

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

SW SE SEC 36 T6N R66W 6th P.M.

CS-LONGMEADOW 2-1-13

JOB #2017-157-341

Design: JOB #2017-157-341

Standard Survey Report

09 November, 2018



Survey Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well CS-LONGMEADOW 2-1-13
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB @ 4688.0usft (PATT 341)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	MD Reference:	KB @ 4688.0usft (PATT 341)
Well:	CS-LONGMEADOW 2-1-13	North Reference:	True
Wellbore:	JOB #2017-157-341	Survey Calculation Method:	Minimum Curvature
Design:	JOB #2017-157-341	Database:	EDM 5000.1

Project	WELD COUNTY, COLORADO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	SW SE SEC 36 T6N R66W 6th P.M.		
Site Position:		Northing:	1,403,485.52 usft
From:	Lat/Long	Easting:	3,216,213.28 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	40° 26' 18.132 N
		Longitude:	104° 43' 23.628 W
		Grid Convergence:	0.50 °

Well	CS-LONGMEADOW 2-1-13		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	JOB #2017-157-341		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	6/23/2015	8.40
			Dip Angle
			(°)
			66.94
			Field Strength
			(nT)
			52,644

Design	JOB #2017-157-341		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			172.42

Survey Program	Date	11/9/2018		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
193.0	1,536.0	SURFACE SURVEYS (JOB #2017-157-34	MWD	MWD - Standard
1,658.0	20,550.0	Survey #2 (JOB #2017-157-341)	MWD	MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
193.0	4.70	96.80	192.8	-0.9	7.9	2.0	2.44	2.44	0.00
315.0	6.40	96.60	314.2	-2.3	19.6	4.9	1.39	1.39	-0.16
405.0	7.30	98.80	403.6	-3.8	30.2	7.7	1.04	1.00	2.44
500.0	8.90	93.00	497.6	-5.1	43.5	10.8	1.89	1.68	-6.11
594.0	10.20	92.40	590.3	-5.8	59.1	13.5	1.39	1.38	-0.64
689.0	11.60	95.30	683.6	-7.0	77.0	17.1	1.58	1.47	3.05
783.0	14.50	95.10	775.2	-9.0	98.1	21.8	3.09	3.09	-0.21
877.0	14.80	97.20	866.1	-11.5	121.8	27.5	0.65	0.32	2.23
971.0	15.30	95.40	956.9	-14.2	146.0	33.3	0.73	0.53	-1.91

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Well:	CS-LONGMEADOW 2-1-13	North Reference:	True
Wellbore:	JOB #2017-157-341	Survey Calculation Method:	Minimum Curvature
Design:	JOB #2017-157-341	Database:	EDM 5000.1

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)
1,066.0	15.00	96.20	1,048.6	-16.7	170.7	39.1	0.38	-0.32	0.84
1,160.0	16.50	98.80	1,139.0	-20.0	196.0	45.7	1.76	1.60	2.77
1,254.0	17.70	99.00	1,228.9	-24.3	223.3	53.6	1.28	1.28	0.21
1,348.0	18.90	98.20	1,318.1	-28.7	252.5	61.8	1.30	1.28	-0.85
1,442.0	18.90	98.10	1,407.1	-33.0	282.7	70.0	0.03	0.00	-0.11
1,536.0	20.20	96.00	1,495.6	-36.9	313.9	78.0	1.57	1.38	-2.23
LAST SURVEY - JUNE 16, 2017									
1,658.0	20.11	96.40	1,610.2	-41.4	355.7	88.0	0.13	-0.07	0.33
1st MWD Surve									
1,753.0	19.40	95.52	1,699.6	-44.8	387.6	95.5	0.81	-0.75	-0.93
1,848.0	20.68	98.69	1,788.8	-48.8	419.9	103.8	1.77	1.35	3.34
1,943.0	20.11	97.11	1,877.9	-53.4	452.7	112.6	0.83	-0.60	-1.66
2,037.0	22.01	95.52	1,965.6	-57.1	486.2	120.7	2.11	2.02	-1.69
2,227.0	20.68	93.98	2,142.6	-62.8	555.1	135.5	0.76	-0.70	-0.81
2,322.0	20.02	94.82	2,231.6	-65.3	588.1	142.4	0.76	-0.69	0.88
2,417.0	21.39	99.31	2,320.5	-69.5	621.4	150.9	2.21	1.44	4.73
2,511.0	20.81	98.30	2,408.2	-74.7	654.8	160.4	0.73	-0.62	-1.07
2,607.0	22.18	95.70	2,497.5	-79.0	689.7	169.3	1.74	1.43	-2.71
2,701.0	23.29	95.30	2,584.2	-82.4	725.9	177.5	1.19	1.18	-0.43
2,795.0	23.42	94.90	2,670.5	-85.8	763.0	185.7	0.22	0.14	-0.43
2,890.0	23.51	93.89	2,757.6	-88.7	800.7	193.5	0.43	0.09	-1.06
2,984.0	21.92	93.32	2,844.4	-90.9	837.0	200.6	1.71	-1.69	-0.61
3,078.0	20.99	92.79	2,931.8	-92.8	871.3	206.9	1.01	-0.99	-0.56
3,172.0	22.71	95.08	3,019.1	-95.2	906.2	213.9	2.04	1.83	2.44
3,267.0	20.28	92.70	3,107.5	-97.6	940.9	220.9	2.72	-2.56	-2.51
3,361.0	21.30	95.61	3,195.4	-100.0	974.2	227.7	1.54	1.09	3.10
3,455.0	22.09	98.69	3,282.7	-104.4	1,008.6	236.5	1.47	0.84	3.28
3,549.0	19.71	97.11	3,370.5	-109.0	1,041.8	245.5	2.60	-2.53	-1.68
3,644.0	21.70	97.11	3,459.4	-113.2	1,075.2	254.0	2.09	2.09	0.00
3,833.0	19.18	101.78	3,636.5	-123.8	1,140.2	273.2	1.59	-1.33	2.47
3,927.0	21.61	94.90	3,724.6	-128.5	1,172.6	282.1	3.63	2.59	-7.32
4,116.0	26.29	101.38	3,897.3	-139.7	1,248.4	303.2	2.84	2.48	3.43
4,210.0	25.10	101.12	3,982.0	-147.7	1,288.3	316.4	1.27	-1.27	-0.28
4,304.0	22.58	101.69	4,068.0	-155.2	1,325.6	328.7	2.69	-2.68	0.61
4,399.0	21.21	98.52	4,156.1	-161.4	1,360.4	339.5	1.90	-1.44	-3.34
4,493.0	19.18	98.69	4,244.3	-166.3	1,392.5	348.5	2.16	-2.16	0.18
4,587.0	20.42	93.98	4,332.8	-169.7	1,424.2	356.2	2.15	1.32	-5.01
4,681.0	19.71	93.19	4,421.1	-171.7	1,456.3	362.4	0.81	-0.76	-0.84
4,775.0	22.09	94.11	4,508.9	-173.9	1,489.8	368.9	2.56	2.53	0.98
4,869.0	19.89	91.29	4,596.6	-175.5	1,523.4	375.0	2.57	-2.34	-3.00
4,964.0	18.12	89.62	4,686.5	-175.8	1,554.4	379.3	1.95	-1.86	-1.76
5,081.0	20.11	90.59	4,797.0	-175.9	1,592.7	384.5	1.72	1.70	0.83
5,175.0	21.79	95.30	4,884.8	-177.7	1,626.2	390.7	2.53	1.79	5.01

Survey Report



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Wellbore:	JOB #2017-157-341	Survey Calculation Method:	Minimum Curvature
Design:	JOB #2017-157-341	Database:	EDM 5000.1

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)
5,270.0	20.50	94.42	4,973.4	-180.6	1,660.3	398.1	1.40	-1.36	-0.93
5,364.0	17.72	91.60	5,062.2	-182.2	1,691.1	403.8	3.12	-2.96	-3.00
5,459.0	17.19	95.08	5,152.8	-183.9	1,719.5	409.1	1.23	-0.56	3.66
5,554.0	14.49	96.49	5,244.2	-186.5	1,745.3	415.1	2.87	-2.84	1.48
5,648.0	12.02	92.22	5,335.7	-188.2	1,766.8	419.6	2.82	-2.63	-4.54
5,742.0	9.72	98.30	5,428.0	-189.7	1,784.4	423.5	2.73	-2.45	6.47
5,837.0	10.30	99.71	5,521.6	-192.3	1,800.7	428.2	0.66	0.61	1.48
5,931.0	6.58	95.08	5,614.5	-194.2	1,814.4	431.9	4.02	-3.96	-4.93
6,025.0	4.99	100.50	5,708.1	-195.4	1,823.7	434.3	1.79	-1.69	5.77
6,120.0	2.21	110.02	5,802.9	-196.8	1,829.5	436.5	2.98	-2.93	10.02
6,215.0	0.80	49.78	5,897.8	-197.0	1,831.8	437.0	2.04	-1.48	-63.41
6,309.0	0.80	60.40	5,991.8	-196.2	1,832.8	436.4	0.16	0.00	11.30
6,404.0	0.71	59.69	6,086.8	-195.6	1,833.9	435.9	0.10	-0.09	-0.75
6,499.0	0.40	87.90	6,181.8	-195.3	1,834.8	435.7	0.43	-0.33	29.69
6,593.0	0.40	14.08	6,275.8	-195.0	1,835.2	435.4	0.51	0.00	-78.53
6,689.0	6.32	170.79	6,371.6	-199.9	1,836.1	440.4	6.97	6.17	163.24
6,743.0	13.48	173.29	6,424.8	-209.1	1,837.3	449.7	13.27	13.25	4.62
KOP - CS-LONGMEADOW 2-1-13									
6,783.0	18.78	173.92	6,463.2	-220.1	1,838.5	460.8	13.27	13.26	1.58
6,878.0	25.90	176.30	6,551.0	-256.1	1,841.5	496.8	7.55	7.49	2.51
6,973.0	31.60	178.15	6,634.3	-301.7	1,843.6	542.3	6.07	6.00	1.95
7,068.0	39.28	182.51	6,711.6	-356.7	1,843.1	596.8	8.51	8.08	4.59
7,162.0	46.31	186.30	6,780.6	-420.3	1,838.1	659.1	7.96	7.48	4.03
7,257.0	51.39	182.29	6,843.1	-491.6	1,832.8	729.1	6.22	5.35	-4.22
7,352.0	57.31	181.89	6,898.4	-568.7	1,830.0	805.2	6.24	6.23	-0.42
7,446.0	64.69	179.91	6,944.0	-650.8	1,828.8	886.4	8.06	7.85	-2.11
7,541.0	74.19	178.19	6,977.3	-739.7	1,830.3	974.7	10.14	10.00	-1.81
7,596.3	77.87	178.43	6,990.6	-793.3	1,831.9	1,028.1	6.67	6.65	0.43
LANDING PNT - CS-LONGMEADOW 2-1-13 Plan #3									
7,636.0	80.51	178.59	6,998.1	-832.3	1,832.9	1,066.8	6.67	6.65	0.42
7,730.0	87.01	181.41	7,008.3	-925.7	1,832.9	1,159.4	7.53	6.91	3.00
7,824.0	87.89	180.39	7,012.5	-1,019.5	1,831.4	1,252.3	1.43	0.94	-1.09
7,919.0	90.41	179.78	7,013.9	-1,114.5	1,831.3	1,346.4	2.73	2.65	-0.64
8,014.0	90.59	178.98	7,013.1	-1,209.5	1,832.3	1,440.7	0.86	0.19	-0.84
8,108.0	90.99	179.21	7,011.8	-1,303.5	1,833.8	1,534.1	0.49	0.43	0.24
8,202.0	91.30	178.10	7,009.9	-1,397.5	1,836.0	1,627.5	1.23	0.33	-1.18
8,297.0	91.30	177.31	7,007.7	-1,492.4	1,839.8	1,722.1	0.83	0.00	-0.83
8,391.0	90.28	178.98	7,006.4	-1,586.3	1,842.8	1,815.6	2.08	-1.09	1.78
8,486.0	90.50	178.50	7,005.8	-1,681.3	1,844.9	1,910.0	0.56	0.23	-0.51
8,580.0	91.12	181.89	7,004.5	-1,775.2	1,844.6	2,003.1	3.67	0.66	3.61
8,674.0	90.72	181.41	7,002.9	-1,869.2	1,841.9	2,095.9	0.66	-0.43	-0.51
8,769.0	91.21	180.39	7,001.3	-1,964.2	1,840.4	2,189.8	1.19	0.52	-1.07
8,957.0	91.69	179.51	6,996.6	-2,152.1	1,840.6	2,376.1	0.53	0.26	-0.47
9,052.0	91.52	180.70	6,993.9	-2,247.1	1,840.4	2,470.2	1.26	-0.18	1.25

Survey Report



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9,146.0	91.52	180.70	6,991.4	-2,341.0	1,839.2	2,563.2	0.00	0.00	0.00
9,241.0	90.94	180.79	6,989.4	-2,436.0	1,838.0	2,657.2	0.62	-0.61	0.09
9,335.0	90.41	180.09	6,988.3	-2,530.0	1,837.3	2,750.3	0.93	-0.56	-0.74
9,430.0	90.72	179.38	6,987.3	-2,625.0	1,837.7	2,844.5	0.82	0.33	-0.75
9,524.0	90.28	179.78	6,986.5	-2,719.0	1,838.4	2,937.8	0.63	-0.47	0.43
9,619.0	90.41	179.29	6,986.0	-2,814.0	1,839.2	3,032.0	0.53	0.14	-0.52
9,713.0	89.70	179.21	6,985.9	-2,907.9	1,840.4	3,125.4	0.76	-0.76	-0.09
9,807.0	89.22	179.38	6,986.7	-3,001.9	1,841.6	3,218.7	0.54	-0.51	0.18
9,902.0	89.70	180.48	6,987.6	-3,096.9	1,841.7	3,312.9	1.26	0.51	1.16
9,996.0	89.62	179.78	6,988.2	-3,190.9	1,841.5	3,406.0	0.75	-0.09	-0.74
10,091.0	92.31	180.79	6,986.6	-3,285.9	1,841.0	3,500.1	3.02	2.83	1.06
10,185.0	92.09	180.70	6,983.0	-3,379.8	1,839.8	3,593.0	0.25	-0.23	-0.10
10,280.0	91.78	180.70	6,979.8	-3,474.8	1,838.6	3,687.0	0.33	-0.33	0.00
10,375.0	90.90	179.38	6,977.6	-3,569.7	1,838.6	3,781.1	1.67	-0.93	-1.39
10,470.0	90.50	178.90	6,976.4	-3,664.7	1,840.0	3,875.4	0.66	-0.42	-0.51
10,564.0	89.88	178.02	6,976.1	-3,758.7	1,842.5	3,968.9	1.15	-0.66	-0.94
10,659.0	89.70	177.71	6,976.4	-3,853.6	1,846.0	4,063.5	0.38	-0.19	-0.33
10,753.0	89.22	177.00	6,977.3	-3,947.5	1,850.4	4,157.1	0.91	-0.51	-0.76
10,848.0	90.81	179.12	6,977.3	-4,042.4	1,853.6	4,251.7	2.79	1.67	2.23
10,942.0	90.19	178.50	6,976.5	-4,136.4	1,855.5	4,345.1	0.93	-0.66	-0.66
11,037.0	91.30	182.20	6,975.2	-4,231.4	1,855.0	4,439.1	4.07	1.17	3.89
11,132.0	91.78	181.89	6,972.7	-4,326.3	1,851.6	4,532.8	0.60	0.51	-0.33
11,227.0	91.60	181.58	6,969.9	-4,421.2	1,848.7	4,626.5	0.38	-0.19	-0.33
11,322.0	90.99	181.01	6,967.7	-4,516.2	1,846.6	4,720.3	0.88	-0.64	-0.60
11,510.0	90.44	179.38	6,965.4	-4,704.1	1,845.9	4,906.6	0.91	-0.29	-0.87
11,604.0	89.22	181.58	6,965.7	-4,798.1	1,845.1	4,999.6	2.68	-1.30	2.34
11,698.0	89.48	181.58	6,966.7	-4,892.1	1,842.5	5,092.4	0.28	0.28	0.00
11,804.0	88.91	182.38	6,968.2	-4,998.0	1,838.9	5,196.9	0.93	-0.54	0.75
11,899.0	88.60	181.41	6,970.3	-5,092.9	1,835.7	5,290.6	1.07	-0.33	-1.02
12,088.0	88.82	179.69	6,974.6	-5,281.9	1,833.9	5,477.7	0.92	0.12	-0.91
12,182.0	89.22	178.72	6,976.2	-5,375.8	1,835.2	5,571.0	1.12	0.43	-1.03
12,277.0	89.09	180.48	6,977.6	-5,470.8	1,835.9	5,665.2	1.86	-0.14	1.85
12,371.0	89.40	180.70	6,978.8	-5,564.8	1,834.9	5,758.3	0.40	0.33	0.23
12,466.0	89.62	180.79	6,979.6	-5,659.8	1,833.7	5,852.3	0.25	0.23	0.09
12,561.0	89.70	179.91	6,980.2	-5,754.8	1,833.1	5,946.4	0.93	0.08	-0.93
12,751.0	89.70	179.51	6,981.2	-5,944.8	1,834.1	6,134.8	0.21	0.00	-0.21
12,846.0	89.70	179.51	6,981.7	-6,039.8	1,834.9	6,229.1	0.00	0.00	0.00
12,940.0	89.79	180.70	6,982.1	-6,133.8	1,834.7	6,322.2	1.27	0.10	1.27
13,035.0	89.62	180.70	6,982.6	-6,228.8	1,833.5	6,416.2	0.18	-0.18	0.00
13,129.0	89.62	179.51	6,983.2	-6,322.8	1,833.4	6,509.4	1.27	0.00	-1.27
13,223.0	89.70	179.51	6,983.8	-6,416.8	1,834.2	6,602.7	0.09	0.09	0.00
13,318.0	89.40	181.32	6,984.5	-6,511.8	1,833.5	6,696.7	1.93	-0.32	1.91
13,508.0	89.62	179.78	6,986.1	-6,701.7	1,831.7	6,884.8	0.82	0.12	-0.81

Survey Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well CS-LONGMEADOW 2-1-13
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB @ 4688.0usft (PATT 341)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	MD Reference:	KB @ 4688.0usft (PATT 341)
Well:	CS-LONGMEADOW 2-1-13	North Reference:	True
Wellbore:	JOB #2017-157-341	Survey Calculation Method:	Minimum Curvature
Design:	JOB #2017-157-341	Database:	EDM 5000.1

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)
13,602.0	89.62	181.10	6,986.8	-6,795.7	1,830.9	6,977.9	1.40	0.00	1.40
13,697.0	89.88	180.48	6,987.2	-6,890.7	1,829.6	7,071.9	0.71	0.27	-0.65
13,793.0	90.19	179.51	6,987.1	-6,986.7	1,829.6	7,167.0	1.06	0.32	-1.01
13,887.0	90.19	179.51	6,986.8	-7,080.7	1,830.4	7,260.3	0.00	0.00	0.00
14,077.0	90.01	180.88	6,986.5	-7,270.7	1,829.8	7,448.6	0.73	-0.09	0.72
14,172.0	90.10	180.48	6,986.4	-7,365.7	1,828.7	7,542.6	0.43	0.09	-0.42
14,267.0	90.01	180.62	6,986.3	-7,460.7	1,827.8	7,636.6	0.18	-0.09	0.15
14,362.0	90.59	179.21	6,985.8	-7,555.7	1,827.9	7,730.8	1.60	0.61	-1.48
14,457.0	90.45	179.78	6,984.9	-7,650.7	1,828.7	7,825.1	0.62	-0.15	0.60
14,552.0	90.59	179.21	6,984.1	-7,745.7	1,829.6	7,919.4	0.62	0.15	-0.60
14,647.0	90.59	179.12	6,983.1	-7,840.7	1,831.0	8,013.7	0.09	0.00	-0.09
14,742.0	90.59	179.51	6,982.1	-7,935.6	1,832.1	8,108.0	0.41	0.00	0.41
14,837.0	90.72	179.69	6,981.0	-8,030.6	1,832.8	8,202.2	0.23	0.14	0.19
14,932.0	90.81	179.69	6,979.7	-8,125.6	1,833.3	8,296.5	0.09	0.09	0.00
15,027.0	90.72	177.88	6,978.5	-8,220.6	1,835.3	8,390.9	1.91	-0.09	-1.91
15,123.0	90.72	179.29	6,977.3	-8,316.6	1,837.7	8,486.3	1.47	0.00	1.47
15,217.0	90.72	179.21	6,976.1	-8,410.5	1,838.9	8,579.6	0.09	0.00	-0.09
15,406.0	90.81	179.21	6,973.6	-8,599.5	1,841.5	8,767.3	0.05	0.05	0.00
15,596.0	90.81	178.59	6,970.9	-8,789.4	1,845.1	8,956.1	0.33	0.00	-0.33
15,691.0	90.19	177.31	6,970.1	-8,884.4	1,848.5	9,050.6	1.50	-0.65	-1.35
15,785.0	89.70	177.18	6,970.1	-8,978.3	1,853.1	9,144.3	0.54	-0.52	-0.14
15,879.0	89.88	177.49	6,970.5	-9,072.2	1,857.4	9,237.9	0.38	0.19	0.33
15,974.0	89.79	180.48	6,970.8	-9,167.1	1,859.1	9,332.3	3.15	-0.09	3.15
16,069.0	89.88	180.31	6,971.0	-9,262.1	1,858.5	9,426.4	0.20	0.09	-0.18
16,164.0	89.79	180.31	6,971.3	-9,357.1	1,857.9	9,520.5	0.09	-0.09	0.00
16,258.0	89.70	180.31	6,971.7	-9,451.1	1,857.4	9,613.6	0.10	-0.10	0.00
16,353.0	89.88	181.81	6,972.1	-9,546.1	1,855.7	9,707.5	1.59	0.19	1.58
16,543.0	89.70	182.60	6,972.8	-9,736.0	1,848.4	9,894.7	0.43	-0.09	0.42
16,638.0	89.70	182.11	6,973.3	-9,830.9	1,844.5	9,988.3	0.52	0.00	-0.52
16,732.0	89.70	182.51	6,973.8	-9,924.8	1,840.7	10,080.9	0.43	0.00	0.43
16,921.0	89.48	182.11	6,975.1	-10,113.7	1,833.1	10,267.1	0.24	-0.12	-0.21
17,016.0	89.70	179.29	6,975.8	-10,208.6	1,831.9	10,361.1	2.98	0.23	-2.97
17,111.0	89.62	178.98	6,976.4	-10,303.6	1,833.3	10,455.4	0.34	-0.08	-0.33
17,206.0	89.48	180.79	6,977.1	-10,398.6	1,833.5	10,549.6	1.91	-0.15	1.91
17,300.0	89.70	179.21	6,977.8	-10,492.6	1,833.5	10,642.8	1.70	0.23	-1.68
17,395.0	89.48	180.31	6,978.5	-10,587.6	1,833.9	10,737.0	1.18	-0.23	1.16
17,490.0	89.88	179.51	6,979.0	-10,682.6	1,834.1	10,831.2	0.94	0.42	-0.84
17,585.0	89.62	178.90	6,979.4	-10,777.6	1,835.4	10,925.5	0.70	-0.27	-0.64
17,680.0	89.70	178.72	6,980.0	-10,872.6	1,837.4	11,019.9	0.21	0.08	-0.19
17,775.0	89.48	178.98	6,980.6	-10,967.5	1,839.3	11,114.3	0.36	-0.23	0.27
17,964.0	90.01	177.62	6,981.5	-11,156.5	1,844.9	11,302.3	0.77	0.28	-0.72
18,058.0	90.10	179.29	6,981.4	-11,250.4	1,847.4	11,395.8	1.78	0.10	1.78
18,153.0	90.41	179.21	6,981.0	-11,345.4	1,848.7	11,490.1	0.34	0.33	-0.08
18,248.0	90.90	178.02	6,979.9	-11,440.4	1,850.9	11,584.6	1.35	0.52	-1.25

Survey Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well CS-LONGMEADOW 2-1-13
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB @ 4688.0usft (PATT 341)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	MD Reference:	KB @ 4688.0usft (PATT 341)
Well:	CS-LONGMEADOW 2-1-13	North Reference:	True
Wellbore:	JOB #2017-157-341	Survey Calculation Method:	Minimum Curvature
Design:	JOB #2017-157-341	Database:	EDM 5000.1

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)
18,343.0	91.21	178.67	6,978.1	-11,535.3	1,853.7	11,679.0	0.76	0.33	0.68
18,437.0	91.05	178.67	6,976.3	-11,629.3	1,855.9	11,772.5	0.17	-0.17	0.00
18,532.0	91.12	178.67	6,974.5	-11,724.2	1,858.1	11,866.9	0.07	0.07	0.00
18,627.0	91.21	178.72	6,972.6	-11,819.2	1,860.2	11,961.3	0.11	0.09	0.05
18,721.0	91.30	179.60	6,970.5	-11,913.1	1,861.6	12,054.6	0.94	0.10	0.94
18,910.0	90.41	178.98	6,967.7	-12,102.1	1,864.0	12,242.2	0.57	-0.47	-0.33
19,005.0	90.10	181.41	6,967.3	-12,197.1	1,863.6	12,336.4	2.58	-0.33	2.56
19,100.0	90.19	181.41	6,967.0	-12,292.1	1,861.3	12,430.2	0.09	0.09	0.00
19,194.0	90.10	181.41	6,966.8	-12,386.0	1,859.0	12,523.0	0.10	-0.10	0.00
19,289.0	90.01	181.50	6,966.7	-12,481.0	1,856.6	12,616.9	0.13	-0.09	0.09
19,383.0	90.01	181.58	6,966.7	-12,575.0	1,854.0	12,709.7	0.09	0.00	0.09
19,478.0	90.10	181.89	6,966.6	-12,669.9	1,851.2	12,803.4	0.34	0.09	0.33
19,572.0	89.88	182.38	6,966.6	-12,763.9	1,847.7	12,896.1	0.57	-0.23	0.52
19,667.0	90.19	181.81	6,966.5	-12,858.8	1,844.2	12,989.7	0.68	0.33	-0.60
19,762.0	89.88	181.19	6,966.5	-12,953.8	1,841.7	13,083.5	0.73	-0.33	-0.65
19,856.0	90.01	181.72	6,966.6	-13,047.7	1,839.3	13,176.4	0.58	0.14	0.56
19,951.0	90.01	181.32	6,966.5	-13,142.7	1,836.8	13,270.2	0.42	0.00	-0.42
20,046.0	90.10	181.01	6,966.5	-13,237.7	1,834.9	13,364.1	0.34	0.09	-0.33
20,141.0	90.28	179.91	6,966.1	-13,332.7	1,834.1	13,458.1	1.17	0.19	-1.16
20,236.0	90.19	181.81	6,965.8	-13,427.7	1,832.7	13,552.1	2.00	-0.09	2.00
20,330.0	90.19	179.78	6,965.4	-13,521.6	1,831.4	13,645.1	2.16	0.00	-2.16
20,425.0	90.01	181.58	6,965.3	-13,616.7	1,830.3	13,739.1	1.90	-0.19	1.89
Last MWD Survey									
20,550.0	90.01	181.58	6,965.3	-13,741.6	1,826.8	13,862.5	0.00	0.00	0.00
Projection to TD - BHL - CS-LONGMEADOW 2-1-13 Plan #3									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP - CS-LONGMEAD(0.00	0.00	6,424.0	-213.8	1,828.6	1,403,289.74	3,218,269.07	40° 26' 16.019 N	104° 42' 57.063 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 9.9usft at 6743.3usft MD (6425.1 TVD, -209.1 N, 1837.3 E)									
- Point									
BHL - CS-LONGMEADC	0.00	0.00	7,020.0	-13,789.1	1,835.4	1,389,715.49	3,218,394.95	40° 24' 1.872 N	104° 42' 56.988 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 73.0usft at 20550.0usft MD (6965.3 TVD, -13741.6 N, 1826.8 E)									
- Point									
LANDING PNT - CS-LOI	0.00	0.00	7,020.0	-786.8	1,828.9	1,402,716.74	3,218,274.40	40° 26' 10.356 N	104° 42' 57.060 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 30.2usft at 7596.3usft MD (6990.6 TVD, -793.3 N, 1831.9 E)									
- Point									

Survey Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well CS-LONGMEADOW 2-1-13
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB @ 4688.0usft (PATT 341)
Site:	SW SE SEC 36 T6N R66W 6th P.M.	MD Reference:	KB @ 4688.0usft (PATT 341)
Well:	CS-LONGMEADOW 2-1-13	North Reference:	True
Wellbore:	JOB #2017-157-341	Survey Calculation Method:	Minimum Curvature
Design:	JOB #2017-157-341	Database:	EDM 5000.1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,536.0	1,495.6	-36.9	313.9	LAST SURVEY - JUNE 16, 2017
1,658.0	1,610.2	-41.4	355.7	1st MWD Surve
20,425.0	6,965.3	-13,616.7	1,830.3	Last MWD Survey
20,550.0	6,965.3	-13,741.6	1,826.8	Projection to TD

Checked By: _____ Approved By: _____ Date: _____