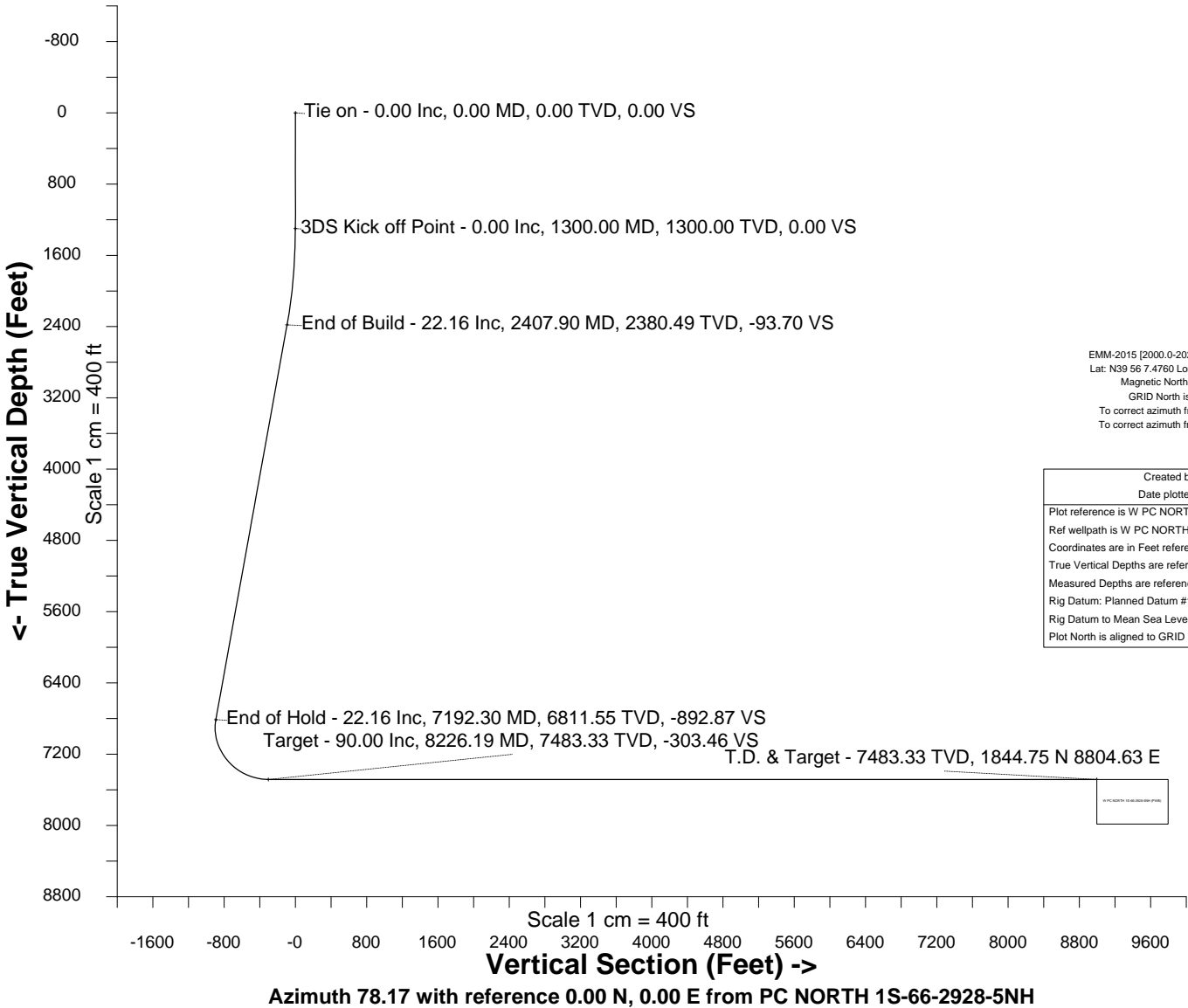
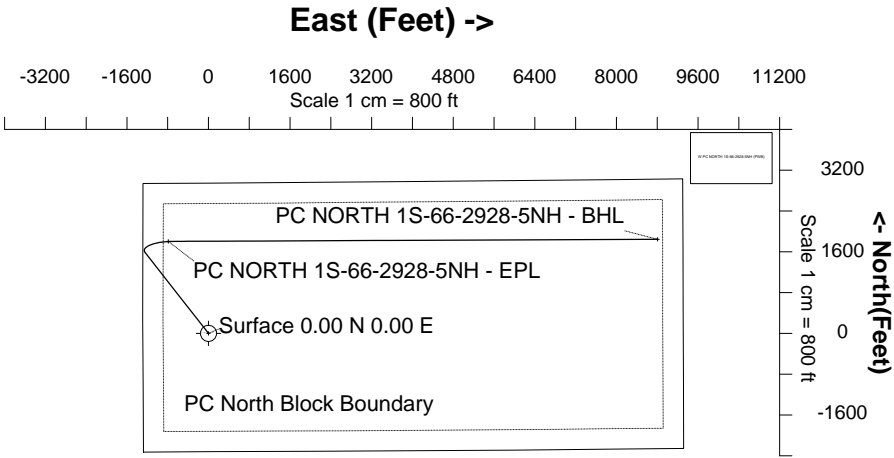


HRM Resources			
Location	DJ Basin	Slot	PC NORTH 1S-66-2928-5NH
Field	WATTENBERG	Well	W PC NORTH 1S-66-2928-5NH
Installation	PC 1S-66-2928 PAD	Wellbore	W PC NORTH 1S-66-2928-5NH (PWB)

WELL PROFILE DATA								
Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
Tie on	0.00	0.00	0.00	0.00	S 0.00	W 0.00		0.00
KOP	1300.00	0.00	321.88	1300.00	S 0.00	W 0.00	0.00	0.00
End of Build	2407.90	22.16	321.88	2380.49	N 166.45	W 130.61	2.00	-93.70
End of Hold	7192.30	22.16	321.88	6811.55	N 1586.06	W 1244.57	0.00	-892.87
Target PC NOR... - EPL	8226.19	90.00	89.76	7483.33	N 1804.37	W 688.11	10.00	-303.46
T.D. & Target PC ...BHL	17719.02	90.00	89.76	7483.33	N 1844.75	E 8804.63	0.00	8995.81



Created by	admin
Date plotted	31-Jan-2017
Plot reference is W PC NORTH 1S-66-2928-5NH (PWB). Ref wellpath is W PC NORTH 1S-66-2928-5NH (PWP#1). Coordinates are in Feet reference PC NORTH 1S-66-2928-5NH. True Vertical Depths are reference Rig Datum. Measured Depths are reference Rig Datum. Rig Datum: Planned Datum #1 Rig Datum to Mean Sea Level: 5062.33 ft. Plot North is aligned to GRID North.	



SYSDRILL
Well Design Combined Report
Wellbore: W PC NORTH 1S-66-2928-5NH (PWB)



Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
PC NORTH 1S-66-2928-5NH	N39 56 6.8640	W104 48 15.5520	1220021.7578	3195080.3218	61.93S	0.49E	0.00

Declination

Date	Source	Time
Jan-24-2017	EMM-2015 [2000.0-2020.0]	09:32

Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
PC 1S-66-2928 PAD	N39 56 7.4760	W104 48 15.5520	1220083.6821	3195079.8360	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	Easting[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	1220021.76	3195080.32
1300.00	0.00	321.880	1300.00	0.00N	0.00E	==>	0.00	1220021.76	3195080.32
2407.90	22.16	321.880	2380.49	166.45N	130.61W	2.00	-93.70	1220188.20	3194949.72
7192.30	22.16	321.880	6811.55	1586.06N	1244.57W	==>	-892.87	1221607.77	3193835.79
8226.19	90.00	89.760	7483.33	1804.37N	688.11W	10.00	-303.46	1221826.07	3194392.24
17719.02	90.00	89.760	7483.33	1844.75N	8804.63E	==>	8995.81	1221866.45	3203884.69

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	Easting[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.000	0.00	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	321.880	1300.00	0.00N	0.00E	==>	0.00	
1400.00	2.00	321.880	1399.98	1.37N	1.08W	2.00	-0.77	
1500.00	4.00	321.880	1499.84	5.49N	4.31W	2.00	-3.09	
1600.00	6.00	321.880	1599.45	12.35N	9.69W	2.00	-6.95	
1700.00	8.00	321.880	1698.70	21.93N	17.21W	2.00	-12.35	
1800.00	10.00	321.880	1797.47	34.24N	26.87W	2.00	-19.28	
1900.00	12.00	321.880	1895.62	49.25N	38.65W	2.00	-27.73	
2000.00	14.00	321.880	1993.06	66.95N	52.53W	2.00	-37.69	
2100.00	16.00	321.880	2089.64	87.31N	68.51W	2.00	-49.15	
2200.00	18.00	321.880	2185.27	110.31N	86.56W	2.00	-62.10	
2300.00	20.00	321.880	2279.82	135.92N	106.65W	2.00	-76.51	
2400.00	22.00	321.880	2373.17	164.11N	128.78W	2.00	-92.39	
2500.00	22.16	321.880	2465.79	193.77N	152.05W	==>	-109.08	
2600.00	22.16	321.880	2558.40	223.45N	175.34W	==>	-125.79	
2700.00	22.16	321.880	2651.02	253.12N	198.62W	==>	-142.49	
2800.00	22.16	321.880	2743.63	282.79N	221.90W	==>	-159.19	
2900.00	22.16	321.880	2836.25	312.46N	245.18W	==>	-175.90	
3000.00	22.16	321.880	2928.86	342.13N	268.47W	==>	-192.60	
3100.00	22.16	321.880	3021.48	371.80N	291.75W	==>	-209.31	

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 5062.3ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 78.170 degrees
Bottom hole distance is 8995.81 Feet on azimuth 78.17 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by IPT
Date Printed: 31-Jan-2017



SYSDRILL
Well Design Combined Report
Wellbore: W PC NORTH 1S-66-2928-5NH (PWB)



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	22.16	321.880	3114.09	401.48N	315.03W	==>	-226.01	
3300.00	22.16	321.880	3206.71	431.15N	338.32W	==>	-242.71	
3400.00	22.16	321.880	3299.32	460.82N	361.60W	==>	-259.42	
3500.00	22.16	321.880	3391.93	490.49N	384.88W	==>	-276.12	
3600.00	22.16	321.880	3484.55	520.16N	408.17W	==>	-292.82	
3700.00	22.16	321.880	3577.16	549.83N	431.45W	==>	-309.53	
3800.00	22.16	321.880	3669.78	579.51N	454.73W	==>	-326.23	
3900.00	22.16	321.880	3762.39	609.18N	478.02W	==>	-342.93	
4000.00	22.16	321.880	3855.01	638.85N	501.30W	==>	-359.64	
4100.00	22.16	321.880	3947.62	668.52N	524.58W	==>	-376.34	
4200.00	22.16	321.880	4040.24	698.19N	547.87W	==>	-393.05	
4300.00	22.16	321.880	4132.85	727.86N	571.15W	==>	-409.75	
4400.00	22.16	321.880	4225.47	757.54N	594.43W	==>	-426.45	
4500.00	22.16	321.880	4318.08	787.21N	617.71W	==>	-443.16	
4600.00	22.16	321.880	4410.70	816.88N	641.00W	==>	-459.86	
4700.00	22.16	321.880	4503.31	846.55N	664.28W	==>	-476.56	
4800.00	22.16	321.880	4595.93	876.22N	687.56W	==>	-493.27	
4900.00	22.16	321.880	4688.54	905.90N	710.85W	==>	-509.97	
5000.00	22.16	321.880	4781.16	935.57N	734.13W	==>	-526.67	
5100.00	22.16	321.880	4873.77	965.24N	757.41W	==>	-543.38	
5200.00	22.16	321.880	4966.38	994.91N	780.70W	==>	-560.08	
5300.00	22.16	321.880	5059.00	1024.58N	803.98W	==>	-576.78	
5400.00	22.16	321.880	5151.61	1054.25N	827.26W	==>	-593.49	
5500.00	22.16	321.880	5244.23	1083.93N	850.55W	==>	-610.19	
5600.00	22.16	321.880	5336.84	1113.60N	873.83W	==>	-626.90	
5700.00	22.16	321.880	5429.46	1143.27N	897.11W	==>	-643.60	
5800.00	22.16	321.880	5522.07	1172.94N	920.40W	==>	-660.30	
5900.00	22.16	321.880	5614.69	1202.61N	943.68W	==>	-677.01	
6000.00	22.16	321.880	5707.30	1232.28N	966.96W	==>	-693.71	
6100.00	22.16	321.880	5799.92	1261.96N	990.24W	==>	-710.41	
6200.00	22.16	321.880	5892.53	1291.63N	1013.53W	==>	-727.12	
6300.00	22.16	321.880	5985.15	1321.30N	1036.81W	==>	-743.82	
6400.00	22.16	321.880	6077.76	1350.97N	1060.09W	==>	-760.52	
6500.00	22.16	321.880	6170.38	1380.64N	1083.38W	==>	-777.23	
6600.00	22.16	321.880	6262.99	1410.31N	1106.66W	==>	-793.93	
6700.00	22.16	321.880	6355.61	1439.99N	1129.94W	==>	-810.63	
6800.00	22.16	321.880	6448.22	1469.66N	1153.23W	==>	-827.34	
6900.00	22.16	321.880	6540.83	1499.33N	1176.51W	==>	-844.04	
7000.00	22.16	321.880	6633.45	1529.00N	1199.79W	==>	-860.75	
7100.00	22.16	321.880	6726.06	1558.67N	1223.08W	==>	-877.45	
7200.00	21.72	323.570	6818.69	1588.35N	1246.31W	10.00	-894.10	
7300.00	18.01	351.250	6912.93	1618.59N	1259.68W	10.00	-900.99	
7400.00	19.24	22.700	7007.93	1649.14N	1255.66W	10.00	-890.79	
7500.00	24.69	45.400	7100.80	1679.08N	1234.38W	10.00	-863.82	
7600.00	32.29	59.180	7188.72	1707.51N	1196.47W	10.00	-820.89	
7700.00	40.84	67.930	7269.02	1733.55N	1143.09W	10.00	-763.31	
7800.00	49.86	74.030	7339.25	1756.41N	1075.87W	10.00	-692.82	
7900.00	59.12	78.670	7397.29	1775.40N	996.84W	10.00	-611.58	
8000.00	68.52	82.490	7441.37	1789.95N	908.41W	10.00	-522.04	
8100.00	78.00	85.840	7470.15	1799.60N	813.26W	10.00	-426.94	
8200.00	87.51	88.950	7482.76	1804.08N	714.29W	10.00	-329.15	
8300.00	90.00	89.760	7483.33	1804.68N	614.30W	==>	-231.16	
8400.00	90.00	89.760	7483.33	1805.11N	514.30W	==>	-133.20	
8500.00	90.00	89.760	7483.33	1805.54N	414.30W	==>	-35.24	
8600.00	90.00	89.760	7483.33	1805.96N	314.30W	==>	62.72	
8700.00	90.00	89.760	7483.33	1806.39N	214.30W	==>	160.68	
8800.00	90.00	89.760	7483.33	1806.81N	114.31W	==>	258.64	
8900.00	90.00	89.760	7483.33	1807.24N	14.31W	==>	356.60	
9000.00	90.00	89.760	7483.33	1807.66N	85.69E	==>	454.56	

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5062.3ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 78.170 degrees
Bottom hole distance is 8995.81 Feet on azimuth 78.17 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by IPT
Date Printed: 31-Jan-2017



SYSDRILL
Well Design Combined Report
Wellbore: W PC NORTH 1S-66-2928-5NH (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
9100.00	90.00	89.760	7483.33	1808.09N	185.69E	==>	552.53	
9200.00	90.00	89.760	7483.33	1808.51N	285.69E	==>	650.49	
9300.00	90.00	89.760	7483.33	1808.94N	385.69E	==>	748.45	
9400.00	90.00	89.760	7483.33	1809.36N	485.69E	==>	846.41	
9500.00	90.00	89.760	7483.33	1809.79N	585.69E	==>	944.37	
9600.00	90.00	89.760	7483.33	1810.21N	685.69E	==>	1042.33	
9700.00	90.00	89.760	7483.33	1810.64N	785.69E	==>	1140.29	
9800.00	90.00	89.760	7483.33	1811.07N	885.69E	==>	1238.25	
9900.00	90.00	89.760	7483.33	1811.49N	985.68E	==>	1336.22	
10000.00	90.00	89.760	7483.33	1811.92N	1085.68E	==>	1434.18	
10100.00	90.00	89.760	7483.33	1812.34N	1185.68E	==>	1532.14	
10200.00	90.00	89.760	7483.33	1812.77N	1285.68E	==>	1630.10	
10300.00	90.00	89.760	7483.33	1813.19N	1385.68E	==>	1728.06	
10400.00	90.00	89.760	7483.33	1813.62N	1485.68E	==>	1826.02	
10500.00	90.00	89.760	7483.33	1814.04N	1585.68E	==>	1923.98	
10600.00	90.00	89.760	7483.33	1814.47N	1685.68E	==>	2021.94	
10700.00	90.00	89.760	7483.33	1814.89N	1785.68E	==>	2119.90	
10800.00	90.00	89.760	7483.33	1815.32N	1885.68E	==>	2217.87	
10900.00	90.00	89.760	7483.33	1815.74N	1985.68E	==>	2315.83	
11000.00	90.00	89.760	7483.33	1816.17N	2085.67E	==>	2413.79	
11100.00	90.00	89.760	7483.33	1816.60N	2185.67E	==>	2511.75	
11200.00	90.00	89.760	7483.33	1817.02N	2285.67E	==>	2609.71	
11300.00	90.00	89.760	7483.33	1817.45N	2385.67E	==>	2707.67	
11400.00	90.00	89.760	7483.33	1817.87N	2485.67E	==>	2805.63	
11500.00	90.00	89.760	7483.33	1818.30N	2585.67E	==>	2903.59	
11600.00	90.00	89.760	7483.33	1818.72N	2685.67E	==>	3001.55	
11700.00	90.00	89.760	7483.33	1819.15N	2785.67E	==>	3099.52	
11800.00	90.00	89.760	7483.33	1819.57N	2885.67E	==>	3197.48	
11900.00	90.00	89.760	7483.33	1820.00N	2985.67E	==>	3295.44	
12000.00	90.00	89.760	7483.33	1820.42N	3085.67E	==>	3393.40	
12100.00	90.00	89.760	7483.33	1820.85N	3185.66E	==>	3491.36	
12200.00	90.00	89.760	7483.33	1821.27N	3285.66E	==>	3589.32	
12300.00	90.00	89.760	7483.33	1821.70N	3385.66E	==>	3687.28	
12400.00	90.00	89.760	7483.33	1822.13N	3485.66E	==>	3785.24	
12500.00	90.00	89.760	7483.33	1822.55N	3585.66E	==>	3883.20	
12600.00	90.00	89.760	7483.33	1822.98N	3685.66E	==>	3981.17	
12700.00	90.00	89.760	7483.33	1823.40N	3785.66E	==>	4079.13	
12800.00	90.00	89.760	7483.33	1823.83N	3885.66E	==>	4177.09	
12900.00	90.00	89.760	7483.33	1824.25N	3985.66E	==>	4275.05	
13000.00	90.00	89.760	7483.33	1824.68N	4085.66E	==>	4373.01	
13100.00	90.00	89.760	7483.33	1825.10N	4185.66E	==>	4470.97	
13200.00	90.00	89.760	7483.33	1825.53N	4285.65E	==>	4568.93	
13300.00	90.00	89.760	7483.33	1825.95N	4385.65E	==>	4666.89	
13400.00	90.00	89.760	7483.33	1826.38N	4485.65E	==>	4764.85	
13500.00	90.00	89.760	7483.33	1826.80N	4585.65E	==>	4862.82	
13600.00	90.00	89.760	7483.33	1827.23N	4685.65E	==>	4960.78	
13700.00	90.00	89.760	7483.33	1827.66N	4785.65E	==>	5058.74	
13800.00	90.00	89.760	7483.33	1828.08N	4885.65E	==>	5156.70	
13900.00	90.00	89.760	7483.33	1828.51N	4985.65E	==>	5254.66	
14000.00	90.00	89.760	7483.33	1828.93N	5085.65E	==>	5352.62	
14100.00	90.00	89.760	7483.33	1829.36N	5185.65E	==>	5450.58	
14200.00	90.00	89.760	7483.33	1829.78N	5285.65E	==>	5548.54	
14300.00	90.00	89.760	7483.33	1830.21N	5385.64E	==>	5646.50	
14400.00	90.00	89.760	7483.33	1830.63N	5485.64E	==>	5744.47	
14500.00	90.00	89.760	7483.33	1831.06N	5585.64E	==>	5842.43	
14600.00	90.00	89.760	7483.33	1831.48N	5685.64E	==>	5940.39	
14700.00	90.00	89.760	7483.33	1831.91N	5785.64E	==>	6038.35	
14800.00	90.00	89.760	7483.33	1832.33N	5885.64E	==>	6136.31	
14900.00	90.00	89.760	7483.33	1832.76N	5985.64E	==>	6234.27	

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 5062.3ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 78.170 degrees
Bottom hole distance is 8995.81 Feet on azimuth 78.17 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by IPT
Date Printed: 31-Jan-2017



SYS DRILL
Well Design Combined Report
Wellbore: W PC NORTH 1S-66-2928-5NH (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
15000.00	90.00	89.760	7483.33	1833.19N	6085.64E	==>	6332.23	
15100.00	90.00	89.760	7483.33	1833.61N	6185.64E	==>	6430.19	
15200.00	90.00	89.760	7483.33	1834.04N	6285.64E	==>	6528.15	
15300.00	90.00	89.760	7483.33	1834.46N	6385.64E	==>	6626.12	
15400.00	90.00	89.760	7483.33	1834.89N	6485.63E	==>	6724.08	
15500.00	90.00	89.760	7483.33	1835.31N	6585.63E	==>	6822.04	
15600.00	90.00	89.760	7483.33	1835.74N	6685.63E	==>	6920.00	
15700.00	90.00	89.760	7483.33	1836.16N	6785.63E	==>	7017.96	
15800.00	90.00	89.760	7483.33	1836.59N	6885.63E	==>	7115.92	
15900.00	90.00	89.760	7483.33	1837.01N	6985.63E	==>	7213.88	
16000.00	90.00	89.760	7483.33	1837.44N	7085.63E	==>	7311.84	
16100.00	90.00	89.760	7483.33	1837.87N	7185.63E	==>	7409.80	
16200.00	90.00	89.760	7483.33	1838.29N	7285.63E	==>	7507.77	
16300.00	90.00	89.760	7483.33	1838.72N	7385.63E	==>	7605.73	
16400.00	90.00	89.760	7483.33	1839.14N	7485.63E	==>	7703.69	
16500.00	90.00	89.760	7483.33	1839.57N	7585.62E	==>	7801.65	
16600.00	90.00	89.760	7483.33	1839.99N	7685.62E	==>	7899.61	
16700.00	90.00	89.760	7483.33	1840.42N	7785.62E	==>	7997.57	
16800.00	90.00	89.760	7483.33	1840.84N	7885.62E	==>	8095.53	
16900.00	90.00	89.760	7483.33	1841.27N	7985.62E	==>	8193.49	
17000.00	90.00	89.760	7483.33	1841.69N	8085.62E	==>	8291.45	
17100.00	90.00	89.760	7483.33	1842.12N	8185.62E	==>	8389.42	
17200.00	90.00	89.760	7483.33	1842.54N	8285.62E	==>	8487.38	
17300.00	90.00	89.760	7483.33	1842.97N	8385.62E	==>	8585.34	
17400.00	90.00	89.760	7483.33	1843.40N	8485.62E	==>	8683.30	
17500.00	90.00	89.760	7483.33	1843.82N	8585.62E	==>	8781.26	
17600.00	90.00	89.760	7483.33	1844.25N	8685.61E	==>	8879.22	
17700.00	90.00	89.760	7483.33	1844.67N	8785.61E	==>	8977.18	
17719.02	90.00	89.760	7483.33	1844.75N	8804.63E	==>	8995.81	

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 5062.3ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 78.170 degrees
Bottom hole distance is 8995.81 Feet on azimuth 78.17 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by IPT
Date Printed: 31-Jan-2017



SYSDRILL
Well Design Combined Report
Wellbore: W PC NORTH 1S-66-2928-5NH (PWB)



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
PC NORTH 1S-66-2928-5NH - BHL	1844.75N	8804.63E	7483.33	N39 56 24.3960	W104 46 22.3320	1221866.45	3203884.69
PC NORTH 1S-66-2928-5NH - EPL	1804.37N	788.11W	7483.33	N39 56 24.7560	W104 48 25.4880	1221826.07	3194292.24

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
523063	Planned	1500.00	1499.84	WdW Rate Gyro	Standard	
523062	Planned	17719.02	7483.33	ISCWSA MWD	Rev 4 + SAG + FLT	

Notes



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: W PC NORTH 1S-66-2928-5NH (PWB)



Ellipse separations are reported ONLY if BOTH wells have uncertainty data
Only Depth and Magnetic Reference Field error terms are correlated across tie points
Scan limit is calculated on CENTRE to CENTRE distance
Summary data uses Closest Approach clearance calculation for all minima
Hole size/Casings ARE included
Hole size/Casings are NOT subtracted from Centre-Centre distance
Confidence limit of 95.00% / 2.80 SD.

Wellbore		
Name	Created	Last Revised
W PC NORTH 1S-66-2928-5NH (PWB)	Jan-24-2017	Jan-24-2017

Well		
Name	Government ID	Last Revised
W PC NORTH 1S-66-2928-5NH		Jan-24-2017

Slot						
Name	Latitude	Longitude	Grid Northing	Grid Easting	North	East
PC NORTH 1S-66-2928-5NH	N39 56 6.8640	W104 48 15.5520	1220021.7578	3195080.3218	61.93S	0.49E

Installation						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Easting	Northing	Coord System Name	North Alignment
PC 1S-66-2928 PAD	N39 56 7.4760	W104 48 15.5520	3195079.8360	1220083.6821	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Clearance Summary							
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
W PC NORTH 1S-66-2928-6NH	14.57	1300.00	1300.00	-357.98	17719.02	0.52	17719.02
W PC NORTH 1S-66-2928-4CD H	18.21	1250.23	17719.02	-130.00	17719.02	0.70	17719.02
W PC NORTH 1S-66-2928-7CD H	29.14	1300.00	1300.00	-66.53	17719.02	0.90	17719.02
W PC SOUTH 1S-66-2928-15N H	30.85	1300.00	17716.54	28.75	1312.34	3.44	17719.02
W PC NORTH 1S-66-2928-3NH	32.79	1200.26	1200.26	-390.80	17719.02	0.47	17719.02
W PC SOUTH 1S-66-2928-16C DH	34.12	1300.00	17700.00	32.03	1312.34	3.81	17719.02
W PC SOUTH 1S-66-2928-14N H	35.82	1300.00	1300.00	33.70	1345.14	2.93	17719.02
W PC SOUTH 1S-66-2928-17N H	42.44	1300.00	17716.54	40.34	1300.00	3.95	17719.02
W PC NORTH 1S-66-2928-8NH	43.71	1300.00	1300.00	-19.13	17719.02	0.97	17719.02
W PC SOUTH 1S-66-2928-13C DH	44.46	1509.19	17700.00	42.03	1509.19	2.72	17719.02
W PC NORTH 1S-66-2928-2NH	47.36	1150.39	17719.02	-92.17	17719.02	0.88	17719.02

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Vertical Section is from 0.00N 0.00E on azimuth 78.170 degrees
Prepared by IPT
Date Printed: 31-Jan-2017



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: W PC NORTH 1S-66-2928-5NH (PWB)



Clearance Summary							
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
W PC SOUTH 1S-66-2928-12N H	53.36	1626.86	17716.54	50.73	1640.42	2.41	17719.02
W PC SOUTH 1S-66-2928-18N H	53.50	1300.00	17719.02	51.41	1300.00	4.44	17719.02
W PC NORTH 1S-66-2928-9NH	58.29	1300.00	17716.54	56.19	1312.34	1.45	17719.02
W PC NORTH 1S-66-2928-11N H	62.26	1716.03	1716.03	59.14	1738.85	1.93	17719.02
W PC SOUTH 1S-66-2928-19C DH	65.94	1300.00	17716.54	63.85	1300.00	4.87	17719.02
W PC NORTH 1S-66-2928-10C DH	72.86	1300.00	17719.02	70.76	1312.34	1.71	17719.02
W PC SOUTH 1S-66-2928-20N H	79.12	1300.00	17716.54	77.02	1300.00	4.99	17719.02
W POLLARD #1	3454.78	13600.00	13600.00	3195.97	13713.91	12.74	14435.70

