

Extraction Oil & Gas

Weld County, CO (NAD83)

Sec 10-T01S-R68W Interchange Pad

Interchange B N35-20-9N

Wellbore #1

Design: Wellbore #1

Standard Survey Report

27 June, 2019

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-9N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-9N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 Single User Db

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		Sec 10-T01S-R68W Interchange Pad			
Site Position:		Northing:	1,235,601.28 usft	Latitude:	39.978987
From:	Map	Easting:	3,142,562.59 usft	Longitude:	-104.991281
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.33 °

Well		Interchange B N35-20-9N				
Well Position	+N/-S	0.00 usft	Northing:	1,235,609.85 usft	Latitude:	39.979010
	+E/-W	0.00 usft	Easting:	3,142,597.57 usft	Longitude:	-104.991156
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,213.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/8/2019	8.09	66.44	51,890.69812708

Design	Wellbore #1				
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	10.83	

Survey Program	Date	6/27/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.30	1,612.30	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,763.00	18,672.00	Atlas MWD Surveys (Wellbore #1)	MWD	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	
122.30	0.66	150.05	122.30	-0.61	0.35	-0.53	0.54	0.54	0.00	
209.30	0.44	109.98	209.29	-1.16	0.92	-0.97	0.49	-0.25	-46.06	
297.30	1.45	34.39	297.28	-0.36	1.86	0.00	1.60	1.15	-85.90	
384.30	3.08	52.85	384.21	1.96	4.35	2.75	2.03	1.87	21.22	
471.30	5.32	52.14	470.97	5.85	9.39	7.51	2.58	2.57	-0.82	
559.30	7.12	52.85	558.45	11.65	16.96	14.63	2.05	2.05	0.81	
646.30	9.14	51.70	644.57	19.19	26.68	23.86	2.33	2.32	-1.32	
733.30	9.58	48.63	730.42	28.26	37.54	34.80	0.76	0.51	-3.53	
820.30	12.57	50.91	815.79	39.01	50.32	47.77	3.47	3.44	2.62	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 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)
908.30	13.84	49.68	901.46	51.86	65.78	63.29	1.48	1.44	-1.40
995.30	15.47	49.15	985.62	66.19	82.49	80.50	1.88	1.87	-0.61
1,082.30	17.58	48.01	1,069.03	82.57	101.04	100.07	2.45	2.43	-1.31
1,169.30	19.25	45.90	1,151.57	101.34	121.10	122.28	2.07	1.92	-2.43
1,257.30	20.13	44.76	1,234.42	122.19	142.18	146.72	1.09	1.00	-1.30
1,344.30	23.34	46.96	1,315.23	144.58	165.33	173.06	3.81	3.69	2.53
1,431.30	24.21	46.61	1,394.84	168.60	190.89	201.45	1.01	1.00	-0.40
1,518.30	26.24	48.28	1,473.55	193.66	218.21	231.20	2.47	2.33	1.92
1,612.30	26.89	49.24	1,557.62	221.37	249.82	264.35	0.83	0.69	1.02
Tie into Surface Surveys									
1,763.00	27.13	46.25	1,691.89	267.38	300.46	319.05	0.91	0.16	-1.98
First MWD Survey @ 1763' MD									
1,858.00	32.88	48.02	1,774.13	299.63	335.30	357.28	6.12	6.05	1.86
1,954.00	32.66	46.96	1,854.85	334.74	373.61	398.96	0.64	-0.23	-1.10
2,049.00	35.22	48.72	1,933.66	370.32	412.94	441.29	2.89	2.69	1.85
2,145.00	34.47	47.66	2,012.45	406.88	453.82	484.88	1.00	-0.78	-1.10
2,240.00	34.47	48.15	2,090.77	442.92	493.72	527.77	0.29	0.00	0.52
2,335.00	35.57	47.66	2,168.56	479.47	534.17	571.27	1.20	1.16	-0.52
2,431.00	33.85	46.43	2,247.48	516.71	574.18	615.36	1.93	-1.79	-1.28
2,526.00	36.72	49.91	2,325.03	553.25	615.09	658.93	3.69	3.02	3.66
2,622.00	34.73	49.29	2,402.96	589.57	657.78	702.62	2.11	-2.07	-0.65
2,717.00	32.61	47.88	2,482.02	624.39	697.29	744.24	2.38	-2.23	-1.48
2,812.00	34.38	50.13	2,561.24	658.76	736.87	785.43	2.28	1.86	2.37
2,908.00	37.30	52.51	2,639.06	693.85	780.76	828.14	3.37	3.04	2.48
3,003.00	34.95	51.58	2,715.79	728.28	824.93	870.26	2.54	-2.47	-0.98
3,099.00	36.99	50.92	2,793.48	763.58	868.89	913.18	2.16	2.13	-0.69
3,194.00	34.73	50.17	2,870.47	798.93	911.87	955.98	2.42	-2.38	-0.79
3,289.00	36.41	47.75	2,947.74	835.23	953.52	999.45	2.31	1.77	-2.55
3,385.00	33.58	46.74	3,026.38	872.58	993.95	1,043.74	3.01	-2.95	-1.05
3,481.00	31.64	48.54	3,107.24	907.45	1,032.16	1,085.17	2.26	-2.02	1.88
3,576.00	33.94	44.40	3,187.11	942.91	1,069.40	1,126.98	3.38	2.42	-4.36
3,671.00	37.07	45.86	3,264.44	981.81	1,108.52	1,172.54	3.41	3.29	1.54
3,767.00	36.32	49.03	3,341.42	1,020.60	1,150.75	1,218.57	2.12	-0.78	3.30
3,862.00	36.06	46.38	3,418.10	1,058.34	1,192.24	1,263.43	1.67	-0.27	-2.79
3,957.00	35.75	47.57	3,495.05	1,096.35	1,232.96	1,308.42	0.80	-0.33	1.25
4,052.00	36.46	44.53	3,571.81	1,135.20	1,273.25	1,354.14	2.03	0.75	-3.20
4,147.00	37.34	46.03	3,647.78	1,175.33	1,313.78	1,401.17	1.33	0.93	1.58
4,243.00	37.30	48.54	3,724.13	1,214.81	1,356.53	1,447.97	1.59	-0.04	2.61
4,338.00	36.77	53.70	3,799.98	1,250.71	1,401.03	1,491.59	3.32	-0.56	5.43
4,434.00	32.97	52.11	3,878.73	1,283.77	1,444.82	1,532.29	4.07	-3.96	-1.66
4,529.00	33.58	55.37	3,958.16	1,314.58	1,486.84	1,570.44	1.99	0.64	3.43
4,625.00	33.27	54.23	4,038.29	1,345.06	1,530.05	1,608.50	0.73	-0.32	-1.19
4,720.00	33.72	51.28	4,117.52	1,376.79	1,571.77	1,647.50	1.78	0.47	-3.11

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Survey									
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4,815.00	37.47	47.71	4,194.76	1,412.74	1,613.74	1,690.69	4.51	3.95	-3.76
4,910.00	37.07	48.19	4,270.36	1,451.27	1,656.46	1,736.56	0.52	-0.42	0.51
5,006.00	36.10	47.93	4,347.44	1,489.51	1,699.02	1,782.12	1.02	-1.01	-0.27
5,102.00	35.09	48.46	4,425.51	1,526.76	1,740.67	1,826.53	1.10	-1.05	0.55
5,197.00	35.13	49.91	4,503.22	1,562.47	1,782.02	1,869.37	0.88	0.04	1.53
5,293.00	34.34	49.03	4,582.11	1,598.02	1,823.59	1,912.09	0.97	-0.82	-0.92
5,388.00	33.72	49.47	4,660.84	1,632.72	1,863.87	1,953.74	0.70	-0.65	0.46
5,483.00	34.91	48.10	4,739.31	1,668.01	1,904.15	1,995.97	1.49	1.25	-1.44
5,579.00	35.75	48.28	4,817.63	1,705.02	1,945.53	2,040.09	0.88	0.88	0.19
5,674.00	36.37	50.75	4,894.43	1,741.31	1,988.05	2,083.72	1.66	0.65	2.60
5,769.00	36.54	50.48	4,970.84	1,777.13	2,031.68	2,127.10	0.25	0.18	-0.28
5,865.00	35.13	49.95	5,048.67	1,813.09	2,074.87	2,170.53	1.50	-1.47	-0.55
5,963.00	38.40	47.84	5,143.19	1,859.55	2,128.05	2,226.15	2.97	2.77	-1.79
6,078.00	38.22	46.91	5,217.73	1,899.43	2,171.38	2,273.46	0.64	-0.19	-0.98
6,173.00	35.26	44.09	5,293.86	1,939.21	2,211.93	2,320.15	3.59	-3.12	-2.97
6,269.00	35.88	47.31	5,371.95	1,978.19	2,251.89	2,365.94	2.05	0.65	3.35
6,365.00	32.79	44.05	5,451.22	2,015.96	2,290.66	2,410.32	3.74	-3.22	-3.40
6,460.00	33.89	48.85	5,530.60	2,051.89	2,328.49	2,452.71	3.01	1.16	5.05
6,555.00	35.71	50.66	5,608.61	2,086.90	2,369.88	2,494.87	2.20	1.92	1.91
6,650.00	33.14	48.28	5,686.97	2,121.76	2,410.72	2,536.78	3.05	-2.71	-2.51
6,745.00	29.74	45.68	5,768.01	2,155.52	2,446.97	2,576.75	3.85	-3.58	-2.74
6,841.00	27.00	45.11	5,852.47	2,187.54	2,479.45	2,614.30	2.87	-2.85	-0.59
6,936.00	24.30	43.92	5,938.10	2,216.84	2,508.29	2,648.50	2.89	-2.84	-1.25
7,032.00	23.91	52.95	6,025.76	2,242.80	2,537.53	2,679.49	3.86	-0.41	9.41
7,127.00	20.90	52.69	6,113.58	2,264.68	2,566.38	2,706.39	3.17	-3.17	-0.27
7,222.00	18.25	50.75	6,203.08	2,284.36	2,591.38	2,730.42	2.87	-2.79	-2.04
7,318.00	16.31	49.25	6,294.75	2,302.67	2,613.24	2,752.52	2.07	-2.02	-1.56
7,413.00	11.71	49.87	6,386.90	2,317.60	2,630.72	2,770.46	4.84	-4.84	0.65
7,508.00	7.73	48.37	6,480.51	2,328.07	2,642.88	2,783.02	4.20	-4.19	-1.58
7,603.00	3.58	40.83	6,575.03	2,334.56	2,649.59	2,790.66	4.43	-4.37	-7.94
7,699.00	1.59	61.19	6,670.93	2,337.47	2,652.72	2,794.10	2.25	-2.07	21.21
7,794.00	1.28	335.82	6,765.91	2,339.07	2,653.44	2,795.81	2.06	-0.33	-89.86
7,889.00	1.28	341.72	6,860.89	2,341.05	2,652.67	2,797.61	0.14	0.00	6.21
7,985.00	1.15	327.53	6,956.87	2,342.88	2,651.82	2,799.25	0.34	-0.14	-14.78
8,080.00	1.02	337.58	7,051.85	2,344.46	2,650.99	2,800.65	0.24	-0.14	10.58
8,175.00	9.99	1.25	7,146.32	2,353.50	2,650.84	2,809.50	9.54	9.44	24.92
8,271.00	20.77	357.85	7,238.75	2,378.91	2,650.38	2,834.37	11.26	11.23	-3.54
8,366.00	26.16	356.57	7,325.86	2,416.68	2,648.50	2,871.11	5.70	5.67	-1.35
8,427.62	30.00	354.99	7,380.22	2,445.59	2,646.34	2,899.11	6.34	6.22	-2.56
30° Inclination @ 8427.62' MD									
8,461.00	32.08	354.28	7,408.82	2,462.72	2,644.73	2,915.63	6.34	6.24	-2.13
8,557.00	41.45	358.47	7,485.65	2,519.99	2,641.33	2,971.24	10.10	9.76	4.36
8,652.00	48.61	359.62	7,552.75	2,587.15	2,640.25	3,037.00	7.59	7.54	1.21
8,748.00	60.67	1.77	7,608.20	2,665.28	2,641.31	3,113.94	12.69	12.56	2.24

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8,842.59	70.00	359.89	7,647.64	2,751.13	2,642.50	3,198.49	10.03	9.86	-1.99
70° Inclination @ 8842.59' MD									
8,843.00	70.04	359.88	7,647.78	2,751.51	2,642.50	3,198.86	10.03	9.87	-1.85
8,846.70	70.41	359.78	7,649.03	2,755.00	2,642.49	3,202.28	10.30	9.97	-2.74
Cross @ 8846.70' MD									
8,939.00	79.63	357.37	7,672.86	2,844.03	2,640.23	3,289.30	10.30	9.99	-2.61
9,034.00	87.76	357.28	7,683.29	2,938.27	2,635.83	3,381.04	8.56	8.56	-0.09
9,129.00	89.00	359.09	7,685.97	3,033.18	2,632.82	3,473.70	2.31	1.31	1.91
9,225.00	91.21	357.94	7,685.80	3,129.14	2,630.33	3,567.48	2.60	2.30	-1.20
9,320.00	90.94	356.66	7,684.02	3,224.01	2,625.86	3,659.83	1.38	-0.28	-1.35
9,416.00	91.16	356.71	7,682.26	3,319.84	2,620.31	3,752.91	0.24	0.23	0.05
9,511.00	91.21	356.35	7,680.29	3,414.64	2,614.56	3,844.94	0.38	0.05	-0.38
9,606.00	91.38	0.06	7,678.14	3,509.56	2,611.59	3,937.61	3.91	0.18	3.91
9,702.00	89.31	359.53	7,677.57	3,605.55	2,611.24	4,031.83	2.23	-2.16	-0.55
9,797.00	89.22	359.79	7,678.79	3,700.54	2,610.68	4,125.02	0.29	-0.09	0.27
9,893.00	89.00	359.48	7,680.28	3,796.52	2,610.07	4,219.18	0.40	-0.23	-0.32
9,988.00	88.69	358.82	7,682.19	3,891.49	2,608.66	4,312.20	0.77	-0.33	-0.69
10,084.00	90.06	0.76	7,683.24	3,987.48	2,608.31	4,406.41	2.47	1.43	2.02
10,179.00	89.93	359.57	7,683.25	4,082.48	2,608.58	4,499.77	1.26	-0.14	-1.25
10,275.00	89.70	359.53	7,683.56	4,178.48	2,607.83	4,593.92	0.24	-0.24	-0.04
10,370.00	90.28	0.06	7,683.57	4,273.47	2,607.49	4,687.16	0.83	0.61	0.56
10,465.00	91.69	358.91	7,681.94	4,368.45	2,606.63	4,780.29	1.92	1.48	-1.21
10,561.00	91.56	358.65	7,679.22	4,464.39	2,604.59	4,874.14	0.30	-0.14	-0.27
10,656.00	91.78	358.12	7,676.45	4,559.31	2,601.91	4,966.87	0.60	0.23	-0.56
10,752.00	91.25	357.81	7,673.91	4,655.22	2,598.50	5,060.43	0.64	-0.55	-0.32
10,847.00	91.34	357.15	7,671.76	4,750.10	2,594.33	5,152.84	0.70	0.09	-0.69
10,943.00	89.70	357.32	7,670.89	4,845.98	2,589.70	5,246.14	1.72	-1.71	0.18
11,038.00	89.31	357.15	7,671.71	4,940.87	2,585.12	5,338.48	0.45	-0.41	-0.18
11,134.00	89.31	356.35	7,672.87	5,036.71	2,579.67	5,431.59	0.83	0.00	-0.83
11,229.00	89.00	357.90	7,674.27	5,131.57	2,574.91	5,523.87	1.66	-0.33	1.63
11,325.00	88.69	357.32	7,676.21	5,227.47	2,570.91	5,617.31	0.68	-0.32	-0.60
11,420.00	90.01	358.73	7,677.28	5,322.40	2,567.63	5,709.94	2.03	1.39	1.48
11,515.00	90.01	358.34	7,677.27	5,417.37	2,565.20	5,802.76	0.41	0.00	-0.41
11,611.00	89.57	358.03	7,677.62	5,513.32	2,562.16	5,896.43	0.56	-0.46	-0.32
11,706.00	91.16	358.60	7,677.01	5,608.28	2,559.37	5,989.17	1.78	1.67	0.60
11,802.00	91.25	358.38	7,675.00	5,704.22	2,556.84	6,082.93	0.25	0.09	-0.23
11,897.00	90.77	356.93	7,673.32	5,799.12	2,552.96	6,175.42	1.61	-0.51	-1.53
11,993.00	92.36	0.63	7,670.70	5,895.05	2,550.91	6,269.25	4.19	1.66	3.85
12,088.00	91.03	0.58	7,667.89	5,990.00	2,551.91	6,362.70	1.40	-1.40	-0.05
12,183.00	91.21	359.88	7,666.03	6,084.98	2,552.30	6,456.06	0.76	0.19	-0.74
12,279.00	89.40	359.57	7,665.52	6,180.97	2,551.83	6,550.26	1.91	-1.89	-0.32
12,375.00	89.62	358.29	7,666.34	6,276.95	2,550.04	6,644.19	1.35	0.23	-1.33
12,470.00	89.88	357.59	7,666.76	6,371.89	2,546.63	6,736.80	0.79	0.27	-0.74

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-9N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-9N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 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)
12,565.00	89.17	358.21	7,667.54	6,466.82	2,543.15	6,829.39	0.99	-0.75	0.65
12,660.00	89.09	357.50	7,668.99	6,561.74	2,539.59	6,921.95	0.75	-0.08	-0.75
12,755.00	89.09	357.32	7,670.49	6,656.63	2,535.30	7,014.35	0.19	0.00	-0.19
12,851.00	89.09	356.93	7,672.02	6,752.50	2,530.48	7,107.60	0.41	0.00	-0.41
12,947.00	89.75	359.13	7,672.99	6,848.43	2,527.18	7,201.21	2.39	0.69	2.29
13,042.00	90.15	358.51	7,673.07	6,943.41	2,525.23	7,294.13	0.78	0.42	-0.65
13,137.00	90.23	357.50	7,672.76	7,038.35	2,521.92	7,386.76	1.07	0.08	-1.06
13,232.00	90.59	1.91	7,672.08	7,133.32	2,521.43	7,479.95	4.66	0.38	4.64
13,328.00	90.72	1.16	7,670.98	7,229.28	2,524.00	7,574.69	0.79	0.14	-0.78
13,519.00	90.23	359.92	7,669.40	7,420.26	2,525.80	7,762.60	0.70	-0.26	-0.65
13,614.00	90.23	359.22	7,669.02	7,515.26	2,525.09	7,855.78	0.74	0.00	-0.74
13,710.00	89.04	359.04	7,669.63	7,611.24	2,523.63	7,949.78	1.25	-1.24	-0.19
13,805.00	88.78	358.34	7,671.44	7,706.20	2,521.46	8,042.64	0.79	-0.27	-0.74
13,860.84	88.68	358.08	7,672.67	7,762.00	2,519.72	8,097.12	0.50	-0.19	-0.46
Cross @ 13860.84' MD									
13,901.00	88.60	357.90	7,673.63	7,802.12	2,518.31	8,136.26	0.50	-0.19	-0.46
13,997.00	90.59	358.34	7,674.31	7,898.06	2,515.16	8,229.91	2.12	2.07	0.46
14,093.00	90.37	357.72	7,673.50	7,994.00	2,511.86	8,323.52	0.69	-0.23	-0.65
14,188.00	90.10	357.50	7,673.11	8,088.92	2,507.90	8,416.00	0.37	-0.28	-0.23
14,283.00	89.57	357.19	7,673.39	8,183.82	2,503.50	8,508.38	0.65	-0.56	-0.33
14,379.00	90.72	0.63	7,673.14	8,279.78	2,501.68	8,602.30	3.78	1.20	3.58
14,475.00	90.23	0.10	7,672.35	8,375.78	2,502.29	8,696.70	0.75	-0.51	-0.55
14,570.00	89.97	0.58	7,672.18	8,470.78	2,502.85	8,790.11	0.57	-0.27	0.51
14,666.00	89.88	359.88	7,672.31	8,566.77	2,503.24	8,884.47	0.74	-0.09	-0.73
14,761.00	90.23	359.31	7,672.22	8,661.77	2,502.56	8,977.65	0.70	0.37	-0.60
14,856.00	90.72	358.43	7,671.43	8,756.75	2,500.69	9,070.59	1.06	0.52	-0.93
14,952.00	91.12	357.50	7,669.89	8,852.67	2,497.28	9,164.17	1.05	0.42	-0.97
15,047.00	89.93	357.85	7,669.02	8,947.59	2,493.43	9,256.67	1.31	-1.25	0.37
15,142.00	90.01	357.28	7,669.07	9,042.50	2,489.39	9,349.14	0.61	0.08	-0.60
15,238.00	89.97	356.18	7,669.08	9,138.35	2,483.92	9,442.25	1.15	-0.04	-1.15
15,333.00	90.19	355.08	7,668.95	9,233.07	2,476.68	9,533.92	1.18	0.23	-1.16
15,429.00	90.19	359.79	7,668.63	9,328.94	2,472.38	9,627.29	4.91	0.00	4.91
15,525.00	89.93	358.91	7,668.53	9,424.94	2,471.29	9,721.37	0.96	-0.27	-0.92
15,620.00	89.57	358.16	7,668.95	9,519.90	2,468.87	9,814.19	0.88	-0.38	-0.79
15,715.00	89.75	357.50	7,669.51	9,614.83	2,465.27	9,906.75	0.72	0.19	-0.69
15,810.00	89.79	356.44	7,669.89	9,709.70	2,460.25	9,998.98	1.12	0.04	-1.12
15,906.00	89.48	355.65	7,670.50	9,805.47	2,453.63	10,091.81	0.88	-0.32	-0.82
16,001.00	90.99	355.74	7,670.11	9,900.20	2,446.49	10,183.51	1.59	1.59	0.09
16,097.00	90.81	354.99	7,668.61	9,995.87	2,438.74	10,276.02	0.80	-0.19	-0.78
16,192.00	90.19	353.97	7,667.78	10,090.42	2,429.60	10,367.18	1.26	-0.65	-1.07
16,288.00	90.46	357.81	7,667.23	10,186.16	2,422.72	10,459.92	4.01	0.28	4.00
16,383.00	90.28	356.88	7,666.62	10,281.05	2,418.32	10,552.30	1.00	-0.19	-0.98
16,479.00	92.18	359.57	7,664.56	10,376.97	2,415.35	10,645.95	3.43	1.98	2.80
16,574.00	92.09	358.47	7,661.02	10,471.89	2,413.72	10,738.87	1.16	-0.09	-1.16

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-9N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-9N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 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)	
16,670.00	91.87	357.81	7,657.70	10,567.78	2,410.61	10,832.47	0.72	-0.23	-0.69	
16,765.00	91.34	356.57	7,655.04	10,662.63	2,405.95	10,924.76	1.42	-0.56	-1.31	
16,860.00	90.59	359.75	7,653.44	10,757.55	2,402.91	11,017.42	3.44	-0.79	3.35	
16,956.00	89.84	358.69	7,653.08	10,853.54	2,401.60	11,111.45	1.35	-0.78	-1.10	
17,051.00	89.35	357.90	7,653.75	10,948.50	2,398.77	11,204.19	0.98	-0.52	-0.83	
17,147.00	88.69	357.02	7,655.39	11,044.39	2,394.52	11,297.57	1.15	-0.69	-0.92	
17,242.00	90.41	0.67	7,656.14	11,139.34	2,392.60	11,390.48	4.25	1.81	3.84	
17,338.00	89.97	0.01	7,655.82	11,235.34	2,393.17	11,484.88	0.83	-0.46	-0.69	
17,433.00	90.72	359.48	7,655.25	11,330.34	2,392.75	11,578.10	0.97	0.79	-0.56	
17,529.00	90.54	359.13	7,654.19	11,426.32	2,391.59	11,672.16	0.41	-0.19	-0.36	
17,624.00	92.97	2.44	7,651.28	11,521.25	2,392.89	11,765.64	4.32	2.56	3.48	
17,719.00	92.75	1.77	7,646.54	11,616.07	2,396.37	11,859.43	0.74	-0.23	-0.71	
17,815.00	92.49	0.94	7,642.16	11,711.94	2,398.64	11,954.02	0.91	-0.27	-0.86	
17,910.00	90.41	359.88	7,639.75	11,806.90	2,399.32	12,047.42	2.46	-2.19	-1.12	
18,006.00	90.01	0.01	7,639.40	11,902.90	2,399.23	12,141.69	0.44	-0.42	0.14	
18,101.00	89.48	359.40	7,639.82	11,997.90	2,398.74	12,234.91	0.85	-0.56	-0.64	
18,197.00	90.68	1.51	7,639.69	12,093.89	2,399.50	12,329.33	2.53	1.25	2.20	
18,292.00	90.50	0.89	7,638.71	12,188.86	2,401.49	12,422.99	0.68	-0.19	-0.65	
18,387.00	89.88	0.28	7,638.40	12,283.85	2,402.46	12,516.47	0.92	-0.65	-0.64	
18,483.00	91.47	0.58	7,637.26	12,379.84	2,403.18	12,610.89	1.69	1.66	0.31	
18,578.00	91.03	359.92	7,635.19	12,474.82	2,403.59	12,704.25	0.83	-0.46	-0.69	
Last MWD Survey @ 18578' MD										
18,672.00	91.03	359.92	7,633.50	12,568.80	2,403.46	12,796.54	0.00	0.00	0.00	
Projection to TD @ 18672' MD 501.5' FNL/ 671' FEL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
30° Inclination @ 8427.6	0.00	0.00	7,380.22	2,445.60	2,646.36	1,238,070.59	3,145,229.86	39.985723	-104.981712	
- actual wellpath misses target center by 0.03usft at 8427.62usft MD (7380.22 TVD, 2445.59 N, 2646.34 E)										
- Point										
70° Inclination @ 8842.5	0.00	0.00	7,647.64	2,751.13	2,642.50	1,238,376.10	3,145,224.24	39.986562	-104.981726	
- actual wellpath hits target center										
- Point										
Cross @ 8846.70' MD	0.00	0.00	7,649.03	2,755.00	2,642.49	1,238,379.97	3,145,224.21	39.986573	-104.981726	
- actual wellpath hits target center										
- Point										
Cross @ 13860.84' MD	0.00	0.00	7,672.67	7,762.00	2,519.72	1,243,386.18	3,145,072.71	40.000318	-104.982162	
- actual wellpath hits target center										
- Point										

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-9N
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-9N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,612.30	1,557.62	221.37	249.82	Tie into Surface Surveys
1,763.00	1,691.89	267.38	300.46	First MWD Survey @ 1763' MD
8,427.62	7,380.22	2,445.59	2,646.34	30° Inclination @ 8427.62' MD
8,842.59	7,647.64	2,751.13	2,642.50	70° Inclination @ 8842.59' MD
8,846.70	7,649.03	2,755.00	2,642.49	Cross @ 8846.70' MD
13,860.84	7,672.67	7,762.00	2,519.72	Cross @ 13860.84' MD
18,578.00	7,635.19	12,474.82	2,403.59	Last MWD Survey @ 18578' MD
18,672.00	7,633.50	12,568.80	2,403.46	Projection to TD @ 18672' MD 501.5' FNL/ 671' FEL

Checked By: _____	Approved By: _____	Date: _____
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