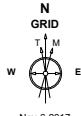


Cub Creek Energy, LLC

Location	Weld County, CO	Slot	KNIGHT 9
Field	WATTENBERG	Well	W KNIGHT 9
Installation	Knight Pad	Wellbore	W KNIGHT 9 (PWB)



Nov-8-2017
 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 9 (PWB).
 Ref wellpath is W KNIGHT 9 (PWP#1).
 Coordinates are in Feet reference KNIGHT 9.
 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.

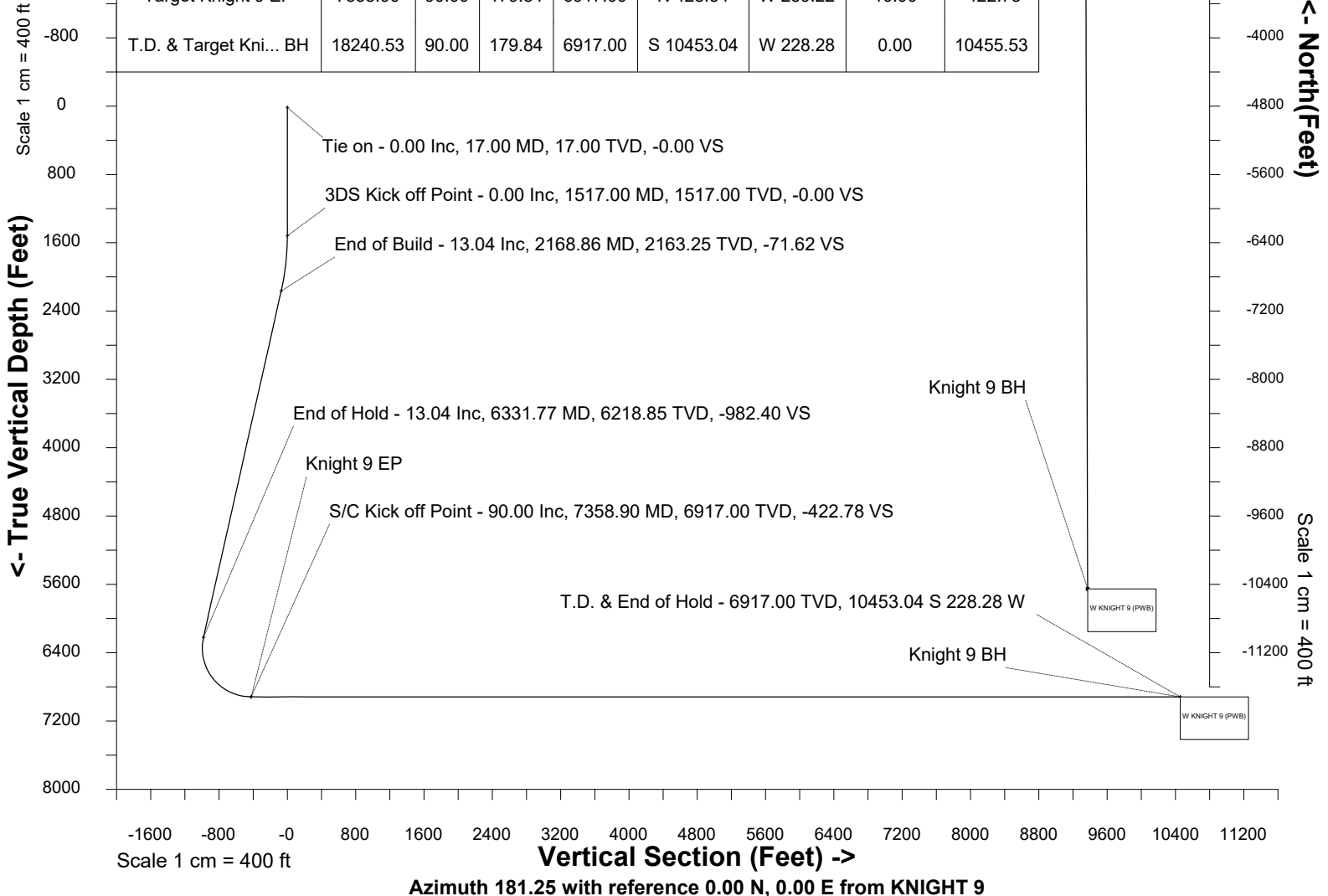
Scale 1 cm = 400 ft
 East (Feet) ->
 -1600 -800 -0 800

Surface 0.00 N 0.00 E

Knight 9 EP

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	347.15	1517.00	S 0.00	W 0.00	0.00	-0.00
End of Build	2168.86	13.04	347.15	2163.25	N 71.99	W 16.42	2.00	-71.62
End of Hold	6331.77	13.04	347.15	6218.85	N 987.55	W 225.30	0.00	-982.40
Target Knight 9 EP	7358.90	90.00	179.84	6917.00	N 428.54	W 259.22	10.00	-422.78
T.D. & Target Kni... BH	18240.53	90.00	179.84	6917.00	S 10453.04	W 228.28	0.00	10455.53



SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 9 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
KNIGHT 9	40.19767000	-105.04197000	1315184.1193	3127946.2452	134.79S	0.70E	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	347.15	1517.00	-3494.00	0.00N	0.00E	==>	0.00
2168.86	13.04	347.15	2163.25	-2847.75	71.99N	16.42W	2.00	-71.62
6331.77	13.04	347.15	6218.85	1207.85	987.55N	225.30W	==>	-982.40
7358.90	90.00	179.84	6917.00	1906.00	428.54N	259.22W	10.00	-422.78
18240.53	90.00	179.84	6917.00	1906.00	10453.04S	228.28W	==>	10455.53

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	40.19767000	-105.04197000
17.00	0.00	0.00	17.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
100.00	0.00	0.00	100.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
200.00	0.00	0.00	200.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
300.00	0.00	0.00	300.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
400.00	0.00	0.00	400.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
500.00	0.00	0.00	500.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
600.00	0.00	0.00	600.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
700.00	0.00	0.00	700.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
800.00	0.00	0.00	800.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
900.00	0.00	0.00	900.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1000.00	0.00	0.00	1000.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1100.00	0.00	0.00	1100.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1200.00	0.00	0.00	1200.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1300.00	0.00	0.00	1300.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1400.00	0.00	0.00	1400.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1500.00	0.00	0.00	1500.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1517.00	0.00	347.15	1517.00	0.00N	0.00E	==>	0.00	40.19767000	-105.04197000
1617.00	2.00	347.15	1616.98	1.70N	0.39W	2.00	-1.69	40.19767468	-105.04197136
1717.00	4.00	347.15	1716.84	6.80N	1.55W	2.00	-6.77	40.19768870	-105.04197543
1817.00	6.00	347.15	1816.45	15.30N	3.49W	2.00	-15.22	40.19771205	-105.04198221
1917.00	8.00	347.15	1915.70	27.18N	6.20W	2.00	-27.04	40.19774470	-105.04199170
2017.00	10.00	347.15	2014.47	42.43N	9.68W	2.00	-42.21	40.19778661	-105.04200387
2117.00	12.00	347.15	2112.62	61.03N	13.92W	2.00	-60.72	40.19783773	-105.04201872
2168.86	13.04	347.15	2163.25	71.99N	16.42W	2.00	-71.62	40.19786785	-105.04202746
2217.00	13.04	347.15	2210.15	82.58N	18.84W	==>	-82.15	40.19789695	-105.04203591
2317.00	13.04	347.15	2307.57	104.57N	23.86W	==>	-104.03	40.19795739	-105.04205347
2417.00	13.04	347.15	2404.99	126.57N	28.88W	==>	-125.91	40.19801783	-105.04207102
2517.00	13.04	347.15	2502.42	148.56N	33.89W	==>	-147.79	40.19807827	-105.04208858
2617.00	13.04	347.15	2599.84	170.55N	38.91W	==>	-169.66	40.19813872	-105.04210613
2717.00	13.04	347.15	2697.26	192.55N	43.93W	==>	-191.54	40.19819916	-105.04212369
2817.00	13.04	347.15	2794.68	214.54N	48.95W	==>	-213.42	40.19825960	-105.04214124

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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 181.25 degrees
Bottom hole distance is 10455.53 Feet on azimuth 181.25 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 9 (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)
2917.00	13.04	347.15	2892.11	236.53N	53.96W	==>	-235.30	40.19832004	-105.04215880
3017.00	13.04	347.15	2989.53	258.53N	58.98W	==>	-257.18	40.19838048	-105.04217635
3117.00	13.04	347.15	3086.95	280.52N	64.00W	==>	-279.06	40.19844092	-105.04219390
3217.00	13.04	347.15	3184.37	302.51N	69.02W	==>	-300.93	40.19850137	-105.04221146
3317.00	13.04	347.15	3281.79	324.51N	74.03W	==>	-322.81	40.19856181	-105.04222901
3417.00	13.04	347.15	3379.22	346.50N	79.05W	==>	-344.69	40.19862225	-105.04224657
3517.00	13.04	347.15	3476.64	368.49N	84.07W	==>	-366.57	40.19868269	-105.04226412
3617.00	13.04	347.15	3574.06	390.49N	89.09W	==>	-388.45	40.19874313	-105.04228168
3717.00	13.04	347.15	3671.48	412.48N	94.10W	==>	-410.33	40.19880357	-105.04229923
3817.00	13.04	347.15	3768.91	434.47N	99.12W	==>	-432.21	40.19886401	-105.04231679
3917.00	13.04	347.15	3866.33	456.47N	104.14W	==>	-454.08	40.19892446	-105.04233434
4017.00	13.04	347.15	3963.75	478.46N	109.16W	==>	-475.96	40.19898490	-105.04235190
4117.00	13.04	347.15	4061.17	500.45N	114.17W	==>	-497.84	40.19904534	-105.04236945
4217.00	13.04	347.15	4158.60	522.45N	119.19W	==>	-519.72	40.19910578	-105.04238701
4317.00	13.04	347.15	4256.02	544.44N	124.21W	==>	-541.60	40.19916622	-105.04240456
4417.00	13.04	347.15	4353.44	566.43N	129.23W	==>	-563.48	40.19922666	-105.04242212
4517.00	13.04	347.15	4450.86	588.43N	134.24W	==>	-585.35	40.19928711	-105.04243967
4617.00	13.04	347.15	4548.29	610.42N	139.26W	==>	-607.23	40.19934755	-105.04245723
4717.00	13.04	347.15	4645.71	632.41N	144.28W	==>	-629.11	40.19940799	-105.04247478
4817.00	13.04	347.15	4743.13	654.40N	149.30W	==>	-650.99	40.19946843	-105.04249234
4917.00	13.04	347.15	4840.55	676.40N	154.31W	==>	-672.87	40.19952887	-105.04250989
5017.00	13.04	347.15	4937.98	698.39N	159.33W	==>	-694.75	40.19958931	-105.04252745
5117.00	13.04	347.15	5035.40	720.38N	164.35W	==>	-716.62	40.19964975	-105.04254500
5217.00	13.04	347.15	5132.82	742.38N	169.37W	==>	-738.50	40.19971020	-105.04256256
5317.00	13.04	347.15	5230.24	764.37N	174.38W	==>	-760.38	40.19977064	-105.04258011
5417.00	13.04	347.15	5327.67	786.36N	179.40W	==>	-782.26	40.19983108	-105.04259767
5517.00	13.04	347.15	5425.09	808.36N	184.42W	==>	-804.14	40.19989152	-105.04261523
5617.00	13.04	347.15	5522.51	830.35N	189.44W	==>	-826.02	40.19995196	-105.04263278
5717.00	13.04	347.15	5619.93	852.34N	194.45W	==>	-847.90	40.20001240	-105.04265034
5817.00	13.04	347.15	5717.35	874.34N	199.47W	==>	-869.77	40.20007285	-105.04266789
5917.00	13.04	347.15	5814.78	896.33N	204.49W	==>	-891.65	40.20013329	-105.04268545
6017.00	13.04	347.15	5912.20	918.32N	209.51W	==>	-913.53	40.20019373	-105.04270300
6117.00	13.04	347.15	6009.62	940.32N	214.52W	==>	-935.41	40.20025417	-105.04272056
6217.00	13.04	347.15	6107.04	962.31N	219.54W	==>	-957.29	40.20031461	-105.04273811
6317.00	13.04	347.15	6204.47	984.30N	224.56W	==>	-979.17	40.20037505	-105.04275567
6331.77	13.04	347.15	6218.85	987.55N	225.30W	==>	-982.40	40.20038398	-105.04275826
6417.00	5.10	325.10	6302.97	1000.05N	229.61W	10.00	-994.80	40.20041836	-105.04277347
6517.00	6.50	206.37	6402.71	998.63N	234.68W	10.00	-993.27	40.20041452	-105.04279165
6617.00	16.07	190.01	6500.68	979.88N	239.61W	10.00	-974.42	40.20036313	-105.04280964
6717.00	25.96	185.83	6593.92	944.39N	244.25W	10.00	-938.83	40.20026576	-105.04282691
6817.00	35.91	183.86	6679.59	893.22N	248.46W	10.00	-887.58	40.20012537	-105.04284293
6917.00	45.88	182.66	6755.08	827.94N	252.12W	10.00	-822.24	40.19994622	-105.04285721
7017.00	55.86	181.81	6818.11	750.52N	255.10W	10.00	-744.77	40.19973376	-105.04286933
7117.00	65.84	181.14	6866.75	663.32N	257.33W	10.00	-657.55	40.19949444	-105.04287891
7217.00	75.83	180.57	6899.54	569.00N	258.73W	10.00	-563.21	40.19923554	-105.04288566
7317.00	85.82	180.05	6915.47	470.40N	259.26W	10.00	-464.63	40.19896491	-105.04288938
7358.90	90.00	179.84	6917.00	428.54N	259.22W	10.00	-422.78	40.19885000	-105.04289000
7417.00	90.00	179.84	6917.00	370.44N	259.05W	==>	-364.70	40.19869051	-105.04289048
7517.00	90.00	179.84	6917.00	270.44N	258.77W	==>	-264.73	40.19841602	-105.04289131
7617.00	90.00	179.84	6917.00	170.44N	258.48W	==>	-164.76	40.19814152	-105.04289214
7717.00	90.00	179.84	6917.00	70.44N	258.20W	==>	-64.79	40.19786702	-105.04289296
7817.00	90.00	179.84	6917.00	29.56S	257.92W	==>	35.18	40.19759252	-105.04289379
7917.00	90.00	179.84	6917.00	129.56S	257.63W	==>	135.15	40.19731802	-105.04289462
8017.00	90.00	179.84	6917.00	229.56S	257.35W	==>	235.12	40.19704352	-105.04289545
8117.00	90.00	179.84	6917.00	329.56S	257.06W	==>	335.09	40.19676902	-105.04289627
8217.00	90.00	179.84	6917.00	429.56S	256.78W	==>	435.06	40.19649452	-105.04289710
8317.00	90.00	179.84	6917.00	529.56S	256.49W	==>	535.03	40.19622002	-105.04289793
8417.00	90.00	179.84	6917.00	629.56S	256.21W	==>	635.00	40.19594553	-105.04289875

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Bottom hole distance is 10455.53 Feet on azimuth 181.25 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 9 (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	179.84	6917.00	729.55S	255.93W	==>	734.97	40.19567103	-105.04289958
8617.00	90.00	179.84	6917.00	829.55S	255.64W	==>	834.94	40.19539653	-105.04290041
8717.00	90.00	179.84	6917.00	929.55S	255.36W	==>	934.91	40.19512203	-105.04290124
8817.00	90.00	179.84	6917.00	1029.55S	255.07W	==>	1034.88	40.19484753	-105.04290206
8917.00	90.00	179.84	6917.00	1129.55S	254.79W	==>	1134.85	40.19457303	-105.04290289
9017.00	90.00	179.84	6917.00	1229.55S	254.50W	==>	1234.82	40.19429853	-105.04290372
9117.00	90.00	179.84	6917.00	1329.55S	254.22W	==>	1334.79	40.19402403	-105.04290455
9217.00	90.00	179.84	6917.00	1429.55S	253.93W	==>	1434.76	40.19374953	-105.04290537
9317.00	90.00	179.84	6917.00	1529.55S	253.65W	==>	1534.72	40.19347504	-105.04290620
9417.00	90.00	179.84	6917.00	1629.55S	253.37W	==>	1634.69	40.19320054	-105.04290703
9517.00	90.00	179.84	6917.00	1729.55S	253.08W	==>	1734.66	40.19292604	-105.04290786
9617.00	90.00	179.84	6917.00	1829.55S	252.80W	==>	1834.63	40.19265154	-105.04290868
9717.00	90.00	179.84	6917.00	1929.55S	252.51W	==>	1934.60	40.19237704	-105.04290951
9817.00	90.00	179.84	6917.00	2029.55S	252.23W	==>	2034.57	40.19210254	-105.04291034
9917.00	90.00	179.84	6917.00	2129.55S	251.94W	==>	2134.54	40.19182804	-105.04291116
10017.00	90.00	179.84	6917.00	2229.55S	251.66W	==>	2234.51	40.19155354	-105.04291199
10117.00	90.00	179.84	6917.00	2329.55S	251.38W	==>	2334.48	40.19127904	-105.04291282
10217.00	90.00	179.84	6917.00	2429.55S	251.09W	==>	2434.45	40.19100454	-105.04291365
10317.00	90.00	179.84	6917.00	2529.55S	250.81W	==>	2534.42	40.19073004	-105.04291447
10417.00	90.00	179.84	6917.00	2629.55S	250.52W	==>	2634.39	40.19045555	-105.04291530
10517.00	90.00	179.84	6917.00	2729.55S	250.24W	==>	2734.36	40.19018105	-105.04291613
10617.00	90.00	179.84	6917.00	2829.55S	249.95W	==>	2834.33	40.18990655	-105.04291696
10717.00	90.00	179.84	6917.00	2929.55S	249.67W	==>	2934.30	40.18963205	-105.04291778
10817.00	90.00	179.84	6917.00	3029.55S	249.39W	==>	3034.27	40.18935755	-105.04291861
10917.00	90.00	179.84	6917.00	3129.55S	249.10W	==>	3134.24	40.18908305	-105.04291944
11017.00	90.00	179.84	6917.00	3229.54S	248.82W	==>	3234.21	40.18880855	-105.04292026
11117.00	90.00	179.84	6917.00	3329.54S	248.53W	==>	3334.18	40.18853405	-105.04292109
11217.00	90.00	179.84	6917.00	3429.54S	248.25W	==>	3434.15	40.18825955	-105.04292192
11317.00	90.00	179.84	6917.00	3529.54S	247.96W	==>	3534.12	40.18798505	-105.04292275
11417.00	90.00	179.84	6917.00	3629.54S	247.68W	==>	3634.09	40.18771055	-105.04292357
11517.00	90.00	179.84	6917.00	3729.54S	247.39W	==>	3734.06	40.18743605	-105.04292440
11617.00	90.00	179.84	6917.00	3829.54S	247.11W	==>	3834.02	40.18716156	-105.04292523
11717.00	90.00	179.84	6917.00	3929.54S	246.83W	==>	3933.99	40.18688706	-105.04292605
11817.00	90.00	179.84	6917.00	4029.54S	246.54W	==>	4033.96	40.18661256	-105.04292688
11917.00	90.00	179.84	6917.00	4129.54S	246.26W	==>	4133.93	40.18633806	-105.04292771
12017.00	90.00	179.84	6917.00	4229.54S	245.97W	==>	4233.90	40.18606356	-105.04292854
12117.00	90.00	179.84	6917.00	4329.54S	245.69W	==>	4333.87	40.18578906	-105.04292936
12217.00	90.00	179.84	6917.00	4429.54S	245.40W	==>	4433.84	40.18551456	-105.04293019
12317.00	90.00	179.84	6917.00	4529.54S	245.12W	==>	4533.81	40.18524006	-105.04293102
12417.00	90.00	179.84	6917.00	4629.54S	244.84W	==>	4633.78	40.18496556	-105.04293184
12517.00	90.00	179.84	6917.00	4729.54S	244.55W	==>	4733.75	40.18469106	-105.04293267
12617.00	90.00	179.84	6917.00	4829.54S	244.27W	==>	4833.72	40.18441656	-105.04293350
12717.00	90.00	179.84	6917.00	4929.54S	243.98W	==>	4933.69	40.18414206	-105.04293433
12817.00	90.00	179.84	6917.00	5029.54S	243.70W	==>	5033.66	40.18386756	-105.04293515
12917.00	90.00	179.84	6917.00	5129.54S	243.41W	==>	5133.63	40.18359306	-105.04293598
13017.00	90.00	179.84	6917.00	5229.54S	243.13W	==>	5233.60	40.18331856	-105.04293681
13117.00	90.00	179.84	6917.00	5329.54S	242.85W	==>	5333.57	40.18304406	-105.04293763
13217.00	90.00	179.84	6917.00	5429.54S	242.56W	==>	5433.54	40.18276957	-105.04293846
13317.00	90.00	179.84	6917.00	5529.54S	242.28W	==>	5533.51	40.18249507	-105.04293929
13417.00	90.00	179.84	6917.00	5629.53S	241.99W	==>	5633.48	40.18222057	-105.04294012
13517.00	90.00	179.84	6917.00	5729.53S	241.71W	==>	5733.45	40.18194607	-105.04294094
13617.00	90.00	179.84	6917.00	5829.53S	241.42W	==>	5833.42	40.18167157	-105.04294177
13717.00	90.00	179.84	6917.00	5929.53S	241.14W	==>	5933.39	40.18139707	-105.04294260
13817.00	90.00	179.84	6917.00	6029.53S	240.86W	==>	6033.35	40.18112257	-105.04294342
13917.00	90.00	179.84	6917.00	6129.53S	240.57W	==>	6133.32	40.18084807	-105.04294425
14017.00	90.00	179.84	6917.00	6229.53S	240.29W	==>	6233.29	40.18057357	-105.04294508
14117.00	90.00	179.84	6917.00	6329.53S	240.00W	==>	6333.26	40.18029907	-105.04294590
14217.00	90.00	179.84	6917.00	6429.53S	239.72W	==>	6433.23	40.18002457	-105.04294673
14317.00	90.00	179.84	6917.00	6529.53S	239.43W	==>	6533.20	40.17975007	-105.04294756

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Vertical Section is from 0.00N 0.00E on azimuth 181.25 degrees
Bottom hole distance is 10455.53 Feet on azimuth 181.25 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 9 (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	179.84	6917.00	6629.53S	239.15W	==>	6633.17	40.17947557	-105.04294839
14517.00	90.00	179.84	6917.00	6729.53S	238.86W	==>	6733.14	40.17920107	-105.04294921
14617.00	90.00	179.84	6917.00	6829.53S	238.58W	==>	6833.11	40.17892657	-105.04295004
14717.00	90.00	179.84	6917.00	6929.53S	238.30W	==>	6933.08	40.17865207	-105.04295087
14817.00	90.00	179.84	6917.00	7029.53S	238.01W	==>	7033.05	40.17837757	-105.04295169
14917.00	90.00	179.84	6917.00	7129.53S	237.73W	==>	7133.02	40.17810307	-105.04295252
15017.00	90.00	179.84	6917.00	7229.53S	237.44W	==>	7232.99	40.17782857	-105.04295335
15117.00	90.00	179.84	6917.00	7329.53S	237.16W	==>	7332.96	40.17755407	-105.04295417
15217.00	90.00	179.84	6917.00	7429.53S	236.87W	==>	7432.93	40.17727957	-105.04295500
15317.00	90.00	179.84	6917.00	7529.53S	236.59W	==>	7532.90	40.17700507	-105.04295583
15417.00	90.00	179.84	6917.00	7629.53S	236.31W	==>	7632.87	40.17673057	-105.04295665
15517.00	90.00	179.84	6917.00	7729.53S	236.02W	==>	7732.84	40.17645608	-105.04295748
15617.00	90.00	179.84	6917.00	7829.53S	235.74W	==>	7832.81	40.17618158	-105.04295831
15717.00	90.00	179.84	6917.00	7929.53S	235.45W	==>	7932.78	40.17590708	-105.04295914
15817.00	90.00	179.84	6917.00	8029.53S	235.17W	==>	8032.75	40.17563258	-105.04295996
15917.00	90.00	179.84	6917.00	8129.52S	234.88W	==>	8132.72	40.17535808	-105.04296079
16017.00	90.00	179.84	6917.00	8229.52S	234.60W	==>	8232.68	40.17508358	-105.04296162
16117.00	90.00	179.84	6917.00	8329.52S	234.32W	==>	8332.65	40.17480908	-105.04296244
16217.00	90.00	179.84	6917.00	8429.52S	234.03W	==>	8432.62	40.17453458	-105.04296327
16317.00	90.00	179.84	6917.00	8529.52S	233.75W	==>	8532.59	40.17426008	-105.04296410
16417.00	90.00	179.84	6917.00	8629.52S	233.46W	==>	8632.56	40.17398558	-105.04296492
16517.00	90.00	179.84	6917.00	8729.52S	233.18W	==>	8732.53	40.17371108	-105.04296575
16617.00	90.00	179.84	6917.00	8829.52S	232.89W	==>	8832.50	40.17343658	-105.04296658
16717.00	90.00	179.84	6917.00	8929.52S	232.61W	==>	8932.47	40.17316208	-105.04296740
16817.00	90.00	179.84	6917.00	9029.52S	232.32W	==>	9032.44	40.17288758	-105.04296823
16917.00	90.00	179.84	6917.00	9129.52S	232.04W	==>	9132.41	40.17261308	-105.04296906
17017.00	90.00	179.84	6917.00	9229.52S	231.76W	==>	9232.38	40.17233858	-105.04296988
17117.00	90.00	179.84	6917.00	9329.52S	231.47W	==>	9332.35	40.17206408	-105.04297071
17217.00	90.00	179.84	6917.00	9429.52S	231.19W	==>	9432.32	40.17178958	-105.04297154
17317.00	90.00	179.84	6917.00	9529.52S	230.90W	==>	9532.29	40.17151508	-105.04297236
17417.00	90.00	179.84	6917.00	9629.52S	230.62W	==>	9632.26	40.17124058	-105.04297319
17517.00	90.00	179.84	6917.00	9729.52S	230.33W	==>	9732.23	40.17096608	-105.04297402
17617.00	90.00	179.84	6917.00	9829.52S	230.05W	==>	9832.20	40.17069158	-105.04297485
17717.00	90.00	179.84	6917.00	9929.52S	229.77W	==>	9932.17	40.17041708	-105.04297567
17817.00	90.00	179.84	6917.00	10029.52S	229.48W	==>	10032.14	40.17014258	-105.04297650
17917.00	90.00	179.84	6917.00	10129.52S	229.20W	==>	10132.11	40.16986808	-105.04297733
18017.00	90.00	179.84	6917.00	10229.52S	228.91W	==>	10232.08	40.16959358	-105.04297815
18117.00	90.00	179.84	6917.00	10329.52S	228.63W	==>	10332.05	40.16931908	-105.04297898
18217.00	90.00	179.84	6917.00	10429.52S	228.34W	==>	10432.01	40.16904458	-105.04297981
18240.53	90.00	179.84	6917.00	10453.04S	228.28W	==>	10455.53	40.16898000	-105.04298000

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Bottom hole distance is 10455.53 Feet on azimuth 181.25 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by
Date Printed: 14-Jul-2020

SYS DRILL
Well Design Combined Report
Wellbore: W KNIGHT 9 (PWB)



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Knight 9 BH	10453.04S	228.28W	6917.00	40.16898000	-105.04298000	1304731.55	3127717.98
Knight 9 EP	428.54N	259.22W	6917.00	40.19885000	-105.04289000	1315612.64	3127687.04

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
590237	Planned	1517.00	1517.00	WdW Rate Gyro	Standard	
590236	Planned	18240.53	6917.00	ISCWSA MWD	Rev 4 + SAG + FLT	

Notes