

Extraction Oil & Gas

Weld County, CO (NAD83)

Sec 10-T01S-R68W Interchange Pad

Interchange B N35-20-7N

Wellbore #1

Design: Wellbore #1

Standard Survey Report

27 June, 2019

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-7N
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 N35-20-7N	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 N35-20-7N				
Well Position	+N/-S	0.00 usft	Northing:	1,235,601.28 usft	Latitude:	39.978987
	+E/-W	0.00 usft	Easting:	3,142,562.59 usft	Longitude:	-104.991281
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	51,890.67280739

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	9.51	

Survey Program	Date	6/27/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.30	1,606.30	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,606.30	18,653.00	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	0.62	290.59	122.30	0.23	-0.62	0.13	0.51	0.51	0.00	
209.30	0.44	253.76	209.29	0.30	-1.38	0.07	0.43	-0.21	-42.33	
297.30	0.66	255.87	297.29	0.09	-2.20	-0.28	0.25	0.25	2.40	
384.30	0.97	61.20	384.29	0.32	-2.04	-0.02	1.86	0.36	190.03	
471.30	1.85	43.88	471.26	1.69	-0.42	1.59	1.11	1.01	-19.91	
559.30	3.30	40.19	559.17	4.64	2.20	4.94	1.66	1.65	-4.19	
646.30	3.96	43.53	645.99	8.74	5.89	9.59	0.80	0.76	3.84	
733.30	6.42	41.16	732.63	14.58	11.16	16.22	2.84	2.83	-2.72	
820.30	8.09	41.95	818.93	22.79	18.45	25.53	1.92	1.92	0.91	

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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	9.98	42.04	905.84	33.06	27.70	37.18	2.15	2.15	0.10
995.30	12.04	42.83	991.23	45.32	38.92	51.12	2.37	2.37	0.91
1,082.30	13.40	41.95	1,076.09	59.47	51.82	67.22	1.58	1.56	-1.01
1,169.30	14.50	41.95	1,160.52	75.07	65.84	84.92	1.26	1.26	0.00
1,257.30	16.35	43.26	1,245.35	92.28	81.70	104.52	2.14	2.10	1.49
1,344.30	18.94	45.72	1,328.25	111.06	100.20	126.10	3.10	2.98	2.83
1,431.30	19.51	46.61	1,410.40	130.90	120.87	149.08	0.74	0.66	1.02
1,518.30	21.40	44.58	1,491.91	152.19	142.57	173.66	2.32	2.17	-2.33
1,606.30	24.17	44.06	1,573.04	176.57	166.37	201.64	3.16	3.15	-0.59
Tie into Surface Surveys									
1,667.00	24.88	43.56	1,628.26	194.76	183.81	222.46	1.22	1.17	-0.82
First MWD Survey @ 1667' MD									
1,763.00	28.59	46.08	1,713.99	225.33	214.28	257.65	4.04	3.86	2.63
1,858.00	32.83	44.80	1,795.65	259.39	248.82	296.95	4.52	4.46	-1.35
1,953.00	31.99	44.05	1,875.85	295.75	284.46	338.70	0.98	-0.88	-0.79
2,049.00	30.53	43.04	1,957.91	331.85	318.79	379.98	1.62	-1.52	-1.05
2,144.00	29.92	41.58	2,039.99	367.21	350.98	420.17	1.01	-0.64	-1.54
2,240.00	28.06	40.08	2,123.96	402.40	381.41	459.90	2.08	-1.94	-1.56
2,335.00	31.02	40.26	2,206.61	438.18	411.62	500.19	3.12	3.12	0.19
2,430.00	29.83	39.73	2,288.52	475.04	442.54	541.65	1.28	-1.25	-0.56
2,526.00	32.61	42.37	2,370.62	512.52	475.25	584.02	3.23	2.90	2.75
2,621.00	30.89	41.40	2,451.40	549.73	508.63	626.23	1.89	-1.81	-1.02
2,716.00	33.85	43.56	2,531.63	587.20	543.00	668.87	3.34	3.12	2.27
2,812.00	31.68	42.82	2,612.35	625.07	578.56	712.10	2.30	-2.26	-0.77
2,907.00	29.70	42.15	2,694.04	660.82	611.31	752.77	2.12	-2.08	-0.71
3,003.00	31.20	41.40	2,776.80	697.11	643.72	793.91	1.61	1.56	-0.78
3,098.00	28.68	40.92	2,859.11	732.80	674.93	834.27	2.66	-2.65	-0.51
3,193.00	31.24	42.64	2,941.41	768.15	706.55	874.36	2.84	2.69	1.81
3,289.00	34.03	46.56	3,022.26	804.94	742.93	916.67	3.65	2.91	4.08
3,384.00	31.64	44.97	3,102.08	840.86	779.85	958.19	2.67	-2.52	-1.67
3,480.00	28.77	43.92	3,185.03	875.32	813.67	997.77	3.04	-2.99	-1.09
3,575.00	32.57	43.12	3,266.73	910.46	847.02	1,037.94	4.02	4.00	-0.84
3,671.00	32.08	42.02	3,347.85	948.26	881.75	1,080.96	0.80	-0.51	-1.15
3,766.00	29.08	40.22	3,429.63	984.64	913.55	1,122.09	3.30	-3.16	-1.89
3,861.00	32.66	42.20	3,511.16	1,021.27	945.69	1,163.53	3.92	3.77	2.08
3,956.00	32.74	42.07	3,591.11	1,059.33	980.12	1,206.76	0.11	0.08	-0.14
4,052.00	29.43	40.26	3,673.31	1,096.61	1,012.77	1,248.92	3.58	-3.45	-1.89
4,147.00	32.61	41.05	3,754.72	1,133.74	1,044.67	1,290.81	3.37	3.35	0.83
4,242.00	31.82	38.94	3,835.09	1,172.52	1,077.22	1,334.44	1.45	-0.83	-2.22
4,338.00	28.50	37.75	3,918.09	1,210.33	1,107.16	1,376.68	3.51	-3.46	-1.24
4,433.00	29.43	39.73	4,001.21	1,246.20	1,135.96	1,416.82	1.41	0.98	2.08
4,529.00	32.30	47.62	4,083.64	1,281.65	1,170.00	1,457.40	5.16	2.99	8.22
4,624.00	28.46	46.87	4,165.58	1,314.25	1,205.28	1,495.38	4.06	-4.04	-0.79

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4,720.00	31.46	47.93	4,248.74	1,346.68	1,240.58	1,533.20	3.17	3.13	1.10	
4,814.00	30.36	47.31	4,329.39	1,379.22	1,276.25	1,571.19	1.22	-1.17	-0.66	
4,910.00	31.77	46.78	4,411.62	1,412.98	1,312.50	1,610.48	1.50	1.47	-0.55	
5,006.00	30.14	46.69	4,493.94	1,446.82	1,348.46	1,649.80	1.70	-1.70	-0.09	
5,101.00	31.60	44.45	4,575.48	1,480.95	1,383.25	1,689.21	1.96	1.54	-2.36	
5,196.00	35.04	44.49	4,654.86	1,518.19	1,419.80	1,731.97	3.62	3.62	0.04	
5,292.00	32.13	43.52	4,734.82	1,556.37	1,456.70	1,775.73	3.08	-3.03	-1.01	
5,387.00	33.98	43.87	4,814.44	1,593.83	1,492.50	1,818.59	1.96	1.95	0.37	
5,483.00	32.61	42.73	4,894.68	1,632.17	1,528.64	1,862.38	1.57	-1.43	-1.19	
5,578.00	31.82	45.59	4,975.06	1,668.50	1,563.91	1,904.04	1.81	-0.83	3.01	
5,673.00	30.80	41.98	5,056.23	1,704.11	1,598.07	1,944.81	2.25	-1.07	-3.80	
5,769.00	32.79	37.13	5,137.84	1,743.12	1,630.21	1,988.59	3.37	2.07	-5.05	
5,864.00	34.91	38.45	5,216.73	1,784.92	1,662.64	2,035.18	2.36	2.23	1.39	
5,983.00	33.36	44.05	5,315.25	1,835.12	1,706.58	2,091.95	2.94	-1.30	4.71	
6,079.00	30.09	42.82	5,396.90	1,871.75	1,741.30	2,133.82	3.47	-3.41	-1.28	
6,174.00	33.14	41.85	5,477.79	1,908.57	1,774.82	2,175.67	3.25	3.21	-1.02	
6,269.00	31.73	41.85	5,557.97	1,946.53	1,808.81	2,218.72	1.48	-1.48	0.00	
6,365.00	34.47	45.72	5,638.39	1,984.31	1,845.12	2,261.98	3.60	2.85	4.03	
6,460.00	31.46	45.11	5,718.09	2,020.58	1,881.93	2,303.84	3.19	-3.17	-0.64	
6,555.00	32.79	43.92	5,798.54	2,056.61	1,917.34	2,345.23	1.55	1.40	-1.25	
6,651.00	29.56	42.42	5,880.67	2,092.83	1,951.36	2,386.57	3.46	-3.36	-1.56	
6,746.00	28.55	49.03	5,963.73	2,125.02	1,984.32	2,423.76	3.54	-1.06	6.96	
6,841.00	28.81	44.14	6,047.09	2,156.34	2,017.40	2,460.12	2.48	0.27	-5.15	
6,937.00	25.72	42.37	6,132.41	2,188.33	2,047.56	2,496.66	3.33	-3.22	-1.84	
7,032.00	22.49	40.70	6,219.12	2,217.35	2,073.31	2,529.53	3.47	-3.40	-1.76	
7,128.00	19.18	38.50	6,308.83	2,243.62	2,095.10	2,559.04	3.54	-3.45	-2.29	
7,223.00	15.78	34.05	6,399.43	2,266.54	2,112.05	2,584.45	3.84	-3.58	-4.68	
7,318.00	12.95	32.19	6,491.45	2,286.26	2,124.96	2,606.03	3.02	-2.98	-1.96	
7,413.00	10.43	27.96	6,584.48	2,302.86	2,134.67	2,624.01	2.80	-2.65	-4.45	
7,509.00	8.66	27.08	6,679.15	2,316.97	2,142.03	2,639.15	1.85	-1.84	-0.92	
7,604.00	4.86	14.57	6,773.47	2,327.24	2,146.30	2,649.98	4.27	-4.00	-13.17	
7,699.00	4.07	11.70	6,868.18	2,334.44	2,148.00	2,657.35	0.86	-0.83	-3.02	
7,794.00	1.02	353.40	6,963.08	2,338.58	2,148.58	2,661.54	3.28	-3.21	-19.26	
7,890.00	1.24	335.20	7,059.06	2,340.37	2,148.05	2,663.22	0.44	0.23	-18.96	
7,985.00	1.72	329.87	7,154.03	2,342.54	2,146.90	2,665.16	0.53	0.51	-5.61	
8,081.00	3.14	346.92	7,249.94	2,346.34	2,145.58	2,668.70	1.64	1.48	17.76	
8,176.00	13.26	11.97	7,343.87	2,359.57	2,147.26	2,682.02	11.05	10.65	26.37	
8,271.00	22.76	5.39	7,434.12	2,388.60	2,151.25	2,711.31	10.21	10.00	-6.93	
8,366.00	25.45	357.41	7,520.85	2,427.30	2,152.06	2,749.61	4.44	2.83	-8.40	
8,414.70	29.98	355.05	7,563.95	2,449.89	2,150.54	2,771.64	9.58	9.31	-4.84	
30° Inclination @ 8414.70' MD										
8,462.00	34.42	353.31	7,603.97	2,474.96	2,147.96	2,795.93	9.58	9.38	-3.68	
8,557.00	46.31	355.43	7,676.22	2,536.08	2,142.07	2,855.25	12.60	12.52	2.23	
8,653.00	52.23	357.72	7,738.84	2,608.66	2,137.79	2,926.12	6.43	6.17	2.39	

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8,748.00	64.78	359.79	7,788.37	2,689.48	2,136.13	3,005.56	13.34	13.21	2.18	
8,805.53	70.00	1.09	7,810.49	2,742.57	2,136.55	3,057.98	9.30	9.07	2.26	
70° Inclination @ 8805.53' MD										
8,833.45	72.53	1.69	7,819.45	2,769.00	2,137.19	3,084.16	9.30	9.08	2.14	
Cross @ 8833.45' MD										
8,844.00	73.49	1.91	7,822.54	2,779.08	2,137.51	3,094.15	9.30	9.08	2.10	
8,939.00	79.81	3.41	7,844.46	2,871.37	2,141.81	3,185.88	6.83	6.65	1.58	
9,035.00	86.30	2.92	7,856.06	2,966.47	2,147.07	3,280.54	6.78	6.76	-0.51	
9,130.00	90.59	1.11	7,858.64	3,061.35	2,150.41	3,374.66	4.90	4.52	-1.91	
9,225.00	90.23	0.94	7,857.96	3,156.33	2,152.11	3,468.62	0.42	-0.38	-0.18	
9,321.00	89.48	0.85	7,858.20	3,252.32	2,153.61	3,563.54	0.79	-0.78	-0.09	
9,416.00	90.54	358.95	7,858.19	3,347.31	2,153.44	3,657.20	2.29	1.12	-2.00	
9,511.00	92.22	357.28	7,855.90	3,442.22	2,150.32	3,750.29	2.49	1.77	-1.76	
9,607.00	92.36	357.02	7,852.06	3,538.03	2,145.55	3,843.99	0.31	0.15	-0.27	
9,702.00	92.27	356.62	7,848.23	3,632.81	2,140.28	3,936.59	0.43	-0.09	-0.42	
9,798.00	92.80	358.95	7,843.98	3,728.63	2,136.57	4,030.49	2.49	0.55	2.43	
9,893.00	89.93	0.14	7,841.72	3,823.59	2,135.82	4,124.01	3.27	-3.02	1.25	
9,989.00	89.79	0.19	7,841.95	3,919.59	2,136.10	4,218.74	0.15	-0.15	0.05	
10,084.00	90.10	0.32	7,842.04	4,014.59	2,136.52	4,312.50	0.35	0.33	0.14	
10,180.00	90.63	0.14	7,841.43	4,110.59	2,136.91	4,407.24	0.58	0.55	-0.19	
10,275.00	90.72	359.88	7,840.31	4,205.58	2,136.92	4,500.93	0.29	0.09	-0.27	
10,370.00	90.54	359.84	7,839.27	4,300.57	2,136.69	4,594.58	0.19	-0.19	-0.04	
10,466.00	90.06	359.53	7,838.77	4,396.57	2,136.16	4,689.17	0.60	-0.50	-0.32	
10,561.00	90.28	359.79	7,838.48	4,491.57	2,135.60	4,782.77	0.36	0.23	0.27	
10,657.00	89.93	359.92	7,838.31	4,587.57	2,135.36	4,877.41	0.39	-0.36	0.14	
10,752.00	92.18	1.03	7,836.56	4,682.54	2,136.14	4,971.20	2.64	2.37	1.17	
10,848.00	92.58	0.81	7,832.57	4,778.44	2,137.68	5,066.04	0.48	0.42	-0.23	
10,943.00	91.65	359.35	7,829.07	4,873.38	2,137.82	5,159.69	1.82	-0.98	-1.54	
11,039.00	90.15	0.58	7,827.56	4,969.36	2,137.76	5,254.35	2.02	-1.56	1.28	
11,134.00	91.60	0.76	7,826.11	5,064.34	2,138.87	5,348.20	1.54	1.53	0.19	
11,230.00	90.94	359.75	7,823.98	5,160.31	2,139.29	5,442.93	1.26	-0.69	-1.05	
11,325.00	91.91	359.97	7,821.62	5,255.28	2,139.06	5,536.55	1.05	1.02	0.23	
11,421.00	91.03	357.85	7,819.15	5,351.23	2,137.24	5,630.87	2.39	-0.92	-2.21	
11,516.00	88.42	359.22	7,819.61	5,446.18	2,134.81	5,724.12	3.10	-2.75	1.44	
11,611.00	88.64	359.00	7,822.05	5,541.14	2,133.33	5,817.53	0.33	0.23	-0.23	
11,707.00	90.41	359.40	7,822.84	5,637.13	2,131.99	5,911.97	1.89	1.84	0.42	
11,802.00	91.12	1.20	7,821.57	5,732.11	2,132.49	6,005.74	2.04	0.75	1.89	
11,898.00	89.35	358.87	7,821.18	5,828.10	2,132.55	6,100.41	3.05	-1.84	-2.43	
11,993.00	88.78	0.06	7,822.73	5,923.08	2,131.66	6,193.94	1.39	-0.60	1.25	
12,088.00	89.62	0.23	7,824.06	6,018.07	2,131.90	6,287.66	0.90	0.88	0.18	
12,184.00	90.50	0.50	7,823.96	6,114.07	2,132.51	6,382.44	0.96	0.92	0.28	
12,279.00	88.07	1.69	7,825.14	6,209.03	2,134.33	6,476.40	2.85	-2.56	1.25	
12,375.00	87.72	1.60	7,828.67	6,304.93	2,137.08	6,571.43	0.38	-0.36	-0.09	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-7N
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 N35-20-7N	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)	
12,470.00	87.98	1.33	7,832.23	6,399.83	2,139.51	6,665.43	0.39	0.27	-0.28	
12,565.00	87.80	1.29	7,835.73	6,494.74	2,141.68	6,759.40	0.19	-0.19	-0.04	
12,660.00	89.40	2.57	7,838.05	6,589.65	2,144.88	6,853.53	2.16	1.68	1.35	
12,756.00	91.52	1.03	7,837.28	6,685.60	2,147.89	6,948.65	2.73	2.21	-1.60	
12,851.00	90.06	358.95	7,835.97	6,780.58	2,147.88	7,042.33	2.67	-1.54	-2.19	
12,947.00	89.09	359.00	7,836.68	6,876.56	2,146.16	7,136.70	1.01	-1.01	0.05	
13,043.00	90.15	358.65	7,837.32	6,972.54	2,144.19	7,231.03	1.16	1.10	-0.36	
13,137.00	89.66	357.85	7,837.47	7,066.49	2,141.32	7,323.22	1.00	-0.52	-0.85	
13,233.00	89.84	356.49	7,837.89	7,162.37	2,136.58	7,417.00	1.43	0.19	-1.42	
13,328.00	90.90	357.28	7,837.28	7,257.23	2,131.42	7,509.70	1.39	1.12	0.83	
13,424.00	90.28	355.96	7,836.29	7,353.05	2,125.76	7,603.27	1.52	-0.65	-1.38	
13,519.00	89.84	359.26	7,836.19	7,447.96	2,121.80	7,696.21	3.50	-0.46	3.47	
13,615.00	89.79	359.22	7,836.50	7,543.95	2,120.52	7,790.67	0.07	-0.05	-0.04	
13,710.00	90.81	0.36	7,836.00	7,638.94	2,120.18	7,884.31	1.61	1.07	1.20	
13,806.00	90.28	0.14	7,835.09	7,734.94	2,120.60	7,979.05	0.60	-0.55	-0.23	
13,841.06	90.02	359.85	7,835.00	7,770.00	2,120.59	8,013.63	1.11	-0.74	-0.82	
Cross @ 13841.06' MD										
13,902.00	89.57	359.35	7,835.22	7,830.93	2,120.17	8,073.66	1.11	-0.74	-0.82	
13,997.00	91.03	0.01	7,834.72	7,925.93	2,119.64	8,167.26	1.69	1.54	0.69	
14,093.00	91.52	359.79	7,832.58	8,021.90	2,119.47	8,261.88	0.56	0.51	-0.23	
14,188.00	91.25	359.13	7,830.29	8,116.87	2,118.58	8,355.40	0.75	-0.28	-0.69	
14,284.00	90.94	358.65	7,828.45	8,212.84	2,116.72	8,449.73	0.60	-0.32	-0.50	
14,379.00	92.31	358.69	7,825.76	8,307.77	2,114.51	8,543.00	1.44	1.44	0.04	
14,475.00	90.59	359.66	7,823.33	8,403.72	2,113.13	8,637.40	2.06	-1.79	1.01	
14,571.00	90.85	359.26	7,822.12	8,499.71	2,112.23	8,731.92	0.50	0.27	-0.42	
14,666.00	92.14	359.09	7,819.65	8,594.67	2,110.86	8,825.35	1.37	1.36	-0.18	
14,761.00	90.59	0.81	7,817.38	8,689.63	2,110.78	8,918.99	2.44	-1.63	1.81	
14,857.00	89.53	1.20	7,817.28	8,785.62	2,112.46	9,013.93	1.18	-1.10	0.41	
14,952.00	90.46	0.67	7,817.29	8,880.60	2,114.01	9,107.87	1.13	0.98	-0.56	
15,047.00	91.07	0.14	7,816.02	8,975.59	2,114.68	9,201.66	0.85	0.64	-0.56	
15,143.00	91.78	359.92	7,813.63	9,071.56	2,114.73	9,296.32	0.77	0.74	-0.23	
15,238.00	91.87	359.70	7,810.61	9,166.51	2,114.42	9,389.91	0.25	0.09	-0.23	
15,334.00	91.03	0.36	7,808.18	9,262.48	2,114.47	9,484.57	1.11	-0.88	0.69	
15,430.00	92.14	359.92	7,805.52	9,358.44	2,114.70	9,579.25	1.24	1.16	-0.46	
15,525.00	89.40	359.48	7,804.25	9,453.42	2,114.20	9,672.84	2.92	-2.88	-0.46	
15,620.00	89.75	359.26	7,804.95	9,548.41	2,113.16	9,766.36	0.44	0.37	-0.23	
15,716.00	90.90	358.95	7,804.41	9,644.40	2,111.66	9,860.77	1.24	1.20	-0.32	
15,811.00	92.71	358.91	7,801.42	9,739.33	2,109.89	9,954.11	1.91	1.91	-0.04	
15,906.00	91.21	359.66	7,798.17	9,834.26	2,108.70	10,047.54	1.77	-1.58	0.79	
16,002.00	90.32	0.58	7,796.88	9,930.25	2,108.90	10,142.24	1.33	-0.93	0.96	
16,097.00	89.22	1.29	7,797.27	10,025.24	2,110.45	10,236.17	1.38	-1.16	0.75	
16,192.00	90.54	1.38	7,797.46	10,120.21	2,112.67	10,330.21	1.39	1.39	0.09	
16,288.00	91.21	1.20	7,796.00	10,216.17	2,114.83	10,425.21	0.72	0.70	-0.19	
16,383.00	88.42	0.81	7,796.31	10,311.15	2,116.49	10,519.15	2.97	-2.94	-0.41	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-7N
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 N35-20-7N	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)	
16,479.00	88.91	0.36	7,798.54	10,407.12	2,117.47	10,613.96	0.69	0.51	-0.47	
16,574.00	90.63	0.58	7,798.92	10,502.11	2,118.25	10,707.78	1.83	1.81	0.23	
16,670.00	89.53	1.25	7,798.79	10,598.10	2,119.79	10,802.70	1.34	-1.15	0.70	
16,765.00	89.53	0.76	7,799.57	10,693.08	2,121.45	10,896.65	0.52	0.00	-0.52	
16,860.00	87.36	359.40	7,802.15	10,788.04	2,121.59	10,990.32	2.70	-2.28	-1.43	
16,956.00	87.54	359.48	7,806.42	10,883.94	2,120.65	11,084.75	0.21	0.19	0.08	
17,052.00	88.38	359.75	7,809.84	10,979.87	2,120.00	11,179.26	0.92	0.88	0.28	
17,147.00	90.06	358.29	7,811.13	11,074.84	2,118.38	11,272.65	2.34	1.77	-1.54	
17,242.00	90.90	357.99	7,810.33	11,169.79	2,115.30	11,365.78	0.94	0.88	-0.32	
17,338.00	92.00	357.85	7,807.90	11,265.69	2,111.81	11,459.79	1.16	1.15	-0.15	
17,433.00	90.46	358.87	7,805.86	11,360.63	2,109.09	11,552.97	1.94	-1.62	1.07	
17,529.00	91.34	359.26	7,804.36	11,456.60	2,107.53	11,647.37	1.00	0.92	0.41	
17,624.00	92.75	359.13	7,800.97	11,551.53	2,106.19	11,740.77	1.49	1.48	-0.14	
17,720.00	90.72	0.06	7,798.06	11,647.48	2,105.52	11,835.29	2.33	-2.11	0.97	
17,815.00	91.38	0.41	7,796.32	11,742.46	2,105.91	11,929.03	0.79	0.69	0.37	
17,911.00	89.22	1.07	7,795.82	11,838.44	2,107.15	12,023.90	2.35	-2.25	0.69	
18,006.00	90.01	0.76	7,796.45	11,933.43	2,108.66	12,117.83	0.89	0.83	-0.33	
18,102.00	89.13	0.41	7,797.18	12,029.42	2,109.64	12,212.66	0.99	-0.92	-0.36	
18,197.00	89.70	0.14	7,798.15	12,124.41	2,110.10	12,306.42	0.66	0.60	-0.28	
18,292.00	90.94	0.54	7,797.61	12,219.41	2,110.66	12,400.20	1.37	1.31	0.42	
18,388.00	91.74	0.06	7,795.37	12,315.38	2,111.17	12,494.94	0.97	0.83	-0.50	
18,483.00	89.40	359.31	7,794.42	12,410.37	2,110.64	12,588.53	2.59	-2.46	-0.79	
18,579.00	89.93	359.17	7,794.99	12,506.36	2,109.37	12,682.99	0.57	0.55	-0.15	
Last MWD Survey @ 18579' MD										
18,653.00	89.93	359.17	7,795.08	12,580.35	2,108.30	12,755.79	0.00	0.00	0.00	
Projection to TD @ 18653' MD 500' FNL/ 1001.5' FEL										

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
30° Inclination @ 8414.7 - actual wellpath misses target center by 0.06usft at 8414.69usft MD (7563.94 TVD, 2449.89 N, 2150.54 E) - Point	0.00	0.00	7,563.94	2,449.90	2,150.59	1,238,063.48	3,144,699.09	39.985712	-104.983606
70° Inclination @ 8805.5 - actual wellpath misses target center by 0.01usft at 8805.53usft MD (7810.49 TVD, 2742.57 N, 2136.55 E) - Point	0.00	0.00	7,810.49	2,742.57	2,136.54	1,238,356.06	3,144,683.36	39.986516	-104.983656
Cross @ 8833.45' MD - actual wellpath hits target center - Point	0.00	0.00	7,819.45	2,769.00	2,137.19	1,238,382.49	3,144,683.86	39.986588	-104.983654
Cross @ 13841.06' MD - actual wellpath hits target center - Point	0.00	0.00	7,835.00	7,770.00	2,120.59	1,243,383.32	3,144,638.57	40.000317	-104.983712

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-7N
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 N35-20-7N	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)	
1,606.30	1,573.04	176.57	166.37	Tie into Surface Surveys
1,667.00	1,628.26	194.76	183.81	First MWD Survey @ 1667' MD
8,414.70	7,563.95	2,449.89	2,150.54	30° Inclination @ 8414.70' MD
8,805.53	7,810.49	2,742.57	2,136.55	70° Inclination @ 8805.53' MD
8,833.45	7,819.45	2,769.00	2,137.19	Cross @ 8833.45' MD
13,841.06	7,835.00	7,770.00	2,120.59	Cross @ 13841.06' MD
18,579.00	7,794.99	12,506.36	2,109.37	Last MWD Survey @ 18579' MD
18,653.00	7,795.08	12,580.35	2,108.30	Projection to TD @ 18653' MD 500' FNL/ 1001.5' FEL

Checked By: _____	Approved By: _____	Date: _____
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