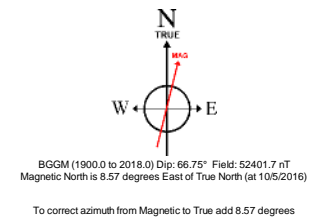
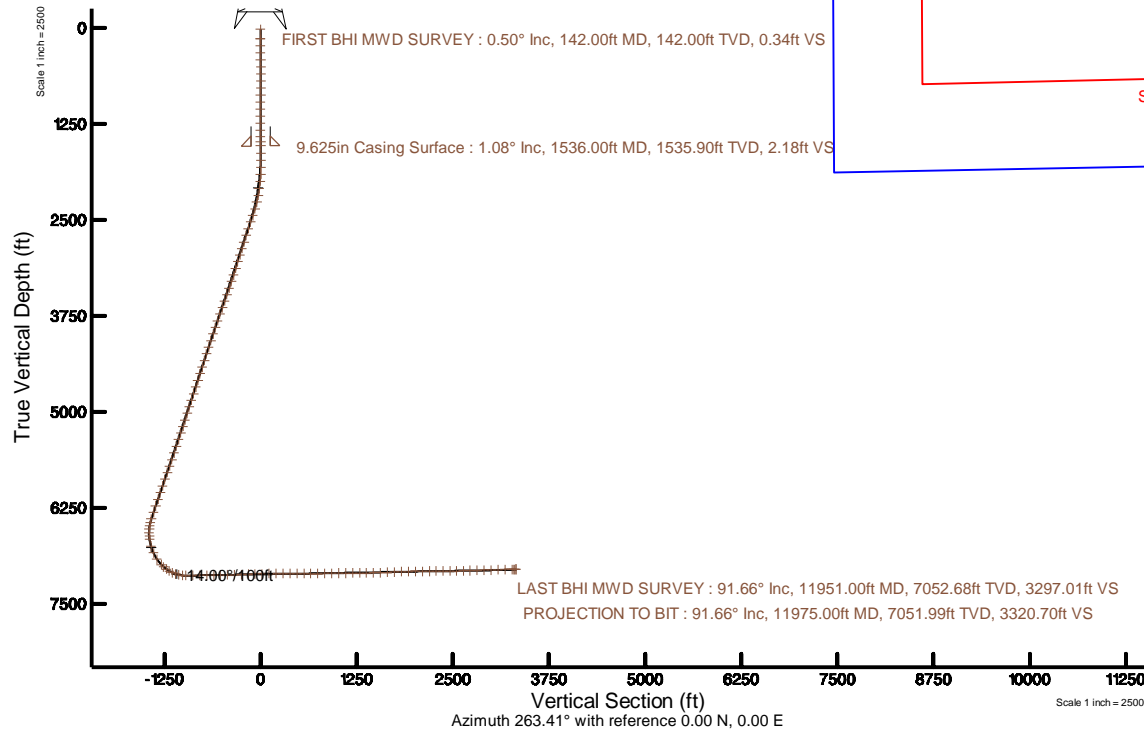
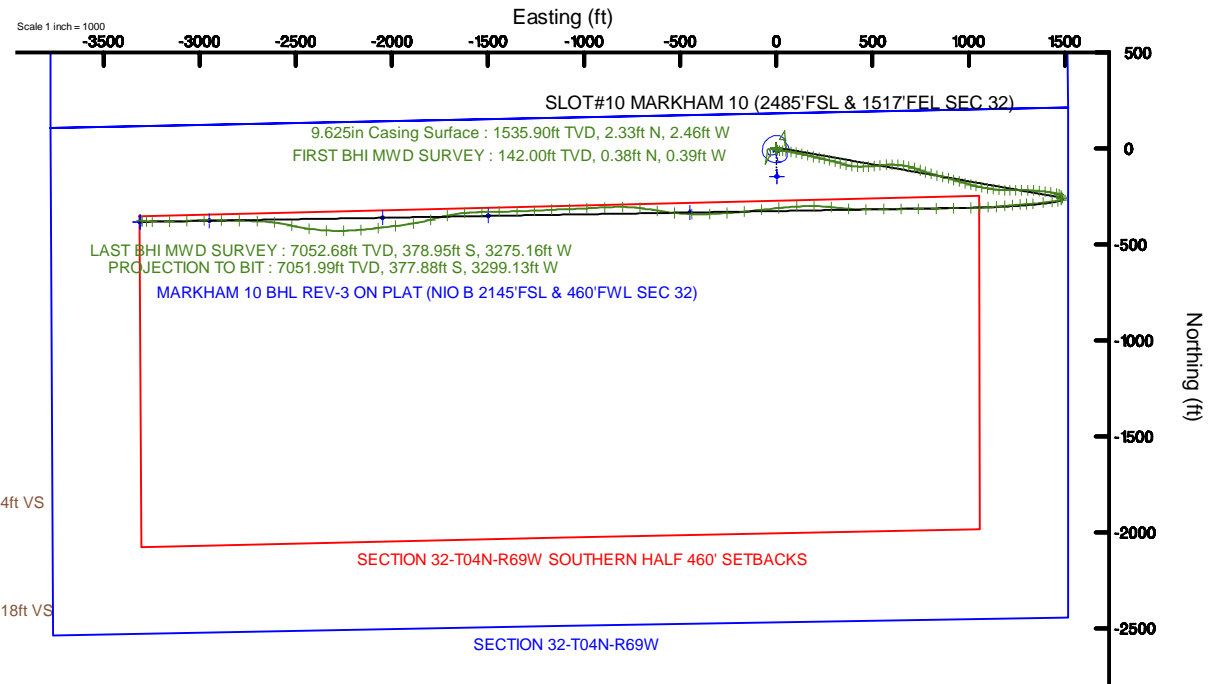


CUB CREEK ENERGY, LLC

Location: COLORADO Slot: SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
 Field: WELD COUNTY (NAD83, TRUE NORTH) Well: MARKHAM 10
 Facility: SEC.32-T04N-R68W Wellbore: MARKHAM 10 PWB

Plot reference wellpath is MARKHAM 10 REV-C.0 PWB	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to XTREME 18 (17) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to XTREME 18 (17) (RKB)	North Reference: True north
XTREME 18 (17) (RKB) to Mean Sea Level: 5057 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: bensjacj on 2016-10-13
	Database: WA_DEN_Denver_Defn





Actual Wellpath Report

MARKHAM 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 10
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 10 AWP
Facility	SEC.32-T04N-R68W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Bensjacj
Scale	0.999957	Report Generated	10/13/2016 at 4:19:48 PM
Convergence at slot	0.31° East	Database/Source file	WA_DEN_Denver_Defn/MARKHAM_10_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	145.73	-2.80	3133069.19	1341203.23	40°16'08.472"N	105°01'23.268"W
Facility Reference Pt			3133072.77	1341057.53	40°16'07.032"N	105°01'23.232"W
Field Reference Pt			3133072.77	1341057.53	40°16'07.032"N	105°01'23.232"W

WELLPATH DATUM

Calculation method	Minimum curvature	XTREME 18 (17') (RKB) to Facility Vertical Datum	5057.00ft
Horizontal Reference Pt	Slot	XTREME 18 (17') (RKB) to Mean Sea Level	5057.00ft
Vertical Reference Pt	XTREME 18 (17') (RKB)	XTREME 18 (17') (RKB) to Mud Line at Slot (SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32))	5057.00ft
MD Reference Pt	XTREME 18 (17') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	263.41°



Actual Wellpath Report

MARKHAM 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 10
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 10 AWP
Facility	SEC.32-T04N-R68W		

WELLPATH DATA (140 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17.00	0.000	314.270	17.00	0.00	0.00	0.00	40°16'08.472"N	105°01'23.268"W	0.00	
142.00	0.500	314.270	142.00	0.34	0.38	-0.39	40°16'08.476"N	105°01'23.273"W	0.40	FIRST BHI MWD SURVEY
234.00	0.260	7.460	234.00	0.55	0.87	-0.65	40°16'08.481"N	105°01'23.276"W	0.44	
326.00	1.020	342.970	325.99	0.64	1.86	-0.86	40°16'08.490"N	105°01'23.279"W	0.86	
418.00	0.970	222.240	417.98	1.38	2.06	-1.63	40°16'08.492"N	105°01'23.289"W	1.88	
510.00	1.110	223.740	509.97	2.65	0.84	-2.77	40°16'08.480"N	105°01'23.304"W	0.16	
603.00	0.610	221.550	602.96	3.71	-0.18	-3.72	40°16'08.470"N	105°01'23.316"W	0.54	
693.00	0.910	121.870	692.95	3.51	-0.91	-3.43	40°16'08.463"N	105°01'23.312"W	1.31	
783.00	0.810	125.410	782.94	2.48	-1.66	-2.30	40°16'08.456"N	105°01'23.298"W	0.13	
874.00	0.500	110.470	873.94	1.65	-2.17	-1.41	40°16'08.451"N	105°01'23.286"W	0.39	
964.00	0.380	71.440	963.93	1.01	-2.21	-0.76	40°16'08.450"N	105°01'23.278"W	0.35	
1056.00	0.800	9.140	1055.93	0.53	-1.48	-0.36	40°16'08.457"N	105°01'23.273"W	0.77	
1148.00	0.370	354.960	1147.92	0.35	-0.55	-0.29	40°16'08.467"N	105°01'23.272"W	0.49	
1240.00	0.650	335.810	1239.92	0.50	0.22	-0.53	40°16'08.474"N	105°01'23.275"W	0.35	
1329.00	0.280	345.710	1328.92	0.68	0.89	-0.79	40°16'08.481"N	105°01'23.278"W	0.42	
1418.00	0.370	327.370	1417.92	0.84	1.34	-1.00	40°16'08.485"N	105°01'23.281"W	0.15	
1484.00	1.050	303.200	1483.91	1.40	1.85	-1.62	40°16'08.490"N	105°01'23.289"W	1.10	
1635.00	1.180	282.020	1634.88	3.93	2.94	-4.30	40°16'08.501"N	105°01'23.323"W	0.28	
1726.00	1.070	187.640	1725.87	5.03	2.29	-5.33	40°16'08.495"N	105°01'23.337"W	1.82	
1814.00	2.420	157.090	1813.83	4.71	-0.24	-4.71	40°16'08.470"N	105°01'23.329"W	1.81	
1906.00	4.360	129.460	1905.67	1.74	-4.25	-1.26	40°16'08.430"N	105°01'23.284"W	2.70	
1998.00	6.310	111.620	1997.27	-5.15	-8.34	6.15	40°16'08.390"N	105°01'23.189"W	2.76	
2091.00	8.350	97.340	2089.52	-16.21	-11.08	17.60	40°16'08.362"N	105°01'23.041"W	2.93	
2183.00	9.820	93.210	2180.36	-30.42	-12.37	32.06	40°16'08.350"N	105°01'22.854"W	1.75	
2275.00	13.240	97.750	2270.49	-48.37	-14.23	50.33	40°16'08.331"N	105°01'22.619"W	3.84	
2365.00	18.470	98.600	2357.04	-72.13	-17.76	74.66	40°16'08.297"N	105°01'22.305"W	5.82	
2454.00	19.070	100.220	2441.31	-99.65	-22.45	102.91	40°16'08.250"N	105°01'21.940"W	0.89	
2547.00	19.030	102.880	2529.21	-128.49	-28.52	132.64	40°16'08.190"N	105°01'21.557"W	0.93	
2639.00	19.740	104.410	2616.00	-157.14	-35.73	162.31	40°16'08.119"N	105°01'21.174"W	0.95	
2731.00	19.250	102.310	2702.73	-185.99	-42.83	192.17	40°16'08.049"N	105°01'20.789"W	0.93	
2823.00	18.600	101.850	2789.75	-214.26	-49.08	221.35	40°16'07.987"N	105°01'20.412"W	0.72	
2910.00	18.730	103.670	2872.18	-240.53	-55.23	248.50	40°16'07.926"N	105°01'20.062"W	0.69	
3000.00	19.350	102.030	2957.25	-268.21	-61.75	277.13	40°16'07.862"N	105°01'19.693"W	0.91	
3092.00	18.180	103.430	3044.36	-296.14	-68.26	306.00	40°16'07.797"N	105°01'19.321"W	1.36	
3184.00	18.620	108.560	3131.66	-322.92	-76.27	333.88	40°16'07.718"N	105°01'18.961"W	1.82	
3275.00	19.360	106.200	3217.71	-349.98	-85.10	362.14	40°16'07.631"N	105°01'18.596"W	1.17	
3367.00	19.360	98.720	3304.52	-378.75	-91.67	391.86	40°16'07.566"N	105°01'18.213"W	2.69	
3457.00	19.360	91.950	3389.45	-407.90	-94.44	421.52	40°16'07.539"N	105°01'17.830"W	2.49	
3546.00	19.290	87.690	3473.43	-437.15	-94.35	450.95	40°16'07.540"N	105°01'17.451"W	1.59	
3634.00	19.230	87.860	3556.51	-466.09	-93.22	479.96	40°16'07.551"N	105°01'17.076"W	0.09	
3725.00	19.370	84.710	3642.40	-496.12	-91.27	509.96	40°16'07.570"N	105°01'16.689"W	1.15	
3817.00	19.370	83.110	3729.19	-526.63	-88.03	540.30	40°16'07.602"N	105°01'16.298"W	0.58	
3909.00	19.230	85.670	3816.02	-557.02	-85.06	570.55	40°16'07.631"N	105°01'15.908"W	0.93	
4001.00	19.310	90.940	3902.87	-587.24	-84.17	600.87	40°16'07.640"N	105°01'15.517"W	1.89	
4091.00	19.420	94.550	3987.79	-616.68	-85.60	630.66	40°16'07.626"N	105°01'15.132"W	1.34	



Actual Wellpath Report

MARKHAM 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 10
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 10 AWP
Facility	SEC.32-T04N-R68W		

WELLPATH DATA (140 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4182.00	19.010	97.540	4073.72	-645.89	-88.74	660.44	40°16'07.595"N	105°01'14.748"W	1.17	
4272.00	19.230	104.210	4158.76	-673.97	-94.30	689.34	40°16'07.540"N	105°01'14.375"W	2.44	
4364.00	19.520	107.630	4245.56	-702.15	-102.68	718.68	40°16'07.457"N	105°01'13.997"W	1.27	
4456.00	19.430	111.050	4332.30	-729.72	-112.83	747.61	40°16'07.357"N	105°01'13.624"W	1.24	
4548.00	19.500	108.390	4419.04	-757.20	-123.17	776.46	40°16'07.255"N	105°01'13.251"W	0.97	
4638.00	19.490	105.920	4503.88	-784.69	-132.03	805.15	40°16'07.167"N	105°01'12.881"W	0.92	
4730.00	19.530	104.990	4590.60	-813.16	-140.22	834.77	40°16'07.086"N	105°01'12.499"W	0.34	
4822.00	19.400	104.200	4677.34	-841.75	-147.94	864.43	40°16'07.010"N	105°01'12.117"W	0.32	
4914.00	19.600	105.030	4764.06	-870.38	-155.69	894.15	40°16'06.933"N	105°01'11.733"W	0.37	
5004.00	19.480	105.800	4848.88	-898.29	-163.69	923.17	40°16'06.854"N	105°01'11.359"W	0.32	
5096.00	19.040	105.480	4935.73	-926.38	-171.87	952.39	40°16'06.773"N	105°01'10.982"W	0.49	
5187.00	19.430	106.830	5021.65	-954.02	-180.22	981.18	40°16'06.691"N	105°01'10.610"W	0.65	
5277.00	19.350	105.480	5106.55	-981.58	-188.53	1009.88	40°16'06.609"N	105°01'10.240"W	0.51	
5365.00	19.290	103.460	5189.59	-1008.74	-195.81	1038.07	40°16'06.537"N	105°01'09.877"W	0.76	
5456.00	19.310	101.430	5275.48	-1037.17	-202.29	1067.43	40°16'06.473"N	105°01'09.498"W	0.74	
5548.00	19.350	99.340	5362.29	-1066.29	-207.78	1097.38	40°16'06.419"N	105°01'09.111"W	0.75	
5640.00	18.990	97.150	5449.19	-1095.49	-212.11	1127.28	40°16'06.376"N	105°01'08.726"W	0.87	
5732.00	19.150	95.580	5536.15	-1124.78	-215.44	1157.15	40°16'06.343"N	105°01'08.340"W	0.58	
5823.00	18.600	90.550	5622.26	-1153.77	-217.03	1186.52	40°16'06.327"N	105°01'07.962"W	1.89	
5913.00	19.300	89.230	5707.38	-1182.81	-216.97	1215.74	40°16'06.328"N	105°01'07.585"W	0.91	
6003.00	19.310	90.690	5792.32	-1212.37	-216.95	1245.49	40°16'06.328"N	105°01'07.201"W	0.54	
6095.00	19.130	90.080	5879.19	-1242.43	-217.15	1275.78	40°16'06.326"N	105°01'06.810"W	0.29	
6188.00	19.520	92.300	5966.95	-1272.92	-217.80	1306.54	40°16'06.319"N	105°01'06.413"W	0.89	
6280.00	19.440	93.360	6053.69	-1303.18	-219.31	1337.18	40°16'06.304"N	105°01'06.018"W	0.39	
6372.00	19.440	94.370	6140.44	-1333.29	-221.38	1367.73	40°16'06.284"N	105°01'05.624"W	0.37	
6464.00	19.580	96.330	6227.16	-1363.35	-224.24	1398.32	40°16'06.256"N	105°01'05.229"W	0.73	
6552.00	19.520	98.810	6310.09	-1391.90	-228.12	1427.50	40°16'06.217"N	105°01'04.853"W	0.95	
6644.00	19.040	104.850	6396.94	-1420.69	-234.32	1457.20	40°16'06.156"N	105°01'04.470"W	2.23	
6690.00	15.970	117.320	6440.82	-1432.93	-239.15	1470.08	40°16'06.108"N	105°01'04.304"W	10.50	
6735.00	12.480	130.220	6484.44	-1441.40	-245.14	1479.30	40°16'06.049"N	105°01'04.185"W	10.43	
6780.00	9.740	154.700	6528.62	-1445.95	-251.72	1484.64	40°16'05.984"N	105°01'04.116"W	11.99	
6825.00	8.630	179.600	6573.06	-1446.81	-258.54	1486.29	40°16'05.917"N	105°01'04.094"W	9.09	
6870.00	7.870	208.200	6617.61	-1444.69	-264.64	1484.86	40°16'05.856"N	105°01'04.113"W	9.17	
6915.00	7.650	238.400	6662.22	-1440.21	-268.92	1480.85	40°16'05.814"N	105°01'04.165"W	8.97	
7007.00	15.320	263.080	6752.36	-1422.48	-273.61	1463.54	40°16'05.768"N	105°01'04.388"W	9.72	
7099.00	23.690	263.970	6839.00	-1391.79	-277.02	1433.04	40°16'05.734"N	105°01'04.781"W	9.10	
7191.00	34.150	262.840	6919.42	-1347.36	-282.19	1388.91	40°16'05.683"N	105°01'05.351"W	11.38	
7281.00	42.960	265.820	6989.73	-1291.34	-287.59	1333.15	40°16'05.630"N	105°01'06.070"W	10.00	
7326.00	47.580	266.190	7021.39	-1259.42	-289.81	1301.27	40°16'05.608"N	105°01'06.481"W	10.28	
7371.00	52.620	265.200	7050.25	-1224.93	-292.41	1266.85	40°16'05.582"N	105°01'06.925"W	11.33	
7417.00	58.940	265.010	7076.11	-1186.93	-295.66	1228.97	40°16'05.550"N	105°01'07.414"W	13.74	
7463.00	65.480	264.690	7097.54	-1146.27	-299.31	1188.47	40°16'05.514"N	105°01'07.936"W	14.23	
7509.00	72.090	265.670	7114.18	-1103.44	-302.90	1145.76	40°16'05.478"N	105°01'08.487"W	14.51	
7554.00	78.190	266.390	7125.71	-1060.01	-305.91	1102.39	40°16'05.449"N	105°01'09.047"W	13.64	
7599.00	84.730	267.610	7132.39	-1015.62	-308.23	1057.97	40°16'05.426"N	105°01'09.620"W	14.78	



Actual Wellpath Report

MARKHAM 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 10
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 10 AWP
Facility	SEC.32-T04N-R68W		

WELLPATH DATA (140 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7644.00	90.980	269.210	7134.08	-970.84	-309.48	1013.05	40°16'05.414"N	105°01'10.199"W	14.34	
7734.00	90.950	269.020	7132.56	-881.30	-310.87	923.07	40°16'05.400"N	105°01'11.360"W	0.21	
7826.00	90.920	268.390	7131.06	-789.71	-312.95	831.11	40°16'05.379"N	105°01'12.547"W	0.69	
7917.00	91.290	269.900	7129.31	-699.18	-314.31	740.14	40°16'05.366"N	105°01'13.720"W	1.71	
8007.00	91.110	269.500	7127.42	-609.74	-314.78	650.16	40°16'05.361"N	105°01'14.881"W	0.49	
8099.00	91.380	268.990	7125.42	-518.24	-315.99	558.19	40°16'05.349"N	105°01'16.067"W	0.63	
8191.00	90.280	269.360	7124.09	-426.72	-317.31	466.21	40°16'05.336"N	105°01'17.254"W	1.26	
8282.00	90.920	275.630	7123.13	-336.91	-313.36	375.35	40°16'05.375"N	105°01'18.426"W	6.93	
8372.00	92.650	274.910	7120.33	-248.88	-305.09	285.77	40°16'05.457"N	105°01'19.581"W	2.08	
8463.00	91.630	271.110	7116.93	-159.23	-300.32	194.98	40°16'05.504"N	105°01'20.753"W	4.32	
8553.00	92.150	266.260	7113.96	-69.69	-302.38	105.08	40°16'05.484"N	105°01'21.912"W	5.42	
8644.00	91.660	264.490	7110.94	21.20	-309.72	14.43	40°16'05.411"N	105°01'23.082"W	2.02	
8736.00	91.050	263.970	7108.76	113.17	-318.96	-77.08	40°16'05.320"N	105°01'24.262"W	0.87	
8826.00	90.090	263.730	7107.87	203.16	-328.60	-166.55	40°16'05.225"N	105°01'25.417"W	1.10	
8915.00	89.970	266.020	7107.82	292.12	-336.55	-255.19	40°16'05.146"N	105°01'26.560"W	2.58	
9006.00	90.180	268.190	7107.70	382.93	-341.15	-346.07	40°16'05.101"N	105°01'27.732"W	2.40	
9099.00	89.750	271.300	7107.76	475.35	-341.56	-439.06	40°16'05.097"N	105°01'28.932"W	3.38	
9191.00	89.260	275.280	7108.55	565.96	-336.29	-530.88	40°16'05.149"N	105°01'30.117"W	4.36	
9281.00	90.860	280.560	7108.46	653.06	-323.89	-619.99	40°16'05.271"N	105°01'31.266"W	6.13	
9373.00	90.280	276.910	7107.54	741.77	-309.92	-710.90	40°16'05.409"N	105°01'32.439"W	4.02	
9463.00	91.850	270.380	7105.87	830.27	-304.20	-800.65	40°16'05.466"N	105°01'33.597"W	7.46	
9556.00	90.740	266.540	7103.77	922.87	-306.70	-893.58	40°16'05.441"N	105°01'34.795"W	4.30	
9648.00	90.770	267.110	7102.55	1014.70	-311.80	-985.43	40°16'05.391"N	105°01'35.980"W	0.62	
9738.00	90.370	267.950	7101.66	1104.46	-315.67	-1075.34	40°16'05.352"N	105°01'37.140"W	1.03	
9830.00	90.430	267.400	7101.02	1196.20	-319.41	-1167.26	40°16'05.315"N	105°01'38.326"W	0.60	
9922.00	90.580	267.620	7100.20	1287.96	-323.40	-1259.17	40°16'05.276"N	105°01'39.512"W	0.29	
10012.00	90.710	268.050	7099.19	1377.69	-326.80	-1349.10	40°16'05.242"N	105°01'40.672"W	0.50	
10103.00	91.380	268.620	7097.53	1468.34	-329.45	-1440.05	40°16'05.216"N	105°01'41.845"W	0.97	
10195.00	91.480	269.260	7095.24	1559.88	-331.15	-1532.00	40°16'05.199"N	105°01'43.031"W	0.70	
10283.00	92.520	264.500	7092.16	1647.64	-335.93	-1619.79	40°16'05.152"N	105°01'44.164"W	5.53	
10375.00	93.080	258.050	7087.66	1739.42	-349.86	-1710.57	40°16'05.014"N	105°01'45.335"W	7.03	
10466.00	91.630	254.350	7083.92	1829.60	-371.55	-1798.85	40°16'04.800"N	105°01'46.474"W	4.36	
10558.00	91.170	260.750	7081.67	1921.05	-391.36	-1888.61	40°16'04.604"N	105°01'47.631"W	6.97	
10650.00	90.980	264.540	7079.95	2013.00	-403.14	-1979.82	40°16'04.487"N	105°01'48.808"W	4.12	
10740.00	91.110	262.160	7078.30	2102.98	-413.56	-2069.20	40°16'04.384"N	105°01'49.961"W	2.65	
10832.00	90.950	264.980	7076.65	2194.96	-423.86	-2160.59	40°16'04.283"N	105°01'51.140"W	3.07	
10923.00	90.680	268.880	7075.36	2285.76	-428.73	-2251.44	40°16'04.234"N	105°01'52.312"W	4.30	
11011.00	90.800	273.270	7074.22	2372.94	-427.08	-2339.39	40°16'04.251"N	105°01'53.447"W	4.99	
11101.00	89.910	278.040	7073.66	2460.87	-418.21	-2428.92	40°16'04.338"N	105°01'54.602"W	5.39	
11193.00	90.920	282.220	7072.99	2548.96	-402.04	-2519.47	40°16'04.498"N	105°01'55.770"W	4.67	
11285.00	91.570	277.920	7070.99	2637.05	-385.96	-2610.01	40°16'04.657"N	105°01'56.938"W	4.73	
11376.00	91.050	271.360	7068.91	2726.24	-378.60	-2700.63	40°16'04.729"N	105°01'58.107"W	7.23	
11468.00	91.570	271.320	7066.81	2817.34	-376.45	-2792.59	40°16'04.750"N	105°01'59.293"W	0.57	
11560.00	91.690	271.660	7064.19	2908.39	-374.06	-2884.52	40°16'04.774"N	105°02'00.479"W	0.39	
11652.00	91.910	268.910	7061.30	2999.67	-373.60	-2976.46	40°16'04.778"N	105°02'01.665"W	3.00	



Actual Wellpath Report

MARKHAM 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 10
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 10 AWP
Facility	SEC.32-T04N-R68W		

WELLPATH DATA (140 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11740.00	91.630	266.460	7058.58	3087.38	-377.16	-3064.34	40°16'04.743"N	105°02'02.799"W	2.80	
11833.00	91.600	269.340	7055.96	3180.05	-380.56	-3157.23	40°16'04.709"N	105°02'03.997"W	3.10	
11922.00	91.570	271.440	7053.50	3268.35	-379.96	-3246.19	40°16'04.715"N	105°02'05.145"W	2.36	
11951.00	91.660	272.550	7052.68	3297.01	-378.95	-3275.16	40°16'04.725"N	105°02'05.518"W	3.84	LAST BHI MWD SURVEY
11975.00	91.660	272.550	7051.99	3320.70	-377.88	-3299.13	40°16'04.736"N	105°02'05.827"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: MARKHAM 10 AWP Ref Wellpath: MARKHAM 10 AWP

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	17.00	1536.00	1519.00	17.00	1535.90	0.00	0.00	2.33	-2.46
9.625in Casing Surface	17.00	1536.00	1519.00	17.00	1535.90	0.00	0.00	2.33	-2.46
8.75in Open Hole	1536.00	11975.00	10439.00	1535.90	7051.99	2.33	-2.46	-377.88	-3299.13

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SECTION 32-T04N-R69W	-10.00	-145.72	2.79	3133072.76	1341057.53	40°16'07.032"N	105°01'23.232"W	polygon
SECTION 32-T04N-R69W SOUTHERN HALF 460' SETBACKS	7058.30	-145.72	2.79	3133072.76	1341057.53	40°16'07.032"N	105°01'23.232"W	polygon
MARKHAM 10 BHL REV-3 ON PLAT (NIO B 2145'FSL & 460'FWL SEC 32)	7058.70	-382.30	-3309.71	3129761.73	1340803.16	40°16'04.692"N	105°02'05.964"W	point
MARKHAM 10 BHL REV-2 ON PLAT (NIO B 2145'FSL & 460'FWL SEC 32)	7093.00	-382.30	-3309.71	3129761.73	1340803.16	40°16'04.692"N	105°02'05.964"W	point
MARKHAM 10 WP 3	7094.50	-360.20	-2048.10	3131023.15	1340832.04	40°16'04.912"N	105°01'49.689"W	point
MARKHAM 10 WP 4	7097.70	-376.00	-2948.00	3130123.39	1340811.40	40°16'04.755"N	105°02'01.298"W	point
MARKHAM 10 BHL REV-1 ON PLAT (NIO B 2145'FSL & 460'FWL SEC 32)	7099.00	-382.30	-3309.71	3129761.73	1340803.16	40°16'04.692"N	105°02'05.964"W	point
MARKHAM 10 WP 2	7106.70	-350.60	-1498.20	3131572.97	1340844.60	40°16'05.007"N	105°01'42.595"W	point
MARKHAM 10 WP 1	7111.70	-332.30	-448.40	3132622.60	1340868.54	40°16'05.188"N	105°01'29.052"W	point



Actual Wellpath Report

MARKHAM 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 10
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 10 AWP
Facility	SEC.32-T04N-R68W		

WELLPATH COMPOSITION - Ref Wellbore: MARKHAM 10 AWP Ref Wellpath: MARKHAM 10 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1484.00	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)	BHI NAVITRAK MWD AXIAL ROCKIES GT <17-1484>	MARKHAM 10 AWP
1484.00	11951.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI ATC MWD, SHORT, ROCKIES GT 8 1/2" MONO <1635-11951>	MARKHAM 10 AWP
11951.00	11975.00	Blind Drilling (std)	Projection to bit	MARKHAM 10 AWP



Actual Wellpath Report

MARKHAM 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 MARKHAM 10 (2485'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 10
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 10 AWP
Facility	SEC.32-T04N-R68W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
142.00	0.500	314.270	142.00	FIRST BHI MWD SURVEY	
11951.00	91.660	272.550	7052.68	LAST BHI MWD SURVEY	
11975.00	91.660	272.550	7051.99	PROJECTION TO BIT	