Cub Creek Energy, LLC

Location	Weld County, CO	Slot	KNIGHT 20
Field	WATTENBERG	Well	W KNIGHT 20
Installation	Knight Pad	Wellbore	W KNIGHT 20 (PWB)

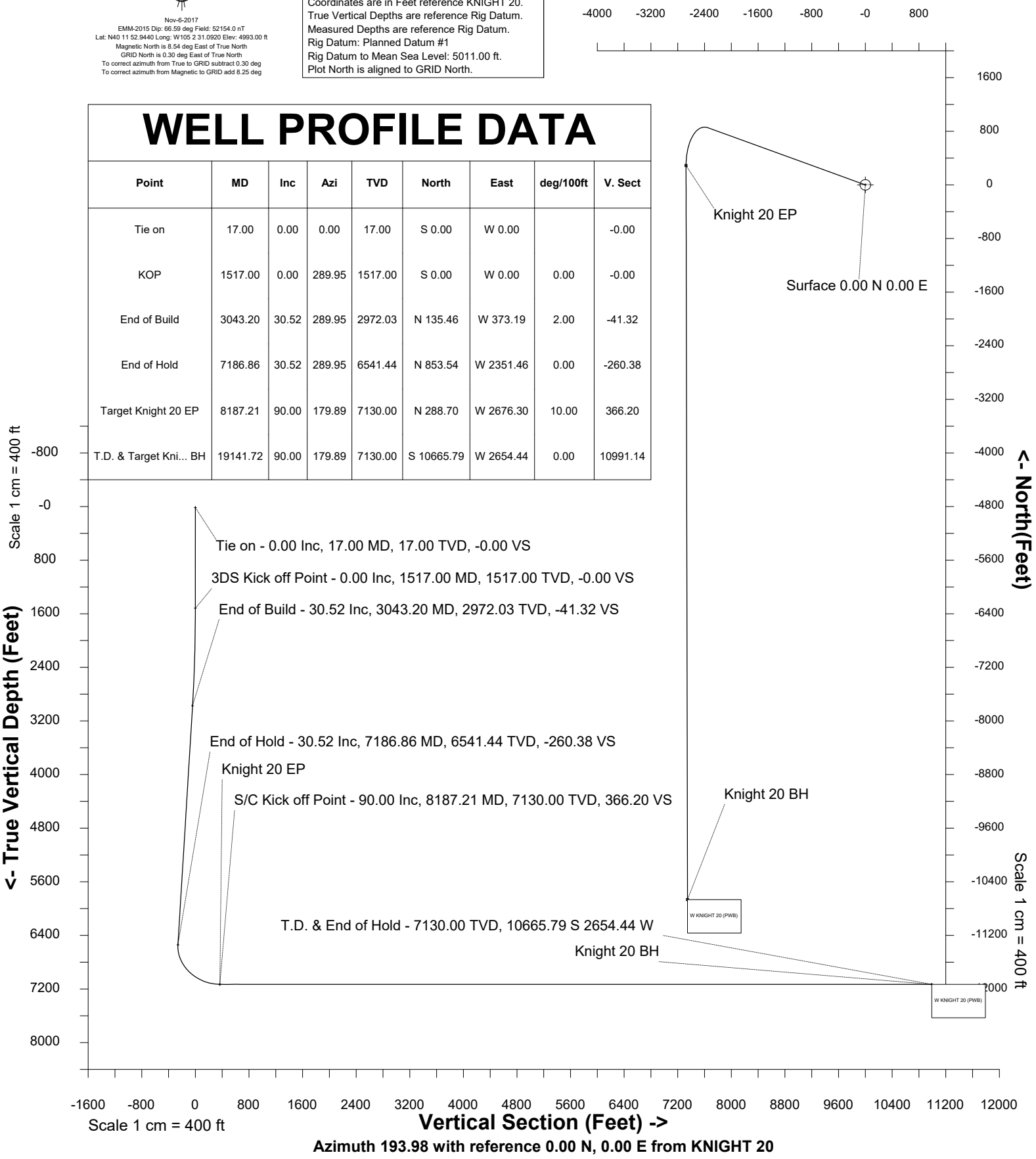
N
GRID
T M
W E

Nov-6-2017
EMM-2015 Dip: 66.59 deg Field: 52154.0 nT
Lat: N40 11 52.9440 Long: W105 2 31.0920 Elev: 4993.00 ft
Magnetic North is 8.54 deg East of True North
GRID North is 0.30 deg East of True North
To correct azimuth from True to GRID subtract 0.30 deg
To correct azimuth from Magnetic to GRID add 8.25 deg

Created by sean.dolfinger
Date plotted 14-Jul-2020
Plot reference is W KNIGHT 20 (PWB).
Ref wellpath is W KNIGHT 20 (PWP#1).
Coordinates are in Feet reference KNIGHT 20.
True Vertical Depths are reference Rig Datum.
Measured Depths are reference Rig Datum.
Rig Datum: Planned Datum #1
Rig Datum to Mean Sea Level: 5011.00 ft.
Plot North is aligned to GRID North.

WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	17.00	0.00	0.00	17.00	S 0.00	W 0.00		-0.00
KOP	1517.00	0.00	289.95	1517.00	S 0.00	W 0.00	0.00	-0.00
End of Build	3043.20	30.52	289.95	2972.03	N 135.46	W 373.19	2.00	-41.32
End of Hold	7186.86	30.52	289.95	6541.44	N 853.54	W 2351.46	0.00	-260.38
Target Knight 20 EP	8187.21	90.00	179.89	7130.00	N 288.70	W 2676.30	10.00	366.20
T.D. & Target Kni... BH	19141.72	90.00	179.89	7130.00	S 10665.79	W 2654.44	0.00	10991.14



SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 20 (PWB)

Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
KNIGHT 20	40.19796000	-105.04205500	1315289.6373	3127921.9559	29.27S	23.59W	0.00

Declination

Date	Source	Time
Nov-6-2017	EMM-2015	14:52

Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Knight Pad	40.19804000	-105.04197000	1315318.9022	3127945.5490	NAD83 Based Colorado State Planes, Northern Zone, US Feet	Grid

Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	Vertical Depth SS	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
17.00	0.00	0.00	17.00	-4994.00	0.00N	0.00E		0.00
1517.00	0.00	289.95	1517.00	-3494.00	0.00N	0.00E	==>	0.00
3043.20	30.52	289.95	2972.03	-2038.97	135.46N	373.19W	2.00	-41.32
7186.86	30.52	289.95	6541.44	1530.44	853.54N	2351.46W	==>	-260.38
8187.21	90.00	179.89	7130.00	2119.00	288.70N	2676.30W	10.00	366.20
19141.72	90.00	179.89	7130.00	2119.00	10665.79S	2654.44W	==>	10991.14

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
0.00	0.00	0.00	0.00	0.00N	0.00E		0.00	40.19796000	-105.04205500
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1517.00	0.00	289.95	1517.00	0.00N	0.00E	==>	0.00	40.19796000	-105.04205500
1617.00	2.00	289.95	1616.98	0.60N	1.64W	2.00	-0.18	40.19796166	-105.04206086
1717.00	4.00	289.95	1716.84	2.38N	6.56W	2.00	-0.73	40.19796663	-105.04207844
1817.00	6.00	289.95	1816.45	5.35N	14.75W	2.00	-1.63	40.19797491	-105.04210771
1917.00	8.00	289.95	1915.70	9.51N	26.21W	2.00	-2.90	40.19798648	-105.04214864
2017.00	10.00	289.95	2014.47	14.85N	40.91W	2.00	-4.53	40.19800134	-105.04220117
2117.00	12.00	289.95	2112.62	21.36N	58.85W	2.00	-6.52	40.19801947	-105.04226525
2217.00	14.00	289.95	2210.06	29.03N	79.99W	2.00	-8.86	40.19804083	-105.04234080
2317.00	16.00	289.95	2306.64	37.87N	104.32W	2.00	-11.55	40.19806542	-105.04242772
2417.00	18.00	289.95	2402.27	47.84N	131.80W	2.00	-14.59	40.19809319	-105.04252591
2517.00	20.00	289.95	2496.82	58.95N	162.40W	2.00	-17.98	40.19812411	-105.04263525
2617.00	22.00	289.95	2590.17	71.18N	196.08W	2.00	-21.71	40.19815815	-105.04275560
2717.00	24.00	289.95	2682.21	84.51N	232.81W	2.00	-25.78	40.19819526	-105.04288682
2817.00	26.00	289.95	2772.84	98.93N	272.54W	2.00	-30.18	40.19823540	-105.04302876
2917.00	28.00	289.95	2861.94	114.41N	315.21W	2.00	-34.90	40.19827853	-105.04318122

All data is in Feet unless otherwise stated
Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5011.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 193.98 degrees
Bottom hole distance is 10991.14 Feet on azimuth 193.98 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 20 (PWB)

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
3017.00	30.00	289.95	2949.39	130.96N	360.78W	2.00	-39.95	40.19832457	-105.04334404
3043.20	30.52	289.95	2972.03	135.46N	373.19W	2.00	-41.32	40.19833712	-105.04338840
3117.00	30.52	289.95	3035.60	148.25N	408.42W	==>	-45.22	40.19837272	-105.04351428
3217.00	30.52	289.95	3121.74	165.58N	456.16W	==>	-50.51	40.19842096	-105.04368486
3317.00	30.52	289.95	3207.88	182.91N	503.91W	==>	-55.80	40.19846921	-105.04385544
3417.00	30.52	289.95	3294.02	200.24N	551.65W	==>	-61.08	40.19851745	-105.04402603
3517.00	30.52	289.95	3380.16	217.57N	599.39W	==>	-66.37	40.19856569	-105.04419661
3617.00	30.52	289.95	3466.30	234.90N	647.13W	==>	-71.66	40.19861393	-105.04436719
3717.00	30.52	289.95	3552.45	252.23N	694.88W	==>	-76.94	40.19866218	-105.04453778
3817.00	30.52	289.95	3638.59	269.56N	742.62W	==>	-82.23	40.19871042	-105.04470836
3917.00	30.52	289.95	3724.73	286.89N	790.36W	==>	-87.52	40.19875866	-105.04487894
4017.00	30.52	289.95	3810.87	304.22N	838.10W	==>	-92.80	40.19880690	-105.04504953
4117.00	30.52	289.95	3897.01	321.54N	885.84W	==>	-98.09	40.19885514	-105.04522011
4217.00	30.52	289.95	3983.15	338.87N	933.59W	==>	-103.38	40.19890338	-105.04539070
4317.00	30.52	289.95	4069.30	356.20N	981.33W	==>	-108.66	40.19895162	-105.04556128
4417.00	30.52	289.95	4155.44	373.53N	1029.07W	==>	-113.95	40.19899986	-105.04573187
4517.00	30.52	289.95	4241.58	390.86N	1076.81W	==>	-119.23	40.19904810	-105.04590245
4617.00	30.52	289.95	4327.72	408.19N	1124.55W	==>	-124.52	40.19909634	-105.04607304
4717.00	30.52	289.95	4413.86	425.52N	1172.30W	==>	-129.81	40.19914458	-105.04624362
4817.00	30.52	289.95	4500.00	442.85N	1220.04W	==>	-135.09	40.19919282	-105.04641421
4917.00	30.52	289.95	4586.14	460.18N	1267.78W	==>	-140.38	40.19924106	-105.04658480
5017.00	30.52	289.95	4672.29	477.51N	1315.52W	==>	-145.67	40.19928930	-105.04675538
5117.00	30.52	289.95	4758.43	494.84N	1363.27W	==>	-150.95	40.19933754	-105.04692597
5217.00	30.52	289.95	4844.57	512.17N	1411.01W	==>	-156.24	40.19938578	-105.04709656
5317.00	30.52	289.95	4930.71	529.50N	1458.75W	==>	-161.53	40.19943401	-105.04726715
5417.00	30.52	289.95	5016.85	546.83N	1506.49W	==>	-166.81	40.19948225	-105.04743773
5517.00	30.52	289.95	5102.99	564.16N	1554.23W	==>	-172.10	40.19953049	-105.04760832
5617.00	30.52	289.95	5189.14	581.49N	1601.98W	==>	-177.39	40.19957873	-105.04777891
5717.00	30.52	289.95	5275.28	598.82N	1649.72W	==>	-182.67	40.19962696	-105.04794950
5817.00	30.52	289.95	5361.42	616.15N	1697.46W	==>	-187.96	40.19967520	-105.04812009
5917.00	30.52	289.95	5447.56	633.48N	1745.20W	==>	-193.24	40.19972344	-105.04829068
6017.00	30.52	289.95	5533.70	650.81N	1792.95W	==>	-198.53	40.19977167	-105.04846126
6117.00	30.52	289.95	5619.84	668.14N	1840.69W	==>	-203.82	40.19981991	-105.04863185
6217.00	30.52	289.95	5705.99	685.46N	1888.43W	==>	-209.10	40.19986815	-105.04880244
6317.00	30.52	289.95	5792.13	702.79N	1936.17W	==>	-214.39	40.19991638	-105.04897303
6417.00	30.52	289.95	5878.27	720.12N	1983.91W	==>	-219.68	40.19996462	-105.04914362
6517.00	30.52	289.95	5964.41	737.45N	2031.66W	==>	-224.96	40.20001285	-105.04931421
6617.00	30.52	289.95	6050.55	754.78N	2079.40W	==>	-230.25	40.20006109	-105.04948480
6717.00	30.52	289.95	6136.69	772.11N	2127.14W	==>	-235.54	40.20010932	-105.04965540
6817.00	30.52	289.95	6222.83	789.44N	2174.88W	==>	-240.82	40.20015755	-105.04982599
6917.00	30.52	289.95	6308.98	806.77N	2222.63W	==>	-246.11	40.20020579	-105.04999658
7017.00	30.52	289.95	6395.12	824.10N	2270.37W	==>	-251.40	40.20025402	-105.05016717
7117.00	30.52	289.95	6481.26	841.43N	2318.11W	==>	-256.68	40.20030226	-105.05033776
7186.86	30.52	289.95	6541.44	853.54N	2351.46W	==>	-260.38	40.20033595	-105.05045694
7217.00	29.75	284.15	6567.51	857.98N	2365.91W	10.00	-261.19	40.20034834	-105.05050858
7317.00	29.12	263.76	6654.82	861.40N	2414.27W	10.00	-252.84	40.20035842	-105.05068165
7417.00	31.52	244.44	6741.35	847.44N	2462.17W	10.00	-227.73	40.20032077	-105.05085334
7517.00	36.35	228.69	6824.45	816.53N	2508.13W	10.00	-186.62	40.20023654	-105.05101844
7617.00	42.79	216.63	6901.61	769.58N	2550.77W	10.00	-130.77	40.20010828	-105.05117192
7717.00	50.21	207.36	6970.47	708.05N	2588.78W	10.00	-61.88	40.19993990	-105.05130913
7817.00	58.22	199.96	7028.96	633.79N	2621.03W	10.00	17.97	40.19973650	-105.05142590
7917.00	66.58	193.76	7075.29	549.06N	2646.51W	10.00	106.35	40.19950428	-105.05151867
8017.00	75.16	188.32	7108.04	456.44N	2664.47W	10.00	200.56	40.19925028	-105.05158463
8117.00	83.86	183.30	7126.24	358.74N	2674.36W	10.00	297.76	40.19898223	-105.05162178
8187.21	90.00	179.89	7130.00	288.70N	2676.30W	10.00	366.20	40.19879000	-105.05163000
8217.00	90.00	179.89	7130.00	258.91N	2676.24W	==>	395.09	40.19870823	-105.05163033
8317.00	90.00	179.89	7130.00	158.91N	2676.04W	==>	492.08	40.19843373	-105.05163142
8417.00	90.00	179.89	7130.00	58.91N	2675.84W	==>	589.07	40.19815924	-105.05163252

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Vertical Section is from 0.00N 0.00E on azimuth 193.98 degrees
Bottom hole distance is 10991.14 Feet on azimuth 193.98 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 20 (PWB)

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
8517.00	90.00	179.89	7130.00	41.09S	2675.64W	==>	686.06	40.19788474	-105.05163361
8617.00	90.00	179.89	7130.00	141.09S	2675.44W	==>	783.05	40.19761024	-105.05163471
8717.00	90.00	179.89	7130.00	241.09S	2675.24W	==>	880.05	40.19733574	-105.05163581
8817.00	90.00	179.89	7130.00	341.09S	2675.04W	==>	977.04	40.19706124	-105.05163690
8917.00	90.00	179.89	7130.00	441.09S	2674.84W	==>	1074.03	40.19678674	-105.05163800
9017.00	90.00	179.89	7130.00	541.09S	2674.64W	==>	1171.02	40.19651225	-105.05163909
9117.00	90.00	179.89	7130.00	641.09S	2674.44W	==>	1268.01	40.19623775	-105.05164019
9217.00	90.00	179.89	7130.00	741.09S	2674.24W	==>	1365.00	40.19596325	-105.05164129
9317.00	90.00	179.89	7130.00	841.09S	2674.04W	==>	1462.00	40.19568875	-105.05164238
9417.00	90.00	179.89	7130.00	941.09S	2673.84W	==>	1558.99	40.19541425	-105.05164348
9517.00	90.00	179.89	7130.00	1041.09S	2673.64W	==>	1655.98	40.19513975	-105.05164457
9617.00	90.00	179.89	7130.00	1141.09S	2673.45W	==>	1752.97	40.19486526	-105.05164567
9717.00	90.00	179.89	7130.00	1241.09S	2673.25W	==>	1849.96	40.19459076	-105.05164676
9817.00	90.00	179.89	7130.00	1341.09S	2673.05W	==>	1946.95	40.19431626	-105.05164786
9917.00	90.00	179.89	7130.00	1441.09S	2672.85W	==>	2043.94	40.19404176	-105.05164896
10017.00	90.00	179.89	7130.00	1541.09S	2672.65W	==>	2140.94	40.19376726	-105.05165005
10117.00	90.00	179.89	7130.00	1641.09S	2672.45W	==>	2237.93	40.19349276	-105.05165115
10217.00	90.00	179.89	7130.00	1741.09S	2672.25W	==>	2334.92	40.19321826	-105.05165224
10317.00	90.00	179.89	7130.00	1841.09S	2672.05W	==>	2431.91	40.19294377	-105.05165334
10417.00	90.00	179.89	7130.00	1941.09S	2671.85W	==>	2528.90	40.19266927	-105.05165443
10517.00	90.00	179.89	7130.00	2041.09S	2671.65W	==>	2625.89	40.19239477	-105.05165553
10617.00	90.00	179.89	7130.00	2141.09S	2671.45W	==>	2722.89	40.19212027	-105.05165663
10717.00	90.00	179.89	7130.00	2241.09S	2671.25W	==>	2819.88	40.19184577	-105.05165772
10817.00	90.00	179.89	7130.00	2341.09S	2671.05W	==>	2916.87	40.19157127	-105.05165882
10917.00	90.00	179.89	7130.00	2441.09S	2670.85W	==>	3013.86	40.19129678	-105.05165991
11017.00	90.00	179.89	7130.00	2541.09S	2670.65W	==>	3110.85	40.19102228	-105.05166101
11117.00	90.00	179.89	7130.00	2641.09S	2670.45W	==>	3207.84	40.19074778	-105.05166210
11217.00	90.00	179.89	7130.00	2741.09S	2670.25W	==>	3304.83	40.19047328	-105.05166320
11317.00	90.00	179.89	7130.00	2841.09S	2670.05W	==>	3401.83	40.19019878	-105.05166430
11417.00	90.00	179.89	7130.00	2941.09S	2669.85W	==>	3498.82	40.18992428	-105.05166539
11517.00	90.00	179.89	7130.00	3041.09S	2669.66W	==>	3595.81	40.18964978	-105.05166649
11617.00	90.00	179.89	7130.00	3141.09S	2669.46W	==>	3692.80	40.18937529	-105.05166758
11717.00	90.00	179.89	7130.00	3241.09S	2669.26W	==>	3789.79	40.18910079	-105.05166868
11817.00	90.00	179.89	7130.00	3341.09S	2669.06W	==>	3886.78	40.18882629	-105.05166977
11917.00	90.00	179.89	7130.00	3441.09S	2668.86W	==>	3983.77	40.18855179	-105.05167087
12017.00	90.00	179.89	7130.00	3541.09S	2668.66W	==>	4080.77	40.18827729	-105.05167197
12117.00	90.00	179.89	7130.00	3641.09S	2668.46W	==>	4177.76	40.18800279	-105.05167306
12217.00	90.00	179.89	7130.00	3741.08S	2668.26W	==>	4274.75	40.18772829	-105.05167416
12317.00	90.00	179.89	7130.00	3841.08S	2668.06W	==>	4371.74	40.18745379	-105.05167525
12417.00	90.00	179.89	7130.00	3941.08S	2667.86W	==>	4468.73	40.18717930	-105.05167635
12517.00	90.00	179.89	7130.00	4041.08S	2667.66W	==>	4565.72	40.18690480	-105.05167744
12617.00	90.00	179.89	7130.00	4141.08S	2667.46W	==>	4662.72	40.18663030	-105.05167854
12717.00	90.00	179.89	7130.00	4241.08S	2667.26W	==>	4759.71	40.18635580	-105.05167963
12817.00	90.00	179.89	7130.00	4341.08S	2667.06W	==>	4856.70	40.18608130	-105.05168073
12917.00	90.00	179.89	7130.00	4441.08S	2666.86W	==>	4953.69	40.18580680	-105.05168182
13017.00	90.00	179.89	7130.00	4541.08S	2666.66W	==>	5050.68	40.18553230	-105.05168292
13117.00	90.00	179.89	7130.00	4641.08S	2666.46W	==>	5147.67	40.18525780	-105.05168402
13217.00	90.00	179.89	7130.00	4741.08S	2666.26W	==>	5244.66	40.18498331	-105.05168511
13317.00	90.00	179.89	7130.00	4841.08S	2666.06W	==>	5341.66	40.18470881	-105.05168621
13417.00	90.00	179.89	7130.00	4941.08S	2665.86W	==>	5438.65	40.18443431	-105.05168730
13517.00	90.00	179.89	7130.00	5041.08S	2665.67W	==>	5535.64	40.18415981	-105.05168840
13617.00	90.00	179.89	7130.00	5141.08S	2665.47W	==>	5632.63	40.18388531	-105.05168949
13717.00	90.00	179.89	7130.00	5241.08S	2665.27W	==>	5729.62	40.18361081	-105.05169059
13817.00	90.00	179.89	7130.00	5341.08S	2665.07W	==>	5826.61	40.18333631	-105.05169168
13917.00	90.00	179.89	7130.00	5441.08S	2664.87W	==>	5923.61	40.18306181	-105.05169278
14017.00	90.00	179.89	7130.00	5541.08S	2664.67W	==>	6020.60	40.18278732	-105.05169388
14117.00	90.00	179.89	7130.00	5641.08S	2664.47W	==>	6117.59	40.18251282	-105.05169497
14217.00	90.00	179.89	7130.00	5741.08S	2664.27W	==>	6214.58	40.18223832	-105.05169607
14317.00	90.00	179.89	7130.00	5841.08S	2664.07W	==>	6311.57	40.18196382	-105.05169716

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Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 20 (PWB)

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Station Position (Latitude)	Station Position (Longitude)
14417.00	90.00	179.89	7130.00	5941.08S	2663.87W	==>	6408.56	40.18168932	-105.05169826
14517.00	90.00	179.89	7130.00	6041.08S	2663.67W	==>	6505.55	40.18141482	-105.05169935
14617.00	90.00	179.89	7130.00	6141.08S	2663.47W	==>	6602.55	40.18114032	-105.05170045
14717.00	90.00	179.89	7130.00	6241.08S	2663.27W	==>	6699.54	40.18086582	-105.05170154
14817.00	90.00	179.89	7130.00	6341.08S	2663.07W	==>	6796.53	40.18059132	-105.05170264
14917.00	90.00	179.89	7130.00	6441.08S	2662.87W	==>	6893.52	40.18031682	-105.05170373
15017.00	90.00	179.89	7130.00	6541.08S	2662.67W	==>	6990.51	40.18004233	-105.05170483
15117.00	90.00	179.89	7130.00	6641.08S	2662.47W	==>	7087.50	40.17976783	-105.05170592
15217.00	90.00	179.89	7130.00	6741.08S	2662.27W	==>	7184.50	40.17949333	-105.05170702
15317.00	90.00	179.89	7130.00	6841.08S	2662.07W	==>	7281.49	40.17921883	-105.05170811
15417.00	90.00	179.89	7130.00	6941.08S	2661.88W	==>	7378.48	40.17894433	-105.05170921
15517.00	90.00	179.89	7130.00	7041.08S	2661.68W	==>	7475.47	40.17866983	-105.05171031
15617.00	90.00	179.89	7130.00	7141.08S	2661.48W	==>	7572.46	40.17839533	-105.05171140
15717.00	90.00	179.89	7130.00	7241.08S	2661.28W	==>	7669.45	40.17812083	-105.05171250
15817.00	90.00	179.89	7130.00	7341.08S	2661.08W	==>	7766.44	40.17784633	-105.05171359
15917.00	90.00	179.89	7130.00	7441.08S	2660.88W	==>	7863.44	40.17757183	-105.05171469
16017.00	90.00	179.89	7130.00	7541.08S	2660.68W	==>	7960.43	40.17729733	-105.05171578
16117.00	90.00	179.89	7130.00	7641.08S	2660.48W	==>	8057.42	40.17702284	-105.05171688
16217.00	90.00	179.89	7130.00	7741.08S	2660.28W	==>	8154.41	40.17674834	-105.05171797
16317.00	90.00	179.89	7130.00	7841.08S	2660.08W	==>	8251.40	40.17647384	-105.05171907
16417.00	90.00	179.89	7130.00	7941.08S	2659.88W	==>	8348.39	40.17619934	-105.05172016
16517.00	90.00	179.89	7130.00	8041.08S	2659.68W	==>	8445.38	40.17592484	-105.05172126
16617.00	90.00	179.89	7130.00	8141.08S	2659.48W	==>	8542.38	40.17565034	-105.05172235
16717.00	90.00	179.89	7130.00	8241.08S	2659.28W	==>	8639.37	40.17537584	-105.05172345
16817.00	90.00	179.89	7130.00	8341.08S	2659.08W	==>	8736.36	40.17510134	-105.05172454
16917.00	90.00	179.89	7130.00	8441.08S	2658.88W	==>	8833.35	40.17482684	-105.05172564
17017.00	90.00	179.89	7130.00	8541.08S	2658.68W	==>	8930.34	40.17455234	-105.05172673
17117.00	90.00	179.89	7130.00	8641.08S	2658.48W	==>	9027.33	40.17427784	-105.05172783
17217.00	90.00	179.89	7130.00	8741.07S	2658.28W	==>	9124.33	40.17400334	-105.05172892
17317.00	90.00	179.89	7130.00	8841.07S	2658.08W	==>	9221.32	40.17372885	-105.05173002
17417.00	90.00	179.89	7130.00	8941.07S	2657.89W	==>	9318.31	40.17345435	-105.05173111
17517.00	90.00	179.89	7130.00	9041.07S	2657.69W	==>	9415.30	40.17317985	-105.05173221
17617.00	90.00	179.89	7130.00	9141.07S	2657.49W	==>	9512.29	40.17290535	-105.05173330
17717.00	90.00	179.89	7130.00	9241.07S	2657.29W	==>	9609.28	40.17263085	-105.05173440
17817.00	90.00	179.89	7130.00	9341.07S	2657.09W	==>	9706.27	40.17235635	-105.05173549
17917.00	90.00	179.89	7130.00	9441.07S	2656.89W	==>	9803.27	40.17208185	-105.05173659
18017.00	90.00	179.89	7130.00	9541.07S	2656.69W	==>	9900.26	40.17180735	-105.05173768
18117.00	90.00	179.89	7130.00	9641.07S	2656.49W	==>	9997.25	40.17153285	-105.05173878
18217.00	90.00	179.89	7130.00	9741.07S	2656.29W	==>	10094.24	40.17125835	-105.05173987
18317.00	90.00	179.89	7130.00	9841.07S	2656.09W	==>	10191.23	40.17098385	-105.05174097
18417.00	90.00	179.89	7130.00	9941.07S	2655.89W	==>	10288.22	40.17070935	-105.05174206
18517.00	90.00	179.89	7130.00	10041.07S	2655.69W	==>	10385.22	40.17043485	-105.05174316
18617.00	90.00	179.89	7130.00	10141.07S	2655.49W	==>	10482.21	40.17016035	-105.05174425
18717.00	90.00	179.89	7130.00	10241.07S	2655.29W	==>	10579.20	40.16988585	-105.05174535
18817.00	90.00	179.89	7130.00	10341.07S	2655.09W	==>	10676.19	40.16961135	-105.05174644
18917.00	90.00	179.89	7130.00	10441.07S	2654.89W	==>	10773.18	40.16933686	-105.05174754
19017.00	90.00	179.89	7130.00	10541.07S	2654.69W	==>	10870.17	40.16906236	-105.05174863
19117.00	90.00	179.89	7130.00	10641.07S	2654.49W	==>	10967.16	40.16878786	-105.05174973
19141.72	90.00	179.89	7130.00	10665.79S	2654.44W	==>	10991.14	40.16872000	-105.05175000

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SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 20 (PWB)

Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Knight 20 BH	10665.79S	2654.44W	7130.00	40.16872000	-105.05175000	1304624.32	3125267.63
Knight 20 EP	288.70N	2676.30W	7130.00	40.19879000	-105.05163000	1315578.32	3125245.78

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
590314	Planned	1517.00	1517.00	WdW Rate Gyro	Standard
590313	Planned	19141.72	7130.00	ISCWSA MWD	Rev 4 + SAG + FLT

Notes

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