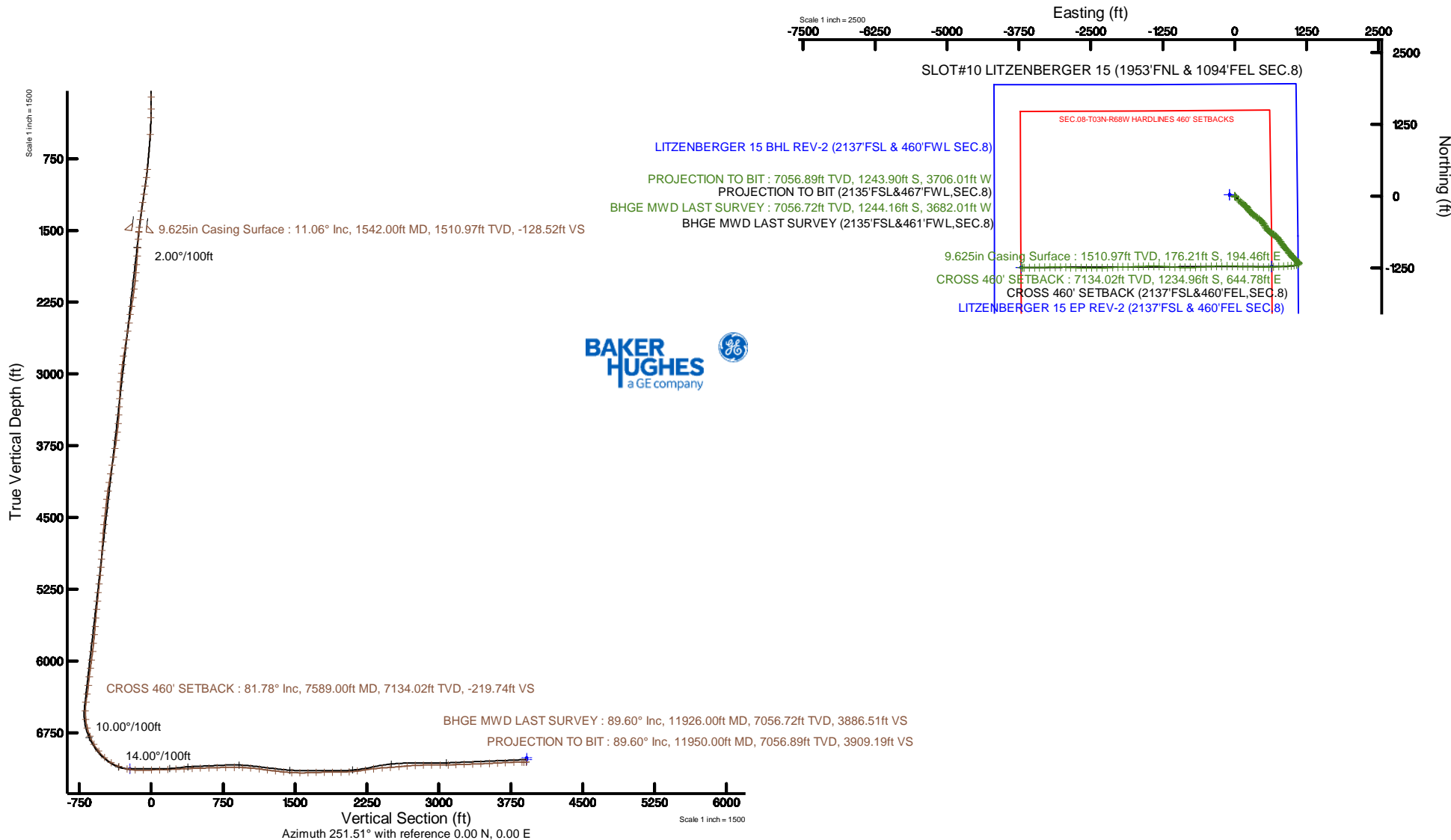


# CUB CREEK ENERGY, LLC

Location: COLORADO Slot: SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)  
Field: WELD COUNTY (NAD83, TRUE NORTH) Well: LITZENBERGER 15  
Facility: SEC.08-T03N-R68W Wellbore: LITZENBERGER 15 PWB

Plot reference wellbore is LITZENBERGER 15 REV-B.D PWB				Grid System: NAD83 / Lambert Colorado SP, Northern Zone (511), US Feet			
True vertical depths are referenced to XTREME 18 (17) (RKB)				North Reference: True north			
Measured depths are referenced to XTREME 18 (17) (RKB)				Scale: True distance			
XTREME 18 (17) (RKB) to Mean Sea Level: 5000 Feet				Depths are in Feet			
Mean Sea Level to Mud line (N Star: SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)) 0 Feet				Created by: baughman on 2017-10-16			
Coordinates are in Feet referenced to Slot				Database: Drawings			
Location Information							
Facility Name				Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
SEC.08-T03N-R68W				3120484.377	1201462.520	40°14'32.2887N	100°10'18.2887W
Site	Local N (ft)	Local E (ft)		Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)	20.50	80.33		3120573.844	1201467.502	40°14'32.1367N	100°10'17.4367W
XTREME 18 (17) (RKB) to Mud line (N Star: SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8))				5000ft			
Mean Sea Level to Mud line (N Star: SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8))				0 ft			
XTREME 18 (17) (RKB) to Mean Sea Level				5000ft			
Survey Program							
Survey ID	Survey N	Survey E	Survey S	Survey W	Survey UTM	Survey UTM	Survey UTM
100	1000	10000	100000	1000000	10000000	100000000	1000000000



# Actual Wellpath Report

LITZENBERGER 15 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWB
Facility	SEC.08-T03N-R68W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	True	User	Bushjamh
Scale	0.999957	Report Generated	10/16/2017 at 10:08:24 AM
Convergence at slot	0.31° East	Database/Source file	Denver/LITZENBERGER_15_AWP.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-25.50	89.33	3133573.84	1331457.50	40°14'32.136"N	105°01'17.436"W
Facility Reference Pt			3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"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	5098.00ft
Horizontal Reference Pt	Slot	XTREME 18 (17') (RKB) to Mean Sea Level	5098.00ft
Vertical Reference Pt	XTREME 18 (17') (RKB)	XTREME 18 (17') (RKB) to Mud Line at Slot (SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8))	5098.00ft
MD Reference Pt	XTREME 18 (17') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	251.51°

# Actual Wellpath Report

LITZENBERGER 15 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (132 stations) † = interpolated/extrapolated station										Comments
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	
0.00†	0.000	137.610	0.00	0.00	0.00	0.00	40°14'32.136"N	105°01'17.436"W	0.00	
17.00	0.000	137.610	17.00	0.00	0.00	0.00	40°14'32.136"N	105°01'17.436"W	0.00	
108.00	0.740	137.610	108.00	-0.24	-0.43	0.40	40°14'32.132"N	105°01'17.431"W	0.81	
229.00	2.140	144.200	228.96	-1.23	-2.84	2.24	40°14'32.108"N	105°01'17.407"W	1.16	
320.00	3.460	138.720	319.85	-2.80	-6.29	5.05	40°14'32.074"N	105°01'17.371"W	1.48	
499.00	5.610	121.670	498.28	-10.49	-14.94	16.06	40°14'31.988"N	105°01'17.229"W	1.41	
867.00	14.740	137.720	860.17	-40.97	-59.12	62.97	40°14'31.552"N	105°01'16.624"W	2.57	
957.00	17.220	136.140	946.69	-51.29	-77.20	79.91	40°14'31.373"N	105°01'16.406"W	2.80	
1049.00	18.190	136.180	1034.33	-63.27	-97.38	99.29	40°14'31.174"N	105°01'16.156"W	1.05	
1140.00	17.920	132.650	1120.85	-76.10	-117.12	119.42	40°14'30.979"N	105°01'15.896"W	1.24	
1231.00	16.500	130.930	1207.77	-89.43	-135.07	139.48	40°14'30.801"N	105°01'15.637"W	1.66	
1323.00	13.190	126.530	1296.69	-102.10	-149.88	157.79	40°14'30.655"N	105°01'15.401"W	3.80	
1415.00	12.020	124.120	1386.48	-113.93	-161.50	174.16	40°14'30.540"N	105°01'15.190"W	1.39	
1495.00	11.110	126.770	1464.85	-123.38	-170.79	187.23	40°14'30.448"N	105°01'15.022"W	1.32	
1550.00	11.050	126.950	1518.83	-129.39	-177.13	195.69	40°14'30.386"N	105°01'14.913"W	0.13	
1626.00	11.950	139.250	1593.31	-136.51	-187.47	206.64	40°14'30.283"N	105°01'14.771"W	3.43	
1718.00	13.450	149.900	1683.07	-142.27	-203.94	218.23	40°14'30.121"N	105°01'14.622"W	3.02	
1806.00	14.520	145.600	1768.46	-147.35	-221.90	229.60	40°14'29.943"N	105°01'14.475"W	1.69	
1897.00	15.030	144.320	1856.45	-153.96	-240.90	242.92	40°14'29.755"N	105°01'14.303"W	0.67	
1986.00	15.420	142.820	1942.33	-161.16	-259.70	256.80	40°14'29.570"N	105°01'14.124"W	0.62	
2076.00	15.430	140.840	2029.09	-169.22	-278.52	271.60	40°14'29.384"N	105°01'13.934"W	0.59	
2164.00	15.390	132.670	2113.93	-178.99	-295.51	287.58	40°14'29.216"N	105°01'13.728"W	2.47	
2255.00	15.310	131.020	2201.69	-190.90	-311.58	305.52	40°14'29.057"N	105°01'13.496"W	0.49	
2347.00	15.500	127.610	2290.39	-203.92	-327.05	324.42	40°14'28.904"N	105°01'13.253"W	1.01	
2439.00	15.480	126.230	2379.04	-217.87	-341.81	344.06	40°14'28.758"N	105°01'12.999"W	0.40	
2529.00	15.450	125.070	2465.79	-231.92	-355.80	363.56	40°14'28.620"N	105°01'12.748"W	0.35	
2620.00	14.390	126.840	2553.72	-245.55	-369.54	382.53	40°14'28.484"N	105°01'12.503"W	1.27	
2710.00	15.690	125.410	2640.63	-259.09	-383.30	401.40	40°14'28.348"N	105°01'12.260"W	1.50	
2802.00	15.830	126.550	2729.17	-273.60	-397.98	421.62	40°14'28.203"N	105°01'11.999"W	0.37	
2891.00	15.910	128.480	2814.78	-287.21	-412.80	440.92	40°14'28.057"N	105°01'11.750"W	0.60	

# Actual Wellpath Report

LITZENBERGER 15 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWB
Facility	SEC.08-T03N-R68W		

## WELLPATH DATA (132 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2984.00	15.370	133.610	2904.34	-299.92	-429.23	459.83	40°14'27.894"N	105°01'11.506"W	1.60	
3076.00	15.710	140.400	2992.99	-310.11	-447.24	476.60	40°14'27.716"N	105°01'11.290"W	2.01	
3169.00	14.890	143.880	3082.69	-318.26	-466.60	491.67	40°14'27.525"N	105°01'11.096"W	1.32	
3261.00	15.590	149.960	3171.46	-324.32	-486.85	504.82	40°14'27.325"N	105°01'10.926"W	1.90	
3351.00	15.820	152.830	3258.10	-328.59	-508.23	516.48	40°14'27.114"N	105°01'10.776"W	0.90	
3440.00	15.920	150.330	3343.71	-332.79	-529.63	528.06	40°14'26.902"N	105°01'10.627"W	0.78	
3529.00	15.810	147.150	3429.32	-338.16	-550.42	540.68	40°14'26.697"N	105°01'10.464"W	0.98	
3622.00	15.890	143.780	3518.79	-345.17	-571.34	555.08	40°14'26.490"N	105°01'10.278"W	0.99	
3713.00	16.220	134.900	3606.25	-354.66	-590.36	571.44	40°14'26.302"N	105°01'10.067"W	2.72	
3804.00	15.130	130.410	3693.87	-366.49	-607.03	589.49	40°14'26.137"N	105°01'09.835"W	1.79	
3893.00	15.260	126.270	3779.76	-379.24	-621.49	607.78	40°14'25.994"N	105°01'09.599"W	1.23	
3984.00	15.170	123.790	3867.57	-393.44	-635.20	627.33	40°14'25.859"N	105°01'09.347"W	0.72	
4073.00	15.180	123.980	3953.47	-407.66	-648.19	646.67	40°14'25.731"N	105°01'09.097"W	0.06	
4166.00	15.100	123.730	4043.24	-422.50	-661.72	666.84	40°14'25.597"N	105°01'08.837"W	0.11	
4258.00	15.140	124.200	4132.06	-437.12	-675.13	686.74	40°14'25.464"N	105°01'08.581"W	0.14	
4351.00	15.750	129.200	4221.70	-451.22	-689.93	706.57	40°14'25.318"N	105°01'08.325"W	1.57	
4443.00	15.430	134.750	4310.32	-463.41	-706.44	724.94	40°14'25.155"N	105°01'08.088"W	1.66	
4536.00	15.620	138.860	4399.93	-473.80	-724.58	741.96	40°14'24.976"N	105°01'07.868"W	1.20	
4625.00	15.510	140.280	4485.67	-482.72	-742.76	757.45	40°14'24.796"N	105°01'07.669"W	0.45	
4718.00	15.600	141.140	4575.26	-491.57	-762.06	773.24	40°14'24.605"N	105°01'07.465"W	0.27	
4810.00	15.710	144.560	4663.85	-499.51	-781.84	788.22	40°14'24.410"N	105°01'07.272"W	1.01	
4903.00	15.250	146.410	4753.48	-506.36	-802.28	802.29	40°14'24.208"N	105°01'07.091"W	0.73	
4995.00	15.270	146.920	4842.23	-512.57	-822.52	815.60	40°14'24.008"N	105°01'06.919"W	0.15	
5088.00	15.310	146.720	4931.94	-518.78	-843.04	829.02	40°14'23.805"N	105°01'06.746"W	0.07	
5179.00	15.350	146.560	5019.70	-524.96	-863.14	842.25	40°14'23.606"N	105°01'06.575"W	0.06	
5269.00	15.220	138.790	5106.53	-532.59	-881.96	856.60	40°14'23.420"N	105°01'06.390"W	2.28	
5360.00	15.220	136.510	5194.34	-542.25	-899.62	872.69	40°14'23.246"N	105°01'06.183"W	0.66	
5452.00	15.300	139.650	5283.10	-551.87	-917.63	888.86	40°14'23.068"N	105°01'05.974"W	0.90	
5545.00	15.180	137.920	5372.83	-561.31	-936.02	904.96	40°14'22.886"N	105°01'05.767"W	0.51	
5635.00	15.230	139.650	5459.68	-570.43	-953.77	920.51	40°14'22.711"N	105°01'05.566"W	0.51	

# Actual Wellpath Report

LITZENBERGER 15 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWP
Facility	SEC.08-T03N-R68W		

## WELLPATH DATA (132 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5728.00	15.180	143.870	5549.42	-578.67	-972.92	935.60	40°14'22.522"N	105°01'05.372"W	1.19	
5820.00	15.170	145.490	5638.22	-585.64	-992.56	949.52	40°14'22.327"N	105°01'05.192"W	0.46	
5911.00	15.600	142.050	5725.96	-593.00	-1012.03	963.80	40°14'22.135"N	105°01'05.008"W	1.11	
6002.00	15.570	138.820	5813.61	-601.78	-1030.87	979.36	40°14'21.949"N	105°01'04.807"W	0.95	
6094.00	15.390	137.190	5902.28	-611.57	-1049.12	995.79	40°14'21.769"N	105°01'04.596"W	0.51	
6185.00	15.410	131.580	5990.01	-622.58	-1066.00	1013.04	40°14'21.602"N	105°01'04.373"W	1.64	
6275.00	15.390	131.120	6076.78	-634.58	-1081.79	1030.98	40°14'21.446"N	105°01'04.142"W	0.14	
6368.00	15.450	136.700	6166.44	-646.02	-1098.92	1048.77	40°14'21.276"N	105°01'03.912"W	1.60	
6461.00	15.330	135.900	6256.10	-656.53	-1116.76	1065.82	40°14'21.100"N	105°01'03.692"W	0.26	
6553.00	15.420	128.280	6344.82	-668.49	-1133.08	1083.89	40°14'20.939"N	105°01'03.460"W	2.20	
6643.00	15.180	130.110	6431.63	-681.19	-1148.08	1102.29	40°14'20.791"N	105°01'03.222"W	0.60	
6735.00	8.100	152.430	6521.72	-688.50	-1161.61	1114.53	40°14'20.657"N	105°01'03.064"W	8.99	
6826.00	11.210	203.880	6611.58	-683.54	-1175.41	1113.91	40°14'20.520"N	105°01'03.072"W	9.68	
6917.00	14.140	240.230	6700.49	-666.64	-1189.04	1100.66	40°14'20.386"N	105°01'03.243"W	9.15	
7009.00	22.000	255.900	6787.93	-638.38	-1198.84	1074.14	40°14'20.289"N	105°01'03.585"W	9.97	
7100.00	30.660	262.180	6869.43	-598.50	-1206.16	1034.54	40°14'20.217"N	105°01'04.096"W	9.98	
7189.00	39.190	264.380	6942.34	-548.70	-1212.01	983.97	40°14'20.159"N	105°01'04.748"W	9.69	
7281.00	48.480	266.620	7008.63	-486.97	-1216.90	920.52	40°14'20.111"N	105°01'05.566"W	10.24	
7371.00	57.910	267.810	7062.49	-417.69	-1220.35	848.63	40°14'20.076"N	105°01'06.493"W	10.53	
7463.00	70.160	265.210	7102.70	-337.94	-1225.48	766.24	40°14'20.026"N	105°01'07.556"W	13.55	
7555.00	77.870	265.370	7128.01	-252.11	-1232.73	678.16	40°14'19.954"N	105°01'08.691"W	8.38	
7589.00†	81.781	266.990	7134.02	-219.74	-1234.96	644.78	40°14'19.932"N	105°01'09.122"W	12.42	CROSS 460' SETBACK (2137'FSL&460'FEL,SEC.8)
7644.00	88.120	269.550	7138.86	-167.32	-1236.60	590.05	40°14'19.916"N	105°01'09.827"W	12.42	
7732.00	90.550	271.300	7139.88	-84.08	-1235.95	502.07	40°14'19.922"N	105°01'10.962"W	3.40	
7824.00	91.140	272.540	7138.52	2.13	-1232.87	410.13	40°14'19.953"N	105°01'12.147"W	1.49	
7914.00	91.110	271.030	7136.76	86.53	-1230.07	320.20	40°14'19.981"N	105°01'13.307"W	1.68	
8006.00	92.340	271.940	7133.99	172.95	-1227.68	228.27	40°14'20.004"N	105°01'14.493"W	1.66	
8095.00	92.310	271.750	7130.38	256.33	-1224.82	139.39	40°14'20.032"N	105°01'15.639"W	0.22	
8187.00	92.370	271.800	7126.62	342.56	-1221.97	47.51	40°14'20.061"N	105°01'16.823"W	0.08	
8279.00	92.400	271.190	7122.79	428.95	-1219.57	-44.38	40°14'20.084"N	105°01'18.008"W	0.66	

# Actual Wellpath Report

LITZENBERGER 15 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWP
Facility	SEC.08-T03N-R68W		

## WELLPATH DATA (132 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8369.00	91.570	269.840	7119.67	513.98	-1218.77	-134.32	40°14'20.092"N	105°01'19.168"W	1.76	
8459.00	91.630	269.310	7117.16	599.51	-1219.43	-224.28	40°14'20.086"N	105°01'20.328"W	0.59	
8551.00	91.600	268.640	7114.57	687.23	-1221.08	-316.23	40°14'20.069"N	105°01'21.514"W	0.73	
8643.00	91.720	267.210	7111.90	775.44	-1224.41	-408.13	40°14'20.036"N	105°01'22.699"W	1.56	
8735.00	89.720	266.300	7110.75	864.19	-1229.62	-499.96	40°14'19.985"N	105°01'23.883"W	2.39	
8825.00	87.600	267.050	7112.85	951.02	-1234.83	-589.78	40°14'19.933"N	105°01'25.041"W	2.50	
8916.00	84.970	267.430	7118.75	1038.42	-1239.21	-680.48	40°14'19.890"N	105°01'26.211"W	2.92	
9007.00	83.150	269.200	7128.17	1125.06	-1241.87	-770.94	40°14'19.864"N	105°01'27.377"W	2.78	
9098.00	83.300	271.010	7138.90	1210.70	-1241.70	-861.30	40°14'19.865"N	105°01'28.542"W	1.98	
9189.00	83.390	271.630	7149.45	1295.74	-1239.62	-951.67	40°14'19.886"N	105°01'29.707"W	0.68	
9280.00	84.510	272.490	7159.04	1380.47	-1236.37	-1042.10	40°14'19.918"N	105°01'30.874"W	1.55	
9372.00	87.110	273.340	7165.76	1465.88	-1231.70	-1133.72	40°14'19.964"N	105°01'32.055"W	2.97	
9463.00	89.450	273.070	7168.49	1550.39	-1226.62	-1224.54	40°14'20.014"N	105°01'33.226"W	2.59	
9553.00	91.630	272.710	7167.64	1634.18	-1222.08	-1314.41	40°14'20.059"N	105°01'34.385"W	2.46	
9643.00	91.630	269.560	7165.08	1718.91	-1220.30	-1404.35	40°14'20.077"N	105°01'35.545"W	3.50	
9733.00	91.540	269.120	7162.59	1804.55	-1221.33	-1494.30	40°14'20.066"N	105°01'36.705"W	0.50	
9823.00	89.080	267.420	7162.11	1890.72	-1224.05	-1584.25	40°14'20.040"N	105°01'37.864"W	3.32	
9914.00	91.420	267.830	7161.71	1978.13	-1227.82	-1675.17	40°14'20.002"N	105°01'39.037"W	2.61	
10006.00	93.480	268.130	7157.78	2066.27	-1231.06	-1767.02	40°14'19.970"N	105°01'40.221"W	2.26	
10095.00	96.390	269.820	7150.12	2150.84	-1232.65	-1855.66	40°14'19.954"N	105°01'41.364"W	3.78	
10186.00	99.030	270.210	7137.91	2236.34	-1232.63	-1945.83	40°14'19.955"N	105°01'42.527"W	2.93	
10274.00	96.730	267.470	7125.85	2319.54	-1234.40	-2032.97	40°14'19.937"N	105°01'43.650"W	4.04	
10366.00	93.880	265.200	7117.34	2408.08	-1240.26	-2124.37	40°14'19.879"N	105°01'44.829"W	3.95	
10457.00	93.140	266.420	7111.77	2496.09	-1246.89	-2214.96	40°14'19.813"N	105°01'45.997"W	1.57	
10547.00	95.000	268.870	7105.38	2582.32	-1250.58	-2304.64	40°14'19.777"N	105°01'47.154"W	3.41	
10639.00	95.090	271.250	7097.29	2669.19	-1250.49	-2396.28	40°14'19.778"N	105°01'48.335"W	2.58	
10731.00	92.930	270.580	7090.86	2755.75	-1249.02	-2488.04	40°14'19.792"N	105°01'49.518"W	2.46	
10820.00	90.920	269.460	7087.87	2840.09	-1248.99	-2576.98	40°14'19.792"N	105°01'50.665"W	2.58	
10910.00	89.480	270.400	7087.55	2925.47	-1249.10	-2666.98	40°14'19.791"N	105°01'51.826"W	1.91	
11002.00	90.920	272.280	7087.23	3012.00	-1246.95	-2758.94	40°14'19.812"N	105°01'53.012"W	2.57	

# Actual Wellpath Report

LITZENBERGER 15 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (132 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11094.00	90.990	272.640	7085.70	3097.91	-1243.00	-2850.85	40°14'19.851"N	105°01'54.197"W	0.40	
11182.00	92.370	272.660	7083.12	3179.95	-1238.94	-2938.71	40°14'19.891"N	105°01'55.330"W	1.57	
11272.00	91.480	271.000	7080.09	3264.29	-1236.06	-3028.61	40°14'19.919"N	105°01'56.489"W	2.09	
11364.00	91.420	269.080	7077.77	3351.49	-1236.00	-3120.58	40°14'19.920"N	105°01'57.675"W	2.09	
11456.00	92.220	268.170	7074.84	3439.37	-1238.21	-3212.50	40°14'19.898"N	105°01'58.860"W	1.32	
11546.00	92.990	268.470	7070.75	3525.43	-1240.84	-3302.37	40°14'19.872"N	105°02'00.019"W	0.92	
11635.00	92.960	268.840	7066.13	3610.36	-1242.93	-3391.23	40°14'19.851"N	105°02'01.165"W	0.42	
11722.00	92.370	269.390	7062.09	3693.19	-1244.27	-3478.12	40°14'19.838"N	105°02'02.285"W	0.93	
11813.00	92.530	269.970	7058.20	3779.57	-1244.78	-3569.04	40°14'19.833"N	105°02'03.458"W	0.66	
11905.00	89.510	270.540	7056.56	3866.66	-1244.37	-3661.01	40°14'19.837"N	105°02'04.644"W	3.34	
11926.00	89.600	270.610	7056.72	3886.51	-1244.16	-3682.01	40°14'19.839"N	105°02'04.914"W	0.54	BHGE MWD LAST SURVEY (2135'FSL&461'FWL,SEC.8)
11950.00	89.600	270.610	7056.89	3909.19	-1243.90	-3706.01	40°14'19.841"N	105°02'05.224"W	0.00	PROJECTION TO BIT (2135'FSL&467'FWL,SEC.8)

HOLE & CASING SECTIONS - Ref Wellbore: LITZENBERGER 15 AWB      Ref Wellpath: LITZENBERGER 15 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	1552.00	1535.00	17.00	1520.79	0.00	0.00	-177.36	195.99
9.625in Casing Surface	17.00	1542.00	1525.00	17.00	1510.97	0.00	0.00	-176.21	194.46
8.5in Open Hole	1552.00	11950.00	10398.00	1520.79	7056.89	-177.36	195.99	-1243.90	-3706.01

# Actual Wellpath Report

LITZENBERGER 15 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWB
Facility	SEC.08-T03N-R68W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.08-T03N-R68W	-1.00	25.50	-89.33	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon
LITZENBERGER 15 BHL REV-1 (2137'FSL & 460'FWL SEC.8)	7012.90	-1241.99	-3713.16	3129867.61	1330195.55	40°14'19.860"N	105°02'05.316"W	point
LITZENBERGER 15 BHL REV-2 (2137'FSL & 460'FWL SEC.8)	7030.00	-1241.99	-3713.16	3129867.61	1330195.55	40°14'19.860"N	105°02'05.316"W	point
LITZENBERGER 15 EP REV-1 (2137'FSL & 460'FEL SEC.8)	7089.00	-1224.05	644.92	3134225.33	1330237.01	40°14'20.040"N	105°01'09.120"W	point
LITZENBERGER 15 EP REV-2 (2137'FSL & 460'FEL SEC.8)	7127.00	-1224.05	644.92	3134225.33	1330237.01	40°14'20.040"N	105°01'09.120"W	point
SEC.08-T03N-R68W HARDLINES 460' SETBACKS	7315.00	25.50	-89.33	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: LITZENBERGER 15 AWB      Ref Wellpath: LITZENBERGER 15 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	1495.00	Custom BHI NaviTrak (Standard Rotating) (Rockies 0.03Gt model)	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)13.5" <108'-1495'>	LITZENBERGER 15 AWB
1495.00	11926.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI ATC 8 1/2" (SHORT, ROCKIES GT)<1550-11926>	LITZENBERGER 15 AWB
11926.00	11950.00	Blind Drilling (std)	Projection to bit	LITZENBERGER 15 AWB



# Actual Wellpath Report

LITZENBERGER 15 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#10 LITZENBERGER 15 (1953'FNL & 1094'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 15
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 15 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
7589.00	81.781	266.990	7134.02	CROSS 460' SETBACK (2137'FSL&460'FEL,SEC.8)
11926.00	89.600	270.610	7056.72	BHGE MWD LAST SURVEY (2135'FSL&461'FWL,SEC.8)
11950.00	89.600	270.610	7056.89	PROJECTION TO BIT (2135'FSL&467'FWL,SEC.8)