



# **Extraction Oil & Gas**

**WELD COUNTY, CO**

**Kiteley 21-I Pad**

**Kiteley 9**

**Kiteley 9 ST01**

**Design: Kiteley 9 ST01**

## **Standard Survey Report**

**09 March, 2017**



<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Kiteley 9
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	New KB @ 5016.00ft (Cyclone 37)
<b>Site:</b>	Kiteley 21-I Pad	<b>MD Reference:</b>	New KB @ 5016.00ft (Cyclone 37)
<b>Well:</b>	Kiteley 9	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kiteley 9 ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kiteley 9 ST01	<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 9					
Well Position	+N/-S	0.00 ft	Northing:	1,318,893.14 usft	Latitude:	40° 12' 27.871 N
	+E/-W	0.00 ft	Easting:	3,135,453.77 usft	Longitude:	105° 0' 54.079 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,988.00 ft

<b>Wellbore</b>	Kiteley 9 ST01				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	02/21/17	8.36	66.67	52,300

<b>Design</b>	Kiteley 9 ST01				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	8,855.00
<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	100.50	

<b>Survey Program</b>	<b>Date</b>	02/21/17			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
128.00	8,855.00	Survey #1 (Kiteley 9)	MWD	MWD - Standard	
8,949.00	11,691.00	Survey #1 (Kiteley 9 ST01)	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	
128.00	0.40	283.90	128.00	0.11	-0.43	-0.45	0.31	0.31	0.00	
286.00	0.70	257.00	285.99	0.02	-1.91	-1.88	0.25	0.19	-17.03	
318.00	0.60	266.00	317.99	-0.03	-2.27	-2.22	0.45	-0.31	28.13	
382.00	0.70	221.50	381.99	-0.35	-2.86	-2.75	0.78	0.16	-69.53	
414.00	1.30	214.70	413.98	-0.79	-3.20	-3.00	1.91	1.88	-21.25	
445.00	2.00	208.70	444.97	-1.56	-3.66	-3.31	2.32	2.26	-19.35	
477.00	2.10	208.40	476.95	-2.56	-4.20	-3.67	0.31	0.31	-0.94	
541.00	2.60	212.40	540.89	-4.82	-5.54	-4.57	0.82	0.78	6.25	
668.00	5.70	216.60	667.55	-12.32	-10.84	-8.42	2.45	2.44	3.31	
764.00	7.00	212.60	762.95	-21.07	-16.84	-12.72	1.43	1.35	-4.17	
859.00	8.10	224.90	857.14	-30.69	-24.68	-18.68	2.05	1.16	12.95	

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Kiteley 9
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	New KB @ 5016.00ft (Cyclone 37)
<b>Site:</b>	Kiteley 21-I Pad	<b>MD Reference:</b>	New KB @ 5016.00ft (Cyclone 37)
<b>Well:</b>	Kiteley 9	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kiteley 9 ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kiteley 9 ST01	<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)
955.00	10.10	226.10	951.92	-41.32	-35.52	-27.40	2.09	2.08	1.25
1,050.00	11.40	226.10	1,045.25	-53.61	-48.29	-37.71	1.37	1.37	0.00
1,146.00	12.00	224.20	1,139.26	-67.34	-62.08	-48.77	0.74	0.63	-1.98
1,239.00	11.70	221.80	1,230.28	-81.30	-75.11	-59.04	0.62	-0.32	-2.58
1,333.00	12.00	219.40	1,322.27	-95.96	-87.67	-68.71	0.61	0.32	-2.55
1,428.00	12.40	219.00	1,415.13	-111.52	-100.35	-78.35	0.43	0.42	-0.42
1,460.00	12.20	217.90	1,446.39	-116.85	-104.59	-81.55	0.96	-0.63	-3.44
1,547.00	12.20	218.70	1,531.43	-131.28	-115.99	-90.12	0.19	0.00	0.92
1,664.00	12.02	215.91	1,645.83	-150.80	-130.86	-101.19	0.52	-0.15	-2.38
1,759.00	11.49	213.75	1,738.83	-166.68	-141.92	-109.17	0.73	-0.56	-2.27
1,853.00	13.52	216.84	1,830.60	-183.26	-153.71	-117.74	2.27	2.16	3.29
1,948.00	13.61	217.94	1,922.95	-200.96	-167.24	-127.82	0.29	0.09	1.16
2,043.00	14.49	225.91	2,015.12	-218.05	-182.65	-139.86	2.24	0.93	8.39
2,137.00	13.61	223.23	2,106.30	-234.29	-198.67	-152.65	1.16	-0.94	-2.85
2,232.00	13.21	221.02	2,198.72	-250.62	-213.45	-164.21	0.68	-0.42	-2.33
2,326.00	12.11	219.13	2,290.43	-266.37	-226.73	-174.39	1.25	-1.17	-2.01
2,420.00	12.90	226.22	2,382.20	-281.28	-240.53	-185.24	1.84	0.84	7.54
2,515.00	12.02	229.13	2,474.97	-295.09	-255.66	-197.61	1.14	-0.93	3.06
2,610.00	10.61	226.84	2,568.12	-307.55	-269.52	-208.97	1.56	-1.48	-2.41
2,704.00	12.99	238.03	2,660.14	-319.07	-284.80	-221.89	3.50	2.53	11.90
2,799.00	12.81	238.03	2,752.74	-330.29	-302.79	-237.54	0.19	-0.19	0.00
2,894.00	10.61	232.44	2,845.76	-341.20	-318.66	-251.15	2.60	-2.32	-5.88
2,988.00	11.80	214.63	2,937.99	-354.39	-330.99	-260.87	3.88	1.27	-18.95
3,083.00	12.59	211.64	3,030.85	-371.20	-341.94	-268.57	1.06	0.83	-3.15
3,177.00	9.99	206.44	3,123.03	-387.23	-350.95	-274.51	2.97	-2.77	-5.53
3,272.00	12.20	205.64	3,216.24	-403.66	-358.96	-279.39	2.33	2.33	-0.84
3,366.00	15.38	208.64	3,307.52	-423.56	-369.24	-285.87	3.47	3.38	3.19
3,461.00	13.52	201.02	3,399.52	-444.98	-379.26	-291.82	2.80	-1.96	-8.02
3,555.00	15.69	215.34	3,490.51	-465.62	-390.56	-299.17	4.46	2.31	15.23
3,650.00	16.48	232.35	3,581.84	-484.34	-408.67	-313.57	5.01	0.83	17.91
3,744.00	15.69	232.74	3,672.16	-500.18	-429.34	-331.01	0.85	-0.84	0.41
3,839.00	14.18	229.22	3,763.95	-515.55	-448.38	-346.92	1.85	-1.59	-3.71
3,934.00	12.02	225.34	3,856.47	-530.11	-464.23	-359.85	2.45	-2.27	-4.08
4,029.00	10.78	225.74	3,949.60	-543.26	-477.63	-370.63	1.31	-1.31	0.42
4,123.00	9.99	224.15	4,042.06	-555.25	-489.60	-380.22	0.89	-0.84	-1.69
4,218.00	10.52	225.91	4,135.54	-567.20	-501.57	-389.81	0.65	0.56	1.85
4,313.00	9.72	225.21	4,229.06	-578.88	-513.49	-399.40	0.85	-0.84	-0.74
4,407.00	12.11	227.24	4,321.36	-591.17	-526.36	-409.82	2.57	2.54	2.16
4,502.00	11.80	230.54	4,414.30	-604.11	-541.18	-422.03	0.79	-0.33	3.47
4,597.00	11.18	228.91	4,507.39	-616.33	-555.62	-434.00	0.74	-0.65	-1.72
4,692.00	13.61	225.52	4,600.17	-630.22	-570.54	-446.14	2.67	2.56	-3.57
4,787.00	12.02	224.24	4,692.80	-645.14	-585.42	-458.05	1.70	-1.67	-1.35
4,881.00	9.99	221.82	4,785.07	-658.23	-597.68	-467.73	2.21	-2.16	-2.57
4,975.00	12.20	224.42	4,877.31	-671.40	-610.07	-477.51	2.41	2.35	2.77
5,070.00	11.40	225.34	4,970.30	-685.17	-623.78	-488.48	0.87	-0.84	0.97
5,164.00	8.79	221.24	5,062.84	-697.10	-635.12	-497.46	2.88	-2.78	-4.36
5,259.00	9.01	220.45	5,156.69	-708.22	-644.73	-504.88	0.26	0.23	-0.83
5,353.00	10.61	231.42	5,249.32	-719.22	-656.27	-514.22	2.61	1.70	11.67
5,448.00	11.31	228.43	5,342.59	-730.86	-670.08	-525.68	0.95	0.74	-3.15
5,542.00	13.52	233.32	5,434.39	-743.54	-685.79	-538.82	2.60	2.35	5.20
5,637.00	13.39	232.74	5,526.78	-756.83	-703.45	-553.76	0.20	-0.14	-0.61
5,732.00	10.69	227.02	5,619.69	-769.50	-718.66	-566.40	3.10	-2.84	-6.02
5,826.00	8.40	223.05	5,712.38	-780.46	-729.72	-575.28	2.53	-2.44	-4.22
5,920.00	7.82	212.91	5,805.45	-790.85	-737.89	-581.42	1.64	-0.62	-10.79

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Kiteley 9
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<b>Wellbore:</b>	Kiteley 9 ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
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Survey									
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6,015.00	6.50	213.44	5,899.70	-800.76	-744.36	-585.98	1.39	-1.39	0.56
6,110.00	4.99	213.05	5,994.22	-808.71	-749.58	-589.66	1.59	-1.59	-0.41
6,205.00	3.49	214.24	6,088.96	-814.57	-753.46	-592.41	1.58	-1.58	1.25
6,301.00	2.78	213.93	6,184.82	-818.91	-756.40	-594.51	0.74	-0.74	-0.32
6,395.00	1.28	292.72	6,278.77	-820.40	-758.64	-596.44	3.01	-1.60	83.82
6,490.00	1.19	323.61	6,373.75	-819.20	-760.21	-598.20	0.70	-0.09	32.52
6,584.00	1.50	289.64	6,467.72	-818.00	-761.94	-600.13	0.89	0.33	-36.14
6,679.00	1.02	278.05	6,562.70	-817.46	-763.95	-602.20	0.57	-0.51	-12.20
6,773.00	6.72	92.35	6,656.51	-817.57	-759.28	-597.58	8.23	6.06	185.43
6,868.00	20.02	74.94	6,748.76	-813.55	-737.92	-577.31	14.47	14.00	-18.33
6,964.00	30.00	85.03	6,835.68	-807.19	-698.02	-539.24	11.27	10.40	10.51
7,058.00	41.01	87.94	6,912.09	-804.03	-643.62	-486.33	11.85	11.71	3.10
7,153.00	52.50	86.84	6,977.07	-800.82	-574.61	-419.06	12.12	12.09	-1.16
7,247.00	60.58	86.22	7,028.86	-796.06	-496.40	-343.02	8.61	8.60	-0.66
7,342.00	68.01	88.03	7,070.04	-791.81	-410.97	-259.80	8.01	7.82	1.91
7,436.00	72.12	88.82	7,102.08	-789.39	-322.66	-173.41	4.44	4.37	0.84
7,530.00	81.71	91.11	7,123.34	-789.37	-231.21	-83.49	10.47	10.20	2.44
7,625.00	87.19	91.02	7,132.52	-791.13	-136.71	9.75	5.77	5.77	-0.09
7,719.00	87.58	89.75	7,136.81	-791.76	-42.81	102.19	1.41	0.41	-1.35
7,813.00	89.09	90.01	7,139.54	-791.56	51.15	194.53	1.63	1.61	0.28
7,908.00	90.19	90.63	7,140.14	-792.09	146.14	288.04	1.33	1.16	0.65
8,002.00	87.50	90.14	7,142.04	-792.72	240.11	380.55	2.91	-2.86	-0.52
8,097.00	87.80	89.44	7,145.93	-792.38	335.03	473.81	0.80	0.32	-0.74
8,192.00	88.91	88.91	7,148.66	-791.01	429.98	566.92	1.29	1.17	-0.56
8,287.00	90.19	90.63	7,149.40	-790.63	524.97	660.25	2.26	1.35	1.81
8,382.00	86.61	89.13	7,152.06	-790.43	619.91	753.57	4.09	-3.77	-1.58
8,476.00	88.51	88.42	7,156.06	-788.42	713.80	845.52	2.16	2.02	-0.76
8,571.00	90.01	89.13	7,157.28	-786.39	808.77	938.53	1.75	1.58	0.75
8,665.00	90.01	88.34	7,157.27	-784.32	902.75	1,030.56	0.84	0.00	-0.84
8,760.00	87.19	87.85	7,159.59	-781.16	997.66	1,123.30	3.01	-2.97	-0.52
Tie on Point									
8,855.00	86.39	86.53	7,164.91	-776.51	1,092.39	1,215.60	1.62	-0.84	-1.39
8,949.00	85.82	89.44	7,171.30	-773.21	1,186.10	1,307.14	3.15	-0.61	3.10
9,044.00	87.19	90.01	7,177.09	-772.76	1,280.92	1,400.29	1.56	1.44	0.60
9,139.00	89.40	89.83	7,179.91	-772.62	1,375.88	1,493.63	2.33	2.33	-0.19
9,233.00	86.79	90.45	7,183.04	-772.85	1,469.81	1,586.04	2.85	-2.78	0.66
9,328.00	86.39	90.14	7,188.69	-773.34	1,564.65	1,679.37	0.53	-0.42	-0.33
9,423.00	86.21	90.23	7,194.82	-773.65	1,659.45	1,772.64	0.21	-0.19	0.09
9,518.00	87.80	90.23	7,199.78	-774.03	1,754.31	1,865.99	1.67	1.67	0.00
9,613.00	87.89	91.42	7,203.35	-775.40	1,849.23	1,959.57	1.26	0.09	1.25
9,707.00	85.90	89.04	7,208.45	-775.77	1,943.08	2,051.92	3.30	-2.12	-2.53
9,802.00	88.20	88.34	7,213.34	-773.61	2,037.93	2,144.78	2.53	2.42	-0.74
9,897.00	86.70	88.03	7,217.56	-770.60	2,132.78	2,237.50	1.61	-1.58	-0.33
9,992.00	87.80	88.64	7,222.12	-767.84	2,227.63	2,330.25	1.32	1.16	0.64
10,087.00	85.51	87.85	7,227.66	-764.94	2,322.42	2,422.92	2.55	-2.41	-0.83
10,182.00	83.92	85.82	7,236.41	-759.72	2,416.86	2,514.84	2.71	-1.67	-2.14
10,276.00	85.68	86.75	7,244.93	-753.65	2,510.27	2,605.58	2.12	1.87	0.99
10,371.00	87.89	86.22	7,250.26	-747.84	2,604.94	2,697.60	2.39	2.33	-0.56
10,465.00	87.32	86.13	7,254.19	-741.57	2,698.65	2,788.60	0.61	-0.61	-0.10
10,560.00	84.18	87.15	7,261.23	-736.02	2,793.21	2,880.56	3.47	-3.31	1.07
10,655.00	84.58	86.04	7,270.53	-730.41	2,887.58	2,972.34	1.24	0.42	-1.17
10,749.00	87.19	89.44	7,277.28	-726.71	2,981.25	3,063.76	4.55	2.78	3.62
10,844.00	87.01	89.92	7,282.09	-726.18	3,076.12	3,156.95	0.54	-0.19	0.51
10,939.00	85.68	91.33	7,288.14	-727.22	3,170.92	3,250.35	2.04	-1.40	1.48

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<b>Site:</b>	Kiteley 21-I Pad	<b>MD Reference:</b>	New KB @ 5016.00ft (Cyclone 37)
<b>Well:</b>	Kiteley 9	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kiteley 9 ST01	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kiteley 9 ST01	<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)	
11,033.00	86.70	91.11	7,294.39	-729.21	3,264.69	3,342.91	1.11	1.09	-0.23	
11,128.00	88.82	91.64	7,298.10	-731.49	3,359.58	3,436.63	2.30	2.23	0.56	
11,223.00	86.39	90.14	7,302.07	-732.97	3,454.48	3,530.21	3.01	-2.56	-1.58	
11,317.00	86.48	89.44	7,307.92	-732.62	3,548.30	3,622.39	0.75	0.10	-0.74	
11,412.00	88.29	87.85	7,312.25	-730.38	3,643.16	3,715.26	2.53	1.91	-1.67	
11,507.00	92.80	88.03	7,311.35	-726.96	3,738.07	3,807.96	4.75	4.75	0.19	
<b>Last Svy</b>										
11,601.00	91.60	90.63	7,307.74	-725.87	3,831.99	3,900.10	3.04	-1.28	2.77	
<b>Proj Svy</b>										
11,691.00	91.60	90.63	7,305.22	-726.86	3,921.95	3,988.73	0.00	0.00	0.00	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
8,855.00	7,164.91	-776.51	1,092.39	Tie on Point	
11,601.00	7,307.74	-725.87	3,831.99	Last Svy	
11,691.00	7,305.22	-726.86	3,921.95	Proj Svy	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_