

NM STATE DRILLING PERMITTING

Estanda SED State 102H

		Deepest TVD 12473		KOP 11890		End of Curve 12841		Measured depth 17972				
Casing Type	Fluid Type	Mud Weight	Hole Size	Casing Size	Casing Grade	Casing Weight	Top MD	Setting Depth	Lead Cement	Tail Cement	Total Sks Cement	TOC
Surface	FW/Native	8.5 - 10.0	17.5	13.375	J-55 LTC	54.5	0	1250	743	289	1032	0
Intermediate	Brine / OBM	9.0-10.3	12.25	9.625	J-55 LTC	40	0	5039	776	488	1264	1710
DV Tool								1710	394	17	411	0
Production	FW/Cut Brine / OBM	9.0-10.5	8-3/4" to EOC	5.5	P110 BTC	17	0	17972	1340	1133	2474	4539
	Cut Brine / OBM	9.3	8-1/2" to TD									

Max Expected Surface Pressure
3288

BOP
Cameron 5M Double Ram BOP
Test Pressure 5000

Total Vertical Section 5131

Contingencies

1. XTO Requests option to use OBM in intermediate hole section
2. Should losses be seen from 9-5/8" shoe to landing point, 4-string contingency may be utilized
3. XTO requests variance to have the option to batch drill this well. XTO will set intermediate csg. ensure cement is circulated to surface and well is dead. With floats holding, and no flow on annulus, a TA cap will be installed as per GE recommendations. XTO will contact the state before skidding to the other well. Once all surface and intermediate are completed on the pad, XTO will begin drilling the production hole of each well.
4. DV Tool may be set in intermediate fr/ 1300' - 5000'
5. OBM may be used in production hole
6. If cmt is not circulated to surface on 5.5" casing, it will be brought at least 500' into intermediate shoe
7. 8.5" lateral may be drilled if no issues in 8.75" hole



XTO Energy

Lea County, NM (NAD-27)

Estancia Sed

#102H

OH

Plan: PERMIT

Standard Planning Report

24 June, 2019

HOBBS OCD
JUL 01 2019
RECEIVED



Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #102H
Wellbore: OH
Design: PERMIT

PROJECT DETAILS: Lea County, NM (NAD-27)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

DESIGN TARGET DETAILS

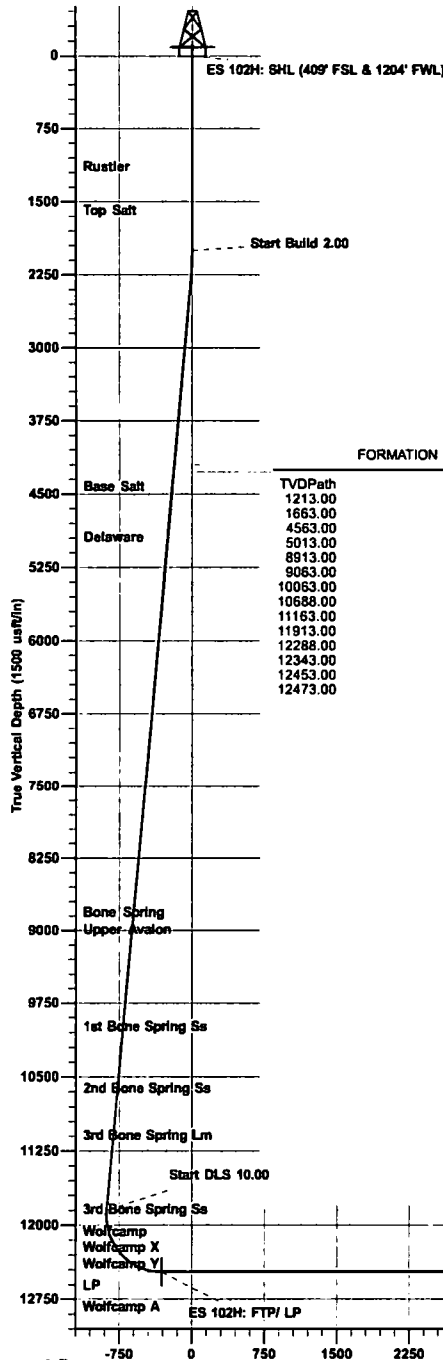
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
ES 102H: SHL (409' FSL & 1204' FWL)	0.00	0.00	0.00	457220.40	721941.30	32.2549758	-103.6153957	Point
ES 102H: FTP/LP	12473.00	-310.10	-212.30	456910.30	721729.00	32.2541273	-103.6160891	Point
ES 102H: LTP	12473.00	4770.50	-238.80	461990.90	721702.50	32.2680931	-103.6160650	Point
ES 102H: PBHL (50' FNL & 990' FWL)	12473.00	4820.50	-239.00	462040.90	721702.30	32.2682306	-103.6160846	Point

WELL DETAILS: #102H

Rig Name:					
ROB = 17' @ 3663.00usft					
Ground Level: 3646.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	457220.40	721941.30	32.2549758	-103.6153957

SECTION DETAILS

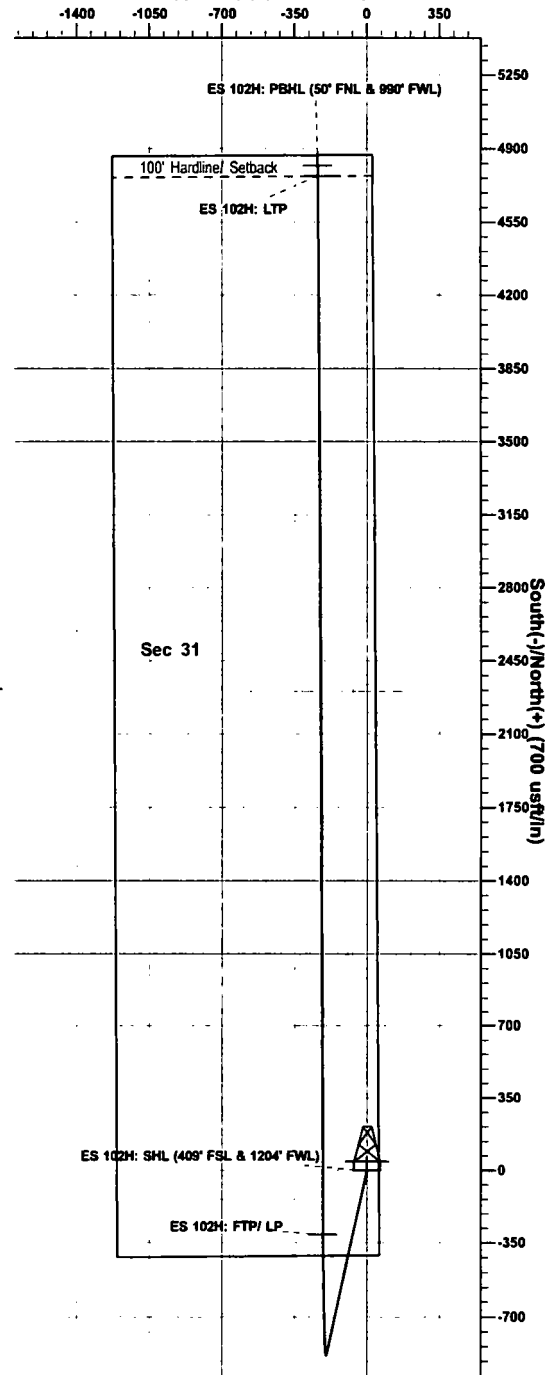
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2265.29	5.31	192.57	2264.91	-11.98	-2.67	2.00	192.57	-11.97
4	11890.14	5.31	192.57	11848.53	-880.65	-196.41	0.00	0.00	-879.61
5	12841.86	90.00	359.70	12473.00	-310.10	-212.30	10.00	167.08	-308.98
6	17922.53	90.00	359.70	12473.00	4770.50	-238.74	0.00	0.00	4771.68
7	17972.53	90.00	359.70	12473.00	4820.50	-239.00	0.00	0.00	4821.69



FORMATION TOP DETAILS

TVDPATH	FORMATION
1213.00	Rustler
1663.00	Top Salt
4563.00	Base Salt
5013.00	Delaware
8913.00	Bone Spring
9063.00	Upper Avalon
10063.00	1st Bone Spring Ss
10688.00	2nd Bone Spring Ss
11163.00	3rd Bone Spring Lm
11913.00	3rd Bone Spring Ss
12288.00	Wolfcamp
12343.00	Wolfcamp X
12453.00	Wolfcamp Y
12473.00	LP

West(-)/East(+) (700 usf/in)



This customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by Prototype are at the sole risk and responsibility of the user.

Plan: PERMIT (#102H/OH)

Created By: Matthew May Date: 7:36, June 24 2019

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ APT Number 30-025-		² Pool Code		³ Pool Name	
⁴ Property Code		⁵ Property Name ESTANCIA SED			⁶ Well Number 102H
⁷ OGRID No. 005380		⁸ Operator Name XTO ENERGY, INC.			⁹ Elevation 3,646'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	31	23 S	33 E		409	SOUTH	1,204	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	31	23 S	33 E		50	NORTH	990	WEST	LEA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16

CORNER COORDINATES TABLE
NAD 83 NME
A - Y= 456,864.3 N, X= 781,923.5 E
B - Y= 456,870.3 N, X= 783,185.1 E
C - Y= 459,504.3 N, X= 781,906.6 E
D - Y= 459,510.5 N, X= 783,185.8 E
E - Y= 482,143.8 N, X= 781,895.7 E
F - Y= 482,151.3 N, X= 783,149.5 E

CORNER COORDINATES TABLE
NAD 27 NME
A - Y= 456,805.6 N, X= 720,739.7 E
B - Y= 456,811.6 N, X= 722,001.3 E
C - Y= 459,445.5 N, X= 720,722.9 E
D - Y= 459,451.7 N, X= 721,982.1 E
E - Y= 482,084.9 N, X= 720,712.1 E
F - Y= 482,092.4 N, X= 721,965.9 E

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 457,279.1
X= 783,125.1
LAT.= 32.255098°N
LONG.= 103.615877°W

LAST TAKE POINT
NAD 83 NME
Y= 482,049.8
X= 782,886.1
LAT.= 32.268216°N
LONG.= 103.616347°W

FIRST TAKE POINT
NAD 83 NME
Y= 456,969.0
X= 782,912.8
LAT.= 32.254250°N
LONG.= 103.616570°W

BOTTOM HOLE LOCATION
NAD 83 NME
Y= 482,099.8
X= 782,885.9
LAT.= 32.268353°N
LONG.= 103.616546°W

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 457,220.4
X= 721,941.3
LAT.= 32.254976°N
LONG.= 103.615396°W

LAST TAKE POINT
NAD 27 NME
Y= 481,990.9
X= 721,702.5
LAT.= 32.268093°N
LONG.= 103.616065°W

FIRST TAKE POINT
NAD 27 NME
Y= 456,910.3
X= 721,729.0
LAT.= 32.254127°N
LONG.= 103.616089°W

BOTTOM HOLE LOCATION
NAD 27 NME
Y= 482,040.9
X= 721,702.3
LAT.= 32.268231°N
LONG.= 103.616065°W

17 OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature _____ Date _____

Printed Name _____

E-mail Address _____

18 SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

05-21-2019
Date of Survey

Signature and Seal of Professional Surveyor:

MARK DILLON HARP 23786
Certificate Number RR 2018112876



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 17' @ 3663.00usft
Project:	Lea County, NM (NAD-27)	MD Reference:	RKB = 17' @ 3663.00usft
Site:	Estancia Sed	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Project	Lea County, NM (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		

Site	Estancia Sed				
Site Position:		Northing:	457,155.00 usft	Latitude:	32.2548083
From:	Map	Easting:	721,273.30 usft	Longitude:	-103.6175578
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	#102H					
Well Position	+N/-S	65.40 usft	Northing:	457,220.40 usft	Latitude:	32.2549758
	+E/-W	668.00 usft	Easting:	721,941.30 usft	Longitude:	-103.6153957
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level:	3,646.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	06/24/19	6.76	60.06	47,743

Design PERMIT

Audit Notes:

Version:	Phase:	PLAN	Tie On Depth:	0.00
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Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	359.70

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,265.29	5.31	192.57	2,264.91	-11.98	-2.67	2.00	2.00	0.00	192.57	
11,890.14	5.31	192.57	11,848.53	-880.65	-196.41	0.00	0.00	0.00	0.00	
12,841.86	90.00	359.70	12,473.00	-310.10	-212.30	10.00	8.90	17.56	167.08	ES 102H: FTP
17,922.53	90.00	359.70	12,473.00	4,770.50	-238.74	0.00	0.00	0.00	0.00	ES 102H: LTP
17,972.53	90.00	359.70	12,473.00	4,820.50	-239.00	0.00	0.00	0.00	0.00	ES 102H: PBHL (5C



Planning Report

Database: EDM 5000.1.13 Single User Db
Company: XTO Energy
Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #102H
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Design: PERMIT

Local Co-ordinate Reference: Well #102H
TVD Reference: RKB = 17' @ 3663.00usft
MD Reference: RKB = 17' @ 3663.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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
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
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
1,213.00	0.00	0.00	1,213.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
1,663.00	0.00	0.00	1,663.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
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	2.00	192.57	2,099.98	-1.70	-0.38	-1.70	2.00	2.00	0.00
2,200.00	4.00	192.57	2,199.84	-6.81	-1.52	-6.80	2.00	2.00	0.00
2,265.29	5.31	192.57	2,264.91	-11.98	-2.67	-11.97	2.00	2.00	0.00
2,300.00	5.31	192.57	2,299.47	-15.11	-3.37	-15.10	0.00	0.00	0.00
2,400.00	5.31	192.57	2,399.04	-24.14	-5.38	-24.11	0.00	0.00	0.00
2,500.00	5.31	192.57	2,498.62	-33.16	-7.40	-33.12	0.00	0.00	0.00
2,600.00	5.31	192.57	2,598.19	-42.19	-9.41	-42.14	0.00	0.00	0.00
2,700.00	5.31	192.57	2,697.76	-51.21	-11.42	-51.15	0.00	0.00	0.00
2,800.00	5.31	192.57	2,797.33	-60.24	-13.44	-60.17	0.00	0.00	0.00
2,900.00	5.31	192.57	2,896.90	-69.26	-15.45	-69.18	0.00	0.00	0.00
3,000.00	5.31	192.57	2,996.47	-78.29	-17.46	-78.20	0.00	0.00	0.00
3,100.00	5.31	192.57	3,096.04	-87.32	-19.47	-87.21	0.00	0.00	0.00
3,200.00	5.31	192.57	3,195.62	-96.34	-21.49	-96.23	0.00	0.00	0.00
3,300.00	5.31	192.57	3,295.19	-105.37	-23.50	-105.24	0.00	0.00	0.00
3,400.00	5.31	192.57	3,394.76	-114.39	-25.51	-114.26	0.00	0.00	0.00
3,500.00	5.31	192.57	3,494.33	-123.42	-27.53	-123.27	0.00	0.00	0.00
3,600.00	5.31	192.57	3,593.90	-132.44	-29.54	-132.29	0.00	0.00	0.00
3,700.00	5.31	192.57	3,693.47	-141.47	-31.55	-141.30	0.00	0.00	0.00
3,800.00	5.31	192.57	3,793.05	-150.49	-33.56	-150.31	0.00	0.00	0.00
3,900.00	5.31	192.57	3,892.62	-159.52	-35.58	-159.33	0.00	0.00	0.00
4,000.00	5.31	192.57	3,992.19	-168.54	-37.59	-168.34	0.00	0.00	0.00
4,100.00	5.31	192.57	4,091.76	-177.57	-39.60	-177.36	0.00	0.00	0.00
4,200.00	5.31	192.57	4,191.33	-186.59	-41.62	-186.37	0.00	0.00	0.00
4,300.00	5.31	192.57	4,290.90	-195.62	-43.63	-195.39	0.00	0.00	0.00
4,400.00	5.31	192.57	4,390.47	-204.64	-45.64	-204.40	0.00	0.00	0.00
4,500.00	5.31	192.57	4,490.05	-213.67	-47.65	-213.42	0.00	0.00	0.00
4,573.27	5.31	192.57	4,563.00	-220.28	-49.13	-220.02	0.00	0.00	0.00
Base Salt									



Planning Report

Database: EDM 5000.1.13 Single User Db
Company: XTO Energy
Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #102H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #102H
TVD Reference: RKB = 17' @ 3663.00usft
MD Reference: RKB = 17' @ 3663.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	5.31	192.57	4,589.62	-222.69	-49.67	-222.43	0.00	0.00	0.00
4,700.00	5.31	192.57	4,689.19	-231.72	-51.68	-231.45	0.00	0.00	0.00
4,800.00	5.31	192.57	4,788.76	-240.74	-53.69	-240.46	0.00	0.00	0.00
4,900.00	5.31	192.57	4,888.33	-249.77	-55.71	-249.48	0.00	0.00	0.00
5,000.00	5.31	192.57	4,987.90	-258.80	-57.72	-258.49	0.00	0.00	0.00
5,025.20	5.31	192.57	5,013.00	-261.07	-58.23	-260.76	0.00	0.00	0.00
Delaware									
5,100.00	5.31	192.57	5,087.48	-267.82	-59.73	-267.50	0.00	0.00	0.00
5,200.00	5.31	192.57	5,187.05	-276.85	-61.75	-276.52	0.00	0.00	0.00
5,300.00	5.31	192.57	5,286.62	-285.87	-63.76	-285.53	0.00	0.00	0.00
5,400.00	5.31	192.57	5,386.19	-294.90	-65.77	-294.55	0.00	0.00	0.00
5,500.00	5.31	192.57	5,485.76	-303.92	-67.78	-303.56	0.00	0.00	0.00
5,600.00	5.31	192.57	5,585.33	-312.95	-69.80	-312.58	0.00	0.00	0.00
5,700.00	5.31	192.57	5,684.90	-321.97	-71.81	-321.59	0.00	0.00	0.00
5,800.00	5.31	192.57	5,784.48	-331.00	-73.82	-330.61	0.00	0.00	0.00
5,900.00	5.31	192.57	5,884.05	-340.02	-75.84	-339.62	0.00	0.00	0.00
6,000.00	5.31	192.57	5,983.62	-349.05	-77.85	-348.64	0.00	0.00	0.00
6,100.00	5.31	192.57	6,083.19	-358.07	-79.86	-357.65	0.00	0.00	0.00
6,200.00	5.31	192.57	6,182.76	-367.10	-81.87	-366.67	0.00	0.00	0.00
6,300.00	5.31	192.57	6,282.33	-376.12	-83.89	-375.68	0.00	0.00	0.00
6,400.00	5.31	192.57	6,381.91	-385.15	-85.90	-384.69	0.00	0.00	0.00
6,500.00	5.31	192.57	6,481.48	-394.17	-87.91	-393.71	0.00	0.00	0.00
6,600.00	5.31	192.57	6,581.05	-403.20	-89.93	-402.72	0.00	0.00	0.00
6,700.00	5.31	192.57	6,680.62	-412.23	-91.94	-411.74	0.00	0.00	0.00
6,800.00	5.31	192.57	6,780.19	-421.25	-93.95	-420.75	0.00	0.00	0.00
6,900.00	5.31	192.57	6,879.76	-430.28	-95.96	-429.77	0.00	0.00	0.00
7,000.00	5.31	192.57	6,979.34	-439.30	-97.98	-438.78	0.00	0.00	0.00
7,100.00	5.31	192.57	7,078.91	-448.33	-99.99	-447.80	0.00	0.00	0.00
7,200.00	5.31	192.57	7,178.48	-457.35	-102.00	-456.81	0.00	0.00	0.00
7,300.00	5.31	192.57	7,278.05	-466.38	-104.02	-465.83	0.00	0.00	0.00
7,400.00	5.31	192.57	7,377.62	-475.40	-106.03	-474.84	0.00	0.00	0.00
7,500.00	5.31	192.57	7,477.19	-484.43	-108.04	-483.86	0.00	0.00	0.00
7,600.00	5.31	192.57	7,576.76	-493.45	-110.06	-492.87	0.00	0.00	0.00
7,700.00	5.31	192.57	7,676.34	-502.48	-112.07	-501.88	0.00	0.00	0.00
7,800.00	5.31	192.57	7,775.91	-511.50	-114.08	-510.90	0.00	0.00	0.00
7,900.00	5.31	192.57	7,875.48	-520.53	-116.09	-519.91	0.00	0.00	0.00
8,000.00	5.31	192.57	7,975.05	-529.55	-118.11	-528.93	0.00	0.00	0.00
8,100.00	5.31	192.57	8,074.62	-538.58	-120.12	-537.94	0.00	0.00	0.00
8,200.00	5.31	192.57	8,174.19	-547.60	-122.13	-546.96	0.00	0.00	0.00
8,300.00	5.31	192.57	8,273.77	-556.63	-124.15	-555.97	0.00	0.00	0.00
8,400.00	5.31	192.57	8,373.34	-565.65	-126.16	-564.99	0.00	0.00	0.00
8,500.00	5.31	192.57	8,472.91	-574.68	-128.17	-574.00	0.00	0.00	0.00
8,600.00	5.31	192.57	8,572.48	-583.71	-130.18	-583.02	0.00	0.00	0.00
8,700.00	5.31	192.57	8,672.05	-592.73	-132.20	-592.03	0.00	0.00	0.00
8,800.00	5.31	192.57	8,771.62	-601.76	-134.21	-601.05	0.00	0.00	0.00
8,900.00	5.31	192.57	8,871.19	-610.78	-136.22	-610.06	0.00	0.00	0.00
8,941.99	5.31	192.57	8,913.00	-614.57	-137.07	-613.84	0.00	0.00	0.00
Bone Spring									
9,000.00	5.31	192.57	8,970.77	-619.81	-138.24	-619.07	0.00	0.00	0.00
9,092.63	5.31	192.57	9,063.00	-628.17	-140.10	-627.42	0.00	0.00	0.00
Upper Avalon									
9,100.00	5.31	192.57	9,070.34	-628.83	-140.25	-628.09	0.00	0.00	0.00
9,200.00	5.31	192.57	9,169.91	-637.86	-142.26	-637.10	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 17' @ 3663.00usft
Project:	Lea County, NM (NAD-27)	MD Reference:	RKB = 17' @ 3663.00usft
Site:	Estancia Sed	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.00	5.31	192.57	9,269.48	-646.88	-144.27	-646.12	0.00	0.00	0.00
9,400.00	5.31	192.57	9,369.05	-655.91	-146.29	-655.13	0.00	0.00	0.00
9,500.00	5.31	192.57	9,468.62	-664.93	-148.30	-664.15	0.00	0.00	0.00
9,600.00	5.31	192.57	9,568.20	-673.96	-150.31	-673.16	0.00	0.00	0.00
9,700.00	5.31	192.57	9,667.77	-682.98	-152.33	-682.18	0.00	0.00	0.00
9,800.00	5.31	192.57	9,767.34	-692.01	-154.34	-691.19	0.00	0.00	0.00
9,900.00	5.31	192.57	9,866.91	-701.03	-156.35	-700.21	0.00	0.00	0.00
10,000.00	5.31	192.57	9,966.48	-710.06	-158.37	-709.22	0.00	0.00	0.00
10,096.93	5.31	192.57	10,063.00	-718.81	-160.32	-717.96	0.00	0.00	0.00
1st Bone Spring Ss									
10,100.00	5.31	192.57	10,066.05	-719.08	-160.38	-718.24	0.00	0.00	0.00
10,200.00	5.31	192.57	10,165.62	-728.11	-162.39	-727.25	0.00	0.00	0.00
10,300.00	5.31	192.57	10,265.20	-737.14	-164.40	-736.26	0.00	0.00	0.00
10,400.00	5.31	192.57	10,364.77	-746.16	-166.42	-745.28	0.00	0.00	0.00
10,500.00	5.31	192.57	10,464.34	-755.19	-168.43	-754.29	0.00	0.00	0.00
10,600.00	5.31	192.57	10,563.91	-764.21	-170.44	-763.31	0.00	0.00	0.00
10,700.00	5.31	192.57	10,663.48	-773.24	-172.46	-772.32	0.00	0.00	0.00
10,724.62	5.31	192.57	10,688.00	-775.46	-172.95	-774.54	0.00	0.00	0.00
2nd Bone Spring Ss									
10,800.00	5.31	192.57	10,763.05	-782.26	-174.47	-781.34	0.00	0.00	0.00
10,900.00	5.31	192.57	10,862.63	-791.29	-176.48	-790.35	0.00	0.00	0.00
11,000.00	5.31	192.57	10,962.20	-800.31	-178.49	-799.37	0.00	0.00	0.00
11,100.00	5.31	192.57	11,061.77	-809.34	-180.51	-808.38	0.00	0.00	0.00
11,200.00	5.31	192.57	11,161.34	-818.36	-182.52	-817.40	0.00	0.00	0.00
11,201.67	5.31	192.57	11,163.00	-818.51	-182.55	-817.55	0.00	0.00	0.00
3rd Bone Spring Lm									
11,300.00	5.31	192.57	11,260.91	-827.39	-184.53	-826.41	0.00	0.00	0.00
11,400.00	5.31	192.57	11,360.48	-836.41	-186.55	-835.43	0.00	0.00	0.00
11,500.00	5.31	192.57	11,460.05	-845.44	-188.56	-844.44	0.00	0.00	0.00
11,600.00	5.31	192.57	11,559.63	-854.46	-190.57	-853.45	0.00	0.00	0.00
11,700.00	5.31	192.57	11,659.20	-863.49	-192.58	-862.47	0.00	0.00	0.00
11,800.00	5.31	192.57	11,758.77	-872.51	-194.60	-871.48	0.00	0.00	0.00
11,890.14	5.31	192.57	11,848.53	-880.65	-196.41	-879.61	0.00	0.00	0.00
11,900.00	4.35	195.48	11,858.35	-881.46	-196.61	-880.41	10.00	-9.69	29.50
11,950.00	1.44	304.18	11,908.30	-882.93	-197.64	-881.88	10.00	-5.83	217.40
11,954.70	1.75	317.00	11,913.00	-882.85	-197.73	-881.80	10.00	6.59	272.67
3rd Bone Spring Ss									
12,000.00	5.93	348.22	11,958.19	-880.05	-198.68	-879.00	10.00	9.24	68.92
12,050.00	10.88	353.52	12,007.64	-872.83	-199.74	-871.77	10.00	9.89	10.61
12,100.00	15.86	355.53	12,056.27	-861.32	-200.81	-860.26	10.00	9.96	4.01
12,150.00	20.85	356.59	12,103.71	-845.62	-201.87	-844.55	10.00	9.98	2.12
12,200.00	25.84	357.25	12,149.60	-825.84	-202.93	-824.77	10.00	9.99	1.33
12,250.00	30.83	357.72	12,193.60	-802.14	-203.96	-801.06	10.00	9.99	0.92
12,300.00	35.83	358.06	12,235.36	-774.69	-204.97	-773.61	10.00	9.99	0.69
12,350.00	40.83	358.33	12,274.57	-743.71	-205.94	-742.62	10.00	9.99	0.54
12,368.00	42.63	358.41	12,288.00	-731.74	-206.28	-730.65	10.00	10.00	0.47
Wolfcamp									
12,400.00	45.83	358.55	12,310.93	-709.43	-206.87	-708.33	10.00	10.00	0.43
12,448.16	50.64	358.73	12,343.00	-673.53	-207.72	-672.43	10.00	10.00	0.37
Wolfcamp X									
12,450.00	50.82	358.74	12,344.17	-672.10	-207.75	-671.00	10.00	10.00	0.35
12,500.00	55.82	358.90	12,374.02	-632.02	-208.58	-630.92	10.00	10.00	0.32
12,550.00	60.82	359.04	12,400.27	-589.49	-209.34	-588.39	10.00	10.00	0.29



Planning Report

Database: EDM 5000.1.13 Single User Db
Company: XTO Energy
Project: Lea County, NM (NAD-27)
Site: Estancia Sed
Well: #102H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #102H
TVD Reference: RKB = 17' @ 3663.00usft
MD Reference: RKB = 17' @ 3663.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,600.00	65.82	359.17	12,422.72	-544.84	-210.04	-543.73	10.00	10.00	0.26
12,650.00	70.82	359.29	12,441.18	-498.39	-210.66	-497.28	10.00	10.00	0.24
12,690.02	74.82	359.38	12,453.00	-460.17	-211.11	-459.06	10.00	10.00	0.23
Wolfcamp Y									
12,700.00	75.82	359.40	12,455.53	-450.51	-211.21	-449.40	10.00	10.00	0.22
12,750.00	80.82	359.51	12,465.65	-401.57	-211.67	-400.45	10.00	10.00	0.22
12,800.00	85.81	359.62	12,471.47	-351.93	-212.05	-350.81	10.00	10.00	0.21
12,841.86	90.00	359.70	12,473.00	-310.10	-212.30	-308.98	10.00	10.00	0.21
LP									
12,900.00	90.00	359.70	12,473.00	-251.96	-212.60	-250.85	0.00	0.00	0.00
13,000.00	90.00	359.70	12,473.00	-151.97	-213.12	-150.85	0.00	0.00	0.00
13,100.00	90.00	359.70	12,473.00	-51.97	-213.64	-50.85	0.00	0.00	0.00
13,200.00	90.00	359.70	12,473.00	48.03	-214.16	49.15	0.00	0.00	0.00
13,300.00	90.00	359.70	12,473.00	148.03	-214.68	149.15	0.00	0.00	0.00
13,400.00	90.00	359.70	12,473.00	248.03	-215.20	249.15	0.00	0.00	0.00
13,500.00	90.00	359.70	12,473.00	348.03	-215.72	349.15	0.00	0.00	0.00
13,600.00	90.00	359.70	12,473.00	448.03	-216.25	449.15	0.00	0.00	0.00
13,700.00	90.00	359.70	12,473.00	548.03	-216.77	549.15	0.00	0.00	0.00
13,800.00	90.00	359.70	12,473.00	648.02	-217.29	649.15	0.00	0.00	0.00
13,900.00	90.00	359.70	12,473.00	748.02	-217.81	749.15	0.00	0.00	0.00
14,000.00	90.00	359.70	12,473.00	848.02	-218.33	849.15	0.00	0.00	0.00
14,100.00	90.00	359.70	12,473.00	948.02	-218.85	949.15	0.00	0.00	0.00
14,200.00	90.00	359.70	12,473.00	1,048.02	-219.37	1,049.15	0.00	0.00	0.00
14,300.00	90.00	359.70	12,473.00	1,148.02	-219.89	1,149.15	0.00	0.00	0.00
14,400.00	90.00	359.70	12,473.00	1,248.02	-220.41	1,249.15	0.00	0.00	0.00
14,500.00	90.00	359.70	12,473.00	1,348.01	-220.93	1,349.15	0.00	0.00	0.00
14,600.00	90.00	359.70	12,473.00	1,448.01	-221.45	1,449.15	0.00	0.00	0.00
14,700.00	90.00	359.70	12,473.00	1,548.01	-221.97	1,549.15	0.00	0.00	0.00
14,800.00	90.00	359.70	12,473.00	1,648.01	-222.49	1,649.15	0.00	0.00	0.00
14,900.00	90.00	359.70	12,473.00	1,748.01	-223.01	1,749.15	0.00	0.00	0.00
15,000.00	90.00	359.70	12,473.00	1,848.01	-223.53	1,849.15	0.00	0.00	0.00
15,100.00	90.00	359.70	12,473.00	1,948.01	-224.05	1,949.15	0.00	0.00	0.00
15,200.00	90.00	359.70	12,473.00	2,048.00	-224.57	2,049.15	0.00	0.00	0.00
15,300.00	90.00	359.70	12,473.00	2,148.00	-225.09	2,149.15	0.00	0.00	0.00
15,400.00	90.00	359.70	12,473.00	2,248.00	-225.61	2,249.15	0.00	0.00	0.00
15,500.00	90.00	359.70	12,473.00	2,348.00	-226.13	2,349.15	0.00	0.00	0.00
15,600.00	90.00	359.70	12,473.00	2,448.00	-226.65	2,449.15	0.00	0.00	0.00
15,700.00	90.00	359.70	12,473.00	2,548.00	-227.17	2,549.15	0.00	0.00	0.00
15,800.00	90.00	359.70	12,473.00	2,648.00	-227.69	2,649.15	0.00	0.00	0.00
15,900.00	90.00	359.70	12,473.00	2,748.00	-228.21	2,749.15	0.00	0.00	0.00
16,000.00	90.00	359.70	12,473.00	2,847.99	-228.73	2,849.15	0.00	0.00	0.00
16,100.00	90.00	359.70	12,473.00	2,947.99	-229.26	2,949.15	0.00	0.00	0.00
16,200.00	90.00	359.70	12,473.00	3,047.99	-229.78	3,049.15	0.00	0.00	0.00
16,300.00	90.00	359.70	12,473.00	3,147.99	-230.30	3,149.15	0.00	0.00	0.00
16,400.00	90.00	359.70	12,473.00	3,247.99	-230.82	3,249.15	0.00	0.00	0.00
16,500.00	90.00	359.70	12,473.00	3,347.99	-231.34	3,349.15	0.00	0.00	0.00
16,600.00	90.00	359.70	12,473.00	3,447.99	-231.86	3,449.15	0.00	0.00	0.00
16,700.00	90.00	359.70	12,473.00	3,547.98	-232.38	3,549.15	0.00	0.00	0.00
16,800.00	90.00	359.70	12,473.00	3,647.98	-232.90	3,649.15	0.00	0.00	0.00
16,900.00	90.00	359.70	12,473.00	3,747.98	-233.42	3,749.15	0.00	0.00	0.00
17,000.00	90.00	359.70	12,473.00	3,847.98	-233.94	3,849.15	0.00	0.00	0.00
17,100.00	90.00	359.70	12,473.00	3,947.98	-234.46	3,949.15	0.00	0.00	0.00
17,200.00	90.00	359.70	12,473.00	4,047.98	-234.98	4,049.15	0.00	0.00	0.00
17,300.00	90.00	359.70	12,473.00	4,147.98	-235.50	4,149.15	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #102H
Company:	XTO Energy	TVD Reference:	RKB = 17' @ 3663.00usft
Project:	Lea County, NM (NAD-27)	MD Reference:	RKB = 17' @ 3663.00usft
Site:	Estancia Sed	North Reference:	Grid
Well:	#102H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

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)
17,400.00	90.00	359.70	12,473.00	4,247.98	-236.02	4,249.15	0.00	0.00	0.00
17,500.00	90.00	359.70	12,473.00	4,347.97	-236.54	4,349.15	0.00	0.00	0.00
17,600.00	90.00	359.70	12,473.00	4,447.97	-237.06	4,449.15	0.00	0.00	0.00
17,700.00	90.00	359.70	12,473.00	4,547.97	-237.58	4,549.15	0.00	0.00	0.00
17,800.00	90.00	359.70	12,473.00	4,647.97	-238.10	4,649.15	0.00	0.00	0.00
17,900.00	90.00	359.70	12,473.00	4,747.97	-238.62	4,749.15	0.00	0.00	0.00
17,922.53	90.00	359.70	12,473.00	4,770.50	-238.74	4,771.69	0.00	0.00	0.00
17,972.53	90.00	359.70	12,473.00	4,820.50	-239.00	4,821.69	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
ES 102H: SHL (409' F	0.00	0.00	0.00	0.00	0.00	457,220.40	721,941.30	32.2549758	-103.6153957
- plan hits target center									
- Point									
ES 102H: PBHL (50' F	0.00	0.00	12,473.00	4,820.50	-239.00	462,040.90	721,702.30	32.2682306	-103.6160646
- plan hits target center									
- Point									
ES 102H: FTP	0.00	0.01	12,473.00	-310.10	-212.30	456,910.30	721,729.00	32.2541273	-103.6160891
- plan hits target center									
- Point									
ES 102H: LTP	0.00	0.00	12,473.00	4,770.50	-238.80	461,990.90	721,702.50	32.2680931	-103.6160650
- plan misses target center by 0.06usft at 17922.53usft MD (12473.00 TVD, 4770.50 N, -238.74 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,213.00	1,213.00	Rustler			
1,663.00	1,663.00	Top Salt			
4,573.27	4,563.00	Base Salt			
5,025.20	5,013.00	Delaware			
8,941.99	8,913.00	Bone Spring			
9,092.63	9,063.00	Upper Avalon			
10,096.93	10,063.00	1st Bone Spring Ss			
10,724.62	10,688.00	2nd Bone Spring Ss			
11,201.67	11,163.00	3rd Bone Spring Lm			
11,954.70	11,913.00	3rd Bone Spring Ss			
12,368.00	12,288.00	Wolfcamp			
12,448.16	12,343.00	Wolfcamp X			
12,690.02	12,453.00	Wolfcamp Y			
12,841.86	12,473.00	LP			