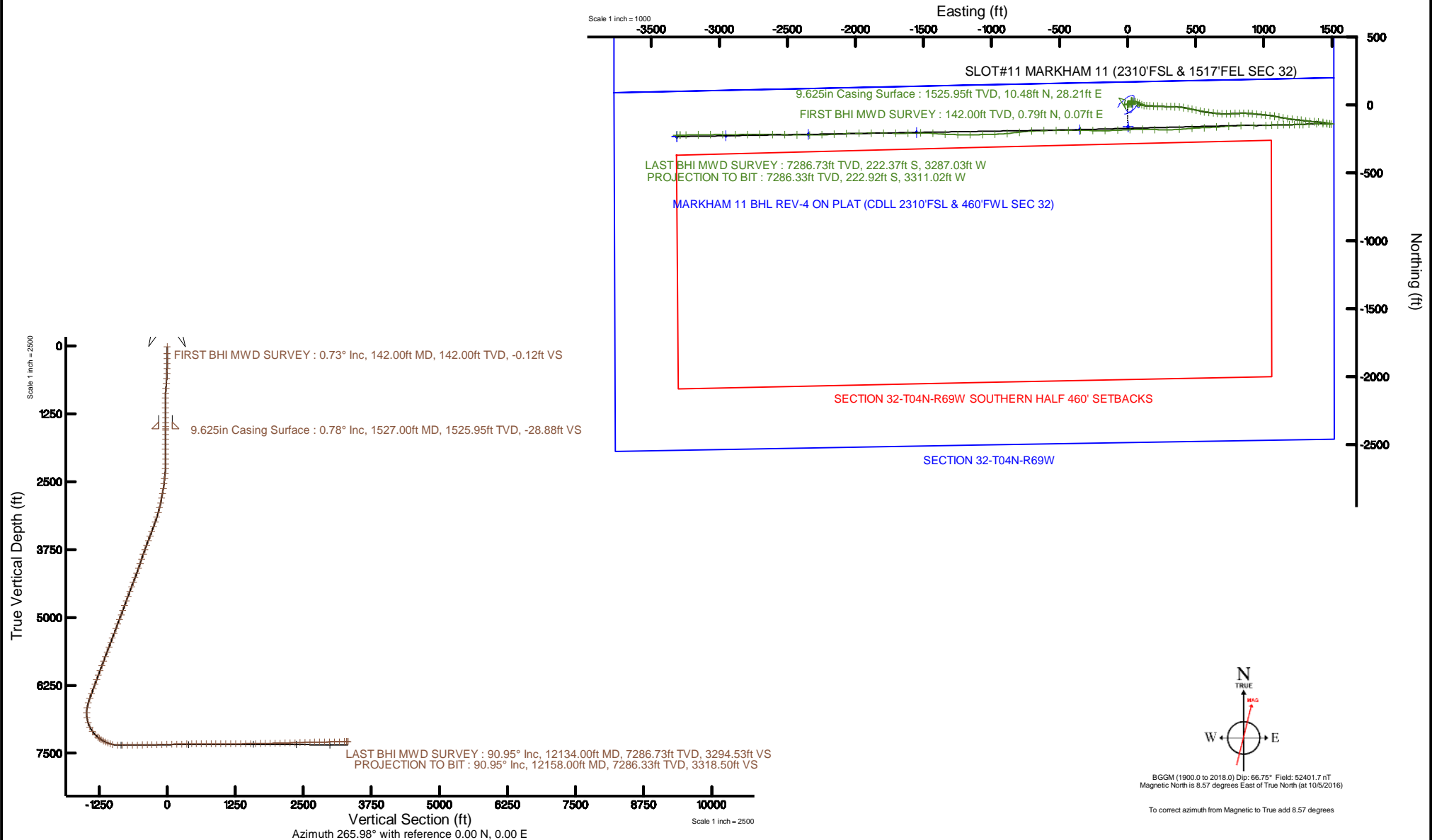


CUB CREEK ENERGY, LLC

Location: COLORADO Slot: SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
 Field: WELD COUNTY (NAD83, TRUE NORTH) Well: MARKHAM 11
 Facility: SEC.32-T04N-R68W Wellbore: MARKHAM 11 PWB

Plot reference wellpath is MARKHAM 11 REV-D.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: 5056 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#11 MARKHAM 11 (2310'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 11 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 11
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 11 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 4:31:12 PM
Convergence at slot	0.31° East	Database/Source file	WA_DEN_Denver_Defn/MARKHAM_11_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	160.30	-2.80	3133069.11	1341217.80	40°16'08.616"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	5056.00ft
Horizontal Reference Pt	Slot	XTREME 18 (17') (RKB) to Mean Sea Level	5056.00ft
Vertical Reference Pt	XTREME 18 (17') (RKB)	XTREME 18 (17') (RKB) to Mud Line at Slot (SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32))	5056.00ft
MD Reference Pt	XTREME 18 (17') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	265.98°



Actual Wellpath Report

MARKHAM 11 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 11
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 11 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	4.810	17.00	0.00	0.00	0.00	40°16'08.616"N	105°01'23.268"W	0.00	
142.00	0.730	4.810	142.00	-0.12	0.79	0.07	40°16'08.624"N	105°01'23.267"W	0.58	FIRST BHI MWD SURVEY
234.00	0.640	28.670	233.99	-0.49	1.83	0.36	40°16'08.634"N	105°01'23.263"W	0.32	
326.00	0.820	16.650	325.98	-1.00	2.91	0.80	40°16'08.645"N	105°01'23.258"W	0.26	
418.00	1.890	30.500	417.96	-2.09	4.85	1.76	40°16'08.664"N	105°01'23.245"W	1.21	
510.00	2.300	60.700	509.90	-4.62	7.06	4.14	40°16'08.686"N	105°01'23.215"W	1.26	
603.00	3.220	83.060	602.79	-8.92	8.29	8.36	40°16'08.698"N	105°01'23.160"W	1.51	
693.00	4.670	96.170	692.58	-15.05	8.20	14.51	40°16'08.697"N	105°01'23.081"W	1.89	
783.00	5.100	90.140	782.25	-22.64	7.80	22.15	40°16'08.693"N	105°01'22.982"W	0.74	
874.00	2.590	90.250	873.04	-28.73	7.78	28.25	40°16'08.693"N	105°01'22.904"W	2.76	
964.00	0.590	82.600	963.00	-31.22	7.83	30.75	40°16'08.693"N	105°01'22.871"W	2.23	
1056.00	0.720	9.350	1054.99	-31.83	8.46	31.31	40°16'08.700"N	105°01'22.864"W	0.86	
1148.00	0.550	246.370	1146.99	-31.54	8.85	31.00	40°16'08.703"N	105°01'22.868"W	1.22	
1240.00	1.380	297.480	1238.98	-30.18	9.19	29.61	40°16'08.707"N	105°01'22.886"W	1.22	
1329.00	0.930	274.560	1327.96	-28.56	9.74	27.94	40°16'08.712"N	105°01'22.908"W	0.72	
1418.00	0.570	80.680	1416.96	-28.28	9.87	27.66	40°16'08.714"N	105°01'22.911"W	1.67	
1486.00	0.370	38.050	1484.96	-28.77	10.10	28.13	40°16'08.716"N	105°01'22.905"W	0.57	
1556.00	1.140	353.030	1554.95	-28.88	10.96	28.18	40°16'08.724"N	105°01'22.904"W	1.31	
1633.00	2.370	358.280	1631.91	-28.91	13.32	28.04	40°16'08.748"N	105°01'22.906"W	1.61	
1723.00	5.910	13.280	1721.67	-30.36	19.69	29.05	40°16'08.811"N	105°01'22.893"W	4.08	
1815.00	3.030	348.920	1813.38	-31.47	26.69	29.67	40°16'08.880"N	105°01'22.885"W	3.68	
1907.00	0.410	293.970	1905.34	-30.88	29.21	28.90	40°16'08.905"N	105°01'22.895"W	3.06	
1995.00	0.180	236.290	1993.34	-30.48	29.26	28.50	40°16'08.905"N	105°01'22.900"W	0.40	
2087.00	0.150	262.270	2085.33	-30.24	29.16	28.26	40°16'08.904"N	105°01'22.903"W	0.09	
2175.00	0.030	140.230	2173.33	-30.14	29.13	28.16	40°16'08.904"N	105°01'22.905"W	0.19	
2266.00	2.200	104.310	2264.31	-31.81	28.68	29.87	40°16'08.899"N	105°01'22.883"W	2.39	
2356.00	6.160	98.960	2354.06	-38.15	27.50	36.32	40°16'08.888"N	105°01'22.800"W	4.42	
2448.00	6.660	95.070	2445.48	-48.23	26.26	46.51	40°16'08.875"N	105°01'22.668"W	0.72	
2540.00	6.460	101.800	2536.88	-58.48	24.73	56.89	40°16'08.860"N	105°01'22.534"W	0.86	
2632.00	10.870	114.750	2627.81	-71.07	20.04	69.84	40°16'08.814"N	105°01'22.367"W	5.21	
2724.00	12.370	121.650	2717.93	-86.68	11.23	86.11	40°16'08.727"N	105°01'22.157"W	2.22	
2814.00	11.870	116.850	2805.93	-102.46	1.99	102.57	40°16'08.636"N	105°01'21.945"W	1.25	
2905.00	12.530	99.950	2894.90	-120.08	-3.94	120.65	40°16'08.577"N	105°01'21.712"W	3.98	
2993.00	14.580	90.510	2980.45	-140.39	-5.69	141.13	40°16'08.560"N	105°01'21.447"W	3.42	
3084.00	15.760	92.520	3068.28	-164.08	-6.34	164.93	40°16'08.553"N	105°01'21.140"W	1.42	
3176.00	17.870	93.940	3156.34	-190.48	-7.86	191.50	40°16'08.538"N	105°01'20.798"W	2.34	
3268.00	19.880	92.290	3243.39	-220.01	-9.45	221.22	40°16'08.523"N	105°01'20.414"W	2.26	
3360.00	20.490	92.120	3329.74	-251.56	-10.67	252.94	40°16'08.511"N	105°01'20.005"W	0.67	
3452.00	20.100	90.160	3416.03	-283.34	-11.31	284.84	40°16'08.504"N	105°01'19.594"W	0.85	
3543.00	20.610	91.390	3501.35	-314.88	-11.74	316.48	40°16'08.500"N	105°01'19.185"W	0.73	
3631.00	20.640	93.340	3583.71	-345.68	-13.02	347.45	40°16'08.487"N	105°01'18.786"W	0.78	
3722.00	20.540	95.430	3668.90	-377.34	-15.47	379.36	40°16'08.463"N	105°01'18.374"W	0.82	
3811.00	20.780	99.010	3752.18	-408.12	-19.42	410.49	40°16'08.424"N	105°01'17.972"W	1.44	
3903.00	20.250	101.230	3838.35	-439.38	-25.07	442.23	40°16'08.368"N	105°01'17.563"W	1.02	
3995.00	19.130	101.660	3924.96	-469.26	-31.22	472.61	40°16'08.307"N	105°01'17.171"W	1.23	



Actual Wellpath Report

MARKHAM 11 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 11
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 11 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
4085.00	18.930	101.620	4010.05	-497.51	-37.14	501.35	40°16'08.249"N	105°01'16.800"W	0.22	
4177.00	20.870	103.390	4096.55	-527.52	-43.94	531.92	40°16'08.182"N	105°01'16.406"W	2.21	
4269.00	20.810	100.540	4182.53	-558.98	-50.73	563.92	40°16'08.115"N	105°01'15.993"W	1.10	
4361.00	20.700	95.970	4268.57	-590.81	-55.41	596.17	40°16'08.068"N	105°01'15.577"W	1.76	
4452.00	20.450	96.500	4353.76	-622.28	-58.88	627.96	40°16'08.034"N	105°01'15.167"W	0.34	
4544.00	20.930	96.050	4439.83	-654.26	-62.43	660.27	40°16'07.999"N	105°01'14.750"W	0.55	
4634.00	20.880	93.140	4523.91	-686.00	-65.01	692.27	40°16'07.974"N	105°01'14.337"W	1.15	
4726.00	20.550	89.440	4609.96	-718.39	-65.75	724.79	40°16'07.966"N	105°01'13.918"W	1.47	
4818.00	20.280	87.000	4696.19	-750.45	-64.75	756.85	40°16'07.976"N	105°01'13.504"W	0.97	
4910.00	20.490	86.630	4782.42	-782.49	-62.97	788.85	40°16'07.994"N	105°01'13.092"W	0.27	
5003.00	20.180	87.150	4869.63	-814.80	-61.22	821.12	40°16'08.011"N	105°01'12.675"W	0.39	
5093.00	20.230	90.820	4954.09	-845.83	-60.67	852.19	40°16'08.016"N	105°01'12.274"W	1.41	
5185.00	21.180	92.280	5040.15	-878.20	-61.56	884.70	40°16'08.008"N	105°01'11.855"W	1.18	
5275.00	21.140	96.570	5124.09	-910.32	-64.06	917.07	40°16'07.983"N	105°01'11.437"W	1.72	
5364.00	20.930	96.910	5207.16	-941.70	-67.81	948.79	40°16'07.946"N	105°01'11.028"W	0.27	
5454.00	20.980	94.830	5291.21	-973.40	-71.10	980.81	40°16'07.913"N	105°01'10.615"W	0.83	
5547.00	20.240	95.180	5378.25	-1005.73	-73.96	1013.42	40°16'07.885"N	105°01'10.195"W	0.81	
5637.00	21.000	97.670	5462.49	-1036.89	-77.51	1044.91	40°16'07.850"N	105°01'09.788"W	1.29	
5729.00	21.580	100.610	5548.21	-1069.41	-82.83	1077.87	40°16'07.797"N	105°01'09.363"W	1.32	
5821.00	21.210	100.910	5633.87	-1101.86	-89.09	1110.84	40°16'07.735"N	105°01'08.938"W	0.42	
5912.00	21.450	99.710	5718.64	-1133.93	-95.02	1143.41	40°16'07.677"N	105°01'08.518"W	0.55	
6004.00	21.570	99.790	5804.23	-1166.69	-100.73	1176.65	40°16'07.620"N	105°01'08.089"W	0.13	
6096.00	21.390	97.360	5889.84	-1199.56	-105.75	1209.96	40°16'07.571"N	105°01'07.659"W	0.99	
6188.00	21.430	95.320	5975.50	-1232.59	-109.46	1243.33	40°16'07.534"N	105°01'07.229"W	0.81	
6278.00	20.310	96.010	6059.59	-1264.20	-112.62	1275.24	40°16'07.503"N	105°01'06.817"W	1.27	
6371.00	20.670	97.940	6146.71	-1296.15	-116.58	1307.55	40°16'07.464"N	105°01'06.400"W	0.82	
6461.00	20.310	95.870	6231.01	-1327.07	-120.37	1338.82	40°16'07.426"N	105°01'05.997"W	0.90	
6551.00	20.520	93.200	6315.36	-1358.11	-122.85	1370.10	40°16'07.402"N	105°01'05.593"W	1.06	
6642.00	20.530	95.130	6400.59	-1389.69	-125.17	1401.92	40°16'07.379"N	105°01'05.183"W	0.74	
6734.00	19.760	98.810	6486.96	-1420.78	-128.99	1433.36	40°16'07.341"N	105°01'04.777"W	1.61	
6826.00	17.310	99.320	6574.18	-1449.27	-133.59	1462.24	40°16'07.295"N	105°01'04.405"W	2.67	
6918.00	10.380	102.150	6663.46	-1470.57	-137.56	1483.87	40°16'07.256"N	105°01'04.126"W	7.57	
7010.00	1.790	136.120	6754.87	-1479.47	-140.34	1492.99	40°16'07.229"N	105°01'04.008"W	9.73	
7101.00	10.210	279.910	6845.44	-1472.53	-139.98	1486.01	40°16'07.232"N	105°01'04.098"W	12.86	
7193.00	16.310	269.860	6934.96	-1451.70	-138.60	1465.03	40°16'07.246"N	105°01'04.369"W	7.06	
7281.00	25.710	271.770	7017.01	-1420.31	-138.04	1433.53	40°16'07.251"N	105°01'04.775"W	10.71	
7373.00	35.240	269.970	7096.21	-1373.87	-137.44	1386.93	40°16'07.257"N	105°01'05.376"W	10.41	
7462.00	44.590	265.680	7164.42	-1316.88	-139.81	1329.96	40°16'07.234"N	105°01'06.111"W	10.95	
7521.00	49.990	266.530	7204.42	-1273.55	-142.74	1286.73	40°16'07.205"N	105°01'06.669"W	9.21	
7553.00	52.480	268.300	7224.46	-1248.61	-143.86	1261.81	40°16'07.194"N	105°01'06.990"W	8.90	
7598.00	57.350	269.630	7250.31	-1211.85	-144.51	1225.00	40°16'07.188"N	105°01'07.465"W	11.09	
7642.00	61.630	269.630	7272.65	-1174.02	-144.76	1187.10	40°16'07.185"N	105°01'07.954"W	9.73	
7688.00	66.110	269.090	7292.90	-1132.81	-145.22	1145.82	40°16'07.181"N	105°01'08.487"W	9.80	
7735.00	68.120	268.520	7311.18	-1089.56	-146.13	1102.53	40°16'07.172"N	105°01'09.045"W	4.42	
7781.00	71.110	267.060	7327.20	-1046.47	-147.79	1059.45	40°16'07.155"N	105°01'09.601"W	7.15	



Actual Wellpath Report

MARKHAM 11 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 11
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 11 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
7827.00	76.970	267.490	7339.84	-1002.27	-149.89	1015.29	40°16'07.135"N	105°01'10.170"W	12.77	
7919.00	90.090	271.080	7350.19	-911.23	-150.99	924.10	40°16'07.124"N	105°01'11.347"W	14.78	
8010.00	90.680	268.700	7349.58	-820.45	-151.17	833.11	40°16'07.122"N	105°01'12.521"W	2.69	
8101.00	90.370	264.950	7348.74	-729.48	-156.21	742.27	40°16'07.072"N	105°01'13.693"W	4.13	
8191.00	90.310	266.980	7348.21	-639.49	-162.54	652.50	40°16'07.010"N	105°01'14.851"W	2.26	
8282.00	90.580	267.440	7347.50	-548.51	-166.97	561.61	40°16'06.966"N	105°01'16.023"W	0.59	
8372.00	90.580	266.260	7346.59	-458.53	-171.91	471.75	40°16'06.917"N	105°01'17.182"W	1.31	
8463.00	90.860	265.330	7345.45	-367.54	-178.59	381.00	40°16'06.851"N	105°01'18.353"W	1.07	
8553.00	90.800	270.030	7344.14	-277.61	-182.23	291.11	40°16'06.815"N	105°01'19.513"W	5.22	
8643.00	91.630	271.730	7342.24	-187.96	-180.85	201.15	40°16'06.829"N	105°01'20.673"W	2.10	
8734.00	92.000	269.980	7339.35	-97.34	-179.49	110.20	40°16'06.842"N	105°01'21.846"W	1.96	
8826.00	91.260	267.400	7336.74	-5.49	-181.59	18.27	40°16'06.822"N	105°01'23.032"W	2.92	
8917.00	91.450	267.330	7334.58	85.46	-185.77	-72.60	40°16'06.780"N	105°01'24.205"W	0.22	
9010.00	90.830	269.070	7332.73	178.36	-188.69	-165.54	40°16'06.751"N	105°01'25.403"W	1.99	
9099.00	90.860	271.450	7331.42	267.10	-188.29	-254.52	40°16'06.755"N	105°01'26.551"W	2.67	
9189.00	91.020	269.980	7329.94	356.78	-187.17	-344.50	40°16'06.766"N	105°01'27.712"W	1.64	
9280.00	90.650	269.830	7328.62	447.55	-187.32	-435.49	40°16'06.765"N	105°01'28.886"W	0.44	
9369.00	90.620	270.400	7327.63	536.32	-187.14	-524.48	40°16'06.767"N	105°01'30.034"W	0.64	
9459.00	90.400	268.510	7326.83	626.14	-188.00	-614.47	40°16'06.758"N	105°01'31.195"W	2.11	
9549.00	90.250	266.280	7326.32	716.11	-192.09	-704.37	40°16'06.718"N	105°01'32.355"W	2.48	
9639.00	90.490	263.590	7325.74	806.08	-200.03	-794.01	40°16'06.639"N	105°01'33.511"W	3.00	
9729.00	89.600	264.390	7325.67	896.03	-209.45	-883.51	40°16'06.546"N	105°01'34.666"W	1.33	
9820.00	90.030	268.430	7325.96	987.00	-215.15	-974.31	40°16'06.490"N	105°01'35.837"W	4.46	
9912.00	89.970	268.550	7325.96	1078.92	-217.57	-1066.28	40°16'06.466"N	105°01'37.023"W	0.15	
10002.00	89.910	269.610	7326.06	1168.78	-219.02	-1156.27	40°16'06.451"N	105°01'38.184"W	1.18	
10094.00	89.910	271.210	7326.20	1260.50	-218.36	-1248.26	40°16'06.458"N	105°01'39.371"W	1.74	
10186.00	90.030	273.430	7326.25	1351.94	-214.64	-1340.18	40°16'06.495"N	105°01'40.557"W	2.42	
10276.00	91.390	274.670	7325.13	1441.03	-208.28	-1429.95	40°16'06.557"N	105°01'41.715"W	2.04	
10367.00	90.830	269.360	7323.37	1531.48	-205.08	-1520.84	40°16'06.589"N	105°01'42.887"W	5.87	
10459.00	90.650	267.720	7322.18	1623.38	-207.43	-1612.80	40°16'06.566"N	105°01'44.074"W	1.79	
10549.00	90.620	271.350	7321.18	1713.18	-208.16	-1702.78	40°16'06.558"N	105°01'45.234"W	4.03	
10639.00	90.740	270.430	7320.12	1802.84	-206.76	-1792.76	40°16'06.572"N	105°01'46.395"W	1.03	
10729.00	91.480	268.940	7318.37	1892.64	-207.26	-1882.74	40°16'06.567"N	105°01'47.556"W	1.85	
10821.00	91.510	269.360	7315.97	1984.46	-208.62	-1974.69	40°16'06.554"N	105°01'48.742"W	0.46	
10912.00	91.480	267.430	7313.60	2075.35	-211.17	-2065.62	40°16'06.528"N	105°01'49.915"W	2.12	
11002.00	91.450	266.960	7311.30	2165.30	-215.57	-2155.49	40°16'06.485"N	105°01'51.074"W	0.52	
11092.00	91.850	268.710	7308.70	2255.21	-218.97	-2245.38	40°16'06.451"N	105°01'52.234"W	1.99	
11184.00	91.910	269.890	7305.69	2347.00	-220.09	-2337.32	40°16'06.440"N	105°01'53.420"W	1.28	
11276.00	91.910	270.540	7302.62	2438.70	-219.75	-2429.27	40°16'06.443"N	105°01'54.606"W	0.71	
11367.00	91.910	271.260	7299.59	2529.31	-218.32	-2520.21	40°16'06.457"N	105°01'55.779"W	0.79	
11457.00	90.830	270.740	7297.44	2618.94	-216.75	-2610.17	40°16'06.473"N	105°01'56.940"W	1.33	
11548.00	90.920	269.590	7296.05	2709.69	-216.49	-2701.15	40°16'06.475"N	105°01'58.114"W	1.27	
11638.00	90.890	269.370	7294.62	2799.51	-217.30	-2791.14	40°16'06.467"N	105°01'59.275"W	0.25	
11728.00	90.950	269.740	7293.18	2889.32	-218.00	-2881.12	40°16'06.460"N	105°02'00.435"W	0.42	
11821.00	90.950	270.320	7291.64	2982.07	-217.95	-2974.11	40°16'06.460"N	105°02'01.635"W	0.62	



Actual Wellpath Report

MARKHAM 11 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 11
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 11 AWB
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
11911.00	90.860	269.510	7290.22	3071.85	-218.09	-3064.10	40°16'06.459"N	105°02'02.796"W	0.91	
12001.00	90.860	268.800	7288.86	3161.70	-219.41	-3154.08	40°16'06.446"N	105°02'03.957"W	0.79	
12093.00	90.950	268.690	7287.41	3253.58	-221.43	-3246.05	40°16'06.426"N	105°02'05.143"W	0.15	
12134.00	90.950	268.680	7286.73	3294.53	-222.37	-3287.03	40°16'06.416"N	105°02'05.672"W	0.02	LAST BHI MWD SURVEY
12158.00	90.950	268.680	7286.33	3318.50	-222.92	-3311.02	40°16'06.411"N	105°02'05.981"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: MARKHAM 11 AWB Ref Wellpath: MARKHAM 11 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	96.00	1538.00	1442.00	96.00	1536.95	0.32	0.03	10.64	28.21
9.625in Casing Surface	17.00	1527.00	1510.00	17.00	1525.95	0.00	0.00	10.48	28.21
8.75in Open Hole	1538.00	12158.00	10620.00	1536.95	7286.33	10.64	28.21	-222.92	-3311.02

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SECTION 32-T04N-R69W	-11.00	-160.29	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	7057.30	-160.29	2.79	3133072.76	1341057.53	40°16'07.032"N	105°01'23.232"W	polygon
MARKHAM 11 WP 2	7328.10	-202.20	-1551.00	3131519.29	1341007.28	40°16'06.617"N	105°01'43.276"W	point
MARKHAM 11BHL REV-3 ON PLAT (CDLL 2310'FSL & 460'FWL SEC 32)	7328.38	-232.93	-3312.48	3129758.08	1340967.07	40°16'06.312"N	105°02'06.000"W	point
MARKHAM 11 WP 3	7330.40	-216.00	-2344.70	3130725.71	1340989.21	40°16'06.480"N	105°01'53.515"W	point
MARKHAM 11 WP 1	7332.10	-181.20	-351.20	3132718.91	1341034.73	40°16'06.825"N	105°01'27.799"W	point
MARKHAM 11BHL REV-2 ON PLAT (CDLL 2310'FSL & 460'FWL SEC 32)	7341.00	-232.93	-3312.48	3129758.08	1340967.07	40°16'06.312"N	105°02'06.000"W	point
MARKHAM 11 WP 4	7341.10	-226.60	-2950.80	3130119.71	1340975.35	40°16'06.375"N	105°02'01.334"W	point
MARKHAM 11BHL REV-1 ON PLAT (CDLL 2310'FSL & 460'FWL SEC 32)	7347.00	-232.93	-3312.48	3129758.08	1340967.07	40°16'06.312"N	105°02'06.000"W	point
MARKHAM 11 BHL REV-4 ON PLAT (CDLL 2310'FSL & 460'FWL SEC 32)	7348.38	-232.93	-3312.48	3129758.08	1340967.07	40°16'06.312"N	105°02'06.000"W	point



Actual Wellpath Report

MARKHAM 11 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 11
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 11 AWB
Facility	SEC.32-T04N-R68W		

WELLPATH COMPOSITION - Ref Wellbore: MARKHAM 11 AWB Ref Wellpath: MARKHAM 11 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1486.00	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)	BHI NAVITRAK MWD STD ROTATING, AXIAL, ROCKIES GT SURFACE <142-1486>	MARKHAM 11 AWB
1486.00	12134.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI AUTOTRAK CURVE SHORT, ROCKIES GT <1556-12134>	MARKHAM 11 AWB
12134.00	12158.00	Blind Drilling (std)	Projection to bit	MARKHAM 11 AWB



Actual Wellpath Report

MARKHAM 11 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#11 MARKHAM 11 (2310'FSL & 1517'FEL SEC 32)
Area	COLORADO	Well	MARKHAM 11
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	MARKHAM 11 AWB
Facility	SEC.32-T04N-R68W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
142.00	0.730	4.810	142.00	FIRST BHI MWD SURVEY	
12134.00	90.950	268.680	7286.73	LAST BHI MWD SURVEY	
12158.00	90.950	268.680	7286.33	PROJECTION TO BIT	