



# **Extraction Oil & Gas**

**WELD COUNTY, CO**

**Kiteley 21-I Pad**

**Kiteley 4**

**Kiteley 4**

**Survey: Survey #1**

## **Standard Survey Report**

**09 March, 2017**



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Kiteley 4
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	New KB @ 5019.00ft (Cyclone 37)
<b>Site:</b>	Kiteley 21-I Pad	<b>MD Reference:</b>	New KB @ 5019.00ft (Cyclone 37)
<b>Well:</b>	Kiteley 4	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kiteley 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kiteley 4	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	WELD COUNTY, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Kiteley 21-I Pad			
Site Position:		Northing:	1,319,048.75 usft	Latitude:	40° 12' 29.416 N
From:	Lat/Long	Easting:	3,135,328.07 usft	Longitude:	105° 0' 55.688 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16"	Grid Convergence:	0.31 °

Well	Kiteley 4					
Well Position	+N/-S	0.00 ft	Northing:	1,318,990.34 usft	Latitude:	40° 12' 28.836 N
	+E/-W	0.00 ft	Easting:	3,135,375.31 usft	Longitude:	105° 0' 55.084 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,991.00 ft

<b>Wellbore</b>	Kiteley 4				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	01/31/17	8.37	66.67	52,307

<b>Design</b>	Kiteley 4				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	84.63	

<b>Survey Program</b>	<b>Date</b>	03/08/17			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
98.00	11,715.00	Survey #1 (Kiteley 4)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
98.00	1.20	328.20	97.99	0.87	-0.54	-0.46	1.22	1.22	0.00	
130.00	1.20	336.70	129.99	1.46	-0.85	-0.71	0.56	0.00	26.56	
320.00	2.00	300.00	319.91	4.95	-4.51	-4.03	0.66	0.42	-19.32	
352.00	1.50	304.40	351.90	5.47	-5.34	-4.80	1.62	-1.56	13.75	
384.00	0.80	298.00	383.89	5.81	-5.88	-5.31	2.22	-2.19	-20.00	
416.00	0.90	310.60	415.89	6.08	-6.27	-5.67	0.66	0.31	39.38	
448.00	1.10	303.60	447.88	6.41	-6.71	-6.09	0.73	0.63	-21.88	
479.00	1.10	298.90	478.88	6.72	-7.22	-6.56	0.29	0.00	-15.16	
511.00	1.10	303.80	510.87	7.04	-7.75	-7.05	0.29	0.00	15.31	
543.00	1.30	303.00	542.87	7.41	-8.31	-7.58	0.63	0.63	-2.50	
575.00	1.70	288.60	574.86	7.75	-9.06	-8.30	1.71	1.25	-45.00	
607.00	3.00	284.50	606.83	8.12	-10.32	-9.52	4.09	4.06	-12.81	

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Kiteley 4
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	New KB @ 5019.00ft (Cyclone 37)
<b>Site:</b>	Kiteley 21-I Pad	<b>MD Reference:</b>	New KB @ 5019.00ft (Cyclone 37)
<b>Well:</b>	Kiteley 4	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kiteley 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kiteley 4	<b>Database:</b>	EDM 5000.1 Single User Db

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)	
639.00	3.60	286.40	638.77	8.61	-12.10	-11.24	1.91	1.88	5.94	
734.00	6.70	287.70	733.38	11.14	-20.24	-19.11	3.27	3.26	1.37	
830.00	8.90	300.30	828.49	16.59	-31.99	-30.30	2.89	2.29	13.13	
893.00	9.90	302.20	890.65	21.93	-40.78	-38.55	1.66	1.59	3.02	
957.00	10.80	304.50	953.60	28.26	-50.38	-47.51	1.55	1.41	3.59	
1,052.00	12.20	305.60	1,046.69	39.15	-65.87	-61.92	1.49	1.47	1.16	
1,116.00	12.80	303.30	1,109.18	46.97	-77.30	-72.56	1.22	0.94	-3.59	
1,146.00	12.90	300.80	1,138.43	50.51	-82.95	-77.86	1.88	0.33	-8.33	
1,178.00	13.00	290.20	1,169.62	53.59	-89.40	-83.99	7.42	0.31	-33.13	
1,210.00	13.40	287.70	1,200.77	55.96	-96.31	-90.65	2.18	1.25	-7.81	
1,241.00	12.30	288.80	1,231.00	58.11	-102.86	-96.97	3.63	-3.55	3.55	
1,271.00	12.00	286.90	1,260.32	60.05	-108.87	-102.77	1.67	-1.00	-6.33	
1,303.00	11.96	286.88	1,291.63	61.98	-115.22	-108.91	0.13	-0.13	-0.06	
1,335.00	11.70	286.10	1,322.95	63.84	-121.51	-115.00	0.95	-0.81	-2.44	
1,399.00	12.70	286.70	1,385.50	67.66	-134.49	-127.56	1.57	1.56	0.94	
1,430.00	12.90	288.00	1,415.73	69.71	-141.04	-133.90	1.13	0.65	4.19	
1,494.00	11.30	287.40	1,478.31	73.79	-153.82	-146.24	2.51	-2.50	-0.94	
1,534.00	11.80	289.10	1,517.50	76.30	-161.42	-153.57	1.51	1.25	4.25	
1,665.00	10.91	284.22	1,645.93	83.73	-186.10	-177.44	1.00	-0.68	-3.73	
1,759.00	10.30	292.63	1,738.33	89.15	-202.48	-193.25	1.77	-0.65	8.95	
1,853.00	11.71	301.84	1,830.61	97.42	-218.34	-208.26	2.39	1.50	9.80	
1,948.00	14.01	301.84	1,923.22	108.57	-236.30	-225.10	2.42	2.42	0.00	
2,043.00	14.58	303.34	2,015.28	121.21	-256.06	-243.59	0.72	0.60	1.58	
2,137.00	13.70	299.73	2,106.43	133.23	-275.61	-261.93	1.32	-0.94	-3.84	
2,232.00	13.21	299.02	2,198.82	144.08	-294.87	-280.09	0.54	-0.52	-0.75	
2,326.00	12.68	298.23	2,290.43	154.17	-313.36	-297.55	0.59	-0.56	-0.84	
2,420.00	12.11	299.11	2,382.24	163.85	-331.06	-314.27	0.64	-0.61	0.94	
2,610.00	10.21	294.75	2,568.65	180.59	-363.77	-345.27	1.09	-1.00	-2.29	
2,705.00	10.69	293.51	2,662.07	187.63	-379.50	-360.26	0.56	0.51	-1.31	
2,799.00	9.72	294.92	2,754.58	194.45	-394.69	-374.75	1.07	-1.03	1.50	
2,894.00	10.61	290.65	2,848.09	200.92	-410.14	-389.53	1.23	0.94	-4.49	
2,988.00	10.38	291.62	2,940.52	207.09	-426.11	-404.86	0.31	-0.24	1.03	
3,083.00	11.49	297.22	3,033.79	214.57	-442.49	-420.46	1.62	1.17	5.89	
3,178.00	13.92	298.14	3,126.46	224.29	-460.98	-437.96	2.57	2.56	0.97	
3,272.00	13.30	295.01	3,217.82	234.19	-480.75	-456.71	1.02	-0.66	-3.33	
3,367.00	11.80	292.41	3,310.55	242.52	-499.63	-474.73	1.69	-1.58	-2.74	
3,461.00	12.20	286.42	3,402.50	248.99	-518.05	-492.46	1.39	0.43	-6.37	
3,555.00	13.52	292.15	3,494.14	255.94	-537.75	-511.43	1.95	1.40	6.10	
3,650.00	12.81	290.65	3,586.65	263.84	-557.89	-530.74	0.83	-0.75	-1.58	
3,744.00	12.90	297.61	3,678.30	272.38	-576.94	-548.91	1.65	0.10	7.40	
3,839.00	11.62	299.24	3,771.13	281.97	-594.69	-565.68	1.40	-1.35	1.72	
3,934.00	9.99	298.54	3,864.44	290.58	-610.28	-580.39	1.72	-1.72	-0.74	
4,029.00	9.01	296.95	3,958.14	297.89	-624.15	-593.52	1.07	-1.03	-1.67	
4,124.00	8.62	294.44	4,052.02	304.21	-637.26	-605.98	0.58	-0.41	-2.64	
4,219.00	8.00	295.23	4,146.02	309.97	-649.72	-617.85	0.66	-0.65	0.83	
4,313.00	5.21	286.02	4,239.39	313.94	-659.74	-627.46	3.17	-2.97	-9.80	
4,407.00	4.20	285.45	4,333.07	316.03	-667.16	-634.65	1.08	-1.07	-0.61	
4,502.00	2.52	304.22	4,427.91	318.13	-672.24	-639.51	2.09	-1.77	19.76	
4,597.00	1.10	316.74	4,522.86	319.97	-674.59	-641.68	1.54	-1.49	13.18	
4,692.00	1.02	297.74	4,617.84	321.03	-675.97	-642.95	0.38	-0.08	-20.00	
4,787.00	1.19	277.65	4,712.82	321.55	-677.69	-644.62	0.44	0.18	-21.15	
4,881.00	1.68	266.24	4,806.79	321.59	-680.04	-646.94	0.60	0.52	-12.14	
4,975.00	0.40	279.63	4,900.78	321.56	-681.74	-648.64	1.38	-1.36	14.24	
5,070.00	1.19	114.25	4,995.77	321.21	-681.16	-648.10	1.66	0.83	-174.08	

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Kiteley 4
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<b>Wellbore:</b>	Kiteley 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kiteley 4	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
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5,164.00	0.40	148.14	5,089.76	320.53	-680.10	-647.11	0.94	-0.84	36.05	
5,259.00	0.62	219.35	5,184.76	319.85	-680.25	-647.32	0.65	0.23	74.96	
5,353.00	0.62	148.44	5,278.75	319.02	-680.31	-647.45	0.77	0.00	-75.44	
5,448.00	1.02	137.43	5,373.74	317.96	-679.47	-646.72	0.45	0.42	-11.59	
5,542.00	1.02	187.84	5,467.73	316.52	-679.01	-646.40	0.92	0.00	53.63	
5,637.00	1.10	174.05	5,562.71	314.77	-679.03	-646.59	0.28	0.08	-14.52	
5,732.00	1.50	186.52	5,657.69	312.63	-679.08	-646.83	0.51	0.42	13.13	
5,826.00	1.02	185.95	5,751.67	310.58	-679.31	-647.25	0.51	-0.51	-0.61	
5,921.00	0.22	24.13	5,846.66	309.90	-679.32	-647.33	1.30	-0.84	-170.34	
6,015.00	0.22	292.72	5,940.66	310.13	-679.41	-647.40	0.34	0.00	-97.24	
6,110.00	0.22	238.43	6,035.66	310.11	-679.74	-647.72	0.21	0.00	-57.15	
6,205.00	0.31	255.53	6,130.66	309.95	-680.14	-648.14	0.13	0.09	18.00	
6,301.00	0.62	269.72	6,226.66	309.88	-680.91	-648.91	0.34	0.32	14.78	
6,418.00	0.71	267.82	6,343.65	309.85	-682.27	-650.27	0.08	0.08	-1.62	
6,512.00	5.30	85.52	6,437.53	310.17	-678.52	-646.50	6.39	4.88	189.04	
6,607.00	14.10	81.95	6,531.08	312.14	-662.66	-630.53	9.28	9.26	-3.76	
6,702.00	21.61	82.12	6,621.44	316.16	-633.83	-601.45	7.91	7.91	0.18	
6,796.00	29.70	88.25	6,706.12	319.25	-593.33	-560.84	9.05	8.61	6.52	
6,891.00	38.80	89.44	6,784.56	320.26	-539.93	-507.58	9.60	9.58	1.25	
6,986.00	47.81	89.53	6,853.62	320.84	-474.85	-442.72	9.48	9.48	0.09	
7,081.00	58.42	86.62	6,910.57	323.53	-399.03	-366.99	11.43	11.17	-3.06	
7,175.00	67.79	85.82	6,953.05	329.07	-315.48	-283.28	10.00	9.97	-0.85	
7,270.00	71.10	86.93	6,986.40	334.68	-226.72	-194.39	3.65	3.48	1.17	
7,365.00	79.72	87.54	7,010.31	339.11	-134.97	-102.63	9.09	9.07	0.64	
7,458.00	89.09	87.15	7,019.36	343.39	-42.62	-10.28	10.08	10.08	-0.42	
7,553.00	89.48	88.42	7,020.55	347.06	52.30	84.56	1.40	0.41	1.34	
7,647.00	87.50	90.85	7,023.03	347.66	146.25	178.16	3.33	-2.11	2.59	
7,742.00	88.91	90.14	7,026.00	346.84	241.20	272.61	1.66	1.48	-0.75	
7,836.00	87.10	91.73	7,029.27	345.31	335.13	365.98	2.56	-1.93	1.69	
7,930.00	87.41	91.33	7,033.78	342.80	428.98	459.19	0.54	0.33	-0.43	
8,025.00	89.22	91.82	7,036.57	340.19	523.90	553.45	1.97	1.91	0.52	
8,120.00	87.41	88.91	7,039.36	339.59	618.85	647.92	3.61	-1.91	-3.06	
8,215.00	88.29	88.51	7,042.93	341.72	713.75	742.61	1.02	0.93	-0.42	
8,309.00	87.80	89.75	7,046.13	343.15	807.69	836.26	1.42	-0.52	1.32	
8,404.00	90.41	91.42	7,047.62	342.18	902.66	930.73	3.26	2.75	1.76	
8,499.00	87.98	90.54	7,048.95	340.56	997.63	1,025.13	2.72	-2.56	-0.93	
8,593.00	88.29	89.53	7,052.01	340.50	1,091.57	1,118.66	1.12	0.33	-1.07	
8,688.00	87.98	91.02	7,055.10	340.04	1,186.52	1,213.14	1.60	-0.33	1.57	
8,783.00	88.82	90.45	7,057.76	338.82	1,281.47	1,307.57	1.07	0.88	-0.60	
8,877.00	86.61	90.85	7,061.50	337.76	1,375.39	1,400.97	2.39	-2.35	0.43	
8,972.00	87.80	91.64	7,066.14	335.70	1,470.25	1,495.22	1.50	1.25	0.83	
9,067.00	86.70	89.22	7,070.69	334.98	1,565.13	1,589.62	2.80	-1.16	-2.55	
9,161.00	86.61	87.94	7,076.18	337.31	1,658.94	1,683.23	1.36	-0.10	-1.36	
9,256.00	86.92	86.62	7,081.54	341.81	1,753.68	1,777.98	1.43	0.33	-1.39	
9,351.00	87.32	86.44	7,086.31	347.55	1,848.38	1,872.80	0.46	0.42	-0.19	
9,446.00	87.58	85.74	7,090.54	354.03	1,943.07	1,967.68	0.79	0.27	-0.74	
9,541.00	88.60	87.72	7,093.71	359.44	2,037.85	2,062.55	2.34	1.07	2.08	
9,635.00	88.11	90.01	7,096.41	361.30	2,131.79	2,156.25	2.49	-0.52	2.44	
9,730.00	86.79	90.45	7,100.63	360.92	2,226.69	2,250.70	1.46	-1.39	0.46	
9,825.00	88.51	90.72	7,104.53	359.95	2,321.61	2,345.11	1.83	1.81	0.28	
9,920.00	87.01	90.63	7,108.24	358.83	2,416.52	2,439.50	1.58	-1.58	-0.09	
10,014.00	86.08	89.75	7,113.91	358.52	2,510.35	2,532.89	1.36	-0.99	-0.94	
10,109.00	87.32	90.54	7,119.37	358.28	2,605.19	2,627.29	1.55	1.31	0.83	
10,204.00	85.82	87.32	7,125.06	360.05	2,699.99	2,721.84	3.73	-1.58	-3.39	

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<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	New KB @ 5019.00ft (Cyclone 37)
<b>Site:</b>	Kiteley 21-I Pad	<b>MD Reference:</b>	New KB @ 5019.00ft (Cyclone 37)
<b>Well:</b>	Kiteley 4	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kiteley 4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kiteley 4	<b>Database:</b>	EDM 5000.1 Single User Db

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)
10,298.00	85.29	87.94	7,132.34	363.93	2,793.62	2,815.42	0.87	-0.56	0.66
10,393.00	85.99	86.44	7,139.57	368.57	2,888.23	2,910.05	1.74	0.74	-1.58
10,488.00	86.30	89.22	7,145.95	372.16	2,982.94	3,004.68	2.94	0.33	2.93
10,583.00	87.10	89.53	7,151.42	373.19	3,077.78	3,099.20	0.90	0.84	0.33
10,677.00	88.60	89.44	7,154.95	374.04	3,171.70	3,192.79	1.60	1.60	-0.10
10,772.00	88.51	89.22	7,157.35	375.15	3,266.67	3,287.44	0.25	-0.09	-0.23
10,866.00	87.50	90.23	7,160.62	375.60	3,360.61	3,381.01	1.52	-1.07	1.07
10,961.00	89.31	90.72	7,163.26	374.81	3,455.56	3,475.47	1.97	1.91	0.52
11,056.00	87.41	90.23	7,165.98	374.02	3,550.51	3,569.94	2.07	-2.00	-0.52
11,150.00	86.48	87.94	7,170.99	375.52	3,644.36	3,663.51	2.63	-0.99	-2.44
11,245.00	86.61	87.72	7,176.72	379.11	3,739.12	3,758.19	0.27	0.14	-0.23
11,340.00	86.39	87.94	7,182.52	382.70	3,833.88	3,852.87	0.33	-0.23	0.23
11,435.00	86.70	85.52	7,188.24	388.11	3,928.54	3,947.62	2.56	0.33	-2.55
11,529.00	87.19	88.42	7,193.25	393.07	4,022.27	4,041.40	3.12	0.52	3.09
<b>Last Svy</b>									
11,641.00	87.98	89.53	7,197.97	395.07	4,134.15	4,152.98	1.22	0.71	0.99
<b>Proj Svy</b>									
11,715.00	87.98	89.53	7,200.58	395.68	4,208.10	4,226.66	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Kiteley 4 Hard Line Inter	0.00	0.00	7,015.37	340.59	-101.40	1,319,330.37	3,135,272.05	40° 12' 32.202 N	105° 0' 56.391 W
- survey misses target center by 0.01ft at 7398.98ft MD (7015.37 TVD, 340.59 N, -101.41 E)									
- Point									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
11,641.00	7,197.97	395.07	4,134.15	Last Svy
11,715.00	7,200.58	395.68	4,208.10	Proj Svy

Checked By: _____	Approved By: _____	Date: _____
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