

Extraction Oil & Gas

Weld County, CO (NAD83)

Sec 10-T01S-R68W Interchange Pad

Interchange B N35-20-4N

Wellbore #1

Design: Wellbore #1

Standard Survey Report

25 May, 2019

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-4N
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 N35-20-4N	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 N35-20-4N				
Well Position	+N/-S	0.00 usft	Northing:	1,235,588.59 usft	Latitude:	39.978953
	+E/-W	0.00 usft	Easting:	3,142,510.25 usft	Longitude:	-104.991468
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	4/17/2019	8.10	66.44	51,897.15746056

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	6.19	

Survey Program	Date	5/25/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.30	1,612.30	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,685.00	18,470.00	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	0.31	120.26	122.30	-0.17	0.29	-0.13	0.25	0.25	0.00	
209.30	0.79	100.31	209.30	-0.39	1.08	-0.27	0.59	0.55	-22.93	
297.30	0.88	117.80	297.29	-0.82	2.27	-0.57	0.31	0.10	19.88	
384.30	0.31	141.18	384.28	-1.31	3.01	-0.98	0.70	-0.66	26.87	
471.30	0.44	206.57	471.28	-1.79	3.01	-1.46	0.48	0.15	75.16	
559.30	0.66	176.16	559.28	-2.60	2.89	-2.27	0.41	0.25	-34.56	
646.30	0.83	345.70	646.27	-2.49	2.77	-2.18	1.71	0.20	194.87	
733.30	1.27	358.09	733.26	-0.92	2.58	-0.63	0.57	0.51	14.24	
820.30	2.94	24.02	820.20	2.09	3.46	2.45	2.16	1.92	29.80	

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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	4.13	22.52	908.03	7.07	5.59	7.64	1.36	1.35	-1.70
995.30	5.58	21.82	994.71	13.90	8.36	14.72	1.67	1.67	-0.80
1,082.30	7.21	24.46	1,081.17	22.79	12.20	23.97	1.90	1.87	3.03
1,169.30	9.58	30.52	1,167.23	34.00	18.14	35.76	2.90	2.72	6.97
1,257.30	11.03	31.23	1,253.81	47.51	26.22	50.06	1.65	1.65	0.81
1,344.30	12.52	30.43	1,338.98	62.76	35.31	66.20	1.72	1.71	-0.92
1,431.30	13.80	32.90	1,423.69	79.60	45.72	84.07	1.61	1.47	2.84
1,518.30	16.79	32.28	1,507.60	98.94	58.07	104.62	3.44	3.44	-0.71
1,612.30	18.46	32.37	1,597.19	122.99	73.29	130.18	1.78	1.78	0.10
Tie into Surface Surveys									
1,685.00	20.19	31.94	1,665.79	143.36	86.09	151.81	2.39	2.38	-0.59
First MWD Survey @ 1685' MD									
1,770.00	23.38	34.41	1,744.71	169.73	103.39	179.89	3.90	3.75	2.91
1,865.00	23.42	32.73	1,831.90	201.16	124.25	213.39	0.70	0.04	-1.77
1,961.00	25.59	28.99	1,919.25	235.35	144.62	249.57	2.78	2.26	-3.90
2,056.00	29.21	31.46	2,003.58	273.08	166.67	289.46	3.99	3.81	2.60
2,151.00	28.90	30.62	2,086.63	312.61	190.46	331.33	0.54	-0.33	-0.88
2,247.00	27.75	27.75	2,171.13	352.36	212.68	373.24	1.86	-1.20	-2.99
2,342.00	29.03	29.60	2,254.71	391.97	234.36	414.96	1.63	1.35	1.95
2,438.00	27.84	28.59	2,339.13	431.91	256.60	457.06	1.34	-1.24	-1.05
2,533.00	30.00	32.56	2,422.28	471.42	280.00	498.86	3.04	2.27	4.18
2,628.00	28.90	30.93	2,505.01	511.13	304.58	540.99	1.43	-1.16	-1.72
2,723.00	27.31	30.31	2,588.80	549.63	327.38	581.73	1.70	-1.67	-0.65
2,819.00	29.87	34.14	2,673.10	588.44	351.92	622.96	3.28	2.67	3.99
2,915.00	28.41	33.53	2,756.94	627.27	377.95	664.37	1.55	-1.52	-0.64
3,010.00	26.34	33.48	2,841.30	663.69	402.06	703.18	2.18	-2.18	-0.05
3,106.00	27.88	34.01	2,926.75	700.06	426.37	741.96	1.62	1.60	0.55
3,201.00	25.59	33.22	3,011.59	735.64	450.03	779.88	2.44	-2.41	-0.83
3,296.00	28.94	31.02	3,096.03	772.52	473.13	819.03	3.68	3.53	-2.32
3,392.00	26.91	30.57	3,180.84	811.13	496.15	859.90	2.13	-2.11	-0.47
3,487.00	29.52	29.12	3,264.55	850.09	518.47	901.05	2.84	2.75	-1.53
3,583.00	26.73	26.92	3,349.21	890.01	539.76	943.03	3.10	-2.91	-2.29
3,678.00	30.18	29.30	3,432.72	929.90	561.13	984.99	3.82	3.63	2.51
3,773.00	27.93	28.02	3,515.76	970.37	583.27	1,027.61	2.46	-2.37	-1.35
3,868.00	31.24	33.44	3,598.38	1,010.59	607.31	1,070.18	4.48	3.48	5.71
3,964.00	28.77	32.12	3,681.51	1,050.93	633.31	1,113.10	2.66	-2.57	-1.38
4,059.00	25.54	30.97	3,766.03	1,087.87	656.01	1,152.26	3.44	-3.40	-1.21
4,154.00	28.63	31.50	3,850.60	1,124.84	678.45	1,191.44	3.26	3.25	0.56
4,250.00	25.81	29.74	3,935.96	1,162.60	700.84	1,231.40	3.05	-2.94	-1.83
4,345.00	28.46	33.44	4,020.50	1,199.46	723.58	1,270.49	3.31	2.79	3.89
4,441.00	29.52	33.26	4,104.47	1,238.32	749.16	1,311.89	1.11	1.10	-0.19
4,536.00	25.90	33.62	4,188.56	1,275.18	773.49	1,351.16	3.81	-3.81	0.38
4,632.00	28.99	37.10	4,273.75	1,311.21	799.14	1,389.74	3.63	3.22	3.63

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4,727.00	30.27	33.00	4,356.34	1,349.66	826.07	1,430.87	2.52	1.35	-4.32	
4,822.00	26.73	32.03	4,439.81	1,387.86	850.45	1,471.48	3.76	-3.73	-1.02	
4,917.00	30.49	29.25	4,523.20	1,427.02	873.56	1,512.90	4.20	3.96	-2.93	
5,013.00	27.84	28.06	4,607.02	1,468.06	896.01	1,556.12	2.83	-2.76	-1.24	
5,109.00	31.77	28.81	4,690.31	1,510.00	918.75	1,600.27	4.11	4.09	0.78	
5,204.00	28.94	27.97	4,772.28	1,552.22	941.58	1,644.71	3.01	-2.98	-0.88	
5,299.00	29.83	33.26	4,855.07	1,592.29	965.33	1,687.10	2.89	0.94	5.57	
5,395.00	25.98	31.10	4,939.89	1,630.27	989.29	1,727.45	4.15	-4.01	-2.25	
5,490.00	30.45	28.15	5,023.59	1,669.34	1,011.41	1,768.67	4.93	4.71	-3.11	
5,586.00	28.99	27.36	5,106.96	1,711.45	1,033.58	1,812.92	1.57	-1.52	-0.82	
5,681.00	31.51	28.06	5,189.01	1,753.81	1,055.84	1,857.44	2.68	2.65	0.74	
5,776.00	28.86	26.74	5,271.13	1,796.20	1,077.84	1,901.95	2.88	-2.79	-1.39	
5,872.00	28.46	31.54	5,355.38	1,836.39	1,100.23	1,944.33	2.43	-0.42	5.00	
5,991.00	28.77	33.39	5,459.84	1,884.47	1,130.82	1,995.42	0.79	0.26	1.55	
6,086.00	28.41	36.30	5,543.26	1,921.77	1,156.78	2,035.31	1.51	-0.38	3.06	
6,181.00	31.55	34.89	5,625.54	1,960.38	1,184.39	2,076.67	3.39	3.31	-1.48	
6,277.00	29.61	30.62	5,708.20	2,001.40	1,210.84	2,120.30	3.03	-2.02	-4.45	
6,372.00	30.27	28.64	5,790.52	2,042.61	1,234.27	2,163.80	1.25	0.69	-2.08	
6,467.00	30.49	31.32	5,872.48	2,084.22	1,258.28	2,207.75	1.45	0.23	2.82	
6,563.00	30.40	34.32	5,955.25	2,125.09	1,284.63	2,251.22	1.59	-0.09	3.13	
6,658.00	27.53	33.88	6,038.36	2,163.18	1,310.43	2,291.87	3.03	-3.02	-0.46	
6,753.00	24.88	32.29	6,123.59	2,198.30	1,333.35	2,329.27	2.89	-2.79	-1.67	
6,849.00	22.45	31.19	6,211.51	2,231.06	1,353.63	2,364.02	2.57	-2.53	-1.15	
6,944.00	19.62	28.99	6,300.17	2,260.53	1,370.76	2,395.17	3.09	-2.98	-2.32	
7,040.00	16.04	27.89	6,391.54	2,286.36	1,384.78	2,422.36	3.75	-3.73	-1.15	
7,135.00	13.12	23.92	6,483.48	2,307.83	1,395.29	2,444.83	3.25	-3.07	-4.18	
7,230.00	10.69	22.77	6,576.43	2,325.81	1,403.08	2,463.55	2.57	-2.56	-1.21	
7,325.00	8.44	18.85	6,670.10	2,340.53	1,408.74	2,478.80	2.46	-2.37	-4.13	
7,421.00	7.51	14.31	6,765.17	2,353.28	1,412.57	2,491.88	1.17	-0.97	-4.73	
7,516.00	5.39	39.87	6,859.58	2,362.72	1,416.96	2,501.74	3.70	-2.23	26.91	
7,611.00	2.52	56.66	6,954.35	2,367.30	1,421.57	2,506.79	3.23	-3.02	17.67	
7,707.00	0.97	126.20	7,050.31	2,367.98	1,423.99	2,507.72	2.46	-1.61	72.44	
7,802.00	0.75	91.83	7,145.30	2,367.48	1,425.26	2,507.37	0.58	-0.23	-36.18	
7,897.00	0.66	70.41	7,240.29	2,367.64	1,426.39	2,507.65	0.29	-0.09	-22.55	
7,993.00	10.65	355.04	7,335.73	2,376.69	1,426.15	2,516.62	10.94	10.41	-78.51	
8,088.00	17.32	354.56	7,427.86	2,399.54	1,424.05	2,539.11	7.02	7.02	-0.51	
8,183.00	27.00	357.16	7,515.74	2,435.24	1,421.63	2,574.34	10.24	10.19	2.74	
8,219.21	30.00	356.70	7,547.56	2,452.49	1,420.70	2,591.39	8.30	8.28	-1.28	
30° Inclination @ 8219.21' MD										
8,278.00	34.87	356.10	7,597.17	2,483.95	1,418.71	2,622.45	8.30	8.29	-1.02	
8,374.00	44.32	359.41	7,671.07	2,545.01	1,416.49	2,682.92	10.08	9.84	3.45	
8,469.00	56.78	1.26	7,731.31	2,618.21	1,417.03	2,755.75	13.20	13.12	1.95	
8,565.00	61.38	0.51	7,780.63	2,700.54	1,418.29	2,837.73	4.84	4.79	-0.78	
8,636.27	70.00	1.69	7,809.94	2,765.41	1,419.55	2,902.37	12.19	12.09	1.65	

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70° Inclination @ 8636.27' MD									
8,659.06	72.76	2.04	7,817.22	2,787.00	1,420.26	2,923.90	12.19	12.10	1.52
Cross @ 8659.06' MD									
8,660.00	72.87	2.05	7,817.50	2,787.90	1,420.29	2,924.80	12.19	12.10	1.50
8,756.00	79.72	2.53	7,840.23	2,881.03	1,424.02	3,017.79	7.15	7.14	0.50
8,851.00	88.60	0.82	7,849.89	2,975.40	1,426.77	3,111.91	9.52	9.35	-1.80
8,947.00	89.70	359.76	7,851.31	3,071.39	1,427.25	3,207.38	1.59	1.15	-1.10
9,042.00	90.41	359.27	7,851.22	3,166.38	1,426.45	3,301.74	0.91	0.75	-0.52
9,137.00	90.15	358.92	7,850.76	3,261.37	1,424.95	3,396.01	0.46	-0.27	-0.37
9,233.00	90.50	358.39	7,850.21	3,357.34	1,422.70	3,491.18	0.66	0.36	-0.55
9,328.00	90.90	358.30	7,849.05	3,452.29	1,419.95	3,585.28	0.43	0.42	-0.09
9,424.00	91.30	358.00	7,847.21	3,548.22	1,416.85	3,680.32	0.52	0.42	-0.31
9,519.00	90.41	359.63	7,845.79	3,643.19	1,414.89	3,774.52	1.95	-0.94	1.72
9,614.00	90.46	358.74	7,845.07	3,738.18	1,413.54	3,868.81	0.94	0.05	-0.94
9,709.00	90.15	358.52	7,844.56	3,833.15	1,411.27	3,962.98	0.40	-0.33	-0.23
9,805.00	90.59	358.26	7,843.94	3,929.11	1,408.57	4,058.09	0.53	0.46	-0.27
9,900.00	89.75	1.65	7,843.66	4,024.09	1,408.49	4,152.51	3.68	-0.88	3.57
9,996.00	89.84	1.87	7,844.00	4,120.05	1,411.44	4,248.22	0.25	0.09	0.23
10,091.00	90.50	1.70	7,843.72	4,215.00	1,414.40	4,342.94	0.72	0.69	-0.18
10,187.00	90.54	0.90	7,842.85	4,310.97	1,416.58	4,438.59	0.83	0.04	-0.83
10,282.00	90.59	2.27	7,841.91	4,405.93	1,419.21	4,533.27	1.44	0.05	1.44
10,378.00	90.41	1.26	7,841.08	4,501.88	1,422.16	4,628.98	1.07	-0.19	-1.05
10,473.00	91.21	1.04	7,839.73	4,596.85	1,424.07	4,723.61	0.87	0.84	-0.23
10,569.00	92.09	0.51	7,836.97	4,692.80	1,425.37	4,819.14	1.07	0.92	-0.55
10,664.00	90.46	359.98	7,834.86	4,787.77	1,425.77	4,913.60	1.80	-1.72	-0.56
10,760.00	91.38	0.02	7,833.31	4,883.76	1,425.77	5,009.03	0.96	0.96	0.04
10,855.00	92.58	0.11	7,830.03	4,978.70	1,425.88	5,103.43	1.27	1.26	0.09
10,950.00	89.75	0.02	7,828.10	5,073.67	1,425.99	5,197.85	2.98	-2.98	-0.09
11,046.00	91.25	0.15	7,827.26	5,169.66	1,426.13	5,293.30	1.57	1.56	0.14
11,141.00	90.10	358.30	7,826.14	5,264.64	1,424.85	5,387.59	2.29	-1.21	-1.95
11,237.00	90.32	358.61	7,825.79	5,360.60	1,422.26	5,482.71	0.40	0.23	0.32
11,332.00	90.90	358.66	7,824.78	5,455.57	1,420.00	5,576.88	0.61	0.61	0.05
11,428.00	90.06	359.58	7,823.98	5,551.55	1,418.52	5,672.15	1.30	-0.88	0.96
11,523.00	90.72	359.98	7,823.33	5,646.55	1,418.16	5,766.55	0.81	0.69	0.42
11,619.00	89.17	358.30	7,823.42	5,742.53	1,416.72	5,861.82	2.38	-1.61	-1.75
11,714.00	89.26	358.66	7,824.72	5,837.49	1,414.20	5,955.95	0.39	0.09	0.38
11,810.00	90.23	358.57	7,825.15	5,933.46	1,411.88	6,051.11	1.01	1.01	-0.09
11,905.00	91.34	358.22	7,823.85	6,028.41	1,409.22	6,145.22	1.23	1.17	-0.37
12,000.00	89.35	359.93	7,823.28	6,123.39	1,407.68	6,239.48	2.76	-2.09	1.80
12,096.00	89.53	359.67	7,824.21	6,219.39	1,407.35	6,334.88	0.33	0.19	-0.27
12,191.00	89.04	358.96	7,825.40	6,314.37	1,406.21	6,429.19	0.91	-0.52	-0.75
12,287.00	89.53	358.79	7,826.60	6,410.34	1,404.33	6,524.40	0.54	0.51	-0.18
12,382.00	89.22	359.14	7,827.63	6,505.32	1,402.61	6,618.64	0.49	-0.33	0.37

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-4N
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 N35-20-4N	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)
12,478.00	89.88	359.45	7,828.39	6,601.31	1,401.43	6,713.94	0.76	0.69	0.32
12,573.00	90.01	358.92	7,828.48	6,696.30	1,400.08	6,808.23	0.57	0.14	-0.56
12,668.00	90.19	358.00	7,828.31	6,791.27	1,397.53	6,902.37	0.99	0.19	-0.97
12,763.00	90.72	358.00	7,827.56	6,886.21	1,394.21	6,996.40	0.56	0.56	0.00
12,859.00	91.87	358.57	7,825.39	6,982.14	1,391.34	7,091.46	1.34	1.20	0.59
12,954.00	89.88	359.85	7,823.94	7,077.11	1,390.03	7,185.73	2.49	-2.09	1.35
13,050.00	90.50	359.14	7,823.62	7,173.10	1,389.18	7,281.08	0.98	0.65	-0.74
13,145.00	91.07	358.79	7,822.32	7,268.08	1,387.47	7,375.31	0.70	0.60	-0.37
13,240.00	92.09	358.17	7,819.70	7,363.01	1,384.95	7,469.42	1.26	1.07	-0.65
13,336.00	89.84	359.80	7,818.08	7,458.97	1,383.25	7,564.64	2.89	-2.34	1.70
13,431.00	91.38	359.85	7,817.07	7,553.96	1,382.96	7,659.04	1.62	1.62	0.05
13,527.00	88.51	0.20	7,817.16	7,649.95	1,383.00	7,754.48	3.01	-2.99	0.36
13,622.00	88.42	0.11	7,819.71	7,744.92	1,383.26	7,848.92	0.13	-0.09	-0.09
13,658.10	88.27	359.96	7,820.75	7,781.00	1,383.28	7,884.79	0.58	-0.41	-0.42
Cross @ 13658.10' MD									
13,718.00	88.03	359.71	7,822.68	7,840.87	1,383.11	7,944.30	0.58	-0.41	-0.42
13,813.00	89.70	359.58	7,824.56	7,935.85	1,382.52	8,038.65	1.76	1.76	-0.14
13,909.00	90.01	359.41	7,824.81	8,031.84	1,381.67	8,134.00	0.37	0.32	-0.18
14,004.00	90.81	359.32	7,824.13	8,126.83	1,380.62	8,228.32	0.85	0.84	-0.09
14,100.00	92.40	359.23	7,821.44	8,222.78	1,379.40	8,323.58	1.66	1.66	-0.09
14,196.00	90.63	358.96	7,818.90	8,318.73	1,377.89	8,418.81	1.87	-1.84	-0.28
14,291.00	90.72	359.67	7,817.78	8,413.72	1,376.75	8,513.12	0.75	0.09	0.75
14,387.00	88.73	358.88	7,818.24	8,509.71	1,375.54	8,608.42	2.23	-2.07	-0.82
14,482.00	89.04	359.18	7,820.09	8,604.67	1,373.93	8,702.66	0.45	0.33	0.32
14,578.00	89.53	359.45	7,821.29	8,700.66	1,372.78	8,797.96	0.58	0.51	0.28
14,673.00	90.06	359.18	7,821.63	8,795.65	1,371.65	8,892.27	0.63	0.56	-0.28
14,769.00	90.15	358.88	7,821.45	8,891.64	1,370.02	8,987.53	0.33	0.09	-0.31
14,864.00	90.32	358.66	7,821.06	8,986.61	1,367.98	9,081.73	0.29	0.18	-0.23
14,960.00	90.37	357.69	7,820.48	9,082.56	1,364.93	9,176.79	1.01	0.05	-1.01
15,054.00	89.17	359.93	7,820.86	9,176.53	1,362.97	9,270.00	2.70	-1.28	2.38
15,150.00	89.31	359.76	7,822.14	9,272.53	1,362.71	9,365.40	0.23	0.15	-0.18
15,246.00	89.35	359.41	7,823.26	9,368.52	1,362.02	9,460.76	0.37	0.04	-0.36
15,341.00	89.70	0.02	7,824.05	9,463.51	1,361.55	9,555.15	0.74	0.37	0.64
15,437.00	90.15	0.20	7,824.17	9,559.51	1,361.73	9,650.61	0.50	0.47	0.19
15,532.00	90.32	359.58	7,823.78	9,654.51	1,361.55	9,745.03	0.68	0.18	-0.65
15,628.00	90.63	359.58	7,822.99	9,750.50	1,360.84	9,840.39	0.32	0.32	0.00
15,723.00	90.46	359.05	7,822.08	9,845.49	1,359.71	9,934.71	0.59	-0.18	-0.56
15,818.00	91.16	358.66	7,820.74	9,940.46	1,357.81	10,028.92	0.84	0.74	-0.41
15,914.00	90.54	359.41	7,819.32	10,036.44	1,356.19	10,124.16	1.01	-0.65	0.78
16,009.00	91.69	359.41	7,817.47	10,131.41	1,355.22	10,218.47	1.21	1.21	0.00
16,105.00	90.28	0.99	7,815.82	10,227.39	1,355.55	10,313.93	2.21	-1.47	1.65
16,200.00	90.19	0.73	7,815.43	10,322.38	1,356.98	10,408.52	0.29	-0.09	-0.27
16,295.00	90.68	0.29	7,814.71	10,417.37	1,357.82	10,503.05	0.69	0.52	-0.46
16,391.00	91.03	359.67	7,813.27	10,513.36	1,357.79	10,598.47	0.74	0.36	-0.65

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-4N
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 N35-20-4N	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)	
16,486.00	88.82	359.01	7,813.40	10,608.35	1,356.70	10,692.79	2.43	-2.33	-0.69	
16,582.00	88.47	358.52	7,815.67	10,704.30	1,354.63	10,787.96	0.63	-0.36	-0.51	
16,677.00	88.82	358.26	7,817.91	10,799.24	1,351.96	10,882.05	0.46	0.37	-0.27	
16,772.00	88.51	357.73	7,820.13	10,894.15	1,348.64	10,976.06	0.65	-0.33	-0.56	
16,868.00	89.84	359.76	7,821.51	10,990.11	1,346.53	11,071.23	2.53	1.39	2.11	
16,963.00	90.32	358.79	7,821.38	11,085.10	1,345.33	11,165.54	1.14	0.51	-1.02	
17,059.00	90.15	358.48	7,820.98	11,181.07	1,343.04	11,260.70	0.37	-0.18	-0.32	
17,154.00	91.65	0.15	7,819.49	11,276.05	1,341.91	11,355.00	2.36	1.58	1.76	
17,250.00	92.49	359.58	7,816.02	11,371.99	1,341.68	11,450.35	1.06	0.88	-0.59	
17,345.00	91.83	1.83	7,812.44	11,466.90	1,342.85	11,544.84	2.47	-0.69	2.37	
17,441.00	89.26	2.36	7,811.53	11,562.83	1,346.36	11,640.59	2.73	-2.68	0.55	
17,536.00	89.62	2.36	7,812.46	11,657.74	1,350.27	11,735.37	0.38	0.38	0.00	
17,632.00	89.62	2.09	7,813.09	11,753.67	1,354.00	11,831.14	0.28	0.00	-0.28	
17,727.00	89.31	1.96	7,813.98	11,848.60	1,357.36	11,925.88	0.35	-0.33	-0.14	
17,822.00	88.78	1.43	7,815.56	11,943.55	1,360.17	12,020.58	0.79	-0.56	-0.56	
17,918.00	89.17	1.65	7,817.28	12,039.50	1,362.74	12,116.25	0.47	0.41	0.23	
18,014.00	91.07	0.68	7,817.08	12,135.47	1,364.70	12,211.87	2.22	1.98	-1.01	
18,109.00	91.12	0.55	7,815.27	12,230.45	1,365.72	12,306.40	0.15	0.05	-0.14	
18,204.00	91.34	0.15	7,813.23	12,325.43	1,366.30	12,400.89	0.48	0.23	-0.42	
18,300.00	91.91	0.02	7,810.50	12,421.39	1,366.44	12,496.31	0.61	0.59	-0.14	
18,395.00	91.47	359.67	7,807.70	12,516.34	1,366.18	12,590.68	0.59	-0.46	-0.37	
Last MWD Survey @ 18395' MD										
18,470.00	91.47	359.67	7,805.78	12,591.32	1,365.75	12,665.17	0.00	0.00	0.00	
Projection to TD @ 18470' MD 500' FNL/ 1796' 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 @ 8219.:	0.00	0.00	7,547.57	2,452.50	1,420.71	1,238,049.19	3,143,916.87	39.985686	-104.986398	
- hit/miss target										
- actual wellpath misses target center by 0.01usft at 8219.22usft MD (7547.57 TVD, 2452.50 N, 1420.70 E)										
- Point										
70° Inclination @ 8636.2	0.00	0.00	7,809.94	2,765.42	1,419.54	1,238,362.10	3,143,913.91	39.986545	-104.986402	
- hit/miss target										
- actual wellpath misses target center by 0.01usft at 8636.27usft MD (7809.94 TVD, 2765.41 N, 1419.55 E)										
- Point										
Cross @ 8659.06' MD	0.00	0.00	7,817.22	2,787.00	1,420.26	1,238,383.69	3,143,914.50	39.986604	-104.986400	
- hit/miss target										
- actual wellpath hits target center										
- Point										
Cross @ 13658.10' MD	0.00	0.00	7,820.75	7,781.00	1,383.28	1,243,377.39	3,143,848.88	40.000313	-104.986531	
- hit/miss target										
- actual wellpath hits target center										
- Point										

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-4N
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 N35-20-4N	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	1,597.19	122.99	73.29	Tie into Surface Surveys
1,685.00	1,665.79	143.36	86.09	First MWD Survey @ 1685' MD
8,219.21	7,547.56	2,452.49	1,420.70	30° Inclination @ 8219.21' MD
8,636.27	7,809.94	2,765.41	1,419.55	70° Inclination @ 8636.27' MD
8,659.06	7,817.22	2,787.00	1,420.26	Cross @ 8659.06' MD
13,658.10	7,820.75	7,781.00	1,383.28	Cross @ 13658.10' MD
18,395.00	7,807.70	12,516.34	1,366.18	Last MWD Survey @ 18395' MD
18,470.00	7,805.78	12,591.32	1,365.75	Projection to TD @ 18470' MD 500' FNL/ 1796' FEL

Checked By: _____ Approved By: _____ Date: _____