

SOUTHWESTERN ENERGY

Location: Wetzel County, WV Slot: Slot #06
 Field: Wetzel Well: Hohman HBP S WTZ 6H
 Facility: Hohman HBP S WTZ Pad Wellbore: Hohman HBP S WTZ 6H PWB



API: 47-103-03171-0000
 Job#: 8498148
 Rig: SDC-46
 Duration: 04/22/17 - 05/01/17



Plot reference wellpath is Hohman HBP S WTZ 6H PWB Rev-B.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to SDC 46 (RKB)	North Reference: Grid north
SDC 46 (RKB) to Mean Sea Level: 1493.5 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot #06): -1467.5 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: amarc on 2017-05-08
	Database: WA_MPL_EASTERNUS_Defn

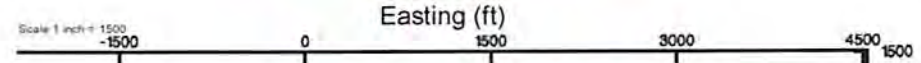
Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
Hohman HBP S WTZ Pad	1722990.370	14410707.650	39°40'51.568"N	80°42'23.432"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #06	-41.08	4.56	1722994.930	14410666.590	39°40'51.162"N	80°42'23.376"W

Comment: 6H	
SDC 46 (RKB) to Ground level (At Slot: Slot #06)	26ft
Mean Sea Level to Ground level (At Slot: Slot #06)	-1467.5ft
SDC 46 (RKB) to Mean Sea Level	1493.5ft

Well Profile Data

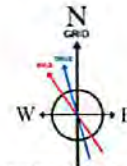
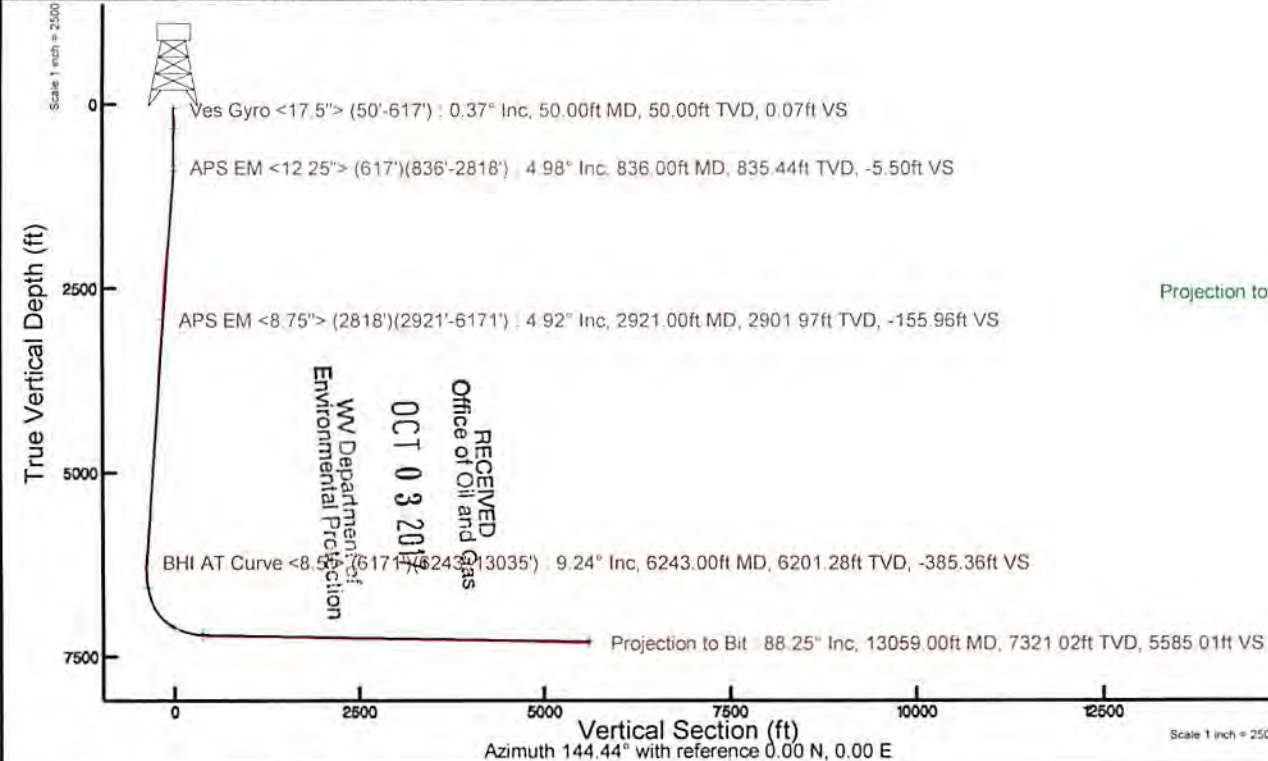
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	26.00	0.000	235.000	26.00	0.00	0.00	0.00	0.00
Start Nudge	200.00	0.000	235.000	200.00	0.00	0.00	0.00	0.00
End Nudge	450.00	5.000	235.000	449.68	-6.25	-8.93	2.00	-0.11
Begin Build	800.00	5.000	235.000	798.35	-23.75	-33.92	0.00	-0.40
End Build	997.32	6.610	271.578	994.71	-28.37	-52.32	2.00	-7.35
Curve KOP	6281.26	6.610	271.578	6243.53	-11.62	-660.36	0.00	-374.58
Start Build/Turn	6920.27	40.000	200.000	6827.63	-211.09	-771.55	6.00	-276.97
Landing Point	7740.14	89.006	134.439	7202.00	-834.29	-535.46	9.00	367.31
Total Depth	13042.66	89.006	134.439	7294.00	-4546.27	3249.96	0.00	5588.46



Ves Gyro <17.5°> (50'-617') : 50.00ft TVD, 0.03ft S, 0.07ft E
 APS EM <12.25°> (617')(836'-2818') : 835.44ft TVD, 6.60ft S, 18.70ft W
 APS EM <8.75°> (2818')(2921'-6171') : 2901.97ft TVD, 12.59ft S, 285.80ft W
 BHI AT Curve <8.5°> (6171')(6243'-13035') : 6201.28ft TVD, 3.78ft S, 667.93ft W

Slot #06

Projection to Bit : 7321.02ft TVD, 4530.09ft S, 3266.67ft E



User specified Dip: 66.98° Field: 52461 nT
 Magnetic North is 7.87 degrees West of True North (at 05/Apr/2017)
 Grid North is 0.19 degrees East of True North
 To correct azimuth from True to Grid subtract 0.19 degrees
 To correct azimuth from Magnetic to Grid subtract 8.06 degrees



Actual Wellpath Report

Hohman HBP S WTZ 6H AWP Proj:13059'
Page 1 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWB
Facility	Hohman HBP S WTZ Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Amarcar
Scale	0.999608	Report Generated	08/May/2017 at 08:57
Convergence at slot	0.19° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Hohman_HBP_S_WTZ_6H_AWP_Proj_13059_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-41.08	4.56	1722994.93	14410666.59	39°40'51.162"N	80°42'23.376"W
Facility Reference Pt			1722990.37	14410707.65	39°40'51.568"N	80°42'23.432"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC 46 (RKB) to Facility Vertical Datum	1493.50ft
Horizontal Reference Pt	Slot	SDC 46 (RKB) to Mean Sea Level	1493.50ft
Vertical Reference Pt	SDC 46 (RKB)	SDC 46 (RKB) to Ground Level at Slot (Slot #06)	26.00ft
MD Reference Pt	SDC 46 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	144.44°

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWB
Facility	Hohman HBP S WTZ Pad		

WELLPATH DATA (161 stations) † = interpolated/extrapolated station															
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	(ft)	(°/100ft)	(°/100ft)
0.00	0.00	114.300	0.00	0.00	0.00	0.00	1722994.93	14410666.59	39°40'51.162"N	80°42'23.376"W	0.00	0.00	0.00	0.00	0.00
26.00	0.000	114.300	26.00	0.00	0.00	0.00	1722994.93	14410666.59	39°40'51.162"N	80°42'23.376"W	0.00	0.00	0.00	0.00	0.00
50.00	0.370	114.300	50.00	0.07	-0.03	0.07	1722995.00	14410666.56	39°40'51.161"N	80°42'23.375"W	0.08	114.300	1.54	0.00	0.00
100.00	0.460	82.440	100.00	0.30	-0.07	0.42	1722995.35	14410666.52	39°40'51.161"N	80°42'23.370"W	0.42	99.792	0.49	0.18	-63.72
100.00	0.460	82.440	100.00	0.30	-0.07	0.42	1722995.35	14410666.52	39°40'51.161"N	80°42'23.370"W	0.42	99.792	0.49	0.18	-63.72
110.00	0.460	93.800	110.00	0.35	-0.07	0.50	1722995.43	14410666.52	39°40'51.161"N	80°42'23.369"W	0.50	97.944	0.91	0.00	113.60
120.00	0.330	97.460	200.00	0.75	-0.13	1.11	1722996.04	14410666.46	39°40'51.160"N	80°42'23.361"W	1.12	96.498	0.15	-0.14	4.07
291.00	0.180	261.340	291.00	0.87	-0.18	1.23	1722996.16	14410666.41	39°40'51.160"N	80°42'23.360"W	1.25	98.419	0.56	-0.16	180.09
384.00	0.630	248.360	383.99	0.68	-0.39	0.61	1722995.54	14410666.20	39°40'51.158"N	80°42'23.368"W	0.73	122.667	0.49	0.48	-13.96
477.00	1.530	250.370	476.98	0.21	-1.00	-1.03	1722993.90	14410665.59	39°40'51.152"N	80°42'23.389"W	1.44	225.935	0.97	0.97	2.16
570.00	2.070	250.690	569.93	-0.60	-1.97	-3.79	1722991.15	14410664.62	39°40'51.142"N	80°42'23.424"W	4.27	242.499	0.58	0.58	0.34
617.00	2.290	246.140	616.90	-1.03	-2.63	-5.45	1722989.49	14410663.96	39°40'51.136"N	80°42'23.446"W	6.05	244.209	0.60	0.47	-9.68
836.00	4.980	256.620	835.44	-5.50	-6.60	-18.70	1722976.24	14410659.99	39°40'51.097"N	80°42'23.615"W	19.83	250.552	1.26	3.13	4.79
883.00	6.450	265.740	882.20	-7.64	-7.27	-23.32	1722971.62	14410659.32	39°40'51.090"N	80°42'23.674"W	24.42	252.681	3.67	3.73	19.40
975.00	9.880	265.040	973.26	-14.35	-8.34	-36.34	1722958.61	14410658.26	39°40'51.080"N	80°42'23.841"W	37.28	257.078	3.73	3.73	-0.76
1068.00	10.220	263.830	1064.83	-22.46	-9.91	-52.49	1722942.46	14410656.68	39°40'51.065"N	80°42'24.047"W	53.42	259.304	0.43	0.37	-1.30
1161.00	10.880	262.650	1156.26	-30.66	-11.92	-69.39	1722925.56	14410654.67	39°40'51.046"N	80°42'24.264"W	70.41	260.251	0.75	0.71	-1.27
1254.00	9.710	258.420	1247.76	-37.99	-14.62	-85.78	1722909.18	14410651.98	39°40'51.020"N	80°42'24.474"W	87.02	260.328	1.50	-1.26	-4.55
1347.00	8.100	253.610	1339.64	-43.33	-18.04	-99.75	1722895.22	14410648.55	39°40'50.986"N	80°42'24.652"W	101.37	259.747	1.91	-1.73	-5.17
1439.00	7.330	255.520	1430.80	-47.57	-21.34	-111.65	1722883.32	14410645.26	39°40'50.954"N	80°42'24.805"W	113.68	259.180	0.88	-0.84	2.08
1532.00	7.060	254.930	1523.07	-51.71	-24.31	-122.92	1722872.06	14410642.29	39°40'50.925"N	80°42'24.949"W	125.30	258.813	0.30	-0.29	-0.63
1625.00	6.650	262.950	1615.41	-56.28	-26.46	-133.78	1722861.20	14410640.14	39°40'50.904"N	80°42'25.088"W	136.37	258.814	1.12	-0.44	8.62
1718.00	6.930	279.970	1707.77	-62.85	-26.15	-144.65	1722850.34	14410640.45	39°40'50.908"N	80°42'25.227"W	147.00	259.754	2.18	0.30	18.30
1810.00	7.610	283.390	1799.03	-71.41	-23.77	-156.04	1722838.95	14410642.83	39°40'50.932"N	80°42'25.373"W	157.84	261.337	0.88	0.74	3.72
1903.00	8.220	282.580	1891.14	-81.00	-20.90	-168.52	1722826.47	14410645.70	39°40'50.960"N	80°42'25.532"W	169.81	262.930	0.67	0.66	-0.87
1996.00	8.720	278.080	1983.13	-90.82	-18.46	-181.99	1722813.01	14410648.14	39°40'50.985"N	80°42'25.704"W	182.93	264.208	0.89	0.54	-4.84
2089.00	8.460	277.020	2075.08	-100.31	-16.63	-195.76	1722799.25	14410649.96	39°40'51.003"N	80°42'25.880"W	196.47	265.47	0.33	-0.28	-1.14
2181.00	8.190	281.910	2166.11	-109.72	-14.45	-208.89	1722784.12	14410652.14	39°40'51.025"N	80°42'26.048"W	209.39	266.042	0.82	-0.29	5.32
2274.00	6.490	282.290	2258.35	-118.50	-11.97	-220.51	1722774.51	14410654.63	39°40'51.050"N	80°42'26.197"W	220.83	266.893	1.83	-1.83	0.41
2367.00	6.040	279.840	2350.79	-125.88	-10.01	-230.46	1722764.56	14410656.58	39°40'51.070"N	80°42'26.324"W	230.68	267.512	0.00	0.00	-2.63
2460.00	6.800	272.970	2443.21	-132.79	-8.89	-240.78	1722754.24	14410657.70	39°40'51.081"N	80°42'26.456"W	240.95	267.885	0.00	0.00	-7.39

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Actual Wellpath Report

Hohman HBP S WTZ 6H AWP Proj:13059

Page 3 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY
Area	Wellzel County, WV
Field	Wellzel
Facility	Hohman HBP S WTZ Pad
Slot	Slot #06
	Hohman HBP S WTZ 6H
	Hohman HBP S WTZ 6H AWB

WELLPATH DATA (161 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2553.00	6.220	266.900	2535.61	-138.93	-8.88	-251.31	1722743.72	1722743.72	14410657.71	39°40'51.082"N	80°42'26.590"W	251.47	267.976	0.97	-0.62	-6.53
2645.00	5.670	262.990	2627.12	-143.77	-9.70	-260.80	1722734.23	1722734.23	14410656.89	39°40'51.074"N	80°42'26.712"W	260.98	267.869	0.74	-0.60	-4.25
2738.00	5.180	262.900	2719.70	-147.97	-10.78	-269.53	1722725.51	1722725.51	14410655.81	39°40'51.064"N	80°42'26.824"W	269.74	267.709	0.53	-0.53	-0.10
2818.00	5.240	265.840	2799.37	-151.60	-11.49	-276.75	1722718.28	1722718.28	14410655.10	39°40'51.057"N	80°42'26.916"W	276.99	267.622	0.34	0.08	3.67
2921.00	4.920	270.150	2901.97	-155.96	-12.59	-285.80	1722709.25	1722709.25	14410654.00	39°40'51.046"N	80°42'27.032"W	286.07	267.477	0.58	-0.31	-5.52
3014.00	5.370	277.400	2994.60	-160.66	-12.71	-294.04	1722701.00	1722701.00	14410653.88	39°40'51.045"N	80°42'27.137"W	294.32	267.524	1.72	0.48	18.55
3106.00	5.880	284.860	3086.15	-167.22	-10.95	-302.87	1722692.18	1722692.18	14410655.64	39°40'51.063"N	80°42'27.250"W	303.06	267.929	0.97	0.55	8.11
3199.00	5.920	284.780	3178.66	-174.59	-8.50	-312.11	1722682.94	1722682.94	14410658.09	39°40'51.088"N	80°42'27.368"W	312.22	268.439	0.04	0.04	-0.09
3292.00	5.510	280.230	3271.20	-181.48	-6.49	-321.14	1722673.92	1722673.92	14410660.10	39°40'51.108"N	80°42'27.483"W	321.21	268.843	0.66	-0.44	-4.89
3385.00	5.290	282.330	3363.79	-187.86	-4.78	-329.72	1722665.34	1722665.34	14410661.81	39°40'51.125"N	80°42'27.593"W	329.76	269.169	0.32	-0.24	2.26
3478.00	5.980	274.980	3456.34	-194.19	-3.44	-338.74	1722656.33	1722656.33	14410663.15	39°40'51.138"N	80°42'27.708"W	338.75	269.418	1.07	0.74	-7.90
3570.00	6.920	3547.76	-200.56	-2.99	-349.05	1722646.01	1722646.01	1722646.01	14410663.60	39°40'51.143"N	80°42'27.840"W	349.07	269.509	1.17	1.02	-5.03
3663.00	6.640	267.150	3640.11	-206.75	-3.23	-360.03	1722635.05	1722635.05	14410663.36	39°40'51.141"N	80°42'27.981"W	360.04	269.486	0.51	-0.30	-3.44
3756.00	6.070	267.790	3732.53	-212.36	-3.68	-370.31	1722624.77	1722624.77	14410662.91	39°40'51.137"N	80°42'28.112"W	370.33	269.430	0.62	-0.61	0.69
3849.00	5.810	266.440	3825.03	-217.55	-4.17	-379.92	1722615.16	1722615.16	14410662.43	39°40'51.133"N	80°42'28.235"W	379.94	269.372	0.32	-0.28	-1.45
3942.00	6.690	270.330	3917.48	-223.22	-4.43	-390.04	1722605.05	1722605.05	14410662.16	39°40'51.130"N	80°42'28.365"W	390.06	269.350	1.05	0.95	4.18
4034.00	7.590	269.740	4008.77	-229.88	-4.42	-401.47	1722593.62	1722593.62	14410662.17	39°40'51.131"N	80°42'28.511"W	401.50	269.369	0.98	0.98	-0.64
4127.00	7.610	268.160	4100.95	-236.84	-4.65	-413.77	1722581.33	1722581.33	14410661.94	39°40'51.129"N	80°42'28.668"W	413.79	269.356	0.23	0.02	-1.70
4220.00	7.040	270.860	4193.19	-243.40	-5.06	-425.62	1722569.48	1722569.48	14410661.53	39°40'51.123"N	80°42'28.820"W	425.65	269.319	0.61	-0.61	-0.32
4313.00	6.640	269.200	4285.53	-249.61	-5.35	-436.69	1722558.41	1722558.41	14410661.24	39°40'51.123"N	80°42'28.961"W	436.72	269.298	0.46	-0.43	1.44
4405.00	6.050	267.580	4376.96	-255.29	-5.63	-446.85	1722548.25	1722548.25	14410660.97	39°40'51.120"N	80°42'29.091"W	446.89	269.279	0.67	-0.64	-1.76
4498.00	5.830	268.740	4469.47	-260.63	-5.94	-456.47	1722538.64	1722538.64	14410660.65	39°40'51.118"N	80°42'29.214"W	456.51	269.255	0.27	-0.24	1.25
4594.00	5.550	268.270	4564.99	-265.96	-6.18	-465.99	1722529.13	1722529.13	14410660.41	39°40'51.115"N	80°42'29.336"W	466.03	269.240	0.30	-0.29	-0.49
4686.00	6.530	272.390	4656.48	-271.66	-6.10	-475.66	1722519.46	1722519.46	14410660.49	39°40'51.117"N	80°42'29.460"W	475.70	269.265	1.16	1.07	4.48
4779.00	6.720	270.400	4748.86	-278.10	-5.84	-486.38	1722508.74	1722508.74	14410660.75	39°40'51.119"N	80°42'29.597"W	486.42	269.312	0.32	0.20	-2.14
4872.00	6.170	270.530	4841.27	-284.24	-5.76	-496.82	1722498.30	1722498.30	14410660.83	39°40'51.121"N	80°42'29.730"W	496.86	269.336	0.59	-0.59	0.14
4965.00	5.860	270.060	4933.76	-289.75	-5.96	-506.56	1722488.57	1722488.57	14410660.64	39°40'51.119"N	80°42'29.855"W	506.60	269.326	0.51	-0.33	-3.73
5058.00	6.750	261.140	5026.20	-294.76	-7.04	-516.70	1722478.43	1722478.43	14410659.55	39°40'51.109"N	80°42'29.985"W	516.75	269.219	1.18	0.96	-6.37
5151.00	6.990	256.760	5118.53	-299.37	-9.18	-527.61	1722467.53	1722467.53	14410657.41	39°40'51.088"N	80°42'30.124"W	527.65	269.003	0.62	0.26	-4.71
5243.00	7.500	266.760	5209.80	-304.70	-10.80	-539.06	1722456.09	1722456.09	14410655.79	39°40'51.072"N	80°42'30.271"W	539.99	268.852	1.48	0.55	10.87

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Actual Wellpath Report

Hohman HBP S WTZ 6H AWP Proj:13059'
Page 4 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWP
Facility	Hohman HBP S WTZ Pad		

WELLPATH DATA (161 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
5336.00	8.390	269.530	5301.91	-311.85	-11.20	-551.90	1722443.25	14410655.40	39°40'51.069"N	80°42'30.435"W	552.02	268.838	1.04	0.96	2.98
5429.00	8.300	265.250	5393.92	-319.19	-11.81	-565.38	1722429.78	14410654.78	39°40'51.063"N	80°42'30.608"W	565.50	268.803	0.67	-0.10	-4.60
5521.00	6.750	262.820	5485.13	-325.16	-13.04	-577.36	1722417.80	14410653.56	39°40'51.051"N	80°42'30.761"W	577.51	268.707	1.72	-1.68	-2.64
5614.00	6.750	278.970	5577.49	-331.59	-12.87	-588.18	1722406.98	14410653.73	39°40'51.053"N	80°42'30.899"W	588.32	268.747	2.03	0.00	17.37
5707.00	6.770	282.690	5669.84	-339.51	-10.81	-598.93	1722396.24	14410655.78	39°40'51.074"N	80°42'31.037"W	599.02	268.966	0.47	0.02	4.00
5800.00	7.150	281.380	5762.16	-347.83	-8.46	-609.95	1722385.22	14410658.13	39°40'51.097"N	80°42'31.177"W	610.01	269.205	0.44	0.41	-1.41
5893.00	7.170	278.420	5854.43	-356.09	-6.47	-621.36	1722373.81	14410660.12	39°40'51.118"N	80°42'31.323"W	621.40	269.403	0.40	0.02	-3.18
5985.00	6.880	274.180	5945.74	-363.60	-5.23	-632.54	1722362.64	14410661.36	39°40'51.130"N	80°42'31.466"W	632.56	269.526	0.65	-0.32	-4.61
6078.00	7.700	275.030	6037.99	-371.21	-4.28	-644.30	1722350.88	14410662.31	39°40'51.140"N	80°42'31.617"W	644.32	269.620	0.89	0.88	0.91
6171.00	8.110	270.370	6130.11	-379.12	-3.69	-657.07	1722338.12	14410662.90	39°40'51.146"N	80°42'31.780"W	657.08	269.678	0.82	0.44	-5.01
6243.00	9.240	268.800	6201.28	-385.36	-3.78	-667.93	1722327.27	14410662.81	39°40'51.146"N	80°42'31.919"W	667.94	269.676	1.60	1.57	-2.18
6289.00	8.910	257.700	6246.71	-388.85	-4.61	-675.10	1722320.10	14410661.98	39°40'51.138"N	80°42'32.011"W	675.12	269.608	3.87	-0.72	-24.13
6335.00	9.060	240.910	6292.16	-390.66	-7.13	-681.75	1722313.45	14410659.46	39°40'51.113"N	80°42'32.096"W	681.78	269.400	5.69	0.33	-36.50
6382.00	10.060	225.110	6338.51	-390.42	-11.83	-687.89	1722307.31	14410654.76	39°40'51.067"N	80°42'32.174"W	687.99	269.015	5.95	2.13	-33.62
6428.00	11.030	215.620	6383.74	-388.35	-18.24	-693.30	1722301.90	14410648.35	39°40'51.004"N	80°42'32.244"W	693.54	268.493	4.32	2.11	-20.63
6474.00	12.010	208.250	6428.81	-384.81	-26.04	-698.13	1722297.08	14410640.56	39°40'50.927"N	80°42'32.306"W	698.61	267.864	3.84	2.13	-16.02
6521.00	14.240	205.700	6474.58	-379.87	-35.56	-702.95	1722292.26	14410631.05	39°40'50.833"N	80°42'32.368"W	703.85	267.104	4.90	4.74	-5.43
6567.00	17.720	205.460	6518.80	-373.76	-46.98	-708.41	1722286.80	14410619.63	39°40'50.720"N	80°42'32.438"W	709.97	266.206	7.57	7.57	-0.52
6614.00	20.790	204.690	6563.16	-366.15	-61.02	-714.97	1722280.24	14410605.60	39°40'50.581"N	80°42'32.523"W	717.57	265.122	6.55	6.53	-1.64
6660.00	23.570	202.510	6605.75	-357.24	-76.93	-721.91	1722273.31	14410589.69	39°40'50.424"N	80°42'32.612"W	725.99	263.917	6.30	6.04	-4.74
6706.00	26.010	200.330	6647.51	-346.71	-94.89	-728.93	1722266.28	14410571.74	39°40'50.247"N	80°42'32.703"W	735.08	262.583	5.66	5.30	-4.74
6753.00	29.530	198.070	6689.09	-334.06	-115.57	-736.11	1722259.11	14410551.06	39°40'50.043"N	80°42'32.796"W	745.13	261.077	7.82	7.49	-4.81
6799.00	32.360	198.310	6728.54	-320.08	-138.04	-743.49	1722251.73	14410528.60	39°40'49.821"N	80°42'32.891"W	756.20	259.482	6.16	6.15	0.52
6846.00	35.260	199.080	6767.59	-304.81	-162.81	-751.88	1722243.34	14410503.84	39°40'49.577"N	80°42'32.999"W	769.31	257.782	6.24	6.17	1.64
6892.00	38.360	199.530	6804.42	-288.95	-188.82	-761.00	1722234.23	14410477.85	39°40'49.320"N	80°42'33.117"W	784.07	256.065	6.76	6.74	0.98
6939.00	41.450	197.990	6840.47	-271.36	-217.37	-770.68	1722224.55	14410449.31	39°40'49.038"N	80°42'33.242"W	800.75	254.249	6.90	6.57	-3.28
6985.00	44.310	193.550	6874.18	-251.79	-247.48	-779.15	1722216.09	14410419.21	39°40'48.741"N	80°42'33.351"W	817.51	252.379	9.04	6.22	-9.65
7032.00	46.320	186.570	6907.25	-228.42	-280.35	-784.94	1722210.30	14410386.35	39°40'48.416"N	80°42'33.427"W	833.51	250.346	11.39	4.28	-14.85
7078.00	47.890	180.260	6938.57	-202.23	-313.95	-786.93	1722208.31	14410352.76	39°40'48.084"N	80°42'33.454"W	847.24	248.250	10.61	3.41	-13.72
7125.00	49.530	175.720	6969.60	-172.81	-349.23	-785.67	1722205.57	14410317.50	39°40'47.735"N	80°42'33.439"W	859.79	246.035	8.05	3.49	-9.66

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Actual Wellpath Report

Hohman HBP S WTZ 6H AWP Proj:13059
Page 5 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWB
Facility	Hohman HBP S WTZ Pad		

WELLPATH DATA (161 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
7171.00	51.630	171.850	6998.81	-141.83	-384.54	-781.81	1722213.43	14410282.20	39°40'47.386"N	80°42'33.391"W	871.26	243.809	7.94	4.57	-8.41
7218.00	54.590	167.660	7027.03	-107.86	-421.51	-775.10	1722220.14	14410245.25	39°40'47.021"N	80°42'33.307"W	882.29	241.462	9.51	6.30	-8.91
7264.00	57.390	164.870	7052.76	-72.46	-458.53	-766.03	1722229.20	14410208.24	39°40'46.655"N	80°42'33.192"W	892.78	239.096	7.89	6.09	-6.07
7310.00	59.630	162.810	7076.79	-35.47	-496.20	-755.11	1722240.12	14410170.58	39°40'46.282"N	80°42'33.054"W	903.55	236.690	6.19	4.87	-4.48
7357.00	61.660	161.110	7099.83	3.60	-535.15	-742.42	1722252.80	14410131.65	39°40'45.897"N	80°42'32.894"W	915.19	234.215	5.35	4.32	-3.62
7403.00	65.140	158.330	7120.43	43.26	-573.71	-728.15	1722267.07	14410093.10	39°40'45.515"N	80°42'32.713"W	927.01	231.765	9.30	7.57	-6.04
7450.00	68.550	155.480	7138.91	85.45	-613.45	-711.19	1722284.02	14410053.39	39°40'45.122"N	80°42'32.498"W	939.21	229.220	9.15	7.26	-6.06
7496.00	71.200	151.450	7154.74	128.10	-652.07	-691.89	1722303.31	14410014.78	39°40'44.740"N	80°42'32.252"W	950.74	226.697	10.04	5.76	-8.76
7543.00	71.490	147.470	7169.78	172.44	-690.41	-669.27	1722325.93	14409976.45	39°40'44.360"N	80°42'31.964"W	961.56	224.109	8.05	0.62	-8.47
7589.00	73.140	143.610	7183.76	216.25	-726.53	-644.47	1722350.71	14409940.34	39°40'44.002"N	80°42'31.649"W	971.18	221.575	8.76	3.59	-8.39
7636.00	73.270	140.820	7197.34	261.21	-762.09	-616.91	1722378.27	14409904.80	39°40'43.650"N	80°42'31.298"W	980.49	218.990	5.69	0.28	-5.94
7729.00	83.740	135.390	7215.86	351.61	-829.75	-556.10	1722439.05	14409837.17	39°40'42.979"N	80°42'30.523"W	998.87	213.830	12.62	11.26	-5.84
7821.00	87.970	131.520	7222.51	441.65	-892.83	-489.51	1722505.61	14409774.11	39°40'42.354"N	80°42'29.674"W	1018.22	208.735	6.22	4.60	-4.21
7914.00	89.200	138.660	7224.81	533.33	-958.63	-423.92	1722571.18	14409708.34	39°40'41.701"N	80°42'28.838"W	1048.18	203.856	7.79	1.32	7.68
8007.00	89.020	145.530	7226.26	626.18	-1031.96	-366.82	1722628.25	14409635.04	39°40'40.975"N	80°42'28.110"W	1095.22	199.568	7.39	-0.19	7.39
8100.00	88.980	140.550	7227.88	719.11	-1106.24	-310.93	1722684.12	14409560.79	39°40'40.239"N	80°42'27.399"W	1149.10	195.699	5.35	-0.04	-5.35
8193.00	89.540	140.650	7229.08	811.90	-1178.09	-251.91	1722743.12	14409488.96	39°40'39.527"N	80°42'26.647"W	1204.73	192.070	0.61	0.60	0.11
8285.00	89.510	129.510	7229.85	902.52	-1243.13	-187.05	1722807.95	14409423.95	39°40'38.882"N	80°42'25.820"W	1257.13	188.557	12.11	-0.03	-12.11
8378.00	89.600	129.460	7230.57	992.37	-1302.27	-115.28	1722879.70	14409364.84	39°40'38.295"N	80°42'24.905"W	1307.36	185.059	0.11	0.10	-0.05
8471.00	89.510	127.460	7231.29	1081.77	-1360.11	-42.46	1722952.49	14409307.02	39°40'37.721"N	80°42'23.976"W	1360.77	181.788	2.15	-0.10	-2.15
8563.00	89.570	129.260	7232.03	1170.16	-1417.20	29.68	1723024.59	14409249.95	39°40'37.155"N	80°42'23.055"W	1417.51	178.800	1.96	0.07	1.96
8656.00	89.570	128.960	7232.73	1259.85	-1475.86	101.84	1723096.73	14409191.31	39°40'36.573"N	80°42'22.135"W	1479.37	176.053	0.32	0.00	-0.32
8749.00	88.830	129.890	7234.03	1349.67	-1534.92	173.67	1723168.53	14409132.28	39°40'35.987"N	80°42'21.219"W	1544.71	173.545	1.28	-0.80	1.00
8842.00	88.340	131.200	7236.32	1439.91	-1595.35	244.31	1723239.15	14409071.87	39°40'35.387"N	80°42'20.318"W	1613.95	171.293	1.50	-0.53	1.41
8935.00	88.520	133.290	7238.87	1530.78	-1657.85	313.13	1723307.94	14409009.40	39°40'34.767"N	80°42'19.440"W	1687.16	169.304	2.25	0.19	2.25
9028.00	88.340	132.370	7241.42	1621.84	-1721.05	381.31	1723376.09	14408946.22	39°40'34.140"N	80°42'18.571"W	1762.78	167.508	1.01	-0.19	-0.99
9120.00	88.680	133.320	7243.81	1711.93	-1783.59	448.74	1723443.49	14408883.71	39°40'33.520"N	80°42'17.711"W	1839.17	165.878	1.10	0.37	1.03
9213.00	88.950	134.380	7245.74	1803.32	-1848.00	515.79	1723510.51	14408819.32	39°40'32.881"N	80°42'16.856"W	1918.63	164.405	1.18	0.29	1.14
9306.00	88.890	135.000	7247.49	1894.96	-1913.39	581.89	1723576.59	14408753.95	39°40'32.233"N	80°42'16.014"W	1999.92	163.085	0.67	-0.06	0.67
9399.00	88.860	135.130	7249.31	1986.70	-1979.22	647.57	1723642.24	14408688.16	39°40'31.580"N	80°42'15.177"W	2082.46	161.883	0.14	-0.03	0.14

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Actual Wellpath Report

Hohman HBP S WTZ 6H AWP Proj:13059'
Page 6 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWP
Facility	Hohman HBP S WTZ Pad		

WELLPATH DATA (161 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
9491.00	88.890	135.650	7251.12	2077.54	-2044.70	712.16	1723706.81	14408622.70	39°40'30.931"N	80°42'14.353"W	2165.17	160.797	0.57	0.03	0.57
9584.00	88.710	137.080	7253.07	2169.60	-2111.99	776.32	1723770.95	14408555.43	39°40'30.264"N	80°42'13.536"W	2250.15	159.818	1.55	-0.19	1.54
9677.00	88.800	137.160	7255.09	2261.82	-2180.12	839.59	1723834.19	14408487.33	39°40'29.588"N	80°42'12.729"W	2336.20	158.938	0.13	0.10	0.09
9770.00	88.830	136.290	7257.01	2353.95	-2247.82	903.33	1723897.90	14408419.66	39°40'28.917"N	80°42'11.917"W	2422.54	158.106	0.94	0.03	-0.94
9863.00	88.920	132.660	7258.84	2445.52	-2312.95	969.66	1723964.21	14408354.55	39°40'28.272"N	80°42'11.071"W	2507.98	157.255	3.90	0.10	-3.90
9956.00	89.690	136.590	7259.97	2537.13	-2378.26	1035.84	1724030.36	14408289.27	39°40'27.624"N	80°42'10.228"W	2594.05	156.465	4.31	0.83	4.23
10048.00	89.690	135.980	7260.47	2628.20	-2444.76	1099.41	1724093.91	14408222.80	39°40'26.965"N	80°42'09.418"W	2680.59	155.786	0.66	0.00	-0.66
10141.00	89.660	136.090	7260.99	2720.20	-2511.69	1163.97	1724158.45	14408155.89	39°40'26.301"N	80°42'08.595"W	2768.29	155.136	0.12	-0.03	0.12
10233.00	89.690	135.300	7261.52	2811.13	-2577.53	1228.23	1724222.68	14408090.08	39°40'25.648"N	80°42'07.776"W	2855.21	154.521	0.86	0.03	-0.86
10326.00	88.920	135.160	7262.64	2902.92	-2643.55	1293.72	1724288.14	14408024.08	39°40'24.994"N	80°42'06.941"W	2943.14	153.923	0.84	-0.83	-0.15
10419.00	89.050	135.490	7264.29	2994.73	-2709.67	1359.10	1724353.50	14407957.99	39°40'24.338"N	80°42'06.108"W	3031.41	153.363	0.38	0.14	0.35
10512.00	89.080	135.700	7265.81	3086.61	-2776.10	1424.17	1724418.54	14407891.58	39°40'23.679"N	80°42'05.278"W	3120.09	152.842	0.23	0.03	0.23
10604.00	89.020	132.620	7267.33	3177.11	-2840.18	1490.15	1724484.49	14407827.53	39°40'23.044"N	80°42'04.437"W	3207.36	152.315	3.35	-0.07	-3.35
10697.00	88.800	128.610	7269.10	3267.38	-2900.70	1560.72	1724555.03	14407767.04	39°40'22.444"N	80°42'03.537"W	3293.92	151.718	4.32	-0.24	-4.31
10790.00	88.490	127.180	7271.30	3356.51	-2957.80	1634.09	1724628.37	14407709.96	39°40'21.877"N	80°42'02.602"W	3379.17	151.081	1.57	-0.33	-1.54
10883.00	88.740	130.190	7273.55	3445.97	-3015.90	1706.65	1724700.91	14407651.87	39°40'21.300"N	80°42'01.676"W	3465.31	150.495	3.25	0.27	3.24
10975.00	88.680	134.290	7275.62	3535.85	-3077.72	1774.73	1724768.96	14407590.08	39°40'20.687"N	80°42'00.808"W	3552.75	150.031	4.46	-0.07	4.46
11068.00	88.770	136.410	7277.69	3627.66	-3143.86	1840.07	1724834.27	14407523.97	39°40'20.031"N	80°41'59.975"W	3642.76	149.660	2.28	0.10	2.28
11161.00	88.740	138.210	7279.71	3719.91	-3212.20	1903.11	1724897.29	14407455.65	39°40'19.354"N	80°41'59.172"W	3733.64	149.355	1.94	-0.03	1.94
11253.00	88.550	134.830	7281.89	3811.00	-3278.93	1966.39	1724960.54	14407388.95	39°40'18.692"N	80°41'58.366"W	3823.36	149.049	3.68	-0.21	-3.67
11346.00	88.710	136.830	7284.11	3902.67	-3344.48	2032.32	1725026.45	14407323.43	39°40'18.042"N	80°41'57.525"W	3913.55	148.714	0.17	0.17	0.00
11439.00	89.080	136.950	7285.91	3994.61	-3411.24	2097.04	1725091.14	14407256.70	39°40'17.380"N	80°41'56.700"W	4004.26	148.419	2.31	0.40	2.28
11532.00	89.110	136.930	7287.38	4086.80	-3479.18	2160.53	1725154.61	14407188.79	39°40'16.707"N	80°41'55.891"W	4095.43	148.160	0.04	0.03	-0.02
11624.00	89.110	135.280	7288.81	4177.82	-3545.46	2224.31	1725218.36	14407122.53	39°40'16.049"N	80°41'55.079"W	4185.43	147.897	1.79	0.00	-1.79
11717.00	89.020	135.510	7290.32	4269.65	-3611.67	2289.60	1725283.63	14407056.35	39°40'15.393"N	80°41'54.246"W	4276.26	147.627	0.27	-0.10	0.25
11810.00	88.710	135.180	7292.16	4361.46	-3677.81	2354.95	1725348.96	14406990.23	39°40'14.737"N	80°41'53.414"W	4367.16	147.368	0.49	-0.33	-0.35
11902.00	89.050	135.020	7293.96	4452.22	-3742.96	2419.88	1725413.86	14406925.10	39°40'14.091"N	80°41'52.586"W	4457.08	147.117	0.41	0.37	-0.17
11995.00	89.080	133.490	7295.48	4543.74	-3807.85	2486.48	1725480.43	14406860.24	39°40'13.448"N	80°41'51.737"W	4547.78	146.856	1.65	0.03	-1.65
12088.00	88.710	133.430	7297.27	4635.02	-3871.58	2553.97	1725547.90	14406796.31	39°40'12.813"N	80°41'50.877"W	4638.29	146.590	0.40	-0.40	-0.06
12180.00	88.740	134.860	7299.32	4725.52	-3935.87	2622.97	1725613.87	14406732.27	39°40'12.178"N	80°41'50.036"W	4728.14	146.350	1.55	0.03	1.55

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Actual Wellpath Report

Hohman HBP S WTZ 6H AWP Proj:13059'
Page 7 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWB
Facility	Hohman HBP S WTZ Pad		

WELLPATH DATA (161 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
12273.00	88.740	135.800	7301.37	4817.32	-4001.99	2685.34	1725679.21	14406666.18	39°40'11.522"N	80°41'49.203"W	4819.44	146.138	1.01	0.00	1.01
12366.00	88.680	134.930	7303.46	4909.13	-4068.15	2750.66	1725744.51	14406600.04	39°40'10.866"N	80°41'48.370"W	4910.80	145.936	0.94	-0.06	-0.94
12459.00	88.620	133.660	7305.65	5000.65	-4133.08	2817.21	1725811.02	14406535.14	39°40'10.222"N	80°41'47.522"W	5001.90	145.721	1.37	-0.06	-1.37
12551.00	88.770	131.850	7307.75	5090.72	-4195.52	2884.74	1725878.53	14406472.73	39°40'09.603"N	80°41'46.661"W	5091.57	145.489	1.97	0.16	-1.97
12644.00	88.710	132.050	7309.79	5181.49	-4257.67	2953.89	1725947.65	14406410.60	39°40'08.987"N	80°41'45.779"W	5182.01	145.248	0.22	-0.06	0.22
12737.00	88.490	131.610	7312.06	5272.22	-4319.68	3023.16	1726016.90	14406348.62	39°40'08.371"N	80°41'44.896"W	5272.49	145.013	0.53	-0.24	-0.47
12829.00	88.490	132.080	7314.49	5361.98	-4381.03	3091.67	1726085.39	14406287.29	39°40'07.763"N	80°41'44.023"W	5362.08	144.790	0.51	0.00	0.51
12922.00	88.400	130.720	7317.01	5452.54	-4442.51	3161.41	1726155.09	14406225.83	39°40'07.153"N	80°41'43.134"W	5452.56	144.563	1.47	-0.10	-1.46
13015.00	88.310	129.610	7319.68	5542.63	-4502.47	3232.45	1726226.10	14406165.90	39°40'06.558"N	80°41'42.228"W	5542.64	144.324	1.20	-0.10	-1.19
13035.00	88.250	128.700	7320.28	5561.92	-4515.09	3247.95	1726241.60	14406153.28	39°40'06.433"N	80°41'42.030"W	5561.94	144.270	4.56	-0.30	-4.55
13059.00	88.250	128.700	7321.02	5585.01	-4530.09	3266.67	1726260.31	14406138.29	39°40'06.284"N	80°41'41.791"W	5585.05	144.204	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Hohman HBP S WTZ 6H AWB Ref Wellpath: Hohman HBP S WTZ 6H AWP Proj:13059'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
17.5in Open Hole	26.00	703.00	677.00	26.00	702.79	0.00	0.00	-4.09	-9.40
13.375in Casing Surface	26.00	688.00	662.00	26.00	687.81	0.00	0.00	-3.82	-8.59
12.25in Open Hole	703.00	2895.00	2192.00	702.79	2876.06	-4.09	-9.40	-12.24	-283.58
9.625in Casing Intermediate	26.00	2875.00	2849.00	26.00	2856.14	0.00	0.00	-12.00	-281.84
8.75in Open Hole	2895.00	6247.00	3352.00	2876.06	6205.23	-12.24	-283.58	-3.80	-668.57
8.5in Open Hole	6247.00	13059.00	6812.00	6205.23	7321.02	-3.80	-668.57	-4530.09	3266.67

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Actual Wellpath Report

Hohman HBP S WTZ 6H AWP Proj:13059'
Page 8 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWB
Facility	Hohman HBP S WTZ Pad		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Hohman HBP S 6H LP Rev-1	7202.00	-834.29	-535.46	1722459.69	14409832.63	39°40'42.934"N	80°42'30.259"W	point
Hohman HBP S 6H BHL Rev-1	7294.00	-4546.27	3249.96	1726243.61	14406122.11	39°40'06.124"N	80°41'42.006"W	point

WELLPATH COMPOSITION - Ref Wellbore: Hohman HBP S WTZ 6H AWB Ref Wellpath: Hohman HBP S WTZ 6H AWP Proj:13059'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	617.00	VESSI GyroFlex v4	01_Ves Gyro <17.5"> (50'-617')	Hohman HBP S WTZ 6H AWB
617.00	2818.00	BHI NaviTrak (Axial)	02_APS EM <12.25"> (617')(836'-2818')	Hohman HBP S WTZ 6H AWB
2818.00	6171.00	BHI NaviTrak (Axial)	03_APS EM <8.75"> (2818')(2921'-6171')	Hohman HBP S WTZ 6H AWB
6171.00	13035.00	BHI AutoTrak Curve (Short)	04_BHI AT Curve <8.5"> (6171')(6243'-13035')	Hohman HBP S WTZ 6H AWB
13035.00	13059.00	Blind Drilling (std)	Projection to bit	Hohman HBP S WTZ 6H AWB

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Page 9 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #06
Area	Wetzel County, WV	Well	Hohman HBP S WTZ 6H
Field	Wetzel	Wellbore	Hohman HBP S WTZ 6H AWP
Facility	Hohman HBP S WTZ Pad		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
50.00	0.370	114.300	50.00	Ves Gyro <17.5"> (50'-617')
836.00	4.980	256.620	835.44	APS EM <12.25"> (617')(836'-2818')
2921.00	4.920	260.150	2901.97	APS EM <8.75"> (2818')(2921'-6171')
6243.00	9.240	268.800	6201.28	BHI AT Curve <8.5"> (6171')(6243'-13035')
13059.00	88.250	128.700	7321.02	Projection to Bit

COMMENTS
<p>Wellpath general comments API: 47-103-03171-0000 Job#: 8498148 Rig: SDC-46 Duration: 04/22/17 - 05/01/17</p>

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