

Extraction Oil & Gas

Weld County, CO (NAD83)

TROTT Pad

TROTT 8E-10-9N

Wellbore #1

Design: Wellbore #1

Standard Survey Report

08 January, 2018

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well TROTT 8E-10-9N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=25' @ 5059.00ft (P 346)
Site:	TROTT Pad	MD Reference:	KB=25' @ 5059.00ft (P 346)
Well:	TROTT 8E-10-9N	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:	1,361,363.2700 usft	Latitude:	40.324433
From:	Map	Easting:	3,128,030.0400 usft	Longitude:	-105.040814
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.30 °

Well		TROTT 8E-10-9N				
Well Position	+N/-S	0.00 ft	Northing:	1,361,363.1700 usft	Latitude:	40.324434
	+E/-W	0.00 ft	Easting:	3,127,939.9800 usft	Longitude:	-105.041137
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,034.00 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	85.93	

Survey Program	Date	1/8/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
113.00	1,541.00	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,651.00	10,525.00	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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
113.00	0.31	317.85	113.00	0.23	-0.21	-0.19	0.27	0.27	0.00	
208.00	0.70	274.70	208.00	0.46	-0.96	-0.92	0.55	0.41	-45.42	
303.00	0.66	269.07	302.99	0.50	-2.08	-2.04	0.08	-0.04	-5.93	
397.00	1.23	276.57	396.98	0.61	-3.63	-3.57	0.62	0.61	7.98	
493.00	0.44	149.80	492.97	0.41	-4.46	-4.42	1.60	-0.82	-132.05	
588.00	0.35	111.22	587.97	-0.01	-4.01	-4.00	0.29	-0.09	-40.61	
683.00	0.57	72.11	682.96	0.03	-3.29	-3.28	0.39	0.23	-41.17	
778.00	0.13	342.02	777.96	0.28	-2.87	-2.85	0.62	-0.46	-94.83	
872.00	0.70	344.92	871.96	0.93	-3.05	-2.98	0.61	0.61	3.09	

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Well:	TROTT 8E-10-9N	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)
967.00	0.53	30.18	966.95	1.87	-2.99	-2.84	0.52	-0.18	47.64
1,060.00	0.62	127.66	1,059.95	1.94	-2.37	-2.23	0.93	0.10	104.82
1,155.00	1.54	58.75	1,154.94	2.29	-0.87	-0.71	1.51	0.97	-72.54
1,251.00	2.55	47.50	1,250.87	4.40	1.81	2.11	1.13	1.05	-11.72
1,346.00	4.66	43.54	1,345.68	8.62	6.02	6.62	2.24	2.22	-4.17
1,441.00	6.77	58.49	1,440.21	14.35	13.46	14.44	2.70	2.22	15.74
1,491.00	7.87	72.72	1,489.81	16.91	19.24	20.39	4.22	2.20	28.46
1,541.00	7.87	72.72	1,539.33	18.94	25.77	27.05	0.00	0.00	0.00
1,651.00	10.91	81.64	1,647.85	22.69	43.27	44.77	3.06	2.76	8.11
First MWD Survey @ 1651'MD									
1,745.00	12.99	81.73	1,739.81	25.50	62.53	64.18	2.21	2.21	0.10
1,840.00	13.61	78.64	1,832.26	29.24	84.05	85.91	0.99	0.65	-3.25
1,934.00	14.01	74.41	1,923.55	34.48	105.86	108.03	1.16	0.43	-4.50
2,028.00	14.72	67.45	2,014.62	42.12	127.85	130.51	1.98	0.76	-7.40
2,123.00	16.39	64.72	2,106.13	52.47	151.12	154.46	1.92	1.76	-2.87
2,218.00	19.00	67.05	2,196.63	64.23	177.48	181.59	2.85	2.75	2.45
2,312.00	22.58	65.64	2,284.50	77.64	208.02	213.00	3.85	3.81	-1.50
2,407.00	25.01	65.82	2,371.42	93.39	242.96	248.97	2.56	2.56	0.19
2,502.00	23.11	63.04	2,458.16	110.07	277.90	285.01	2.33	-2.00	-2.93
2,595.00	24.61	66.52	2,543.22	126.06	311.94	320.09	2.21	1.61	3.74
2,691.00	25.32	69.52	2,630.25	141.21	349.50	358.63	1.51	0.74	3.13
2,785.00	24.61	68.55	2,715.47	155.40	386.55	396.59	0.87	-0.76	-1.03
2,880.00	25.32	69.83	2,801.59	169.64	424.03	434.99	0.94	0.75	1.35
2,974.00	23.60	68.02	2,887.15	183.61	460.35	472.21	2.00	-1.83	-1.93
3,068.00	22.40	68.64	2,973.68	197.18	494.48	507.22	1.30	-1.28	0.66
3,162.00	22.89	68.42	3,060.43	210.43	528.16	541.75	0.53	0.52	-0.23
3,256.00	23.11	67.23	3,146.96	224.29	562.17	576.66	0.55	0.23	-1.27
3,351.00	20.50	62.82	3,235.16	239.11	594.17	609.62	3.24	-2.75	-4.64
3,445.00	19.31	68.81	3,323.55	252.25	623.30	639.62	2.51	-1.27	6.37
3,539.00	17.01	64.32	3,412.87	263.83	650.19	667.26	2.86	-2.45	-4.78
3,633.00	15.82	68.81	3,503.04	274.42	674.53	692.29	1.85	-1.27	4.78
3,728.00	14.58	69.03	3,594.71	283.38	697.77	716.11	1.31	-1.31	0.23
3,822.00	11.80	62.03	3,686.23	292.12	717.31	736.22	3.41	-2.96	-7.45
3,916.00	8.71	71.33	3,778.72	298.91	732.55	751.90	3.72	-3.29	9.89
4,010.00	6.58	59.25	3,871.89	303.94	743.92	763.60	2.83	-2.27	-12.85
4,104.00	5.79	63.92	3,965.34	308.78	752.81	772.81	1.00	-0.84	4.97
4,198.00	4.51	73.93	4,058.96	311.89	760.62	780.82	1.66	-1.36	10.65
4,293.00	2.78	41.23	4,153.78	314.66	765.73	786.11	2.78	-1.82	-34.42
4,387.00	3.49	350.71	4,247.65	319.19	766.77	787.47	2.93	0.76	-53.74
4,482.00	1.41	316.43	4,342.56	322.90	765.50	786.46	2.59	-2.19	-36.08
4,576.00	0.49	355.74	4,436.55	324.13	764.67	785.73	1.15	-0.98	41.82
4,671.00	1.90	310.74	4,531.53	325.57	763.45	784.61	1.68	1.48	-47.37
4,788.00	1.50	317.44	4,648.48	327.96	760.94	782.28	0.38	-0.34	5.73

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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)
4,882.00	5.39	100.41	4,742.36	328.07	764.45	785.79	7.07	4.14	152.10
4,977.00	12.99	89.83	4,836.08	327.29	779.54	800.79	8.16	8.00	-11.14
5,071.00	20.90	89.75	4,925.92	327.40	806.92	828.10	8.41	8.41	-0.09
5,165.00	31.51	92.61	5,010.15	326.35	848.34	869.35	11.36	11.29	3.04
5,259.00	38.80	92.61	5,086.95	323.89	902.38	923.07	7.76	7.76	0.00
5,353.00	48.08	93.05	5,155.13	320.68	966.86	987.16	9.88	9.87	0.47
5,447.00	56.78	92.21	5,212.39	317.29	1,041.21	1,061.09	9.28	9.26	-0.89
5,541.00	63.50	89.75	5,259.17	315.96	1,122.67	1,142.24	7.50	7.15	-2.62
5,584.00	68.62	89.50	5,276.61	316.22	1,161.95	1,181.45	11.92	11.90	-0.58
Enter Section @ 5584'MD									
5,636.00	74.81	89.22	5,292.92	316.77	1,211.30	1,230.71	11.92	11.91	-0.54
5,663.01	76.12	89.42	5,299.70	317.08	1,237.44	1,256.81	4.90	4.84	0.75
Hardline Crossing @ 5663.01'MD (1845'FSL & 75'FWL)									
5,675.22	76.71	89.51	5,302.56	317.19	1,249.32	1,268.66	4.90	4.84	0.74
Trott 9N LP									
5,731.00	79.41	89.92	5,314.10	317.46	1,303.88	1,323.11	4.90	4.84	0.73
5,825.00	83.52	89.75	5,328.05	317.73	1,396.82	1,415.83	4.38	4.37	-0.18
5,920.00	85.29	89.22	5,337.31	318.58	1,491.36	1,510.19	1.94	1.86	-0.56
6,014.00	85.42	88.64	5,344.93	320.33	1,585.03	1,603.75	0.63	0.14	-0.62
6,108.00	85.82	88.51	5,352.10	322.66	1,678.73	1,697.38	0.45	0.43	-0.14
6,203.00	86.48	88.25	5,358.48	325.34	1,773.48	1,792.08	0.75	0.69	-0.27
6,296.00	87.19	88.03	5,363.62	328.35	1,866.28	1,884.87	0.80	0.76	-0.24
6,390.00	85.68	88.82	5,369.46	330.93	1,960.06	1,978.59	1.81	-1.61	0.84
6,485.00	86.30	87.63	5,376.11	333.87	2,054.78	2,073.28	1.41	0.65	-1.25
6,579.00	84.89	87.63	5,383.33	337.75	2,148.42	2,166.96	1.50	-1.50	0.00
6,673.00	83.69	87.63	5,392.68	341.61	2,241.87	2,260.45	1.28	-1.28	0.00
6,767.00	82.99	88.82	5,403.58	344.51	2,335.19	2,353.74	1.46	-0.74	1.27
6,861.00	83.21	86.44	5,414.87	348.36	2,428.43	2,447.01	2.52	0.23	-2.53
6,955.00	84.58	88.34	5,424.87	352.62	2,521.79	2,540.44	2.48	1.46	2.02
7,050.00	83.78	88.91	5,434.51	354.89	2,616.27	2,634.85	1.03	-0.84	0.60
7,144.00	79.81	90.63	5,447.92	355.27	2,709.29	2,727.66	4.60	-4.22	1.83
7,332.00	78.70	90.45	5,482.97	353.53	2,893.98	2,911.76	0.60	-0.59	-0.10
7,427.00	78.88	89.61	5,501.44	353.48	2,987.17	3,004.71	0.89	0.19	-0.88
7,521.00	78.22	90.23	5,520.10	353.61	3,079.29	3,096.61	0.95	-0.70	0.66
7,616.00	78.79	89.92	5,539.03	353.48	3,172.39	3,189.47	0.68	0.60	-0.33
7,710.00	79.32	89.53	5,556.88	353.93	3,264.68	3,281.55	0.70	0.56	-0.41
7,804.00	79.32	88.82	5,574.30	355.26	3,357.04	3,373.78	0.74	0.00	-0.76
7,899.00	77.11	88.34	5,593.70	357.56	3,450.00	3,466.67	2.38	-2.33	-0.51
7,993.00	76.80	87.94	5,614.92	360.53	3,541.53	3,558.17	0.53	-0.33	-0.43
8,088.00	76.89	87.85	5,636.54	363.93	3,633.97	3,650.63	0.13	0.09	-0.09
8,182.00	79.32	87.72	5,655.91	367.49	3,725.88	3,742.55	2.59	2.59	-0.14
8,276.00	81.22	87.72	5,671.80	371.17	3,818.45	3,835.15	2.02	2.02	0.00
8,370.00	81.22	86.84	5,686.15	375.58	3,911.24	3,928.02	0.93	0.00	-0.94
8,464.00	82.41	88.82	5,699.53	379.10	4,004.21	4,021.01	2.44	1.27	2.11

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Site:	TROTT Pad	MD Reference:	KB=25' @ 5059.00ft (P 346)
Well:	TROTT 8E-10-9N	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)
8,558.00	79.89	89.22	5,713.99	380.69	4,097.07	4,113.75	2.71	-2.68	0.43
8,652.00	76.01	89.13	5,733.61	382.01	4,188.97	4,205.51	4.13	-4.13	-0.10
8,747.00	72.60	89.44	5,759.31	383.16	4,280.41	4,296.80	3.60	-3.59	0.33
8,841.00	72.69	88.91	5,787.35	384.45	4,370.12	4,386.38	0.55	0.10	-0.56
8,936.00	73.22	87.85	5,815.19	387.02	4,460.91	4,477.12	1.20	0.56	-1.12
9,029.00	70.39	88.64	5,844.23	389.73	4,549.21	4,565.39	3.15	-3.04	0.85
9,123.00	69.91	88.12	5,876.15	392.23	4,637.58	4,653.72	0.73	-0.51	-0.55
9,217.00	71.81	88.73	5,906.97	394.66	4,726.35	4,742.44	2.11	2.02	0.65
9,312.00	72.21	88.82	5,936.31	396.60	4,816.68	4,832.68	0.43	0.42	0.09
9,406.00	71.81	88.82	5,965.34	398.44	4,906.07	4,921.97	0.43	-0.43	0.00
9,500.00	69.82	89.04	5,996.23	400.10	4,994.83	5,010.63	2.13	-2.12	0.23
9,594.00	68.80	88.64	6,029.44	401.87	5,082.75	5,098.45	1.16	-1.09	-0.43
9,688.00	71.19	88.73	6,061.60	403.90	5,171.05	5,186.67	2.54	2.54	0.10
9,781.00	75.30	88.64	6,088.40	405.95	5,260.06	5,275.60	4.42	4.42	-0.10
9,875.00	79.50	88.42	6,108.90	408.30	5,351.74	5,367.22	4.47	4.47	-0.23
9,970.00	83.30	87.72	6,123.10	411.47	5,445.60	5,461.07	4.07	4.00	-0.74
10,064.00	84.31	86.75	6,133.25	415.97	5,538.94	5,554.49	1.49	1.07	-1.03
10,159.00	86.79	87.63	6,140.62	420.62	5,633.53	5,649.18	2.77	2.61	0.93
10,253.00	88.51	86.93	6,144.47	425.07	5,727.34	5,743.07	1.98	1.83	-0.74
10,347.00	86.92	86.75	6,148.22	430.25	5,821.12	5,836.98	1.70	-1.69	-0.19
10,441.00	87.98	85.34	6,152.40	436.73	5,914.80	5,930.88	1.88	1.13	-1.50
Final MWD Survey @ 10441'MD									
10,525.00	87.98	85.34	6,155.36	443.55	5,998.47	6,014.83	0.00	0.00	0.00
PTD @ 10525'MD (1866'FSL & 491'FEL) - Trott 9N BHL									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,651.00	1,647.85	22.69	43.27	First MWD Survey @ 1651'MD
5,584.00	5,276.61	316.22	1,161.95	Enter Section @ 5584'MD
5,663.01	5,299.70	317.08	1,237.44	Hardline Crossing @ 5663.01'MD (1845'FSL & 75'FWL)
10,441.00	6,152.40	436.73	5,914.80	Final MWD Survey @ 10441'MD
10,525.00	6,155.36	443.55	5,998.47	PTD @ 10525'MD (1866'FSL & 491'FEL)

Checked By: _____ Approved By: _____ Date: _____