

SOUTHWESTERN ENERGY

Location: Ohio County, WV Slot: Slot 3H
 Field: Ohio Well: GW Rentals LLC OHI 3H
 Facility: GW Rentals LLC OHI Pad Wellbore: GW Rentals LLC OHI 3H (PWB)

Scale 1 inch = 300 ft
 Easting (ft)
 -4500 -4200 -3900 -3600 -3300 -3000 -2700 -2400 -2100 -1800 -1500 -1200 -900 -600 -300 0 300 600

Rig: SDC 41
API: 47-069-00193-0000
BHI Job#: 7567179
Duration: 10.22.2015 - 10.26.2015

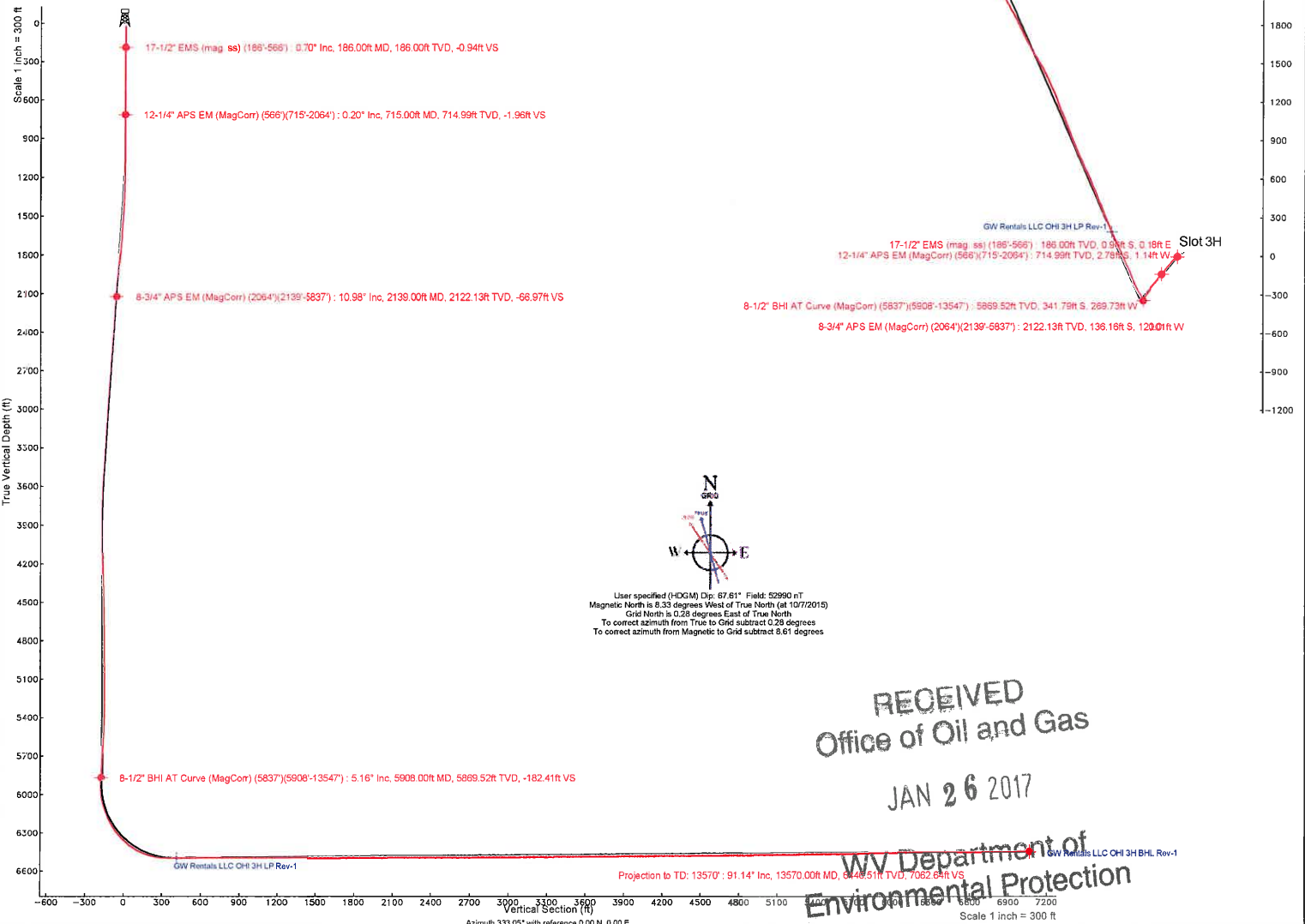
Projection to TD: 13570' 6446.51ft TVD, 6294.20ft N, 3203.74ft W

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
GW Rentals LLC OHI Pad	1761911.920	14554083.900	40°04'27.462"N	80°33'56.509"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot 3H	0.00	0.00	1761911.920	14554083.900	80°33'56.509"W
SDC 41 (RT) to Mud line (At Slot: Slot 3H)					261
Mean Sea Level to Mud line (At Slot: Slot 3H)					-1246.7ft
SDC 41 (RT) to Mean Sea Level					1272.7ft

Well Profile Data (Plan B.0)							
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	566.00	0.300	250.470	565.89	-2.90	-0.71	-2.26
PTB	690.00	0.300	250.470	689.99	-3.12	-1.32	-2.18
nudge KOP	1000.00	0.300	250.470	999.98	-3.66	-2.85	-1.87
Build 10inc	1487.09	10.000	220.286	1484.64	-36.43	-31.47	-18.21
End 10inc hold	3494.06	10.000	220.286	3491.01	-302.28	-256.61	-153.04
Drop to dir:	3994.05	0.000	336.260	3958.48	-335.48	-284.95	-169.88
curve KOP	5960.63	0.000	336.260	5925.06	-335.48	-284.95	-169.88
Landing pt	6864.76	90.412	336.260	6498.00	192.77	-517.28	406.30
TD	13532.07	90.412	336.260	6450.00	6296.74	-3201.39	7062.95

Targets							
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
GW Rentals LLC OHI 3H BHL Rev-1	13532.07	6450.00	6296.74	-3201.40	1758711.76	14560377.22	40°05'29.829"N
GW Rentals LLC OHI 3H LP Rev-1	6864.76	6498.00	192.77	-517.28	1761394.84	14554276.60	40°04'29.362"N

Plot reference wellpath is GW Rentals LLC OHI 3H PWP Rev-B.0
 True vertical depths are referenced to SDC 41 (RT)
 Measured depths are referenced to SDC 41 (RT)
 SDC 41 (RT) to Mean Sea Level: 1272.7 feet
 Mean Sea Level to Mud line (At Slot: Slot 3H): -1246.7 feet
 Coordinates are in feet referenced to Slot
 Grid System: NAD83 / UTM Zone 17 North, US feet
 North Reference: Grid north
 Scale: True distance
 Depths are in feet
 Created by: always on 10/19/2015



REFERENCE WELLPATH IDENTIFICATION	
Operator	SOUTHWESTERN ENERGY
Area	Ohio County, WV
Field	Ohio
Facility	GW Rentals LLC OHI Pad
Slot	Slot 3H
Well	GW Rentals LLC OHI 3H
Wellbore	GW Rentals LLC OHI 3H (AWB)

REPORT SETUP INFORMATION	
Projection System	NAD83 / UTM Zone 17 North, US feet
North Reference	Grid
Scale	0.999617
Convergence at slot	0.28° East
Software System	WellArchitect® 4.0.1
User	Alvayes
Report Generated	11/9/2015 at 11:48:26 AM
Database/Source file	WA_MPL_EASTERNUS_Defn/GW_Rentals_LLC_OHI_3H_AWB_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Northing[US ft]	Latitude	Longitude	
Slot Location	0.00	0.00	1761911.92	40°04'27.462"N	80°33'56.509"W	
Facility Reference Pt			1761911.92	40°04'27.462"N	80°33'56.509"W	
Field Reference Pt			0.00	0°00'00.000"	85°29'19.478"W	

WELLPATH DATUM	
Calculation method	SDC 41 (RT) to Facility Vertical Datum
Horizontal Reference	SDC 41 (RT) to Mean Sea Level
Vertical Reference Pt	SDC 41 (RT) to Mud Line at Slot (Slot 3H)
Mean Reference Pt	Section Origin
Field Vertical Reference	Section Azimuth
Minimum curvature	1272.70ft
Slot	1272.70ft
SDC 41 (RT)	26.00ft
SDC 41 (RT)	N 0.00, E 0.00 ft
Mean Sea Level	333.05°

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Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	GW Rentals LLC OHI 3H
Field	Ohio	Wellbore	GW Rentals LLC OHI 3H (AWB)
Facility	GW Rentals LLC OHI Pad		

WELLPATH DATA (156 stations) † = interpolated/extrapolated station

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]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	169.470	0.00	0.00	0.00	0.00	1761911.92	14554083.90	40°04'27.462"N	80°33'56.509"W	0.00	0.000	0.00	0.00	0.00	0.00	
26.00	0.000	169.470	26.00	0.00	0.00	0.00	1761911.92	14554083.90	40°04'27.462"N	80°33'56.509"W	0.00	0.000	0.00	169.47	0.00	0.00	
186.00	0.700	169.470	186.00	-0.94	-0.96	0.18	1761912.10	14554082.94	40°04'27.452"N	80°33'56.507"W	0.98	169.470	0.44	157.54	0.44	0.00	17-1/2" EMS (mag. ss) (186'-566')
281.00	0.300	210.070	280.99	-1.63	-1.75	0.16	1761912.08	14554082.15	40°04'27.445"N	80°33'56.507"W	1.75	174.765	0.54	91.20	-0.42	42.74	
376.00	0.300	212.470	375.99	-1.89	-2.17	-0.10	1761911.82	14554081.73	40°04'27.441"N	80°33'56.511"W	2.17	182.586	0.01	-91.60	0.00	2.53	
472.00	0.300	209.270	471.99	-2.16	-2.60	-0.36	1761911.56	14554081.30	40°04'27.436"N	80°33'56.514"W	2.63	187.785	0.02	110.60	0.00	-3.33	
566.00	0.300	250.470	565.99	-2.26	-2.90	-0.71	1761911.21	14554081.00	40°04'27.433"N	80°33'56.518"W	2.99	193.723	0.22	147.71	0.00	43.83	
715.00	0.200	344.920	714.99	-1.96	-2.78	-1.14	1761910.78	14554081.12	40°04'27.435"N	80°33'56.524"W	3.01	202.363	0.25	119.68	-0.07	63.39	12-1/4" APS EM (MagCorr) (566')(715'-2064')
810.00	0.340	73.870	809.99	-1.85	-2.54	-0.92	1761911.00	14554081.36	40°04'27.437"N	80°33'56.521"W	2.70	199.821	0.41	-9.79	0.15	93.63	
904.00	0.620	69.430	903.98	-1.96	-2.28	-0.17	1761911.75	14554081.62	40°04'27.439"N	80°33'56.512"W	2.29	184.299	0.30	167.40	0.30	-4.72	
999.00	0.340	213.380	998.98	-2.16	-2.34	0.15	1761912.07	14554081.56	40°04'27.443"N	80°33'56.507"W	2.34	176.224	0.97	22.03	-0.29	151.53	
1095.00	2.030	231.810	1094.96	-2.63	-3.63	-1.34	1761910.58	14554080.27	40°04'27.426"N	80°33'56.527"W	3.87	200.251	1.78	-3.42	1.76	19.20	
1190.00	4.480	229.940	1189.80	-3.80	-7.06	-5.50	1761906.42	14554076.85	40°04'27.392"N	80°33'56.580"W	8.95	217.938	2.58	4.20	2.58	-1.97	
1285.00	6.690	231.330	1284.34	-5.76	-12.90	-12.66	1761899.26	14554071.00	40°04'27.335"N	80°33'56.673"W	18.08	224.460	2.33	-21.36	2.33	1.46	
1380.00	8.540	226.530	1378.50	-8.89	-21.21	-22.10	1761889.83	14554062.69	40°04'27.253"N	80°33'56.795"W	30.64	226.175	2.06	-24.80	1.95	-5.05	
1476.00	9.880	222.970	1473.26	-13.75	-32.15	-32.89	1761879.04	14554051.77	40°04'27.146"N	80°33'56.934"W	45.99	225.656	1.52	-49.57	1.40	-3.71	
1570.00	10.460	219.350	1565.78	-19.94	-44.65	-43.80	1761868.14	14554039.27	40°04'27.023"N	80°33'57.075"W	62.54	224.451	0.92	14.02	0.62	-3.85	
1666.00	11.590	220.750	1660.01	-27.10	-58.69	-55.62	1761856.32	14554025.23	40°04'26.885"N	80°33'57.228"W	80.86	223.461	1.21	-19.10	1.18	1.46	
1761.00	12.300	219.600	1752.95	-34.75	-73.72	-68.30	1761843.65	14554010.21	40°04'26.737"N	80°33'57.392"W	100.49	222.815	0.79	-32.36	0.75	-1.21	
1855.00	13.210	217.110	1844.63	-43.43	-90.00	-81.16	1761830.79	14553993.94	40°04'26.577"N	80°33'57.559"W	121.19	222.045	1.13	123.84	0.97	-2.65	
1949.00	12.860	219.530	1936.21	-52.31	-106.63	-94.30	1761817.66	14553977.31	40°04'26.413"N	80°33'57.729"W	142.35	221.488	0.69	162.35	-0.37	2.57	
2045.00	11.740	221.290	2040.01	-60.19	-122.21	-107.54	1761804.42	14553961.74	40°04'26.259"N	80°33'57.900"W	162.79	221.348	1.23	77.43	-1.17	1.83	
2064.00	10.830	223.130	2058.61	-61.57	-125.08	-110.15	1761801.81	14553958.86	40°04'26.231"N	80°33'57.934"W	166.67	221.368	2.03	-146.30	0.47	9.68	
2139.00	10.990	220.100	2128.15	-66.97	-136.16	-120.01	1761791.96	14553947.79	40°04'26.122"N	80°33'58.061"W	181.50	221.393	1.39	177.18	-1.13	-4.04	8-3/4" APS EM (MagCorr) (2064')(2139'-5837')
2234.00	10.390	220.220	2197.47	-73.78	-149.55	-131.32	1761780.65	14553934.41	40°04'25.990"N	80°33'58.208"W	199.02	221.287	0.73	136.66	-0.73	0.20	
2329.00	10.220	220.230	2197.02	-79.93	-162.05	-142.32	1761769.65	14553921.92	40°04'25.867"N	80°33'58.350"W	215.67	221.292	0.57	-133.56	-0.41	2.29	
2424.00	10.600	220.240	2196.44	-86.67	-174.06	-151.11	1761760.87	14553899.90	40°04'25.749"N	80°33'58.464"W	230.50	220.961	3.15	51.86	-1.73	-14.60	
2519.00	10.800	221.600	2195.39	-93.63	-186.46	-160.08	1761751.90	14553887.55	40°04'25.627"N	80°33'58.580"W	245.73	220.650	3.00	-115.56	2.23	13.88	
2614.00	10.700	221.620	2194.84	-99.89	-199.22	-171.41	1761740.58	14553884.75	40°04'25.501"N	80°33'58.727"W	262.81	220.708	0.10	-167.13	-0.04	-0.49	
2709.00	10.210	219.530	2183.04	-106.08	-211.56	-182.01	1761729.98	14553872.42	40°04'25.380"N	80°33'58.864"W	279.08	220.707	1.04	-79.18	-1.01	-1.42	

WV Department of Environmental Protection Gas

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	GW Rentals LLC OHI 3H
Field	Ohio	Wellbore	GW Rentals LLC OHI 3H (AWB)
Facility	GW Rentals LLC OHI Pad		

WELLPATH DATA (156 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]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
2804.00	9.510	216.420	2777.35	-112.63	-223.81	-191.65	1761720.35	14553860.18	40°04'25.260"N	80°33'58.988"W	294.65	220.573	0.63	20.92	0.14	-3.74	
2898.00	9.800	217.070	2870.02	-119.62	-236.44	-201.08	1761710.92	14553847.55	40°04'25.135"N	80°33'59.111"W	310.38	220.379	0.33	-161.32	0.31	0.69	
2993.00	9.080	215.520	2963.73	-126.62	-248.99	-210.31	1761701.69	14553835.00	40°04'25.012"N	80°33'59.230"W	325.92	220.186	0.80	50.12	-0.76	-1.63	
3088.00	9.630	219.310	3057.47	-133.28	-261.24	-219.70	1761692.31	14553822.76	40°04'24.891"N	80°33'59.352"W	341.34	220.063	0.87	161.15	0.58	3.99	
3183.00	9.410	219.770	3151.16	-139.55	-273.36	-229.70	1761682.31	14553810.65	40°04'24.772"N	80°33'59.481"W	357.05	220.040	0.25	-174.41	-0.23	0.48	
3277.00	8.450	219.130	3244.02	-145.39	-284.62	-238.97	1761673.04	14553799.39	40°04'24.661"N	80°33'59.601"W	371.64	220.017	1.03	-147.27	-1.02	-0.68	
3373.00	7.710	215.510	3339.07	-151.22	-295.34	-247.16	1761664.85	14553788.68	40°04'24.555"N	80°33'59.707"W	385.12	219.926	0.94	-147.99	-0.77	-3.77	
3467.00	7.300	213.470	3432.26	-157.09	-305.45	-254.12	1761657.90	14553778.57	40°04'24.456"N	80°33'59.797"W	397.34	219.759	0.52	-128.93	-0.44	-2.17	
3563.00	7.020	210.540	3527.52	-163.25	-315.59	-260.47	1761651.55	14553768.43	40°04'24.356"N	80°33'59.879"W	409.20	219.534	0.48	137.80	-0.29	-3.05	
3658.00	5.910	221.280	3621.91	-168.18	-324.27	-266.64	1761645.38	14553759.76	40°04'24.270"N	80°33'59.959"W	419.82	219.430	1.72	-169.62	-1.17	11.31	
3752.00	5.310	220.090	3715.46	-171.68	-331.23	-272.64	1761639.39	14553752.80	40°04'24.202"N	80°34'00.037"W	429.01	219.458	0.65	148.57	-0.64	-1.27	
3847.00	4.410	227.560	3810.12	-174.37	-337.06	-278.16	1761633.86	14553746.97	40°04'24.145"N	80°34'00.108"W	437.02	219.532	1.16	155.64	-0.95	7.86	
3942.00	3.170	238.220	3904.91	-175.56	-340.91	-283.09	1761628.94	14553743.12	40°04'24.107"N	80°34'00.172"W	443.12	219.706	1.50	154.87	-1.31	11.22	
4037.00	1.560	272.740	3999.83	-175.14	-342.23	-286.62	1761625.41	14553741.80	40°04'24.094"N	80°34'00.217"W	446.40	219.946	2.19	116.33	-1.69	36.34	
4132.00	1.400	302.030	4094.80	-173.51	-341.55	-288.89	1761623.14	14553742.48	40°04'24.101"N	80°34'00.247"W	447.34	220.225	0.80	106.89	-0.17	30.83	
4228.00	1.340	320.320	4190.78	-171.41	-340.07	-290.60	1761621.43	14553743.96	40°04'24.115"N	80°34'00.269"W	447.32	220.515	0.46	101.28	-0.06	19.05	
4323.00	1.430	354.830	4285.75	-169.22	-338.03	-291.42	1761620.61	14553746.00	40°04'24.136"N	80°34'00.279"W	446.31	220.765	0.87	59.15	0.09	36.33	
4417.00	1.620	4.710	4379.72	-167.00	-335.54	-291.42	1761620.62	14553748.49	40°04'24.160"N	80°34'00.279"W	444.42	220.974	0.34	42.03	0.20	10.51	
4512.00	1.910	12.140	4474.67	-164.63	-332.65	-290.97	1761621.06	14553751.38	40°04'24.189"N	80°34'00.273"W	441.95	221.176	0.39	105.58	0.31	7.82	
4606.00	1.850	33.750	4568.62	-162.67	-329.86	-289.80	1761622.23	14553754.17	40°04'24.216"N	80°34'00.258"W	439.08	221.301	0.75	125.19	-0.06	22.99	
4701.00	1.710	4.800	4663.58	-161.39	-327.52	-288.02	1761624.01	14553756.51	40°04'24.239"N	80°34'00.235"W	436.14	221.328	0.28	56.05	-0.15	7.73	
4796.00	1.950	50.070	4758.53	-160.51	-325.42	-285.84	1761626.19	14553758.61	40°04'24.260"N	80°34'00.206"W	433.13	221.295	0.40	-178.48	0.25	9.87	
4891.00	1.360	49.950	4853.49	-159.90	-323.66	-283.74	1761628.30	14553760.36	40°04'24.277"N	80°34'00.179"W	430.42	221.239	0.62	-150.67	-0.62	-0.69	
4985.00	1.144	43.800	4947.46	-159.33	-322.26	-282.22	1761629.79	14553761.76	40°04'24.291"N	80°34'00.160"W	428.38	221.212	0.28	-52.92	-0.23	-6.84	
5079.00	1.204	39.740	5041.45	-158.63	-320.83	-280.96	1761631.06	14553763.20	40°04'24.305"N	80°34'00.143"W	426.46	221.210	0.10	-167.73	0.06	-3.87	
5174.00	0.260	310.690	5136.44	-158.03	-319.92	-280.49	1761631.54	14553764.10	40°04'24.314"N	80°34'00.137"W	425.47	221.243	1.29	-70.02	-0.99	-93.74	
5268.00	1.370	60.940	5231.43	-157.68	-320.15	-281.72	1761630.31	14553763.87	40°04'24.312"N	80°34'00.153"W	426.45	221.346	1.34	-69.42	1.18	-63.56	
5363.00	1.950	222.648	5323.39	-158.09	-321.71	-283.88	1761628.15	14553762.31	40°04'24.296"N	80°34'00.181"W	429.05	221.426	1.04	-80.40	0.61	-29.79	
5458.00	2.220	242.054	5415.33	-159.86	-324.60	-285.68	1761626.35	14553759.42	40°04'24.268"N	80°34'00.204"W	432.41	221.350	0.83	-88.43	0.28	-21.47	
5553.00	1.580	173.130	5515.25	-163.07	-328.43	-286.12	1761625.91	14553755.60	40°04'24.230"N	80°34'00.210"W	435.58	221.061	1.32	-93.17	0.38	-30.64	

WV Department of Environmental Protection
Oil and Gas

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	GW Rentals LLC OHI 3H
Field	Ohio	Wellbore	GW Rentals LLC OHI 3H (AWB)
Facility	GW Rentals LLC OHI Pad		

WELLPATH DATA (156 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TYD [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]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
5648.00	2.870	143.780	5610.14	-167.42	-332.47	-284.45	1761627.57	14553751.56	40°04'24.190"N	80°34'00.189"W	437.55	220.550	1.48	-85.48	0.31	-30.89	
5743.00	3.170	122.780	5705.02	-172.04	-335.81	-280.84	1761631.19	14553748.22	40°04'24.157"N	80°34'00.143"W	437.77	219.906	1.20	-12.98	0.32	-22.11	
5837.00	4.760	118.400	5798.79	-177.49	-339.07	-275.22	1761636.80	14553744.96	40°04'24.124"N	80°34'00.071"W	436.71	219.066	1.72	-42.85	1.69	-4.66	
5938.00	5.160	114.400	5869.52	-182.41	-341.79	-269.73	1761642.30	14553742.24	40°04'24.097"N	80°34'00.060"W	435.40	218.279	0.74	-175.47	0.56	-5.638-1/2" BHI AT Curve (MagCorr) (5837)(5908'-13547')	
5952.00	2.210	108.310	5913.43	-184.56	-342.88	-267.12	1761644.90	14553741.15	40°04'24.086"N	80°33'59.967"W	434.65	217.920	6.75	-148.39	-6.70	-13.84	
6003.00	3.890	337.200	5964.39	-183.53	-341.59	-266.85	1761645.17	14553742.44	40°04'24.099"N	80°33'59.963"W	433.47	217.997	10.97	-13.50	3.29	-257.08	
6048.00	8.480	329.830	6009.12	-178.69	-337.31	-269.11	1761642.91	14553746.72	40°04'24.142"N	80°33'59.992"W	431.51	218.584	10.33	1.36	10.20	-16.38	
6098.00	12.120	330.240	6058.30	-169.76	-329.57	-273.57	1761638.45	14553754.46	40°04'24.218"N	80°34'00.049"W	428.32	219.696	7.28	-3.21	7.28	0.82	
6142.00	16.610	329.360	6100.92	-158.87	-320.14	-279.08	1761632.95	14553763.88	40°04'24.312"N	80°34'00.119"W	424.70	221.080	10.22	-0.05	10.20	-2.00	
6193.00	21.080	329.350	6149.17	-142.43	-305.97	-287.47	1761624.56	14553778.05	40°04'24.452"N	80°34'00.226"W	419.83	223.214	8.76	-12.16	8.76	-0.02	
6237.00	24.410	327.620	6189.74	-125.48	-291.48	-296.38	1761615.66	14553792.53	40°04'24.596"N	80°34'00.340"W	415.69	225.477	7.72	2.32	7.57	-3.93	
6288.00	28.820	327.990	6235.33	-102.74	-272.15	-308.54	1761603.50	14553811.86	40°04'24.787"N	80°34'00.495"W	411.42	228.586	8.65	23.11	8.65	0.73	
6335.00	34.440	332.170	6275.33	-78.14	-250.77	-320.76	1761591.28	14553833.23	40°04'24.999"N	80°34'00.651"W	407.15	231.982	12.83	27.35	11.96	8.89	
6384.00	39.770	336.410	6314.41	-48.61	-224.13	-333.51	1761578.54	14553859.86	40°04'25.263"N	80°34'00.813"W	401.83	236.098	12.06	15.80	10.88	8.65	
6433.00	44.800	338.420	6350.65	-15.76	-193.69	-346.14	1761565.91	14553890.28	40°04'25.565"N	80°34'00.974"W	396.65	240.770	10.63	0.09	10.27	4.10	
6479.00	49.750	338.430	6381.85	17.88	-162.28	-358.57	1761553.49	14553921.69	40°04'25.876"N	80°34'01.132"W	393.58	245.650	10.76	-11.20	10.76	0.02	
6525.00	54.400	337.300	6410.11	54.02	-128.68	-372.24	1761539.82	14553955.27	40°04'26.208"N	80°34'01.306"W	393.86	250.930	10.29	-10.33	10.11	-2.46	
6574.00	60.280	336.070	6436.54	95.17	-90.82	-388.58	1761523.49	14553993.11	40°04'26.583"N	80°34'01.513"W	399.05	256.845	12.18	-9.57	12.00	-2.51	
6617.00	65.530	335.100	6456.12	133.40	-55.98	-404.40	1761507.67	14554027.94	40°04'26.928"N	80°34'01.715"W	408.26	262.119	12.37	4.18	12.21	-2.26	
6668.00	72.460	335.630	6474.39	180.95	-12.73	-424.23	1761487.85	14554071.18	40°04'27.357"N	80°34'01.967"W	424.42	268.282	13.62	0.66	13.59	1.04	
6715.00	78.470	335.700	6486.18	226.37	28.71	-442.97	1761469.12	14554112.60	40°04'27.767"N	80°34'02.205"W	443.90	273.708	12.79	-0.48	12.79	0.15	
6763.00	83.270	335.660	6493.80	273.70	71.88	-462.48	1761449.62	14554155.76	40°04'28.195"N	80°34'02.454"W	468.03	278.835	10.00	-4.33	10.00	-0.08	
6807.00	87.630	335.330	6497.29	317.51	111.78	-480.67	1761431.44	14554195.64	40°04'28.590"N	80°34'02.685"W	493.50	283.092	9.94	6.85	9.91	-0.75	
6857.00	90.460	335.670	6498.12	367.45	157.27	-501.40	1761410.71	14554241.11	40°04'29.040"N	80°34'02.949"W	525.49	287.415	5.70	102.27	5.66	0.68	
6952.00	90.090	337.370	6497.66	462.27	244.40	-539.25	1761372.88	14554328.21	40°04'29.903"N	80°34'03.430"W	592.05	294.381	1.83	83.77	-0.39	1.79	
7047.00	90.150	337.920	6497.46	556.97	332.26	-575.38	1761336.76	14554416.03	40°04'30.773"N	80°34'03.890"W	664.42	300.005	0.58	-96.34	0.06	0.58	
7141.00	90.120	337.650	6497.24	650.65	419.28	-610.92	1761310.24	14554503.02	40°04'31.635"N	80°34'04.342"W	740.96	304.462	0.29	-167.47	-0.03	-0.29	
7235.00	90.030	337.600	6497.12	744.34	506.21	-646.68	1761265.49	14554589.92	40°04'32.496"N	80°34'04.796"W	821.25	308.053	0.10	-90.00	-0.10	-0.02	
7329.00	90.030	336.790	6497.07	838.10	592.88	-683.09	1761229.09	14554676.55	40°04'33.354"N	80°34'05.259"W	904.50	310.956	0.89	-90.00	0.00	-0.89	
7424.00	90.030	334.060	6497.02	933.01	679.26	-722.60	1761189.60	14554762.90	40°04'34.209"N	80°34'05.762"W	991.74	313.229	2.87	85.40	0.00	-2.87	

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	GW Rentals LLC OHI 3H
Field	Ohio	Wellbore	GW Rentals LLC OHI 3H (AWB)
Facility	GW Rentals LLC OHI Pad		

WELLPATH DATA (156 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]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
7519.00	90.150	335.550	6496.87	1027.96	765.22	-763.04	1761149.18	14554848.83	40°04'35.061"N	80°34'06.277"W	1080.64	315.082	1.57	85.00	0.13	1.57	
7614.00	90.310	337.380	6496.49	1122.78	852.31	-800.97	1761111.26	14554935.89	40°04'35.923"N	80°34'06.759"W	1169.61	316.779	1.93	90.96	0.17	1.93	
7709.00	90.280	339.170	6496.00	1217.38	940.56	-836.13	1761076.11	14555024.10	40°04'36.797"N	80°34'07.206"W	1258.48	318.364	1.88	-65.88	-0.03	1.88	
7804.00	90.580	338.500	6495.29	1311.90	1029.15	-870.43	1761041.82	14555112.65	40°04'37.674"N	80°34'07.642"W	1347.89	319.776	0.77	-97.46	0.32	-0.71	
7898.00	90.340	336.670	6494.53	1405.59	1116.04	-906.27	1761005.00	14555199.51	40°04'38.534"N	80°34'08.097"W	1437.66	320.922	1.96	90.45	-0.26	-1.95	
7994.00	90.310	340.390	6493.99	1501.14	1205.36	-941.40	1760970.88	14555288.80	40°04'39.419"N	80°34'08.544"W	1529.42	322.010	3.88	-92.92	-0.03	3.88	
8089.00	90.090	336.090	6493.66	1595.72	1293.57	-976.61	1760935.68	14555376.97	40°04'40.292"N	80°34'08.991"W	1620.83	322.948	4.53	-40.74	-0.23	-4.53	
8184.00	90.740	335.530	6492.97	1690.61	1380.23	-1015.54	1760896.77	14555463.60	40°04'41.150"N	80°34'09.487"W	1713.58	323.655	0.90	-99.39	0.68	-0.59	
8279.00	89.880	330.340	6492.46	1785.57	1464.79	-1058.75	1760853.58	14555548.13	40°04'41.988"N	80°34'10.037"W	1807.36	324.141	5.54	-90.00	-0.91	-5.46	
8373.00	89.880	328.660	6492.65	1879.39	1545.78	-1106.45	1760805.89	14555629.09	40°04'42.791"N	80°34'10.646"W	1900.97	324.405	1.79	77.63	0.00	-1.79	
8468.00	90.680	332.310	6492.19	1974.28	1628.44	-1153.25	1760759.12	14555711.71	40°04'43.610"N	80°34'11.243"W	1995.44	324.694	3.93	13.24	0.84	3.84	
8563.00	91.020	332.390	6490.78	2069.26	1712.58	-1197.33	1760715.05	14555795.82	40°04'44.443"N	80°34'11.804"W	2089.62	325.041	0.37	106.63	0.36	0.08	
8658.00	90.180	335.200	6489.78	2164.24	1797.80	-1239.27	1760673.12	14555881.01	40°04'45.287"N	80°34'12.339"W	2183.55	325.420	3.09	-97.30	-0.88	2.96	
8754.00	89.600	330.670	6489.97	2260.21	1883.27	-1282.94	1760629.47	14555966.44	40°04'46.134"N	80°34'12.895"W	2278.73	325.736	4.76	52.29	-0.60	-4.72	
8849.00	90.180	331.420	6490.15	2355.15	1966.39	-1328.93	1760583.50	14556049.53	40°04'46.958"N	80°34'13.482"W	2373.34	325.948	1.00	90.33	0.61	0.79	
8944.00	90.150	336.470	6489.88	2450.11	2051.71	-1370.65	1760541.80	14556134.82	40°04'47.803"N	80°34'14.013"W	2467.42	326.255	5.32	90.53	-0.03	5.32	
9039.00	90.120	339.720	6489.65	2544.73	2139.84	-1406.08	1760506.38	14556222.91	40°04'48.675"N	80°34'14.463"W	2560.46	326.691	3.42	87.80	-0.03	3.42	
9134.00	90.220	342.330	6489.37	2638.80	2229.67	-1436.97	1760475.50	14556312.71	40°04'49.565"N	80°34'14.855"W	2652.60	327.199	2.75	-83.99	0.11	2.75	
9229.00	90.280	341.760	6488.96	2732.63	2320.04	-1466.25	1760446.23	14556403.05	40°04'50.459"N	80°34'15.226"W	2744.54	327.707	0.60	-88.38	0.06	-0.60	
9324.00	90.310	340.700	6488.47	2826.66	2409.98	-1496.82	1760415.67	14556492.96	40°04'51.349"N	80°34'15.614"W	2836.99	328.156	1.12	-96.58	0.03	-1.12	
9419.00	90.250	340.180	6488.00	2920.87	2499.50	-1528.63	1760383.88	14556582.44	40°04'52.235"N	80°34'16.018"W	2929.88	328.551	0.55	-79.25	-0.06	-0.55	
9514.00	90.400	339.390	6487.46	3015.21	2588.65	-1561.45	1760351.07	14556671.55	40°04'53.118"N	80°34'16.434"W	3023.12	328.902	0.85	-90.52	0.16	-0.83	
9609.00	90.370	336.130	6486.83	3109.87	2676.57	-1597.40	1760315.13	14556759.44	40°04'53.989"N	80°34'16.891"W	3117.00	329.171	3.43	-89.08	-0.03	-3.43	
9704.00	90.400	334.250	6486.10	3204.80	2762.79	-1637.26	1760275.29	14556845.63	40°04'54.843"N	80°34'17.399"W	3211.49	329.349	1.98	-81.47	0.03	-1.98	
9799.00	90.320	333.700	6485.42	3299.79	2848.06	-1679.13	1760233.44	14556930.87	40°04'55.687"N	80°34'17.932"W	3306.20	329.478	0.85	90.00	0.13	-0.84	
9894.00	90.520	333.340	6484.56	3394.78	2933.20	-1721.27	1760191.31	14557015.97	40°04'56.531"N	80°34'18.469"W	3400.95	329.595	0.45	88.30	0.00	0.45	
9989.00	90.580	335.630	6483.65	3489.72	3019.22	-1761.57	1760151.02	14557101.96	40°04'57.382"N	80°34'18.982"W	3495.54	329.738	2.14	94.96	0.06	2.14	
10084.00	90.400	337.380	6482.84	3584.49	3106.62	-1798.77	1760113.84	14557189.33	40°04'58.248"N	80°34'19.455"W	3589.80	329.929	2.19	-90.00	-0.19	2.18	
10179.00	90.600	336.770	6482.17	3679.22	3194.29	-1835.36	1760077.27	14557276.96	40°04'59.116"N	80°34'19.921"W	3684.02	330.119	1.33	0.00	0.00	-1.33	
10274.00	90.400	335.730	6481.51	3774.02	3281.56	-1872.90	1760039.74	14557364.19	40°04'59.980"N	80°34'20.398"W	3778.41	330.285	0.00	89.99	0.00	0.00	

Ohio Department of Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	GW Rentals LLC OHI 3H
Field	Ohio	Wellbore	GW Rentals LLC OHI 3H (AWB)
Facility	GW Rentals LLC OHI Pad		

WELLPATH DATA (156 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]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
10369.00	90.400	338.690	6480.85	3868.70	3369.45	-1908.94	1760003.71	14557452.05	40°05'00.850"N	80°34'20.856"W	3872.63	330.467	2.07	-89.99	0.00	2.07	
10464.00	90.400	335.290	6480.18	3963.46	3456.87	-1946.07	1759966.60	14557539.44	40°05'01.716"N	80°34'21.329"W	3967.01	330.622	3.58	-91.98	0.00	-3.58	
10559.00	90.340	333.560	6479.57	4058.43	3542.56	-1987.08	1759925.61	14557625.10	40°05'02.565"N	80°34'21.851"W	4061.80	330.711	1.82	-84.80	-0.06	-1.82	
10654.00	90.430	332.570	6478.93	4153.42	3627.25	-2030.11	1759882.59	14557709.76	40°05'03.404"N	80°34'22.399"W	4156.72	330.765	1.05	-110.56	0.09	-1.04	
10748.00	90.370	332.730	6478.28	4247.42	3710.74	-2073.29	1759839.42	14557793.21	40°05'04.231"N	80°34'22.950"W	4250.67	330.807	0.18	88.43	-0.04	0.17	
10843.00	90.400	333.830	6477.64	4342.41	3795.59	-2116.01	1759796.73	14557878.03	40°05'05.071"N	80°34'23.494"W	4345.58	330.861	1.16	88.83	0.03	1.16	
10938.00	90.490	338.290	6476.90	4437.26	3882.40	-2154.55	1759758.20	14557964.80	40°05'05.931"N	80°34'23.985"W	4440.17	330.972	4.70	91.46	0.09	4.69	
11033.00	90.460	339.460	6476.11	4531.76	3971.01	-2188.78	1759723.98	14558053.38	40°05'06.808"N	80°34'24.420"W	4534.28	331.137	1.23	-86.53	-0.03	1.23	
11128.00	90.520	338.470	6475.30	4626.25	4059.67	-2222.88	1759689.90	14558142.01	40°05'07.686"N	80°34'24.853"W	4628.41	331.297	1.04	95.53	0.06	-1.04	
11222.00	90.490	338.780	6474.47	4719.80	4147.20	-2257.14	1759655.65	14558229.51	40°05'08.553"N	80°34'25.288"W	4721.65	331.443	0.33	-82.76	-0.03	0.33	
11317.00	90.650	337.520	6473.53	4814.42	4235.37	-2292.49	1759620.31	14558317.64	40°05'09.426"N	80°34'25.738"W	4816.01	331.575	1.34	-90.00	0.17	-1.33	
11412.00	90.650	337.440	6472.45	4909.13	4323.12	-2328.88	1759583.94	14558405.36	40°05'10.295"N	80°34'26.200"W	4910.50	331.689	0.08	84.64	0.00	-0.08	
11507.00	90.680	337.760	6471.35	5003.82	4410.95	-2365.08	1759547.76	14558493.15	40°05'11.164"N	80°34'26.661"W	5005.00	331.801	0.34	-93.30	0.03	0.34	
11602.00	90.650	337.240	6470.24	5098.53	4498.71	-2401.43	1759511.42	14558580.88	40°05'12.033"N	80°34'27.123"W	5099.54	331.907	0.55	-89.99	-0.03	-0.55	
11697.00	90.650	335.330	6469.17	5193.36	4585.68	-2439.63	1759473.23	14558667.81	40°05'12.894"N	80°34'27.609"W	5194.25	331.987	2.01	-99.04	0.00	-2.01	
11792.00	90.580	334.890	6468.15	5288.30	4671.85	-2479.61	1759433.26	14558753.95	40°05'13.748"N	80°34'28.118"W	5289.11	332.043	0.47	35.54	-0.07	-0.46	
11887.00	90.650	334.940	6467.13	5383.24	4757.89	-2519.89	1759393.00	14558839.95	40°05'14.600"N	80°34'28.631"W	5383.99	332.093	0.09	-88.92	0.07	0.05	
11982.00	90.680	333.330	6466.02	5478.21	4843.36	-2561.33	1759351.58	14558925.39	40°05'15.447"N	80°34'29.159"W	5478.92	332.129	1.69	111.18	0.03	-1.69	
12076.00	90.370	334.130	6465.16	5572.20	4927.65	-2602.93	1759309.99	14559009.65	40°05'16.282"N	80°34'29.689"W	5572.88	332.156	0.91	-66.52	-0.33	0.85	
12172.00	91.260	332.080	6463.80	5668.19	5013.25	-2646.35	1759266.59	14559095.22	40°05'17.130"N	80°34'30.242"W	5668.85	332.172	2.33	89.98	0.93	-2.14	
12267.00	91.260	334.330	6461.71	5763.16	5098.02	-2689.16	1759223.80	14559179.96	40°05'17.969"N	80°34'30.788"W	5763.80	332.189	2.37	89.32	0.00	2.37	
12361.00	91.320	339.940	6459.59	5856.86	5184.58	-2725.66	1759187.31	14559266.48	40°05'18.826"N	80°34'31.252"W	5857.40	332.268	5.97	112.25	0.06	5.97	
12456.00	91.230	340.160	6457.47	5951.12	5273.86	-2758.07	1759154.92	14559355.73	40°05'19.710"N	80°34'31.664"W	5951.51	332.392	0.25	-100.19	-0.09	0.23	
12551.00	90.740	337.440	6455.84	6045.62	5362.41	-2792.41	1759120.58	14559444.24	40°05'20.587"N	80°34'32.100"W	6045.91	332.492	2.91	-97.17	-0.52	-2.86	
12645.00	90.580	336.170	6454.76	6139.41	5448.80	-2829.43	1759083.58	14559530.60	40°05'21.442"N	80°34'32.571"W	6139.64	332.558	1.36	91.95	-0.17	-1.35	
12740.00	90.550	337.050	6453.82	6234.22	5535.99	-2867.14	1759045.88	14559617.76	40°05'22.306"N	80°34'33.051"W	6234.40	332.620	0.93	80.98	-0.03	0.93	
12836.00	90.650	337.680	6452.82	6329.94	5624.59	-2904.09	1759008.95	14559706.32	40°05'23.183"N	80°34'33.521"W	6330.07	332.692	0.66	-135.00	0.10	0.66	
12931.00	90.520	337.550	6451.85	6424.64	5712.43	-2940.27	1758972.79	14559794.13	40°05'24.053"N	80°34'33.981"W	6424.72	332.764	0.19	-98.97	-0.14	-0.14	
13026.00	90.400	336.790	6451.08	6519.39	5799.98	-2977.12	1758935.94	14559881.65	40°05'24.920"N	80°34'34.450"W	6519.44	332.829	0.81	-90.59	-0.13	-0.80	
13120.00	90.370	333.930	6450.45	6613.30	5885.41	-3016.31	1758896.77	14559967.04	40°05'25.766"N	80°34'34.949"W	6613.33	332.865	3.04	-90.00	-0.03	-3.04	

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	GW Rentals LLC OHI 3H
Field	Ohio	Wellbore	GW Rentals LLC OHI 3H (AWB)
Facility	GW Rentals LLC OHI Pad		

WELLPATH DATA (156 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]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
13215.00	90.370	333.090	6449.84	6708.29	5970.43	-3058.68	1758834.42	1456002.03	40°05'26.608"N	80°34'35.489"W	6708.32	332.874	0.88	89.21	0.00	-0.88	
13310.00	90.400	335.280	6449.20	6803.27	6055.95	-3100.05	1758813.07	14560137.51	40°05'27.455"N	80°34'36.016"W	6803.29	332.892	2.31	-90.00	0.03	2.31	
13404.00	90.400	334.400	6448.54	6897.22	6141.02	-3140.01	1758773.12	14560222.56	40°05'28.298"N	80°34'36.525"W	6897.23	332.919	0.94	86.31	0.00	-0.94	
13500.00	90.620	337.820	6447.69	6993.06	6228.78	-3178.88	1758734.26	14560310.28	40°05'29.167"N	80°34'37.020"W	6993.07	332.962	3.57	75.88	0.23	3.56	
13547.00	91.140	339.890	6446.97	7039.81	6272.61	-3195.83	1758717.32	14560354.10	40°05'29.600"N	80°34'37.235"W	7039.82	333.002	4.54	0.00	1.11	4.40	Projection to TD: 13570'
13570.00	91.140	339.890	6446.51	7062.64	6294.20	-3203.74	1758709.41	14560375.68	40°05'29.814"N	80°34'37.335"W	7062.65	333.024	0.00		0.00	0.00	

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
GW Rentals LLC OHI 3H BHLL Rev-1		6450.00	6295.74	-3201.40	1758711.76	14560377.22	40°05'29.829"N	80°34'37.305"W	point
GW Rentals LLC OHI 3H LP Rev-1		6498.00	192.77	-517.28	1761394.84	14554276.60	40°04'29.392"N	80°34'03.151"W	point

WELLPATH COMPOSITION - Ref Wellbore: GW Rentals LLC OHI 3H (AWB) Ref Wellpath: GW Rentals LLC OHI 3H AWP TD: 13570' MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	566.00	EMS (Standard)		
566.00	2064.00	NaviTrak (MagCorr)	01_17-1/2" EMS (mag. ss) <186'-566">	GW Rentals LLC OHI 3H (AWB)
2064.00	5837.00	NaviTrak (MagCorr)	02_12-1/4" APS EM (MagCorr) (566')(715'-2064')	GW Rentals LLC OHI 3H (AWB)
5837.00	58547.00	NaviTrak (MagCorr)	03_8-3/4" APS EM (MagCorr) (2064')(2139'-5837')	GW Rentals LLC OHI 3H (AWB)
58547.00	57900.00	Blind Drilling (std)	04_8-1/2" BHL AT Curve (MagCorr) (5837')(5908'-13547')	GW Rentals LLC OHI 3H (AWB)

RECEIVED
Office of Oil and Gas
JAN 26 2017
WV Department of
Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 3H
SOUTHWESTERN ENERGY	Well	GW Rentals LLC OHI 3H
Ohio County, WV	Wellbore	GW Rentals LLC OHI 3H (AWB)
Ohio		
GW Rentals LLC OHI Pad		

COMMENTS

Wellpath general comments
 Rig: SDC 41
 API: 47-069-00193-0000
 BHL Job#: 7567179
 Duration: 10.22.2015 - 10.26.2015
 17-1/2" EMS (mag. ss) <186'-566'>
 12-1/4" APS EM (MagCorr) (566')(715'-2064')
 8-3/4" APS EM (MagCorr) (2064')(2139'-5837')
 8-1/2" BHL AT Curve (MagCorr) (5837')(5908'-13547')
 Projection to TD: 13570'