



SYSDRILL  
Proposed Wellpath Report  
Wellbore: Pihl 1-33H (PWB)  
Wellpath: Pihl 1-33H (PWP#1)

**Section**

Name	Easting	Northing	Map Projection	North Alignment
Sec 33 - 15S - 03W	1406901.0000	137717.0000	KS83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

**Surface Hole Location**

County	Well Name	Northing	Easting	Latitude	Longitude
Kansas	Pihl 1-33H	137516.0000	1407229.0000	N38 42 37.5508	W97 40 2.8352

**Summary Wellpath**

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	137516.00	1407229.00
2591.14	0.00	172.780	2591.14	0.00N	0.00E	==>	0.00	137516.00	1407229.00
3466.14	70.00	172.780	3264.15	467.51S	59.23E	8.00	471.24	137048.49	1407288.23
3616.14	70.00	172.780	3315.45	607.34S	76.94E	==>	612.20	136908.66	1407305.94
3818.34	90.22	172.780	3350.00	803.93S	101.85E	10.00	810.36	136712.07	1407330.85
7824.16	90.21	172.790	3335.00	4778.00S	605.00E	==>	4816.16	132738.00	1407834.00

**Interpolated Wellpath**

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	137516.00	1407229.00
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1500.00	0.00	0.000	1500.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1600.00	0.00	0.000	1600.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1700.00	0.00	0.000	1700.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1800.00	0.00	0.000	1800.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
1900.00	0.00	0.000	1900.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2000.00	0.00	0.000	2000.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2100.00	0.00	0.000	2100.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2200.00	0.00	0.000	2200.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2300.00	0.00	0.000	2300.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2400.00	0.00	0.000	2400.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2500.00	0.00	0.000	2500.00	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2591.14	0.00	172.780	2591.14	0.00N	0.00E	==>	0.00	137516.00	1407229.00
2691.14	8.00	172.780	2690.82	6.91S	0.88E	8.00	6.97	137509.09	1407229.88
2791.14	16.00	172.780	2788.55	27.52S	3.49E	8.00	27.74	137488.48	1407232.49
2891.14	24.00	172.780	2882.44	61.43S	7.78E	8.00	61.92	137454.57	1407236.78
2991.14	32.00	172.780	2970.67	107.96S	13.68E	8.00	108.83	137408.04	1407242.68
3091.14	40.00	172.780	3051.50	166.23S	21.06E	8.00	167.56	137349.77	1407250.06
3191.14	48.00	172.780	3123.38	235.09S	29.78E	8.00	236.97	137280.91	1407258.78
3291.14	56.00	172.780	3184.89	313.20S	39.68E	8.00	315.70	137202.80	1407268.68
3391.14	64.00	172.780	3234.85	399.05S	50.55E	8.00	402.24	137116.95	1407279.55
3466.14	70.00	172.780	3264.15	467.51S	59.23E	8.00	471.24	137048.49	1407288.23
3500.00	70.00	172.780	3275.73	499.07S	63.22E	==>	503.06	137016.93	1407292.22
3600.00	70.00	172.780	3309.93	592.30S	75.03E	==>	597.03	136923.70	1407304.03
3616.14	70.00	172.780	3315.45	607.34S	76.94E	==>	612.20	136908.66	1407305.94
3716.14	80.00	172.780	3341.30	703.05S	89.07E	10.00	708.67	136812.95	1407318.07
3816.14	90.00	172.780	3350.00	801.76S	101.57E	10.00	808.16	136714.25	1407330.57
3818.34	90.22	172.780	3350.00	803.93S	101.85E	10.00	810.36	136712.07	1407330.85
3900.00	90.22	172.780	3349.68	884.95S	112.11E	==>	892.02	136631.05	1407341.11
4000.00	90.22	172.780	3349.30	984.15S	124.68E	==>	992.02	136531.85	1407353.68
4100.00	90.22	172.780	3348.92	1083.36S	137.24E	==>	1092.02	136432.64	1407366.24
4200.00	90.22	172.780	3348.54	1182.57S	149.81E	==>	1192.02	136333.43	1407378.81
4300.00	90.22	172.780	3348.15	1281.77S	162.38E	==>	1292.02	136234.23	1407391.38
4400.00	90.22	172.780	3347.77	1380.98S	174.94E	==>	1392.02	136135.02	1407403.94
4500.00	90.22	172.780	3347.39	1480.19S	187.51E	==>	1492.02	136035.82	1407416.51
4600.00	90.22	172.780	3347.01	1579.39S	200.07E	==>	1592.01	135936.61	1407429.07
4700.00	90.22	172.780	3346.63	1678.60S	212.64E	==>	1692.01	135837.40	1407441.64
4800.00	90.22	172.780	3346.25	1777.81S	225.20E	==>	1792.01	135738.20	1407454.20
4900.00	90.22	172.780	3345.87	1877.01S	237.77E	==>	1892.01	135638.99	1407466.77
5000.00	90.22	172.780	3345.49	1976.22S	250.33E	==>	1992.01	135539.78	1407479.33

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Slot and TVD's are from Slot ( Pihl 1-33H 1294.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 172.780 degrees  
Bottom hole distance is 4816.16 Feet on azimuth 172.78 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Drill Right Technology  
Date Printed: 23-Jun-2014

SYS DRILL  
 Proposed Wellpath Report  
 Wellbore: Pihl 1-33H (PWB)  
 Wellpath: Pihl 1-33H (PWP#1)

**Interpolated Wellpath**

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
5100.00	90.22	172.780	3345.12	2075.43S	262.89E	==>	2092.01	135440.58	1407491.89
5200.00	90.22	172.780	3344.74	2174.63S	275.46E	==>	2192.01	135341.37	1407504.46
5300.00	90.22	172.780	3344.36	2273.84S	288.02E	==>	2292.01	135242.16	1407517.02
5400.00	90.22	172.780	3343.98	2373.05S	300.58E	==>	2392.01	135142.95	1407529.58
5500.00	90.22	172.780	3343.61	2472.26S	313.14E	==>	2492.01	135043.75	1407542.14
5600.00	90.22	172.780	3343.23	2571.46S	325.70E	==>	2592.01	134944.54	1407554.70
5700.00	90.21	172.780	3342.86	2670.67S	338.27E	==>	2692.01	134845.33	1407567.27
5800.00	90.21	172.780	3342.48	2769.88S	350.83E	==>	2792.01	134746.13	1407579.83
5900.00	90.21	172.780	3342.11	2869.08S	363.39E	==>	2892.01	134646.92	1407592.39
6000.00	90.21	172.780	3341.73	2968.29S	375.95E	==>	2992.00	134547.71	1407604.95
6100.00	90.21	172.780	3341.36	3067.50S	388.51E	==>	3092.00	134448.50	1407617.51
6200.00	90.21	172.780	3340.99	3166.71S	401.07E	==>	3192.00	134349.30	1407630.07
6300.00	90.21	172.790	3340.62	3265.91S	413.63E	==>	3292.00	134250.09	1407642.63
6400.00	90.21	172.790	3340.24	3365.12S	426.18E	==>	3392.00	134150.88	1407655.18
6500.00	90.21	172.790	3339.87	3464.33S	438.74E	==>	3492.00	134051.67	1407667.74
6600.00	90.21	172.790	3339.50	3563.54S	451.30E	==>	3592.00	133952.47	1407680.30
6700.00	90.21	172.790	3339.13	3662.74S	463.86E	==>	3692.00	133853.26	1407692.86
6800.00	90.21	172.790	3338.76	3761.95S	476.42E	==>	3792.00	133754.05	1407705.41
6900.00	90.21	172.790	3338.39	3861.16S	488.97E	==>	3892.00	133654.84	1407717.97
7000.00	90.21	172.790	3338.02	3960.37S	501.53E	==>	3992.00	133555.64	1407730.53
7100.00	90.21	172.790	3337.65	4059.58S	514.08E	==>	4092.00	133456.43	1407743.08
7200.00	90.21	172.790	3337.29	4158.78S	526.64E	==>	4192.00	133357.22	1407755.64
7300.00	90.21	172.790	3336.92	4257.99S	539.20E	==>	4292.00	133258.01	1407768.20
7400.00	90.21	172.790	3336.55	4357.20S	551.75E	==>	4392.00	133158.80	1407780.75
7500.00	90.21	172.790	3336.19	4456.41S	564.31E	==>	4491.99	133059.60	1407793.30
7600.00	90.21	172.790	3335.82	4555.62S	576.86E	==>	4591.99	132960.39	1407805.86
7700.00	90.21	172.790	3335.45	4654.82S	589.41E	==>	4691.99	132861.18	1407818.41
7800.00	90.21	172.790	3335.09	4754.03S	601.97E	==>	4791.99	132761.97	1407830.97
7824.16	90.21	172.790	3335.00	4778.00S	605.00E	==>	4816.16	132738.00	1407834.00

**Targets**

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting	Last Revised
PBHL Pihl 1-33H	4778.00S	605.00E	3335.00	N38 41 50.3009	W97 39 55.4256	132738.00	1407834.00	23-Jun-2014
KOP w/ 8° BRN	0.00N	0.00E	2591.14	N38 42 37.5508	W97 40 2.8352	137516.00	1407229.00	23-Jun-2014
150' Tangent	467.51S	59.23E	3264.15	N38 42 32.9276	W97 40 2.1097	137048.49	1407288.23	23-Jun-2014
Build w/ 10° BRN	607.34S	76.94E	3315.45	N38 42 31.5448	W97 40 1.8927	136908.66	1407305.94	23-Jun-2014
Landing Point	803.93S	101.85E	3350.00	N38 42 29.6007	W97 40 1.5877	136712.07	1407330.85	23-Jun-2014

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 Vertical Section is from 0.00N 0.00E on azimuth 172.780 degrees  
 Bottom hole distance is 4816.16 Feet on azimuth 172.78 degrees from Wellhead  
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