



SWN PRODUCTION COMPANY, LLC



Location: Ohio County, WV
Field: Ohio
Facility: Franz Thoman OHI Pad

Slot: 401H
Well: Franz Thoman OHI 401H
Wellbore: Franz Thoman OHI 401H AWB

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Franz Thoman OHI Pad			1735483.620	14576675.990	40°08'11.9423"N	80°39'35.4898"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
401H	34.80	-31.43	1735452.200	14576710.780	40°08'12.2875"N	80°39'35.8928"W
SDC 41 (KB) to Ground level (At Slot: 401H)					28ft	
Mean Sea Level to Ground level (At Slot: 401H)					-1137.3ft	
SDC 41 (KB) to Mean Sea Level					1163.3ft	
Plot reference wellpath is Franz Thoman OHI 401H awp Proj: 22186'				Grid System: NAD83 / UTM Zone 17 North, US feet		
True vertical depths are referenced to SDC 41 (KB)				North Reference: Grid north		
Reference wellpath measured depths are referenced to SDC 41 (KB)				Scale: True distance		
SDC 41 (KB) to Mean Sea Level: 1163.3 feet				Coordinates are in feet referenced to Slot		
Mean Sea Level to Ground level (At Slot: 401H): -1137.3 feet				Depths are in feet		
Offset wellpath MDs are referenced to each path's default MD datum				Created by: tranlam on 2023-05-25; Database: WA_MPL_EASTERNUS_Defn		

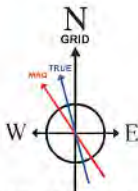
Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
22186.00	90.770	342.980	5699.67	15866.79	-7395.25	1728059.85	14592571.35	40°10'49.3518"N	80°41'10.3872"W

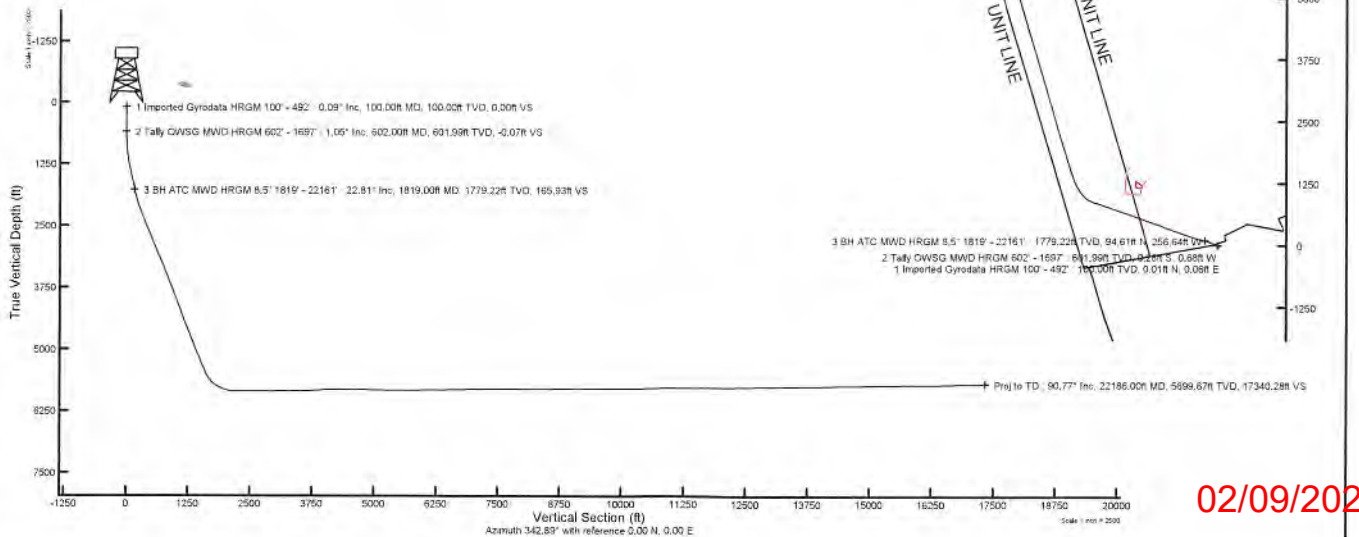
API:47069003510000
BH JOB: 111773292
DURATION: 05.13.2023 to 05.22.2023
RIG: SDC 41

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HDGM2023 (1900.0 to 2024.0) Dip: 67.03° Field: 52017 nT
Magnetic North is 8.08 degrees West of True North (at 5/8/2023)
Grid North is 0.22 degrees East of True North
To correct azimuth from True to Grid subtract 0.22 degrees
To correct azimuth from Magnetic to Grid subtract 8.30 degrees



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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Franz Thoman OHI 401H
Field	Ohio	API	47069003510000
Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Tranlam
Scale	0.999610	Report Generated	5/25/2023 at 2:55:41 PM
Convergence at slot	0.22° East	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	34.80	-31.43	1735452.20	14576710.78	40°08'12.2875"N	80°39'35.8928"W
Facility Reference Pt			1735483.62	14576675.99	40°08'11.9423"N	80°39'35.4898"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 41 (KB) to Facility Vertical Datum	1163.30ft
Horizontal Reference Pt	Slot	SDC 41 (KB) to Mean Sea Level	1163.30ft
Vertical Reference Pt	SDC 41 (KB)	SDC 41 (KB) to Ground Level at Slot (401H)	26.00ft
MD Reference Pt	SDC 41 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	342.89°

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Field	Ohio	API	47069003510000
Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

WELLPATH DATA (245 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]	Comments
0.00†	0.000	75.640	0.00	0.00	0.00	0.00	1735452.20	14576710.78	40°08'12.2875"N	80°39'35.8928"W	0.00	0.000	0.00	
26.00	0.000	75.640	26.00	0.00	0.00	0.00	1735452.20	14576710.78	40°08'12.2875"N	80°39'35.8928"W	0.00	0.000	0.00	
100.00	0.090	75.640	100.00	0.00	0.01	0.06	1735452.28	14576710.79	40°08'12.2876"N	80°39'35.8920"W	0.06	75.640	0.12	
200.00	0.060	97.410	200.00	-0.03	0.03	0.18	1735452.38	14576710.81	40°08'12.2877"N	80°39'35.8904"W	0.19	81.623	0.04	
300.00	0.210	100.440	300.00	-0.13	-0.01	0.42	1735452.62	14576710.77	40°08'12.2873"N	80°39'35.8874"W	0.42	91.763	0.15	
400.00	0.180	142.010	400.00	-0.37	-0.17	0.69	1735452.89	14576710.61	40°08'12.2858"N	80°39'35.8839"W	0.71	103.762	0.14	
492.00	0.270	255.870	492.00	-0.49	-0.34	0.57	1735452.77	14576710.44	40°08'12.2841"N	80°39'35.8854"W	0.66	120.473	0.41	
602.00	1.050	276.820	601.99	-0.07	-0.28	-0.68	1735451.52	14576710.50	40°08'12.2847"N	80°39'35.9015"W	0.74	247.603	0.73	
694.00	2.760	279.900	693.94	1.28	0.20	-3.70	1735448.50	14576710.98	40°08'12.2896"N	80°39'35.9404"W	3.70	273.106	1.86	
785.00	4.740	280.660	784.74	4.03	1.27	-9.55	1735442.65	14576712.05	40°08'12.3004"N	80°39'36.0157"W	9.64	277.590	2.18	
877.00	6.710	283.970	876.27	8.57	3.27	-18.51	1735433.70	14576714.05	40°08'12.3205"N	80°39'36.1309"W	18.79	280.033	2.17	
968.00	8.390	285.970	966.48	14.94	6.38	-30.05	1735422.16	14576717.16	40°08'12.3517"N	80°39'36.2793"W	30.72	281.995	1.87	
1059.00	10.160	290.750	1056.29	23.49	11.05	-43.94	1735408.28	14576721.83	40°08'12.3984"N	80°39'36.4579"W	45.31	284.123	2.12	
1149.00	12.280	294.490	1144.57	34.72	17.84	-60.07	1735392.15	14576728.61	40°08'12.4660"N	80°39'36.6653"W	62.66	286.536	2.49	
1241.00	14.660	297.880	1234.03	49.45	27.34	-79.27	1735372.96	14576738.11	40°08'12.5606"N	80°39'36.9120"W	83.85	289.027	2.72	
1332.00	17.060	299.420	1321.56	67.28	39.28	-101.08	1735351.16	14576750.04	40°08'12.6795"N	80°39'37.1923"W	108.44	291.237	2.68	
1425.00	18.980	296.570	1410.00	87.63	52.75	-126.49	1735325.76	14576763.51	40°08'12.8135"N	80°39'37.5188"W	137.05	292.636	2.27	
1516.00	18.740	291.390	1496.12	106.95	64.70	-153.34	1735298.92	14576775.45	40°08'12.9326"N	80°39'37.8639"W	166.43	292.876	1.86	
1606.00	19.860	289.010	1581.06	124.96	74.95	-181.26	1735271.02	14576785.70	40°08'13.0350"N	80°39'38.2228"W	196.14	292.466	1.52	
1697.00	21.490	286.860	1666.20	143.39	84.82	-211.82	1735240.46	14576795.57	40°08'13.1337"N	80°39'38.6159"W	228.18	291.823	1.98	
1819.00	22.810	278.040	1779.22	165.93	94.61	-256.64	1735195.66	14576805.36	40°08'13.2321"N	80°39'39.1924"W	273.53	290.237	2.93	
1909.00	25.230	283.290	1861.43	183.06	101.47	-292.59	1735159.72	14576812.21	40°08'13.3012"N	80°39'39.6550"W	309.69	289.126	3.58	
2001.00	27.830	287.000	1943.74	205.03	112.25	-332.22	1735120.11	14576822.99	40°08'13.4093"N	80°39'40.1647"W	350.67	288.670	3.35	
2092.00	30.060	285.770	2023.37	229.32	124.66	-374.47	1735077.87	14576835.39	40°08'13.5335"N	80°39'40.7081"W	394.68	288.412	2.54	
2183.00	32.630	285.560	2101.08	254.94	137.44	-420.05	1735032.31	14576848.16	40°08'13.6615"N	80°39'41.2943"W	441.96	288.118	2.83	
2274.00	34.180	286.130	2177.05	282.19	151.12	-468.24	1734984.14	14576861.84	40°08'13.7985"N	80°39'41.9141"W	492.03	287.887	1.74	
2367.00	33.310	289.870	2254.39	311.88	167.06	-517.36	1734935.04	14576877.77	40°08'13.9579"N	80°39'42.5457"W	543.66	287.896	2.42	
2459.00	33.930	289.540	2331.00	342.40	184.23	-565.32	1734887.11	14576894.94	40°08'14.1294"N	80°39'43.1624"W	594.58	288.051	0.70	
2549.00	34.850	289.740	2405.27	372.82	201.32	-613.19	1734839.25	14576912.02	40°08'14.3000"N	80°39'43.7779"W	645.39	288.176	1.03	
2641.00	33.110	288.460	2481.55	403.20	218.16	-661.77	1734790.69	14576928.85	40°08'14.4682"N	80°39'44.4026"W	696.80	288.245	2.04	

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Field	Ohio	API	47069003510000
Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

WELLPATH DATA (245 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]	Comments
2733.00	34.880	290.830	2557.83	433.99	235.47	-710.20	1734742.28	14576946.16	40°08'14.6411"N	80°39'45.0253"W	748.22	288.343	2.40	
2824.00	34.580	289.650	2632.62	465.45	253.41	-758.84	1734693.66	14576964.09	40°08'14.8202"N	80°39'45.6506"W	800.03	288.466	0.81	
2916.00	33.640	288.720	2708.79	495.99	270.36	-807.56	1734644.95	14576981.04	40°08'14.9896"N	80°39'46.2771"W	851.62	288.510	1.17	
3009.00	34.310	289.110	2785.91	526.56	287.21	-856.73	1734595.81	14576997.88	40°08'15.1580"N	80°39'46.9093"W	903.59	288.533	0.76	
3098.00	34.900	289.820	2859.17	556.60	303.97	-904.41	1734548.14	14577014.64	40°08'15.3254"N	80°39'47.5225"W	954.13	288.578	0.74	
3190.00	34.470	290.450	2934.82	588.22	321.91	-953.59	1734498.98	14577032.56	40°08'15.5044"N	80°39'48.1549"W	1006.46	288.653	0.69	
3282.00	34.040	289.560	3010.86	619.46	339.63	-1002.25	1734450.34	14577050.27	40°08'15.6813"N	80°39'48.7805"W	1058.23	288.720	0.72	
3373.00	34.690	292.710	3085.98	651.26	358.15	-1050.14	1734402.47	14577068.79	40°08'15.8662"N	80°39'49.3962"W	1109.54	288.832	2.08	
3465.00	34.630	292.940	3161.66	684.85	378.45	-1098.37	1734354.26	14577089.08	40°08'16.0686"N	80°39'50.0161"W	1161.74	289.012	0.16	
3556.00	34.100	290.440	3236.78	717.03	397.44	-1146.09	1734306.56	14577108.08	40°08'16.2580"N	80°39'50.6296"W	1213.04	289.125	1.66	
3647.00	33.860	289.530	3312.24	747.71	414.82	-1193.88	1734258.79	14577125.44	40°08'16.4316"N	80°39'51.2441"W	1263.89	289.160	0.62	
3739.00	33.030	288.940	3389.00	777.76	431.53	-1241.75	1734210.93	14577142.14	40°08'16.5984"N	80°39'51.8597"W	1314.60	289.163	0.97	
3830.00	34.820	289.290	3464.51	807.77	448.16	-1289.74	1734162.97	14577158.76	40°08'16.7646"N	80°39'52.4767"W	1366.38	289.161	1.98	
3922.00	33.660	289.710	3540.56	838.64	465.44	-1338.53	1734114.19	14577176.03	40°08'16.9372"N	80°39'53.1041"W	1417.15	289.174	1.29	
4013.00	31.750	289.000	3617.13	867.87	481.74	-1384.92	1734067.82	14577192.33	40°08'17.1000"N	80°39'53.7006"W	1466.31	289.180	2.14	
4104.00	34.210	289.410	3693.46	897.21	498.04	-1431.69	1734021.07	14577208.62	40°08'17.2628"N	80°39'54.3020"W	1515.84	289.181	2.71	
4195.00	34.640	289.530	3768.53	927.87	515.18	-1480.19	1733972.59	14577225.76	40°08'17.4340"N	80°39'54.9257"W	1567.29	289.191	0.48	
4286.00	33.350	289.160	3843.97	958.10	532.04	-1528.20	1733924.60	14577242.61	40°08'17.6024"N	80°39'55.5430"W	1618.17	289.195	1.44	
4379.00	34.600	289.380	3921.09	988.93	549.19	-1577.26	1733875.56	14577259.76	40°08'17.7737"N	80°39'56.1738"W	1670.14	289.198	1.35	
4471.00	34.470	289.470	3996.88	1019.98	566.54	-1626.44	1733826.39	14577277.10	40°08'17.9470"N	80°39'56.8062"W	1722.29	289.205	0.15	
4561.00	34.120	289.620	4071.23	1050.25	583.50	-1674.23	1733778.62	14577294.05	40°08'18.1164"N	80°39'57.4207"W	1773.00	289.214	0.40	
4652.00	32.420	288.650	4147.32	1079.77	599.88	-1721.39	1733731.49	14577310.42	40°08'18.2799"N	80°39'58.0271"W	1822.92	289.213	1.96	
4742.00	31.770	289.150	4223.56	1107.88	615.36	-1766.63	1733686.26	14577325.90	40°08'18.4347"N	80°39'58.6089"W	1870.74	289.205	0.78	
4833.00	31.980	288.680	4300.84	1136.14	630.94	-1812.09	1733640.82	14577341.47	40°08'18.5903"N	80°39'59.1934"W	1918.79	289.197	0.36	
4924.00	32.230	288.100	4377.92	1164.23	646.20	-1857.98	1733594.94	14577356.72	40°08'18.7427"N	80°39'59.7836"W	1967.15	289.177	0.44	
5014.00	34.120	288.060	4453.25	1192.61	661.48	-1904.80	1733548.15	14577372.00	40°08'18.8955"N	80°40'0.3856"W	2016.38	289.151	2.10	
5105.00	35.020	288.430	4528.18	1222.49	677.65	-1953.83	1733499.13	14577388.16	40°08'19.0571"N	80°40'1.0162"W	2068.01	289.128	1.02	
5195.00	33.910	289.000	4602.38	1252.29	693.98	-2002.07	1733450.91	14577404.49	40°08'19.2203"N	80°40'1.6365"W	2118.94	289.118	1.28	
5287.00	35.000	290.640	4678.24	1283.57	711.64	-2051.03	1733401.97	14577422.14	40°08'19.3966"N	80°40'2.2661"W	2170.98	289.135	1.56	
5379.00	34.710	289.270	4753.74	1315.26	729.59	-2100.45	1733352.57	14577440.08	40°08'19.5758"N	80°40'2.9015"W	2223.55	289.155	0.91	

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Slot	401H			

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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]	Comments
5469.00	34.160	289.500	4827.97	1345.53	746.48	-2148.46	1733304.59	14577456.96	40°08'19.7445"N	80°40'3.5188"W	2274.44	289.160	0.63	
5559.00	33.630	289.610	4902.68	1375.50	763.28	-2195.75	1733257.31	14577473.76	40°08'19.9122"N	80°40'4.1269"W	2324.63	289.168	0.59	
5650.00	33.140	289.470	4978.66	1405.39	780.02	-2242.94	1733210.14	14577490.50	40°08'20.0795"N	80°40'4.7337"W	2374.71	289.176	0.55	
5740.00	33.780	289.670	5053.74	1435.03	796.65	-2289.70	1733163.40	14577507.11	40°08'20.2455"N	80°40'5.3349"W	2424.33	289.184	0.72	
5831.00	34.620	289.140	5129.01	1465.47	813.64	-2337.94	1733115.18	14577524.10	40°08'20.4151"N	80°40'5.9553"W	2475.47	289.189	0.98	
5923.00	34.790	289.610	5204.64	1496.61	831.02	-2387.35	1733065.78	14577541.47	40°08'20.5887"N	80°40'6.5907"W	2527.85	289.193	0.34	
6015.00	34.960	289.240	5280.12	1527.93	848.51	-2436.96	1733016.19	14577558.96	40°08'20.7634"N	80°40'7.2286"W	2580.46	289.197	0.29	
6106.00	35.030	289.100	5354.66	1558.81	865.65	-2486.26	1732966.91	14577576.09	40°08'20.9346"N	80°40'7.8625"W	2632.65	289.197	0.12	
6198.00	35.360	289.330	5429.85	1590.22	883.10	-2536.33	1732916.86	14577593.53	40°08'21.1089"N	80°40'8.5064"W	2685.67	289.197	0.39	
6288.00	35.800	293.000	5503.05	1622.65	902.01	-2585.14	1732868.07	14577612.43	40°08'21.2975"N	80°40'9.1339"W	2737.99	289.235	2.42	
6378.00	39.840	303.060	5574.20	1661.80	928.05	-2633.60	1732819.63	14577638.47	40°08'21.5567"N	80°40'9.7566"W	2792.33	289.412	8.18	
6469.00	46.070	314.320	5640.87	1713.09	966.95	-2681.59	1732771.66	14577677.35	40°08'21.9428"N	80°40'10.3727"W	2850.60	289.829	10.84	
6560.00	53.360	319.610	5699.69	1775.52	1017.74	-2728.78	1732724.49	14577728.12	40°08'22.4464"N	80°40'10.9778"W	2912.39	290.454	9.15	
6652.00	60.000	325.290	5750.23	1847.52	1078.70	-2775.46	1732677.83	14577789.06	40°08'23.0506"N	80°40'11.5760"W	2977.71	291.239	8.87	
6742.00	65.860	327.600	5791.17	1924.35	1145.47	-2819.70	1732633.61	14577855.81	40°08'23.7121"N	80°40'12.1424"W	3043.48	292.109	6.90	
6833.00	72.530	330.440	5823.48	2006.89	1218.38	-2863.41	1732589.91	14577928.68	40°08'24.4341"N	80°40'12.7018"W	3111.84	293.050	7.89	
6924.00	78.940	339.240	5845.94	2094.09	1298.12	-2900.76	1732552.58	14578008.39	40°08'25.2235"N	80°40'13.1788"W	3177.97	294.109	11.72	
7015.00	88.490	341.350	5855.89	2184.34	1383.18	-2931.21	1732522.14	14578093.41	40°08'26.0651"N	80°40'13.5668"W	3241.16	295.262	10.74	
7105.00	91.110	340.600	5856.20	2274.28	1468.25	-2960.54	1732492.82	14578178.46	40°08'26.9069"N	80°40'13.9405"W	3304.63	296.379	3.03	
7195.00	89.230	342.470	5855.94	2364.25	1553.61	-2989.04	1732464.33	14578263.78	40°08'27.7515"N	80°40'14.3034"W	3368.69	297.464	2.95	
7286.00	92.190	342.670	5854.81	2455.23	1640.41	-3016.30	1732437.08	14578350.55	40°08'28.6103"N	80°40'14.6502"W	3433.51	298.540	3.26	
7376.00	90.180	342.750	5852.95	2545.20	1726.32	-3043.04	1732410.35	14578436.43	40°08'29.4602"N	80°40'14.9904"W	3498.61	299.566	2.24	
7467.00	90.030	342.390	5852.78	2636.20	1813.15	-3070.30	1732383.11	14578523.22	40°08'30.3192"N	80°40'15.3373"W	3565.70	300.564	0.43	
7558.00	90.650	341.650	5852.24	2727.19	1899.70	-3098.39	1732355.03	14578609.74	40°08'31.1756"N	80°40'15.6948"W	3634.40	301.514	1.06	
7649.00	90.520	343.670	5851.31	2818.18	1986.55	-3125.51	1732327.92	14578696.56	40°08'32.0349"N	80°40'16.0399"W	3703.40	302.440	2.22	
7741.00	89.510	343.820	5851.29	2910.17	2074.88	-3151.26	1732302.18	14578784.84	40°08'32.9086"N	80°40'16.3672"W	3773.00	303.362	1.11	
7832.00	91.510	342.580	5850.48	3001.16	2161.98	-3177.56	1732275.89	14578871.92	40°08'33.7703"N	80°40'16.7017"W	3843.31	304.231	2.59	
7923.00	90.370	343.690	5848.98	3092.14	2249.05	-3203.95	1732249.50	14578958.95	40°08'34.6318"N	80°40'17.0375"W	3914.53	305.067	1.75	
8013.00	89.720	344.020	5848.91	3182.13	2335.50	-3228.98	1732224.49	14579045.37	40°08'35.4870"N	80°40'17.3556"W	3985.08	305.878	0.81	
8105.00	90.770	343.710	5848.52	3274.11	2423.88	-3254.54	1732198.93	14579133.71	40°08'36.3612"N	80°40'17.6806"W	4057.99	306.678	1.19	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Franz Thoman OHI 401H
Field	Ohio	API	47069003510000
Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

WELLPATH DATA (245 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]	Comments
8195.00	90.680	343.900	5847.38	3364.09	2510.30	-3279.64	1732173.84	14579220.10	40°08'37.2161"N	80°40'17.9997"W	4130.09	307.431	0.23	
8289.00	90.370	343.700	5846.52	3458.08	2600.56	-3305.87	1732147.63	14579310.32	40°08'38.1091"N	80°40'18.3331"W	4206.15	308.190	0.39	
8381.00	91.380	344.280	5845.11	3550.05	2688.98	-3331.24	1732122.27	14579398.71	40°08'38.9838"N	80°40'18.6556"W	4281.10	308.911	1.27	
8472.00	91.020	343.370	5843.21	3641.01	2776.36	-3356.58	1732096.93	14579486.05	40°08'39.8482"N	80°40'18.9778"W	4356.01	309.595	1.08	
8564.00	93.080	344.050	5839.92	3732.94	2864.61	-3382.37	1732071.15	14579574.26	40°08'40.7211"N	80°40'19.3056"W	4432.43	310.262	2.36	
8655.00	92.220	343.480	5835.71	3823.83	2951.88	-3407.79	1732045.75	14579661.51	40°08'41.5845"N	80°40'19.6287"W	4508.50	310.900	1.13	
8747.00	93.140	343.510	5831.41	3915.72	3039.99	-3433.89	1732019.65	14579749.58	40°08'42.4562"N	80°40'19.9607"W	4586.20	311.518	1.00	
8838.00	92.900	343.700	5826.61	4006.59	3127.17	-3459.54	1731994.01	14579836.73	40°08'43.3187"N	80°40'20.2869"W	4663.44	312.111	0.34	
8930.00	93.910	343.540	5821.15	4098.42	3215.28	-3485.44	1731968.12	14579924.80	40°08'44.1903"N	80°40'20.6162"W	4741.98	312.691	1.11	
9021.00	91.660	343.370	5816.73	4189.30	3302.40	-3511.32	1731942.25	14580011.89	40°08'45.0522"N	80°40'20.9453"W	4820.30	313.244	2.48	
9113.00	90.310	343.670	5815.15	4281.28	3390.61	-3537.42	1731916.17	14580100.06	40°08'45.9248"N	80°40'21.2772"W	4899.96	313.786	1.50	
9205.00	88.090	343.660	5816.43	4373.26	3478.88	-3563.29	1731890.31	14580188.30	40°08'46.7980"N	80°40'21.6061"W	4979.92	314.313	2.41	
9296.00	90.220	343.940	5817.77	4464.23	3566.25	-3588.67	1731864.93	14580275.64	40°08'47.6624"N	80°40'21.9289"W	5059.32	314.820	2.36	
9388.00	87.720	343.460	5819.43	4556.20	3654.53	-3614.49	1731839.13	14580363.88	40°08'48.5357"N	80°40'22.2571"W	5140.05	315.316	2.77	
9478.00	87.970	343.350	5822.81	4646.13	3740.73	-3640.17	1731813.45	14580450.04	40°08'49.3884"N	80°40'22.5838"W	5219.57	315.780	0.30	
9570.00	90.180	343.870	5824.30	4738.11	3828.97	-3666.13	1731787.51	14580538.25	40°08'50.2613"N	80°40'22.9138"W	5301.09	316.245	2.47	
9661.00	89.290	343.230	5824.72	4829.10	3916.24	-3691.90	1731761.75	14580625.49	40°08'51.1247"N	80°40'23.2415"W	5382.11	316.689	1.20	
9753.00	89.320	343.360	5825.83	4921.09	4004.35	-3718.34	1731735.32	14580713.56	40°08'51.9964"N	80°40'23.5779"W	5464.51	317.121	0.15	
9845.00	89.660	343.740	5826.65	5013.08	4092.58	-3744.39	1731709.27	14580801.76	40°08'52.8692"N	80°40'23.9091"W	5547.04	317.544	0.55	
9936.00	88.950	343.250	5827.76	5104.07	4179.83	-3770.24	1731683.43	14580888.97	40°08'53.7323"N	80°40'24.2379"W	5629.00	317.949	0.95	
10028.00	89.260	343.670	5829.19	5196.05	4268.01	-3796.43	1731657.26	14580977.12	40°08'54.6047"N	80°40'24.5710"W	5712.16	318.347	0.57	
10119.00	89.260	343.580	5830.37	5287.04	4355.31	-3822.08	1731631.61	14581064.38	40°08'55.4683"N	80°40'24.8972"W	5794.57	318.731	0.10	
10211.00	89.110	343.490	5831.68	5379.02	4443.53	-3848.16	1731605.55	14581152.57	40°08'56.3410"N	80°40'25.2288"W	5878.20	319.107	0.19	
10302.00	89.940	342.770	5832.43	5470.01	4530.61	-3874.56	1731579.15	14581239.61	40°08'57.2025"N	80°40'25.5647"W	5961.43	319.463	1.21	
10394.00	90.580	343.890	5832.01	5562.01	4618.74	-3900.95	1731552.77	14581327.71	40°08'58.0744"N	80°40'25.9004"W	6045.67	319.816	1.40	
10485.00	89.880	342.390	5831.65	5653.00	4705.82	-3927.35	1731526.39	14581414.76	40°08'58.9359"N	80°40'26.2361"W	6129.34	320.153	1.82	
10577.00	90.990	343.490	5830.95	5745.00	4793.77	-3954.33	1731499.41	14581502.67	40°08'59.8060"N	80°40'26.5795"W	6214.26	320.481	1.70	
10668.00	90.180	345.220	5830.02	5835.96	4881.39	-3978.87	1731474.89	14581590.26	40°09'0.6727"N	80°40'26.8914"W	6297.57	320.816	2.10	
10760.00	90.490	343.810	5829.48	5927.92	4970.05	-4003.43	1731450.33	14581678.88	40°09'1.5497"N	80°40'27.2035"W	6381.92	321.148	1.57	
10851.00	90.860	341.530	5828.41	6018.91	5056.90	-4030.54	1731423.24	14581765.70	40°09'2.4090"N	80°40'27.5484"W	6466.65	321.444	2.54	

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REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	Franz Thoman OHI 401H
Field	Ohio		API	47069003510000
Facility	Franz Thoman OHI Pad		Wellbore	Franz Thoman OHI 401H AWB
Slot	401H			

WELLPATH DATA (245 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]	Comments
10943.00	89.720	342.970	5827.95	6110.90	5144.52	-4058.58	1731395.21	14581853.28	40°09'3.2759"N	80°40'27.9055"W	6552.72	321.730	2.00	
11034.00	90.120	343.910	5828.07	6201.89	5231.74	-4084.52	1731369.28	14581940.47	40°09'4.1387"N	80°40'28.2354"W	6637.35	322.020	1.12	
11126.00	90.280	343.320	5827.75	6293.88	5320.01	-4110.47	1731343.34	14582028.70	40°09'5.0119"N	80°40'28.5654"W	6722.98	322.309	0.66	
11218.00	90.650	343.850	5827.01	6385.87	5408.25	-4136.47	1731317.35	14582116.91	40°09'5.8849"N	80°40'28.8961"W	6808.79	322.590	0.70	
11309.00	81.820	343.610	5825.04	6476.84	5495.59	-4161.96	1731291.87	14582204.21	40°09'6.7488"N	80°40'29.2202"W	6893.72	322.862	1.31	
11401.00	90.920	343.590	5822.84	6568.80	5583.82	-4187.92	1731265.92	14582292.41	40°09'7.6217"N	80°40'29.5504"W	6979.81	323.130	0.98	
11492.00	90.920	341.610	5821.38	6659.79	5670.64	-4215.13	1731238.72	14582379.20	40°09'8.4806"N	80°40'29.8967"W	7065.65	323.376	2.18	
11584.00	90.710	340.210	5820.07	6751.72	5757.57	-4245.22	1731208.65	14582466.09	40°09'9.3408"N	80°40'30.2801"W	7153.42	323.598	1.54	
11675.00	91.850	337.580	5818.04	6842.47	5842.43	-4277.97	1731175.90	14582550.93	40°09'10.1806"N	80°40'30.6979"W	7241.21	323.787	3.15	
11767.00	90.370	335.430	5816.26	6933.87	5926.78	-4314.64	1731139.25	14582635.24	40°09'11.0154"N	80°40'31.1662"W	7330.95	323.946	2.84	
11858.00	91.050	333.620	5815.13	7023.89	6008.92	-4353.78	1731100.13	14582717.35	40°09'11.8286"N	80°40'31.6663"W	7420.41	324.075	2.12	
11950.00	90.460	333.890	5813.92	7114.72	6091.43	-4394.46	1731059.47	14582799.83	40°09'12.6454"N	80°40'32.1863"W	7511.11	324.193	0.71	
12041.00	90.490	333.580	5813.18	7204.55	6173.04	-4434.72	1731019.21	14582881.40	40°09'13.4532"N	80°40'32.7011"W	7600.86	324.306	0.34	
12133.00	90.550	334.010	5812.33	7295.39	6255.58	-4475.35	1730978.60	14582963.91	40°09'14.2704"N	80°40'33.2204"W	7691.62	324.419	0.47	
12224.00	90.430	333.920	5811.55	7385.29	6337.34	-4515.29	1730938.68	14583045.64	40°09'15.0798"N	80°40'33.7309"W	7781.37	324.531	0.16	
12316.00	90.430	333.920	5810.86	7476.16	6419.97	-4555.73	1730898.25	14583128.23	40°09'15.8978"N	80°40'34.2479"W	7872.15	324.640	0.00	
12407.00	90.310	334.200	5810.27	7566.08	6501.80	-4595.54	1730858.46	14583210.03	40°09'16.7079"N	80°40'34.7567"W	7961.93	324.747	0.33	
12499.00	90.490	336.180	5809.63	7657.24	6585.30	-4634.14	1730819.88	14583293.50	40°09'17.5344"N	80°40'35.2499"W	8052.42	324.866	2.16	
12590.00	90.490	338.490	5808.85	7747.81	6669.27	-4669.20	1730784.83	14583377.43	40°09'18.3654"N	80°40'35.6975"W	8141.29	325.004	2.54	
12681.00	90.520	340.120	5808.05	7838.62	6754.39	-4701.36	1730752.68	14583462.52	40°09'19.2076"N	80°40'36.1077"W	8229.49	325.160	1.79	
12773.00	90.400	339.950	5807.31	7930.51	6840.86	-4732.77	1730721.28	14583548.96	40°09'20.0634"N	80°40'36.5082"W	8318.44	325.323	0.23	
12864.00	90.400	340.610	5806.68	8021.41	6926.52	-4763.47	1730690.59	14583634.58	40°09'20.9110"N	80°40'36.8996"W	8406.39	325.483	0.73	
12956.00	90.060	341.720	5806.31	8113.36	7013.59	-4793.18	1730660.90	14583721.62	40°09'21.7725"N	80°40'37.2780"W	8495.00	325.651	1.26	
13047.00	90.250	343.670	5806.06	8204.36	7100.46	-4820.24	1730633.85	14583808.46	40°09'22.6320"N	80°40'37.6226"W	8582.04	325.829	2.15	
13139.00	90.030	343.680	5805.84	8296.35	7188.75	-4846.10	1730608.00	14583896.72	40°09'23.5054"N	80°40'37.9515"W	8669.65	326.015	0.24	
13230.00	90.250	343.560	5805.61	8387.34	7276.06	-4871.77	1730582.34	14583983.99	40°09'24.3691"N	80°40'38.2779"W	8756.43	326.195	0.28	
13322.00	90.220	343.790	5805.24	8479.33	7364.35	-4897.62	1730556.49	14584072.25	40°09'25.2425"N	80°40'38.6068"W	8844.23	326.374	0.25	
13413.00	90.220	343.410	5804.89	8570.33	7451.65	-4923.32	1730530.81	14584159.51	40°09'26.1061"N	80°40'38.9337"W	8931.19	326.547	0.42	
13505.00	90.590	342.960	5804.24	8662.32	7539.71	-4949.93	1730504.21	14584247.54	40°09'26.9773"N	80°40'39.2723"W	9019.37	326.715	0.63	
13596.00	90.490	342.570	5803.38	8753.32	7626.62	-4976.89	1730477.26	14584334.41	40°09'27.8371"N	80°40'39.6155"W	9106.85	326.873	0.44	

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Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

WELLPATH DATA (245 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]	Comments
13688.00	90.550	343.950	5802.54	8845.31	7714.72	-5003.39	1730450.77	14584422.47	40°09'28.7086"N	80°40'39.9526"W	9195.15	327.035	1.50	
13779.00	90.580	343.640	5801.65	8936.29	7802.10	-5028.78	1730425.39	14584509.82	40°09'29.5730"N	80°40'40.2756"W	9282.32	327.196	0.34	
13871.00	90.550	343.860	5800.74	9028.28	7890.42	-5054.53	1730399.65	14584598.11	40°09'30.4467"N	80°40'40.6030"W	9370.53	327.357	0.24	
13962.00	90.620	343.760	5799.81	9119.26	7977.80	-5079.90	1730374.29	14584685.46	40°09'31.3112"N	80°40'40.9257"W	9457.84	327.513	0.13	
14054.00	90.550	343.590	5798.87	9211.25	8066.09	-5105.76	1730348.44	14584773.71	40°09'32.1845"N	80°40'41.2546"W	9546.23	327.667	0.20	
14146.00	91.110	344.030	5797.54	9303.23	8154.43	-5131.41	1730322.80	14584862.02	40°09'33.0584"N	80°40'41.5809"W	9634.63	327.819	0.77	
14237.00	90.090	343.990	5796.59	9394.20	8241.90	-5156.47	1730297.75	14584949.46	40°09'33.9237"N	80°40'41.8996"W	9722.05	327.968	1.12	
14329.00	90.650	344.440	5795.99	9486.18	8330.43	-5181.50	1730272.73	14585037.95	40°09'34.7995"N	80°40'42.2178"W	9810.40	328.119	0.78	
14420.00	89.940	344.220	5795.52	9577.14	8418.05	-5206.08	1730248.16	14585125.53	40°09'35.6662"N	80°40'42.5303"W	9897.82	328.266	0.82	
14512.00	90.430	344.010	5795.23	9669.12	8506.53	-5231.26	1730222.99	14585213.98	40°09'36.5415"N	80°40'42.8505"W	9986.35	328.410	0.58	
14603.00	89.970	344.300	5794.91	9760.10	8594.08	-5256.10	1730198.16	14585301.49	40°09'37.4075"N	80°40'43.1664"W	10073.96	328.550	0.60	
14695.00	89.690	343.910	5795.18	9852.08	8682.56	-5281.30	1730172.97	14585389.94	40°09'38.2827"N	80°40'43.4868"W	10162.62	328.689	0.52	
14786.00	89.720	343.860	5795.65	9943.06	8769.98	-5306.56	1730147.72	14585477.33	40°09'39.1476"N	80°40'43.8081"W	10250.47	328.823	0.06	
14878.00	89.540	342.690	5796.24	10035.06	8858.09	-5333.03	1730121.26	14585565.40	40°09'40.0191"N	80°40'44.1450"W	10339.58	328.950	1.29	
14969.00	90.800	344.390	5795.97	10126.05	8945.35	-5358.81	1730095.48	14585652.63	40°09'40.8824"N	80°40'44.4730"W	10427.67	329.076	2.33	
15061.00	89.910	343.070	5795.40	10218.03	9033.66	-5384.58	1730069.72	14585740.90	40°09'41.7560"N	80°40'44.8008"W	10516.69	329.203	1.73	
15152.00	90.860	343.620	5794.79	10309.03	9120.84	-5410.67	1730043.65	14585828.05	40°09'42.6185"N	80°40'45.1327"W	10604.96	329.323	1.21	
15244.00	91.020	344.440	5793.28	10400.99	9209.28	-5435.98	1730018.35	14585916.45	40°09'43.4933"N	80°40'45.4546"W	10693.95	329.448	0.91	
15335.00	91.820	343.730	5791.03	10491.95	9296.76	-5460.92	1729993.42	14586003.90	40°09'44.3587"N	80°40'45.7718"W	10782.00	329.570	1.18	
15427.00	89.820	341.750	5789.71	10583.93	9384.60	-5488.21	1729966.13	14586091.71	40°09'45.2277"N	80°40'46.1192"W	10871.58	329.680	3.05	
15518.00	90.620	343.980	5789.36	10674.92	9471.55	-5515.02	1729939.34	14586178.63	40°09'46.0879"N	80°40'46.4605"W	10960.19	329.789	2.60	
15610.00	91.010	344.160	5788.05	10766.89	9560.01	-5540.27	1729914.10	14586267.05	40°09'46.9630"N	80°40'46.7816"W	11049.36	329.907	0.47	
15701.00	90.490	343.570	5786.86	10857.87	9647.42	-5565.56	1729888.82	14586354.42	40°09'47.8276"N	80°40'47.1032"W	11137.69	330.020	0.86	
15793.00	90.710	342.420	5785.90	10949.86	9735.39	-5592.46	1729861.93	14586442.36	40°09'48.6979"N	80°40'47.4457"W	11227.35	330.125	1.27	
15884.00	90.340	340.630	5785.06	11040.83	9821.69	-5621.30	1729833.10	14586528.63	40°09'49.5518"N	80°40'47.8131"W	11316.57	330.218	2.01	
15976.00	89.880	341.000	5784.89	11132.77	9908.58	-5651.53	1729802.88	14586615.48	40°09'50.4115"N	80°40'48.1985"W	11407.01	330.301	0.64	
16068.00	90.250	344.250	5784.78	11224.75	9996.37	-5679.00	1729775.42	14586703.24	40°09'51.2800"N	80°40'48.5482"W	11496.89	330.399	3.56	
16159.00	91.480	343.240	5783.41	11315.73	10083.72	-5704.47	1729749.97	14586790.55	40°09'52.1441"N	80°40'48.8722"W	11585.44	330.503	1.75	
16251.00	90.520	343.970	5781.80	11407.71	10171.97	-5730.43	1729724.01	14586878.76	40°09'53.0171"N	80°40'49.2025"W	11675.05	330.605	1.31	
16342.00	90.890	344.230	5780.68	11498.68	10258.48	-5755.36	1729699.10	14586966.24	40°09'53.8828"N	80°40'49.5196"W	11763.55	330.708	0.50	

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Franz Thoman OHI 401H awp Proj: 22186'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	Franz Thoman OHI 401H
Field	Ohio		API	47069003510000
Facility	Franz Thoman OHI Pad		Wellbore	Franz Thoman OHI 401H AWB
Slot	401H			

WELLPATH DATA (245 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]	Comments
16434.00	91.600	343.320	5778.69	11590.65	10347.79	-5781.06	1729673.41	14587054.52	40°09'54.7564"N	80°40'49.8465"W	11853.16	330.809	1.25	
16525.00	90.430	343.220	5777.07	11681.63	10434.93	-5807.25	1729647.23	14587141.62	40°09'55.6184"N	80°40'50.1798"W	11942.02	330.903	1.29	
16617.00	89.570	344.090	5777.07	11773.62	10523.21	-5833.14	1729621.35	14587229.86	40°09'56.4917"N	80°40'50.5092"W	12031.77	331.000	1.33	
16709.00	91.840	344.250	5775.94	11865.58	10611.70	-5858.23	1729596.26	14587318.33	40°09'57.3671"N	80°40'50.8283"W	12121.35	331.099	2.47	
16800.00	90.250	340.740	5774.28	11956.55	10698.46	-5885.59	1729568.91	14587405.05	40°09'58.2254"N	80°40'51.1768"W	12210.54	331.183	4.23	
16892.00	91.050	344.210	5773.24	12048.52	10786.17	-5913.29	1729541.22	14587492.72	40°09'59.0931"N	80°40'51.5295"W	12300.75	331.267	3.87	
16983.00	90.550	340.760	5771.97	12139.50	10872.93	-5940.67	1729513.85	14587579.45	40°09'59.9514"N	80°40'51.8781"W	12390.00	331.349	3.83	
17075.00	90.280	342.520	5771.30	12231.47	10960.24	-5969.65	1729484.89	14587666.73	40°10'0.8153"N	80°40'52.2473"W	12480.53	331.424	1.94	
17165.00	90.060	341.730	5771.03	12321.46	11045.89	-5997.27	1729457.28	14587752.35	40°10'1.6627"N	80°40'52.5992"W	12568.97	331.501	0.91	
17257.00	90.550	344.650	5770.54	12413.45	11133.95	-6023.88	1729430.68	14587840.37	40°10'2.5338"N	80°40'52.9378"W	12659.07	331.585	3.22	
17349.00	91.390	342.300	5768.99	12505.42	11222.13	-6050.04	1729404.53	14587928.52	40°10'3.4061"N	80°40'53.2707"W	12749.09	331.670	2.71	
17440.00	89.660	342.000	5768.15	12596.41	11308.74	-6077.93	1729376.65	14588015.10	40°10'4.2630"N	80°40'53.6260"W	12838.57	331.744	1.93	
17532.00	91.910	344.080	5766.89	12688.39	11396.72	-6104.76	1729349.83	14588103.04	40°10'5.1334"N	80°40'53.9676"W	12928.78	331.824	3.33	
17623.00	90.340	341.940	5765.10	12779.36	11483.73	-6131.34	1729323.26	14588190.01	40°10'5.9941"N	80°40'54.3060"W	13018.04	331.902	2.92	
17715.00	90.980	344.980	5764.04	12871.34	11571.90	-6157.53	1729297.08	14588278.15	40°10'6.8664"N	80°40'54.6392"W	13108.17	331.982	3.38	
17806.00	90.800	344.760	5762.63	12962.28	11659.74	-6181.28	1729273.34	14588365.95	40°10'7.7352"N	80°40'54.9411"W	13196.88	332.070	0.31	
17898.00	90.950	344.560	5761.23	13054.22	11748.45	-6205.62	1729249.02	14588454.63	40°10'8.6127"N	80°40'55.2505"W	13286.68	332.157	0.27	
17990.00	90.520	345.120	5760.05	13146.16	11837.24	-6229.67	1729224.97	14588543.39	40°10'9.4910"N	80°40'55.5563"W	13376.44	332.243	0.77	
18081.00	90.120	343.990	5759.54	13237.12	11924.95	-6253.91	1729200.74	14588631.06	40°10'10.3586"N	80°40'55.8644"W	13465.36	332.326	1.32	
18173.00	92.030	343.630	5757.81	13329.09	12013.28	-6279.55	1729175.11	14588719.36	40°10'11.2324"N	80°40'56.1907"W	13555.51	332.403	2.11	
18264.00	90.890	344.240	5755.49	13420.04	12100.70	-6304.73	1729149.94	14588806.74	40°10'12.0971"N	80°40'56.5109"W	13644.65	332.480	1.42	
18356.00	89.660	344.180	5755.05	13512.01	12189.23	-6329.76	1729124.92	14588895.23	40°10'12.9728"N	80°40'56.8293"W	13734.74	332.558	1.34	
18447.00	91.660	344.790	5754.00	13602.97	12276.90	-6354.10	1729100.59	14588982.87	40°10'13.8401"N	80°40'57.1388"W	13823.78	332.635	2.30	
18539.00	90.710	344.720	5752.10	13694.90	12365.64	-6378.28	1729076.41	14589071.58	40°10'14.7179"N	80°40'57.4463"W	13913.72	332.715	1.04	
18630.00	90.900	342.450	5750.90	13785.88	12452.92	-6404.00	1729050.71	14589158.82	40°10'15.5813"N	80°40'57.7735"W	14003.08	332.785	2.50	
18722.00	90.950	340.580	5749.50	13877.83	12540.16	-6433.18	1729021.56	14589246.03	40°10'16.4444"N	80°40'58.1452"W	14094.01	332.842	2.04	
18813.00	91.110	343.360	5747.86	13968.80	12626.67	-6461.32	1728993.41	14589332.50	40°10'17.3003"N	80°40'58.5039"W	14183.84	332.900	3.06	
18905.00	91.200	344.510	5746.01	14060.76	12715.06	-6486.77	1728967.97	14589420.86	40°10'18.1746"N	80°40'58.8277"W	14274.13	332.971	1.25	
18996.00	91.080	344.390	5744.20	14151.71	12802.71	-6511.16	1728943.59	14589508.47	40°10'19.0416"N	80°40'59.1379"W	14363.31	333.043	0.19	
19087.00	91.080	344.520	5742.48	14242.66	12890.36	-6535.55	1728919.21	14589596.09	40°10'19.9087"N	80°40'59.4480"W	14452.50	333.115	0.14	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Franz Thoman OHI 401H
Field	Ohio	API	47069003510000
Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

WELLPATH DATA (245 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]	Comments
19179.00	91.170	345.380	5740.67	14334.58	12979.19	-6559.43	1728895.34	14589684.89	40°10'20.7873"N	80°40'59.7516"W	14542.54	333.189	0.94	
19270.00	90.680	344.870	5739.20	14425.50	13067.13	-6582.79	1728871.99	14589772.79	40°10'21.6572"N	80°41'0.0484"W	14631.57	333.263	0.78	
19362.00	90.950	345.060	5737.90	14517.43	13155.97	-6606.65	1728848.14	14589861.60	40°10'22.5359"N	80°41'0.3518"W	14721.66	333.335	0.36	
19453.00	90.310	344.600	5736.90	14608.37	13243.79	-6630.46	1728824.33	14589949.38	40°10'23.4046"N	80°41'0.6545"W	14810.84	333.405	0.87	
19545.00	90.610	345.180	5736.16	14700.31	13332.60	-6654.46	1728800.35	14590038.16	40°10'24.2831"N	80°41'0.9595"W	14901.01	333.476	0.69	
19636.00	90.950	344.700	5734.92	14791.25	13420.47	-6678.12	1728776.70	14590125.99	40°10'25.1522"N	80°41'1.2602"W	14990.20	333.545	0.63	
19728.00	90.650	344.770	5733.63	14883.19	13509.21	-6702.34	1728752.49	14590214.70	40°10'26.0300"N	80°41'1.5682"W	15080.45	333.613	0.33	
19820.00	91.050	344.880	5732.27	14975.13	13597.99	-6726.42	1728728.42	14590303.45	40°10'26.9082"N	80°41'1.8743"W	15170.70	333.680	0.45	
19911.00	91.010	344.940	5730.63	15066.06	13685.84	-6750.10	1728704.74	14590391.26	40°10'27.7772"N	80°41'2.1754"W	15259.95	333.747	0.08	
20003.00	91.050	344.900	5728.98	15157.98	13774.66	-6774.03	1728680.82	14590480.04	40°10'28.6557"N	80°41'2.4797"W	15350.20	333.813	0.06	
20094.00	91.020	345.050	5727.34	15248.91	13862.53	-6797.62	1728657.24	14590567.88	40°10'29.5249"N	80°41'2.7795"W	15439.48	333.879	0.17	
20186.00	90.950	344.190	5725.75	15340.85	13951.22	-6822.02	1728632.85	14590656.54	40°10'30.4022"N	80°41'3.0897"W	15529.86	333.942	0.94	
20277.00	90.740	344.380	5724.41	15431.82	14038.81	-6846.66	1728608.22	14590744.09	40°10'31.2686"N	80°41'3.4032"W	15619.38	334.002	0.31	
20369.00	90.830	344.850	5723.15	15523.77	14127.51	-6871.07	1728583.82	14590832.75	40°10'32.1460"N	80°41'3.7135"W	15709.81	334.064	0.52	
20460.00	90.950	344.710	5721.74	15614.70	14215.31	-6894.96	1728559.95	14590920.52	40°10'33.0144"N	80°41'4.0172"W	15799.22	334.125	0.20	
20552.00	90.710	344.350	5720.41	15706.66	14303.96	-6919.49	1728535.42	14591009.14	40°10'33.8914"N	80°41'4.3293"W	15889.70	334.185	0.47	
20643.00	90.710	344.490	5719.28	15797.62	14391.61	-6943.93	1728510.99	14591096.76	40°10'34.7584"N	80°41'4.6401"W	15979.26	334.243	0.15	
20735.00	90.520	345.260	5718.29	15889.56	14480.42	-6967.93	1728486.99	14591185.53	40°10'35.6368"N	80°41'4.9453"W	16069.68	334.303	0.86	
20826.00	90.680	345.210	5717.34	15980.48	14568.41	-6991.13	1728463.81	14591273.48	40°10'36.5072"N	80°41'5.2400"W	16159.03	334.364	0.18	
20918.00	90.340	340.640	5716.52	16072.45	14656.33	-7018.13	1728436.82	14591361.37	40°10'37.3769"N	80°41'5.5839"W	16249.99	334.413	4.98	
21009.00	90.860	342.300	5715.56	16163.41	14742.60	-7047.05	1728407.91	14591447.61	40°10'38.2305"N	80°41'5.9525"W	16340.29	334.452	1.91	
21101.00	90.650	342.770	5714.35	16255.40	14830.35	-7074.66	1728380.31	14591535.32	40°10'39.0986"N	80°41'6.3042"W	16431.38	334.497	0.56	
21192.00	90.340	342.780	5713.57	16346.40	14917.27	-7101.60	1728353.38	14591622.21	40°10'39.9584"N	80°41'6.6474"W	16521.43	334.542	0.34	
21284.00	90.460	342.700	5712.92	16438.39	15005.12	-7128.90	1728326.09	14591710.03	40°10'40.8276"N	80°41'6.9950"W	16612.49	334.588	0.16	
21375.00	90.680	342.470	5712.02	16529.39	15091.95	-7156.13	1728298.87	14591796.82	40°10'41.6865"N	80°41'7.3419"W	16702.61	334.631	0.35	
21467.00	91.200	343.020	5710.51	16621.38	15179.79	-7183.42	1728271.59	14591884.63	40°10'42.5556"N	80°41'7.6894"W	16793.68	334.675	0.82	
21558.00	90.830	343.090	5708.90	16712.36	15266.83	-7209.94	1728245.09	14591971.63	40°10'43.4166"N	80°41'8.0271"W	16883.70	334.720	0.41	
21650.00	91.050	343.090	5707.39	16804.35	15354.84	-7236.69	1728218.34	14592059.61	40°10'44.2872"N	80°41'8.3678"W	16974.71	334.766	0.24	
21742.00	90.280	342.480	5706.32	16896.34	15442.71	-7263.92	1728191.13	14592147.44	40°10'45.1565"N	80°41'8.7145"W	17065.81	334.809	1.07	
21833.00	90.890	343.110	5705.39	16987.33	15529.63	-7290.83	1728164.22	14592234.33	40°10'46.0164"N	80°41'9.0573"W	17155.93	334.851	0.96	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Franz Thoman OHI 401H
Field	Ohio	API	47069003510000
Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

WELLPATH DATA (245 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]	Comments
21925.00	90.770	342.670	5704.06	17079.32	15617.55	-7317.90	1728137.17	14592322.22	40°10'46.8862"N	80°41'9.4020"W	17247.02	334.894	0.50	
22016.00	90.710	342.820	5702.88	17170.32	15704.45	-7344.89	1728110.19	14592409.08	40°10'47.7459"N	80°41'9.7458"W	17337.16	334.935	0.18	
22108.00	91.540	342.580	5701.08	17262.30	15792.27	-7372.24	1728082.84	14592496.87	40°10'48.6146"N	80°41'10.0942"W	17428.30	334.976	0.94	
22161.00	90.770	342.980	5700.01	17315.29	15842.88	-7387.93	1728067.16	14592547.46	40°10'49.1154"N	80°41'10.2940"W	17480.80	334.999	1.64	
22186.00‡	90.770	342.980	5699.67	17340.28	15866.79	-7395.25	1728059.85	14592571.35	40°10'49.3518"N	80°41'10.3872"W	17505.56	335.011	0.00	

HOLE & CASING SECTIONS - Ref Wellbore: Franz Thoman OHI 401H AWB Ref Wellpath: Franz Thoman OHI 401H awp Proj: 22186'									
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]
13.375in Casing	26.00	455.00	429.00	26.00	455.00	0.00	0.00	-0.28	0.69
9.625in Casing	26.00	1764.00	1738.00	26.00	1728.40	0.00	0.00	90.99	-235.93

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Actual Wellpath Report
Franz Thoman OHI 401H awp Proj: 22186'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Franz Thoman OHI 401H
Field	Ohio	API	47069003510000
Facility	Franz Thoman OHI Pad	Wellbore	Franz Thoman OHI 401H AWB
Slot	401H		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Franz Thoman OHI 401H BHL rev 3	5680.00	15868.19	-7391.87	1728063.23	14592572.75	40°10'49.3655"N	80°41'10.3436"W	point
Franz Thoman OHI 401H wp1	5851.80	5989.34	-4317.75	1731136.14	14582697.77	40°09'11.6337"N	80°40'31.2032"W	point
Franz Thoman OHI 401H wp2	5851.80	7045.92	-4800.77	1730653.31	14583753.94	40°09'22.0923"N	80°40'37.3744"W	point
Franz Thoman OHI 401H LP rev 2	5854.00	1427.28	-2948.35	1732505.00	14578137.50	40°08'26.5016"N	80°40'13.7855"W	point

WELLPATH COMPOSITION - Ref Wellbore: Franz Thoman OHI 401H AWB Ref Wellpath: Franz Thoman OHI 401H awp Proj: 22186'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	492.00	Gyrodata 2015 - GC+WIR+DPIPE	1 Imported Gyrodata HRGM 100' - 492'	Franz Thoman OHI 401H AWB	5/13/2023
492.00	1697.00	OWSG MWD rev2 + HRGM	2 Tally OWSG MWD HRGM 602' - 1697'	Franz Thoman OHI 401H AWB	5/13/2023
1697.00	22186.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	3 BH ATC MWD HRGM 8.5" 1819' - 22161'	Franz Thoman OHI 401H AWB	5/25/2023