Form 3160-5
(June 2015)

COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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.
NMNM0556857

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM70992X

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

8. Well Name and No.
NASH UNIT 47 H

2. Name of Operator
XTO ENERGY, INC
Contact: STEPHANIE RABADUE
E-Mail: stephanie_rabadue@xtoenergy.com

9. API Well No.
30-015-43077

3a. Address
500 W. ILLINOIS ST STE 100
MIDLAND, TX 79701

3b. Phone No. (include area code)
Ph: 432-620-6714

10. Field and Pool or Exploratory Area
NASH DRAW; DELAWARE, BS

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 03 2017
RECEIVED

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 18 T23S R30E Mer NMP NENE 700FNL 1980FWL

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 Energy, Inc respectfully requests to change the approved APD in the following ways:

1. Change well name from Nash Unit Fed Com #105H to Nash Unit #47H. An updated C-102 is attached.
2. Well hole, casing and cement design. An updated drilling program is attached.
3. Change the flex hose variance to XTO Rig. Flex hose specs are attached.
4. Add a pilot hole to the base of the Strawn. An updated drilling program is attached.
5. Change of TD/MD associated with the well. New BHL & TP information. An updated C-102 and directional drill survey is attached.

Accepted For Record
NMOCD

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Electronic Submission #358778 verified by the BLM Well Information System
For XTO ENERGY, INC, sent to the Carlsbad
Committed to AFMSS for processing by MUSTAFA HAQUE on 12/13/2016 ()

Name *(Printed/Typed)* STEPHANIE RABADUE — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 11/22/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
JAN 10 2017
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved By Mustafa Haque — Title Engineer — Date 1/10/2017

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 CFO

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 #358778 that would not fit on the form

32. Additional remarks, continued

6. Change Facility & Electrical Information to the Following:
Production from an active well will be located at the existing Nash Unit 42H battery. No more than 5280' of 4", 125psi poly flowline will be run on the surface in approved and existing lease road corridors back to the Nash Unit 42H facility. Electrical for the well will be 12,740 volt and will also follow existing proposed and approved lease road corridors connecting from the Nash Unit #45H well to the Nash Unit #46H well. No more than 3 poles are anticipated to make this connection. No additional surface disturbance than what was permitted by Murchison is anticipated.

→ Operator shall submit a new sundry for the "Facility Change" mentioned in bullet point #6

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Energy Inc
LEASE NO.:	NMNM0556857
WELL NAME & NO.:	47H-Nash Unit
SURFACE HOLE FOOTAGE:	700'/N & 1980'/W
BOTTOM HOLE FOOTAGE	1190'/S & 330'/E, sec. 6
LOCATION:	Section 18, T. 23 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

All previous COAs still apply except for the following:

A. CASING

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Potash Areas:
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 for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

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

R-111-P-Potash
High Cave/Karst
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Rustler, Delaware and Bone Spring.

1. The **16** inch surface casing shall be set at approximately **200** feet and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt. Excess calculates to -10% - Additional cement will be required.**

    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 is to include the lead cement slurry.

    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.

Formation below the 16" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **11-3/4** inch intermediate casing, is:

    ☒ Cement to surface. If cement does not circulate see A.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.**

Formation below the 11-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Pilot hole is required to have a plug at the bottom of the hole. The BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 200' in length. The Wolfcamp plug from 10,400' – 9,900' and the Bone Spring / Shoe plug from 7,250' – 6,850' also need to be tagged. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug. Note plug tops on subsequent drilling report.

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

Option 1:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash. Excess calculates to -12% - Additional cement will be required.**

Option 2:

a. First stage to 4400':

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage Pump down 8 5/8" x 11 3/4" annulus:

☒ Cement to surface. If cement does not circulate see A.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave karst and potash. Excess calculates to -1% - Additional cement will be required.**

Operator must run a CBL from TD of the 8 5/8" casing to surface. Submit results to the BLM.

Formation below the 8-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
☒ Cement to surface. Operator shall provide method of verification.

5. 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.

6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. 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.

5M/10M 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.

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

    a. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    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 (18 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.

MHH 01102017

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, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-43077	47545	Nash Draw; Delaware, BS AV

Property Code	Property Name	Well Number
303150	NASH UNIT	47H

OGRID No.	Operator Name	Elevation
005380	XTO ENERGY	3022'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	18	23-S	30-E		700	NORTH	1980	WEST	EDDY

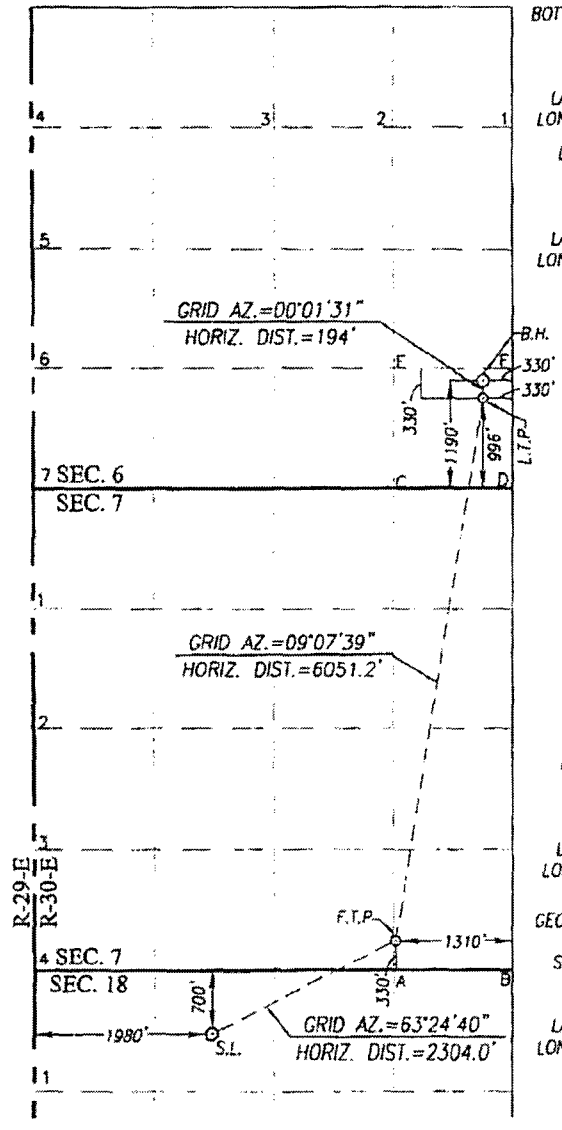
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	6	23-S	30-E		1190	SOUTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No
200			

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

SCALE: 1"=2000'



BOTTOM HOLE LOCATION
NAD 83 NME
Y= 484095.4 N
X= 671048.9 E
LAT.=32.330151° N
LONG.=103.913383° W

BOTTOM HOLE LOCATION
NAD 27 NME
Y= 484035.6 N
X= 629866.0 E
LAT.=32.330029° N
LONG.=103.912892° W

LAST TAKE POINT
NAD 83 NME
Y= 483901.3 N
X= 671048.8 E
LAT.=32.329618° N
LONG.=103.913386° W

LAST TAKE POINT
NAD 27 NME
Y= 483841.5 N
X= 629866.0 E
LAT.=32.329495° N
LONG.=103.912895° W

CORNER COORDINATES TABLE
NAD 27 NME
A - Y= 477538.4 N, X= 628880.0 E
B - Y= 477539.7 N, X= 630217.1 E
C - Y= 482846.1 N, X= 628857.6 E
D - Y= 482845.8 N, X= 630195.4 E
E - Y= 484172.0 N, X= 628858.2 E
F - Y= 484171.3 N, X= 630196.1 E

CORNER COORDINATES TABLE
NAD 83 NME
A - Y= 477598.1 N, X= 670063.0 E
B - Y= 477599.4 N, X= 671400.2 E
C - Y= 482905.9 N, X= 670040.5 E
D - Y= 482905.6 N, X= 671378.3 E
E - Y= 484231.8 N, X= 670041.0 E
F - Y= 484231.1 N, X= 671378.9 E

FIRST TAKE POINT
NAD 83 NME
Y= 477926.0 N
X= 670089.1 E
LAT.=32.313209° N
LONG.=103.916558° W

FIRST TAKE POINT
NAD 27 NME
Y= 477868.3 N
X= 628906.1 E
LAT.=32.313087° N
LONG.=103.916078° W

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 476896.4 N
X= 668029.5 E
LAT.=32.310395° N
LONG.=103.923248° W

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 476836.7 N
X= 626846.4 E
LAT.=32.310273° N
LONG.=103.922757° W

OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Stephanie Rabadue 11-7-16
Signature Date

Stephanie Rabadue
Printed Name

Stephanie_Rabadue@xtoenergy.com
E-mail Address

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.

NOVEMBER 1, 2016
Date of Survey
Signature & Seal of Professional Surveyor:

Ronald J. Eidson 11/07/2016

Certificate Number: Gary G. Eidson 12641
Ronald J. Eidson 3239

ACK. REV. 11/4/16 REL. W.O.: 14111318 JWSC W.O.: 16.11.0877

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

XTO Energy Inc.
Nash Unit #47
Projected TD: 14573' MD / 7020' TVD
SHL: 700' FNL & 1980' FWL, SECTION 18, T23S, R30E
BHL: 1190' FSL & 330' FEL, SECTION 6, T23S, R30E
Eddy County, NM

1. **GEOLOGIC NAME OF SURFACE FORMATION:**
   A. Salado

2. **ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Formation	Well Depth (TVD)	Water / Oil / Gas
Rustler	30'	Water
Top of Salt	368'	
Base of Salt	3033'	
Delaware	3258'	Water
Cherry Canyon	4143'	Water
Brushy Canyon Top	5721'	Water/Oil/Gas
Brushy Canyon E5 Zone	6960'	Water/Oil/Gas
Target/Land Curve	6985'	Water/Oil/Gas
Bone Spring	7047'	Water/Oil/Gas
1st Bone Spring Ss	8032'	Water/Oil/Gas
2nd Bone Spring Ss	8888'	Water/Oil/Gas
3rd Bone Spring Ss	9972'	Water/Oil/Gas
Wolfcamp	10322'	Water/Oil/Gas
Wolfcamp A	10454'	Water/Oil/Gas
Wolfcamp B	10777'	Water/Oil/Gas
Wolfcamp C	11000'	Water/Oil/Gas
Wolfcamp D	11185'	Water/Oil/Gas
Wolfcamp E	11386'	Water/Oil/Gas
Wolfcamp F	11520'	Water/Oil/Gas
Cisco	11717'	Water/Oil/Gas
Strawn	12197'	Water/Oil/Gas
Pilot Hole TD	12250'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon
*** Groundwater depth 50'.

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 16" casing @ ~~325'~~ 200', (43' above the salt) and circulating cement back to surface. Potash/fresh water sands will be protected by setting 11-3/4" casing at 3150' and circulating cement to surface. The Brushy Canyon intervals will be isolated by setting 8-5/8" casing in the top of the Bone Spring at 7200' and cementing back into the 11-3/4" casing. A 7-7/8" pilot hole will be drilled to 12,250. A cement plug will be set from 11,800' to 11,400' to isolate the Cisco/Strawn from the Wolfcamp. Another plug will be set from 10,400' to 9,900' to isolate the Wolfcamp from the

Bone Spring. A cased hole whipstock will then be set to sidetrack into the Brushy Canyon E5 target. A 7-7/8" lateral hole will be drilled to MD/TD and 5-1/2" casing with sliding frac sleeves will be run and cemented for completion.

3. CASING PROGRAM: - SEE COA

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
20"	0' – ~~325'~~ 200'	16"	65#	STC	H-40	New	11.03	4.51	20.78
14-3/4"	0' – 3150'	11-3/4"	54#	~~LTC~~ BTC	J-55	New	2.13	1.24	3.34
10-5/8"	0' – 7200'	8-5/8"	32#	LTC	J-55	New	2.00	1.29	1.81
7-7/8"	0' – 14573'	5-1/2"	17#	BTC	P-110	New	1.12	2.24	2.20

WELLHEAD:

A. Starting Head: 13-5/8" 5,000 psi top flange x 11-3/4" SOW bottom
B. Tubing Head: 13-5/8" 5,000 psi bottom flange x 7-1/16" 10,000 psi top flange

4. CEMENT PROGRAM:

Surface Casing: 16", 65#, NEW H-40, STC casing to be set at ± 325'.

235 sx HalCem-C + 2% CaCl (mixed at 14.80 ppg, 1.35 cu ft/sx, 6.39 gal/sx wtr)
*** 100% open hole excess. Cement to surface.

Low cement - SEE COA

In the event that loss circulation is encountered while drilling the surface hole (i.e. Nash #39H, #40H, #41H), an alternate cementing procedure will be to pump 150 sx Thixotropic + 10 pps CalSeal + 10 pps Gilsonite + 2% CaCl (14 ppg, 1.7 cu ft/sx) Compr Strengths 12 hr – 468 psi 24 hr – 739 psi followed by 200 sx HalCem C + 2% CaCl (properties above) Run temp survey to locate top of cement, top out with 1" to surface with the required amount of "Thixotropic" cement. This procedure to be coordinated and communicated with the designated BLM representative.

1st Interm. Casing: 11-3/4", 54#, NEW J-55, ~~LTC~~ BTC casing to be set at ± 3150'.

Lead: 20 bbls FW, then 1153 sx EconoCem + 5% salt + 5% Kol-Seal (mixed at 12.8 ppg, 1.88 ft^3/sk, 9.96 gal/sx wtr)

Tail: 425 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft^3/sk, 6.34 gal/sx wtr)
*** 100% open hole excess. Cement to surface.

2nd Interm. Casing: 8-5/8", 32#, NEW J-55, LTC casing to be set at ± 7200'

Primary cement job

Low cement - SEE COA

Lead: 437 sx NeoCem (mixed at 11ppg, 2.808 cuft/sx, 17.37 gal/sx wtr)

Tail (Csg Shoe Cmt): 145 sx HalCem-H + 0.5% LAP-1 + 0.25% CFR-3 + 5 pps Kol-Seal + 0.25 pps D-air 5000 (13.2 ppg, 1.33 cuft/sx, 6.83 gal/sx wtr)

*** 50% open hole excess on lead, 30% open hole excess on tail. Lead cement to ~~2600' (500' above 11-3/4" shoe)~~ surface ***

SEE COA **In the event the the well is still flowing after primary cement job, cement to be pumped down the 8-5/8" x 11-3/4" annulus to eliminate and isolate the water flow area – cement to fill from 4400' to surface.**

Low Cement - SEE COA **Lead:** 500 sx EconoCem + 5% Salt (mixed at 12.8 ppg, 1.89 cuft/sx, 10.17 gal/sx wtr)

Tail: 50 sx HalCem (mixed at 14.8 ppg, 1.33 cuft/sx, 6.34 gal/sx wtr)

Production Casing: 5.5", 17#, NEW P-110, BTC casing to be set at ± 14573'. Casing will be cemented and will include sliding sleeves for the completion.

Lead: 232 sx NeoCem + 5% Salt (mixed at 11 ppg, 2.808 cuft/sx, 17.37 gal/sx wtr)

Tail: 1200 sx NeoCem (mixed at 14.5 ppg, 1.33 cuft/sx, 6.34 gal/sx wtr)

Compr Strengths: 12 hr – 1375 psi 24 hr – 2285 psi
***20% open hole excess. Cement to top ~~of liner~~. surface

Pilot Hole Plugs: Plugs will be set to isolate producing intervals as follows:

- ~~11,800'~~ 12,250' – ~~11,400'~~ 11850': 153 sxs HalCem (mixed at 14.8 ppg, 1.33 cuft/sx, 6.34 gal/sx wtr) → Tag
- 10,400' – 9,900': 191 sxs HalCem (mixed at 14.8 ppg, 1.33 cuft/sx, 6.34 gal/sx wtr) → Tag.

Third plug: 7250' — 6850' → Tag

5. PRESSURE CONTROL EQUIPMENT:

The blow out preventer equipment for drilling below the 16" surface casing will be 2M (annular preventer). Max bottom hole pressure should not exceed 1670 psi.

The blow out preventer equipment (BOP) for drilling below the 11-3/4" intermediate casing consists of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. Max bottom hole pressure should not exceed 7644 psi.

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 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 2,500psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagram is attached. Blind rams will be function tested each trip, pipe rams will be function 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' to ~~325'~~ 200'	20"	FW/Native	8.5 - 8.8	35 - 40	NC
~~325'~~ to 3150'	14-3/4"	Brine/Gel Sweeps	9.8 - 10.2	30 - 32	NC
3150' to 7200'	10-5/8"	Cut Brine/ Poly-Sweeps	8.7-9.4	29 - 32	NC - 30
7200' to 12250'	7-7/8"	Polymer WBM	10.0 – 12.0	30 – 60	5 - 40
5000' to 12455'	7-7/8"	Polymer WBM	8.6 – 9.2	40 – 60	5 - 40

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 16" surface casing with brine solution. A 9.8ppg - 10.2ppg brine mud will be used while drilling through the salt formation. Cut brine will be used to drill the 10-5/8" hole section. Polymer-water will be used to drill the 7-7/8" pilot hole. Polymer-water will be used to drill the 7-7/8" lateral. 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. Solids control equipment will be used 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 16" casing.

8. LOGGING, CORING AND TESTING PROGRAM:

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

9. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

None anticipated. BHT of 175 F is anticipated. H2S can be present from 3200 – TD. 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.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 40 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

Company: XTO Energy
Site: Nash Unit
Well: 47H
Project: Eddy County, New Mexico (NAD 27)
Rig: Noram 25

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T G M

Azimuths to Grid North
True North: -0.22°
Magnetic North: 7.00°

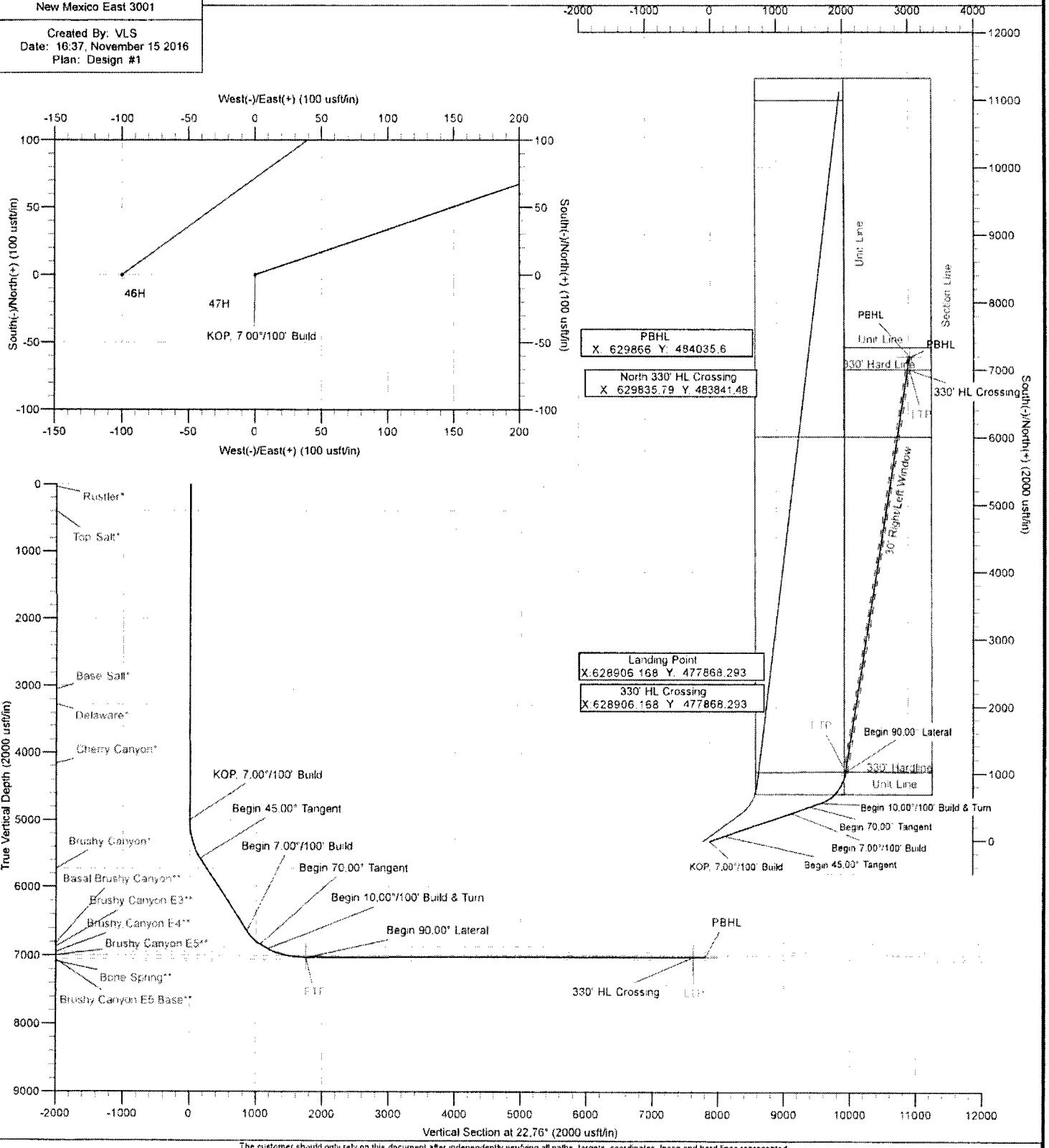
Magnetic Field
Strength: 48084.2snT
Dip Angle: 60.09°
Date: 1/2/2017
Model: BGGM2016

US State Plane 1927 (Exact solution)
New Mexico East 3001

Created By: VLS
Date: 16:37, November 15 2016
Plan: Design #1

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
4997.04	0.00	0.00	4997.04	0.00	0.00	0.00	0.00	KOP, 7.00°/100' Build
5639.90	45.00	71.37	5575.81	76.59	227.17	158.50	239.74	Begin 45.00° Tangent
7151.79	45.00	71.37	6644.88	418.11	1240.23	865.28	1308.81	Begin 7.00°/100' Build
7508.93	70.00	71.37	6835.26	513.57	1523.40	1062.85	1607.63	Begin 70.00° Tangent
7688.93	70.00	71.37	6896.82	567.60	1683.68	1174.67	1776.78	Begin 10.00°/100' Build & Turn
8332.00	90.00	8.85	7020.00	1031.59	2059.77	1748.02	2404.46	Begin 90.00° Lateral
14573.55	90.00	8.85	7020.00	7198.90	3019.60	7806.55	8646.01	PBHL



XTO Energy

Eddy County, New Mexico (NAD 27)
Nash Unit
47H

Wellbore #1

Plan: Design #1

Standard Planning Report

15 November, 2016

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Database:	5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 47H
Company:	XTO Energy	**TVD Reference:**	Well @ 3047.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Well @ 3047.00usft (Noram 25)
Site:	Nash Unit	**North Reference:**	Grid
Well:	47H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Eddy County, New Mexico (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well	47H					
Well Position	**+N/-S**	476,836.70 usft	**Northing:**	476,836.70 usft	**Latitude:**	32° 18' 36.981 N
	+E/-W	626,846.40 usft	**Easting:**	626,846.40 usft	**Longitude:**	103° 55' 21.926 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,022.00 usft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	BGGM2016	1/2/2017	7.22	60.09	48,084

Design Design #1

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	22.76

Plan Survey Tool Program **Date** 11/15/2016

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	14,573.55	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,997.04	0.00	0.00	4,997.04	0.00	0.00	0.00	0.00	0.00	0.00	
5,639.90	45.00	71.37	5,575.81	76.59	227.17	7.00	7.00	0.00	71.37	
7,151.79	45.00	71.37	6,644.88	418.11	1,240.23	0.00	0.00	0.00	0.00	
7,508.93	70.00	71.37	6,835.26	513.57	1,523.40	7.00	7.00	0.00	0.00	
7,688.93	70.00	71.37	6,896.82	567.60	1,683.68	0.00	0.00	0.00	0.00	
8,332.00	90.00	8.85	7,020.00	1,031.59	2,059.77	10.00	3.11	-9.72	-79.91	
14,573.55	90.00	8.85	7,020.00	7,198.90	3,019.60	0.00	0.00	0.00	0.00	PBHL v1 - Nash Un

Database:	5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 47H
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Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Well @ 3047.00usft (Noram 25)
Site:	Nash Unit	**North Reference:**	Grid
Well:	47H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler*									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
391.00	0.00	0.00	391.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt*									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,052.00	0.00	0.00	3,052.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt*									
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,273.00	0.00	0.00	3,273.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware*									
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,159.00	0.00	0.00	4,159.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon*									
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Database:	5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 47H
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Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Well @ 3047.00usft (Noram 25)
Site:	Nash Unit	**North Reference:**	Grid
Well:	47H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,997.04	0.00	0.00	4,997.04	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 7.00°/100' Build									
5,000.00	0.21	71.37	5,000.00	0.00	0.01	0.00	7.00	7.00	0.00
5,050.00	3.71	71.37	5,049.96	0.55	1.62	1.13	7.00	7.00	0.00
5,100.00	7.21	71.37	5,099.73	2.07	6.13	4.28	7.00	7.00	0.00
5,150.00	10.71	71.37	5,149.11	4.55	13.50	9.42	7.00	7.00	0.00
5,200.00	14.21	71.37	5,197.93	8.00	23.72	16.55	7.00	7.00	0.00
5,250.00	17.71	71.37	5,245.99	12.39	36.75	25.64	7.00	7.00	0.00
5,300.00	21.21	71.37	5,293.13	17.71	52.53	36.65	7.00	7.00	0.00
5,350.00	24.71	71.37	5,339.16	23.94	71.00	49.54	7.00	7.00	0.00
5,400.00	28.21	71.37	5,383.92	31.05	92.11	64.26	7.00	7.00	0.00
5,450.00	31.71	71.37	5,427.23	39.03	115.77	80.77	7.00	7.00	0.00
5,500.00	35.21	71.37	5,468.94	47.83	141.88	98.99	7.00	7.00	0.00
5,550.00	38.71	71.37	5,508.89	57.43	170.36	118.86	7.00	7.00	0.00
5,600.00	42.21	71.37	5,546.93	67.80	201.10	140.31	7.00	7.00	0.00
5,639.90	45.00	71.37	5,575.81	76.59	227.17	158.50	7.00	7.00	0.00
Begin 45.00° Tangent									
5,700.00	45.00	71.37	5,618.31	90.16	267.45	186.59	0.00	0.00	0.00
5,800.00	45.00	71.37	5,689.02	112.75	334.45	233.34	0.00	0.00	0.00
5,855.12	45.00	71.37	5,728.00	125.20	371.39	259.11	0.00	0.00	0.00
Brushy Canyon*									
5,900.00	45.00	71.37	5,759.74	135.34	401.46	280.09	0.00	0.00	0.00
6,000.00	45.00	71.37	5,830.45	157.93	468.46	326.84	0.00	0.00	0.00
6,100.00	45.00	71.37	5,901.16	180.52	535.47	373.59	0.00	0.00	0.00
6,200.00	45.00	71.37	5,971.87	203.11	602.47	420.34	0.00	0.00	0.00
6,300.00	45.00	71.37	6,042.58	225.70	669.48	467.08	0.00	0.00	0.00
6,400.00	45.00	71.37	6,113.29	248.28	736.49	513.83	0.00	0.00	0.00
6,500.00	45.00	71.37	6,184.00	270.87	803.49	560.58	0.00	0.00	0.00
6,600.00	45.00	71.37	6,254.71	293.46	870.50	607.33	0.00	0.00	0.00
6,700.00	45.00	71.37	6,325.42	316.05	937.50	654.08	0.00	0.00	0.00
6,800.00	45.00	71.37	6,396.13	338.64	1,004.51	700.83	0.00	0.00	0.00
6,900.00	45.00	71.37	6,466.84	361.23	1,071.51	747.58	0.00	0.00	0.00
7,000.00	45.00	71.37	6,537.55	383.82	1,138.52	794.33	0.00	0.00	0.00
7,100.00	45.00	71.37	6,608.26	406.41	1,205.52	841.07	0.00	0.00	0.00
7,151.79	45.00	71.37	6,644.88	418.11	1,240.23	865.28	0.00	0.00	0.00
Begin 7.00°/100' Build									
7,200.00	48.37	71.37	6,677.95	429.31	1,273.46	888.47	7.00	7.00	0.00
7,250.00	51.87	71.37	6,710.00	441.57	1,309.82	913.84	7.00	7.00	0.00
7,300.00	55.37	71.37	6,739.65	454.42	1,347.96	940.45	7.00	7.00	0.00
7,350.00	58.87	71.37	6,766.79	467.84	1,387.75	968.21	7.00	7.00	0.00
7,400.00	62.37	71.37	6,791.31	481.75	1,429.03	997.01	7.00	7.00	0.00
7,450.00	65.87	71.37	6,813.13	496.12	1,471.65	1,026.75	7.00	7.00	0.00
7,475.01	67.63	71.37	6,823.00	503.46	1,493.43	1,041.94	7.00	7.00	0.00
Basal Brushy Canyon**									
7,500.00	69.37	71.37	6,832.16	510.89	1,515.46	1,057.31	7.00	7.00	0.00
7,508.93	70.00	71.37	6,835.26	513.57	1,523.40	1,062.85	7.00	7.00	0.00
Begin 70.00° Tangent									

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Site:	Nash Unit	**North Reference:**	Grid
Well:	47H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,600.00	70.00	71.37	6,866.41	540.90	1,604.49	1,119.42	0.00	0.00	0.00
7,619.28	70.00	71.37	6,873.00	546.69	1,621.66	1,131.40	0.00	0.00	0.00
Brushy Canyon E3**									
7,688.93	70.00	71.37	6,896.82	567.60	1,683.68	1,174.67	0.00	0.00	0.00
Begin 10.00°/100' Build & Turn									
7,700.00	70.20	70.21	6,900.59	571.03	1,693.50	1,181.63	10.00	1.79	-10.46
7,750.00	71.18	65.02	6,917.13	588.99	1,737.11	1,215.07	10.00	1.97	-10.39
7,800.00	72.31	59.89	6,932.81	610.95	1,779.19	1,251.59	10.00	2.25	-10.26
7,850.00	73.56	54.82	6,947.49	636.73	1,819.42	1,290.93	10.00	2.51	-10.13
7,858.95	73.80	53.93	6,950.00	641.73	1,826.40	1,298.24	10.00	2.66	-10.04
Brushy Canyon E4**									
7,900.00	74.94	49.83	6,961.06	666.14	1,857.49	1,332.77	10.00	2.77	-9.98
7,950.00	76.43	44.90	6,973.44	698.94	1,893.12	1,376.80	10.00	2.97	-9.86
8,000.00	78.01	40.04	6,984.51	734.90	1,926.02	1,422.69	10.00	3.16	-9.73
8,050.00	79.67	35.23	6,994.19	773.74	1,955.96	1,470.09	10.00	3.33	-9.61
8,054.54	79.82	34.80	6,995.00	777.40	1,958.52	1,474.45	10.00	3.41	-9.55
Brushy Canyon E5**									
8,100.00	81.40	30.48	7,002.42	815.16	1,982.70	1,518.62	10.00	3.47	-9.51
8,150.00	83.19	25.76	7,009.12	858.85	2,006.05	1,567.94	10.00	3.58	-9.42
8,200.00	85.03	21.09	7,014.26	904.47	2,025.81	1,617.66	10.00	3.67	-9.35
8,250.00	86.90	16.44	7,017.78	951.68	2,041.85	1,667.40	10.00	3.74	-9.30
8,300.00	88.79	11.81	7,019.66	1,000.12	2,054.03	1,716.78	10.00	3.78	-9.27
8,332.00	90.00	8.85	7,020.00	1,031.59	2,059.77	1,748.02	10.00	3.79	-9.25
Begin 90.00° Lateral									
8,400.00	90.00	8.85	7,020.00	1,098.78	2,070.23	1,814.03	0.00	0.00	0.00
8,500.00	90.00	8.85	7,020.00	1,197.60	2,085.60	1,911.10	0.00	0.00	0.00
8,600.00	90.00	8.85	7,020.00	1,296.41	2,100.98	2,008.16	0.00	0.00	0.00
8,700.00	90.00	8.85	7,020.00	1,395.22	2,116.36	2,105.23	0.00	0.00	0.00
8,800.00	90.00	8.85	7,020.00	1,494.03	2,131.74	2,202.30	0.00	0.00	0.00
8,900.00	90.00	8.85	7,020.00	1,592.84	2,147.12	2,299.37	0.00	0.00	0.00
9,000.00	90.00	8.85	7,020.00	1,691.65	2,162.49	2,396.43	0.00	0.00	0.00
9,100.00	90.00	8.85	7,020.00	1,790.46	2,177.87	2,493.50	0.00	0.00	0.00
9,200.00	90.00	8.85	7,020.00	1,889.27	2,193.25	2,590.57	0.00	0.00	0.00
9,300.00	90.00	8.85	7,020.00	1,988.08	2,208.63	2,687.64	0.00	0.00	0.00
9,400.00	90.00	8.85	7,020.00	2,086.89	2,224.01	2,784.70	0.00	0.00	0.00
9,500.00	90.00	8.85	7,020.00	2,185.70	2,239.38	2,881.77	0.00	0.00	0.00
9,600.00	90.00	8.85	7,020.00	2,284.51	2,254.76	2,978.84	0.00	0.00	0.00
9,700.00	90.00	8.85	7,020.00	2,383.32	2,270.14	3,075.91	0.00	0.00	0.00
9,800.00	90.00	8.85	7,020.00	2,482.13	2,285.52	3,172.97	0.00	0.00	0.00
9,900.00	90.00	8.85	7,020.00	2,580.94	2,300.90	3,270.04	0.00	0.00	0.00
10,000.00	90.00	8.85	7,020.00	2,679.75	2,316.28	3,367.11	0.00	0.00	0.00
10,100.00	90.00	8.85	7,020.00	2,778.56	2,331.65	3,464.18	0.00	0.00	0.00
10,200.00	90.00	8.85	7,020.00	2,877.37	2,347.03	3,561.25	0.00	0.00	0.00
10,300.00	90.00	8.85	7,020.00	2,976.18	2,362.41	3,658.31	0.00	0.00	0.00
10,400.00	90.00	8.85	7,020.00	3,074.99	2,377.79	3,755.38	0.00	0.00	0.00
10,500.00	90.00	8.85	7,020.00	3,173.81	2,393.17	3,852.45	0.00	0.00	0.00
10,600.00	90.00	8.85	7,020.00	3,272.62	2,408.54	3,949.52	0.00	0.00	0.00
10,700.00	90.00	8.85	7,020.00	3,371.43	2,423.92	4,046.58	0.00	0.00	0.00
10,800.00	90.00	8.85	7,020.00	3,470.24	2,439.30	4,143.65	0.00	0.00	0.00
10,900.00	90.00	8.85	7,020.00	3,569.05	2,454.68	4,240.72	0.00	0.00	0.00
11,000.00	90.00	8.85	7,020.00	3,667.86	2,470.06	4,337.79	0.00	0.00	0.00
11,100.00	90.00	8.85	7,020.00	3,766.67	2,485.43	4,434.85	0.00	0.00	0.00
11,200.00	90.00	8.85	7,020.00	3,865.48	2,500.81	4,531.92	0.00	0.00	0.00
11,300.00	90.00	8.85	7,020.00	3,964.29	2,516.19	4,628.99	0.00	0.00	0.00

Database:	5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 47H
Company:	XTO Energy	**TVD Reference:**	Well @ 3047.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Well @ 3047.00usft (Noram 25)
Site:	Nash Unit	**North Reference:**	Grid
Well:	47H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,400.00	90.00	8.85	7,020.00	4,063.10	2,531.57	4,726.06	0.00	0.00	0.00
11,500.00	90.00	8.85	7,020.00	4,161.91	2,546.95	4,823.12	0.00	0.00	0.00
11,600.00	90.00	8.85	7,020.00	4,260.72	2,562.32	4,920.19	0.00	0.00	0.00
11,700.00	90.00	8.85	7,020.00	4,359.53	2,577.70	5,017.26	0.00	0.00	0.00
11,800.00	90.00	8.85	7,020.00	4,458.34	2,593.08	5,114.33	0.00	0.00	0.00
11,900.00	90.00	8.85	7,020.00	4,557.15	2,608.46	5,211.39	0.00	0.00	0.00
12,000.00	90.00	8.85	7,020.00	4,655.96	2,623.84	5,308.46	0.00	0.00	0.00
12,100.00	90.00	8.85	7,020.00	4,754.77	2,639.22	5,405.53	0.00	0.00	0.00
12,200.00	90.00	8.85	7,020.00	4,853.58	2,654.59	5,502.60	0.00	0.00	0.00
12,300.00	90.00	8.85	7,020.00	4,952.39	2,669.97	5,599.66	0.00	0.00	0.00
12,400.00	90.00	8.85	7,020.00	5,051.20	2,685.35	5,696.73	0.00	0.00	0.00
12,500.00	90.00	8.85	7,020.00	5,150.02	2,700.73	5,793.80	0.00	0.00	0.00
12,600.00	90.00	8.85	7,020.00	5,248.83	2,716.11	5,890.87	0.00	0.00	0.00
12,700.00	90.00	8.85	7,020.00	5,347.64	2,731.48	5,987.94	0.00	0.00	0.00
12,800.00	90.00	8.85	7,020.00	5,446.45	2,746.86	6,085.00	0.00	0.00	0.00
12,900.00	90.00	8.85	7,020.00	5,545.26	2,762.24	6,182.07	0.00	0.00	0.00
13,000.00	90.00	8.85	7,020.00	5,644.07	2,777.62	6,279.14	0.00	0.00	0.00
13,100.00	90.00	8.85	7,020.00	5,742.88	2,793.00	6,376.21	0.00	0.00	0.00
13,200.00	90.00	8.85	7,020.00	5,841.69	2,808.37	6,473.27	0.00	0.00	0.00
13,300.00	90.00	8.85	7,020.00	5,940.50	2,823.75	6,570.34	0.00	0.00	0.00
13,400.00	90.00	8.85	7,020.00	6,039.31	2,839.13	6,667.41	0.00	0.00	0.00
13,500.00	90.00	8.85	7,020.00	6,138.12	2,854.51	6,764.48	0.00	0.00	0.00
13,600.00	90.00	8.85	7,020.00	6,236.93	2,869.89	6,861.54	0.00	0.00	0.00
13,700.00	90.00	8.85	7,020.00	6,335.74	2,885.26	6,958.61	0.00	0.00	0.00
13,800.00	90.00	8.85	7,020.00	6,434.55	2,900.64	7,055.68	0.00	0.00	0.00
13,900.00	90.00	8.85	7,020.00	6,533.36	2,916.02	7,152.75	0.00	0.00	0.00
14,000.00	90.00	8.85	7,020.00	6,632.17	2,931.40	7,249.81	0.00	0.00	0.00
14,100.00	90.00	8.85	7,020.00	6,730.98	2,946.78	7,346.88	0.00	0.00	0.00
14,200.00	90.00	8.85	7,020.00	6,829.79	2,962.16	7,443.95	0.00	0.00	0.00
14,300.00	90.00	8.85	7,020.00	6,928.60	2,977.53	7,541.02	0.00	0.00	0.00
14,400.00	90.00	8.85	7,020.00	7,027.41	2,992.91	7,638.08	0.00	0.00	0.00
14,500.00	90.00	8.85	7,020.00	7,126.23	3,008.29	7,735.15	0.00	0.00	0.00
14,573.55	90.00	8.85	7,020.00	7,198.90	3,019.60	7,806.55	0.00	0.00	0.00
PBHL									

Database:	5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 47H
Company:	XTO Energy	**TVD Reference:**	Well @ 3047.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Well @ 3047.00usft (Noram 25)
Site:	Nash Unit	**North Reference:**	Grid
Well:	47H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

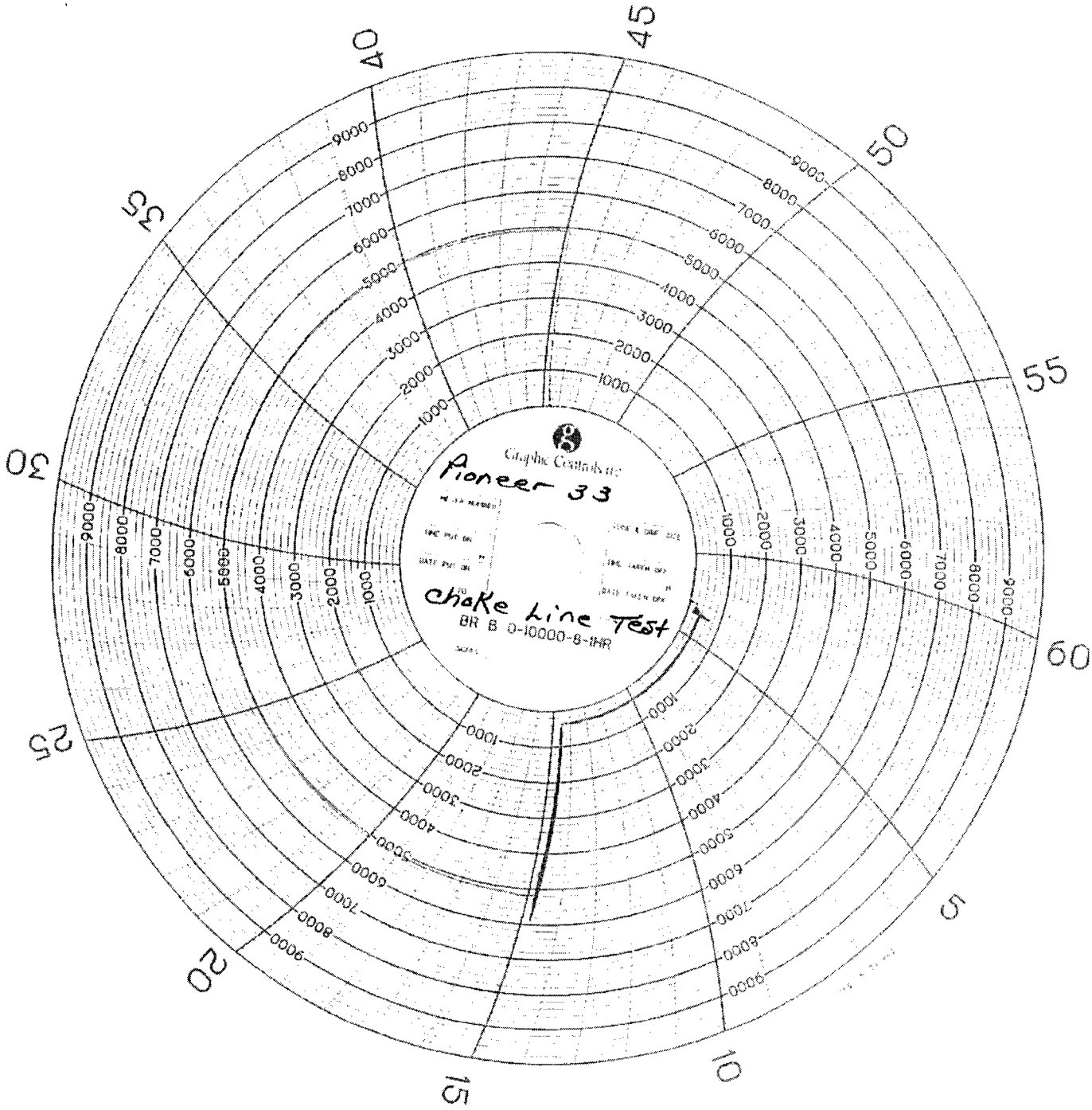
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL v1 - Nash Unit - plan hits target center - Point	0.00	0.00	7,020.00	7,198.90	3,019.60	484,035.60	629,866.00	32° 19' 48.106 N	103° 54' 46.412 W
FTP v1 - Nash Unit 47 - plan misses target center by 0.07usft at 8331.99usft MD (7020.00 TVD, 1031.59 N, 2059.77 E) - Point	0.00	0.00	7,020.00	1,031.60	2,059.70	477,868.30	628,906.10	32° 18' 47.111 N	103° 54' 57.880 W
330' HL Crossing - Na - plan misses target center by 0.92usft at 14383.02usft MD (7020.00 TVD, 7010.64 N, 2990.30 E) - Point	0.00	0.00	7,020.00	7,010.78	2,989.39	483,847.48	629,835.79	32° 19' 46.245 N	103° 54' 46.773 W
LTP v1 - Nash Unit 47 - plan misses target center by 29.85usft at 14381.76usft MD (7020.00 TVD, 7009.39 N, 2990.11 E) - Point	0.00	0.00	7,020.00	7,004.80	3,019.60	483,841.50	629,866.00	32° 19' 46.185 N	103° 54' 46.421 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
30.00	30.00	Rustler*			
391.00	391.00	Top Salt*			
3,052.00	3,052.00	Base Salt*			
3,273.00	3,273.00	Delaware*			
4,159.00	4,159.00	Cherry Canyon*			
5,855.12	5,728.00	Brushy Canyon*			
7,475.01	6,823.00	Basal Brushy Canyon**			
7,619.28	6,873.00	Brushy Canyon E3**			
7,858.95	6,950.00	Brushy Canyon E4**			
8,054.54	6,995.00	Brushy Canyon E5**			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
4,997.04	4,997.04	0.00	0.00	KOP, 7.00°/100' Build
5,639.90	5,575.81	76.59	227.17	Begin 45.00° Tangent
7,151.79	6,644.88	418.11	1,240.23	Begin 7.00°/100' Build
7,508.93	6,835.26	513.57	1,523.40	Begin 70.00° Tangent
7,688.93	6,896.82	567.60	1,683.68	Begin 10.00°/100' Build & Turn
8,332.00	7,020.00	1,031.59	2,059.77	Begin 90.00° Lateral
14,573.55	7,020.00	7,198.90	3,019.60	PBHL


Graphic Controls
Pioneer 33
Choke Line Test
BR B 0-10000-8-1HR

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

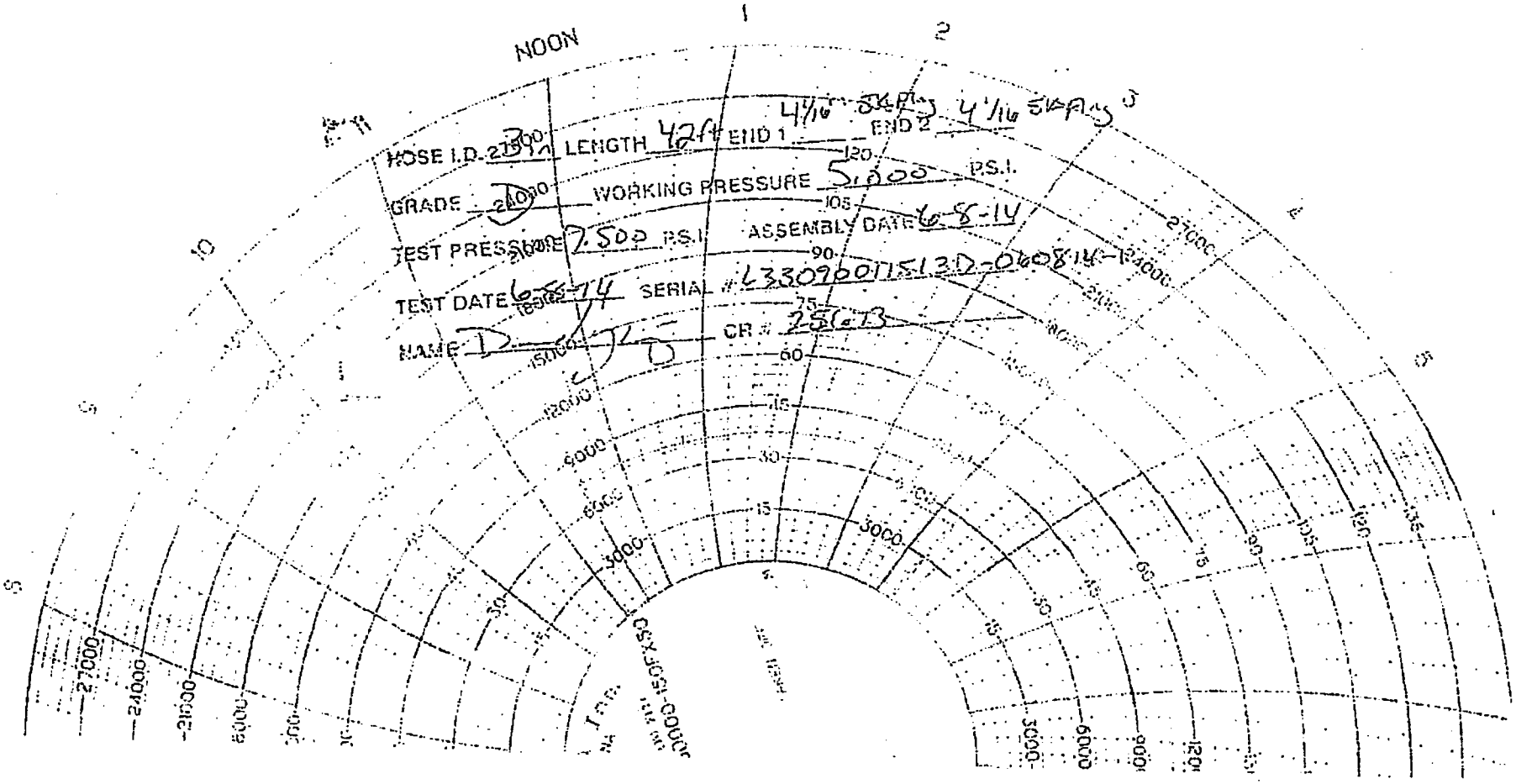
Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D 060814-1
Invoice No. :	201709	Created By:	NORMA

Product Description:	FDJ-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 Supervision :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :		Signature :	


NOON
HOSE I.D. 2"
LENGTH 42ft
END 1 4 1/16 SAE 5
END 2 4 1/16 SAE 5
GRADE D
WORKING PRESSURE 5,000 P.S.I.
TEST PRESSURE 7,500 P.S.I.
ASSEMBLY DATE 6-6-14
TEST DATE 6-6-14
SERIAL # 133090075130-060814-1
NAME D. [illegible] D
CR # 25613

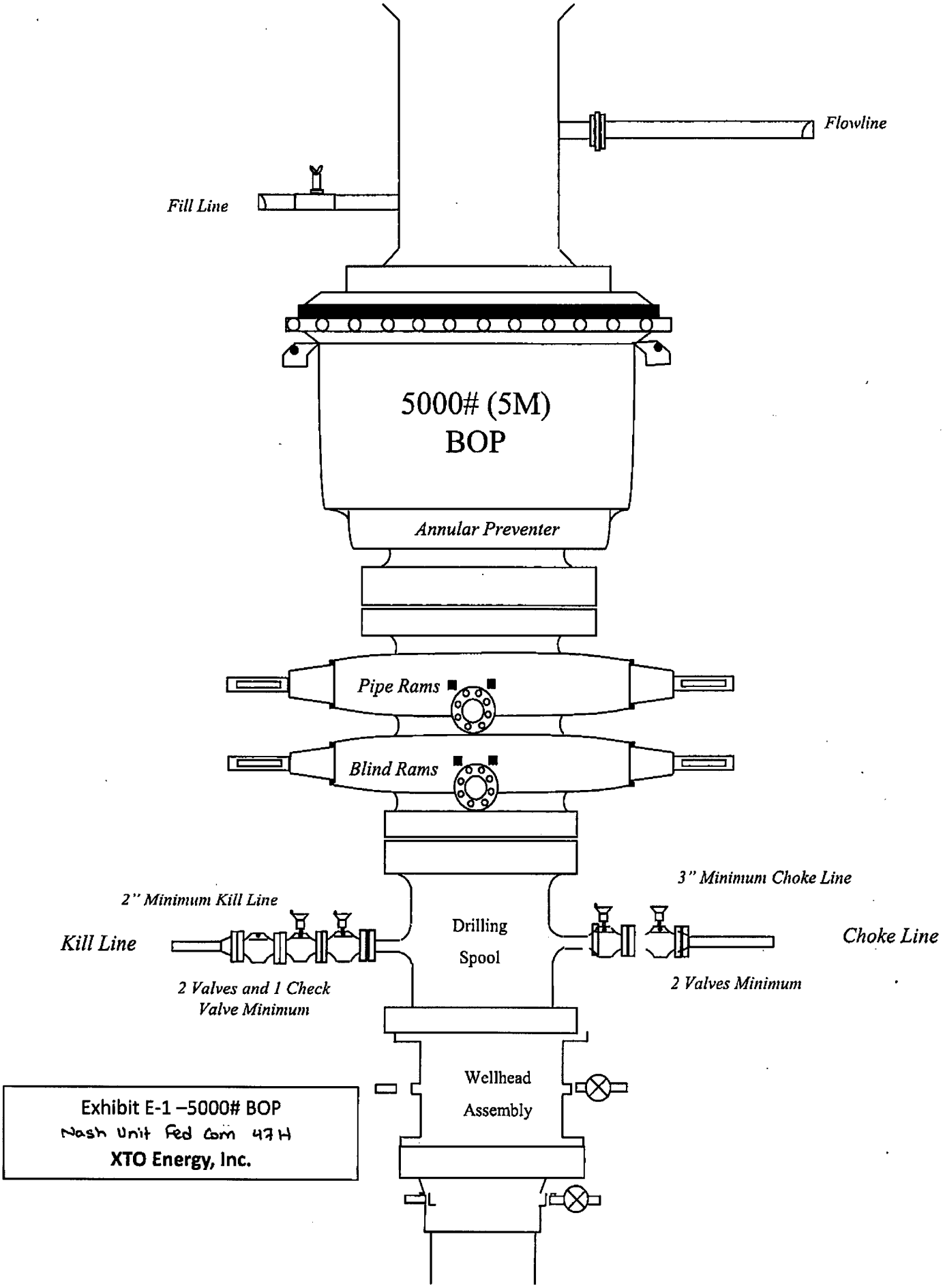
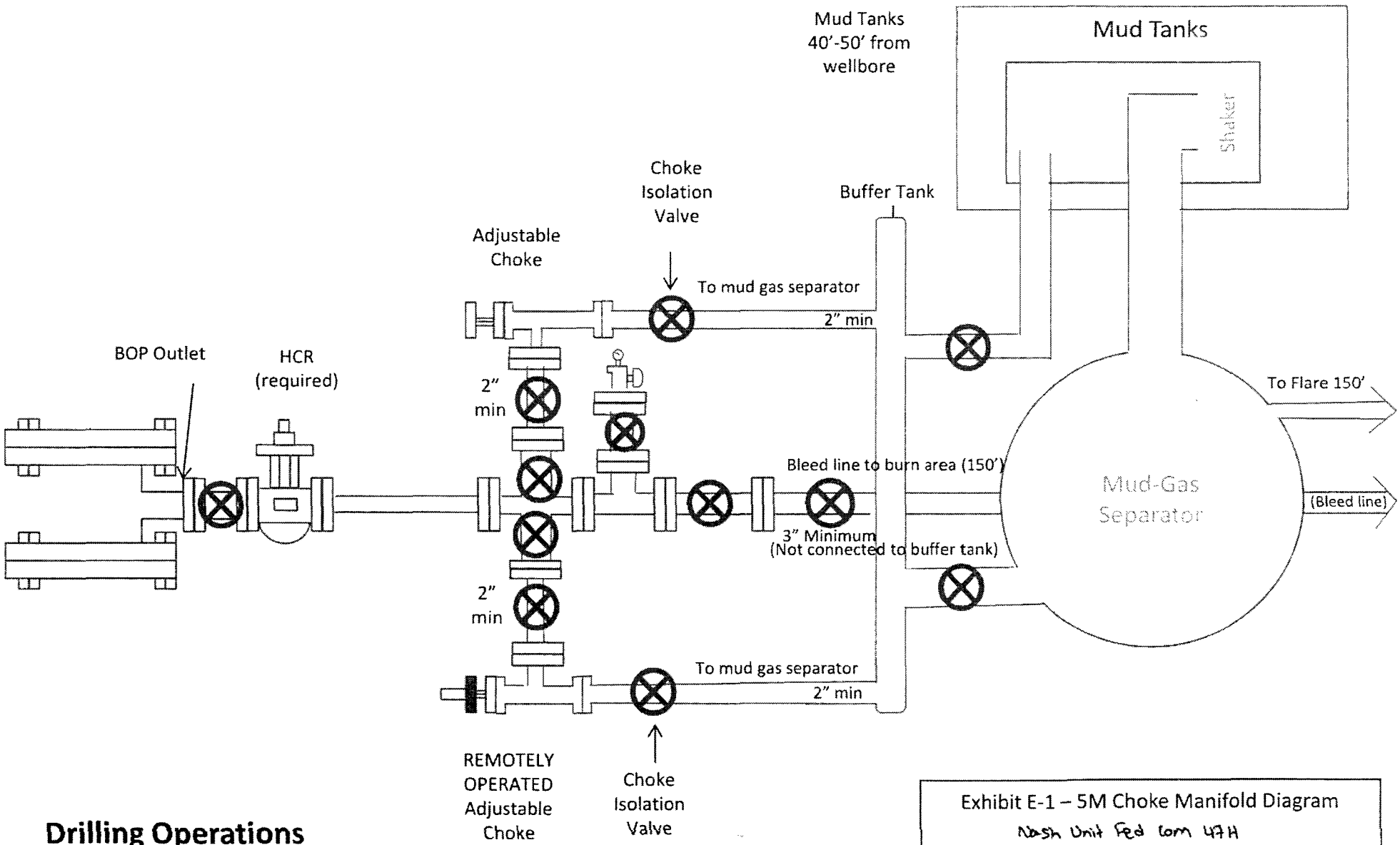


Exhibit E-1 –5000# BOP
Nash Unit Fed Com 47H
XTO Energy, Inc.



Drilling Operations
Choke Manifold

Exhibit E-1 – 5M Choke Manifold Diagram
Nash Unit Fed Com 47H
XTO Energy, Inc..

Haque, Mustafa <mhaque@blm.gov>

XTO - Nash 47H

2 messages

Farmar, Logan <Logan_Farmar@xtoenergy.com> Tue, Jan 10, 2017 .
To: "cwalls@blm.gov" <cwalls@blm.gov>, "mhaque@blm.gov" <mhaque@blm.gov>

8-5/8" TOP	7200	MD/TVD	9.4	# mud					Collapse assumes 1/2 evacuation & FW intern	
32#, J-55, LT&C	collapse =	2530	burst =	3930	tension =	417000			Fluid Top:	3600 MD/TVD
Max expected surf pressure =		1966	psi							
(9.4)(0.052)(7200) * =	1966	psi	2530/1966=	1.29	SF for collapse					
*Less internal fluid height										
			3930/1965.6=	2.00	SF for burst					
(7200)(32)=	230400	lb	417/230.4=	1.81	SF for tension					

Thanks,

Logan Farmar

Drilling Engineer | Permian District

C: 432.234.9872 O: 432.620.4377

Logan_Farmar@xtoenergy.com

XTO ENERGY

An **ExxonMobil** Subsidiary

Farmar, Logan <Logan_Farmar@xtoenergy.com> Tue, Jan 10, 2017 at 11:02 AM
To: "cwalls@blm.gov" <cwalls@blm.gov>, "mhaque@blm.gov" <mhaque@blm.gov>
Cc: "Rabadue, Stephanie" <Stephanie_Rabadue@xtoenergy.com>

Good Morning,

Based on the offset experience in the Nash Unit 53 SWD, XTO does not anticipate significant losses below the proposed casing shoe at 7200', so 50% evacuation was used in the collapse calculation for the 8-5/8" 32# J-55 BTC casing string. Additionally, XTO will set a plug from 7250' – 6850' in order to isolate the Bone Spring formation from the cased hole.

Thanks,

Logan Farmar

Drilling Engineer | Permian District

C: 432.234.9872 O: 432.620.4377

Logan_Farmar@xtoenergy.com

XTO ENERGY