

Extraction Oil & Gas

Weld County, CO (NAD83)

Vetting PAD (Sec 15-T5N-R65W)

VT LDS 3-16-18

Wellbore #1

Design: Wellbore #1

Standard Survey Report

16 August, 2018

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well VT LDS 3-16-18
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Site:	Vetting PAD (Sec 15-T5N-R65W)	MD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Well:	VT LDS 3-16-18	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		Vetting PAD (Sec 15-T5N-R65W)			
Site Position:		Northing:	1,390,162.31 usft	Latitude:	40.40133
From:	Map	Easting:	3,234,926.48 usft	Longitude:	-104.65646
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well		VT LDS 3-16-18				
Well Position	+N/-S	0.00 ft	Northing:	1,390,146.83 usft	Latitude:	40.40129
	+E/-W	0.00 ft	Easting:	3,234,831.93 usft	Longitude:	-104.65680
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,648.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/15/2018	8.08	66.88	52,232

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	274.41	

Survey Program	Date	8/16/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
149.00	1,613.00	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,671.00	20,255.00	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	
149.00	0.99	178.03	148.99	-1.29	0.04	-0.14	0.66	0.66	0.00	
233.00	0.52	322.51	232.99	-1.71	-0.16	0.03	1.72	-0.56	172.00	
315.00	1.00	323.58	314.98	-0.84	-0.81	0.75	0.59	0.59	1.30	
347.00	0.62	304.56	346.98	-0.52	-1.12	1.08	1.44	-1.19	-59.44	
441.00	0.79	212.08	440.97	-0.78	-1.89	1.82	1.09	0.18	-98.38	
526.00	1.14	233.66	525.96	-1.77	-2.88	2.73	0.59	0.41	25.39	
611.00	1.10	278.35	610.95	-2.16	-4.37	4.19	1.00	-0.05	52.58	
696.00	2.68	281.70	695.90	-1.63	-7.12	6.97	1.86	1.86	3.94	
780.00	3.73	284.41	779.77	-0.56	-11.69	11.61	1.26	1.25	3.23	

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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)
864.00	4.71	283.15	863.54	0.91	-17.69	17.71	1.17	1.17	-1.50
948.00	5.87	286.39	947.18	2.90	-25.17	25.32	1.43	1.38	3.86
1,032.00	6.73	280.14	1,030.67	4.98	-34.14	34.42	1.31	1.02	-7.44
1,116.00	7.73	276.96	1,114.00	6.53	-44.59	44.96	1.28	1.19	-3.79
1,201.00	9.64	278.04	1,198.02	8.22	-57.32	57.78	2.26	2.25	1.27
1,286.00	12.55	274.32	1,281.43	9.91	-73.57	74.12	3.52	3.42	-4.38
1,327.00	13.65	265.70	1,321.36	9.89	-82.84	83.36	5.46	2.68	-21.02
1,414.00	17.88	256.56	1,405.08	6.01	-106.08	106.23	5.62	4.86	-10.51
1,498.00	19.64	272.36	1,484.67	3.59	-132.75	132.63	6.38	2.10	18.81
1,563.00	19.67	288.40	1,545.93	7.50	-154.06	154.18	8.28	0.05	24.68
1,613.00	20.20	290.00	1,592.93	13.11	-170.16	170.66	1.52	1.06	3.20
Tie in to Surface Surveys @ 1613'MD									
1,671.00	21.79	292.64	1,647.08	20.68	-189.50	190.53	3.19	2.74	4.55
First MWD Survey @ 1671'MD									
1,767.00	23.46	286.52	1,735.70	32.97	-224.27	226.14	3.00	1.74	-6.38
1,862.00	24.75	286.34	1,822.42	43.94	-261.49	264.09	1.36	1.36	-0.19
1,958.00	26.96	282.02	1,908.81	54.13	-302.07	305.33	3.02	2.30	-4.50
2,053.00	27.40	279.38	1,993.32	62.18	-344.70	348.46	1.35	0.46	-2.78
2,149.00	30.05	273.82	2,077.52	67.38	-390.49	394.51	3.92	2.76	-5.79
2,244.00	32.13	271.93	2,158.87	69.82	-439.48	443.54	2.42	2.19	-1.99
2,340.00	32.52	276.60	2,240.00	73.65	-490.64	494.84	2.63	0.41	4.86
2,435.00	34.78	277.48	2,319.08	80.11	-542.87	547.42	2.43	2.38	0.93
2,498.26	33.95	277.13	2,371.30	84.65	-578.29	583.09	1.34	-1.31	-0.55
Crossing Section 15/16 @ 2498'MD									
2,530.00	33.54	276.95	2,397.69	86.81	-595.79	600.70	1.34	-1.30	-0.57
2,626.00	36.10	276.38	2,476.49	93.16	-650.23	655.47	2.69	2.67	-0.59
2,721.00	35.13	276.12	2,553.72	99.19	-705.23	710.76	1.03	-1.02	-0.27
2,817.00	35.22	276.16	2,632.19	105.10	-760.21	766.04	0.10	0.09	0.04
2,912.00	35.66	275.67	2,709.59	110.78	-815.00	821.10	0.55	0.46	-0.52
3,008.00	35.71	275.45	2,787.57	116.21	-870.74	877.09	0.14	0.05	-0.23
3,103.00	34.51	273.96	2,865.28	120.70	-925.19	931.73	1.55	-1.26	-1.57
3,199.00	34.87	279.16	2,944.23	126.95	-979.42	986.28	3.10	0.38	5.42
3,294.00	33.58	279.33	3,022.78	135.53	-1,032.16	1,039.52	1.36	-1.36	0.18
3,390.00	30.98	279.02	3,103.94	143.71	-1,082.77	1,090.61	2.71	-2.71	-0.32
3,485.00	31.46	282.55	3,185.19	152.93	-1,131.12	1,139.52	1.99	0.51	3.72
3,581.00	32.79	283.21	3,266.49	164.31	-1,180.88	1,190.01	1.43	1.39	0.69
3,676.00	30.00	284.14	3,347.57	176.00	-1,228.97	1,238.85	2.98	-2.94	0.98
3,772.00	30.67	281.36	3,430.43	186.68	-1,276.25	1,286.81	1.62	0.70	-2.90
3,867.00	30.80	273.12	3,512.12	192.78	-1,324.31	1,335.20	4.43	0.14	-8.67
3,963.00	32.21	272.68	3,593.97	195.31	-1,374.41	1,385.35	1.49	1.47	-0.46
4,058.00	33.50	278.14	3,673.79	200.21	-1,425.67	1,436.83	3.40	1.36	5.75
4,153.00	33.85	278.23	3,752.85	207.71	-1,477.81	1,489.39	0.37	0.37	0.09
4,249.00	34.73	277.79	3,832.16	215.25	-1,531.36	1,543.37	0.95	0.92	-0.46

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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)
4,344.00	34.60	278.50	3,910.30	222.90	-1,584.85	1,597.29	0.45	-0.14	0.75
4,440.00	32.88	277.88	3,990.13	230.50	-1,637.62	1,650.49	1.83	-1.79	-0.65
4,535.00	32.17	280.35	4,070.23	238.58	-1,688.05	1,701.39	1.59	-0.75	2.60
4,631.00	34.69	277.26	4,150.35	246.63	-1,740.30	1,754.10	3.17	2.63	-3.22
4,727.00	32.39	276.07	4,230.36	252.80	-1,792.98	1,807.10	2.49	-2.40	-1.24
4,822.00	31.90	276.51	4,310.80	258.34	-1,843.22	1,857.62	0.57	-0.52	0.46
4,918.00	33.85	278.45	4,391.42	265.14	-1,894.87	1,909.64	2.31	2.03	2.02
5,013.00	33.10	278.50	4,470.66	272.86	-1,946.70	1,961.91	0.79	-0.79	0.05
5,109.00	28.86	275.32	4,552.96	278.89	-1,995.72	2,011.24	4.73	-4.42	-3.31
5,204.00	29.08	273.12	4,636.07	282.27	-2,041.60	2,057.25	1.15	0.23	-2.32
5,237.33	29.99	274.08	4,665.07	283.31	-2,058.00	2,073.68	3.09	2.74	2.89
30°Inclination @ 5237'MD									
5,300.00	31.73	275.76	4,718.86	286.08	-2,090.02	2,105.82	3.09	2.77	2.67
5,395.00	34.60	277.57	4,798.38	292.14	-2,141.63	2,157.74	3.20	3.02	1.91
5,491.00	32.17	275.85	4,878.54	298.34	-2,194.08	2,210.51	2.72	-2.53	-1.79
5,586.00	34.73	278.10	4,957.80	304.73	-2,246.04	2,262.81	2.99	2.69	2.37
5,682.00	33.80	279.46	5,037.14	312.97	-2,299.45	2,316.70	1.25	-0.97	1.42
5,777.00	31.11	279.16	5,117.29	321.22	-2,349.76	2,367.49	2.84	-2.83	-0.32
5,873.00	32.39	280.48	5,198.93	329.85	-2,399.53	2,417.78	1.52	1.33	1.38
5,968.00	30.40	280.04	5,280.01	338.67	-2,448.22	2,467.00	2.11	-2.09	-0.46
6,064.00	32.04	277.97	5,362.11	346.43	-2,497.36	2,516.60	2.04	1.71	-2.16
6,160.00	34.29	279.69	5,442.47	354.52	-2,549.25	2,568.95	2.54	2.34	1.79
6,255.00	33.01	279.69	5,521.55	363.38	-2,601.14	2,621.36	1.35	-1.35	0.00
6,351.00	33.10	279.95	5,602.01	372.31	-2,652.73	2,673.49	0.17	0.09	0.27
6,446.00	31.42	279.69	5,682.34	380.96	-2,702.69	2,723.97	1.77	-1.77	-0.27
6,542.00	32.61	280.04	5,763.74	389.68	-2,752.83	2,774.63	1.25	1.24	0.36
6,637.00	34.82	278.32	5,842.76	398.07	-2,804.88	2,827.17	2.53	2.33	-1.81
6,733.00	33.36	276.42	5,922.26	404.99	-2,858.24	2,880.90	1.88	-1.52	-1.98
6,828.00	34.78	276.82	6,000.95	411.12	-2,911.10	2,934.08	1.51	1.49	0.42
6,924.00	31.42	277.00	6,081.36	417.43	-2,963.14	2,986.45	3.50	-3.50	0.19
7,019.00	30.67	276.47	6,162.76	423.17	-3,011.79	3,035.40	0.84	-0.79	-0.56
7,114.00	32.26	275.23	6,243.79	428.22	-3,061.12	3,084.97	1.81	1.67	-1.31
7,210.00	32.30	277.35	6,324.95	433.83	-3,112.07	3,136.20	1.18	0.04	2.21
7,305.00	32.88	278.50	6,404.99	440.89	-3,162.75	3,187.27	0.89	0.61	1.21
7,401.00	33.27	277.53	6,485.44	448.19	-3,214.63	3,239.56	0.68	0.41	-1.01
7,496.00	33.98	276.60	6,564.54	454.66	-3,266.83	3,292.10	0.92	0.75	-0.98
7,592.00	43.88	274.84	6,639.13	460.57	-3,326.79	3,352.33	10.38	10.31	-1.83
7,687.00	53.25	273.16	6,701.93	465.45	-3,397.76	3,423.47	9.95	9.86	-1.77
7,782.00	62.09	275.01	6,752.69	471.23	-3,477.74	3,503.66	9.45	9.31	1.95
7,878.00	69.16	272.19	6,792.29	476.66	-3,564.94	3,591.02	7.83	7.36	-2.94
7,886.07	70.00	272.06	6,795.11	476.94	-3,572.50	3,598.58	10.51	10.41	-1.60
70°Inclination @ 7886'MD									
7,973.00	79.05	270.74	6,818.28	478.96	-3,656.17	3,682.15	10.51	10.41	-1.52
8,068.00	89.62	269.95	6,827.64	479.52	-3,750.57	3,776.32	11.16	11.13	-0.83

Survey Report

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8,164.00	90.32	269.73	6,827.69	479.25	-3,846.56	3,872.01	0.76	0.73	-0.23
8,259.00	90.85	269.55	6,826.72	478.66	-3,941.56	3,966.68	0.59	0.56	-0.19
8,394.00	92.67	267.74	6,822.58	475.47	-4,076.45	4,100.92	1.90	1.35	-1.34
8,489.00	90.94	269.59	6,819.58	473.26	-4,171.36	4,195.39	2.67	-1.82	1.95
8,585.00	91.03	269.90	6,817.93	472.83	-4,267.35	4,291.06	0.34	0.09	0.32
8,680.00	91.25	269.90	6,816.04	472.66	-4,362.33	4,385.75	0.23	0.23	0.00
8,775.00	91.34	270.25	6,813.90	472.79	-4,457.31	4,480.45	0.38	0.09	0.37
8,871.00	90.85	270.96	6,812.06	473.80	-4,553.28	4,576.22	0.90	-0.51	0.74
8,966.00	90.63	269.64	6,810.84	474.30	-4,648.27	4,670.97	1.41	-0.23	-1.39
9,062.00	90.72	272.02	6,809.70	475.69	-4,744.25	4,766.77	2.48	0.09	2.48
9,158.00	91.03	272.28	6,808.24	479.29	-4,840.17	4,862.68	0.42	0.32	0.27
9,253.00	90.85	272.90	6,806.68	483.58	-4,935.06	4,957.62	0.68	-0.19	0.65
9,349.00	90.63	271.93	6,805.44	487.63	-5,030.96	5,053.55	1.04	-0.23	-1.01
9,444.00	90.46	272.46	6,804.54	491.27	-5,125.89	5,148.48	0.59	-0.18	0.56
9,540.00	90.15	272.28	6,804.03	495.24	-5,221.81	5,244.42	0.37	-0.32	-0.19
9,635.00	90.81	271.80	6,803.23	498.62	-5,316.74	5,339.33	0.86	0.69	-0.51
9,731.00	91.03	272.11	6,801.69	501.89	-5,412.67	5,435.23	0.40	0.23	0.32
9,826.00	90.99	272.11	6,800.01	505.39	-5,507.59	5,530.14	0.04	-0.04	0.00
9,922.00	91.25	271.75	6,798.14	508.62	-5,603.52	5,626.03	0.46	0.27	-0.38
10,018.00	91.47	273.12	6,795.86	512.70	-5,699.40	5,721.95	1.44	0.23	1.43
10,113.00	91.30	272.11	6,793.56	517.03	-5,794.28	5,816.87	1.08	-0.18	-1.06
10,204.64	90.87	272.70	6,791.83	520.88	-5,885.82	5,908.44	0.80	-0.47	0.64
Crossing Section 16/17 @ 10204'MD									
10,208.00	90.85	272.72	6,791.78	521.03	-5,889.17	5,911.80	0.80	-0.47	0.64
10,304.00	90.41	271.66	6,790.72	524.70	-5,985.10	6,007.72	1.20	-0.46	-1.10
10,399.00	90.90	272.94	6,789.64	528.51	-6,080.01	6,102.65	1.44	0.52	1.35
10,494.00	90.94	273.30	6,788.11	533.68	-6,174.86	6,197.61	0.38	0.04	0.38
10,589.00	90.85	272.68	6,786.63	538.64	-6,269.72	6,292.57	0.66	-0.09	-0.65
10,685.00	90.46	271.31	6,785.53	541.98	-6,365.65	6,388.47	1.48	-0.41	-1.43
10,781.00	90.85	270.78	6,784.43	543.73	-6,461.63	6,484.30	0.69	0.41	-0.55
10,876.00	90.85	271.31	6,783.03	545.46	-6,556.60	6,579.13	0.56	0.00	0.56
10,971.00	90.19	270.39	6,782.16	546.87	-6,651.59	6,673.94	1.19	-0.69	-0.97
11,066.00	90.37	270.39	6,781.70	547.52	-6,746.58	6,768.71	0.19	0.19	0.00
11,162.00	90.23	271.62	6,781.20	549.20	-6,842.56	6,864.53	1.29	-0.15	1.28
11,257.00	90.28	271.09	6,780.77	551.45	-6,937.54	6,959.40	0.56	0.05	-0.56
11,353.00	90.59	270.39	6,780.04	552.69	-7,033.52	7,055.20	0.80	0.32	-0.73
11,448.00	90.10	268.23	6,779.47	551.55	-7,128.51	7,149.81	2.33	-0.52	-2.27
11,543.00	89.93	268.36	6,779.45	548.72	-7,223.47	7,244.28	0.23	-0.18	0.14
11,639.00	90.01	269.15	6,779.50	546.63	-7,319.44	7,339.81	0.83	0.08	0.82
11,735.00	90.19	268.84	6,779.33	544.95	-7,415.43	7,435.38	0.37	0.19	-0.32
11,830.00	89.84	268.14	6,779.31	542.45	-7,510.40	7,529.87	0.82	-0.37	-0.74
11,925.00	90.10	269.64	6,779.36	540.61	-7,605.38	7,624.43	1.60	0.27	1.58
12,020.00	90.19	268.23	6,779.11	538.84	-7,700.36	7,719.00	1.49	0.09	-1.48
12,116.00	90.32	268.54	6,778.69	536.13	-7,796.32	7,814.47	0.35	0.14	0.32

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well VT LDS 3-16-18
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Site:	Vetting PAD (Sec 15-T5N-R65W)	MD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Well:	VT LDS 3-16-18	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)
12,211.00	90.59	269.77	6,777.93	534.73	-7,891.30	7,909.06	1.33	0.28	1.29
12,307.00	90.15	268.32	6,777.31	533.13	-7,987.28	8,004.64	1.58	-0.46	-1.51
12,402.00	89.79	268.71	6,777.36	530.67	-8,082.25	8,099.14	0.56	-0.38	0.41
12,498.00	89.70	269.68	6,777.79	529.32	-8,178.24	8,194.74	1.01	-0.09	1.01
12,593.00	90.01	269.77	6,778.03	528.87	-8,273.24	8,289.42	0.34	0.33	0.09
12,689.00	89.70	269.11	6,778.27	527.93	-8,369.23	8,385.06	0.76	-0.32	-0.69
12,784.00	89.97	269.90	6,778.55	527.11	-8,464.23	8,479.71	0.88	0.28	0.83
12,880.00	89.53	268.84	6,778.97	526.05	-8,560.22	8,575.34	1.20	-0.46	-1.10
12,976.00	89.62	268.67	6,779.68	523.97	-8,656.19	8,670.87	0.20	0.09	-0.18
13,071.00	89.66	268.71	6,780.27	521.79	-8,751.17	8,765.39	0.06	0.04	0.04
13,167.00	89.48	269.29	6,781.00	520.12	-8,847.15	8,860.96	0.63	-0.19	0.60
13,262.00	89.35	269.59	6,781.97	519.19	-8,942.14	8,955.60	0.34	-0.14	0.32
13,357.00	89.79	271.44	6,782.68	520.04	-9,037.13	9,050.38	2.00	0.46	1.95
13,453.00	89.84	271.05	6,782.99	522.13	-9,133.11	9,146.23	0.41	0.05	-0.41
13,549.00	89.84	271.84	6,783.26	524.55	-9,229.07	9,242.10	0.82	0.00	0.82
13,645.00	89.70	269.86	6,783.64	525.98	-9,325.06	9,337.91	2.07	-0.15	-2.06
13,741.00	89.79	271.05	6,784.07	526.74	-9,421.05	9,433.68	1.24	0.09	1.24
13,836.00	89.84	271.36	6,784.38	528.74	-9,516.03	9,528.53	0.33	0.05	0.33
13,932.00	90.01	270.87	6,784.50	530.60	-9,612.01	9,624.37	0.54	0.18	-0.51
14,027.00	89.88	271.53	6,784.59	532.59	-9,706.99	9,719.22	0.71	-0.14	0.69
14,123.00	89.79	270.12	6,784.87	533.98	-9,802.98	9,815.03	1.47	-0.09	-1.47
14,218.00	89.79	270.39	6,785.22	534.40	-9,897.98	9,909.78	0.28	0.00	0.28
14,313.00	89.97	271.66	6,785.42	536.10	-9,992.96	10,004.62	1.35	0.19	1.34
14,409.00	89.84	270.96	6,785.58	538.29	-10,088.93	10,100.47	0.74	-0.14	-0.73
14,504.00	90.01	270.87	6,785.70	539.81	-10,183.92	10,195.30	0.20	0.18	-0.09
14,600.00	90.06	271.93	6,785.64	542.15	-10,279.89	10,291.16	1.11	0.05	1.10
14,695.00	89.75	270.17	6,785.80	543.90	-10,374.87	10,386.00	1.88	-0.33	-1.85
14,790.00	90.10	271.71	6,785.92	545.45	-10,469.85	10,480.82	1.66	0.37	1.62
14,886.00	90.01	271.40	6,785.83	548.06	-10,565.82	10,576.70	0.34	-0.09	-0.32
14,982.00	89.88	270.56	6,785.92	549.70	-10,661.80	10,672.53	0.89	-0.14	-0.88
15,077.00	89.22	270.34	6,786.67	550.45	-10,756.80	10,767.30	0.73	-0.69	-0.23
15,173.00	89.48	270.21	6,787.76	550.91	-10,852.79	10,863.04	0.30	0.27	-0.14
15,268.00	89.53	271.89	6,788.58	552.65	-10,947.77	10,957.87	1.77	0.05	1.77
15,364.00	89.00	269.95	6,789.81	554.19	-11,043.74	11,053.68	2.09	-0.55	-2.02
15,459.00	88.91	271.31	6,791.54	555.23	-11,138.72	11,148.46	1.43	-0.09	1.43
15,500.66	88.83	271.12	6,792.36	556.12	-11,180.36	11,190.05	0.50	-0.19	-0.46
Crossing Section 17/18 @ 15500'MD									
15,555.00	88.73	270.87	6,793.52	557.06	-11,234.68	11,244.28	0.50	-0.19	-0.46
15,650.00	88.60	270.92	6,795.73	558.54	-11,329.64	11,339.08	0.15	-0.14	0.05
15,745.00	88.73	270.78	6,797.95	559.95	-11,424.61	11,433.87	0.20	0.14	-0.15
15,840.00	88.56	270.39	6,800.19	560.92	-11,519.58	11,528.63	0.45	-0.18	-0.41
15,936.00	89.00	270.92	6,802.24	562.02	-11,615.55	11,624.40	0.72	0.46	0.55
16,031.00	88.91	271.80	6,803.97	564.27	-11,710.50	11,719.25	0.93	-0.09	0.93

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well VT LDS 3-16-18
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Site:	Vetting PAD (Sec 15-T5N-R65W)	MD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Well:	VT LDS 3-16-18	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)
16,126.00	88.86	271.09	6,805.82	566.67	-11,805.45	11,814.10	0.75	-0.05	-0.75
16,222.00	88.82	271.53	6,807.76	568.86	-11,901.41	11,909.94	0.46	-0.04	0.46
16,317.00	88.86	270.61	6,809.69	570.64	-11,996.37	12,004.76	0.97	0.04	-0.97
16,413.00	88.82	269.99	6,811.63	571.14	-12,092.35	12,100.50	0.65	-0.04	-0.65
16,508.00	88.82	271.66	6,813.59	572.51	-12,187.32	12,195.29	1.76	0.00	1.76
16,604.00	88.69	270.78	6,815.67	574.55	-12,283.27	12,291.12	0.93	-0.14	-0.92
16,700.00	88.56	269.86	6,817.97	575.09	-12,379.24	12,386.84	0.97	-0.14	-0.96
16,795.00	88.78	270.30	6,820.18	575.22	-12,474.22	12,481.55	0.52	0.23	0.46
16,891.00	88.56	269.86	6,822.41	575.35	-12,570.19	12,577.25	0.51	-0.23	-0.46
16,986.00	88.86	271.75	6,824.55	576.69	-12,665.15	12,672.03	2.01	0.32	1.99
17,082.00	88.78	271.14	6,826.52	579.11	-12,761.10	12,767.88	0.64	-0.08	-0.64
17,177.00	88.69	270.65	6,828.62	580.59	-12,856.07	12,862.68	0.52	-0.09	-0.52
17,273.00	88.64	270.12	6,830.86	581.24	-12,952.04	12,958.42	0.55	-0.05	-0.55
17,369.00	89.09	270.48	6,832.76	581.74	-13,048.02	13,054.15	0.60	0.47	0.38
17,464.00	89.88	271.09	6,833.61	583.04	-13,143.00	13,148.96	1.05	0.83	0.64
17,560.00	89.66	270.70	6,834.00	584.54	-13,238.99	13,244.78	0.47	-0.23	-0.41
17,655.00	89.53	269.95	6,834.67	585.08	-13,333.98	13,339.53	0.80	-0.14	-0.79
17,750.00	89.79	271.36	6,835.23	586.16	-13,428.97	13,434.33	1.51	0.27	1.48
17,846.00	89.97	271.80	6,835.44	588.81	-13,524.94	13,530.21	0.50	0.19	0.46
17,942.00	89.57	270.48	6,835.82	590.72	-13,620.92	13,626.05	1.44	-0.42	-1.38
18,037.00	89.53	270.65	6,836.57	591.66	-13,715.91	13,720.83	0.18	-0.04	0.18
18,133.00	91.43	271.62	6,835.76	593.56	-13,811.88	13,816.67	2.22	1.98	1.01
18,228.00	92.09	270.70	6,832.84	595.48	-13,906.81	13,911.47	1.19	0.69	-0.97
18,420.00	92.44	272.02	6,825.26	600.04	-14,098.61	14,103.04	0.71	0.18	0.69
18,515.00	92.14	269.95	6,821.46	601.67	-14,193.51	14,197.79	2.20	-0.32	-2.18
18,611.00	92.36	270.48	6,817.69	602.03	-14,289.44	14,293.46	0.60	0.23	0.55
18,707.00	91.38	271.58	6,814.56	603.75	-14,385.37	14,389.24	1.53	-1.02	1.15
18,802.00	91.34	271.05	6,812.30	605.93	-14,480.31	14,484.08	0.56	-0.04	-0.56
18,898.00	91.47	272.02	6,809.95	608.50	-14,576.25	14,579.93	1.02	0.14	1.01
18,993.00	91.12	269.86	6,807.80	610.06	-14,671.21	14,674.72	2.30	-0.37	-2.27
19,088.00	91.30	270.48	6,805.80	610.34	-14,766.18	14,769.44	0.68	0.19	0.65
19,183.00	91.25	270.83	6,803.68	611.43	-14,861.15	14,864.22	0.37	-0.05	0.37
19,279.00	91.47	271.80	6,801.40	613.63	-14,957.10	14,960.05	1.04	0.23	1.01
19,375.00	91.52	271.93	6,798.90	616.75	-15,053.02	15,055.92	0.15	0.05	0.14
19,470.00	90.99	269.90	6,796.82	618.27	-15,147.98	15,150.72	2.21	-0.56	-2.14
19,565.00	91.43	270.52	6,794.81	618.62	-15,242.96	15,245.44	0.80	0.46	0.65
19,661.00	91.38	271.97	6,792.46	620.70	-15,338.90	15,341.26	1.51	-0.05	1.51
19,756.00	91.03	270.96	6,790.46	623.13	-15,433.85	15,436.12	1.12	-0.37	-1.06
19,852.00	91.21	270.30	6,788.58	624.19	-15,529.82	15,531.89	0.71	0.19	-0.69
19,947.00	91.52	270.39	6,786.32	624.76	-15,624.79	15,626.62	0.34	0.33	0.09
20,042.00	91.30	269.15	6,783.98	624.38	-15,719.76	15,721.28	1.33	-0.23	-1.31
20,137.00	91.47	269.81	6,781.69	623.51	-15,814.73	15,815.90	0.72	0.18	0.69
Last MWD Survey @ 20137'MD									
20,255.00	91.47	269.81	6,778.66	623.12	-15,932.69	15,933.49	0.00	0.00	0.00

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well VT LDS 3-16-18
Project:	Weld County, CO (NAD83)	TVD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Site:	Vetting PAD (Sec 15-T5N-R65W)	MD Reference:	KB=29 @ 4677.00ft (Patterson #901)
Well:	VT LDS 3-16-18	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)
PTB @ TD @ 20255'MD (511'FWL & 1301'FNL)									

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
VT-LDS 3-16-18 BHL	0.00	0.00	0.00	602.63	-15,983.05	1,390,597.45	3,218,843.90	40.40293	-104.71419
- actual wellpath misses target center by 6778.88ft at 20255.00ft MD (6778.66 TVD, 623.12 N, -15932.69 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,613.00	1,592.93	13.11	-170.16	Tie in to Surface Surveys @ 1613'MD
1,671.00	1,647.08	20.68	-189.50	First MWD Survey @ 1671'MD
2,498.26	2,371.30	84.65	-578.29	Crossing Section 15/16 @ 2498'MD
5,237.33	4,665.07	283.31	-2,058.00	30°Inclination @ 5237'MD
7,886.07	6,795.11	476.94	-3,572.50	70°Inclination @ 7886'MD
10,204.64	6,791.83	520.88	-5,885.82	Crossing Section 16/17 @ 10204'MD
15,500.66	6,792.36	556.12	-11,180.36	Crossing Section 17/18 @ 15500'MD
20,137.00	6,781.69	623.51	-15,814.73	Last MWD Survey @ 20137'MD
20,255.00	6,778.66	623.12	-15,932.69	PTB @ TD @ 20255'MD (511'FWL & 1301'FNL)

Checked By: _____ Approved By: _____ Date: _____