



SYSDRILL
Well Design Combined Report
Wellbore: W KNIGHT 14 (PWB)



Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
KNIGHT 14	40.19763000	-105.04205400	1315169.4270	3127922.8560	149.48S	22.69W	0.00

Declination		
Date	Source	Time
Nov-6-2017	EMM-2015 [2000.0-2020.0]	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	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
17.00	0.00	0.000	17.00	0.00N	0.00E		0.00	1315169.43	3127922.86
1667.00	0.00	309.880	1667.00	0.00N	0.00E	==>	0.00	1315169.43	3127922.86
2649.44	19.65	309.880	2630.30	106.96N	128.01W	2.00	-89.95	1315276.38	3127794.85
6711.53	19.65	309.880	6455.86	982.73N	1176.19W	==>	-826.50	1316152.11	3126746.71
7736.38	90.00	179.870	7128.00	422.90N	1358.72W	10.00	-248.12	1315592.31	3126564.19
18647.17	90.00	179.870	7128.00	10487.86S	1333.72W	==>	10572.32	1304682.04	3126589.20

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	Rig Datum
17.00	0.00	0.000	17.00	0.00N	0.00E	==>	0.00	Slot Datum
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	
1500.00	0.00	0.000	1500.00	0.00N	0.00E	==>	0.00	
1600.00	0.00	0.000	1600.00	0.00N	0.00E	==>	0.00	
1700.00	0.66	309.880	1700.00	0.12N	0.15W	2.00	-0.10	
1800.00	2.66	309.880	1799.95	1.98N	2.37W	2.00	-1.66	
1900.00	4.66	309.880	1899.74	6.07N	7.27W	2.00	-5.11	
2000.00	6.66	309.880	1999.25	12.40N	14.84W	2.00	-10.42	
2100.00	8.66	309.880	2098.35	20.94N	25.06W	2.00	-17.61	
2200.00	10.66	309.880	2196.93	31.70N	37.94W	2.00	-26.66	
2300.00	12.66	309.880	2294.86	44.66N	53.45W	2.00	-37.56	
2400.00	14.66	309.880	2392.03	59.80N	71.57W	2.00	-50.29	
2500.00	16.66	309.880	2488.31	77.10N	92.28W	2.00	-64.85	
2600.00	18.66	309.880	2583.59	96.55N	115.56W	2.00	-81.20	
2700.00	19.65	309.880	2677.91	117.86N	141.06W	==>	-99.12	
2800.00	19.65	309.880	2772.09	139.42N	166.86W	==>	-117.25	
2900.00	19.65	309.880	2866.27	160.98N	192.67W	==>	-135.38	
3000.00	19.65	309.880	2960.44	182.54N	218.47W	==>	-153.52	
3100.00	19.65	309.880	3054.62	204.09N	244.27W	==>	-171.65	

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 5010.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 187.250 degrees
Bottom hole distance is 10572.32 Feet on azimuth 187.25 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Microsoft
Date Printed: 1-Dec-2017



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Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
3200.00	19.65	309.880	3148.80	225.65N	270.08W	==>	-189.78	
3300.00	19.65	309.880	3242.98	247.21N	295.88W	==>	-207.91	
3400.00	19.65	309.880	3337.15	268.77N	321.69W	==>	-226.05	
3500.00	19.65	309.880	3431.33	290.33N	347.49W	==>	-244.18	
3600.00	19.65	309.880	3525.51	311.89N	373.29W	==>	-262.31	
3700.00	19.65	309.880	3619.68	333.45N	399.10W	==>	-280.44	
3800.00	19.65	309.880	3713.86	355.01N	424.90W	==>	-298.57	
3900.00	19.65	309.880	3808.04	376.57N	450.71W	==>	-316.71	
4000.00	19.65	309.880	3902.22	398.13N	476.51W	==>	-334.84	
4100.00	19.65	309.880	3996.39	419.69N	502.31W	==>	-352.97	
4200.00	19.65	309.880	4090.57	441.25N	528.12W	==>	-371.10	
4300.00	19.65	309.880	4184.75	462.81N	553.92W	==>	-389.23	
4400.00	19.65	309.880	4278.92	484.37N	579.73W	==>	-407.37	
4500.00	19.65	309.880	4373.10	505.93N	605.53W	==>	-425.50	
4600.00	19.65	309.880	4467.28	527.49N	631.33W	==>	-443.63	
4700.00	19.65	309.880	4561.46	549.05N	657.14W	==>	-461.76	
4800.00	19.65	309.880	4655.63	570.61N	682.94W	==>	-479.90	
4900.00	19.65	309.880	4749.81	592.17N	708.75W	==>	-498.03	
5000.00	19.65	309.880	4843.99	613.73N	734.55W	==>	-516.16	
5100.00	19.65	309.880	4938.16	635.29N	760.35W	==>	-534.29	
5200.00	19.65	309.880	5032.34	656.85N	786.16W	==>	-552.42	
5300.00	19.65	309.880	5126.52	678.41N	811.96W	==>	-570.56	
5400.00	19.65	309.880	5220.69	699.97N	837.77W	==>	-588.69	
5500.00	19.65	309.880	5314.87	721.53N	863.57W	==>	-606.82	
5600.00	19.65	309.880	5409.05	743.09N	889.38W	==>	-624.95	
5700.00	19.65	309.880	5503.23	764.65N	915.18W	==>	-643.09	
5800.00	19.65	309.880	5597.40	786.20N	940.98W	==>	-661.22	
5900.00	19.65	309.880	5691.58	807.76N	966.79W	==>	-679.35	
6000.00	19.65	309.880	5785.76	829.32N	992.59W	==>	-697.48	
6100.00	19.65	309.880	5879.93	850.88N	1018.40W	==>	-715.61	
6200.00	19.65	309.880	5974.11	872.44N	1044.20W	==>	-733.75	
6300.00	19.65	309.880	6068.29	894.00N	1070.00W	==>	-751.88	
6400.00	19.65	309.880	6162.47	915.56N	1095.81W	==>	-770.01	
6500.00	19.65	309.880	6256.64	937.12N	1121.61W	==>	-788.14	
6600.00	19.65	309.880	6350.82	958.68N	1147.42W	==>	-806.27	
6700.00	19.65	309.880	6445.00	980.24N	1173.22W	==>	-824.41	
6800.00	15.71	283.420	6540.27	995.07N	1199.31W	10.00	-835.83	
6900.00	16.54	246.960	6636.57	992.64N	1225.64W	10.00	-830.09	
7000.00	22.25	221.810	6731.02	972.90N	1251.42W	10.00	-807.26	
7100.00	30.20	207.890	6820.74	936.47N	1275.87W	10.00	-768.03	
7200.00	39.03	199.580	6903.00	884.44N	1298.25W	10.00	-713.59	
7300.00	48.27	193.990	6975.31	818.39N	1317.87W	10.00	-645.60	
7400.00	57.70	189.820	7035.46	740.34N	1334.14W	10.00	-566.13	
7500.00	67.25	186.450	7081.63	652.66N	1346.57W	10.00	-477.57	
7600.00	76.85	183.530	7112.42	558.01N	1354.77W	10.00	-382.64	
7700.00	86.49	180.830	7126.89	459.26N	1358.50W	10.00	-284.21	
7800.00	90.00	179.870	7128.00	359.28N	1358.58W	==>	-185.02	
7900.00	90.00	179.870	7128.00	259.28N	1358.35W	==>	-85.85	
8000.00	90.00	179.870	7128.00	159.28N	1358.12W	==>	13.32	
8100.00	90.00	179.870	7128.00	59.28N	1357.89W	==>	112.49	
8200.00	90.00	179.870	7128.00	40.72S	1357.66W	==>	211.66	
8300.00	90.00	179.870	7128.00	140.72S	1357.43W	==>	310.84	
8400.00	90.00	179.870	7128.00	240.72S	1357.20W	==>	410.01	
8500.00	90.00	179.870	7128.00	340.72S	1356.97W	==>	509.18	
8600.00	90.00	179.870	7128.00	440.72S	1356.74W	==>	608.35	
8700.00	90.00	179.870	7128.00	540.72S	1356.51W	==>	707.52	
8800.00	90.00	179.870	7128.00	640.72S	1356.28W	==>	806.70	
8900.00	90.00	179.870	7128.00	740.72S	1356.06W	==>	905.87	
9000.00	90.00	179.870	7128.00	840.72S	1355.83W	==>	1005.04	

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Interpolated Wellpath								
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9100.00	90.00	179.870	7128.00	940.72S	1355.60W	==>	1104.21	
9200.00	90.00	179.870	7128.00	1040.72S	1355.37W	==>	1203.38	
9300.00	90.00	179.870	7128.00	1140.72S	1355.14W	==>	1302.55	
9400.00	90.00	179.870	7128.00	1240.71S	1354.91W	==>	1401.73	
9500.00	90.00	179.870	7128.00	1340.71S	1354.68W	==>	1500.90	
9600.00	90.00	179.870	7128.00	1440.71S	1354.45W	==>	1600.07	
9700.00	90.00	179.870	7128.00	1540.71S	1354.22W	==>	1699.24	
9800.00	90.00	179.870	7128.00	1640.71S	1353.99W	==>	1798.41	
9900.00	90.00	179.870	7128.00	1740.71S	1353.76W	==>	1897.59	
10000.00	90.00	179.870	7128.00	1840.71S	1353.53W	==>	1996.76	
10100.00	90.00	179.870	7128.00	1940.71S	1353.31W	==>	2095.93	
10200.00	90.00	179.870	7128.00	2040.71S	1353.08W	==>	2195.10	
10300.00	90.00	179.870	7128.00	2140.71S	1352.85W	==>	2294.27	
10400.00	90.00	179.870	7128.00	2240.71S	1352.62W	==>	2393.45	
10500.00	90.00	179.870	7128.00	2340.71S	1352.39W	==>	2492.62	
10600.00	90.00	179.870	7128.00	2440.71S	1352.16W	==>	2591.79	
10700.00	90.00	179.870	7128.00	2540.71S	1351.93W	==>	2690.96	
10800.00	90.00	179.870	7128.00	2640.71S	1351.70W	==>	2790.13	
10900.00	90.00	179.870	7128.00	2740.71S	1351.47W	==>	2889.31	
11000.00	90.00	179.870	7128.00	2840.71S	1351.24W	==>	2988.48	
11100.00	90.00	179.870	7128.00	2940.71S	1351.01W	==>	3087.65	
11200.00	90.00	179.870	7128.00	3040.71S	1350.78W	==>	3186.82	
11300.00	90.00	179.870	7128.00	3140.71S	1350.55W	==>	3285.99	
11400.00	90.00	179.870	7128.00	3240.71S	1350.33W	==>	3385.17	
11500.00	90.00	179.870	7128.00	3340.71S	1350.10W	==>	3484.34	
11600.00	90.00	179.870	7128.00	3440.71S	1349.87W	==>	3583.51	
11700.00	90.00	179.870	7128.00	3540.71S	1349.64W	==>	3682.68	
11800.00	90.00	179.870	7128.00	3640.71S	1349.41W	==>	3781.85	
11900.00	90.00	179.870	7128.00	3740.71S	1349.18W	==>	3881.02	
12000.00	90.00	179.870	7128.00	3840.71S	1348.95W	==>	3980.20	
12100.00	90.00	179.870	7128.00	3940.71S	1348.72W	==>	4079.37	
12200.00	90.00	179.870	7128.00	4040.71S	1348.49W	==>	4178.54	
12300.00	90.00	179.870	7128.00	4140.71S	1348.26W	==>	4277.71	
12400.00	90.00	179.870	7128.00	4240.71S	1348.03W	==>	4376.88	
12500.00	90.00	179.870	7128.00	4340.71S	1347.80W	==>	4476.06	
12600.00	90.00	179.870	7128.00	4440.71S	1347.58W	==>	4575.23	
12700.00	90.00	179.870	7128.00	4540.71S	1347.35W	==>	4674.40	
12800.00	90.00	179.870	7128.00	4640.71S	1347.12W	==>	4773.57	
12900.00	90.00	179.870	7128.00	4740.71S	1346.89W	==>	4872.74	
13000.00	90.00	179.870	7128.00	4840.71S	1346.66W	==>	4971.92	
13100.00	90.00	179.870	7128.00	4940.71S	1346.43W	==>	5071.09	
13200.00	90.00	179.870	7128.00	5040.70S	1346.20W	==>	5170.26	
13300.00	90.00	179.870	7128.00	5140.70S	1345.97W	==>	5269.43	
13400.00	90.00	179.870	7128.00	5240.70S	1345.74W	==>	5368.60	
13500.00	90.00	179.870	7128.00	5340.70S	1345.51W	==>	5467.78	
13600.00	90.00	179.870	7128.00	5440.70S	1345.28W	==>	5566.95	
13700.00	90.00	179.870	7128.00	5540.70S	1345.05W	==>	5666.12	
13800.00	90.00	179.870	7128.00	5640.70S	1344.82W	==>	5765.29	
13900.00	90.00	179.870	7128.00	5740.70S	1344.60W	==>	5864.46	
14000.00	90.00	179.870	7128.00	5840.70S	1344.37W	==>	5963.64	
14100.00	90.00	179.870	7128.00	5940.70S	1344.14W	==>	6062.81	
14200.00	90.00	179.870	7128.00	6040.70S	1343.91W	==>	6161.98	
14300.00	90.00	179.870	7128.00	6140.70S	1343.68W	==>	6261.15	
14400.00	90.00	179.870	7128.00	6240.70S	1343.45W	==>	6360.32	
14500.00	90.00	179.870	7128.00	6340.70S	1343.22W	==>	6459.49	
14600.00	90.00	179.870	7128.00	6440.70S	1342.99W	==>	6558.67	
14700.00	90.00	179.870	7128.00	6540.70S	1342.76W	==>	6657.84	
14800.00	90.00	179.870	7128.00	6640.70S	1342.53W	==>	6757.01	
14900.00	90.00	179.870	7128.00	6740.70S	1342.30W	==>	6856.18	

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Vertical Section is from 0.00N 0.00E on azimuth 187.250 degrees
Bottom hole distance is 10572.32 Feet on azimuth 187.25 degrees from Wellhead
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15000.00	90.00	179.870	7128.00	6840.70S	1342.07W	==>	6955.35	
15100.00	90.00	179.870	7128.00	6940.70S	1341.85W	==>	7054.53	
15200.00	90.00	179.870	7128.00	7040.70S	1341.62W	==>	7153.70	
15300.00	90.00	179.870	7128.00	7140.70S	1341.39W	==>	7252.87	
15400.00	90.00	179.870	7128.00	7240.70S	1341.16W	==>	7352.04	
15500.00	90.00	179.870	7128.00	7340.70S	1340.93W	==>	7451.21	
15600.00	90.00	179.870	7128.00	7440.70S	1340.70W	==>	7550.39	
15700.00	90.00	179.870	7128.00	7540.70S	1340.47W	==>	7649.56	
15800.00	90.00	179.870	7128.00	7640.70S	1340.24W	==>	7748.73	
15900.00	90.00	179.870	7128.00	7740.70S	1340.01W	==>	7847.90	
16000.00	90.00	179.870	7128.00	7840.70S	1339.78W	==>	7947.07	
16100.00	90.00	179.870	7128.00	7940.70S	1339.55W	==>	8046.25	
16200.00	90.00	179.870	7128.00	8040.70S	1339.32W	==>	8145.42	
16300.00	90.00	179.870	7128.00	8140.70S	1339.09W	==>	8244.59	
16400.00	90.00	179.870	7128.00	8240.70S	1338.87W	==>	8343.76	
16500.00	90.00	179.870	7128.00	8340.70S	1338.64W	==>	8442.93	
16600.00	90.00	179.870	7128.00	8440.70S	1338.41W	==>	8542.11	
16700.00	90.00	179.870	7128.00	8540.70S	1338.18W	==>	8641.28	
16800.00	90.00	179.870	7128.00	8640.70S	1337.95W	==>	8740.45	
16900.00	90.00	179.870	7128.00	8740.70S	1337.72W	==>	8839.62	
17000.00	90.00	179.870	7128.00	8840.69S	1337.49W	==>	8938.79	
17100.00	90.00	179.870	7128.00	8940.69S	1337.26W	==>	9037.96	
17200.00	90.00	179.870	7128.00	9040.69S	1337.03W	==>	9137.14	
17300.00	90.00	179.870	7128.00	9140.69S	1336.80W	==>	9236.31	
17400.00	90.00	179.870	7128.00	9240.69S	1336.57W	==>	9335.48	
17500.00	90.00	179.870	7128.00	9340.69S	1336.34W	==>	9434.65	
17600.00	90.00	179.870	7128.00	9440.69S	1336.12W	==>	9533.82	
17700.00	90.00	179.870	7128.00	9540.69S	1335.89W	==>	9633.00	
17800.00	90.00	179.870	7128.00	9640.69S	1335.66W	==>	9732.17	
17900.00	90.00	179.870	7128.00	9740.69S	1335.43W	==>	9831.34	
18000.00	90.00	179.870	7128.00	9840.69S	1335.20W	==>	9930.51	
18100.00	90.00	179.870	7128.00	9940.69S	1334.97W	==>	10029.68	
18200.00	90.00	179.870	7128.00	10040.69S	1334.74W	==>	10128.86	
18300.00	90.00	179.870	7128.00	10140.69S	1334.51W	==>	10228.03	
18400.00	90.00	179.870	7128.00	10240.69S	1334.28W	==>	10327.20	
18500.00	90.00	179.870	7128.00	10340.69S	1334.05W	==>	10426.37	
18600.00	90.00	179.870	7128.00	10440.69S	1333.82W	==>	10525.54	
18647.17	90.00	179.870	7128.00	10487.86S	1333.72W	==>	10572.32	

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 5010.0ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 187.250 degrees
Bottom hole distance is 10572.32 Feet on azimuth 187.25 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by Microsoft
Date Printed: 1-Dec-2017



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
Knight 14 EP	422.90N	1358.72W	7128.00	40.19881000	-105.04691000	1315592.31	3126564.19
Knight 14 BH	10487.86S	1333.72W	7128.00	40.16886000	-105.04702000	1304682.04	3126589.20

Notes