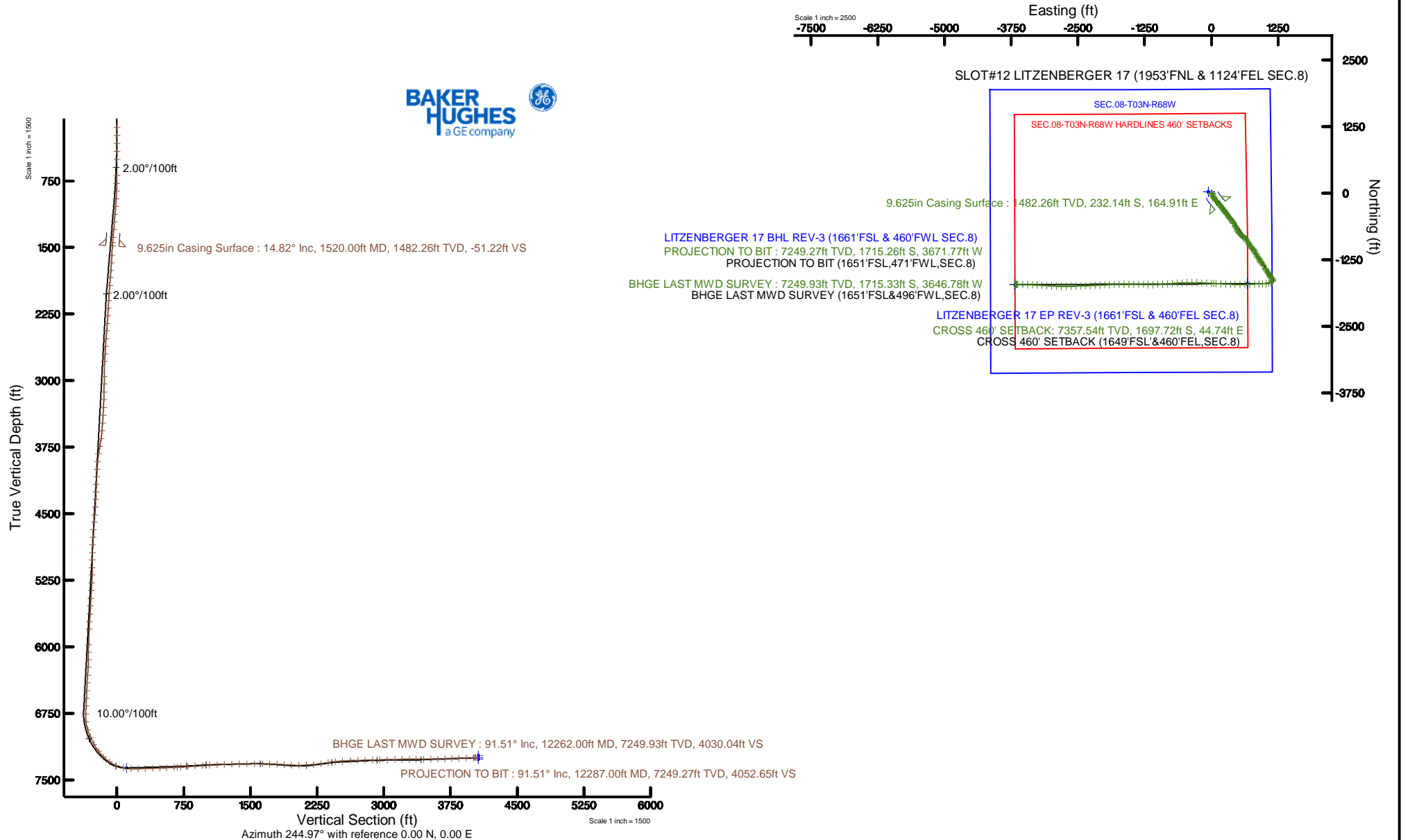


CUB CREEK ENERGY, LLC

Location: COLORADO Slot: SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Field: WELD COUNTY (NAD83, TRUE NORTH) Well: LITZENBERGER 17
Facility: SEC.08-T03N-R68W Wellbore: LITZENBERGER 17 PWB

Plot reference wellbore is LITZENBERGER 17 PWB REV.0				Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US Feet			
True vertical depths are referenced to XTREME 18 (17) (RWB)				North Reference: True north			
Measured depths are referenced to XTREME 18 (17) (RWB)				Scale: True distance			
XTREME 18 (17) (RWB) to Mean Sea Level: 5088 Feet				Depth in Feet			
Mean Sea Level to Mud line (in Slot: SLOTH12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)) 0 Feet				Created by: Insight on 2017-10-16			
Coordinates are in Feet referenced to Slot				Database: Denver			
Location Information							
Facility Name				Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
SEC.08-T03N-R68W				373344.377	1331462.520	40°14'32.1087N	102°10'16.5687W
Slot	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude	
SLOTH12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)	-25.50	58.63	373344.377	1331462.520	40°14'32.1087N	102°10'16.5687W	
XTREME 18 (17) (RWB) to Mud line (in Slot: SLOTH12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8))							03881
Mean Sea Level to Mud line (in Slot: SLOTH12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8))							031
XTREME 18 (17) (RWB) to Mean Sea Level							03881
Survey Program							
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comments		Wellbore	
17.00	1953.00	BH Newtrak	Custom BH Newtrak (Standard Rotating-Arm Cart) (Workline 0.000 model)			LITZENBERGER 17 PWB	
1953.00	12213.00	BH AutoTrack Curve	Custom BH AutoTrack Curve (Short) (Workline 0.000 model)			LITZENBERGER 17 PWB	



Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 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 12:49:33 PM
Convergence at slot	0.31° East	Database/Source file	Denver/LITZENBERGER_17_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	58.63	3133543.14	1331457.34	40°14'32.136"N	105°01'17.832"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#12 LITZENBERGER 17 (1953'FNL & 1124'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	244.97°

Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	120.170	0.00	0.00	0.00	0.00	40°14'32.136"N	105°01'17.832"W	0.00	
17.00	0.000	120.170	17.00	0.00	0.00	0.00	40°14'32.136"N	105°01'17.832"W	0.00	
146.00	1.080	120.170	145.99	-0.69	-0.61	1.05	40°14'32.130"N	105°01'17.818"W	0.84	
238.00	2.020	173.940	237.96	-0.66	-2.66	1.97	40°14'32.110"N	105°01'17.807"W	1.78	
327.00	3.340	154.240	326.86	-0.19	-6.55	3.26	40°14'32.071"N	105°01'17.790"W	1.79	
417.00	5.030	155.860	416.62	-0.16	-12.52	6.02	40°14'32.012"N	105°01'17.754"W	1.88	
506.00	6.640	156.780	505.16	0.06	-20.81	9.64	40°14'31.930"N	105°01'17.708"W	1.81	
689.00	10.770	149.610	686.01	-1.20	-45.29	22.47	40°14'31.688"N	105°01'17.542"W	2.33	
781.00	13.520	152.970	775.95	-2.38	-62.29	31.71	40°14'31.520"N	105°01'17.423"W	3.09	
873.00	15.760	147.550	864.96	-4.37	-82.41	43.30	40°14'31.322"N	105°01'17.274"W	2.85	
964.00	17.550	143.220	952.14	-8.76	-103.83	58.15	40°14'31.110"N	105°01'17.082"W	2.39	
1055.00	19.090	141.530	1038.53	-15.02	-126.47	75.62	40°14'30.886"N	105°01'16.857"W	1.79	
1147.00	19.220	141.060	1125.43	-22.16	-150.03	94.50	40°14'30.653"N	105°01'16.613"W	0.22	
1238.00	18.340	140.330	1211.59	-29.38	-172.70	113.05	40°14'30.429"N	105°01'16.374"W	1.00	
1330.00	17.070	137.860	1299.23	-37.01	-193.86	131.35	40°14'30.220"N	105°01'16.138"W	1.60	
1421.00	15.560	138.590	1386.56	-44.39	-212.92	148.39	40°14'30.032"N	105°01'15.919"W	1.67	
1477.00	14.440	139.190	1440.65	-48.40	-223.83	157.92	40°14'29.924"N	105°01'15.796"W	2.02	
1628.00	15.800	143.950	1586.43	-57.46	-254.71	182.32	40°14'29.619"N	105°01'15.481"W	1.22	
1716.00	17.180	143.180	1670.81	-62.40	-274.80	197.16	40°14'29.420"N	105°01'15.290"W	1.59	
1805.00	18.340	142.740	1755.57	-68.06	-296.47	213.52	40°14'29.206"N	105°01'15.079"W	1.31	
1894.00	18.280	140.620	1840.06	-74.49	-318.40	230.85	40°14'28.990"N	105°01'14.855"W	0.75	
1984.00	18.120	141.090	1925.56	-81.34	-340.20	248.60	40°14'28.774"N	105°01'14.626"W	0.24	
2076.00	18.240	142.730	2012.97	-87.83	-362.79	266.30	40°14'28.551"N	105°01'14.398"W	0.57	
2166.00	18.490	146.160	2098.38	-93.00	-385.85	282.78	40°14'28.323"N	105°01'14.186"W	1.23	
2256.00	18.690	145.470	2183.69	-97.57	-409.59	298.90	40°14'28.088"N	105°01'13.978"W	0.33	
2347.00	18.860	144.200	2269.85	-102.73	-433.53	315.77	40°14'27.852"N	105°01'13.760"W	0.49	
2439.00	18.770	140.790	2356.93	-109.13	-457.06	333.82	40°14'27.619"N	105°01'13.527"W	1.20	
2527.00	18.220	138.840	2440.39	-116.43	-478.38	351.83	40°14'27.409"N	105°01'13.295"W	0.94	
2619.00	18.010	142.570	2527.83	-123.48	-500.51	369.94	40°14'27.190"N	105°01'13.062"W	1.28	
2709.00	18.160	145.180	2613.39	-128.85	-523.07	386.41	40°14'26.967"N	105°01'12.849"W	0.92	

Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2800.00	18.100	145.790	2699.87	-133.52	-546.40	402.45	40°14'26.736"N	105°01'12.642"W	0.22	
2889.00	18.030	147.260	2784.48	-137.58	-569.42	417.67	40°14'26.509"N	105°01'12.446"W	0.52	
3068.00	18.050	152.340	2954.69	-142.57	-617.29	445.53	40°14'26.036"N	105°01'12.087"W	0.88	
3158.00	18.070	152.100	3040.26	-143.91	-641.97	458.53	40°14'25.792"N	105°01'11.919"W	0.09	
3250.00	17.990	150.900	3127.74	-145.63	-667.00	472.12	40°14'25.545"N	105°01'11.744"W	0.41	
3342.00	17.980	149.420	3215.25	-148.02	-691.63	486.25	40°14'25.301"N	105°01'11.562"W	0.50	
3434.00	17.920	147.720	3302.77	-151.18	-715.83	501.04	40°14'25.062"N	105°01'11.371"W	0.57	
3526.00	18.080	143.870	3390.27	-155.72	-739.32	517.01	40°14'24.830"N	105°01'11.165"W	1.30	
3619.00	18.090	142.180	3478.68	-161.69	-762.38	534.38	40°14'24.602"N	105°01'10.941"W	0.56	
3710.00	18.260	138.780	3565.14	-168.80	-784.27	552.43	40°14'24.386"N	105°01'10.708"W	1.18	
3801.00	18.000	128.700	3651.64	-179.00	-803.79	572.81	40°14'24.193"N	105°01'10.446"W	3.45	
3892.00	17.870	123.300	3738.23	-192.56	-820.25	595.45	40°14'24.030"N	105°01'10.154"W	1.83	
3982.00	17.850	124.350	3823.89	-206.83	-835.61	618.38	40°14'23.878"N	105°01'09.858"W	0.36	
4074.00	17.440	136.470	3911.59	-218.40	-853.57	639.52	40°14'23.701"N	105°01'09.585"W	4.01	
4165.00	18.190	144.130	3998.24	-225.40	-874.97	657.24	40°14'23.490"N	105°01'09.357"W	2.70	
4255.00	18.760	148.690	4083.60	-229.62	-898.72	672.99	40°14'23.255"N	105°01'09.154"W	1.73	
4343.00	18.970	149.480	4166.88	-232.54	-923.13	687.61	40°14'23.014"N	105°01'08.965"W	0.38	
4435.00	18.870	148.750	4253.91	-235.59	-948.73	702.92	40°14'22.761"N	105°01'08.768"W	0.28	
4527.00	18.780	147.250	4340.99	-239.19	-973.90	718.65	40°14'22.512"N	105°01'08.565"W	0.54	
4617.00	17.970	144.240	4426.40	-243.72	-997.36	734.60	40°14'22.280"N	105°01'08.359"W	1.39	
4707.00	17.940	142.680	4512.02	-249.26	-1019.64	751.12	40°14'22.060"N	105°01'08.146"W	0.54	
4796.00	18.120	141.840	4596.65	-255.32	-1041.43	767.98	40°14'21.845"N	105°01'07.929"W	0.36	
4883.00	18.030	140.370	4679.35	-261.79	-1062.43	784.93	40°14'21.637"N	105°01'07.711"W	0.53	
4972.00	17.910	144.040	4764.01	-267.86	-1084.12	801.75	40°14'21.423"N	105°01'07.494"W	1.28	
5062.00	18.010	148.120	4849.63	-272.15	-1107.14	817.23	40°14'21.195"N	105°01'07.294"W	1.40	
5154.00	18.050	150.990	4937.12	-274.83	-1131.68	831.65	40°14'20.953"N	105°01'07.108"W	0.97	
5243.00	18.050	153.460	5021.74	-276.16	-1156.07	844.50	40°14'20.712"N	105°01'06.942"W	0.86	
5333.00	18.190	153.550	5107.27	-276.87	-1181.12	856.98	40°14'20.464"N	105°01'06.781"W	0.16	
5421.00	17.970	149.010	5190.93	-278.63	-1205.06	870.09	40°14'20.228"N	105°01'06.612"W	1.62	
5513.00	18.040	144.370	5278.43	-282.72	-1228.81	885.70	40°14'19.993"N	105°01'06.411"W	1.56	

Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5605.00	17.870	143.300	5365.95	-288.20	-1251.70	902.43	40°14'19.767"N	105°01'06.195"W	0.40	
5697.00	17.620	146.650	5453.58	-293.07	-1274.65	918.52	40°14'19.540"N	105°01'05.988"W	1.14	
5788.00	17.850	146.200	5540.25	-297.19	-1297.75	933.85	40°14'19.312"N	105°01'05.790"W	0.29	
5880.00	18.070	143.360	5627.77	-302.22	-1320.91	950.21	40°14'19.083"N	105°01'05.579"W	0.98	
5969.00	17.990	144.510	5712.40	-307.49	-1343.18	966.43	40°14'18.863"N	105°01'05.370"W	0.41	
6061.00	17.790	144.800	5799.95	-312.55	-1366.23	982.78	40°14'18.635"N	105°01'05.159"W	0.24	
6243.00	17.800	152.570	5973.27	-318.63	-1413.65	1011.63	40°14'18.166"N	105°01'04.788"W	1.30	
6333.00	17.650	153.940	6059.00	-319.46	-1438.11	1023.96	40°14'17.924"N	105°01'04.629"W	0.49	
6424.00	18.010	152.010	6145.63	-320.43	-1462.93	1036.62	40°14'17.679"N	105°01'04.465"W	0.76	
6515.00	18.020	143.420	6232.18	-323.98	-1486.66	1051.61	40°14'17.445"N	105°01'04.272"W	2.92	
6607.00	17.960	141.390	6319.68	-330.16	-1509.17	1068.94	40°14'17.222"N	105°01'04.048"W	0.68	
6699.00	17.950	146.780	6407.21	-335.51	-1532.12	1085.56	40°14'16.996"N	105°01'03.834"W	1.81	
6791.00	18.080	147.270	6494.70	-339.45	-1555.98	1101.05	40°14'16.760"N	105°01'03.635"W	0.22	
6880.00	17.140	145.300	6579.53	-343.50	-1578.38	1115.98	40°14'16.538"N	105°01'03.442"W	1.25	
6972.00	17.960	147.010	6667.25	-347.75	-1601.43	1131.42	40°14'16.311"N	105°01'03.243"W	1.05	
7064.00	12.370	146.970	6756.01	-351.09	-1621.60	1144.53	40°14'16.111"N	105°01'03.074"W	6.08	
7156.00	13.840	185.290	6845.77	-346.90	-1640.86	1148.89	40°14'15.921"N	105°01'03.018"W	9.40	
7248.00	17.830	219.820	6934.46	-328.54	-1662.69	1138.83	40°14'15.705"N	105°01'03.147"W	10.92	
7339.00	23.480	242.780	7019.71	-297.74	-1681.73	1113.73	40°14'15.517"N	105°01'03.471"W	10.74	
7429.00	30.080	259.910	7100.13	-257.93	-1693.91	1075.48	40°14'15.397"N	105°01'03.964"W	11.22	
7521.00	39.050	263.800	7175.83	-208.12	-1701.10	1023.86	40°14'15.326"N	105°01'04.630"W	10.04	
7613.00	48.010	271.480	7242.51	-149.93	-1703.35	960.70	40°14'15.303"N	105°01'05.444"W	11.30	
7703.00	57.070	270.180	7297.19	-85.69	-1702.36	889.34	40°14'15.313"N	105°01'06.364"W	10.13	
7795.00	68.720	266.230	7339.05	-10.53	-1705.07	807.65	40°14'15.287"N	105°01'07.418"W	13.22	
7887.00	79.850	266.300	7363.93	71.86	-1710.83	719.42	40°14'15.230"N	105°01'08.555"W	12.10	
7979.00	88.370	268.930	7373.36	156.23	-1714.62	628.08	40°14'15.192"N	105°01'09.733"W	9.69	
8068.00	91.450	270.050	7373.50	237.19	-1715.41	539.09	40°14'15.184"N	105°01'10.881"W	3.68	
8160.00	91.660	270.810	7371.00	320.23	-1714.72	447.13	40°14'15.191"N	105°01'12.067"W	0.86	
8250.00	91.720	272.000	7368.35	400.78	-1712.51	357.20	40°14'15.213"N	105°01'13.226"W	1.32	
8340.00	91.630	272.900	7365.72	480.60	-1708.67	267.32	40°14'15.251"N	105°01'14.385"W	1.00	

Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8430.00	92.030	273.180	7362.84	559.97	-1703.90	177.49	40°14'15.298"N	105°01'15.543"W	0.54	
8521.00	92.340	272.290	7359.37	640.44	-1699.56	86.66	40°14'15.341"N	105°01'16.715"W	1.03	
8563.00†	92.679	272.729	7357.54	677.65	-1697.72	44.74	40°14'15.359"N	105°01'17.255"W	1.32	CROSS 460' SETBACK (1649'FSL'&460'FEL, SEC.8)
8609.00	93.050	273.210	7355.24	718.21	-1695.34	-1.14	40°14'15.383"N	105°01'17.847"W	1.32	
8701.00	93.420	273.360	7350.05	799.08	-1690.08	-92.84	40°14'15.435"N	105°01'19.029"W	0.43	
8791.00	93.360	272.170	7344.72	878.56	-1685.75	-182.58	40°14'15.478"N	105°01'20.186"W	1.32	
8883.00	93.360	270.560	7339.33	960.82	-1683.56	-274.39	40°14'15.499"N	105°01'21.370"W	1.75	
8972.00	93.360	270.070	7334.11	1041.12	-1683.07	-363.23	40°14'15.504"N	105°01'22.516"W	0.55	
9064.00	92.920	269.320	7329.08	1124.56	-1683.56	-455.09	40°14'15.499"N	105°01'23.700"W	0.94	
9156.00	91.910	267.740	7325.20	1208.82	-1685.92	-546.98	40°14'15.476"N	105°01'24.885"W	2.04	
9246.00	91.420	265.840	7322.58	1292.33	-1690.95	-636.79	40°14'15.426"N	105°01'26.043"W	2.18	
9336.00	91.140	265.760	7320.57	1376.43	-1697.54	-726.53	40°14'15.361"N	105°01'27.200"W	0.32	
9428.00	91.260	266.040	7318.65	1462.35	-1704.12	-818.27	40°14'15.296"N	105°01'28.383"W	0.33	
9520.00	90.220	266.080	7317.46	1548.18	-1710.44	-910.05	40°14'15.233"N	105°01'29.567"W	1.13	
9612.00	88.770	267.010	7318.27	1633.73	-1715.98	-1001.87	40°14'15.179"N	105°01'30.751"W	1.87	
9702.00	88.770	269.950	7320.20	1716.23	-1718.37	-1091.81	40°14'15.155"N	105°01'31.910"W	3.27	
9794.00	87.100	271.580	7323.52	1799.01	-1717.14	-1183.74	40°14'15.167"N	105°01'33.096"W	2.54	
9884.00	87.140	271.830	7328.04	1879.29	-1714.47	-1273.58	40°14'15.193"N	105°01'34.254"W	0.28	
9975.00	87.660	270.480	7332.17	1960.86	-1712.64	-1364.47	40°14'15.211"N	105°01'35.426"W	1.59	
10067.00	89.820	269.430	7334.19	2044.23	-1712.71	-1456.44	40°14'15.211"N	105°01'36.612"W	2.61	
10159.00	92.560	269.380	7332.28	2127.97	-1713.67	-1548.41	40°14'15.201"N	105°01'37.798"W	2.98	
10250.00	94.990	269.020	7326.29	2210.77	-1714.93	-1639.19	40°14'15.189"N	105°01'38.968"W	2.70	
10341.00	97.560	269.920	7316.34	2293.07	-1715.77	-1729.63	40°14'15.180"N	105°01'40.135"W	2.99	
10431.00	97.220	268.780	7304.77	2374.37	-1716.78	-1818.88	40°14'15.170"N	105°01'41.285"W	1.31	
10521.00	95.920	268.230	7294.47	2456.34	-1719.12	-1908.26	40°14'15.147"N	105°01'42.438"W	1.57	
10609.00	93.730	266.800	7287.07	2537.32	-1722.92	-1995.85	40°14'15.109"N	105°01'43.567"W	2.97	
10701.00	91.940	266.810	7282.52	2622.62	-1728.04	-2087.59	40°14'15.059"N	105°01'44.750"W	1.95	
10793.00	91.420	267.440	7279.82	2707.79	-1732.65	-2179.44	40°14'15.013"N	105°01'45.935"W	0.89	
10883.00	91.420	266.890	7277.59	2791.10	-1737.10	-2269.30	40°14'14.969"N	105°01'47.093"W	0.61	
10973.00	91.510	267.760	7275.29	2874.31	-1741.30	-2359.17	40°14'14.927"N	105°01'48.252"W	0.97	

Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 AWP
Facility	SEC.08-T03N-R68W		

WELLPATH DATA (136 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11062.00	91.350	268.530	7273.07	2956.10	-1744.18	-2448.10	40°14'14.899"N	105°01'49.399"W	0.88	
11151.00	91.510	268.410	7270.85	3037.70	-1746.56	-2537.04	40°14'14.875"N	105°01'50.546"W	0.22	
11243.00	90.830	268.420	7268.97	3122.09	-1749.10	-2628.98	40°14'14.850"N	105°01'51.731"W	0.74	
11335.00	90.680	269.260	7267.76	3206.21	-1750.97	-2720.96	40°14'14.832"N	105°01'52.917"W	0.93	
11425.00	90.180	271.440	7267.08	3287.52	-1750.42	-2810.95	40°14'14.837"N	105°01'54.077"W	2.49	
11513.00	90.120	272.470	7266.85	3365.94	-1747.41	-2898.89	40°14'14.867"N	105°01'55.212"W	1.17	
11606.00	90.430	272.970	7266.40	3448.25	-1743.00	-2991.79	40°14'14.910"N	105°01'56.409"W	0.63	
11698.00	91.020	273.760	7265.24	3529.17	-1737.60	-3083.62	40°14'14.963"N	105°01'57.593"W	1.07	
11790.00	91.600	274.320	7263.14	3609.57	-1731.12	-3175.37	40°14'15.027"N	105°01'58.777"W	0.88	
11879.00	91.630	273.600	7260.63	3687.39	-1724.98	-3264.12	40°14'15.088"N	105°01'59.921"W	0.81	
11967.00	91.630	272.420	7258.12	3765.03	-1720.36	-3351.96	40°14'15.133"N	105°02'01.054"W	1.34	
12056.00	91.630	271.530	7255.59	3844.29	-1717.29	-3440.87	40°14'15.164"N	105°02'02.200"W	1.00	
12147.00	91.540	270.440	7253.08	3926.04	-1715.73	-3531.82	40°14'15.179"N	105°02'03.373"W	1.20	
12237.00	91.600	270.010	7250.61	4007.41	-1715.37	-3621.78	40°14'15.182"N	105°02'04.533"W	0.48	
12262.00	91.510	270.180	7249.93	4030.04	-1715.33	-3646.78	40°14'15.183"N	105°02'04.855"W	0.77	BHGE LAST MWD SURVEY (1651'FSL&496'FWL,SEC.8)
12287.00	91.510	270.180	7249.27	4052.65	-1715.26	-3671.77	40°14'15.183"N	105°02'05.177"W	0.00	PROJECTION TO BIT (1651'FSL,471'FWL,SEC.8)

HOLE & CASING SECTIONS - Ref Wellbore: LITZENBERGER 17 AWP Ref Wellpath: LITZENBERGER 17 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	1530.00	1513.00	17.00	1491.93	0.00	0.00	-234.13	166.53
9.625in Casing Surface	17.00	1520.00	1503.00	17.00	1482.26	0.00	0.00	-232.14	164.91
8.5in Open Hole	1530.00	12287.00	10757.00	1491.93	7249.27	-234.13	166.53	-1715.26	-3671.77

Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 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	-58.63	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon
LITZENBERGER 17 BHL REV-1 (1661'FSL & 460'FWL SEC.8)	7222.90	-1719.23	-3682.52	3129870.11	1329718.34	40°14'15.144"N	105°02'05.316"W	point
LITZENBERGER 17 BHL REV-3 (1661'FSL & 460'FWL SEC.8)	7250.00	-1719.23	-3682.52	3129870.11	1329718.34	40°14'15.144"N	105°02'05.316"W	point
LITZENBERGER 17 BHL REV-2 (1661'FSL & 460'FWL SEC.8)	7265.90	-1719.23	-3682.52	3129870.11	1329718.34	40°14'15.144"N	105°02'05.316"W	point
LITZENBERGER 17 EP REV-1 (1661'FSL & 460'FEL SEC.8)	7299.00	-1701.28	675.64	3134227.91	1329759.80	40°14'15.324"N	105°01'09.120"W	point
SEC.08-T03N-R68W HARDLINES 460' SETBACKS	7315.00	25.50	-58.63	3133484.38	1331482.52	40°14'32.388"N	105°01'18.588"W	polygon
LITZENBERGER 17 EP REV-2 (1661'FSL & 460'FEL SEC.8)	7342.00	-1701.28	675.64	3134227.91	1329759.80	40°14'15.324"N	105°01'09.120"W	point
LITZENBERGER 17 EP REV-3 (1661'FSL & 460'FEL SEC.8)	7364.00	-1701.28	675.64	3134227.91	1329759.80	40°14'15.324"N	105°01'09.120"W	point

WELLPATH COMPOSITION - Ref Wellbore: LITZENBERGER 17 AWB					Ref Wellpath: LITZENBERGER 17 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
17.00	1477.00	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)	BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model) 13.5"<146'-1477">		LITZENBERGER 17 AWB	
1477.00	12262.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI ATC 8.5" (SHORT, ROCKIES GT)<1628-12262>		LITZENBERGER 17 AWB	
12262.00	12287.00	Blind Drilling (std)	Projection to bit		LITZENBERGER 17 AWB	

Actual Wellpath Report

LITZENBERGER 17 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CUB CREEK ENERGY, LLC	Slot	SLOT#12 LITZENBERGER 17 (1953'FNL & 1124'FEL SEC.8)
Area	COLORADO	Well	LITZENBERGER 17
Field	WELD COUNTY (NAD83, TRUE NORTH)	Wellbore	LITZENBERGER 17 AWB
Facility	SEC.08-T03N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
8563.00	92.679	272.729	7357.54	CROSS 460' SETBACK (1649'FSL&460'FEL,SEC.8)
12262.00	91.510	270.180	7249.93	BHGE LAST MWD SURVEY (1651'FSL&496'FWL,SEC.8)
12287.00	91.510	270.180	7249.27	PROJECTION TO BIT (1651'FSL,471'FWL,SEC.8)