

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD-REC'D: 09/04/2020

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.5. Lease Serial No.
NMNM017225A

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
CHEESECAKE 32 FEDERAL 121H9. API Well No.
30-015-4736910. Field and Pool or Exploratory Area
PURPLE SAGE-WOLFCAMP (GAS)11. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

XTO ENERGY INCORPORATED

Contact: KELLY KARDOS

E-Mail: kelly_kardos@xtoenergy.com

3a. Address

6401 HOLIDAY HILL ROAD BLDG 5
MIDLAND, TX 79707

3b. Phone No. (include area code)

Ph: 432-620-4374

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 31 T26S R30E 170FSL 325FEL
32.000587 N Lat, 103.913033 W Lon

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

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. requests permission to change the casing & cement design per the attached drilling program.

OCD Accepted for Record 9/11/2020 - JAG

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

Electronic Submission #528488 verified by the BLM Well Information System
For XTO ENERGY INCORPORATED, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER SANCHEZ on 09/04/2020 (20JAS0234SE)

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 09/03/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By (BLM Approver Not Specified)

Title

Date 09/04/2020

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 Carlsbad

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)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Revisions to Operator-Submitted EC Data for Sundry Notice #528488

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM17225A	NMNM017225A
Agreement:		
Operator:	XTO ENERGY INC 6401 HOLIDAY HILL RD BLDG 5 MIDLAND, TX 79707 Ph: 432-620-4374	XTO ENERGY INCORPORATED 6401 HOLIDAY HILL ROAD BLDG 5 MIDLAND, TX 79707 Ph: 432.683 2277
Admin Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374
Tech Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374
Location:		
State:	NM	NM
County:	EDDY	EDDY
Field/Pool:	PURPLE SAGE WOLFCAMP	PURPLE SAGE-WOLFCAMP (GAS)
Well/Facility:	CHEESECAKE 32 FEDERAL 121H Sec 31 T26S R30E Mer NMP SENE 170FSL 325FEL	CHEESECAKE 32 FEDERAL 121H Sec 31 T26S R30E 170FSL 325FEL 32.000587 N Lat, 103.913033 W Lon

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Energy, Inc.
LEASE NO.:	NMNM-017225A
WELL NAME & NO.:	Cheesecake 32 Federal 121H
SURFACE HOLE FOOTAGE:	0170' FSL & 0325' FEL
BOTTOM HOLE FOOTAGE:	0330' FSL & 0200' FEL Sec. 32, T.26 S., R.30 E.
LOCATION:	Section 31, T.26 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input type="checkbox"/> Unit

High Cave/Karst

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Rustler, Red Beds, and Delaware.

Abnormal pressure is possible in the 3rd Bone Spring and all subsequent formations.

A. HYDROGEN SULFIDE

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

B. CASING

1. The **16** inch surface casing shall be set at approximately **724** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
 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 B.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.**
 - ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- 8-5/8" Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.**
3. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:
 - Cement as proposed. Operator shall provide method of verification.
 4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back **200 feet** into the previous casing. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance approved to use a 5M annular. The annular must be tested to 70% working pressure (3500 psi.)**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

BOP Break Testing Variance

- 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.

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
5. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
6. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
7. 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. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer.
 - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - d. The results of the test shall be reported to the appropriate BLM office.

- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

JAM 09042020

Cheesecake 32 Federal 121H
 Projected TD: 15724' MD / 10589' TVD
 SHL: 170' FSL & 325' FEL , Section 31, T26S, R30E
 BHL: 330' FSL & 200' FEL , Section 32, T26S, R30E
 Eddy County, NM

Casing Design

The surface fresh water sands will be protected by setting 16 inch casing @ 724' (25' above the salt) and circulating cement back to surface. The salt will be isolated by setting 11-3/4 inch casing at 3013' and circulating cement to surface. The second intermediate will isolate from the salt down to the next casing seat by setting 8-5/8" casing at 10000' and a DV tool at 3063'. A 7-7/8" curve and lateral hole will be drilled to MD/TD and 5-1/2" casing will be set at TD and cemented to 2000'.

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
20"	0' – 724'	16"	75	STC	J-55	New	2.81	3.11	13.08
14-3/4"	0' – 3013'	11-3/4"	54	STC	J-55	New	1.19	2.18	3.49
10-5/8"	0' – 10000'	8-5/8"	32	BTC	HCL-80	New	1.12	1.67	2.29
7-7/8"	0' – 15724'	5-1/2"	20	BTC	P-110	New	1.33	1.50	2.70

- XTO requests to not utilize centralizers in the curve and lateral
- 11-3/4" Collapse analyzed using 50% evacuation based on regional experience.
- 8-5/8" Collapse analyzed using 33% 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
- Test on 2M Annular & Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less

WELLHEAD:

Permanent Wellhead – Cactus Conventional / MBU3T System

- Starting Head: 16" SOW bottom x 16-3/4" 3M top flange
- Casing Spool: 16-3/4" 3M bottom flange x 13-5/8" 10M top flange
- Tubing Head: 13-5/8" 10M 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 8-5/8" casing per Onshore Order 2.
 - Wellhead manufacturer representative may not be present for BOP test plug installation

Cement Program

Surface Casing:

Lead: 350 sxs EconoCem-HLTRRC (mixed at 12.8 ppg, 2.03 ft3/sx, 11.37 gal/sx water)
 Tail: 340 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: 1110 sxs EconoCem-HLTRRC (mixed at 12.8 ppg, 2.03 ft3/sx, 11.37 gal/sx water)
 Tail: 380 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

XTO requests to pump an Optional Lead if well conditions dictate in an attempt to bring cement to surface on the first stage. If cement is brought to surface, the BLM will be notified and the second stage bradenhead squeeze and subsequent TOC verification will be negated.

In the event cement is not circulated to surface on the first stage, whether intentionally or unintentionally, XTO requests the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval from BLM when unplanned remediation is needed and batch drilling is approved. In the event the bradenhead is conducted, we will ensure first stage cement job is cemented properly and the well is static with floats holding and no pressure on the csg annulus as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed per wellhead manufacturer procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

2nd Intermediate Casing; TOC: 2013'

ECP/DV Tool to be set at 3063'

1st Stage

Lead: 1020 sxs Halcem-C + 2% CaCl (mixed at 11.5 ppg, 2.83 ft3/sx, 17.05 gal/sx water)
 Tail: 220 sxs Halcem-H + 2% CaCl (mixed at 15.6 ppg, 1.83 ft3/sx, 5.236 gal/sx water)
 Compressives: 12-hr = 1300 psi 24 hr = 1800 psi

2nd Stage

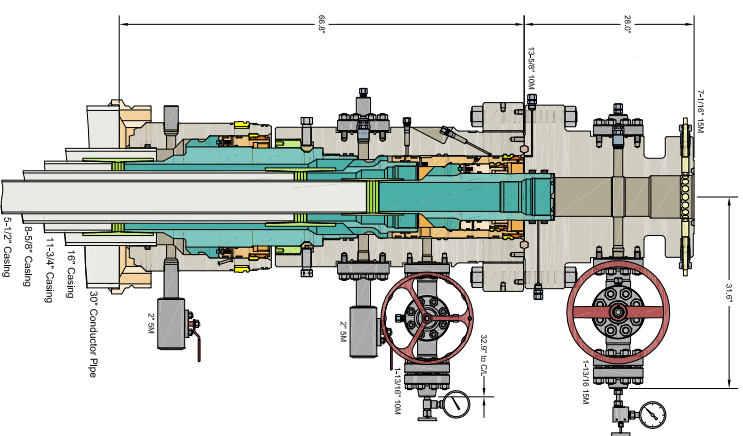
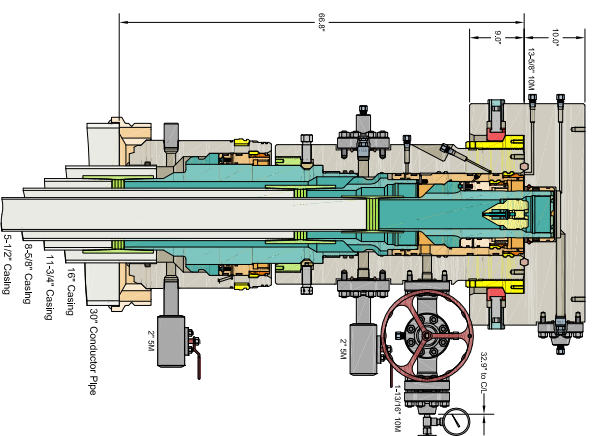
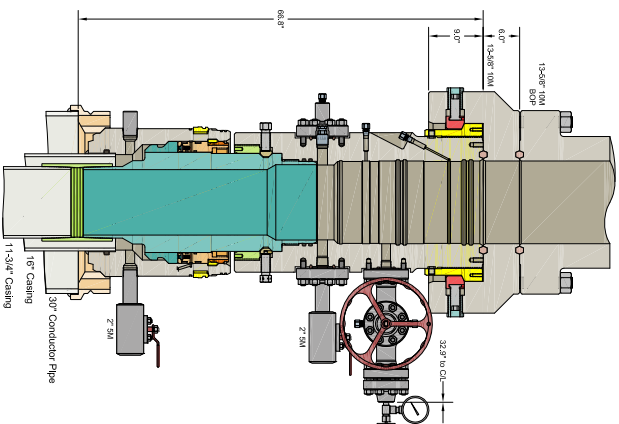
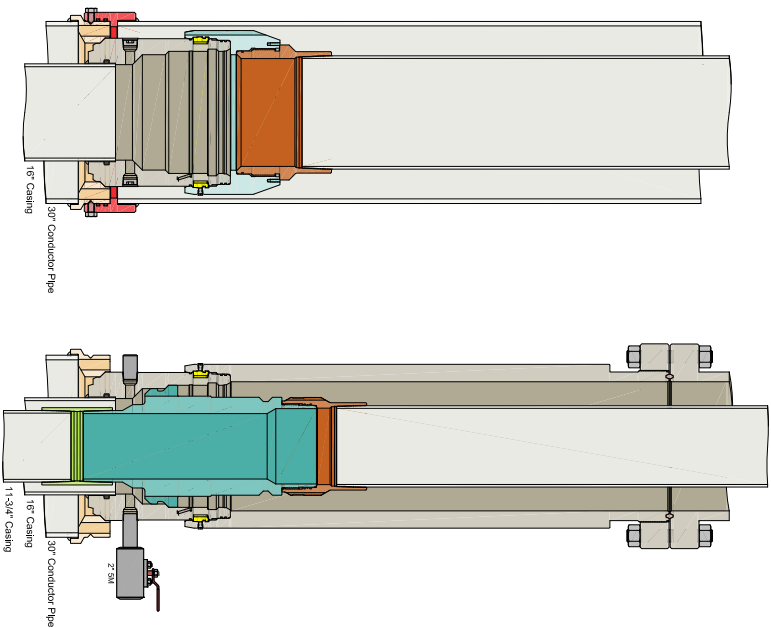
Lead: 570 sxs Halcem-C + 2% CaCl (mixed at 12.8 ppg, 2.03 ft3/sx, 11.37 gal/sx water)
 Tail: 150 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.39 gal/sx water)
 Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing; TOC: 8000'

1070 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'-724'	20"	FW/Native	8.4-8.8	35-40	NC
724'-3013'	14-3/4"	Brine	9.8-10.2	30-32	NC
3013' to 10000'	10-5/8"	FW / Cut Brine / OBM / BDE	8.7-10.0	32-36	NC
10000'-15708'	7-7/8"	Cut Brine / Polymer / OBM / BDE	12.2-13.5	32-50	NC - 20



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

XTO ENERGY INC
POTASH

30" x 16" x 11-3/4" x 8-5/8" x 5-1/2" CRC/MBU-3T-CFL Wellhead
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head
And Drilling & Skid Configurations

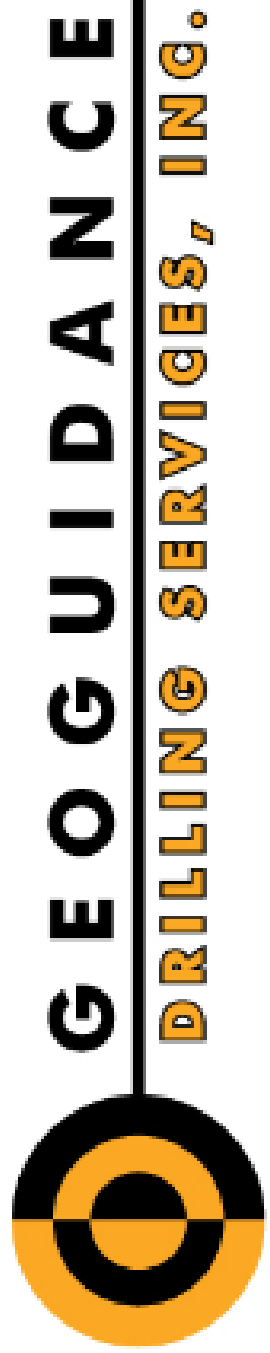
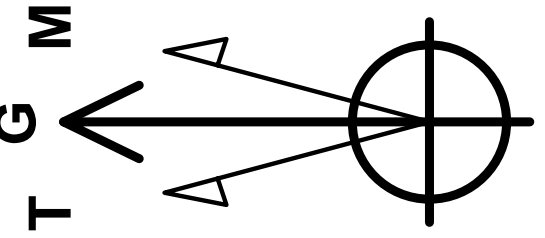
DRAWN	DLE	13JUL20
APPRV		
DRAWING NO.	HBE0000358	



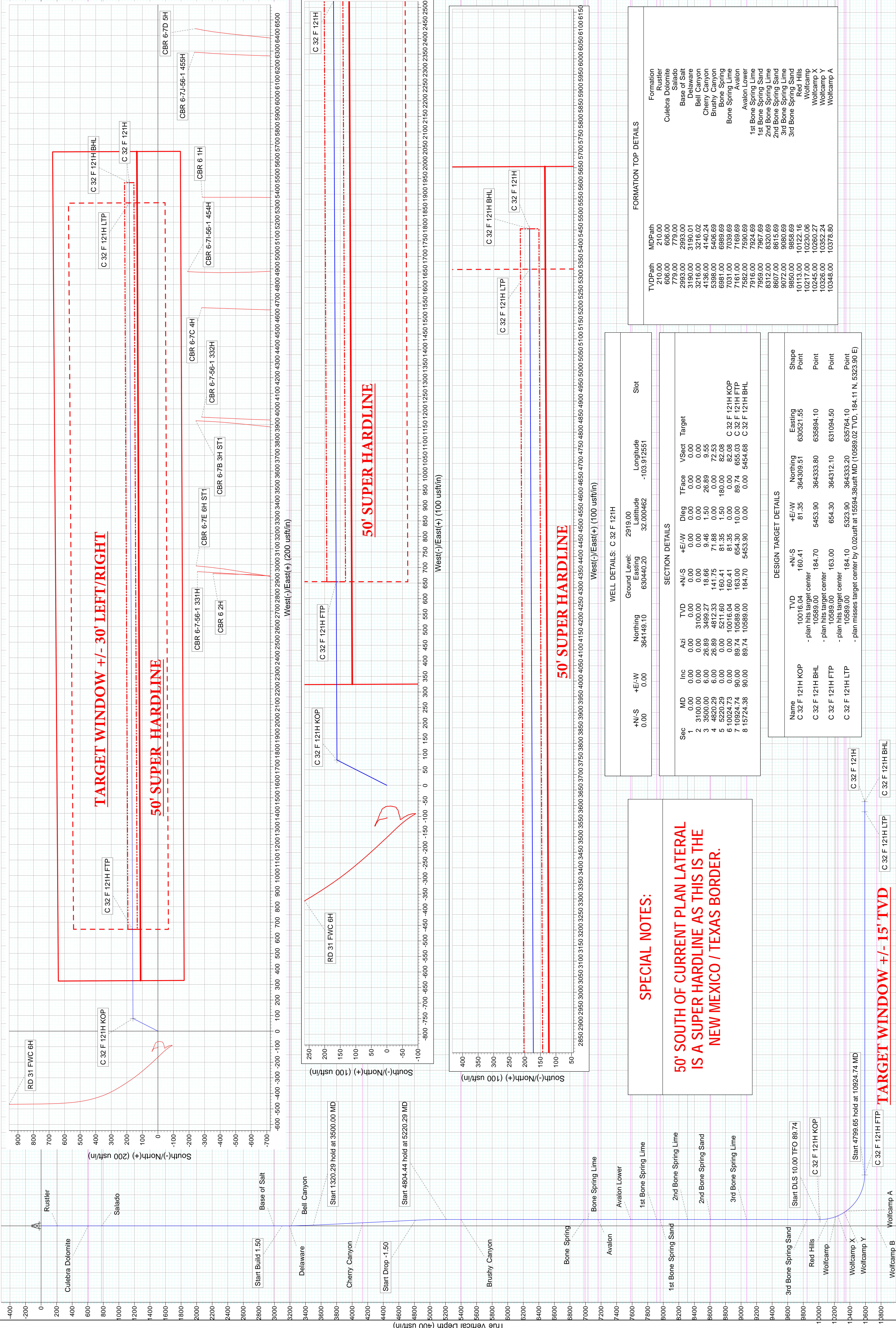
Project: EDDY COUNTY, NM
Site: CHEESECAKE 32 FED
Well: C 32 F 121H
Wellbore: C 32 F 121H
Design: 082120 V1

WELLPATH DETAILS
WELLPATH: C 32 F 121H
PLAN: 082120 V1
RIG : H&P 518 - 30' KB
KB ELEVATION: C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB)
GROUND ELEVATION: 2919.00

Azimuths to Grid North
True North: -0.22°
Magnetic North: 6.56°
Magnetic Field
Strength: 47414.7snT
Dip Angle: 59.67°
Date: 8/20/2020
Model: IGRF2020



13:20, August 21 2020



SPECIAL NOTES:

50' SOUTH OF CURRENT PLAN LATERAL
IS A SUPER HARDLINE AS THIS IS THE
NEW MEXICO / TEXAS BORDER.

TARGET WINDOW +/- 15' TVD

WELL DETAILS: C 32 F 121H											
+N/-S			+E/-W			Northing			Easting		
0.00			0.00			364149.10			630440.20		
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	3500.00	6.00	26.89	3499.27	18.66	9.46	1.50	26.89	9.55	0.00	
4	4820.29	6.00	26.89	4812.33	141.75	71.88	0.00	0.00	72.53	0.00	
5	5220.29	0.00	0.00	5211.60	160.41	81.35	1.50	180.00	82.08	0.00	
6	10024.73	0.00	0.00	10016.04	160.41	81.35	0.00	89.74	655.03	0.00	C 32 F 121H KOP
7	10924.74	90.00	89.74	10589.00	163.00	654.30	10.00	89.74	655.03	0.00	C 32 F 121H FTP
8	15724.38	90.00	89.74	10589.00	184.70	5453.90	0.00	0.00	5454.88	0.00	C 32 F 121H BHL
DESIGN TARGET DETAILS											
Name	C 32 F 121H KOP			TVD	+N/-S	+E/-W	Northing	Easting	Shape		
				10016.04	160.41	81.35	364309.51	630521.55	Point		
Name	C 32 F 121H BHL			- plan hits target center	184.70	5453.90	364333.80	635894.10	Point		
Name	C 32 F 121H FTP			- plan hits target center	163.00	654.30	364312.10	631094.50	Point		
Name	C 32 F 121H LTP			- plan hits target center	184.10	5323.90	364333.20	635764.10	Point		
				- plan misses target center by 0.02usft at 15594.38usft MD (10589.02 TVD, 184.11 N, 5323.90 E)							

FORMATION TOP DETAILS	
MDPath	Formation
210.00	Rustler
606.00	Culebra Dolomite
779.00	Salado
2993.00	Base of Salt
3190.01	Delaware
3216.02	Bell Canyon
4136.00	Cherry Canyon
5406.69	Brushy Canyon
6989.69	Bone Spring
7031.00	Bone Spring Lime
7169.69	Avalon
7590.69	Avalon Lower
7916.00	1st Bone Spring Lime
7967.69	1st Bone Spring Sand
8320.69	2nd Bone Spring Lime
8615.69	2nd Bone Spring Sand
9072.00	3rd Bone Spring Lime
9080.69	3rd Bone Spring Sand
9850.00	Red Hills
9858.69	Wolfcamp
10122.16	Wolfcamp X
10230.06	Wolfcamp Y
10260.27	Wolfcamp X
10325.00	Wolfcamp Y
10352.24	Wolfcamp X
10378.80	Wolfcamp A

Vertical Section at 89.74° (400 usft/in)



XTO ENERGY INC.

**EDDY COUNTY, NM
CHEESECAKE 32 FED
C 32 F 121H
C 32 F 121H**

Plan: 082120 V1

PLANNING REPORT

21 August, 2020





GeoGuidance Drilling PLANNING REPORT



Company: XTO ENERGY INC. Project: EDDY COUNTY, NM Site: CHEESECAKE 32 FED Well: C 32 F 121H Wellbore: C 32 F 121H Design: 082120 V1		Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) Grid Minimum Curvature XTO ENERGY	
Project	EDDY COUNTY, NM		
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		
Site	CHEESECAKE 32 FED		
Site Position:		Northing: 364,000.00 usft	Latitude: 32.000024
From:	Map	Easting: 633,000.00 usft	Longitude: -103.904295
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.23 °
Well	C 32 F 121H, SUR. N 364149.1 E 630440.2		
Well Position	+N/-S 0.00 usft	Northing: 364,149.10 usft	Latitude: 32.000462
	+E/-W 0.00 usft	Easting: 630,440.20 usft	Longitude: -103.912551
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 2,919.00 usft
Wellbore	C 32 F 121H		
Magnetics	Model Name	Sample Date	Dip Angle (°)
	IGRF2020	8/20/2020	59.67
			47.415
Design	082120 V1		
Audit Notes:			
Version:	Phase: PLAN	Tie On Depth: 0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	Direction (°)
	0.00	0.00	89.74
Survey Tool Program	Date 8/21/2020		
From (usft)	To (usft)	Survey (Wellbore)	Description
0.00	15,724.38	082120 V1 (C 32 F 121H)	OWSG MWD + IFR1 + Multi-Station Correction



GeoGuidance Drilling PLANNING REPORT



Company: XTO ENERGY INC. Project: EDDY COUNTY, NM Site: CHEESECAKE 32 FED Well: C 32 F 121H Wellbore: C 32 F 121H Design: 082120 V1			Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) Grid Minimum Curvature XTO ENERGY							
Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	2,949.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
100.00	0.00	0.00	100.00	2,849.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
200.00	0.00	0.00	200.00	2,749.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
210.00	0.00	0.00	210.00	2,739.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
Rustler										
300.00	0.00	0.00	300.00	2,649.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
400.00	0.00	0.00	400.00	2,549.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
500.00	0.00	0.00	500.00	2,449.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
600.00	0.00	0.00	600.00	2,349.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
606.00	0.00	0.00	606.00	2,343.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
Culebra Dolomite										
700.00	0.00	0.00	700.00	2,249.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
779.00	0.00	0.00	779.00	2,170.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
Salado										
800.00	0.00	0.00	800.00	2,149.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
900.00	0.00	0.00	900.00	2,049.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,000.00	0.00	0.00	1,000.00	1,949.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,100.00	0.00	0.00	1,100.00	1,849.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,200.00	0.00	0.00	1,200.00	1,749.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,300.00	0.00	0.00	1,300.00	1,649.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,400.00	0.00	0.00	1,400.00	1,549.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,500.00	0.00	0.00	1,500.00	1,449.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,600.00	0.00	0.00	1,600.00	1,349.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,700.00	0.00	0.00	1,700.00	1,249.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,800.00	0.00	0.00	1,800.00	1,149.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
1,900.00	0.00	0.00	1,900.00	1,049.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,000.00	0.00	0.00	2,000.00	949.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,100.00	0.00	0.00	2,100.00	849.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20



GeoGuidance Drilling PLANNING REPORT



Company: Project: Site: Well: Wellbore: Design:			XTO ENERGY INC. EDDY COUNTY, NM CHEESECAKE 32 FED C 32 F 121H C 32 F 121H 082120 V1			Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) Grid Minimum Curvature XTO ENERGY				
Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,200.00	0.00	0.00	2,200.00	749.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,300.00	0.00	0.00	2,300.00	649.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,400.00	0.00	0.00	2,400.00	549.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,500.00	0.00	0.00	2,500.00	449.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,600.00	0.00	0.00	2,600.00	349.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,700.00	0.00	0.00	2,700.00	249.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,800.00	0.00	0.00	2,800.00	149.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,900.00	0.00	0.00	2,900.00	49.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
2,993.00	0.00	0.00	2,993.00	-44.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
Base of Salt										
3,000.00	0.00	0.00	3,000.00	-51.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
3,100.00	0.00	0.00	3,100.00	-151.00	0.00	0.00	0.00	0.00	364,149.10	630,440.20
Start Build 1.50										
3,190.01	1.35	26.89	3,190.00	-241.00	0.95	0.48	0.48	1.50	364,150.05	630,440.68
Delaware										
3,200.00	1.50	26.89	3,199.99	-250.99	1.17	0.59	0.60	1.50	364,150.27	630,440.79
3,216.02	1.74	26.89	3,216.00	-267.00	1.57	0.80	0.80	1.50	364,150.67	630,441.00
Bell Canyon										
3,300.00	3.00	26.89	3,299.91	-350.91	4.67	2.37	2.39	1.50	364,153.77	630,442.57
3,400.00	4.50	26.89	3,399.69	-450.69	10.50	5.33	5.37	1.50	364,159.60	630,445.53
3,500.00	6.00	26.89	3,499.27	-550.27	18.66	9.46	9.55	1.50	364,167.76	630,449.66
Start 1320.29 hold at 3500.00 MD										
3,600.00	6.00	26.89	3,598.72	-649.72	27.98	14.19	14.32	0.00	364,177.08	630,454.39
3,700.00	6.00	26.89	3,698.17	-749.17	37.31	18.92	19.09	0.00	364,186.41	630,459.12
3,800.00	6.00	26.89	3,797.63	-848.63	46.63	23.65	23.86	0.00	364,195.73	630,463.85
3,900.00	6.00	26.89	3,897.08	-948.08	55.95	28.38	28.63	0.00	364,205.05	630,468.58
4,000.00	6.00	26.89	3,996.53	-1,047.53	65.28	33.10	33.40	0.00	364,214.38	630,473.30
4,100.00	6.00	26.89	4,095.98	-1,146.98	74.60	37.83	38.17	0.00	364,223.70	630,478.03



GeoGuidance Drilling PLANNING REPORT



Company: XTO ENERGY INC. Project: EDDY COUNTY, NM Site: CHEESECAKE 32 FED Well: C 32 F 121H Wellbore: C 32 F 121H Design: 082120 V1			Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) MD Reference: Grid North Reference: Minimum Curvature Survey Calculation Method: Database: XTO ENERGY								
Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,140.24	6.00	26.89	4,136.00	-1,187.00	78.35	39.73	40.09	0.00	364,227.45	630,479.93	
Cherry Canyon											
4,200.00	6.00	26.89	4,195.43	-1,246.43	83.92	42.56	42.94	0.00	364,233.02	630,482.76	
4,300.00	6.00	26.89	4,294.89	-1,345.89	93.24	47.29	47.71	0.00	364,242.34	630,487.49	
4,400.00	6.00	26.89	4,394.34	-1,445.34	102.57	52.01	52.48	0.00	364,251.67	630,492.21	
4,500.00	6.00	26.89	4,493.79	-1,544.79	111.89	56.74	57.25	0.00	364,260.99	630,496.94	
4,600.00	6.00	26.89	4,593.24	-1,644.24	121.21	61.47	62.02	0.00	364,270.31	630,501.67	
4,700.00	6.00	26.89	4,692.70	-1,743.70	130.53	66.20	66.79	0.00	364,279.63	630,506.40	
4,800.00	6.00	26.89	4,792.15	-1,843.15	139.86	70.92	71.56	0.00	364,288.96	630,511.12	
4,820.29	6.00	26.89	4,812.33	-1,863.33	141.75	71.88	72.53	0.00	364,290.85	630,512.08	
Start Drop -1.50											
4,900.00	4.80	26.89	4,891.68	-1,942.68	148.44	75.28	75.95	1.50	364,297.54	630,515.48	
5,000.00	3.30	26.89	4,991.43	-2,042.43	154.75	78.48	79.18	1.50	364,303.85	630,518.68	
5,100.00	1.80	26.89	5,091.33	-2,142.33	158.72	80.49	81.21	1.50	364,307.82	630,520.69	
5,200.00	0.30	26.89	5,191.31	-2,242.31	160.36	81.32	82.05	1.50	364,309.46	630,521.52	
5,220.29	0.00	0.00	5,211.60	-2,262.60	160.41	81.35	82.08	1.50	364,309.51	630,521.55	
Start 4804.44 hold at 5220.29 MD											
5,300.00	0.00	0.00	5,291.31	-2,342.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
5,400.00	0.00	0.00	5,391.31	-2,442.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
5,406.69	0.00	0.00	5,398.00	-2,449.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
Brushy Canyon											
5,500.00	0.00	0.00	5,491.31	-2,542.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
5,600.00	0.00	0.00	5,591.31	-2,642.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
5,700.00	0.00	0.00	5,691.31	-2,742.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
5,800.00	0.00	0.00	5,791.31	-2,842.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
5,900.00	0.00	0.00	5,891.31	-2,942.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
6,000.00	0.00	0.00	5,991.31	-3,042.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	



GeoGuidance Drilling PLANNING REPORT



Company:		XTO ENERGY INC.		Local Co-ordinate Reference:						
Project:	EDDY COUNTY, NM			TVD Reference:						
Site:	CHEESECAKE 32 FED			MD Reference:						
Well:	C 32 F 121H			North Reference:						
Wellbore:	C 32 F 121H			Survey Calculation Method:						
Design:	082120 V1			Database:						
Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
6,100.00	0.00	0.00	6,091.31	-3,142.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,200.00	0.00	0.00	6,191.31	-3,242.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,300.00	0.00	0.00	6,291.31	-3,342.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,400.00	0.00	0.00	6,391.31	-3,442.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,500.00	0.00	0.00	6,491.31	-3,542.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,600.00	0.00	0.00	6,591.31	-3,642.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,700.00	0.00	0.00	6,691.31	-3,742.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,800.00	0.00	0.00	6,791.31	-3,842.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,900.00	0.00	0.00	6,891.31	-3,942.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
6,989.69	0.00	0.00	6,981.00	-4,032.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55
Bone Spring										
7,000.00	0.00	0.00	6,991.31	-4,042.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,039.69	0.00	0.00	7,031.00	-4,082.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55
Bone Spring Lime										
7,100.00	0.00	0.00	7,091.31	-4,142.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,169.69	0.00	0.00	7,161.00	-4,212.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55
Avalon										
7,200.00	0.00	0.00	7,191.31	-4,242.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,300.00	0.00	0.00	7,291.31	-4,342.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,400.00	0.00	0.00	7,391.31	-4,442.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,500.00	0.00	0.00	7,491.31	-4,542.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,590.69	0.00	0.00	7,582.00	-4,633.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55
Avalon Lower										
7,600.00	0.00	0.00	7,591.31	-4,642.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,700.00	0.00	0.00	7,691.31	-4,742.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,800.00	0.00	0.00	7,791.31	-4,842.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
7,900.00	0.00	0.00	7,891.31	-4,942.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55



GeoGuidance Drilling PLANNING REPORT



Company: XTO ENERGY INC. Project: EDDY COUNTY, NM Site: CHEESECAKE 32 FED Well: C 32 F 121H Wellbore: C 32 F 121H Design: 082120 V1				Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) Grid Minimum Curvature XTO ENERGY							
Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
7,924.69	0.00	0.00	7,916.00	-4,967.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
1st Bone Spring Lime											
7,967.69	0.00	0.00	7,959.00	-5,010.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
1st Bone Spring Sand											
8,000.00	0.00	0.00	7,991.31	-5,042.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,100.00	0.00	0.00	8,091.31	-5,142.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,200.00	0.00	0.00	8,191.31	-5,242.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,300.00	0.00	0.00	8,291.31	-5,342.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,320.69	0.00	0.00	8,312.00	-5,363.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
2nd Bone Spring Lime											
8,400.00	0.00	0.00	8,391.31	-5,442.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,500.00	0.00	0.00	8,491.31	-5,542.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,600.00	0.00	0.00	8,591.31	-5,642.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,615.69	0.00	0.00	8,607.00	-5,658.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
2nd Bone Spring Sand											
8,700.00	0.00	0.00	8,691.31	-5,742.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,800.00	0.00	0.00	8,791.31	-5,842.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
8,900.00	0.00	0.00	8,891.31	-5,942.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,000.00	0.00	0.00	8,991.31	-6,042.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,080.69	0.00	0.00	9,072.00	-6,123.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
3rd Bone Spring Lime											
9,100.00	0.00	0.00	9,091.31	-6,142.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,200.00	0.00	0.00	9,191.31	-6,242.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,300.00	0.00	0.00	9,291.31	-6,342.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,400.00	0.00	0.00	9,391.31	-6,442.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,500.00	0.00	0.00	9,491.31	-6,542.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,600.00	0.00	0.00	9,591.31	-6,642.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	
9,700.00	0.00	0.00	9,691.31	-6,742.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55	



GeoGuidance Drilling PLANNING REPORT



Company: XTO ENERGY INC. Project: EDDY COUNTY, NM Site: CHEESECAKE 32 FED Well: C 32 F 121H Wellbore: C 32 F 121H Design: 082120 V1				Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00ustf (H&P 518 - 30' KB) C 32 F 121H @ 2949.00ustf (H&P 518 - 30' KB) Grid Minimum Curvature XTO ENERGY						
Planned Survey				TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:						
MD (ustf)	Inc (°)	Azi (azimuth) (°)	TVD (ustf)	TVDSS (ustf)	N/S (ustf)	E/W (ustf)	V. Sec (ustf)	DLeg (°/100ustf)	Northing (ustf)	Easting (ustf)
9,800.00	0.00	0.00	9,791.31	-6,842.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
9,858.69	0.00	0.00	9,850.00	-6,901.00	160.41	81.35	82.08	0.00	364,309.51	630,521.55
3rd Bone Spring Sand										
9,900.00	0.00	0.00	9,891.31	-6,942.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
10,000.00	0.00	0.00	9,991.31	-7,042.31	160.41	81.35	82.08	0.00	364,309.51	630,521.55
10,024.73	0.00	0.00	10,016.04	-7,067.04	160.41	81.35	82.08	0.00	364,309.51	630,521.55
Start DLS 10.00 TFO 89.74 - C 32 F 121H KOP										
10,100.00	7.53	89.74	10,091.09	-7,142.09	160.43	86.28	87.01	10.00	364,309.53	630,526.48
10,122.16	9.74	89.74	10,113.00	-7,164.00	160.45	89.61	90.34	10.00	364,309.55	630,529.81
Red Hills										
10,200.00	17.53	89.74	10,188.59	-7,239.59	160.53	107.95	108.67	10.00	364,309.63	630,548.15
10,230.06	20.53	89.74	10,217.00	-7,268.00	160.57	117.75	118.47	10.00	364,309.67	630,557.95
Wolfcamp										
10,260.27	23.55	89.74	10,245.00	-7,296.00	160.63	129.08	129.81	10.00	364,309.73	630,569.28
Wolfcamp X										
10,300.00	27.53	89.74	10,280.84	-7,331.84	160.70	146.21	146.94	10.00	364,309.80	630,586.41
10,352.24	32.75	89.74	10,326.00	-7,377.00	160.82	172.43	173.16	10.00	364,309.92	630,612.63
Wolfcamp Y										
10,378.80	35.41	89.74	10,348.00	-7,399.00	160.89	187.31	188.04	10.00	364,309.99	630,627.51
Wolfcamp A										
10,400.00	37.53	89.74	10,365.05	-7,416.05	160.95	199.91	200.64	10.00	364,310.05	630,640.11
10,500.00	47.53	89.74	10,438.65	-7,489.65	161.25	267.41	268.14	10.00	364,310.35	630,707.61
10,600.00	57.53	89.74	10,499.41	-7,550.41	161.61	346.68	347.41	10.00	364,310.71	630,786.88
10,700.00	67.53	89.74	10,545.49	-7,596.49	162.01	435.29	436.02	10.00	364,311.11	630,875.49
10,800.00	77.53	89.74	10,575.48	-7,626.48	162.44	530.55	531.28	10.00	364,311.54	630,970.75
10,900.00	87.53	89.74	10,588.47	-7,639.47	162.89	629.57	630.31	10.00	364,311.99	631,069.77
10,924.74	90.00	89.74	10,589.00	-7,640.00	163.00	654.30	655.03	10.00	364,312.10	631,094.50
Start 4799.65 hold at 10924.74 MD - C 32 F 121H FTP										



GeoGuidance Drilling PLANNING REPORT



Company: Project: Site: Well: Wellbore: Design:			XTO ENERGY INC. EDDY COUNTY, NM CHEESECAKE 32 FED C 32 F 121H C 32 F 121H 082120 V1			Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) MD Reference: North Reference: Survey Calculation Method: Database:					
Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
11,000.00	90.00	89.74	10,589.00	-7,640.00	163.34	729.56	730.30	0.00	364,312.44	631,169.76	
11,100.00	90.00	89.74	10,589.00	-7,640.00	163.79	829.56	830.30	0.00	364,312.89	631,269.76	
11,200.00	90.00	89.74	10,589.00	-7,640.00	164.24	929.56	930.30	0.00	364,313.34	631,369.76	
11,300.00	90.00	89.74	10,589.00	-7,640.00	164.70	1,029.56	1,030.30	0.00	364,313.80	631,469.76	
11,400.00	90.00	89.74	10,589.00	-7,640.00	165.15	1,129.56	1,130.30	0.00	364,314.25	631,569.76	
11,500.00	90.00	89.74	10,589.00	-7,640.00	165.60	1,229.56	1,230.30	0.00	364,314.70	631,669.76	
11,600.00	90.00	89.74	10,589.00	-7,640.00	166.05	1,329.56	1,330.30	0.00	364,315.15	631,769.76	
11,700.00	90.00	89.74	10,589.00	-7,640.00	166.51	1,429.56	1,430.30	0.00	364,315.61	631,869.76	
11,800.00	90.00	89.74	10,589.00	-7,640.00	166.96	1,529.56	1,530.30	0.00	364,316.06	631,969.76	
11,900.00	90.00	89.74	10,589.00	-7,640.00	167.41	1,629.55	1,630.30	0.00	364,316.51	632,069.75	
12,000.00	90.00	89.74	10,589.00	-7,640.00	167.86	1,729.55	1,730.30	0.00	364,316.96	632,169.75	
12,100.00	90.00	89.74	10,589.00	-7,640.00	168.31	1,829.55	1,830.30	0.00	364,317.41	632,269.75	
12,200.00	90.00	89.74	10,589.00	-7,640.00	168.77	1,929.55	1,930.30	0.00	364,317.87	632,369.75	
12,300.00	90.00	89.74	10,589.01	-7,640.01	169.22	2,029.55	2,030.30	0.00	364,318.32	632,469.75	
12,400.00	90.00	89.74	10,589.01	-7,640.01	169.67	2,129.55	2,130.30	0.00	364,318.77	632,569.75	
12,500.00	90.00	89.74	10,589.01	-7,640.01	170.12	2,229.55	2,230.30	0.00	364,319.22	632,669.75	
12,600.00	90.00	89.74	10,589.01	-7,640.01	170.57	2,329.55	2,330.30	0.00	364,319.67	632,769.75	
12,700.00	90.00	89.74	10,589.01	-7,640.01	171.03	2,429.55	2,430.30	0.00	364,320.13	632,869.75	
12,800.00	90.00	89.74	10,589.01	-7,640.01	171.48	2,529.55	2,530.30	0.00	364,320.58	632,969.75	
12,900.00	90.00	89.74	10,589.01	-7,640.01	171.93	2,629.54	2,630.30	0.00	364,321.03	633,069.74	
13,000.00	90.00	89.74	10,589.01	-7,640.01	172.38	2,729.54	2,730.30	0.00	364,321.48	633,169.74	
13,100.00	90.00	89.74	10,589.01	-7,640.01	172.83	2,829.54	2,830.30	0.00	364,321.93	633,269.74	
13,200.00	90.00	89.74	10,589.01	-7,640.01	173.29	2,929.54	2,930.30	0.00	364,322.39	633,369.74	
13,300.00	90.00	89.74	10,589.01	-7,640.01	173.74	3,029.54	3,030.30	0.00	364,322.84	633,469.74	
13,400.00	90.00	89.74	10,589.01	-7,640.01	174.19	3,129.54	3,130.30	0.00	364,323.29	633,569.74	
13,500.00	90.00	89.74	10,589.01	-7,640.01	174.64	3,229.54	3,230.30	0.00	364,323.74	633,669.74	
13,600.00	90.00	89.74	10,589.01	-7,640.01	175.10	3,329.54	3,330.30	0.00	364,324.20	633,769.74	



GeoGuidance Drilling PLANNING REPORT



Company: Project: Site: Well: Wellbore: Design:			Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:						
XTO ENERGY INC. EDDY COUNTY, NM CHEESECAKE 32 FED C 32 F 121H C 32 F 121H 082120 V1			Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) Grid Minimum Curvature XTO ENERGY						
Planned Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Easting (usft)
13,700.00	90.00	89.74	10,589.01	-7,640.01	175.55	3,429.54	3,430.30	0.00	633,869.74
13,800.00	90.00	89.74	10,589.01	-7,640.01	176.00	3,529.54	3,530.30	0.00	633,969.74
13,900.00	90.00	89.74	10,589.01	-7,640.01	176.45	3,629.53	3,630.30	0.00	634,069.73
14,000.00	90.00	89.74	10,589.01	-7,640.01	176.90	3,729.53	3,730.30	0.00	634,169.73
14,100.00	90.00	89.74	10,589.01	-7,640.01	177.36	3,829.53	3,830.30	0.00	634,269.73
14,200.00	90.00	89.74	10,589.01	-7,640.01	177.81	3,929.53	3,930.30	0.00	634,369.73
14,300.00	90.00	89.74	10,589.01	-7,640.01	178.26	4,029.53	4,030.30	0.00	634,469.73
14,400.00	90.00	89.74	10,589.01	-7,640.01	178.71	4,129.53	4,130.30	0.00	634,569.73
14,500.00	90.00	89.74	10,589.01	-7,640.01	179.16	4,229.53	4,230.30	0.00	634,669.73
14,600.00	90.00	89.74	10,589.01	-7,640.01	179.62	4,329.53	4,330.30	0.00	634,769.73
14,700.00	90.00	89.74	10,589.01	-7,640.01	180.07	4,429.53	4,430.30	0.00	634,869.73
14,800.00	90.00	89.74	10,589.01	-7,640.01	180.52	4,529.53	4,530.30	0.00	634,969.73
14,900.00	90.00	89.74	10,589.02	-7,640.02	180.97	4,629.52	4,630.30	0.00	635,069.72
15,000.00	90.00	89.74	10,589.02	-7,640.02	181.42	4,729.52	4,730.30	0.00	635,169.72
15,100.00	90.00	89.74	10,589.02	-7,640.02	181.88	4,829.52	4,830.30	0.00	635,269.72
15,200.00	90.00	89.74	10,589.02	-7,640.02	182.33	4,929.52	4,930.30	0.00	635,369.72
15,300.00	90.00	89.74	10,589.02	-7,640.02	182.78	5,029.52	5,030.30	0.00	635,469.72
15,400.00	90.00	89.74	10,589.02	-7,640.02	183.23	5,129.52	5,130.30	0.00	635,569.72
15,500.00	90.00	89.74	10,589.02	-7,640.02	183.69	5,229.52	5,230.30	0.00	635,669.72
15,594.38	90.00	89.74	10,589.02	-7,640.02	184.11	5,323.90	5,324.68	0.00	635,764.10
C 32 F 121H LTP									
15,600.00	90.00	89.74	10,589.02	-7,640.02	184.14	5,329.52	5,330.30	0.00	635,769.72
15,700.00	90.00	89.74	10,589.02	-7,640.02	184.59	5,429.52	5,430.30	0.00	635,869.72
15,724.38	90.00	89.74	10,589.02	-7,640.02	184.70	5,453.90	5,454.68	0.00	635,894.10
TD at 15724.38 - C 32 F 121H BHL									



GeoGuidance Drilling PLANNING REPORT



Company: Project: Site: Well: Wellbore: Design:				XTO ENERGY INC. EDDY COUNTY, NM CHEESECAKE 32 FED C 32 F 121H C 32 F 121H 082120 V1				Local Co-ordinate Reference: Well C 32 F 121H C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) Grid Minimum Curvature XTO ENERGY			
TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:											
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	
C 32 F 121H LTP - plan misses target center by 0.02usft at 15594.38usft MD (10589.02 TVD, 184.11 N, 5323.90 E) - Point		0.00	0.00	10,589.00	184.10	5,323.90	364,333.20	635,764.10	32.000910	-103.895375	
C 32 F 121H KOP - plan hits target center - Point		0.00	0.00	10,016.04	160.41	81.35	364,309.51	630,521.55	32.000902	-103.912286	
C 32 F 121H BHL - plan misses target center by 0.02usft at 15724.38usft MD (10589.02 TVD, 184.70 N, 5453.90 E) - Point		0.00	0.00	10,589.00	184.70	5,453.90	364,333.80	635,894.10	32.000910	-103.894955	
C 32 F 121H FTP - plan hits target center - Point		0.00	0.00	10,589.00	163.00	654.30	364,312.10	631,094.50	32.000903	-103.910438	



GeoGuidance Drilling
PLANNING REPORT



<div>Company: XTO ENERGY INC. Project: EDDY COUNTY, NM Site: CHEESECAKE 32 FED Well: C 32 F 121H Wellbore: C 32 F 121H Design: 082120 V1</div>			<div>Local Co-ordinate Reference: Well C 32 F 121H TVD Reference: C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) MD Reference: C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) North Reference: Grid Survey Calculation Method: Minimum Curvature Database: XTO ENERGY</div>		
Formations					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip Direction (°)
	779.00	779.00	Salado		
	5,406.69	5,398.00	Brushy Canyon		
	6,989.69	6,981.00	Bone Spring		
	2,993.00	2,993.00	Base of Salt		
	10,352.24	10,326.00	Wolfcamp Y		
	3,190.01	3,190.00	Delaware		
	8,615.69	8,607.00	2nd Bone Spring Sand		
	7,924.69	7,916.00	1st Bone Spring Lime		
	606.00	606.00	Culebra Dolomite		
	8,320.69	8,312.00	2nd Bone Spring Lime		
	4,140.24	4,136.00	Cherry Canyon		
	7,169.69	7,161.00	Avalon		
	7,039.69	7,031.00	Bone Spring Lime		
	10,122.16	10,113.00	Red Hills		
	10,378.80	10,348.00	Wolfcamp A		
	10,260.27	10,245.00	Wolfcamp X		
	210.00	210.00	Rustler		
	7,967.69	7,959.00	1st Bone Spring Sand		
	9,858.69	9,850.00	3rd Bone Spring Sand		
	3,216.02	3,216.00	Bell Canyon		
	9,080.69	9,072.00	3rd Bone Spring Lime		
	7,590.69	7,582.00	Avalon Lower		
	10,230.06	10,217.00	Wolfcamp		



GeoGuidance Drilling
PLANNING REPORT



Company:	XTO ENERGY INC.	Local Co-ordinate Reference: TVD Reference: C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) MD Reference: C 32 F 121H @ 2949.00usft (H&P 518 - 30' KB) North Reference: Grid Survey Calculation Method: Minimum Curvature Database: XTO ENERGY
Project:	EDDY COUNTY, NM	
Site:	CHEESECAKE 32 FED	
Well:	C 32 F 121H	
Wellbore:	C 32 F 121H	
Design:	082120 V1	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
3,100.00	3,100.00	0.00	0.00	Start Build 1.50
3,500.00	3,499.27	18.66	9.46	Start 1320.29 hold at 3500.00 MD
4,820.29	4,812.33	141.75	71.88	Start Drop -1.50
5,220.29	5,211.60	160.41	81.35	Start 4804.44 hold at 5220.29 MD
10,024.73	10,016.04	160.41	81.35	Start DLS 10.00 TFO 89.74
10,924.74	10,589.00	163.00	654.30	Start 4799.65 hold at 10924.74 MD
15,724.38	10,589.02	184.70	5,453.90	TD at 15724.38

Checked By: _____	Approved By: _____	Date: _____
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