



XTO ENERGY, INC.

Winkler County, TX (NAD 27 True North)

University Land, Sec 13, Block 20

University BLK 20 #1310H

Original Hole

Design: Original Hole

QES Survey Certification Report

25 September, 2017



QES Directional Drilling, LLC

11390 FM 830

Willis, TX 77318

Phone: (936) 856-4332

Fax: (936) 856-8678



10/31/2017

Railroad Commission of Texas
Oil and Gas Division
1701 North Congress Avenue
Austin, Texas 78711

Attention: Pam Johns

Re: XTO Energy, INC
University BLK 20 # 1310H
RRC Lease/ID No.
UL
Abstract No. U14
Winkler, Texas
API No. 42-495-33713

Enclosed, please find the original and one (1) copy of the survey performed on the referenced well by QES Directional Drilling, LLC (P5#684437). Other information required by your office is as follows:

Name of Surveyor	Drainhole Number	Surveyed Depths	Dates Performed	Type of Survey
Jeremy Oyler	Original Hole	11188'- 12301'	10/01/2017-10/22/2017	MWD
Jeremy Oyler	ST1	12088'-12271'	10/01/2017-10/22/2017	MWD
Jeremy Oyler	ST2	11867'-18015'	10/01/2017-10/22/2017	MWD
Jeremy Oyler	ST3	12502'-22117'	10/01/2017-10/22/2017	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Sincerely,

Christopher Hughes

MWD Compliance Manager
QES Directional Drilling, LLC

**Christopher
Hughes**

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=QES,
ou=compliance, email=chrish@qeslp.com,
c=US
Date: 2017.11.02 15:45:49 -05'00'

QES Directional Drilling, LLC

11390 FM 830

Willis, TX 77318

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Enclosures

Cc: XTO Energy, INC

Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB @ 2839.0usft (Scan Producer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB @ 2839.0usft (Scan Producer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Project	Winkler County, TX (NAD 27 True North)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site	University Land, Sec 13, Block 20		
Site Position:		Northing:	761,235.91 usft
From:	Map	Easting:	1,082,226.69 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	31° 43' 34.448 N
		Longitude:	103° 17' 7.433 W
		Grid Convergence:	-1.52 °

Well	University BLK 20 #1310H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	31° 43' 58.322 N
		Longitude:	103° 16' 45.761 W
		Ground Level:	2,812.0 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/24/2017	6.77	59.65	47,669.99976835

Design	Original Hole			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
				0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	164.10

Survey Program	Date	9/18/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	11,188.0	WellBender MWD (Original Hole)	MWD	OWSG MWD - Standard
11,204.0	12,301.0	QES MWD Surveys (Original Hole)	MWD	OWSG MWD - Standard

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
11,188.0	1.00	314.38	11,184.3	185.9	18.8	186.8	5.76
WellBenders Tie-in @ 11188.0' MD / 11184.3' TVD							
11,204.0	0.90	314.90	11,200.3	186.1	18.6	187.0	5.70
11,236.0	0.60	203.60	11,232.3	186.1	18.3	187.0	5.62
11,267.0	3.70	173.10	11,263.3	184.9	18.4	185.9	5.67
11,299.0	7.10	172.90	11,295.2	182.0	18.7	182.9	5.88
11,330.0	10.30	173.60	11,325.8	177.3	19.3	178.3	6.21
11,362.0	13.30	174.10	11,357.1	170.8	20.0	172.0	6.68
11,394.0	16.20	173.90	11,388.1	162.7	20.8	164.0	7.30
11,425.0	19.40	173.10	11,417.6	153.3	21.9	154.8	8.14
11,457.0	22.30	170.10	11,447.5	142.0	23.6	144.0	9.44

Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB @ 2839.0usft (Scan Producer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB @ 2839.0usft (Scan Producer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
11,488.0	25.30	168.80	11,475.8	129.7	25.9	132.3	11.29	
11,520.0	27.80	170.90	11,504.5	115.6	28.4	119.1	13.80	
11,551.0	30.10	173.20	11,531.6	100.8	30.5	105.3	16.82	
11,583.0	32.10	176.80	11,559.0	84.3	31.9	90.2	20.72	
11,614.0	32.90	180.80	11,585.1	67.7	32.2	75.0	25.47	
11,646.0	34.50	182.90	11,611.8	49.9	31.7	59.1	32.37	
11,678.0	36.00	185.00	11,637.9	31.5	30.4	43.8	43.95	
11,709.0	38.10	187.50	11,662.6	13.0	28.3	31.2	65.43	
11,741.0	39.80	190.50	11,687.5	-6.9	25.2	26.1	105.33	
11,773.0	41.20	194.00	11,711.9	-27.2	20.8	34.2	142.64	
11,804.0	43.10	197.10	11,734.8	-47.2	15.2	49.6	162.18	
11,836.0	45.10	199.80	11,757.8	-68.4	8.1	68.8	173.22	
11,867.0	47.00	202.20	11,779.3	-89.2	0.1	89.2	179.92	
11,899.0	49.70	203.80	11,800.6	-111.2	-9.2	111.6	184.74	
11,930.0	52.20	205.20	11,820.1	-133.1	-19.2	134.5	188.21	
11,962.0	55.00	206.50	11,839.1	-156.3	-30.4	159.2	191.02	
11,993.0	58.00	207.00	11,856.2	-179.3	-42.1	184.2	193.20	
12,025.0	60.70	207.70	11,872.5	-203.8	-54.7	211.0	195.03	
12,057.0	63.60	208.20	11,887.5	-228.8	-68.0	238.7	196.55	
12,088.0	66.50	207.90	11,900.6	-253.6	-81.2	266.3	197.76	
12,120.0	68.90	207.20	11,912.7	-279.8	-94.9	295.5	198.73	
12,151.0	70.70	206.10	11,923.4	-305.8	-107.9	324.3	199.44	
12,183.0	72.00	204.40	11,933.6	-333.3	-120.9	354.5	199.94	
12,215.0	73.90	202.80	11,943.0	-361.3	-133.1	385.0	200.23	
12,246.0	75.60	200.50	11,951.2	-389.1	-144.1	414.9	200.33	
12,301.0	80.00	198.00	11,962.8	-439.8	-161.9	468.7	200.20	
OH TD @ 12301.0' MD / 11962.8' TVD								

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,188.0	11,184.3	185.9	18.8	WellBenders Tie-in @ 11188.0' MD / 11184.3' TVD
12,301.0	11,962.8	-439.8	-161.9	OH TD @ 12301.0' MD / 11962.8' TVD



XTO ENERGY, INC.

**Winkler County, TX (NAD 27 True North)
University Land, Sec 13, Block 20
University BLK 20 #1310H
ST01**

Design: ST01

QES Survey Certification Report

25 September, 2017



Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	g iniMuM Curvature
Design:	ST01	Database:	EDg P000.1 Sin5le User Db

Project	Winkler County, TX (NAD 27 True North)		
Map System:	US State 9lane 1827 (Exact solution)	System Datum:	g ean Sea Level
Geo Datum:	NAD 1827 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site	University Land, Sec 13, Block 20		
Site Position:		Northing:	761,23P.81 usft
From:	g ap	Easting:	1,0@,226.68 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	31° 43' 34.44@N
		Longitude:	103° 17' 7.433 W
		Grid Convergence:	-1.P2 °

Well	University BLK 20 #1310H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	31° 43' P@322 N
		Longitude:	103° 16' 4P.761 W
		Ground Level:	2,@2.0 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF201P	@4/2017	6.77	P8.6P	47,666.816P3173

Design	ST01			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
				12,0@@@
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	202.13

Survey Program	Date 8/2P/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	11,1@@@	WellBender g WD (Ori5inal Hole)	g WD	OWSG g WD - Standard
11,204.0	12,0@@@	QES g WD Surveys (Ori5inal Hole)	g WD	OWSG g WD - Standard
12,121.0	12,271.0	ST-01 g WD Surveys (ST01)	g WD	OWSG g WD - Standard

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
12,000.0	66.P0	207.80	11,800.6	-2P3.6	-@.2	266.3	187.76	
ST #1 Tie-In @ 12088.0' MD / 11900.6 ' TVD								
12,121.0	6@10	207.70	11,813.3	-2@.P	-8P.4	286.3	18@7@	
12,1P3.0	68.60	206.30	11,824.@	-307.1	-10@8	32P.8	188.P3	
12,1@.0	71.80	206.60	11,83P.1	-333.3	-122.0	3P4.8	200.10	
12,216.0	7P.40	207.70	11,844.1	-360.6	-136.0	3@.4	200.66	
12,271.0	@.70	208.P0	11,8PP.0	-407.8	-161.@	43@.	201.63	
ST #1 TD @ 12271.0' MD / 11955.0' TVD								



Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB m 2@38.0usft (Scan 9roducer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB m 2@38.0usft (Scan 9roducer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	g iniMuM Curvature
Design:	ST01	Database:	EDg P000.1 Sin5le User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,000.0	11,800.6	-2P3.6	-.2	ST #1 Tie-In m 12000.0' g D / 11800.6' TVD
12,271.0	11,8PP.0	-407.8	-161.0	ST #1 TD m 12271.0' g D / 118PP.0' TVD



XTO ENERGY, INC.

**Winkler County, TX (NAD 27 True North)
University Land, Sec 13, Block 20
University BLK 20 #1310H
ST02**

Design: ST02

QES Survey Certification Report

25 September, 2017



Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	g iniMuM Curvature
Design:	ST02	Database:	EDg P000.1 Sin5le User Db

Project	Winkler County, TX (NAD 27 True North)		
Map System:	US State 9lane 1827 (Exact solution)	System Datum:	g ean Sea Level
Geo Datum:	NAD 1827 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site	University Land, Sec 13, Block 20		
Site Position:		Northing:	761,23P.81 usft
From:	g ap	Easting:	1,0@,226.68 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	31° 43' 34.44@N
		Longitude:	103° 17' 7.433 W
		Grid Convergence:	-1.P2 °

Well	University BLK 20 #1310H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	31° 43' P@322 N
		Longitude:	103° 16' 4P.761 W
		Ground Level:	2,@2.0 usft

Wellbore	ST02				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF201P	@@2017	6.77	P8.6P	47,66P.7843P47@

Design	ST02			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
				11,@7.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	164.10

Survey Program	Date 8/2P/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
200.0	11,1@@@	WellBender g WD (Ori5inal Hole)	g WD	OWSG g WD - Standard
11,204.0	11,@7.0	QES g WD Surveys (Ori5inal Hole)	g WD	OWSG g WD - Standard
11,831.0	1@01P.0	ST#2 Surveys (ST02)	g WD	OWSG g WD - Standard

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
11,870.0	47.00	202.20	11,778.3	-132.2	0.1	133.2	178.82
ST #2 Tie-In @ 11867.0' MD / 11779.3' TVD							
11,831.0	4P.60	180.70	11,823.6	-132.P	-16.1	133.P	178.81
11,863.0	48.20	188.60	11,824.P	-134.2	-23.2	136.6	179.74
11,884.0	P4.00	204.20	11,824.P	-177.3	-32.8	170.3	180.P0
12,026.0	P8.80	207.70	11,820.8	-201.4	-44.6	206.2	182.48
12,084.0	60.80	210.P0	11,811.3	-204.8	-74.P	26P.P	186.28
12,126.0	72.10	210.30	11,822.0	-200.8	-60.7	284.8	187.72
12,177.0	74.10	207.30	11,831.0	-306.8	-104.0	324.0	180.72
12,180.0	76.P0	180.40	11,830.8	-334.P	-11P.6	3P3.8	188.07

Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	g iniMuM Curvature
Design:	ST02	Database:	EDg P000.1 Sin5le User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
12,220.0	78.20	204.80	11,84P.6	-363.P	-127.2	3@.1	188.2@	
12,2P1.0	@.@	203.@	11,8P1.0	-381.3	-138.@	41P.P	188.6P	
12,2@.0	@.80	200.P0	11,8PP.6	-418.7	-1P1.3	446.2	188.@	
12,314.0	@.80	187.30	11,860.2	-448.7	-161.6	477.@	188.76	
12,34P.0	@.00	182.@	11,864.2	-478.4	-168.P	P0@4	188.4@	
12,376.0	@.00	1@@40	11,867.7	-P08.6	-17P.2	P3@8	18@87	
12,40@	@.70	1@.@	11,870.8	-P41.3	-17@6	P70.0	18@26	
12,438.0	@.30	178.20	11,873.6	-P72.1	-178.4	P88.6	187.41	
12,471.0	@.30	17P.00	11,87P.8	-604.0	-177.@	628.6	186.40	
12,P02.0	@.80	168.80	11,877.@	-634.7	-173.7	6P@0	18P.31	
12,P33.0	@@10	16P.P0	11,878.1	-664.8	-167.1	6@.6	184.11	
12,P6P.0	@.60	162.30	11,878.@	-68P.7	-1P@2	713.4	182.@	
12,6P8.0	80.10	161.10	11,8@.0	-7@.8	-12@7	78P.4	1@.31	
12,7P4.0	80.@	160.@	11,878.3	-@4.7	-87.7	@@.1	1@.37	
12,@@	@.60	1P8.80	11,87@8	-863.2	-66.1	86P.P	1@.83	
12,843.0	80.00	1P8.40	11,878.3	-1,0P2.3	-33.1	1,0P2.@	1@.@	
13,037.0	80.60	1P@@	11,87@@	-1,140.1	0.P	1,140.1	178.8@	
13,131.0	@.30	1P8.P0	11,87@8	-1,227.8	33.8	1,22@4	17@42	
13,22P.0	@@70	1P7.40	11,8@.P	-1,31P.3	6@4	1,317.1	177.02	
13,320.0	80.30	1P8.70	11,8@.3	-1,403.@	103.2	1,407.P	17P.@	
13,414.0	81.00	161.60	11,8@.3	-1,482.4	134.3	1,48@P	174.@	
13,P0@	80.70	162.30	11,87@8	-1,P@.@	163.4	1,P80.2	174.10	
13,602.0	81.60	163.00	11,877.0	-1,671.P	181.P	1,6@.4	173.47	
13,686.0	80.00	162.00	11,87P.7	-1,761.1	218.7	1,774.@	172.@	
13,780.0	@.30	1P8.P0	11,876.3	-1,@8.8	2P0.7	1,@6.@	172.2@	
13,@@.0	@@P0	1P8.00	11,87@1	-1,837.@	2@.0	1,8P@P	171.66	
13,87@	80.00	161.P0	11,878.3	-2,026.2	31P.@	2,0P0.7	171.14	
14,072.0	80.@	162.00	11,87@6	-2,11P.P	34P.2	2,143.P	170.73	
14,166.0	@.70	160.80	11,878.8	-2,204.6	37P.1	2,236.3	170.34	
14,260.0	@.20	161.30	11,8@.0	-2,283.4	40P.P	2,328.0	168.87	
14,3P4.0	@.@	162.P0	11,8@@1	-2,3@.7	434.7	2,422.0	168.66	
14,44@	80.@	166.70	11,8@.3	-2,473.3	4P8.6	2,P1P.6	168.47	
14,P42.0	81.40	166.70	11,8@.P	-2,P64.7	4@.3	2,608.P	168.37	
14,636.0	@.70	161.P0	11,8@.6	-2,6PP.1	P07.0	2,703.1	168.18	
14,731.0	@.@	160.10	11,8@.0	-2,744.@	P3@2	2,787.1	16@81	
14,@P.0	@.80	1P8.00	11,8@.2	-2,@2.8	P71.1	2,@@.8	16@60	
14,818.0	80.30	160.20	11,8@.1	-2,821.0	603.@	2,8@.@	16@32	
1P,013.0	@.30	160.@	11,8@.4	-3,008.6	63P.2	3,07P.8	16@0@	
1P,107.0	@.@	160.20	11,8@.@	-3,08@2	666.6	3,168.1	167.@	
1P,201.0	@@@	162.30	11,882.6	-3,1@.1	686.@	3,262.4	167.67	
1P,286.0	80.20	163.70	11,883.4	-3,27@0	724.6	3,3P7.1	167.P4	
1P,380.0	80.70	162.P0	11,882.7	-3,367.8	7P1.8	3,4P0.@	167.42	
1P,4@.0	80.20	162.20	11,881.8	-3,4P7.P	7@.4	3,P44.P	167.2@	
1P,P7@	@.40	161.P0	11,882.3	-3,P46.@	@8.7	3,63@1	167.14	

Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB m 2@8.0usft (Scan 9roducer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	g iniMuM Curvature
Design:	ST02	Database:	EDg P000.1 Sin5le User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
1P,673.0	81.40	162.P0	11,881.6	-3,637.2	@8.0	3,732.7	167.01	
1P,767.0	81.@	162.30	11,8@.0	-3,726.7	@7.4	3,@6.3	166.80	
1P,@1.0	82.40	160.@	11,8@P	-3,@P.@	@7.2	3,818.8	166.77	
1P,8PP.0	81.00	160.80	11,8@.7	-3,804.6	82@	4,013.3	166.63	
16,048.0	81.40	163.00	11,8@.@	-3,883.8	8P7.1	4,107.0	166.P2	
16,143.0	82.20	162.80	11,877.@	-4,0@.@	8@.6	4,200.@	166.44	
16,237.0	83.10	16P.P0	11,873.P	-4,174.1	1,010.2	4,284.6	166.38	
16,332.0	83.10	16P.P0	11,86@3	-4,26P.8	1,034.0	4,3@.4	166.3@	
16,427.0	80.80	163.40	11,86P.0	-4,3P7.4	1,0P8.4	4,4@.3	166.33	
16,P21.0	@.@	160.@	11,864.4	-4,446.@	1,0@@3	4,P7@1	166.2P	
16,61P.0	81.10	162.00	11,863.7	-4,P3P.8	1,11@3	4,671.7	166.1P	
16,708.0	81.60	162.30	11,861.P	-4,62P.4	1,147.1	4,76P.P	166.07	
16,@3.0	81.60	162.20	11,8P@3	-4,714.8	1,17P.7	4,@8.2	166.00	
16,@@	82.P0	162.30	11,8PP.P	-4,@P.3	1,204.7	4,8P4.0	16P.83	
16,882.0	82.80	162.80	11,8P1.0	-4,@4.8	1,232.@	P,047.7	16P.@	
17,0@.0	83.@	163.20	11,84P.P	-4,8@.6	1,260.1	P,141.4	16P.@	
17,1@.0	81.70	163.20	11,841.0	-P,07P.P	1,2@.P	P,236.2	16P.77	
17,27P.0	@.80	162.00	11,838.7	-P,16P.2	1,31P.6	P,330.1	16P.71	
17,368.0	@.@	160.80	11,838.8	-P,2P4.3	1,34P.P	P,423.@	16P.64	
17,463.0	@.P0	1P8.40	11,840.P	-P,342.7	1,377.P	P,P17.4	16P.P4	
17,482.0	@.10	1P8.70	11,840.@	-P,368.@	1,3@.6	P,P46.2	16P.P1	
17,P@.0	80.@	162.30	11,840.8	-P,4P@7	1,41@2	P,638.8	16P.44	
17,6@.0	82.P0	16P.10	11,83@2	-P,P4@8	1,444.6	P,733.@	16P.41	
17,77P.0	81.70	16P.80	11,834.7	-P,640.@	1,46@3	P,@@@	16P.41	
17,@8.0	82.30	16@30	11,831.P	-P,732.4	1,4@.3	P,822.7	16P.44	
17,863.0	83.@	170.40	11,826.P	-P,@4.6	1,P06.7	6,016.3	16P.P0	
1@01P.0	83.@	170.40	11,823.0	-P,@P.@	1,P1P.3	6,06@	16P.P4	
ST #2 TD @ 18015.0' MD / 11923.0' TVD								

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,@7.0	11,778.3	-@.2	0.1	ST #2 Tie-In m 11@7.0' g D / 11778.3' TVD
1@01P.0	11,823.0	-P,@P.@	1,P1P.3	ST #2 TD m 1@1P.0' g D / 11823.0' TVD



XTO ENERGY, INC.

**Winkler County, TX (NAD 27 True North)
University Land, Sec 13, Block 20
University BLK 20 #1310H
ST03**

Survey: MWD

QES Survey Certification Report

21 October, 2017



Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB @ 2839.0usft (Scan Producer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB @ 2839.0usft (Scan Producer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM 5000.1 Single User Db

Project	Winkler County, TX (NAD 27 True North)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site		University Land, Sec 13, Block 20			
Site Position:		Northing:	761,235.91 usft	Latitude:	31° 43' 34.448 N
From:	Map	Easting:	1,082,226.69 usft	Longitude:	103° 17' 7.433 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-1.52 °

Well		University BLK 20 #1310H				
Well Position	+N/-S	0.0 usft	Northing:	763,597.74 usft	Latitude:	31° 43' 58.322 N
	+E/-W	0.0 usft	Easting:	1,084,161.71 usft	Longitude:	103° 16' 45.761 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	2,812.0 usft

Wellbore	ST03				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/1/2017	6.75	59.65	47,650.65627884

Design	ST03				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	12,502.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	164.10	

Survey Program	Date	10/21/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
200.0	11,188.0	WellBender MWD (Original Hole)	MWD	OWSG MWD - Standard	
11,204.0	11,867.0	QES MWD Surveys (Original Hole)	MWD	OWSG MWD - Standard	
11,931.0	12,502.0	ST#2 Surveys (ST02)	MWD	OWSG MWD - Standard	
12,570.0	22,117.0	MWD (ST03)	MWD	OWSG MWD - Standard	

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
12,502.0	86.90	169.90	11,977.8	-634.7	-173.7	658.0	195.31	
ST #3 Tie into ST #2 @ 12502.0' MD, 11977.8' TVD								
12,570.0	87.90	176.80	11,980.9	-702.1	-165.9	721.4	193.29	
12,601.0	90.30	177.80	11,981.4	-733.1	-164.4	751.3	192.64	
12,633.0	90.80	175.30	11,981.0	-765.0	-162.5	782.1	191.99	
12,664.0	90.30	174.10	11,980.7	-795.9	-159.6	811.7	191.34	
12,758.0	89.30	170.90	11,981.1	-889.0	-147.3	901.2	189.41	
12,853.0	89.20	170.10	11,982.3	-982.7	-131.7	991.5	187.63	
12,947.0	88.10	167.60	11,984.5	-1,074.9	-113.5	1,080.9	186.03	

Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB @ 2839.0usft (Scan Producer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB @ 2839.0usft (Scan Producer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM 5000.1 Single User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
13,042.0	88.30	158.50	11,987.5	-1,165.7	-85.8	1,168.8	184.21	
13,136.0	90.00	158.60	11,988.9	-1,253.1	-51.5	1,254.2	182.35	
13,230.0	91.60	160.00	11,987.6	-1,341.1	-18.2	1,341.2	180.78	
13,325.0	91.40	161.80	11,985.1	-1,430.8	12.8	1,430.8	179.49	
13,419.0	90.30	163.70	11,983.7	-1,520.5	40.7	1,521.1	178.47	
13,513.0	90.40	163.00	11,983.2	-1,610.6	67.6	1,612.0	177.60	
13,607.0	90.70	162.10	11,982.3	-1,700.3	95.8	1,703.0	176.77	
13,701.0	89.30	162.70	11,982.3	-1,789.9	124.2	1,794.2	176.03	
13,795.0	89.40	163.90	11,983.3	-1,879.9	151.3	1,886.0	175.40	
13,889.0	89.60	163.20	11,984.1	-1,970.0	177.9	1,978.1	174.84	
13,983.0	90.80	166.20	11,983.8	-2,060.7	202.7	2,070.6	174.38	
14,077.0	87.50	164.60	11,985.2	-2,151.6	226.4	2,163.5	173.99	
14,171.0	86.80	162.50	11,989.9	-2,241.7	252.9	2,255.9	173.56	
14,265.0	89.00	164.10	11,993.3	-2,331.6	279.9	2,348.4	173.15	
14,359.0	88.50	163.00	11,995.4	-2,421.8	306.5	2,441.1	172.79	
14,453.0	91.60	164.60	11,995.3	-2,512.0	332.8	2,534.0	172.45	
14,547.0	91.50	163.40	11,992.7	-2,602.3	358.7	2,626.9	172.15	
14,641.0	91.70	163.90	11,990.1	-2,692.5	385.1	2,719.9	171.86	
14,735.0	90.00	160.60	11,988.7	-2,782.0	413.8	2,812.6	171.54	
14,829.0	92.50	165.30	11,986.7	-2,871.8	441.3	2,905.5	171.26	
14,924.0	92.90	165.00	11,982.2	-2,963.5	465.6	2,999.9	171.07	
15,018.0	93.50	165.10	11,977.0	-3,054.2	489.8	3,093.3	170.89	
15,112.0	92.10	165.70	11,972.4	-3,145.1	513.5	3,186.7	170.73	
15,206.0	91.90	165.30	11,969.1	-3,236.0	537.0	3,280.3	170.58	
15,300.0	89.20	164.10	11,968.2	-3,326.7	561.8	3,373.8	170.41	
15,394.0	88.00	163.60	11,970.5	-3,416.9	588.0	3,467.2	170.24	
15,489.0	87.80	164.30	11,974.0	-3,508.2	614.2	3,561.5	170.07	
15,583.0	88.80	163.60	11,976.7	-3,598.5	640.2	3,655.0	169.91	
15,677.0	88.10	160.60	11,979.3	-3,687.9	669.1	3,748.1	169.72	
15,772.0	90.40	165.10	11,980.5	-3,778.6	697.1	3,842.4	169.55	
15,866.0	90.20	162.10	11,980.0	-3,868.8	723.6	3,935.9	169.41	
15,960.0	89.50	158.50	11,980.3	-3,957.3	755.3	4,028.7	169.19	
16,054.0	89.80	159.00	11,980.9	-4,044.9	789.4	4,121.2	168.96	
16,148.0	88.80	156.90	11,982.0	-4,132.0	824.6	4,213.5	168.71	
16,242.0	89.30	157.20	11,983.6	-4,218.5	861.3	4,305.6	168.46	
16,337.0	90.90	159.90	11,983.4	-4,306.9	896.0	4,399.2	168.25	
16,431.0	90.80	159.30	11,982.0	-4,395.0	928.8	4,492.1	168.07	
16,526.0	91.30	160.00	11,980.3	-4,484.1	961.8	4,586.1	167.89	
16,620.0	90.90	161.10	11,978.5	-4,572.7	993.1	4,679.3	167.75	
16,714.0	90.00	159.20	11,977.7	-4,661.1	1,025.0	4,772.5	167.60	
16,830.0	91.00	158.10	11,976.7	-4,769.1	1,067.3	4,887.1	167.39	
16,925.0	92.30	159.70	11,974.0	-4,857.7	1,101.4	4,981.0	167.22	
17,019.0	93.70	161.40	11,969.1	-4,946.2	1,132.7	5,074.3	167.10	
17,113.0	93.00	161.60	11,963.6	-5,035.2	1,162.5	5,167.7	167.00	



QES Survey Certification Report



Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB @ 2839.0usft (Scan Producer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB @ 2839.0usft (Scan Producer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM 5000.1 Single User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
17,207.0	94.00	162.10	11,957.8	-5,124.4	1,191.7	5,261.1	166.91	
17,301.0	93.20	164.30	11,951.9	-5,214.2	1,218.8	5,354.7	166.84	
17,396.0	93.80	164.60	11,946.1	-5,305.5	1,244.2	5,449.5	166.80	
17,490.0	92.20	164.40	11,941.2	-5,396.0	1,269.3	5,543.3	166.76	
17,584.0	91.60	161.80	11,938.1	-5,485.9	1,296.6	5,637.0	166.70	
17,679.0	90.60	162.30	11,936.3	-5,576.2	1,325.9	5,731.7	166.62	
17,773.0	92.20	164.30	11,934.0	-5,666.2	1,352.9	5,825.5	166.57	
17,868.0	93.10	164.30	11,929.6	-5,757.6	1,378.6	5,920.3	166.53	
17,962.0	93.40	163.40	11,924.2	-5,847.7	1,404.7	6,014.1	166.49	
18,056.0	92.80	164.40	11,919.2	-5,937.9	1,430.7	6,107.9	166.45	
18,151.0	92.10	165.50	11,915.1	-6,029.6	1,455.4	6,202.7	166.43	
18,245.0	91.60	162.10	11,912.1	-6,119.8	1,481.6	6,296.6	166.39	
18,339.0	91.00	161.30	11,909.9	-6,209.0	1,511.1	6,390.2	166.32	
18,433.0	90.70	161.10	11,908.5	-6,298.0	1,541.4	6,483.9	166.25	
18,527.0	89.80	159.50	11,908.1	-6,386.5	1,573.0	6,577.3	166.16	
18,621.0	90.70	160.60	11,907.7	-6,474.8	1,605.1	6,670.8	166.08	
18,715.0	93.10	162.90	11,904.6	-6,564.0	1,634.5	6,764.5	166.02	
18,810.0	91.90	160.70	11,900.5	-6,654.2	1,664.2	6,859.1	165.96	
18,905.0	91.70	159.70	11,897.5	-6,743.5	1,696.3	6,953.6	165.88	
18,999.0	89.80	159.20	11,896.2	-6,831.5	1,729.3	7,047.0	165.79	
19,093.0	89.90	158.80	11,896.5	-6,919.3	1,763.0	7,140.4	165.71	
19,188.0	90.40	160.20	11,896.2	-7,008.3	1,796.3	7,234.8	165.62	
19,281.0	90.60	159.50	11,895.4	-7,095.6	1,828.3	7,327.3	165.55	
19,374.0	89.70	158.80	11,895.2	-7,182.5	1,861.4	7,419.8	165.47	
19,468.0	91.40	161.80	11,894.3	-7,271.0	1,893.1	7,513.4	165.41	
19,562.0	88.50	156.00	11,894.4	-7,358.6	1,926.9	7,606.7	165.33	
19,656.0	91.30	162.30	11,894.5	-7,446.4	1,960.4	7,700.1	165.25	
19,750.0	91.30	160.40	11,892.4	-7,535.4	1,990.4	7,793.9	165.20	
19,844.0	91.50	159.30	11,890.1	-7,623.7	2,022.8	7,887.5	165.14	
19,938.0	91.40	157.60	11,887.7	-7,711.1	2,057.3	7,980.8	165.06	
20,032.0	93.50	158.60	11,883.7	-7,798.2	2,092.3	8,074.0	164.98	
20,126.0	93.70	157.40	11,877.8	-7,885.2	2,127.5	8,167.1	164.90	
20,221.0	93.80	157.40	11,871.6	-7,972.7	2,163.9	8,261.1	164.81	
20,315.0	93.70	157.80	11,865.4	-8,059.4	2,199.6	8,354.2	164.73	
20,408.0	91.50	155.10	11,861.2	-8,144.6	2,236.8	8,446.1	164.64	
20,528.0	94.40	158.80	11,855.0	-8,254.8	2,283.7	8,564.9	164.54	
20,622.0	94.10	159.00	11,848.1	-8,342.3	2,317.4	8,658.2	164.48	
20,717.0	93.80	158.80	11,841.5	-8,430.7	2,351.5	8,752.5	164.41	
20,811.0	93.60	159.20	11,835.5	-8,518.3	2,385.2	8,845.9	164.36	
20,905.0	92.30	157.80	11,830.6	-8,605.6	2,419.6	8,939.3	164.30	
20,999.0	90.40	155.60	11,828.4	-8,691.9	2,456.7	9,032.4	164.22	
21,093.0	90.00	155.10	11,828.1	-8,777.3	2,495.9	9,125.3	164.13	
21,187.0	89.30	154.40	11,828.7	-8,862.3	2,536.0	9,218.1	164.03	
21,281.0	89.00	154.40	11,830.1	-8,947.1	2,576.6	9,310.7	163.93	



Company:	XTO ENERGY, INC.	Local Co-ordinate Reference:	Well University BLK 20 #1310H
Project:	Winkler County, TX (NAD 27 True North)	TVD Reference:	RKB @ 2839.0usft (Scan Producer)
Site:	University Land, Sec 13, Block 20	MD Reference:	RKB @ 2839.0usft (Scan Producer)
Well:	University BLK 20 #1310H	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM 5000.1 Single User Db

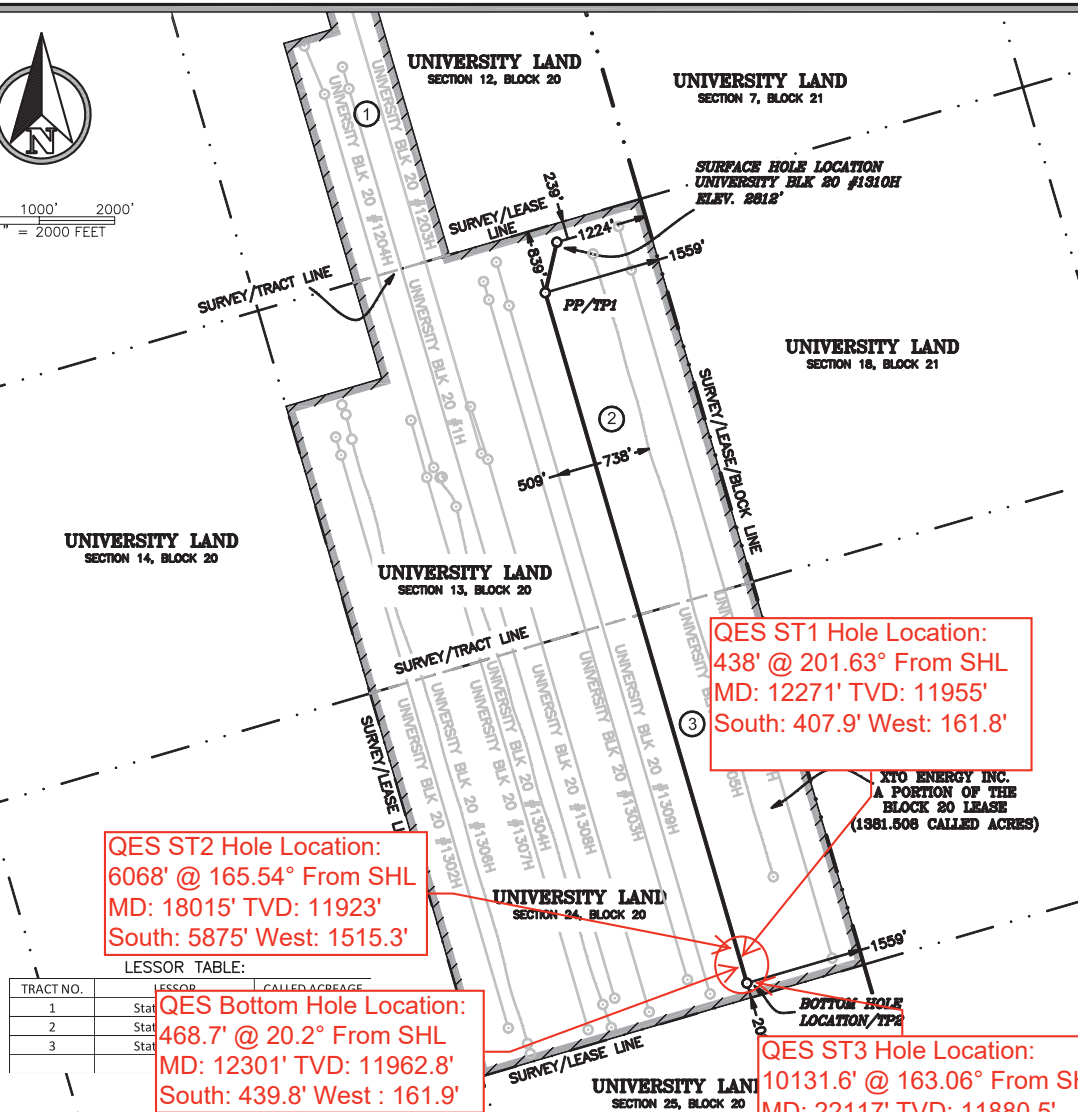
Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
21,376.0	89.40	155.30	11,831.4	-9,033.1	2,617.0	9,404.5	163.84	
21,470.0	87.80	153.90	11,833.7	-9,118.0	2,657.3	9,497.3	163.75	
21,565.0	87.10	153.70	11,837.9	-9,203.1	2,699.2	9,590.8	163.65	
21,659.0	86.20	153.50	11,843.4	-9,287.2	2,740.9	9,683.2	163.56	
21,753.0	86.00	152.50	11,849.8	-9,370.7	2,783.5	9,775.4	163.46	
21,847.0	85.90	152.80	11,856.4	-9,454.0	2,826.6	9,867.5	163.35	
21,941.0	85.00	152.30	11,863.9	-9,537.2	2,869.8	9,959.6	163.25	
22,035.0	84.60	152.00	11,872.4	-9,619.9	2,913.5	10,051.5	163.15	
22,065.0	84.30	152.30	11,875.3	-9,646.4	2,927.5	10,080.8	163.12	
22,117.0	84.30	152.30	11,880.5	-9,692.2	2,951.5	10,131.6	163.06	
ST #3 TD @ 22117.0' MD / 11880.5' TVD								

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
12,502.0	11,977.8	-634.7	-173.7	ST #3 Tie into ST #2 @ 12502.0' MD, 11977.8' TVD	
22,117.0	11,880.5	-9,692.2	2,951.5	ST #3 TD @ 22117.0' MD / 11880.5' TVD	

Checked By: _____	Approved By: _____	Date: _____
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0 1000' 2000'
1" = 2000 FEET



LESSOR TABLE:

TRACT NO.	LESSOR	CALLLED ACREAGE
1	Stat	
2	Stat	
3	Stat	

GENERAL NOTES

- COORDINATES SHOWN ARE BASED ON TEXAS PLANE COORDINATE SYSTEM OF NAD 27, TEXAS CENTRAL ZONE 4203
- VERTICAL DATUM IS NAVD 88
- LATITUDE AND LONGITUDE ARE NAD 27 AS SHOWN
- AREA, DISTANCES, AND COORDINATES ARE "GRID".
- UNITS ARE UNITED STATES SURVEY FOOT.
- ALL LEASE AND TRACT INFORMATION SHOWN HERE ON IS DONE SO BY LIMITED DEED RECORD INFORMATION ONLY. ALL ACREAGES SHOWN ARE BY DEED AND LEASE CALL, EXCEPT WHERE NOTED. THIS IS NOT IN ANY WAY A "BOUNDARY SURVEY".

DRIVING DIRECTIONS TO LOCATION:

FROM WINK, HEAD WEST ON FARM TO MARKET 1232 FOR 1.5 MILES. THEN TURN LEFT (WEST) ONTO COUNTY ROAD 201 FOR 6.0 MILES AND THE LOCATION WILL BE APPROXIMATELY 200 FEET ON THE LEFT (SOUTH).

I HEREBY STATE THAT THIS PLAT SHOWS THE SUBJECT SURFACE LOCATION AS STAKED ON THE GROUND.

MARK DILLON HARP
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS NO. 6445



PLAT OF:
A PROPOSED WELL LOCATION FOR:
XTO ENERGY INC.

UNIVERSITY BLK 20 #1310H
SITUATED IN THE UNIVERSITY LAND, SECTION 13, BLOCK 20, AND UNIVERSITY LAND, SECTION 24, BLOCK 20 BEING APPROXIMATELY 7.2 MILES WEST OF WINK IN WINKLER COUNTY, TEXAS.

FSC INC
SURVEYORS+ENGINEERS
550 Bailey Ave., 205 - Fort Worth, TX 76107
Ph: 817.349.9800 - Fax: 979.732.5271
TBPE Firm 17957 | TBPLS Firm 10193887
www.fscinc.net
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DATE: 07-20-2017
DRAWN BY: BLC/AL
CHECKED BY: AP/CH/JK
FIELD CREW: DC/BK
PROJECT NO: 2015121238
SCALE: 1" = 2000'
SHEET: 1
REVISION: 4