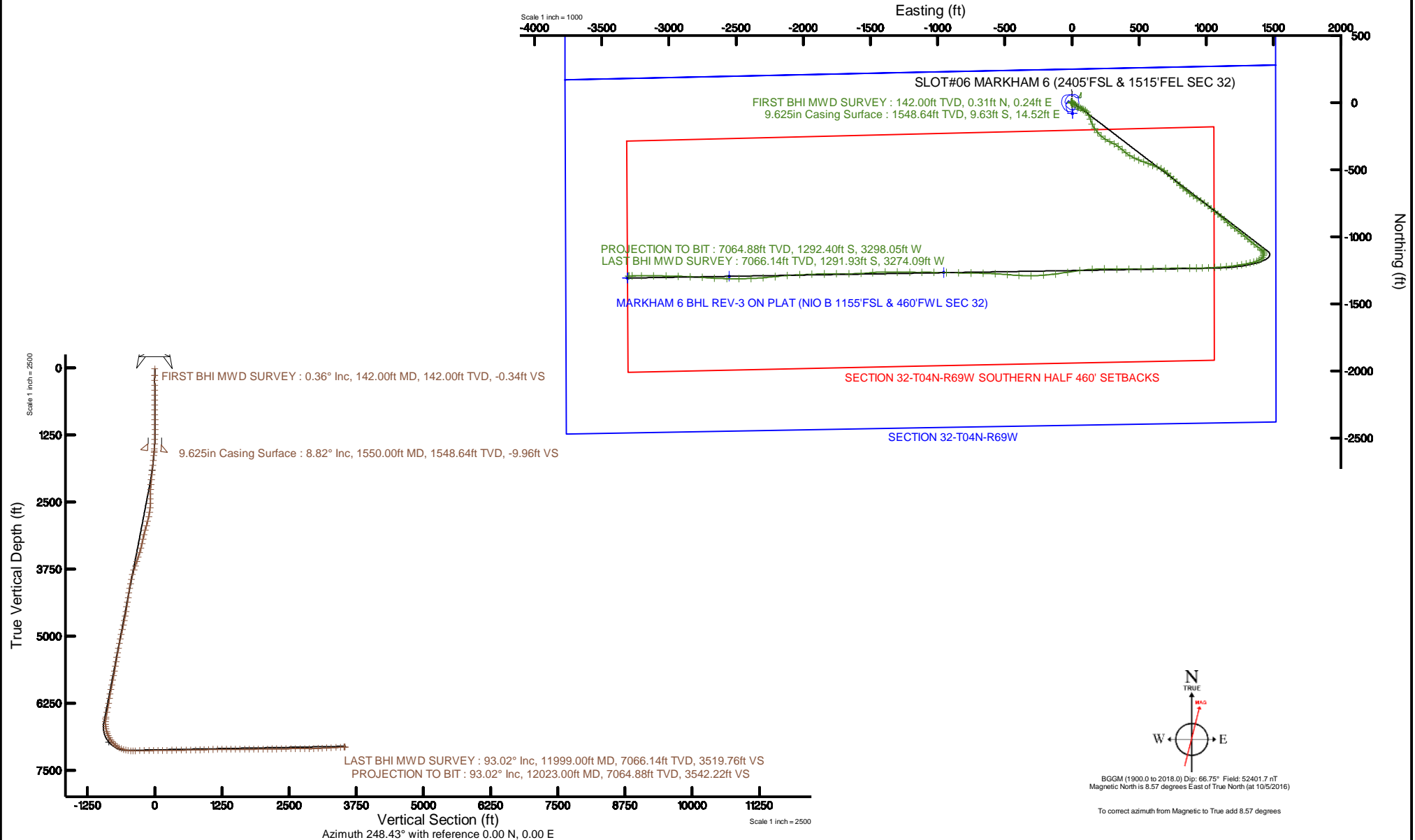


# CUB CREEK ENERGY, LLC

Location: COLORADO Slot: SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)  
Field: WELD COUNTY (NAD83, TRUE NORTH) Well: MARKHAM 6  
Facility: SEC.32-T04N-R68W Wellbore: MARKHAM 6 PWB

Plot reference wellpath is MARKHAM 6 REV-C.1 PWP	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: 5058 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#06 MARKHAM 6 (2405'FSL & 1515'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 6 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 6 AWB
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 3:20:42 PM
Convergence at slot	0.31° East	Database/Source file	WA_DEN_Denver_Defn/MARKHAM_6_AWP.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	80.15	-2.80	3133069.54	1341137.66	40°16'07.824"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	5058.00ft
Horizontal Reference Pt	Slot	XTREME 18 (17") (RKB) to Mean Sea Level	5058.00ft
Vertical Reference Pt	XTREME 18 (17") (RKB)	XTREME 18 (17") (RKB) to Mud Line at Slot (SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32))	5058.00ft
MD Reference Pt	XTREME 18 (17") (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	248.43°



# Actual Wellpath Report

MARKHAM 6 AWP

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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 6 AWB
Facility	SEC.32-T04N-R68W		

## WELLPATH DATA (145 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17.00	0.000	38.120	17.00	0.00	0.00	0.00	40°16'07.824"N	105°01'23.268"W	0.00	
142.00	0.360	38.120	142.00	-0.34	0.31	0.24	40°16'07.827"N	105°01'23.265"W	0.29	FIRST BHI MWD SURVEY
234.00	0.590	340.360	234.00	-0.60	0.98	0.26	40°16'07.834"N	105°01'23.265"W	0.54	
326.00	0.570	319.720	325.99	-0.47	1.78	-0.19	40°16'07.842"N	105°01'23.270"W	0.23	
418.00	1.070	343.010	417.98	-0.40	2.95	-0.74	40°16'07.853"N	105°01'23.278"W	0.64	
510.00	0.300	172.230	509.98	-0.41	3.53	-0.96	40°16'07.859"N	105°01'23.280"W	1.49	
603.00	0.410	192.790	602.98	-0.16	2.97	-1.00	40°16'07.853"N	105°01'23.281"W	0.18	
693.00	0.560	200.930	692.97	0.32	2.24	-1.23	40°16'07.846"N	105°01'23.284"W	0.18	
783.00	0.600	217.260	782.97	1.02	1.45	-1.67	40°16'07.838"N	105°01'23.290"W	0.19	
874.00	1.040	261.070	873.96	2.23	0.95	-2.77	40°16'07.833"N	105°01'23.304"W	0.81	
964.00	0.440	310.580	963.95	3.19	1.05	-3.84	40°16'07.834"N	105°01'23.318"W	0.92	
1056.00	0.960	317.710	1055.95	3.63	1.85	-4.63	40°16'07.842"N	105°01'23.328"W	0.57	
1148.00	1.330	299.210	1147.93	4.58	2.94	-6.08	40°16'07.853"N	105°01'23.346"W	0.56	
1240.00	0.810	80.720	1239.92	4.62	3.56	-6.37	40°16'07.859"N	105°01'23.350"W	2.20	
1329.00	2.710	125.850	1328.88	2.87	2.43	-4.05	40°16'07.848"N	105°01'23.320"W	2.49	
1418.00	4.790	124.270	1417.68	-0.35	-0.89	0.73	40°16'07.815"N	105°01'23.259"W	2.34	
1509.00	8.170	121.520	1508.09	-6.37	-6.41	9.39	40°16'07.761"N	105°01'23.147"W	3.73	
1576.00	9.230	123.200	1574.32	-12.33	-11.85	17.94	40°16'07.707"N	105°01'23.037"W	1.63	
1638.00	9.320	124.750	1635.50	-17.98	-17.43	26.23	40°16'07.652"N	105°01'22.930"W	0.43	
1728.00	9.480	120.120	1724.30	-26.62	-25.30	38.63	40°16'07.574"N	105°01'22.770"W	0.86	
1820.00	9.540	119.330	1815.03	-36.12	-32.84	51.83	40°16'07.499"N	105°01'22.599"W	0.16	
1912.00	8.970	119.870	1905.84	-45.40	-40.15	64.69	40°16'07.427"N	105°01'22.433"W	0.63	
2002.00	8.640	118.820	1994.77	-54.08	-46.90	76.70	40°16'07.361"N	105°01'22.279"W	0.41	
2094.00	7.820	114.920	2085.83	-62.79	-52.87	88.43	40°16'07.302"N	105°01'22.127"W	1.08	
2184.00	8.330	121.200	2174.94	-70.95	-58.83	99.56	40°16'07.243"N	105°01'21.984"W	1.13	
2276.00	13.470	146.160	2265.29	-77.27	-71.19	111.24	40°16'07.120"N	105°01'21.833"W	7.46	
2368.00	18.110	152.330	2353.80	-81.07	-92.77	123.85	40°16'06.907"N	105°01'21.670"W	5.36	
2460.00	23.110	160.690	2439.91	-81.87	-122.50	136.48	40°16'06.613"N	105°01'21.507"W	6.29	
2553.00	25.650	157.540	2524.61	-81.46	-158.33	150.20	40°16'06.259"N	105°01'21.330"W	3.07	
2643.00	24.430	146.680	2606.19	-85.55	-191.90	167.88	40°16'05.928"N	105°01'21.102"W	5.28	
2735.00	24.430	139.030	2689.98	-95.75	-222.17	190.81	40°16'05.629"N	105°01'20.807"W	3.44	
2827.00	24.510	130.610	2773.74	-110.98	-248.97	217.78	40°16'05.364"N	105°01'20.459"W	3.79	
2919.00	24.460	124.380	2857.48	-130.55	-272.15	247.99	40°16'05.135"N	105°01'20.069"W	2.81	
3011.00	24.350	116.210	2941.28	-153.96	-291.29	280.74	40°16'04.946"N	105°01'19.646"W	3.67	
3103.00	23.430	117.050	3025.40	-178.80	-307.98	314.04	40°16'04.781"N	105°01'19.217"W	1.07	
3192.00	23.120	126.430	3107.19	-199.76	-326.41	343.87	40°16'04.598"N	105°01'18.832"W	4.18	
3284.00	24.220	132.030	3191.46	-217.72	-349.77	372.43	40°16'04.368"N	105°01'18.464"W	2.72	
3375.00	24.260	128.380	3274.44	-235.38	-373.88	400.95	40°16'04.129"N	105°01'18.096"W	1.65	
3467.00	24.190	120.940	3358.36	-256.32	-395.31	431.94	40°16'03.918"N	105°01'17.696"W	3.32	
3557.00	24.370	115.100	3440.41	-280.28	-412.67	464.57	40°16'03.746"N	105°01'17.275"W	2.67	
3647.00	24.100	113.250	3522.48	-306.06	-427.80	498.27	40°16'03.596"N	105°01'16.840"W	0.90	
3737.00	24.090	110.310	3604.64	-332.77	-441.43	532.38	40°16'03.462"N	105°01'16.400"W	1.33	
3829.00	23.900	109.240	3688.69	-360.85	-454.09	567.58	40°16'03.337"N	105°01'15.946"W	0.52	
3918.00	24.060	110.900	3770.01	-387.88	-466.50	601.56	40°16'03.214"N	105°01'15.508"W	0.78	
4007.00	21.480	111.760	3852.07	-413.12	-479.02	633.64	40°16'03.090"N	105°01'15.094"W	2.92	



# Actual Wellpath Report

MARKHAM 6 AWP

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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 6 AWB
Facility	SEC.32-T04N-R68W		

## WELLPATH DATA (145 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4099.00	19.520	116.040	3938.24	-435.73	-492.01	663.10	40°16'02.962"N	105°01'14.714"W	2.68	
4189.00	18.690	127.470	4023.31	-453.29	-507.39	688.07	40°16'02.810"N	105°01'14.392"W	4.25	
4279.00	20.190	134.180	4108.19	-467.09	-526.99	710.65	40°16'02.616"N	105°01'14.101"W	2.99	
4372.00	20.350	133.660	4195.43	-480.45	-549.34	733.86	40°16'02.395"N	105°01'13.801"W	0.26	
4464.00	20.340	132.830	4281.69	-494.06	-571.25	757.16	40°16'02.179"N	105°01'13.501"W	0.31	
4556.00	20.580	133.530	4367.89	-507.78	-593.26	780.61	40°16'01.961"N	105°01'13.198"W	0.37	
4648.00	20.460	133.520	4454.05	-521.36	-615.47	803.99	40°16'01.742"N	105°01'12.896"W	0.13	
4738.00	20.950	132.290	4538.24	-535.07	-637.13	827.30	40°16'01.528"N	105°01'12.596"W	0.73	
4830.00	20.530	128.820	4624.28	-550.28	-658.31	852.04	40°16'01.319"N	105°01'12.277"W	1.41	
4922.00	20.310	125.340	4710.50	-566.97	-677.66	877.63	40°16'01.127"N	105°01'11.947"W	1.34	
5014.00	21.100	123.540	4796.56	-585.16	-696.04	904.46	40°16'00.946"N	105°01'11.600"W	1.10	
5103.00	20.950	123.440	4879.63	-603.44	-713.66	931.09	40°16'00.772"N	105°01'11.257"W	0.17	
5195.00	20.930	119.350	4965.56	-623.23	-730.78	959.14	40°16'00.602"N	105°01'10.895"W	1.59	
5287.00	20.830	127.070	5051.54	-642.11	-748.70	986.52	40°16'00.425"N	105°01'10.542"W	2.99	
5379.00	20.960	131.020	5137.49	-658.19	-769.36	1011.99	40°16'00.221"N	105°01'10.213"W	1.54	
5471.00	20.880	129.960	5223.43	-673.58	-790.69	1036.97	40°16'00.010"N	105°01'09.891"W	0.42	
5562.00	20.690	129.490	5308.50	-689.09	-811.33	1061.81	40°15'59.806"N	105°01'09.571"W	0.28	
5650.00	20.850	129.350	5390.78	-704.22	-831.14	1085.91	40°15'59.611"N	105°01'09.260"W	0.19	
5740.00	20.190	131.140	5475.07	-719.13	-851.52	1110.00	40°15'59.409"N	105°01'08.949"W	1.01	
5832.00	20.100	131.910	5561.45	-733.46	-872.52	1133.72	40°15'59.202"N	105°01'08.643"W	0.30	
5924.00	20.820	132.030	5647.64	-747.79	-894.03	1157.63	40°15'58.989"N	105°01'08.335"W	0.78	
6016.00	20.660	129.040	5733.68	-763.02	-915.20	1182.38	40°15'58.780"N	105°01'08.015"W	1.16	
6108.00	21.040	126.340	5819.66	-779.76	-935.21	1208.29	40°15'58.582"N	105°01'07.681"W	1.12	
6200.00	21.010	127.960	5905.54	-796.89	-955.14	1234.59	40°15'58.385"N	105°01'07.342"W	0.63	
6292.00	20.970	128.100	5991.43	-813.57	-975.44	1260.55	40°15'58.185"N	105°01'07.007"W	0.07	
6384.00	20.080	129.970	6077.59	-829.40	-995.74	1285.61	40°15'57.984"N	105°01'06.684"W	1.20	
6474.00	18.820	133.200	6162.46	-842.95	-1015.61	1308.03	40°15'57.788"N	105°01'06.395"W	1.84	
6565.00	20.820	128.080	6248.07	-857.38	-1035.63	1331.47	40°15'57.590"N	105°01'06.092"W	2.91	
6657.00	21.070	129.440	6333.99	-873.66	-1056.22	1357.11	40°15'57.386"N	105°01'05.762"W	0.59	
6749.00	20.970	125.690	6419.87	-890.57	-1076.33	1383.25	40°15'57.187"N	105°01'05.424"W	1.47	
6841.00	19.470	127.370	6506.20	-907.39	-1095.25	1408.81	40°15'57.001"N	105°01'05.095"W	1.75	
6876.00	15.180	136.150	6539.61	-912.14	-1102.09	1416.63	40°15'56.933"N	105°01'04.994"W	14.32	
6932.00	10.670	147.780	6594.19	-915.88	-1111.77	1424.48	40°15'56.837"N	105°01'04.893"W	9.26	
6978.00	10.800	168.260	6639.40	-915.93	-1119.60	1427.62	40°15'56.760"N	105°01'04.852"W	8.26	
7024.00	13.520	186.050	6684.38	-912.70	-1129.17	1427.93	40°15'56.665"N	105°01'04.848"W	10.00	
7070.00	16.090	199.860	6728.86	-905.98	-1140.52	1425.20	40°15'56.553"N	105°01'04.883"W	9.45	
7116.00	19.180	216.510	6772.72	-895.34	-1152.60	1418.53	40°15'56.434"N	105°01'04.969"W	12.79	
7160.00	21.420	228.830	6814.00	-881.63	-1163.70	1408.18	40°15'56.324"N	105°01'05.103"W	10.94	
7205.00	25.390	241.270	6855.32	-864.30	-1173.76	1393.52	40°15'56.225"N	105°01'05.292"W	14.04	
7250.00	29.440	250.250	6895.27	-843.65	-1182.14	1374.63	40°15'56.142"N	105°01'05.536"W	12.84	
7295.00	34.660	254.950	6933.41	-819.87	-1189.21	1351.85	40°15'56.072"N	105°01'05.829"W	12.85	
7340.00	39.510	257.580	6969.30	-793.00	-1195.61	1325.50	40°15'56.009"N	105°01'06.169"W	11.34	
7385.00	44.810	258.350	7002.64	-763.23	-1201.90	1295.96	40°15'55.947"N	105°01'06.550"W	11.83	
7429.00	51.120	259.610	7032.09	-731.12	-1208.12	1263.90	40°15'55.885"N	105°01'06.964"W	14.50	
7473.00	56.740	261.860	7057.99	-696.40	-1213.82	1228.81	40°15'55.829"N	105°01'07.417"W	13.42	



# Actual Wellpath Report

MARKHAM 6 AWP

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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 6 AWB
Facility	SEC.32-T04N-R68W		

## WELLPATH DATA (145 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7519.00	61.940	263.690	7081.44	-658.08	-1218.78	1189.57	40°15'55.780"N	105°01'07.923"W	11.81	
7565.00	67.420	264.850	7101.11	-618.10	-1222.92	1148.21	40°15'55.739"N	105°01'08.456"W	12.13	
7610.00	73.850	265.460	7116.02	-577.47	-1226.50	1105.93	40°15'55.704"N	105°01'09.002"W	14.35	
7655.00	80.260	266.440	7126.09	-535.67	-1229.59	1062.21	40°15'55.673"N	105°01'09.566"W	14.40	
7701.00	83.710	267.990	7132.51	-492.55	-1231.80	1016.72	40°15'55.651"N	105°01'10.153"W	8.21	
7747.00	87.480	268.690	7136.04	-449.44	-1233.13	970.88	40°15'55.638"N	105°01'10.744"W	8.33	
7793.00	90.990	269.910	7136.65	-406.47	-1233.69	924.90	40°15'55.633"N	105°01'11.337"W	8.08	
7840.00	90.950	270.070	7135.86	-362.77	-1233.70	877.91	40°15'55.633"N	105°01'11.943"W	0.35	
7931.00	91.200	269.530	7134.15	-278.04	-1234.02	786.92	40°15'55.629"N	105°01'13.117"W	0.65	
8021.00	90.490	267.660	7132.82	-193.57	-1236.22	696.97	40°15'55.608"N	105°01'14.277"W	2.22	
8113.00	90.740	269.640	7131.84	-107.25	-1238.39	605.00	40°15'55.586"N	105°01'15.464"W	2.17	
8203.00	90.460	269.110	7130.89	-23.21	-1239.37	515.01	40°15'55.577"N	105°01'16.624"W	0.67	
8294.00	90.340	268.950	7130.26	61.97	-1240.91	424.03	40°15'55.561"N	105°01'17.798"W	0.22	
8384.00	90.650	271.100	7129.48	145.64	-1240.87	334.04	40°15'55.562"N	105°01'18.959"W	2.41	
8476.00	90.770	269.610	7128.34	230.98	-1240.30	242.05	40°15'55.567"N	105°01'20.146"W	1.62	
8568.00	90.920	267.020	7126.98	317.47	-1243.01	150.11	40°15'55.541"N	105°01'21.332"W	2.82	
8660.00	90.860	262.480	7125.55	405.73	-1251.42	58.53	40°15'55.458"N	105°01'22.513"W	4.93	
8752.00	91.290	261.070	7123.83	495.22	-1264.58	-32.51	40°15'55.328"N	105°01'23.687"W	1.60	
8844.00	90.710	262.940	7122.22	584.63	-1277.38	-123.60	40°15'55.201"N	105°01'24.862"W	2.13	
8934.00	90.680	265.600	7121.13	671.20	-1286.36	-213.13	40°15'55.112"N	105°01'26.017"W	2.96	
9025.00	90.520	268.920	7120.18	757.31	-1290.71	-304.01	40°15'55.069"N	105°01'27.190"W	3.65	
9116.00	91.260	273.820	7118.76	841.08	-1288.53	-394.95	40°15'55.091"N	105°01'28.363"W	5.44	
9203.00	92.030	275.130	7116.27	919.20	-1281.75	-481.64	40°15'55.158"N	105°01'29.481"W	1.75	
9293.00	92.190	273.110	7112.95	1000.25	-1275.29	-571.34	40°15'55.222"N	105°01'30.638"W	2.25	
9384.00	91.970	271.090	7109.65	1083.53	-1271.96	-662.22	40°15'55.255"N	105°01'31.810"W	2.23	
9474.00	91.140	271.010	7107.21	1166.57	-1270.31	-752.17	40°15'55.271"N	105°01'32.971"W	0.93	
9566.00	89.750	271.120	7106.49	1251.48	-1268.60	-844.15	40°15'55.288"N	105°01'34.157"W	1.52	
9656.00	89.750	271.120	7106.88	1334.51	-1266.84	-934.13	40°15'55.305"N	105°01'35.318"W	0.00	
9748.00	89.420	270.660	7107.55	1419.53	-1265.41	-1026.12	40°15'55.319"N	105°01'36.505"W	0.62	
9840.00	89.850	269.630	7108.14	1504.99	-1265.18	-1118.11	40°15'55.321"N	105°01'37.691"W	1.21	
9930.00	90.000	270.640	7108.25	1588.61	-1264.96	-1208.11	40°15'55.323"N	105°01'38.852"W	1.13	
10022.00	90.460	271.080	7107.88	1673.64	-1263.58	-1300.10	40°15'55.337"N	105°01'40.039"W	0.69	
10113.00	90.580	269.560	7107.06	1758.07	-1263.08	-1391.09	40°15'55.342"N	105°01'41.213"W	1.68	
10205.00	90.520	265.490	7106.18	1844.99	-1267.05	-1482.98	40°15'55.303"N	105°01'42.398"W	4.42	
10293.00	90.770	266.590	7105.18	1928.85	-1273.12	-1570.76	40°15'55.243"N	105°01'43.530"W	1.28	
10383.00	90.830	269.640	7103.93	2013.57	-1276.08	-1660.70	40°15'55.213"N	105°01'44.690"W	3.39	
10476.00	90.710	270.300	7102.68	2100.07	-1276.13	-1753.69	40°15'55.213"N	105°01'45.890"W	0.72	
10566.00	89.880	268.780	7102.21	2184.02	-1276.86	-1843.68	40°15'55.206"N	105°01'47.051"W	1.92	
10657.00	90.000	267.750	7102.31	2269.62	-1279.61	-1934.64	40°15'55.178"N	105°01'48.224"W	1.14	
10749.00	91.600	267.610	7101.03	2356.46	-1283.33	-2026.55	40°15'55.141"N	105°01'49.410"W	1.75	
10841.00	91.390	265.510	7098.63	2443.86	-1288.85	-2118.35	40°15'55.087"N	105°01'50.594"W	2.29	
10931.00	90.120	264.230	7097.44	2530.17	-1296.90	-2207.98	40°15'55.007"N	105°01'51.750"W	2.00	
11021.00	90.310	264.950	7097.10	2616.61	-1305.38	-2297.57	40°15'54.923"N	105°01'52.906"W	0.83	
11113.00	90.180	268.250	7096.71	2704.00	-1310.84	-2389.40	40°15'54.869"N	105°01'54.090"W	3.59	
11202.00	90.000	269.530	7096.57	2787.39	-1312.56	-2478.38	40°15'54.852"N	105°01'55.238"W	1.45	



# Actual Wellpath Report

MARKHAM 6 AWP

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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 6 AWB
Facility	SEC.32-T04N-R68W		

## WELLPATH DATA (145 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11293.00	88.980	270.990	7097.38	2871.85	-1312.15	-2569.37	40°15'54.856"N	105°01'56.412"W	1.96	
11385.00	92.060	273.360	7096.54	2956.04	-1308.66	-2661.28	40°15'54.891"N	105°01'57.598"W	4.22	
11477.00	93.140	273.790	7092.37	3039.23	-1302.93	-2753.01	40°15'54.947"N	105°01'58.781"W	1.26	
11565.00	92.120	272.540	7088.33	3119.07	-1298.08	-2840.78	40°15'54.995"N	105°01'59.913"W	1.83	
11655.00	93.050	271.990	7084.27	3201.31	-1294.52	-2930.62	40°15'55.030"N	105°02'01.072"W	1.20	
11747.00	92.980	271.040	7079.43	3285.82	-1292.09	-3022.45	40°15'55.054"N	105°02'02.257"W	1.03	
11839.00	93.050	270.380	7074.59	3370.83	-1290.96	-3114.32	40°15'55.065"N	105°02'03.442"W	0.72	
11930.00	93.020	269.570	7069.78	3455.35	-1291.00	-3205.19	40°15'55.065"N	105°02'04.614"W	0.89	
11999.00	93.020	268.880	7066.14	3519.76	-1291.93	-3274.09	40°15'55.055"N	105°02'05.503"W	1.00	LAST BHI MWD SURVEY
12023.00	93.020	268.880	7064.88	3542.22	-1292.40	-3298.05	40°15'55.051"N	105°02'05.812"W	0.00	PROJECTION TO BIT

## HOLE & CASING SECTIONS - Ref Wellbore: MARKHAM 6 AWB Ref Wellpath: MARKHAM 6 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	1561.00	1544.00	17.00	1559.50	0.00	0.00	-10.55	15.95
9.625in Casing Surface	17.00	1550.00	1533.00	17.00	1548.64	0.00	0.00	-9.63	14.52
8.75in Open Hole	1561.00	12023.00	10462.00	1559.50	7064.88	-10.55	15.95	-1292.40	-3298.05

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SECTION 32-T04N-R69W	-9.00	-80.15	2.79	3133072.76	1341057.53	40°16'07.032"N	105°01'23.232"W	polygon
MARKHAM 6 BHL REV-3 ON PLAT (NIO B 1155'FSL & 460'FWL SEC 32)	7052.80	-1307.63	-3307.06	3129769.71	1339812.33	40°15'54.900"N	105°02'05.928"W	point
MARKHAM 6 BHL REV-2 ON PLAT (NIO B 1155'FSL & 460'FWL SEC 32)	7059.00	-1307.63	-3307.06	3129769.71	1339812.33	40°15'54.900"N	105°02'05.928"W	point
SECTION 32-T04N-R69W SOUTHERN HALF 460' SETBACKS	7059.30	-80.15	2.79	3133072.76	1341057.53	40°16'07.032"N	105°01'23.232"W	polygon
MARKHAM 6 BHL REV-1 ON PLAT (NIO B 1155'FSL & 460'FWL SEC 32)	7065.00	-1307.63	-3307.06	3129769.72	1339812.33	40°15'54.900"N	105°02'05.928"W	point
MARKHAM 6 WP 2	7079.00	-1294.40	-2550.30	3130526.36	1339829.62	40°15'55.032"N	105°01'56.166"W	point
MARKHAM 6 WP 1	7092.00	-1266.50	-954.90	3132121.51	1339866.10	40°15'55.308"N	105°01'35.586"W	point



# Actual Wellpath Report

MARKHAM 6 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 6 AWB
Facility	SEC.32-T04N-R68W		

WELLPATH COMPOSITION - Ref Wellbore: MARKHAM 6 AWB      Ref Wellpath: MARKHAM 6 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1509.00	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)	BHI NAVITRAK MWD AXIAL ROCKIES GT <142-1509>	MARKHAM 6 AWB
1509.00	11999.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI ATC (SHORT) MWD 8.75"-<1576-11999>	MARKHAM 6 AWB
11999.00	12023.00	Blind Drilling (std)	Projection to bit	MARKHAM 6 AWB



# Actual Wellpath Report

MARKHAM 6 AWP

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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#06 MARKHAM 6 (2405'FSL & 1515'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 6
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 6 AWB
Facility	SEC.32-T04N-R68W		

## WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
142.00	0.360	38.120	142.00	FIRST BHI MWD SURVEY
11999.00	93.020	268.880	7066.14	LAST BHI MWD SURVEY
12023.00	93.020	268.880	7064.88	PROJECTION TO BIT