



Extraction Oil & Gas

Weld County, CO (NAD83)

TROTT Pad

TROTT 8E-10- 3N

Wellbore #1

Survey: MWD Surveys

Standard Survey Report

23 February, 2018

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well TROTT 8E-10- 3N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=25' @ 5060.00ft (P 346)
Site:	TROTT Pad	MD Reference:	KB=25' @ 5060.00ft (P 346)
Well:	TROTT 8E-10- 3N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Project	Weld County, CO (NAD83)		
Map System:	US State Plane 1983	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		TROTT Pad			
Site Position:		Northing:	1,361,363.27 usft	Latitude:	40.324433
From:	Map	Easting:	3,128,030.04 usft	Longitude:	-105.040814
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.30 °

Well	TROTT 8E-10- 3N					
Well Position	+N-S	0.00 ft	Northing:	1,361,363.18 usft	Latitude:	40.324433
	+E-W	0.00 ft	Easting:	3,128,011.91 usft	Longitude:	-105.040879
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,035.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/19/2017	8.53	66.65	52,162

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	76.68	

Survey Program	Date	2/23/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
207.00	1,538.00	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,651.00	10,560.00	MWD Surveys (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,538.00	13.18	37.22	1,531.10	71.54	51.94	67.02	0.00	0.00	0.00	
1,651.00	16.08	36.73	1,640.42	94.34	69.09	88.97	2.57	2.57	-0.43	
First MWD Survey @ 1651'MD										
1,745.00	18.38	40.04	1,730.20	116.13	86.42	110.85	2.66	2.45	3.52	
1,840.00	21.52	43.43	1,819.49	140.25	108.04	137.44	3.52	3.31	3.57	
1,935.00	24.08	42.02	1,907.06	167.31	132.99	167.96	2.76	2.69	-1.48	
2,029.00	26.12	38.45	1,992.19	197.77	158.70	200.00	2.70	2.17	-3.80	
2,124.00	28.68	35.01	2,076.53	232.82	184.79	233.46	3.17	2.69	-3.62	
2,218.00	33.01	36.25	2,157.21	271.96	212.88	269.82	4.66	4.61	1.32	
2,312.00	38.09	38.23	2,233.67	315.42	245.99	312.04	5.54	5.40	2.11	

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Well:	TROTT 8E-10- 3N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,407.00	41.80	39.82	2,306.49	362.77	284.41	360.34	4.05	3.91	1.67
2,502.00	45.60	40.74	2,375.16	412.82	326.85	413.17	4.06	4.00	0.97
2,596.00	45.69	39.02	2,440.88	464.40	369.94	466.98	1.31	0.10	-1.83
2,691.00	46.00	39.11	2,507.06	517.32	412.90	520.98	0.33	0.33	0.09
2,785.00	44.81	40.74	2,573.05	568.65	455.84	574.59	1.77	-1.27	1.73
2,880.00	46.09	41.94	2,639.70	619.47	500.56	629.82	1.62	1.35	1.26
2,974.00	46.18	40.21	2,704.84	670.56	545.09	684.92	1.33	0.10	-1.84
3,068.00	46.00	38.01	2,770.04	723.10	587.80	738.59	1.70	-0.19	-2.34
3,162.00	44.98	39.73	2,835.94	775.29	629.86	791.54	1.70	-1.09	1.83
3,257.00	43.08	37.83	2,904.24	826.74	671.23	843.65	2.44	-2.00	-2.00
3,351.00	43.39	39.24	2,972.72	877.11	711.34	894.29	1.08	0.33	1.50
3,446.00	43.00	41.05	3,041.98	926.81	753.26	946.53	1.37	-0.41	1.91
3,540.00	41.18	39.24	3,111.74	974.96	793.89	997.16	2.33	-1.94	-1.93
3,634.00	39.51	41.93	3,183.39	1,021.18	833.45	1,046.30	2.57	-1.78	2.86
3,728.00	36.72	40.04	3,257.34	1,064.95	871.52	1,093.43	3.22	-2.97	-2.01
3,822.00	34.38	38.54	3,333.81	1,107.23	906.14	1,136.86	2.66	-2.49	-1.60
3,917.00	29.92	36.73	3,414.23	1,147.22	937.04	1,176.14	4.80	-4.69	-1.91
4,011.00	26.69	39.95	3,496.98	1,182.20	964.62	1,211.05	3.80	-3.44	3.43
4,105.00	23.42	41.84	3,582.13	1,212.31	990.64	1,243.31	3.58	-3.48	2.01
4,199.00	20.19	38.72	3,669.39	1,238.89	1,013.26	1,271.44	3.65	-3.44	-3.32
4,294.00	17.10	41.45	3,759.40	1,262.16	1,032.76	1,295.78	3.38	-3.25	2.87
4,388.00	14.41	35.94	3,849.86	1,281.99	1,048.78	1,315.93	3.27	-2.86	-5.86
4,482.00	11.00	40.61	3,941.55	1,298.28	1,061.49	1,332.05	3.79	-3.63	4.97
4,576.00	8.22	47.04	4,034.22	1,309.67	1,072.25	1,345.14	3.17	-2.96	6.84
4,671.00	4.99	43.43	4,128.58	1,317.30	1,080.06	1,354.50	3.43	-3.40	-3.80
4,766.00	2.21	21.31	4,223.39	1,322.00	1,083.57	1,359.00	3.22	-2.93	-23.28
4,860.00	3.18	340.31	4,317.29	1,326.15	1,083.35	1,359.74	2.23	1.03	-43.62
4,954.00	2.21	333.62	4,411.19	1,330.23	1,081.66	1,359.04	1.08	-1.03	-7.12
5,049.00	0.80	334.41	4,506.15	1,332.47	1,080.56	1,358.49	1.48	-1.48	0.83
5,143.00	2.39	324.71	4,600.11	1,334.66	1,079.15	1,357.61	1.71	1.69	-10.32
5,261.00	0.31	39.33	4,718.08	1,336.91	1,077.93	1,356.95	1.97	-1.76	63.24
5,354.00	10.12	83.53	4,810.58	1,338.03	1,086.22	1,365.28	10.65	10.55	47.53
5,432.41	16.02	81.37	4,886.93	1,340.43	1,103.78	1,382.92	7.54	7.52	-2.76
Enter Lease @ 5432.41'MD									
5,448.00	17.19	81.11	4,901.87	1,341.11	1,108.18	1,387.36	7.54	7.53	-1.64
5,543.00	23.29	92.04	4,990.99	1,342.62	1,140.86	1,419.51	7.53	6.42	11.51
5,637.00	32.39	94.55	5,074.03	1,339.95	1,184.63	1,461.48	9.76	9.68	2.67
5,732.00	40.79	89.53	5,150.25	1,338.18	1,241.13	1,516.06	9.38	8.84	-5.28
5,826.00	49.18	86.62	5,216.69	1,340.54	1,307.47	1,581.15	9.19	8.93	-3.10
5,921.00	57.40	88.95	5,273.43	1,343.39	1,383.50	1,655.79	8.87	8.65	2.45
6,016.00	65.71	94.02	5,318.66	1,341.09	1,466.89	1,736.41	9.92	8.75	5.34
6,110.00	74.59	93.71	5,350.55	1,335.14	1,555.01	1,820.79	9.45	9.45	-0.33
6,119.12	75.06	93.56	5,352.94	1,334.58	1,563.80	1,829.21	5.36	5.12	-1.63

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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
460' Hardline Crossing @ 6119.12'MD (460'FWL & 2454'FNL)									
6,204.00	79.41	92.21	5,371.69	1,330.42	1,646.45	1,908.68	5.36	5.13	-1.59
6,298.00	81.88	91.02	5,386.97	1,327.81	1,739.16	1,998.29	2.91	2.63	-1.27
6,392.00	82.50	90.72	5,399.74	1,326.40	1,832.27	2,088.58	0.73	0.66	-0.32
6,486.00	82.81	89.83	5,411.76	1,325.95	1,925.50	2,179.19	1.00	0.33	-0.95
6,581.00	81.62	87.72	5,424.63	1,327.96	2,019.60	2,271.22	2.53	-1.25	-2.22
6,675.00	81.09	87.32	5,438.76	1,331.98	2,112.44	2,362.49	0.70	-0.56	-0.43
6,768.00	81.62	89.61	5,452.74	1,334.44	2,204.34	2,452.49	2.50	0.57	2.46
6,863.00	81.49	89.75	5,466.69	1,334.97	2,298.31	2,544.05	0.20	-0.14	0.15
6,957.00	81.49	91.51	5,480.60	1,333.95	2,391.27	2,634.27	1.85	0.00	1.87
7,051.00	81.88	89.75	5,494.20	1,332.93	2,484.27	2,724.54	1.90	0.41	-1.87
7,146.00	82.19	88.91	5,507.36	1,334.03	2,578.35	2,816.34	0.93	0.33	-0.88
7,240.00	79.72	86.22	5,522.14	1,337.96	2,671.08	2,907.48	3.86	-2.63	-2.86
7,334.00	80.60	87.94	5,538.21	1,342.68	2,763.57	2,998.57	2.03	0.94	1.83
7,429.00	80.78	87.32	5,553.58	1,346.55	2,857.24	3,090.61	0.67	0.19	-0.65
7,523.00	81.09	87.15	5,568.39	1,351.03	2,949.96	3,181.87	0.38	0.33	-0.18
7,617.00	81.79	86.84	5,582.38	1,355.91	3,042.78	3,273.32	0.81	0.74	-0.33
7,712.00	82.02	89.04	5,595.76	1,359.29	3,136.77	3,365.55	2.31	0.24	2.32
7,806.00	80.69	89.22	5,609.89	1,360.70	3,229.69	3,456.30	1.43	-1.41	0.19
7,900.00	79.50	89.35	5,626.06	1,361.85	3,322.28	3,546.66	1.27	-1.27	0.14
7,995.00	77.42	88.73	5,645.06	1,363.41	3,415.34	3,637.58	2.28	-2.19	-0.65
8,089.00	77.69	88.64	5,665.32	1,365.52	3,507.10	3,727.36	0.30	0.29	-0.10
8,183.00	77.82	88.25	5,685.25	1,368.01	3,598.93	3,817.29	0.43	0.14	-0.41
8,277.00	77.99	87.63	5,704.95	1,371.31	3,690.78	3,907.44	0.67	0.18	-0.66
8,371.00	76.80	88.25	5,725.46	1,374.61	3,782.46	3,997.40	1.42	-1.27	0.66
8,465.00	76.18	86.75	5,747.42	1,378.60	3,873.77	4,087.17	1.69	-0.66	-1.60
8,559.00	77.29	89.04	5,769.00	1,381.95	3,965.19	4,176.91	2.65	1.18	2.44
8,653.00	77.99	88.82	5,789.12	1,383.67	4,056.99	4,266.64	0.78	0.74	-0.23
8,748.00	77.29	90.01	5,809.45	1,384.62	4,149.78	4,357.15	1.43	-0.74	1.25
8,842.00	78.22	89.35	5,829.39	1,385.13	4,241.64	4,446.66	1.20	0.99	-0.70
8,937.00	75.70	89.53	5,850.82	1,386.04	4,334.18	4,536.92	2.66	-2.65	0.19
9,031.00	75.21	88.82	5,874.43	1,387.35	4,425.16	4,625.75	0.90	-0.52	-0.76
9,125.00	76.32	89.13	5,897.54	1,388.97	4,516.26	4,714.77	1.22	1.18	0.33
9,219.00	75.30	87.15	5,920.59	1,391.93	4,607.33	4,804.08	2.31	-1.09	-2.11
9,313.00	77.11	89.35	5,943.00	1,394.71	4,698.57	4,893.50	2.98	1.93	2.34
9,407.00	77.99	89.13	5,963.27	1,395.93	4,790.35	4,983.09	0.96	0.94	-0.23
9,501.00	77.11	89.75	5,983.53	1,396.83	4,882.13	5,072.61	1.14	-0.94	0.66
9,595.00	75.52	89.92	6,005.77	1,397.09	4,973.46	5,161.54	1.70	-1.69	0.18
9,689.00	75.21	89.53	6,029.52	1,397.53	5,064.41	5,250.15	0.52	-0.33	-0.41
9,782.00	75.39	89.75	6,053.12	1,398.09	5,154.36	5,337.81	0.30	0.19	0.24
9,877.00	76.71	90.85	6,076.02	1,397.60	5,246.56	5,427.41	1.79	1.39	1.16
9,971.00	78.08	91.42	6,096.54	1,395.79	5,338.27	5,516.24	1.57	1.46	0.61
10,066.00	78.08	90.14	6,116.16	1,394.52	5,431.21	5,606.39	1.32	0.00	-1.35
10,160.00	78.70	89.44	6,135.08	1,394.86	5,523.29	5,696.06	0.98	0.66	-0.74

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Well:	TROTT 8E-10- 3N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,348.00	77.99	89.61	6,173.06	1,396.39	5,707.40	5,875.58	0.39	-0.38	0.09
10,442.00	77.91	88.64	6,192.68	1,397.79	5,799.32	5,965.35	1.01	-0.09	-1.03
Final MWD Survey @ 10442'MD									
10,560.00	77.91	88.64	6,217.40	1,400.53	5,914.67	6,078.22	0.00	0.00	0.00
PTD @ 10560'MD (2468'FNL & 500'FEL)									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,651.00	1,640.42	94.34	69.09	First MWD Survey @ 1651'MD
5,432.41	4,886.93	1,340.43	1,103.78	Enter Lease @ 5432.41'MD
6,119.12	5,352.94	1,334.58	1,563.80	460' Hardline Crossing @ 6119.12'MD (460'FWL & 2454'FNL)
10,442.00	6,192.68	1,397.79	5,799.32	Final MWD Survey @ 10442'MD
10,560.00	6,217.40	1,400.53	5,914.67	PTD @ 10560'MD (2468'FNL & 500'FEL)

Checked By: _____	Approved By: _____	Date: _____
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