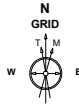


Cub Creek Energy, LLC

Location **Weld County, CO** Slot **KNIGHT 21**
 Field **WATTENBERG** Well **W KNIGHT 21**
 Installation **Knight Pad** Wellbore **W KNIGHT 21 (PWB)**



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 8.29 deg

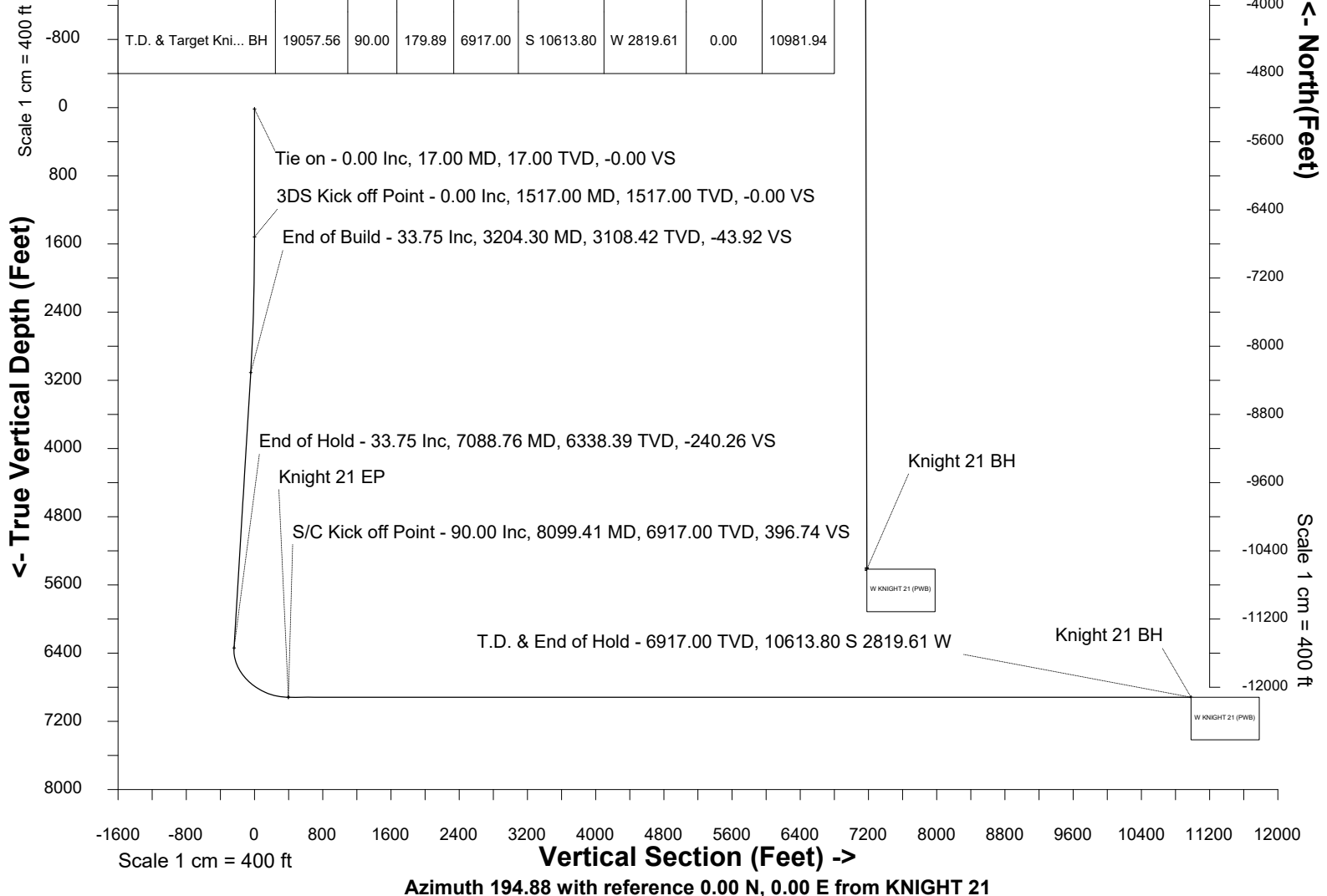
Created by sean.dolfinger
 Date plotted 14-Jul-2020
 Plot reference is W KNIGHT 21 (PWB).
 Ref wellpath is W KNIGHT 21 (PWP#1).
 Coordinates are in Feet reference KNIGHT 21.
 True Vertical Depths are reference Rig Datum.
 Measured Depths are reference Rig Datum.
 Rig Datum: Planned Datum #1
 Rig Datum to Mean Sea Level: 5011.00 ft.
 Plot North is aligned to GRID North.

Scale 1 cm = 400 ft **East (Feet) ->**

-4000 -3200 -2400 -1600 -800 -0 800

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	290.10	1517.00	S 0.00	W 0.00	0.00	-0.00
End of Build	3204.30	33.75	290.10	3108.42	N 165.86	W 453.30	2.00	-43.92
End of Hold	7088.76	33.75	290.10	6338.39	N 907.36	W 2479.77	0.00	-240.26
Target Knight 21 EP	8099.41	90.00	179.89	6917.00	N 344.33	W 2841.40	10.00	396.74
T.D. & Target Kni... BH	19057.56	90.00	179.89	6917.00	S 10613.80	W 2819.61	0.00	10981.94



SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 21 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
KNIGHT 21	40.19779500	-105.04205500	1315229.5314	3127922.2663	89.37S	23.28W	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	290.10	1517.00	-3494.00	0.00N	0.00E	==>	0.00
3204.30	33.75	290.10	3108.42	-1902.58	165.86N	453.30W	2.00	-43.92
7088.76	33.75	290.10	6338.39	1327.39	907.36N	2479.77W	==>	-240.26
8099.41	90.00	179.89	6917.00	1906.00	344.33N	2841.40W	10.00	396.74
19057.56	90.00	179.89	6917.00	1906.00	10613.80S	2819.61W	==>	10981.94

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	40.19779500	-105.04205500
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1517.00	0.00	290.10	1517.00	0.00N	0.00E	==>	0.00	40.19779500	-105.04205500
1617.00	2.00	290.10	1616.98	0.60N	1.64W	2.00	-0.16	40.19779667	-105.04206086
1717.00	4.00	290.10	1716.84	2.40N	6.55W	2.00	-0.63	40.19780168	-105.04207842
1817.00	6.00	290.10	1816.45	5.39N	14.74W	2.00	-1.43	40.19781001	-105.04210766
1917.00	8.00	290.10	1915.70	9.58N	26.18W	2.00	-2.54	40.19782167	-105.04214855
2017.00	10.00	290.10	2014.47	14.96N	40.87W	2.00	-3.96	40.19783663	-105.04220103
2117.00	12.00	290.10	2112.62	21.51N	58.79W	2.00	-5.70	40.19785488	-105.04226505
2217.00	14.00	290.10	2210.06	29.24N	79.91W	2.00	-7.74	40.19787640	-105.04234053
2317.00	16.00	290.10	2306.64	38.13N	104.22W	2.00	-10.10	40.19790115	-105.04242736
2417.00	18.00	290.10	2402.27	48.18N	131.67W	2.00	-12.76	40.19792912	-105.04252546
2517.00	20.00	290.10	2496.82	59.37N	162.25W	2.00	-15.72	40.19796026	-105.04263469
2617.00	22.00	290.10	2590.17	71.68N	195.90W	2.00	-18.98	40.19799454	-105.04275493
2717.00	24.00	290.10	2682.21	85.11N	232.59W	2.00	-22.54	40.19803191	-105.04288603
2817.00	26.00	290.10	2772.84	99.63N	272.28W	2.00	-26.38	40.19807233	-105.04302782
2917.00	28.00	290.10	2861.94	115.23N	314.91W	2.00	-30.51	40.19811575	-105.04318015

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 194.88 degrees
Bottom hole distance is 10981.94 Feet on azimuth 194.88 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 21 (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	290.10	2949.39	131.89N	360.44W	2.00	-34.92	40.19816212	-105.04334281
3117.00	32.00	290.10	3035.11	149.58N	408.80W	2.00	-39.61	40.19821138	-105.04351561
3204.30	33.75	290.10	3108.42	165.86N	453.30W	2.00	-43.92	40.19825670	-105.04367460
3217.00	33.75	290.10	3118.99	168.29N	459.93W	==>	-44.56	40.19826345	-105.04369827
3317.00	33.75	290.10	3202.14	187.38N	512.09W	==>	-49.62	40.19831659	-105.04388467
3417.00	33.75	290.10	3285.29	206.47N	564.26W	==>	-54.67	40.19836972	-105.04407106
3517.00	33.75	290.10	3368.44	225.55N	616.43W	==>	-59.72	40.19842285	-105.04425746
3617.00	33.75	290.10	3451.59	244.64N	668.60W	==>	-64.78	40.19847599	-105.04444385
3717.00	33.75	290.10	3534.74	263.73N	720.77W	==>	-69.83	40.19852912	-105.04463025
3817.00	33.75	290.10	3617.89	282.82N	772.94W	==>	-74.89	40.19858225	-105.04481665
3917.00	33.75	290.10	3701.04	301.91N	825.11W	==>	-79.94	40.19863539	-105.04500304
4017.00	33.75	290.10	3784.19	321.00N	877.27W	==>	-85.00	40.19868852	-105.04518944
4117.00	33.75	290.10	3867.34	340.09N	929.44W	==>	-90.05	40.19874165	-105.04537584
4217.00	33.75	290.10	3950.49	359.17N	981.61W	==>	-95.11	40.19879478	-105.04556223
4317.00	33.75	290.10	4033.64	378.26N	1033.78W	==>	-100.16	40.19884791	-105.04574863
4417.00	33.75	290.10	4116.80	397.35N	1085.95W	==>	-105.22	40.19890104	-105.04593503
4517.00	33.75	290.10	4199.95	416.44N	1138.12W	==>	-110.27	40.19895418	-105.04612143
4617.00	33.75	290.10	4283.10	435.53N	1190.29W	==>	-115.32	40.19900731	-105.04630783
4717.00	33.75	290.10	4366.25	454.62N	1242.45W	==>	-120.38	40.19906044	-105.04649423
4817.00	33.75	290.10	4449.40	473.71N	1294.62W	==>	-125.43	40.19911357	-105.04668062
4917.00	33.75	290.10	4532.55	492.80N	1346.79W	==>	-130.49	40.19916669	-105.04686702
5017.00	33.75	290.10	4615.70	511.88N	1398.96W	==>	-135.54	40.19921982	-105.04705342
5117.00	33.75	290.10	4698.85	530.97N	1451.13W	==>	-140.60	40.19927295	-105.04723982
5217.00	33.75	290.10	4782.00	550.06N	1503.30W	==>	-145.65	40.19932608	-105.04742622
5317.00	33.75	290.10	4865.15	569.15N	1555.47W	==>	-150.71	40.19937921	-105.04761262
5417.00	33.75	290.10	4948.30	588.24N	1607.63W	==>	-155.76	40.19943234	-105.04779903
5517.00	33.75	290.10	5031.45	607.33N	1659.80W	==>	-160.82	40.19948547	-105.04798543
5617.00	33.75	290.10	5114.61	626.42N	1711.97W	==>	-165.87	40.19953859	-105.04817183
5717.00	33.75	290.10	5197.76	645.50N	1764.14W	==>	-170.92	40.19959172	-105.04835823
5817.00	33.75	290.10	5280.91	664.59N	1816.31W	==>	-175.98	40.19964485	-105.04854463
5917.00	33.75	290.10	5364.06	683.68N	1868.48W	==>	-181.03	40.19969797	-105.04873103
6017.00	33.75	290.10	5447.21	702.77N	1920.65W	==>	-186.09	40.19975110	-105.04891744
6117.00	33.75	290.10	5530.36	721.86N	1972.81W	==>	-191.14	40.19980423	-105.04910384
6217.00	33.75	290.10	5613.51	740.95N	2024.98W	==>	-196.20	40.19985735	-105.04929024
6317.00	33.75	290.10	5696.66	760.04N	2077.15W	==>	-201.25	40.19991048	-105.04947665
6417.00	33.75	290.10	5779.81	779.13N	2129.32W	==>	-206.31	40.19996360	-105.04966305
6517.00	33.75	290.10	5862.96	798.21N	2181.49W	==>	-211.36	40.20001673	-105.04984946
6617.00	33.75	290.10	5946.11	817.30N	2233.66W	==>	-216.41	40.20006985	-105.05003586
6717.00	33.75	290.10	6029.27	836.39N	2285.83W	==>	-221.47	40.20012297	-105.05022226
6817.00	33.75	290.10	6112.42	855.48N	2337.99W	==>	-226.52	40.20017610	-105.05040867
6917.00	33.75	290.10	6195.57	874.57N	2390.16W	==>	-231.58	40.20022922	-105.05059507
7017.00	33.75	290.10	6278.72	893.66N	2442.33W	==>	-236.63	40.20028234	-105.05078148
7088.76	33.75	290.10	6338.39	907.36N	2479.77W	==>	-240.26	40.20032047	-105.05091525
7117.00	33.02	285.14	6361.97	912.06N	2494.56W	10.00	-241.01	40.20033359	-105.05096813
7217.00	32.13	266.58	6446.46	917.60N	2547.54W	10.00	-232.76	40.20034953	-105.05115767
7317.00	33.95	248.49	6530.49	905.74N	2600.20W	10.00	-207.78	40.20031771	-105.05134639
7417.00	38.10	232.96	6611.51	876.84N	2650.94W	10.00	-166.82	40.20023909	-105.05152855
7517.00	43.91	220.52	6687.07	831.78N	2698.22W	10.00	-111.13	40.20011606	-105.05169862
7617.00	50.80	210.64	6754.86	771.93N	2740.60W	10.00	-42.41	40.19995235	-105.05185142
7717.00	58.37	202.60	6812.83	699.10N	2776.80W	10.00	37.27	40.19975295	-105.05198232
7817.00	66.36	195.81	6859.21	615.51N	2805.71W	10.00	125.48	40.19952390	-105.05208734
7917.00	74.62	189.82	6892.61	523.70N	2826.47W	10.00	219.54	40.19927217	-105.05216329
8017.00	83.02	184.29	6911.99	426.46N	2838.42W	10.00	316.60	40.19900541	-105.05220785
8099.41	90.00	179.89	6917.00	344.33N	2841.40W	10.00	396.74	40.19878000	-105.05222000
8117.00	90.00	179.89	6917.00	326.74N	2841.37W	==>	413.73	40.19873172	-105.05222019
8217.00	90.00	179.89	6917.00	226.74N	2841.17W	==>	510.33	40.19845722	-105.05222129
8317.00	90.00	179.89	6917.00	126.74N	2840.97W	==>	606.92	40.19818273	-105.05222388
8417.00	90.00	179.89	6917.00	26.74N	2840.77W	==>	703.52	40.19790823	-105.05222348

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Bottom hole distance is 10981.94 Feet on azimuth 194.88 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
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SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 21 (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	6917.00	73.26S	2840.57W	==>	800.12	40.19763373	-105.05222457
8617.00	90.00	179.89	6917.00	173.26S	2840.37W	==>	896.71	40.19735923	-105.05222567
8717.00	90.00	179.89	6917.00	273.26S	2840.18W	==>	993.31	40.19708473	-105.05222677
8817.00	90.00	179.89	6917.00	373.26S	2839.98W	==>	1089.91	40.19681023	-105.05222786
8917.00	90.00	179.89	6917.00	473.26S	2839.78W	==>	1186.50	40.19653574	-105.05222896
9017.00	90.00	179.89	6917.00	573.26S	2839.58W	==>	1283.10	40.19626124	-105.05223005
9117.00	90.00	179.89	6917.00	673.26S	2839.38W	==>	1379.70	40.19598674	-105.05223115
9217.00	90.00	179.89	6917.00	773.26S	2839.18W	==>	1476.29	40.19571224	-105.05223224
9317.00	90.00	179.89	6917.00	873.26S	2838.98W	==>	1572.89	40.19543774	-105.05223334
9417.00	90.00	179.89	6917.00	973.26S	2838.78W	==>	1669.49	40.19516324	-105.05223443
9517.00	90.00	179.89	6917.00	1073.26S	2838.58W	==>	1766.08	40.19488875	-105.05223553
9617.00	90.00	179.89	6917.00	1173.26S	2838.38W	==>	1862.68	40.19461425	-105.05223663
9717.00	90.00	179.89	6917.00	1273.26S	2838.19W	==>	1959.28	40.19433975	-105.05223772
9817.00	90.00	179.89	6917.00	1373.26S	2837.99W	==>	2055.87	40.19406525	-105.05223882
9917.00	90.00	179.89	6917.00	1473.26S	2837.79W	==>	2152.47	40.19379075	-105.05223991
10017.00	90.00	179.89	6917.00	1573.26S	2837.59W	==>	2249.07	40.19351625	-105.05224101
10117.00	90.00	179.89	6917.00	1673.26S	2837.39W	==>	2345.66	40.19324176	-105.05224210
10217.00	90.00	179.89	6917.00	1773.26S	2837.19W	==>	2442.26	40.19296726	-105.05224320
10317.00	90.00	179.89	6917.00	1873.25S	2836.99W	==>	2538.86	40.19269276	-105.05224429
10417.00	90.00	179.89	6917.00	1973.25S	2836.79W	==>	2635.45	40.19241826	-105.05224539
10517.00	90.00	179.89	6917.00	2073.25S	2836.59W	==>	2732.05	40.19214376	-105.05224648
10617.00	90.00	179.89	6917.00	2173.25S	2836.40W	==>	2828.65	40.19186926	-105.05224758
10717.00	90.00	179.89	6917.00	2273.25S	2836.20W	==>	2925.24	40.19159476	-105.05224867
10817.00	90.00	179.89	6917.00	2373.25S	2836.00W	==>	3021.84	40.19132027	-105.05224977
10917.00	90.00	179.89	6917.00	2473.25S	2835.80W	==>	3118.43	40.19104577	-105.05225086
11017.00	90.00	179.89	6917.00	2573.25S	2835.60W	==>	3215.03	40.19077127	-105.05225196
11117.00	90.00	179.89	6917.00	2673.25S	2835.40W	==>	3311.63	40.19049677	-105.05225306
11217.00	90.00	179.89	6917.00	2773.25S	2835.20W	==>	3408.22	40.19022227	-105.05225415
11317.00	90.00	179.89	6917.00	2873.25S	2835.00W	==>	3504.82	40.18994777	-105.05225525
11417.00	90.00	179.89	6917.00	2973.25S	2834.80W	==>	3601.42	40.18967327	-105.05225634
11517.00	90.00	179.89	6917.00	3073.25S	2834.61W	==>	3698.01	40.18939878	-105.05225744
11617.00	90.00	179.89	6917.00	3173.25S	2834.41W	==>	3794.61	40.18912428	-105.05225853
11717.00	90.00	179.89	6917.00	3273.25S	2834.21W	==>	3891.21	40.18884978	-105.05225963
11817.00	90.00	179.89	6917.00	3373.25S	2834.01W	==>	3987.80	40.18857528	-105.05226072
11917.00	90.00	179.89	6917.00	3473.25S	2833.81W	==>	4084.40	40.18830078	-105.05226182
12017.00	90.00	179.89	6917.00	3573.25S	2833.61W	==>	4181.00	40.18802628	-105.05226291
12117.00	90.00	179.89	6917.00	3673.25S	2833.41W	==>	4277.59	40.18775178	-105.05226401
12217.00	90.00	179.89	6917.00	3773.25S	2833.21W	==>	4374.19	40.18747729	-105.05226510
12317.00	90.00	179.89	6917.00	3873.25S	2833.01W	==>	4470.79	40.18720279	-105.05226620
12417.00	90.00	179.89	6917.00	3973.25S	2832.81W	==>	4567.38	40.18692829	-105.05226729
12517.00	90.00	179.89	6917.00	4073.25S	2832.62W	==>	4663.98	40.18665379	-105.05226839
12617.00	90.00	179.89	6917.00	4173.25S	2832.42W	==>	4760.58	40.18637929	-105.05226948
12717.00	90.00	179.89	6917.00	4273.25S	2832.22W	==>	4857.17	40.18610479	-105.05227058
12817.00	90.00	179.89	6917.00	4373.25S	2832.02W	==>	4953.77	40.18583029	-105.05227167
12917.00	90.00	179.89	6917.00	4473.25S	2831.82W	==>	5050.37	40.18555579	-105.05227277
13017.00	90.00	179.89	6917.00	4573.25S	2831.62W	==>	5146.96	40.18528130	-105.05227386
13117.00	90.00	179.89	6917.00	4673.25S	2831.42W	==>	5243.56	40.18500680	-105.05227496
13217.00	90.00	179.89	6917.00	4773.25S	2831.22W	==>	5340.16	40.18473230	-105.05227605
13317.00	90.00	179.89	6917.00	4873.25S	2831.02W	==>	5436.75	40.18445780	-105.05227715
13417.00	90.00	179.89	6917.00	4973.25S	2830.83W	==>	5533.35	40.18418330	-105.05227824
13517.00	90.00	179.89	6917.00	5073.25S	2830.63W	==>	5629.94	40.18390880	-105.05227934
13617.00	90.00	179.89	6917.00	5173.25S	2830.43W	==>	5726.54	40.18363430	-105.05228044
13717.00	90.00	179.89	6917.00	5273.25S	2830.23W	==>	5823.14	40.18335980	-105.05228153
13817.00	90.00	179.89	6917.00	5373.25S	2830.03W	==>	5919.73	40.18308530	-105.05228263
13917.00	90.00	179.89	6917.00	5473.25S	2829.83W	==>	6016.33	40.18281081	-105.05228372
14017.00	90.00	179.89	6917.00	5573.25S	2829.63W	==>	6112.93	40.18253631	-105.05228482
14117.00	90.00	179.89	6917.00	5673.25S	2829.43W	==>	6209.52	40.18226181	-105.05228591
14217.00	90.00	179.89	6917.00	5773.25S	2829.23W	==>	6306.12	40.18198731	-105.05228701
14317.00	90.00	179.89	6917.00	5873.25S	2829.04W	==>	6402.72	40.18171281	-105.05228810

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Bottom hole distance is 10981.94 Feet on azimuth 194.88 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 21 (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	6917.00	5973.25S	2828.84W	==>	6499.31	40.18143831	-105.05228920
14517.00	90.00	179.89	6917.00	6073.25S	2828.64W	==>	6595.91	40.18116381	-105.05229029
14617.00	90.00	179.89	6917.00	6173.25S	2828.44W	==>	6692.51	40.18088931	-105.05229139
14717.00	90.00	179.89	6917.00	6273.25S	2828.24W	==>	6789.10	40.18061481	-105.05229248
14817.00	90.00	179.89	6917.00	6373.25S	2828.04W	==>	6885.70	40.18034032	-105.05229358
14917.00	90.00	179.89	6917.00	6473.25S	2827.84W	==>	6982.30	40.18006582	-105.05229467
15017.00	90.00	179.89	6917.00	6573.25S	2827.64W	==>	7078.89	40.17979132	-105.05229577
15117.00	90.00	179.89	6917.00	6673.25S	2827.44W	==>	7175.49	40.17951682	-105.05229686
15217.00	90.00	179.89	6917.00	6773.25S	2827.25W	==>	7272.09	40.17924232	-105.05229796
15317.00	90.00	179.89	6917.00	6873.25S	2827.05W	==>	7368.68	40.17896782	-105.05229905
15417.00	90.00	179.89	6917.00	6973.24S	2826.85W	==>	7465.28	40.17869332	-105.05230014
15517.00	90.00	179.89	6917.00	7073.24S	2826.65W	==>	7561.88	40.17841882	-105.05230124
15617.00	90.00	179.89	6917.00	7173.24S	2826.45W	==>	7658.47	40.17814432	-105.05230233
15717.00	90.00	179.89	6917.00	7273.24S	2826.25W	==>	7755.07	40.17786982	-105.05230343
15817.00	90.00	179.89	6917.00	7373.24S	2826.05W	==>	7851.67	40.17759532	-105.05230452
15917.00	90.00	179.89	6917.00	7473.24S	2825.85W	==>	7948.26	40.17732083	-105.05230562
16017.00	90.00	179.89	6917.00	7573.24S	2825.65W	==>	8044.86	40.17704633	-105.05230671
16117.00	90.00	179.89	6917.00	7673.24S	2825.45W	==>	8141.45	40.17677183	-105.05230781
16217.00	90.00	179.89	6917.00	7773.24S	2825.26W	==>	8238.05	40.17649733	-105.05230890
16317.00	90.00	179.89	6917.00	7873.24S	2825.06W	==>	8334.65	40.17622283	-105.05231000
16417.00	90.00	179.89	6917.00	7973.24S	2824.86W	==>	8431.24	40.17594833	-105.05231109
16517.00	90.00	179.89	6917.00	8073.24S	2824.66W	==>	8527.84	40.17567383	-105.05231219
16617.00	90.00	179.89	6917.00	8173.24S	2824.46W	==>	8624.44	40.17539933	-105.05231328
16717.00	90.00	179.89	6917.00	8273.24S	2824.26W	==>	8721.03	40.17512483	-105.05231438
16817.00	90.00	179.89	6917.00	8373.24S	2824.06W	==>	8817.63	40.17485033	-105.05231547
16917.00	90.00	179.89	6917.00	8473.24S	2823.86W	==>	8914.23	40.17457583	-105.05231657
17017.00	90.00	179.89	6917.00	8573.24S	2823.66W	==>	9010.82	40.17430133	-105.05231766
17117.00	90.00	179.89	6917.00	8673.24S	2823.47W	==>	9107.42	40.17402684	-105.05231876
17217.00	90.00	179.89	6917.00	8773.24S	2823.27W	==>	9204.02	40.17375234	-105.05231985
17317.00	90.00	179.89	6917.00	8873.24S	2823.07W	==>	9300.61	40.17347784	-105.05232095
17417.00	90.00	179.89	6917.00	8973.24S	2822.87W	==>	9397.21	40.17320334	-105.05232204
17517.00	90.00	179.89	6917.00	9073.24S	2822.67W	==>	9493.81	40.17292884	-105.05232314
17617.00	90.00	179.89	6917.00	9173.24S	2822.47W	==>	9590.40	40.17265434	-105.05232423
17717.00	90.00	179.89	6917.00	9273.24S	2822.27W	==>	9687.00	40.17237984	-105.05232533
17817.00	90.00	179.89	6917.00	9373.24S	2822.07W	==>	9783.60	40.17210534	-105.05232642
17917.00	90.00	179.89	6917.00	9473.24S	2821.87W	==>	9880.19	40.17183084	-105.05232751
18017.00	90.00	179.89	6917.00	9573.24S	2821.68W	==>	9976.79	40.17155634	-105.05232861
18117.00	90.00	179.89	6917.00	9673.24S	2821.48W	==>	10073.39	40.17128184	-105.05232970
18217.00	90.00	179.89	6917.00	9773.24S	2821.28W	==>	10169.98	40.17100734	-105.05233080
18317.00	90.00	179.89	6917.00	9873.24S	2821.08W	==>	10266.58	40.17073284	-105.05233189
18417.00	90.00	179.89	6917.00	9973.24S	2820.88W	==>	10363.18	40.17045834	-105.05233299
18517.00	90.00	179.89	6917.00	10073.24S	2820.68W	==>	10459.77	40.17018384	-105.05233408
18617.00	90.00	179.89	6917.00	10173.24S	2820.48W	==>	10556.37	40.16990935	-105.05233518
18717.00	90.00	179.89	6917.00	10273.24S	2820.28W	==>	10652.96	40.16963485	-105.05233627
18817.00	90.00	179.89	6917.00	10373.24S	2820.08W	==>	10749.56	40.16936035	-105.05233737
18917.00	90.00	179.89	6917.00	10473.24S	2819.88W	==>	10846.16	40.16908585	-105.05233846
19017.00	90.00	179.89	6917.00	10573.24S	2819.69W	==>	10942.75	40.16881135	-105.05233956
19057.56	90.00	179.89	6917.00	10613.80S	2819.61W	==>	10981.94	40.16870000	-105.05234000

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SYS DRILL
Well Design Combined Report
Wellbore: W KNIGHT 21 (PWB)



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Knight 21 BH	10613.80S	2819.61W	6917.00	40.16870000	-105.05234000	1304616.20	3125102.79
Knight 21 EP	344.33N	2841.40W	6917.00	40.19878000	-105.05222000	1315573.84	3125080.99

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
590321	Planned	1517.00	1517.00	WdW Rate Gyro	Standard	
590320	Planned	19057.56	6917.00	ISCWSA MWD	Rev 4 + SAG + FLT	

Notes