32.203 W
19,000.0	90.00	89.70	9,550.0	1,060.1	9,044.1	564,100.11	697,879.62	32° 32' 59.070 N	103° 49' 31.035 W
19,100.0	90.00	89.70	9,550.0	1,060.6	9,144.1	564,100.64	697,979.62	32° 32' 59.070 N	103° 49' 29.866 W
19,200.0	90.00	89.70	9,550.0	1,061.1	9,244.1	564,101.17	698,079.62	32° 32' 59.071 N	103° 49' 28.698 W
19,300.0	90.00	89.70	9,550.0	1,061.7	9,344.1	564,101.70	698,179.62	32° 32' 59.071 N	103° 49' 27.530 W
19,400.0	90.00	89.70	9,550.0	1,062.2	9,444.1	564,102.23	698,279.62	32° 32' 59.072 N	103° 49' 26.361 W

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,500.0	90.00	89.70	9,550.0	1,062.7	9,544.1	564,102.76	698,379.62	32° 32' 59.072 N	103° 49' 25.193 W
19,600.0	90.00	89.70	9,550.0	1,063.3	9,644.1	564,103.29	698,479.62	32° 32' 59.073 N	103° 49' 24.025 W
19,700.0	90.00	89.70	9,550.0	1,063.8	9,744.1	564,103.82	698,579.62	32° 32' 59.073 N	103° 49' 22.856 W
19,800.0	90.00	89.70	9,550.0	1,064.3	9,844.1	564,104.35	698,679.61	32° 32' 59.074 N	103° 49' 21.688 W
19,900.0	90.00	89.70	9,550.0	1,064.8	9,944.1	564,104.88	698,779.61	32° 32' 59.074 N	103° 49' 20.520 W
20,000.0	90.00	89.70	9,550.0	1,065.4	10,044.1	564,105.41	698,879.61	32° 32' 59.075 N	103° 49' 19.352 W
20,100.0	90.00	89.70	9,550.0	1,065.9	10,144.1	564,105.93	698,979.61	32° 32' 59.075 N	103° 49' 18.183 W
20,200.0	90.00	89.70	9,550.0	1,066.4	10,244.1	564,106.46	699,079.61	32° 32' 59.076 N	103° 49' 17.015 W
20,300.0	90.00	89.70	9,550.0	1,067.0	10,344.1	564,106.99	699,179.61	32° 32' 59.076 N	103° 49' 15.847 W
20,400.0	90.00	89.70	9,550.0	1,067.5	10,444.1	564,107.52	699,279.61	32° 32' 59.077 N	103° 49' 14.678 W
20,500.0	90.00	89.70	9,550.0	1,068.0	10,544.1	564,108.05	699,379.60	32° 32' 59.077 N	103° 49' 13.510 W
20,600.0	90.00	89.70	9,550.0	1,068.6	10,644.1	564,108.58	699,479.60	32° 32' 59.078 N	103° 49' 12.342 W
20,700.0	90.00	89.70	9,550.0	1,069.1	10,744.1	564,109.11	699,579.60	32° 32' 59.078 N	103° 49' 11.173 W
20,800.0	90.00	89.70	9,550.0	1,069.6	10,844.1	564,109.64	699,679.60	32° 32' 59.079 N	103° 49' 10.005 W
20,900.0	90.00	89.70	9,550.0	1,070.1	10,944.1	564,110.17	699,779.60	32° 32' 59.079 N	103° 49' 8.837 W
21,000.0	90.00	89.70	9,550.0	1,070.7	11,044.1	564,110.70	699,879.60	32° 32' 59.080 N	103° 49' 7.668 W
21,100.0	90.00	89.70	9,550.0	1,071.2	11,144.1	564,111.23	699,979.60	32° 32' 59.080 N	103° 49' 6.500 W
21,200.0	90.00	89.70	9,550.0	1,071.7	11,244.1	564,111.76	700,079.59	32° 32' 59.081 N	103° 49' 5.332 W
21,300.0	90.00	89.70	9,550.0	1,072.3	11,344.1	564,112.29	700,179.59	32° 32' 59.081 N	103° 49' 4.163 W
21,400.0	90.00	89.70	9,550.0	1,072.8	11,444.1	564,112.82	700,279.59	32° 32' 59.081 N	103° 49' 2.995 W
21,500.0	90.00	89.70	9,550.0	1,073.3	11,544.1	564,113.35	700,379.59	32° 32' 59.082 N	103° 49' 1.827 W
22,379.4	90.00	89.70	9,550.0	1,078.0	12,423.5	564,117.99	701,259.00	32° 32' 59.086 N	103° 48' 51.552 W
TD at 22379.4									

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
BHL 15-1	90.00	262.97	9,550.0	1,078.0	12,423.5	564,117.99	701,259.00	32° 32' 59.086 N	103° 48' 51.552 W
- plan hits target center - Rectangle (sides W200.0 H50.0 D0.0)									
FTP 15-1	90.00	209.30	9,550.0	1,012.7	87.8	564,052.70	688,923.30	32° 32' 59.012 N	103° 51' 15.676 W
- plan hits target center - Rectangle (sides W200.0 H50.0 D0.0)									

Casing Points

	Measured Depth (usft)	Vertical Depth (usft)		Name	Casing Diameter (")	Hole Diameter (")
	1,000.0	1,000.0	17.75		17-3/4	17-3/4

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well BEU 5E HAN SOLO 102H - Slot BEU 5E HAN SOLO 102H
Company:	Delaware Basin Asset	**TVD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Project:	New Mexico, XTO	**MD Reference:**	BEU 5E HAN SOLO 102H Default @ 3555.0usft
Site:	Big Eddy DI5	**North Reference:**	Grid
Well:	BEU 5E HAN SOLO 102H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BEU 5E HAN SOLO 102H		
Design:	BEU 5E HAN SOLO 102H		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
2,700.0	2,700.0	0.0	0.0	Start Build 2.00
2,850.0	2,849.9	3.2	-2.3	Start Drop -2.00
3,000.0	2,999.9	6.4	-4.5	Start 2500.0 hold at 3000.0 MD
5,500.0	5,499.9	6.4	-4.5	Start Build 2.00
6,389.4	6,375.1	125.3	-72.6	Start 2667.6 hold at 6389.4 MD
9,057.0	8,915.1	832.4	-477.7	Start DLS 10.00 TFO 118.32
10,043.5	9,550.0	1,012.7	87.8	Start 12335.9 hold at 10043.5 MD
22,379.4	9,550.0	1,078.0	12,423.5	TD at 22379.4

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.

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.

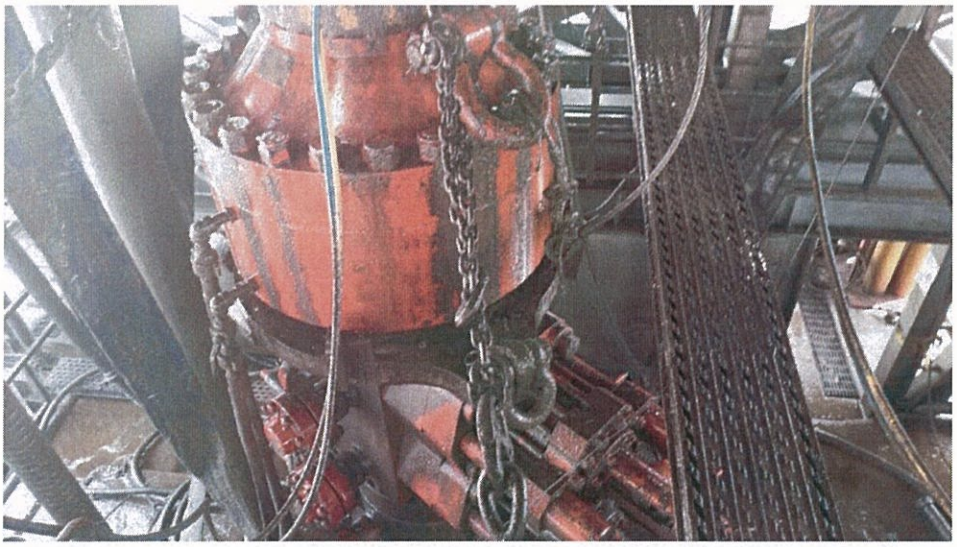


Figure 1: Winch System attached to BOP Stack

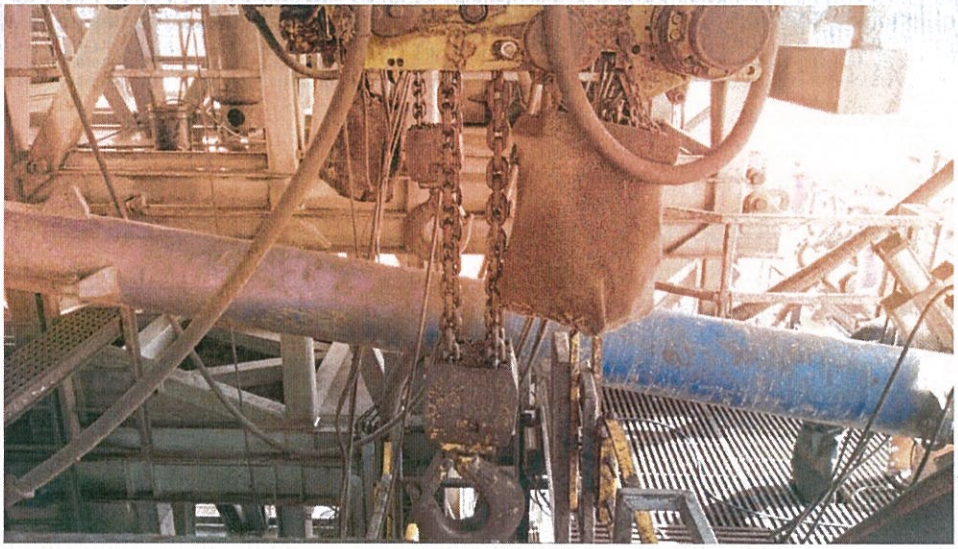


Figure 2: BOP Winch System

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.

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

Component to be Pressure Tested	Pressure Test—Low Pressure[a,c] psig (MPa)	Pressure Test—High Pressure[a,c]	
		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[b,d]	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.

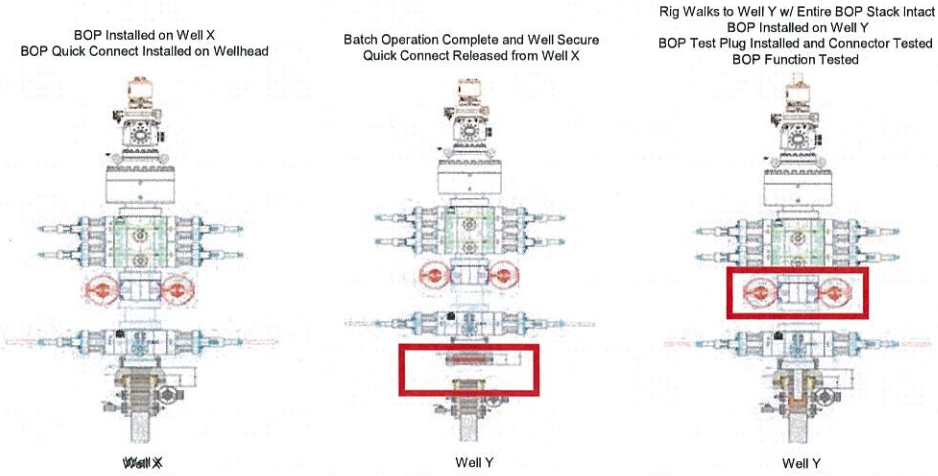
XTO Energy feels break testing and our current procedures meet the intent of OOGO No. 2 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. XTO Energy's internal standards requires complete BOPE tests more often than that 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.

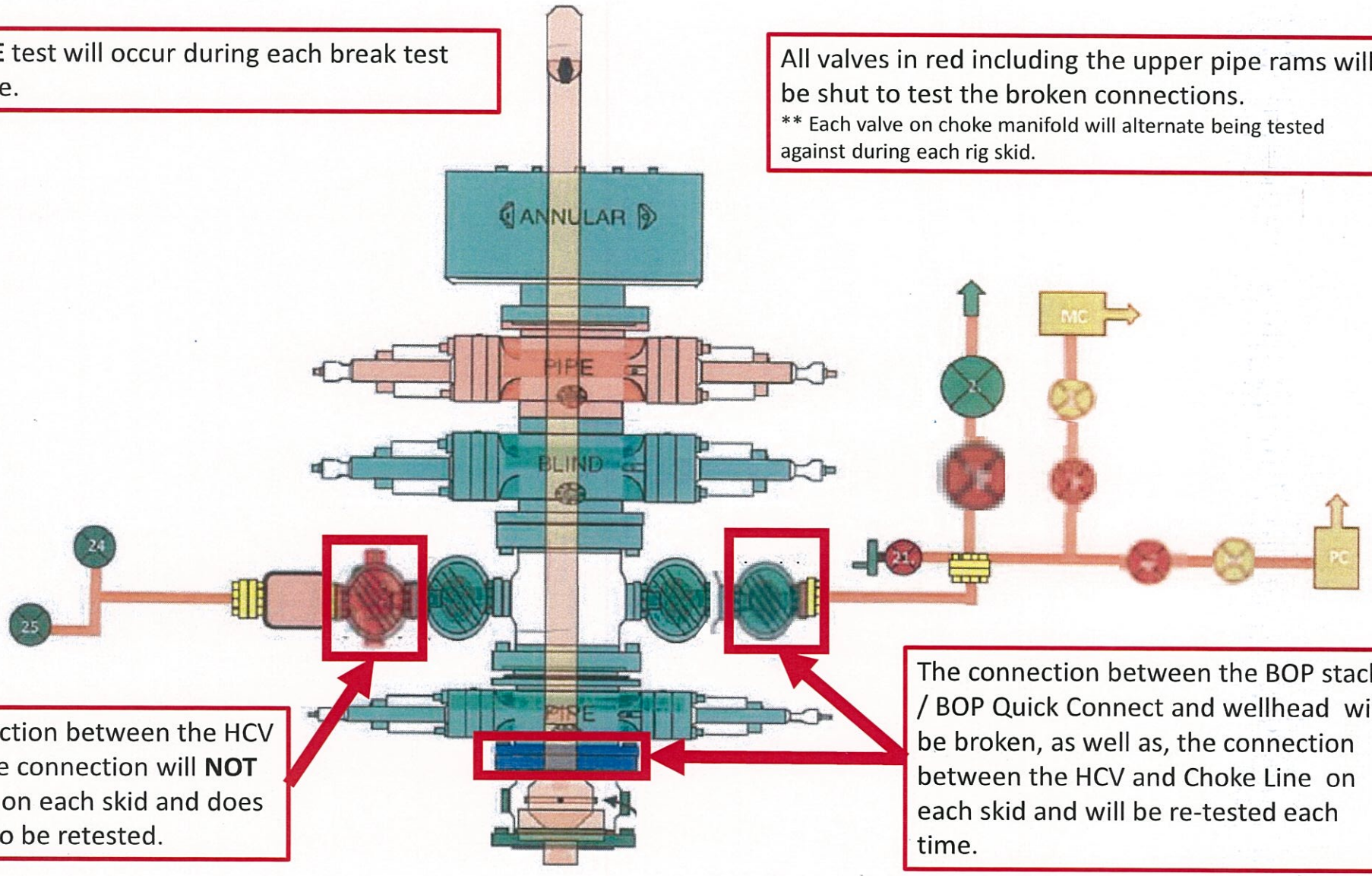
3. Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.

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.