

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

AS-DRILLED PLAT

¹ API Number 30-015-45256	² Pool Code 97020	³ Pool Name HACKBERRY; BONE SPRING, NW
⁴ Property Code 322449	⁵ Property Name BUBBLES 22 15 FEDERAL	
⁷ OGRID No. 005380	⁸ Operator Name XTO ENERGY, INC.	⁶ Well Number 4H ⁹ Elevation 3,314'

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
J	22	19 S	30 E		1,931	SOUTH	1,451	EAST	EDDY

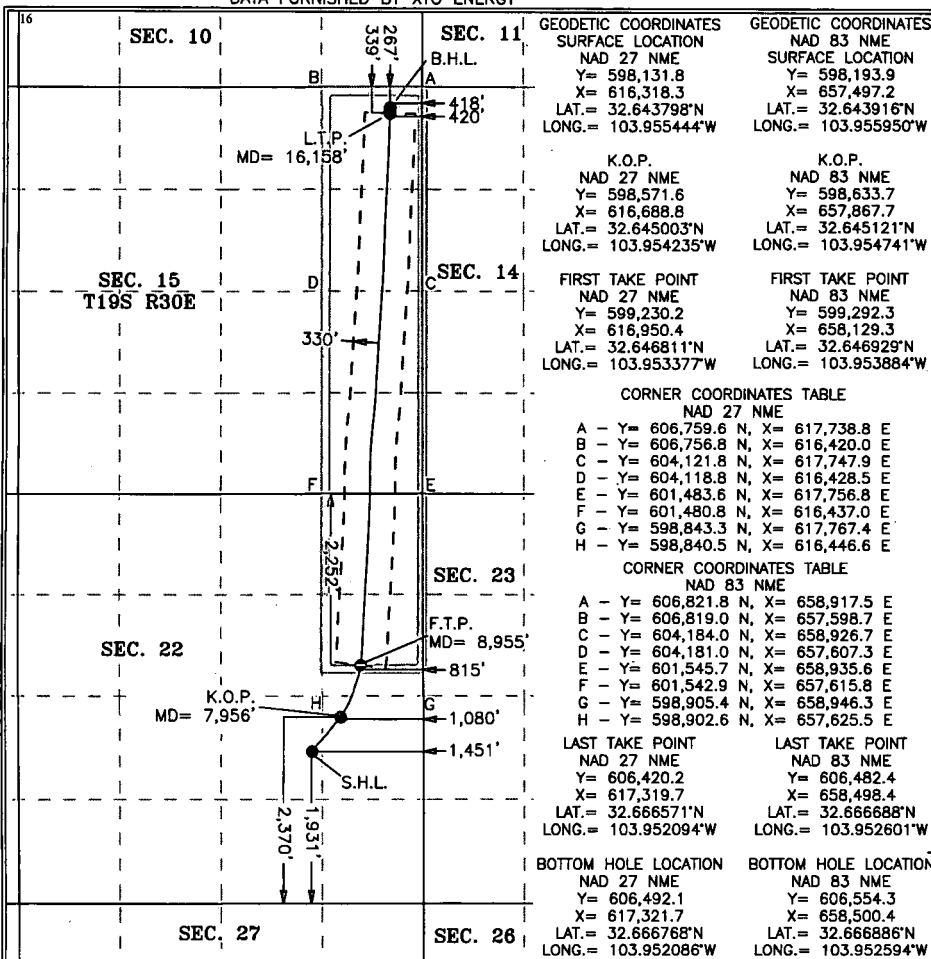
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	15	19 S	30 E		267	NORTH	418	EAST	EDDY

¹² Dedicated Acres 240	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.

NOTE: AS-DRILLED BOTTOM HOLE PLOTTED FROM
DATA FURNISHED BY XTO ENERGY



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.

Cheryl Rowell 1/16/20
Signature Date

Printed Name
Cheryl Rowell

cheryl_rowell@xtoenergy.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

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

1-16-2020

Date of Survey

Signature and Seal of
Professional Surveyor:

MARK DILLON HARP 23786
Certificate Number



AW/JC 2019051396

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JAN 24 2020

EMNRD-OCD ARTESIA

Intent ☐ As Drilled ☒API #
30-015-45256Operator Name:
XTO ENERGY INC.Property Name:
BUBBLES 22 15 FEDERALWell Number
4H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
I	22	19S	30E		2370	FSL	1080	FEL	EDDY
Latitude					Longitude			NAD	
32.645121					103954741			83	

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
H	22	19S	30E		2252	FNL	815	FEL	EDDY
Latitude					Longitude			NAD	
32.646929					103.953884			83	

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
A	15	19S	30E		339	FNL	420	FEL	EDDY
Latitude					Longitude			NAD	
32.666688					103.952601			83	

Is this well the defining well for the Horizontal Spacing Unit?

☒ YES

Is this well an infill well?

☐

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

API #

Operator Name:

Property Name:

Well Number

KZ 06/29/2018



I **Cary Rodriguez**, certify that I am employed by **Scout Downhole Inc. (SDI)**. That I did on the day(s) of **12/01/18** thru **02/10/19** conduct or supervise the taking of a **MWD Survey** from a depth of **156'** to a depth of **9720'**; that the data is true, correct, complete and within the limitations of the tool as set forth by **Scout Downhole Inc. (SDI)**.; that I am authorized and qualified to make this report; that this survey was conducted at the request of **XTO Energy** for the **Bubbles 2215 Federal 4H OH API No. 30-015-45256** in **Eddy County, NM**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **Scout Downhole Inc. (SDI)**.

Cary Rodriguez

Cary

Rodriguez

Digitally signed by: Cary Rodriguez
DN: CN = Cary Rodriguez email
crodriguez@scoutdownhole.
com, C = US, O = Scout
Downhole
Date: 2020.01.16 09:02:36 -
06'00'

RECEIVED

JAN 24 2020

EMNRD-OCD ARTESIA

1125 Beach Airport Rd, Conroe, Texas
77301

PH 936-756-3225 FAX 936-756-3248



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	Pilot Hole	Survey Calculation Method:	Minimum Curvature
Design:	Pilot Surveys	Database:	EDM 5000.14 Single User Db

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	Bubbles 2215 Federal		
Site Position:		Northing:	598,106.00 usft
From: Map		Easting:	616,169.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 38' 37.422 N
		Longitude:	103° 57' 21.337 W
		Grid Convergence:	0.20 °

Well	Bubbles 2215 Federal #4H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 38' 37.670 N
		Longitude:	103° 57' 19.607 W
		Ground Level:	3,314.00 usft

Wellbore	Pilot Hole		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	11/16/2018	7.37
			Dip Angle (°)
			60.48
			Field Strength (nT)
			48,175.10000000

Design	Pilot Surveys		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			6.91

Survey Program	Date 1/15/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
156.00	9,794.00	Scout MWD (Pilot Hole)	MWD
			Description
			MWD - Standard

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
156.00	0.35	175.82	156.00	-0.48	0.03	-0.47	0.22	0.22	0.00
First Scout Pilot MWD Survey at 156.00' MD									
248.00	0.57	133.02	248.00	-1.07	0.39	-1.01	0.43	0.24	-46.52
302.00	0.48	107.00	301.99	-1.32	0.80	-1.21	0.47	-0.17	-48.19
385.00	0.31	154.55	384.99	-1.62	1.23	-1.46	0.43	-0.20	57.29
522.00	0.04	293.33	521.99	-1.94	1.35	-1.76	0.25	-0.20	101.30
611.00	0.22	26.50	610.99	-1.77	1.39	-1.59	0.25	0.20	104.69
707.00	0.18	42.49	706.99	-1.50	1.58	-1.30	0.07	-0.04	16.66
813.00	0.26	91.80	812.99	-1.38	1.93	-1.14	0.19	0.08	46.52
881.00	0.26	92.41	880.99	-1.39	2.24	-1.11	0.00	0.00	0.90



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Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	Pilot Hole	Survey Calculation Method:	Minimum Curvature
Design:	Pilot Surveys	Database:	EDM 5000.14 Single User Db

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)
975.00	0.48	96.19	974.99	-1.44	2.84	-1.09	0.24	0.23	4.02
1,070.00	0.57	88.63	1,069.98	-1.47	3.71	-1.02	0.12	0.09	-7.96
1,164.00	0.70	93.20	1,163.98	-1.50	4.75	-0.91	0.15	0.14	4.86
1,260.00	0.70	100.41	1,259.97	-1.63	5.92	-0.91	0.09	0.00	7.51
1,355.00	0.79	92.68	1,354.96	-1.77	7.14	-0.90	0.14	0.09	-8.14
1,449.00	0.88	96.46	1,448.95	-1.88	8.50	-0.84	0.11	0.10	4.02
1,485.00	0.79	91.80	1,484.95	-1.92	9.03	-0.82	0.31	-0.25	-12.94
1,585.00	0.84	91.45	1,584.94	-1.96	10.45	-0.69	0.05	0.05	-0.35
1,648.00	0.84	89.43	1,647.93	-1.97	11.37	-0.59	0.05	0.00	-3.21
1,744.00	1.01	87.67	1,743.92	-1.93	12.92	-0.36	0.18	0.18	-1.83
1,839.00	1.05	86.35	1,838.90	-1.84	14.63	-0.06	0.05	0.04	-1.39
1,934.00	1.05	87.67	1,933.89	-1.75	16.37	0.24	0.03	0.00	1.39
2,029.00	0.97	286.30	2,028.88	-1.48	16.46	0.51	2.10	-0.08	-169.86
2,123.00	0.92	288.23	2,122.87	-1.03	14.98	0.78	0.06	-0.05	2.05
2,218.00	1.05	289.73	2,217.86	-0.49	13.44	1.13	0.14	0.14	1.58
2,313.00	1.23	289.38	2,312.84	0.14	11.66	1.54	0.19	0.19	-0.37
2,408.00	1.23	275.58	2,407.82	0.58	9.68	1.74	0.31	0.00	-14.53
2,502.00	1.19	270.22	2,501.79	0.68	7.70	1.60	0.13	-0.04	-5.70
2,598.00	1.27	268.02	2,597.77	0.65	5.64	1.32	0.10	0.08	-2.29
2,692.00	1.32	269.43	2,691.75	0.60	3.52	1.02	0.06	0.05	1.50
2,787.00	1.36	270.30	2,786.72	0.59	1.30	0.75	0.05	0.04	0.92
2,882.00	1.45	273.20	2,881.69	0.67	-1.03	0.54	0.12	0.09	3.05
2,977.00	1.36	275.05	2,976.67	0.83	-3.35	0.42	0.11	-0.09	1.95
3,072.00	0.44	269.87	3,071.65	0.93	-4.84	0.34	0.97	-0.97	-5.45
3,167.00	0.13	9.80	3,166.65	1.04	-5.19	0.41	0.51	-0.33	105.19
3,262.00	0.26	358.46	3,261.65	1.36	-5.18	0.73	0.14	0.14	-11.94
3,357.00	0.31	350.46	3,356.65	1.83	-5.22	1.19	0.07	0.05	-8.42
3,452.00	0.26	347.82	3,451.65	2.29	-5.31	1.64	0.05	-0.05	-2.78
3,547.00	0.48	1.62	3,546.65	2.90	-5.35	2.24	0.25	0.23	14.53
3,641.00	0.35	345.71	3,640.64	3.57	-5.41	2.90	0.18	-0.14	-16.93
3,736.00	0.48	341.85	3,735.64	4.23	-5.60	3.53	0.14	0.14	-4.06
3,831.00	0.48	359.16	3,830.64	5.01	-5.73	4.28	0.15	0.00	18.22
3,925.00	0.53	347.21	3,924.63	5.82	-5.83	5.08	0.12	0.05	-12.71
4,020.00	0.57	339.21	4,019.63	6.70	-6.10	5.91	0.09	0.04	-8.42
4,134.00	0.35	342.46	4,133.63	7.56	-6.41	6.73	0.19	-0.19	2.85
4,196.00	0.26	343.61	4,195.63	7.87	-6.50	7.03	0.15	-0.15	1.85
4,290.00	0.44	5.05	4,289.62	8.44	-6.53	7.59	0.23	0.19	22.81
4,386.00	0.40	341.67	4,385.62	9.12	-6.60	8.26	0.18	-0.04	-24.35
4,481.00	1.98	24.83	4,480.60	10.93	-6.02	10.12	1.80	1.66	45.43
4,576.00	4.26	34.93	4,575.45	15.31	-3.31	14.80	2.46	2.40	10.63
4,670.00	6.02	40.21	4,669.07	21.94	1.87	22.00	1.94	1.87	5.62
4,765.00	7.69	43.46	4,763.39	30.36	9.46	31.27	1.80	1.76	3.42
4,860.00	9.76	43.90	4,857.28	40.77	19.42	42.81	2.18	2.18	0.46



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	Pilot Hole	Survey Calculation Method:	Minimum Curvature
Design:	Pilot Surveys	Database:	EDM 5000.14 Single User Db

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)
4,955.00	10.07	43.28	4,950.87	52.62	30.70	55.93	0.35	0.33	-0.65
5,050.00	10.24	44.51	5,044.38	64.69	42.31	69.31	0.29	0.18	1.29
5,145.00	9.67	42.67	5,137.95	76.58	53.64	82.47	0.69	-0.60	-1.94
5,239.00	9.71	43.72	5,230.61	88.11	64.47	95.23	0.19	0.04	1.12
5,335.00	9.80	43.72	5,325.22	99.87	75.71	108.25	0.09	0.09	0.00
5,429.00	9.80	44.16	5,417.85	111.39	86.81	121.02	0.08	0.00	0.47
5,524.00	9.89	44.95	5,511.45	122.96	98.21	133.88	0.17	0.09	0.83
5,619.00	9.85	41.35	5,605.04	134.84	109.34	147.01	0.65	-0.04	-3.79
5,713.00	9.67	41.61	5,697.68	146.77	119.89	160.13	0.20	-0.19	0.28
5,808.00	9.67	41.61	5,791.33	158.71	130.49	173.25	0.00	0.00	0.00
5,903.00	9.54	42.32	5,885.00	170.49	141.09	186.23	0.19	-0.14	0.75
5,997.00	8.84	41.88	5,977.79	181.63	151.16	198.49	0.75	-0.74	-0.47
6,091.00	9.36	42.93	6,070.61	192.60	161.18	210.60	0.58	0.55	1.12
6,186.00	9.49	43.55	6,164.33	203.94	171.84	223.13	0.17	0.14	0.65
6,281.00	10.02	38.27	6,257.96	216.10	182.36	236.47	1.09	0.56	-5.56
6,375.00	9.80	37.31	6,350.55	228.88	192.27	250.35	0.29	-0.23	-1.02
6,470.00	9.85	36.60	6,444.16	241.84	202.02	264.38	0.14	0.05	-0.75
6,565.00	10.02	34.85	6,537.74	255.14	211.58	278.74	0.36	0.18	-1.84
6,660.00	10.11	40.56	6,631.28	268.26	221.73	292.99	1.05	0.09	6.01
6,754.00	9.71	38.89	6,723.87	280.70	232.07	306.58	0.52	-0.43	-1.78
6,850.00	10.33	40.91	6,818.41	293.51	242.79	320.58	0.74	0.65	2.10
6,944.00	10.07	40.38	6,910.92	306.14	253.63	334.42	0.29	-0.28	-0.56
7,039.00	9.45	39.24	7,004.55	318.50	263.95	347.94	0.68	-0.65	-1.20
7,134.00	9.63	39.59	7,098.23	330.67	273.94	361.22	0.20	0.19	0.37
7,229.00	11.03	41.35	7,191.69	343.61	285.01	375.40	1.51	1.47	1.85
7,323.00	10.64	41.61	7,284.02	356.85	296.72	389.96	0.42	-0.41	0.28
7,418.00	9.49	40.73	7,377.55	369.34	307.65	403.67	1.22	-1.21	-0.93
7,514.00	8.75	41.00	7,472.34	380.85	317.60	416.29	0.77	-0.77	0.28
7,609.00	11.03	41.79	7,565.92	393.08	328.40	429.74	2.40	2.40	0.83
7,704.00	10.99	43.28	7,659.17	406.45	340.67	444.48	0.30	-0.04	1.57
7,799.00	9.93	44.07	7,752.59	418.93	352.57	458.30	1.13	-1.12	0.83
7,894.00	6.51	44.51	7,846.60	428.66	362.05	469.10	3.60	-3.60	0.46
7,989.00	3.12	29.40	7,941.26	434.75	367.09	475.76	3.78	-3.57	-15.91
8,084.00	2.24	16.92	8,036.15	438.78	368.90	479.97	1.11	-0.93	-13.14
8,179.00	1.98	28.08	8,131.09	442.01	370.22	483.33	0.51	-0.27	11.75
8,273.00	2.07	11.29	8,225.03	445.10	371.31	486.54	0.64	0.10	-17.86
8,368.00	1.49	55.68	8,319.99	447.48	372.67	489.06	1.52	-0.61	46.73
8,462.00	1.71	97.16	8,413.95	448.00	375.07	489.86	1.23	0.23	44.13
8,557.00	1.67	103.75	8,508.91	447.49	377.82	489.69	0.21	-0.04	6.94
8,652.00	0.62	278.39	8,603.90	447.24	378.66	489.54	2.41	-1.11	183.83
8,747.00	0.92	286.83	8,698.89	447.53	377.42	489.69	0.34	0.32	8.88
8,842.00	0.53	314.42	8,793.89	448.06	376.37	490.09	0.54	-0.41	29.04
8,936.00	0.48	269.51	8,887.88	448.36	375.67	490.30	0.41	-0.05	-47.78



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	Pilot Hole	Survey Calculation Method:	Minimum Curvature
Design:	Pilot Surveys	Database:	EDM 5000.14 Single User Db

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)
9,031.00	0.53	215.37	8,982.88	448.00	375.02	489.86	0.49	0.05	-56.99
9,126.00	0.53	213.09	9,077.88	447.27	374.52	489.08	0.02	0.00	-2.40
9,221.00	0.66	179.34	9,172.87	446.36	374.29	488.14	0.39	0.14	-35.53
9,316.00	1.24	205.00	9,267.86	444.88	373.86	486.62	0.74	0.61	27.01
9,411.00	2.11	208.69	9,362.82	442.41	372.59	484.02	0.92	0.92	3.88
9,506.00	2.11	206.58	9,457.75	439.32	370.97	480.75	0.08	0.00	-2.22
9,696.00	2.07	198.06	9,647.63	432.93	368.34	474.09	0.16	-0.02	-4.48
9,720.00	2.07	199.11	9,671.61	432.10	368.06	473.24	0.16	0.00	4.38
Last Scout Pilot MWD Survey @ 9720.00' MD									
9,794.00	2.07	199.11	9,745.56	429.58	367.19	470.63	0.00	0.00	0.00
Projection to Pilot TD @ 9794.00' MD									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
156.00	156.00	-0.48	0.03	First Scout Pilot MWD Survey at 156.00' MD
9,720.00	9,671.61	432.10	368.06	Last Scout Pilot MWD Survey @ 9720.00' MD
9,794.00	9,745.56	429.58	367.19	Projection to Pilot TD @ 9794.00' MD

Checked By: _____ Approved By: _____ Date: _____



I **Cary Rodriguez**, certify that I am employed by **Scout Downhole Inc. (SDI)**. That I did on the day(s) of **02/18/19** thru **03/03/19** conduct or supervise the taking of a **MWD Survey** from a depth of **7956'** to a depth of **16230'**; that the data is true, correct, complete and within the limitations of the tool as set forth by **Scout Downhole Inc. (SDI)**; that I am authorized and qualified to make this report; that this survey was conducted at the request of **XTO Energy** for the **Bubbles 2215 Federal 4H ST01** API No. **30-015-45256** in **Eddy County, NM**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **Scout Downhole Inc. (SDI)**.

Cary Rodriguez

Cary

Rodriguez

Digitally signed by: Cary
Rodriguez
DN: CN = Cary Rodriguez email
= crodriquez@scoutdownhole.
com, C = US, O = Scout
Downhole
Date: 2020.01.16 08:51:22 -
06'00'

RECEIVED

JAN 24 2020

EMNRD-OCD ARTESIA

1125 Beach Airport Rd, Conroe, Texas
77301

PH 936-756-3225 FAX 936-756-3248



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01 Surveys	Database:	EDM 5000.14 Single User Db

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	Bubbles 2215 Federal		
Site Position:		Northing:	598,106.00 usft
From:	Map	Easting:	616,169.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 38' 37.422 N
		Longitude:	103° 57' 21.337 W
		Grid Convergence:	0.20 °

Well	Bubbles 2215 Federal #4H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 38' 37.670 N
		Longitude:	103° 57' 19.607 W
		Ground Level:	3,314.00 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/13/2019	7.33	60.47	48,146.90000000

Design	ST01 Surveys			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	6.80

Survey Program	Date 7/19/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name Description
156.00	16,295.00	ST01 Surveys (ST01)	A008Mb_MWD+IFR1+MS OWSG MWD + IFR1 + Multi-Station Correction

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
156.00	0.35	175.82	156.00	-0.48	0.03	-0.47	0.22	0.22	0.00
First Scout MWD Survey @ 156.00' MD									
248.00	0.57	133.02	248.00	-1.07	0.39	-1.01	0.43	0.24	-46.52
302.00	0.48	107.00	301.99	-1.32	0.80	-1.21	0.47	-0.17	-48.19
385.00	0.31	154.55	384.99	-1.62	1.23	-1.46	0.43	-0.20	57.29
522.00	0.04	293.33	521.99	-1.94	1.35	-1.76	0.25	-0.20	101.30
611.00	0.22	26.50	610.99	-1.77	1.39	-1.59	0.25	0.20	104.69
707.00	0.18	42.49	706.99	-1.50	1.58	-1.30	0.07	-0.04	16.66
813.00	0.26	91.80	812.99	-1.38	1.93	-1.14	0.19	0.08	46.52
881.00	0.26	92.41	880.99	-1.39	2.24	-1.12	0.00	0.00	0.90



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01 Surveys	Database:	EDM 5000.14 Single User Db

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)
975.00	0.48	96.19	974.99	-1.44	2.84	-1.10	0.24	0.23	4.02
1,070.00	0.57	88.63	1,069.98	-1.47	3.71	-1.03	0.12	0.09	-7.96
1,164.00	0.70	93.20	1,163.98	-1.50	4.75	-0.92	0.15	0.14	4.86
1,260.00	0.70	100.41	1,259.97	-1.63	5.92	-0.92	0.09	0.00	7.51
1,355.00	0.79	92.68	1,354.96	-1.77	7.14	-0.91	0.14	0.09	-8.14
1,449.00	0.88	96.46	1,448.95	-1.88	8.50	-0.86	0.11	0.10	4.02
1,485.00	0.79	91.80	1,484.95	-1.92	9.03	-0.84	0.31	-0.25	-12.94
1,585.00	0.84	91.45	1,584.94	-1.96	10.45	-0.71	0.05	0.05	-0.35
1,648.00	0.84	89.43	1,647.93	-1.97	11.37	-0.61	0.05	0.00	-3.21
1,744.00	1.01	87.67	1,743.92	-1.93	12.92	-0.38	0.18	0.18	-1.83
1,839.00	1.05	86.35	1,838.90	-1.84	14.63	-0.09	0.05	0.04	-1.39
1,934.00	1.05	87.67	1,933.89	-1.75	16.37	0.20	0.03	0.00	1.39
2,029.00	0.97	286.30	2,028.88	-1.48	16.46	0.47	2.10	-0.08	-169.86
2,123.00	0.92	288.23	2,122.87	-1.03	14.98	0.76	0.06	-0.05	2.05
2,218.00	1.05	289.73	2,217.86	-0.49	13.44	1.10	0.14	0.14	1.58
2,313.00	1.23	289.38	2,312.84	0.14	11.66	1.52	0.19	0.19	-0.37
2,408.00	1.23	275.58	2,407.82	0.58	9.68	1.72	0.31	0.00	-14.53
2,502.00	1.19	270.22	2,501.79	0.68	7.70	1.59	0.13	-0.04	-5.70
2,598.00	1.27	268.02	2,597.77	0.65	5.64	1.31	0.10	0.08	-2.29
2,692.00	1.32	269.43	2,691.75	0.60	3.52	1.01	0.06	0.05	1.50
2,787.00	1.36	270.30	2,786.72	0.59	1.30	0.74	0.05	0.04	0.92
2,882.00	1.45	273.20	2,881.69	0.67	-1.03	0.54	0.12	0.09	3.05
2,977.00	1.36	275.05	2,976.67	0.83	-3.35	0.43	0.11	-0.09	1.95
3,072.00	0.44	269.87	3,071.65	0.93	-4.84	0.35	0.97	-0.97	-5.45
3,167.00	0.13	9.80	3,166.65	1.04	-5.19	0.42	0.51	-0.33	105.19
3,262.00	0.26	358.46	3,261.65	1.36	-5.18	0.74	0.14	0.14	-11.94
3,357.00	0.31	350.46	3,356.65	1.83	-5.22	1.20	0.07	0.05	-8.42
3,452.00	0.26	347.82	3,451.65	2.29	-5.31	1.65	0.05	-0.05	-2.78
3,547.00	0.48	1.62	3,546.65	2.90	-5.35	2.25	0.25	0.23	14.53
3,641.00	0.35	345.71	3,640.64	3.57	-5.41	2.91	0.18	-0.14	-16.93
3,736.00	0.48	341.85	3,735.64	4.23	-5.60	3.54	0.14	0.14	-4.06
3,831.00	0.48	359.16	3,830.64	5.01	-5.73	4.29	0.15	0.00	18.22
3,925.00	0.53	347.21	3,924.63	5.82	-5.83	5.09	0.12	0.05	-12.71
4,020.00	0.57	339.21	4,019.63	6.70	-6.10	5.93	0.09	0.04	-8.42
4,134.00	0.35	342.46	4,133.63	7.56	-6.41	6.75	0.19	-0.19	2.85
4,196.00	0.26	343.61	4,195.63	7.87	-6.50	7.05	0.15	-0.15	1.85
4,290.00	0.44	5.05	4,289.62	8.44	-6.53	7.60	0.23	0.19	22.81
4,386.00	0.40	341.67	4,385.62	9.12	-6.60	8.28	0.18	-0.04	-24.35
4,481.00	1.98	24.83	4,480.60	10.93	-6.02	10.14	1.80	1.66	45.43
4,576.00	4.26	34.93	4,575.45	15.31	-3.31	14.81	2.46	2.40	10.63
4,670.00	6.02	40.21	4,669.07	21.94	1.87	22.00	1.94	1.87	5.62
4,765.00	7.69	43.46	4,763.39	30.36	9.46	31.26	1.80	1.76	3.42
4,860.00	9.76	43.90	4,857.28	40.77	19.42	42.78	2.18	2.18	0.46



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01 Surveys	Database:	EDM 5000.14 Single User Db

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)
4,955.00	10.07	43.28	4,950.87	52.62	30.70	55.88	0.35	0.33	-0.65
5,050.00	10.24	44.51	5,044.38	64.69	42.31	69.24	0.29	0.18	1.29
5,145.00	9.67	42.67	5,137.95	76.58	53.64	82.39	0.69	-0.60	-1.94
5,239.00	9.71	43.72	5,230.61	88.11	64.47	95.12	0.19	0.04	1.12
5,335.00	9.80	43.72	5,325.22	99.87	75.71	108.13	0.09	0.09	0.00
5,429.00	9.80	44.16	5,417.85	111.39	86.81	120.88	0.08	0.00	0.47
5,524.00	9.89	44.95	5,511.45	122.96	98.21	133.72	0.17	0.09	0.83
5,619.00	9.85	41.35	5,605.04	134.84	109.34	146.83	0.65	-0.04	-3.79
5,713.00	9.67	41.61	5,697.68	146.77	119.89	159.94	0.20	-0.19	0.28
5,808.00	9.67	41.61	5,791.33	158.71	130.49	173.04	0.00	0.00	0.00
5,903.00	9.54	42.32	5,885.00	170.49	141.09	186.00	0.19	-0.14	0.75
5,997.00	8.84	41.88	5,977.79	181.63	151.16	198.25	0.75	-0.74	-0.47
6,091.00	9.36	42.93	6,070.61	192.60	161.18	210.33	0.58	0.55	1.12
6,186.00	9.49	43.55	6,164.33	203.94	171.84	222.85	0.17	0.14	0.65
6,281.00	10.02	38.27	6,257.96	216.10	182.36	236.17	1.09	0.56	-5.56
6,375.00	9.80	37.31	6,350.55	228.88	192.27	250.04	0.29	-0.23	-1.02
6,470.00	9.85	36.60	6,444.16	241.84	202.02	264.06	0.14	0.05	-0.75
6,565.00	10.02	34.85	6,537.74	255.14	211.58	278.40	0.36	0.18	-1.84
6,660.00	10.11	40.56	6,631.28	268.26	221.73	292.63	1.05	0.09	6.01
6,754.00	9.71	38.89	6,723.87	280.70	232.07	306.20	0.52	-0.43	-1.78
6,850.00	10.33	40.91	6,818.41	293.51	242.79	320.19	0.74	0.65	2.10
6,944.00	10.07	40.38	6,910.92	306.14	253.63	334.01	0.29	-0.28	-0.56
7,039.00	9.45	39.24	7,004.55	318.50	263.95	347.51	0.68	-0.65	-1.20
7,134.00	9.63	39.59	7,098.23	330.67	273.94	360.78	0.20	0.19	0.37
7,229.00	11.03	41.35	7,191.69	343.61	285.01	374.94	1.51	1.47	1.85
7,323.00	10.64	41.61	7,284.02	356.85	296.72	389.47	0.42	-0.41	0.28
7,418.00	9.49	40.73	7,377.55	369.34	307.65	403.17	1.22	-1.21	-0.93
7,514.00	8.75	41.00	7,472.34	380.85	317.60	415.78	0.77	-0.77	0.28
7,609.00	11.03	41.79	7,565.92	393.08	328.40	429.20	2.40	2.40	0.83
7,704.00	10.99	43.28	7,659.17	406.45	340.67	443.93	0.30	-0.04	1.57
7,799.00	9.93	44.07	7,752.59	418.93	352.57	457.73	1.13	-1.12	0.83
7,885.00	9.27	42.05	7,837.39	429.40	362.37	469.29	0.86	-0.77	-2.35
7,910.00	10.11	39.42	7,862.03	432.59	365.11	472.78	3.80	3.36	-10.52
7,952.00	12.04	34.76	7,903.25	439.04	369.95	479.75	5.06	4.60	-11.10
8,004.00	14.68	30.10	7,953.84	449.20	376.35	490.60	5.48	5.08	-8.96
8,051.00	19.12	27.11	7,998.80	461.21	382.85	503.29	9.62	9.45	-6.36
8,098.00	22.90	27.90	8,042.66	476.15	390.63	519.05	8.06	8.04	1.68
8,146.00	25.36	34.05	8,086.47	492.92	400.76	536.90	7.32	5.13	12.81
8,193.00	28.66	32.91	8,128.34	510.73	412.53	555.98	7.11	7.02	-2.43
8,241.00	33.58	32.12	8,169.42	531.65	425.85	578.33	10.29	10.25	-1.65
8,288.00	38.51	30.63	8,207.41	555.26	440.22	603.48	10.65	10.49	-3.17
8,336.00	42.46	26.41	8,243.92	582.65	455.05	632.43	10.01	8.23	-8.79
8,383.00	44.26	26.06	8,278.09	611.59	469.31	662.86	3.86	3.83	-0.74



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01 Surveys	Database:	EDM 5000.14 Single User Db

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)
8,430.00	48.92	24.47	8,310.38	642.47	483.86	695.24	10.21	9.91	-3.38
8,477.00	53.41	22.01	8,339.85	676.10	498.28	730.34	10.39	9.55	-5.23
8,525.00	59.08	22.10	8,366.51	713.07	513.26	768.83	11.81	11.81	0.19
8,572.00	62.77	21.13	8,389.35	751.26	528.38	808.54	8.06	7.85	-2.06
8,620.00	64.18	20.61	8,410.78	791.39	543.68	850.19	3.09	2.94	-1.08
8,667.00	67.60	21.31	8,429.98	831.44	559.03	891.78	7.40	7.28	1.49
8,715.00	70.68	20.70	8,447.07	873.31	575.10	935.26	6.53	6.42	-1.27
8,762.00	72.00	18.67	8,462.11	915.23	590.10	978.67	4.96	2.81	-4.32
8,810.00	74.07	16.04	8,476.11	959.05	603.79	1,023.79	6.79	4.31	-5.48
8,857.00	76.70	13.49	8,487.97	1,003.02	615.37	1,068.83	7.67	5.60	-5.43
8,902.68	79.84	10.40	8,497.26	1,046.77	624.62	1,113.37	9.55	6.87	-6.77
Bubbles 2215 Federal #4H p5-FTP									
8,905.00	80.00	10.24	8,497.67	1,049.02	625.02	1,115.64	9.55	6.91	-6.70
8,952.00	83.08	7.25	8,504.58	1,094.95	632.09	1,162.09	9.08	6.55	-6.36
9,000.00	84.48	6.46	8,509.78	1,142.33	637.78	1,209.81	3.34	2.92	-1.65
9,048.00	85.45	6.11	8,514.00	1,189.86	643.01	1,257.62	2.15	2.02	-0.73
9,143.00	87.78	3.12	8,519.61	1,284.37	650.64	1,352.37	3.99	2.45	-3.15
9,238.00	90.51	2.33	8,521.02	1,379.24	655.16	1,447.11	2.99	2.87	-0.83
9,332.00	89.71	1.97	8,520.84	1,473.17	658.68	1,540.80	0.93	-0.85	-0.38
9,425.00	90.90	1.18	8,520.35	1,566.13	661.24	1,633.41	1.54	1.28	-0.85
9,520.00	90.33	2.06	8,519.33	1,661.09	663.92	1,728.01	1.10	-0.60	0.93
9,614.00	89.76	3.56	8,519.25	1,754.97	668.53	1,821.78	1.71	-0.61	1.60
9,707.00	90.07	4.70	8,519.39	1,847.73	675.23	1,914.68	1.27	0.33	1.23
9,800.00	89.80	3.64	8,519.50	1,940.48	681.99	2,007.58	1.18	-0.29	-1.14
9,895.00	88.66	2.85	8,520.78	2,035.32	687.37	2,102.39	1.46	-1.20	-0.83
9,990.00	90.11	3.20	8,521.79	2,130.18	692.38	2,197.17	1.57	1.53	0.37
10,084.00	91.34	2.59	8,520.61	2,224.05	697.13	2,290.94	1.46	1.31	-0.65
10,179.00	90.68	3.29	8,518.93	2,318.91	702.00	2,385.71	1.01	-0.69	0.74
10,273.00	88.88	3.20	8,519.29	2,412.75	707.32	2,479.53	1.92	-1.91	-0.10
10,366.00	91.08	2.59	8,519.32	2,505.63	712.02	2,572.31	2.45	2.37	-0.66
10,459.00	90.42	2.85	8,518.11	2,598.51	716.43	2,665.06	0.76	-0.71	0.28
10,551.00	89.05	3.29	8,518.53	2,690.38	721.36	2,756.86	1.56	-1.49	0.48
10,650.00	90.95	2.94	8,518.53	2,789.23	726.74	2,855.65	1.95	1.92	-0.35
10,703.00	92.57	2.77	8,516.90	2,842.13	729.38	2,908.50	3.07	3.06	-0.32
10,801.00	92.75	2.77	8,512.36	2,939.91	734.11	3,006.15	0.18	0.18	0.00
10,938.00	86.73	1.97	8,512.98	3,076.73	739.77	3,142.68	4.43	-4.39	-0.58
11,033.00	86.81	1.53	8,518.33	3,171.54	742.67	3,237.16	0.47	0.08	-0.46
11,128.00	87.74	1.45	8,522.85	3,266.39	745.13	3,331.64	0.98	0.98	-0.08
11,222.00	88.44	0.83	8,525.98	3,360.32	747.00	3,425.13	0.99	0.74	-0.66
11,317.00	88.62	359.43	8,528.42	3,455.29	747.22	3,519.46	1.49	0.19	-1.47
11,412.00	90.11	1.01	8,529.47	3,550.28	747.58	3,613.82	2.29	1.57	1.66
11,507.00	90.86	0.39	8,528.67	3,645.27	748.74	3,708.28	1.02	0.79	-0.65
11,602.00	91.82	2.24	8,526.44	3,740.21	750.92	3,802.81	2.19	1.01	1.95
11,697.00	92.44	1.97	8,522.91	3,835.08	754.41	3,897.43	0.71	0.65	-0.28



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01 Surveys	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,791.00	90.42	3.73	8,520.57	3,928.92	759.08	3,991.16	2.85	-2.15	1.87	
11,886.00	89.54	2.85	8,520.60	4,023.77	764.53	4,085.98	1.31	-0.93	-0.93	
11,982.00	90.07	3.73	8,520.93	4,119.61	770.04	4,181.80	1.07	0.55	0.92	
12,076.00	90.68	6.11	8,520.31	4,213.25	778.11	4,275.74	2.61	0.65	2.53	
12,169.00	90.90	5.93	8,519.03	4,305.73	787.86	4,368.73	0.31	0.24	-0.19	
12,263.00	90.99	6.11	8,517.48	4,399.20	797.71	4,462.70	0.21	0.10	0.19	
12,358.00	90.99	6.02	8,515.84	4,493.65	807.75	4,557.68	0.09	0.00	-0.09	
12,452.00	90.29	3.56	8,514.79	4,587.31	815.60	4,651.61	2.72	-0.74	-2.62	
12,547.00	90.55	3.03	8,514.09	4,682.15	821.06	4,746.43	0.62	0.27	-0.56	
12,641.00	90.46	2.77	8,513.26	4,776.03	825.81	4,840.21	0.29	-0.10	-0.28	
12,737.00	90.68	2.94	8,512.31	4,871.90	830.60	4,935.98	0.29	0.23	0.18	
12,831.00	90.81	3.20	8,511.09	4,965.76	835.63	5,029.77	0.31	0.14	0.28	
12,926.00	89.05	3.73	8,511.20	5,060.58	841.37	5,124.60	1.93	-1.85	0.56	
13,020.00	88.79	3.82	8,512.97	5,154.36	847.56	5,218.46	0.29	-0.28	0.10	
13,114.00	88.84	3.91	8,514.92	5,248.13	853.89	5,312.31	0.11	0.05	0.10	
13,209.00	88.97	3.64	8,516.73	5,342.90	860.15	5,407.16	0.32	0.14	-0.28	
13,303.00	89.23	3.47	8,518.21	5,436.71	865.97	5,501.00	0.33	0.28	-0.18	
13,397.00	89.49	3.29	8,519.26	5,530.54	871.52	5,594.83	0.34	0.28	-0.19	
13,491.00	89.67	3.64	8,519.95	5,624.37	877.20	5,688.67	0.42	0.19	0.37	
13,586.00	90.02	3.82	8,520.21	5,719.16	883.38	5,783.53	0.41	0.37	0.19	
13,680.00	90.33	3.20	8,519.92	5,812.99	889.13	5,877.37	0.74	0.33	-0.66	
13,775.00	90.64	3.91	8,519.11	5,907.80	895.02	5,972.22	0.82	0.33	0.75	
13,870.00	90.42	4.61	8,518.24	6,002.53	902.08	6,067.12	0.77	-0.23	0.74	
13,964.00	90.64	4.70	8,517.37	6,096.22	909.71	6,161.05	0.25	0.23	0.10	
14,059.00	90.46	2.15	8,516.45	6,191.04	915.38	6,255.87	2.69	-0.19	-2.68	
14,155.00	90.37	2.06	8,515.76	6,286.97	918.91	6,351.55	0.13	-0.09	-0.09	
14,250.00	90.64	2.06	8,514.92	6,381.90	922.32	6,446.22	0.28	0.28	0.00	
14,345.00	90.77	2.15	8,513.75	6,476.83	925.81	6,540.89	0.17	0.14	0.09	
14,439.00	90.90	2.06	8,512.38	6,570.76	929.26	6,634.57	0.17	0.14	-0.10	
14,534.00	91.21	2.33	8,510.63	6,665.67	932.90	6,729.24	0.43	0.33	0.28	
14,630.00	91.69	1.71	8,508.20	6,761.58	936.29	6,824.88	0.82	0.50	-0.65	
14,725.00	89.98	2.50	8,506.82	6,856.50	939.77	6,919.55	1.98	-1.80	0.83	
14,820.00	90.29	2.33	8,506.60	6,951.42	943.78	7,014.27	0.37	0.33	-0.18	
14,914.00	90.86	2.50	8,505.65	7,045.33	947.74	7,107.99	0.63	0.61	0.18	
15,008.00	88.66	3.12	8,506.05	7,139.21	952.35	7,201.75	2.43	-2.34	0.66	
15,102.00	88.84	2.85	8,508.10	7,233.06	957.24	7,295.52	0.35	0.19	-0.29	
15,196.00	88.92	2.94	8,509.93	7,326.92	961.99	7,389.28	0.13	0.09	0.10	
15,290.00	89.80	2.94	8,510.98	7,420.79	966.81	7,483.06	0.94	0.94	0.00	
15,384.00	90.02	2.59	8,511.13	7,514.68	971.34	7,576.83	0.44	0.23	-0.37	
15,478.00	90.59	2.41	8,510.63	7,608.59	975.44	7,670.57	0.64	0.61	-0.19	
15,571.00	90.77	2.33	8,509.53	7,701.51	979.29	7,763.28	0.21	0.19	-0.09	
15,666.00	91.38	2.06	8,507.75	7,796.42	982.93	7,857.96	0.70	0.64	-0.28	
15,760.00	90.20	2.85	8,506.45	7,890.32	986.95	7,951.68	1.51	-1.26	0.84	



Survey Report

Company:	XTO Energy	Local Co-ordinate Reference:	Well Bubbles 2215 Federal #4H
Project:	Eddy County, NM	TVD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Site:	Bubbles 2215 Federal	MD Reference:	GL 3314' + 30' KB @ 3344.00usft (Nabors F34)
Well:	Bubbles 2215 Federal #4H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01 Surveys	Database:	EDM 5000.14 Single User Db

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)
15,854.00	90.15	2.24	8,506.16	7,984.23	991.13	8,045.42	0.65	-0.05	-0.65
15,948.00	90.86	1.97	8,505.33	8,078.16	994.58	8,139.10	0.81	0.76	-0.29
16,041.00	90.99	1.80	8,503.83	8,171.10	997.64	8,231.74	0.23	0.14	-0.18
16,136.00	91.30	1.71	8,501.93	8,266.03	1,000.55	8,326.35	0.34	0.33	-0.09
16,167.35	91.21	1.59	8,501.25	8,297.37	1,001.45	8,357.58	0.47	-0.29	-0.37
Bubbles 2215 Federal #4H p5 LTP									
16,230.00	91.03	1.36	8,500.02	8,359.98	1,003.06	8,419.94	0.47	-0.29	-0.37
Last Scout MWD Survey @ 16230.00' MD									
16,295.00	91.03	1.36	8,498.85	8,424.95	1,004.61	8,484.64	0.00	0.00	0.00
Projection to Bit @ 16295.00' MD - Bubbles 2215 Federal #4H p5 PBHL									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
156.00	156.00	-0.48	0.03	First Scout MWD Survey @ 156.00' MD
16,230.00	8,500.02	8,359.98	1,003.06	Last Scout MWD Survey @ 16230.00' MD
16,295.00	8,498.85	8,424.95	1,004.61	Projection to Bit @ 16295.00' MD

Checked By: _____	Approved By: _____	Date: _____
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