



**Actual Wellpath Report**  
 Charles Jamison MSH 210H AWP Proj: 23950'  
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**REFERENCE WELLPATH IDENTIFICATION**

Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 210H
Field	Marshall	API/Legal	
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 210H AWP
Slot	Slot 210H		

**REPORT SETUP INFORMATION**

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Atenjen
Scale	0.999614	Report Generated	4/10/2020 at 1:13:44 PM
Convergence at slot	0.25° 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	-22.75	16.89	1750655.38	14451189.18	39°47'30.7444"N	80°36'27.1849"W
Facility Reference Pt			1750638.50	14451211.92	39°47'30.9700"N	80°36'27.4000"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

**WELLPATH DATUM**

Calculation method	Minimum curvature	SDC 46 (KB) to Facility Vertical Datum	1363.20ft
Horizontal Reference Pt	Slot	SDC 46 (KB) to Mean Sea Level	1363.20ft
Vertical Reference Pt	SDC 46 (KB)	SDC 46 (KB) to Mud Line at Slot (Slot 210H)	26.00ft
MD Reference Pt	SDC 46 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	147.98°

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WELLPATH DATA (267 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]	Build Rate ["/100ft]	Turn Rate ["/100ft]
0.00	0.000	152.090	0.00	0.00	0.00	0.00	1750655.38	14451189.18	39°47'30.7444"N	80°36'27.1849"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	152.090	26.00	0.00	0.00	0.00	1750655.38	14451189.18	39°47'30.7444"N	80°36'27.1849"W	0.00	0.000	0.00	0.00	0.00
207.00	0.460	152.090	207.00	0.72	-0.64	0.34	1750655.72	14451188.54	39°47'30.7381"N	80°36'27.1806"W	0.73	152.090	0.25	0.25	0.00
297.00	0.400	142.710	297.00	1.40	-1.21	0.70	1750656.08	14451187.97	39°47'30.7324"N	80°36'27.1761"W	1.40	149.992	0.10	-0.07	-10.42
388.00	0.420	143.770	387.99	2.05	-1.73	1.09	1750656.47	14451187.45	39°47'30.7272"N	80°36'27.1711"W	2.05	147.853	0.02	0.02	1.16
495.00	0.480	144.510	494.99	2.89	-2.41	1.58	1750656.96	14451186.77	39°47'30.7205"N	80°36'27.1648"W	2.89	146.779	0.06	0.06	0.69
586.00	0.730	146.070	585.98	3.85	-3.21	2.13	1750657.51	14451185.98	39°47'30.7126"N	80°36'27.1579"W	3.85	146.448	0.28	0.27	1.71
676.00	0.700	139.760	675.98	4.96	-4.10	2.80	1750658.18	14451185.08	39°47'30.7038"N	80°36'27.1493"W	4.97	145.665	0.09	-0.03	-7.01
766.00	0.690	131.810	765.97	6.03	-4.88	3.56	1750658.94	14451184.30	39°47'30.6960"N	80°36'27.1396"W	6.04	143.898	0.11	-0.01	-8.83
857.00	0.320	170.690	856.97	6.79	-5.50	4.01	1750659.39	14451183.68	39°47'30.6899"N	80°36'27.1339"W	6.80	143.896	0.53	-0.41	42.73
947.00	0.300	256.640	946.97	6.94	-5.80	3.82	1750659.20	14451183.38	39°47'30.6869"N	80°36'27.1363"W	6.95	146.625	0.47	-0.02	95.50
974.00	0.350	247.070	973.97	6.91	-5.85	3.68	1750659.05	14451183.33	39°47'30.6865"N	80°36'27.1382"W	6.91	147.848	0.27	0.19	-35.44
1037.00	0.600	257.230	1036.96	6.77	-6.00	3.18	1750658.56	14451183.19	39°47'30.6850"N	80°36'27.1446"W	6.79	152.062	0.42	0.40	16.13
1127.00	0.820	307.570	1126.96	6.01	-5.71	2.21	1750657.59	14451183.47	39°47'30.6879"N	80°36'27.1570"W	6.12	158.858	0.71	0.24	55.93
1218.00	1.950	337.250	1217.93	3.87	-3.88	1.09	1750656.47	14451185.30	39°47'30.7060"N	80°36'27.1712"W	4.03	164.286	1.43	1.24	32.62
1308.00	3.710	347.960	1307.82	-0.38	0.38	-0.11	1750655.27	14451189.56	39°47'30.7481"N	80°36'27.1863"W	0.39	344.140	2.03	1.96	11.90
1399.00	6.020	352.550	1398.48	-7.48	7.99	-1.34	1750654.04	14451197.17	39°47'30.8234"N	80°36'27.2017"W	8.10	350.478	2.57	2.54	5.04
1490.00	8.510	355.110	1488.75	-17.82	19.43	-2.53	1750652.85	14451208.60	39°47'30.9365"N	80°36'27.2163"W	19.60	352.573	2.76	2.74	2.81
1580.00	10.410	354.890	1577.52	-31.00	34.17	-3.82	1750651.56	14451223.33	39°47'31.0822"N	80°36'27.2320"W	34.38	353.612	2.11	2.11	-0.24
1670.00	12.020	357.570	1665.80	-46.40	51.63	-4.95	1750650.44	14451240.79	39°47'31.2549"N	80°36'27.2454"W	51.87	354.527	1.88	1.79	2.98
1761.00	13.540	0.340	1754.54	-63.64	71.75	-5.29	1750650.10	14451260.90	39°47'31.4537"N	80°36'27.2486"W	71.94	355.787	1.80	1.67	3.04
1851.00	15.550	0.910	1841.65	-82.66	94.35	-5.03	1750650.35	14451283.49	39°47'31.6770"N	80°36'27.2441"W	94.48	356.948	2.24	2.23	0.63
1942.00	16.210	0.450	1929.18	-103.62	119.25	-4.74	1750650.64	14451308.38	39°47'31.9231"N	80°36'27.2389"W	119.34	357.725	0.74	0.73	-0.51
2032.00	16.050	1.880	2015.64	-124.54	144.24	-4.23	1750651.15	14451333.37	39°47'32.1701"N	80°36'27.2310"W	144.31	358.320	0.48	-0.18	1.59
2122.00	16.330	3.120	2102.07	-145.22	169.31	-3.13	1750652.25	14451358.43	39°47'32.4178"N	80°36'27.2156"W	169.34	358.940	0.49	0.31	1.38
2213.00	15.540	6.450	2189.57	-165.22	194.20	-1.07	1750654.31	14451383.31	39°47'32.6637"N	80°36'27.1877"W	194.20	359.685	1.33	-0.87	3.66
2303.00	16.990	8.720	2275.97	-184.62	219.18	2.28	1750657.66	14451408.27	39°47'32.9104"N	80°36'27.1434"W	219.19	0.596	1.76	1.61	2.52
2393.00	18.480	9.490	2361.69	-205.27	246.25	6.63	1750662.00	14451435.33	39°47'33.1777"N	80°36'27.0862"W	246.34	1.541	1.68	1.66	0.86
2484.00	17.870	8.920	2448.15	-226.62	274.26	11.17	1750666.54	14451463.34	39°47'33.4544"N	80°36'27.0265"W	274.49	2.332	0.70	-0.67	-0.63
2574.00	16.850	7.480	2534.05	-247.11	300.84	15.01	1750670.38	14451489.90	39°47'33.7168"N	80°36'26.9758"W	301.21	2.866	1.23	-1.13	-1.60

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Field	Marshall	API/Legal	
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 210H AWB
Slot	Slot 210H		

WELLPATH DATA (267 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)	
2653.00	15.900	8.350	2609.84	-264.43	322.95	17.69	1750673.07	14451512.00	39°47'33.9352"N	80°36'26.9401"W	323.43	3.136	1.27	-1.20	-1.43	
2788.00	15.210	5.470	2739.90	-292.98	358.96	21.43	1750676.80	14451548.00	39°47'34.2909"N	80°36'26.8903"W	359.59	3.416	0.54	-0.51	-0.65	
2878.00	17.340	3.250	2826.29	-313.30	384.10	23.31	1750678.69	14451573.13	39°47'34.5393"N	80°36'26.8647"W	384.81	3.474	2.47	2.37	-2.47	
2969.00	17.920	1.880	2913.01	-336.00	411.63	24.54	1750679.91	14451600.65	39°47'34.8114"N	80°36'26.8474"W	412.36	3.412	0.78	0.64	-1.51	
3059.00	19.370	358.300	2998.29	-360.37	440.39	24.55	1750679.92	14451629.40	39°47'35.0956"N	80°36'26.8457"W	441.08	3.191	2.05	1.61	-3.98	
3150.00	21.180	355.220	3083.65	-388.02	471.86	22.74	1750678.11	14451660.86	39°47'35.4066"N	80°36'26.8672"W	472.41	2.759	2.31	1.99	-3.38	
3240.00	20.960	353.660	3167.63	-416.98	504.08	19.60	1750674.98	14451693.05	39°47'35.7250"N	80°36'26.9055"W	504.44	2.227	0.67	-0.24	-1.73	
3330.00	22.310	352.520	3251.29	-447.03	537.00	15.60	1750670.98	14451725.97	39°47'36.0507"N	80°36'26.9549"W	537.23	1.664	1.57	1.50	-1.27	
3421.00	24.300	351.210	3334.86	-479.95	572.63	10.49	1750665.87	14451761.59	39°47'36.4031"N	80°36'27.0184"W	572.73	1.050	2.26	2.19	-1.44	
3511.00	27.020	352.420	3415.98	-515.59	611.21	4.95	1750660.34	14451800.15	39°47'36.7845"N	80°36'27.0870"W	611.23	0.465	3.08	3.02	-1.34	
3602.00	29.600	354.440	3496.09	-554.53	654.07	0.06	1750655.44	14451843.00	39°47'37.2084"N	80°36'27.1475"W	654.07	0.005	3.02	2.84	2.22	
3692.00	32.560	355.870	3573.17	-595.85	700.36	-3.84	1750651.54	14451889.27	39°47'37.6660"N	80°36'27.1948"W	700.37	359.686	3.39	3.29	1.59	
3782.00	35.280	357.300	3647.84	-639.92	750.49	-6.81	1750648.57	14451939.38	39°47'38.1615"N	80°36'27.2300"W	750.52	359.480	3.15	3.02	1.59	
3873.00	34.480	354.790	3722.50	-685.83	802.40	-10.39	1750645.00	14451991.27	39°47'38.6746"N	80°36'27.2729"W	802.46	359.258	1.81	-0.88	-2.76	
3963.00	34.300	355.730	3796.77	-731.01	853.06	-14.59	1750640.80	14452041.91	39°47'39.1754"N	80°36'27.3239"W	853.18	359.020	0.62	-0.20	1.04	
4054.00	34.660	356.200	3871.78	-776.50	904.44	-18.21	1750637.18	14452093.27	39°47'39.6835"N	80°36'27.3675"W	904.63	358.846	0.49	0.40	0.52	
4144.00	34.590	358.550	3945.85	-821.05	955.52	-20.55	1750634.83	14452144.33	39°47'40.1883"N	80°36'27.3946"W	955.74	358.768	1.49	-0.08	2.61	
4234.00	32.910	0.130	4020.68	-863.75	1005.51	-21.15	1750634.24	14452194.30	39°47'40.6824"N	80°36'27.3994"W	1005.74	358.795	2.11	-1.87	1.76	
4325.00	31.540	357.670	4097.66	-905.36	1054.02	-22.06	1750633.33	14452242.79	39°47'41.1618"N	80°36'27.4083"W	1054.25	358.801	2.08	-1.51	-2.70	
4415.00	32.070	355.590	4174.15	-946.98	1101.36	-24.85	1750630.54	14452290.12	39°47'41.6298"N	80°36'27.4415"W	1101.64	358.707	1.35	0.59	-2.31	
4506.00	34.380	355.210	4250.27	-991.24	1151.06	-28.85	1750626.54	14452339.79	39°47'42.1211"N	80°36'27.4900"W	1151.42	358.564	2.55	2.54	-0.42	
4596.00	34.930	356.680	4324.30	-1036.44	1202.11	-32.47	1750622.92	14452390.82	39°47'42.6257"N	80°36'27.5334"W	1202.54	358.453	1.11	0.61	1.63	
4687.00	35.040	356.760	4398.86	-1082.19	1254.20	-35.45	1750619.94	14452442.89	39°47'43.1406"N	80°36'27.5687"W	1254.70	358.381	0.13	0.12	0.09	
4777.00	34.740	357.070	4472.68	-1127.24	1305.60	-38.23	1750617.17	14452494.28	39°47'43.6488"N	80°36'27.6013"W	1306.16	358.323	0.39	-0.33	0.34	
4868.00	34.380	357.190	4547.92	-1172.32	1357.16	-40.81	1750614.59	14452545.81	39°47'44.1584"N	80°36'27.6316"W	1357.77	358.278	0.40	-0.40	0.13	
4958.00	33.870	356.480	4622.13	-1216.54	1407.57	-43.60	1750611.80	14452596.20	39°47'44.6567"N	80°36'27.6644"W	1408.25	358.226	0.72	-0.57	-0.79	
5048.00	33.740	355.540	4696.91	-1260.74	1457.52	-47.08	1750608.32	14452646.14	39°47'45.1505"N	80°36'27.7062"W	1458.28	358.150	0.60	-0.14	-1.04	
5138.00	33.510	355.780	4771.85	-1304.87	1507.22	-50.85	1750604.55	14452695.81	39°47'45.6418"N	80°36'27.7518"W	1508.07	358.068	0.30	-0.26	0.27	
5229.00	34.270	354.810	4847.39	-1349.96	1557.78	-55.02	1750600.38	14452746.36	39°47'46.1417"N	80°36'27.8023"W	1558.76	357.977	1.03	0.84	-1.07	
5319.00	34.280	355.810	4921.76	-1394.98	1608.30	-59.16	1750596.24	14452796.85	39°47'46.6411"N	80°36'27.8526"W	1609.39	357.893	0.63	0.01	1.11	

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5409.00	33.990	355.960	4996.26	-1439.62	1658.67	-62.79	1750592.62	14452847.21	39°47'47.1391"N	80°36'27.8962"W	1659.86	357.832	0.34	-0.32	0.17	
5500.00	33.530	355.570	5071.91	-1484.35	1709.10	-66.52	1750588.89	14452897.62	39°47'47.6376"N	80°36'27.9412"W	1710.40	357.771	0.56	-0.51	-0.43	
5590.00	33.920	355.330	5146.77	-1528.69	1758.91	-70.48	1750584.92	14452947.41	39°47'48.1301"N	80°36'27.9892"W	1760.33	357.705	0.46	0.43	-0.27	
5680.00	33.500	355.180	5221.63	-1573.08	1808.69	-74.61	1750580.79	14452997.17	39°47'48.6222"N	80°36'28.0393"W	1810.23	357.638	0.48	-0.47	-0.17	
5771.00	34.050	355.830	5297.27	-1617.95	1859.13	-78.58	1750576.83	14453047.58	39°47'49.1208"N	80°36'28.0872"W	1860.78	357.580	0.72	0.60	0.71	
5861.00	34.360	357.050	5371.71	-1662.42	1909.62	-81.72	1750573.70	14453098.06	39°47'49.6199"N	80°36'28.1246"W	1911.37	357.550	0.84	0.34	1.36	
5951.00	33.640	357.020	5446.32	-1706.42	1959.88	-84.32	1750571.09	14453148.30	39°47'50.1167"N	80°36'28.1551"W	1961.69	357.536	0.80	-0.80	-0.03	
6042.00	33.520	356.700	5522.13	-1750.49	2010.14	-87.08	1750568.34	14453198.54	39°47'50.6135"N	80°36'28.1876"W	2012.02	357.520	0.23	-0.13	-0.35	
6132.00	33.930	354.830	5596.99	-1794.69	2059.96	-90.77	1750564.64	14453248.34	39°47'51.1061"N	80°36'28.2322"W	2061.96	357.477	1.24	0.46	-2.08	
6223.00	35.400	355.460	5671.84	-1840.74	2111.53	-95.15	1750560.27	14453299.89	39°47'51.6159"N	80°36'28.2853"W	2113.68	357.420	1.66	1.62	0.69	
6313.00	35.030	356.240	5745.37	-1886.62	2163.29	-98.90	1750556.52	14453351.63	39°47'52.1276"N	80°36'28.3306"W	2165.55	357.382	0.65	-0.41	0.87	
6404.00	34.830	354.880	5819.97	-1932.80	2215.24	-102.93	1750552.49	14453403.56	39°47'52.6411"N	80°36'28.3793"W	2217.63	357.340	0.88	-0.22	-1.49	
6498.00	34.280	354.050	5897.39	-1980.52	2268.31	-108.07	1750547.35	14453456.61	39°47'53.1658"N	80°36'28.4422"W	2270.88	357.272	0.77	-0.59	-0.88	
6589.00	34.590	354.610	5972.44	-2026.63	2319.51	-113.16	1750542.27	14453507.79	39°47'53.6721"N	80°36'28.5044"W	2322.27	357.207	0.49	0.34	0.62	
6679.00	30.790	0.080	6048.19	-2069.00	2368.01	-115.53	1750539.90	14453556.27	39°47'54.1515"N	80°36'28.5321"W	2370.83	357.207	5.34	-4.22	6.08	
6769.00	26.550	6.480	6127.16	-2104.28	2411.06	-113.22	1750542.20	14453599.30	39°47'54.5768"N	80°36'28.5001"W	2413.72	357.311	5.81	-4.71	7.11	
6860.00	22.230	15.410	6210.05	-2131.86	2447.89	-106.35	1750549.07	14453636.12	39°47'54.9405"N	80°36'28.4100"W	2450.20	357.512	6.23	-4.75	9.81	
6950.00	19.640	28.560	6294.14	-2150.83	2477.61	-94.58	1750560.83	14453665.83	39°47'55.2337"N	80°36'28.2576"W	2479.42	357.814	5.94	-2.88	14.61	
7041.00	18.390	47.500	6360.26	-2160.96	2500.76	-78.67	1750578.74	14453688.97	39°47'55.4617"N	80°36'28.0268"W	2501.94	358.244	6.89	-1.37	20.81	
7132.00	18.660	68.900	6466.64	-2160.81	2515.72	-52.48	1750602.92	14453703.92	39°47'55.6085"N	80°36'27.7180"W	2516.27	358.805	7.44	0.30	23.52	
7222.00	20.450	85.860	6551.52	-2150.72	2522.04	-23.34	1750632.05	14453710.25	39°47'55.6697"N	80°36'27.3423"W	2522.15	359.470	6.59	1.99	18.84	
7313.00	24.150	100.010	6635.76	-2130.80	2519.95	10.89	1750666.26	14453708.16	39°47'55.6476"N	80°36'26.9039"W	2519.98	0.248	7.14	4.07	15.55	
7403.00	27.740	110.250	6716.72	-2101.89	2509.50	48.70	1750704.06	14453697.70	39°47'55.5426"N	80°36'26.4201"W	2509.97	1.112	6.37	3.99	11.38	
7493.00	32.700	116.870	6794.48	-2064.47	2491.24	90.07	1750745.42	14453679.45	39°47'55.3604"N	80°36'25.8910"W	2492.87	2.071	6.63	5.51	7.36	
7584.00	39.020	125.070	6868.24	-2016.97	2463.63	135.52	1750790.85	14453651.85	39°47'55.0855"N	80°36'25.3103"W	2467.35	3.149	8.71	6.95	9.01	
7674.00	46.010	132.070	6934.57	-1959.63	2425.59	182.83	1750838.13	14453613.83	39°47'54.7075"N	80°36'24.7064"W	2432.47	4.310	9.37	7.77	7.78	
7765.00	53.260	137.630	6993.50	-1892.16	2376.63	231.79	1750887.08	14453564.89	39°47'54.2216"N	80°36'24.0818"W	2387.90	5.570	9.22	7.97	6.11	
7855.00	61.710	141.230	7041.84	-1817.18	2318.97	281.00	1750936.27	14453507.25	39°47'53.6497"N	80°36'23.4545"W	2335.94	6.909	9.97	9.39	4.00	
7946.00	69.540	142.540	7079.37	-1734.82	2253.79	332.10	1750987.35	14453442.10	39°47'53.0033"N	80°36'22.8036"W	2278.13	8.382	8.70	8.60	1.44	
8036.00	75.070	143.940	7106.72	-1649.41	2185.12	383.38	1751038.61	14453373.45	39°47'52.3224"N	80°36'22.1504"W	2218.50	9.951	6.32	6.14	1.56	

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Field	Marshall	API/Legal	
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 210H AWB
Slot	Slot 210H		

WELLPATH DATA (267 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)
8126.00	82.650	146.240	7124.10	-1561.29	2112.75	433.85	1751089.07	14453301.11	39°47'51.6050"N	80°36'21.5078"W	2156.84	11.604	8.79	8.42	2.56
8217.00	87.690	147.260	7131.75	-1470.66	2036.94	483.55	1751138.75	14453225.33	39°47'50.8537"N	80°36'20.8754"W	2093.55	13.354	5.65	5.54	1.12
8307.00	88.920	147.240	7134.42	-1380.71	1961.28	532.22	1751187.39	14453149.70	39°47'50.1038"N	80°36'20.2562"W	2032.21	15.182	1.37	1.37	-0.02
8398.00	88.980	148.290	7136.08	-1289.73	1884.32	580.75	1751235.90	14453072.77	39°47'49.3412"N	80°36'19.6388"W	1971.79	17.129	1.18	0.07	1.15
8488.00	88.920	147.980	7137.73	-1199.74	1807.90	628.25	1751283.39	14452996.38	39°47'48.5838"N	80°36'19.0345"W	1913.95	19.163	0.35	-0.07	-0.34
8578.00	89.080	147.420	7139.30	-1109.76	1731.84	676.34	1751331.45	14452920.35	39°47'47.8300"N	80°36'18.4227"W	1859.22	21.332	0.65	0.18	-0.62
8669.00	88.860	146.590	7140.94	-1018.79	1655.53	725.88	1751380.98	14452844.07	39°47'47.0737"N	80°36'17.7923"W	1807.67	23.676	0.94	-0.24	-0.91
8759.00	90.060	150.230	7141.79	-928.81	1578.88	773.02	1751428.10	14452767.45	39°47'46.3142"N	80°36'17.1927"W	1757.96	26.086	4.26	1.33	4.04
8849.00	90.030	149.000	7141.72	-838.85	1501.25	818.54	1751473.60	14452689.84	39°47'45.5450"N	80°36'16.6139"W	1709.90	28.601	1.37	-0.03	-1.37
8940.00	89.350	150.510	7142.21	-747.90	1422.64	864.37	1751519.42	14452611.26	39°47'44.7661"N	80°36'16.0312"W	1664.64	31.282	1.82	-0.75	1.66
9030.00	90.770	149.100	7142.12	-657.95	1344.85	909.64	1751564.66	14452533.51	39°47'43.9954"N	80°36'15.4557"W	1623.60	34.074	2.22	1.58	-1.57
9121.00	89.380	148.910	7142.00	-566.96	1266.85	956.50	1751611.51	14452455.54	39°47'43.2225"N	80°36'14.8598"W	1587.38	37.054	1.54	-1.53	-0.21
9211.00	89.230	147.900	7143.09	-476.97	1190.19	1003.65	1751658.64	14452378.91	39°47'42.4629"N	80°36'14.2601"W	1556.88	40.140	1.13	-0.17	-1.12
9302.00	90.490	149.220	7143.31	-385.98	1112.56	1051.11	1751706.08	14452301.31	39°47'41.6936"N	80°36'13.6564"W	1530.56	43.373	2.01	1.38	1.45
9393.00	90.520	150.380	7142.51	-295.03	1033.91	1096.88	1751751.84	14452222.69	39°47'40.9144"N	80°36'13.0745"W	1507.36	46.693	1.28	0.03	1.27
9483.00	89.200	151.440	7142.73	-205.15	955.27	1140.64	1751795.57	14452144.08	39°47'40.1353"N	80°36'12.5184"W	1487.81	50.054	1.88	-1.47	1.18
9573.00	88.340	152.210	7144.66	-115.38	875.95	1183.12	1751838.04	14452064.79	39°47'39.3496"N	80°36'11.9786"W	1472.10	53.485	1.28	-0.96	0.86
9663.00	88.880	152.310	7147.00	-25.66	796.32	1225.00	1751879.90	14451985.19	39°47'38.5608"N	80°36'11.4466"W	1461.08	56.974	0.39	0.38	0.11
9754.00	89.080	151.500	7148.78	65.11	716.06	1267.84	1751922.73	14451904.96	39°47'37.7657"N	80°36'10.9023"W	1456.08	60.543	0.99	0.44	-0.89
9844.00	89.050	153.020	7150.25	154.84	636.42	1309.73	1751964.60	14451825.35	39°47'36.9768"N	80°36'10.3702"W	1456.17	64.084	1.69	-0.03	1.69
9934.00	89.110	151.530	7151.69	244.57	556.76	1351.59	1752006.45	14451745.73	39°47'36.1878"N	80°36'9.8384"W	1461.78	67.612	1.66	0.07	-1.66
10024.00	89.020	149.420	7153.16	334.47	478.47	1395.94	1752050.78	14451667.46	39°47'35.4120"N	80°36'9.2748"W	1475.66	71.080	2.35	-0.10	-2.34
10115.00	90.060	147.800	7153.89	425.46	400.79	1443.33	1752098.15	14451589.82	39°47'34.6423"N	80°36'8.6721"W	1497.95	74.481	2.12	1.14	-1.78
10205.00	90.150	146.690	7153.73	515.45	325.10	1492.03	1752146.83	14451514.16	39°47'33.8922"N	80°36'8.0526"W	1527.03	77.708	1.24	0.10	-1.23
10296.00	89.940	143.180	7153.66	606.31	250.63	1544.30	1752199.08	14451439.71	39°47'33.1539"N	80°36'7.3872"W	1564.50	80.782	3.86	-0.23	-3.86
10386.00	89.910	144.000	7153.77	696.04	178.20	1597.72	1752252.48	14451367.31	39°47'32.4358"N	80°36'6.7069"W	1607.62	83.636	0.91	-0.03	0.91
10476.00	89.910	142.480	7153.92	785.73	106.10	1651.58	1752306.32	14451295.24	39°47'31.7209"N	80°36'6.0210"W	1654.98	86.324	1.69	0.00	-1.69
10567.00	89.780	143.040	7154.16	876.35	33.66	1706.65	1752361.36	14451222.82	39°47'31.0025"N	80°36'5.3197"W	1706.98	88.870	0.63	-0.14	0.62
10657.00	90.220	143.890	7154.16	966.07	-38.66	1760.22	1752414.92	14451150.54	39°47'30.2855"N	80°36'4.6375"W	1760.65	91.258	1.06	0.49	0.94
10748.00	90.150	142.610	7153.87	1056.76	-111.57	1814.67	1752469.35	14451077.65	39°47'29.5625"N	80°36'3.9441"W	1818.10	93.518	1.41	-0.08	-1.41

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WELLPATH DATA (267 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]	
10838.00	90.710	145.560	7153.19	1146.54	-184.45	1867.46	1752522.12	14451004.81	39°47'28.8400"N	80°36'3.2720"W	1876.55	95.641	3.33	0.62	3.27	
10928.00	90.220	147.130	7152.46	1236.50	-259.35	1917.34	1752571.98	14450929.93	39°47'28.0976"N	80°36'2.6373"W	1934.80	97.703	1.84	-0.54	1.76	
11019.00	90.520	147.570	7151.87	1327.49	-335.97	1966.44	1752621.05	14450853.34	39°47'27.3382"N	80°36'2.0128"W	1994.93	99.695	0.59	0.33	0.48	
11109.00	91.230	147.630	7150.50	1417.48	-411.95	2014.65	1752669.25	14450777.39	39°47'26.5852"N	80°36'1.3994"W	2056.34	101.556	0.79	0.79	0.07	
11199.00	90.740	147.160	7148.95	1507.46	-487.75	2083.14	1752717.72	14450701.61	39°47'25.8339"N	80°36'0.7826"W	2120.01	103.301	0.75	-0.54	-0.52	
11290.00	90.770	147.420	7147.75	1598.44	-564.32	2112.31	1752766.87	14450625.08	39°47'25.0751"N	80°36'0.1570"W	2186.39	104.958	0.29	0.03	0.29	
11381.00	90.490	147.270	7146.75	1689.43	-640.93	2161.41	1752815.95	14450548.50	39°47'24.3158"N	80°35'59.5325"W	2254.44	106.517	0.35	-0.31	-0.16	
11471.00	90.710	147.760	7145.81	1779.42	-716.84	2209.75	1752864.27	14450472.62	39°47'23.5635"N	80°35'58.9176"W	2323.11	107.973	0.60	0.24	0.54	
11562.00	90.860	148.520	7144.56	1870.41	-794.12	2257.78	1752912.28	14450395.36	39°47'22.7976"N	80°35'58.3068"W	2393.36	109.378	0.85	0.16	0.84	
11652.00	90.710	146.470	7143.33	1960.40	-870.01	2306.13	1752960.62	14450319.50	39°47'22.0455"N	80°35'57.6917"W	2464.79	110.670	2.28	-0.17	-2.28	
11743.00	90.980	147.530	7141.99	2051.37	-946.32	2355.69	1753010.15	14450243.22	39°47'21.2892"N	80°35'57.0612"W	2538.66	111.886	1.20	0.30	1.16	
11833.00	91.080	146.980	7140.37	2141.35	-1022.01	2404.36	1753058.81	14450167.57	39°47'20.5390"N	80°35'56.4421"W	2612.56	113.029	0.62	0.11	-0.61	
11923.00	91.200	147.900	7138.58	2231.33	-1097.85	2452.79	1753107.22	14450091.76	39°47'19.7874"N	80°35'55.8261"W	2687.27	114.113	1.03	0.13	1.02	
12014.00	91.350	146.850	7136.56	2322.30	-1174.47	2501.84	1753156.24	14450015.17	39°47'19.0280"N	80°35'55.2021"W	2763.79	115.147	1.17	0.16	-1.15	
12104.00	91.230	146.930	7134.53	2412.26	-1249.84	2550.99	1753205.38	14449939.83	39°47'18.2810"N	80°35'54.5769"W	2840.71	116.102	0.16	-0.13	0.09	
12194.00	90.800	147.270	7132.94	2502.24	-1325.39	2599.86	1753254.23	14449864.31	39°47'17.5322"N	80°35'53.9551"W	2918.21	117.012	0.61	-0.48	0.38	
12285.00	91.080	147.530	7131.44	2593.22	-1402.04	2648.88	1753303.24	14449787.68	39°47'16.7725"N	80°35'53.3315"W	2997.05	117.892	0.42	0.31	0.29	
12375.00	90.920	147.580	7129.87	2683.20	-1477.98	2697.16	1753351.49	14449711.77	39°47'16.0199"N	80°35'52.7175"W	3075.57	118.722	0.19	-0.18	0.06	
12465.00	90.920	147.310	7128.43	2773.19	-1553.83	2745.59	1753399.90	14449635.95	39°47'15.2681"N	80°35'52.1015"W	3154.78	119.507	0.30	0.00	-0.30	
12556.00	90.740	147.490	7127.11	2864.17	-1630.49	2794.61	1753448.90	14449559.33	39°47'14.5084"N	80°35'51.4780"W	3235.48	120.261	0.28	-0.20	0.20	
12646.00	90.620	147.480	7126.04	2954.16	-1706.37	2842.98	1753497.26	14449483.47	39°47'13.7563"N	80°35'50.8627"W	3315.76	120.972	0.13	-0.13	-0.01	
12737.00	90.890	145.910	7124.84	3045.13	-1782.42	2892.94	1753547.20	14449407.45	39°47'13.0026"N	80°35'50.2271"W	3397.96	121.638	1.75	0.30	-1.73	
12827.00	90.610	146.110	7123.66	3135.07	-1857.03	2943.25	1753597.49	14449332.87	39°47'12.2629"N	80°35'49.5869"W	3480.13	122.250	0.38	-0.31	0.22	
12917.00	91.230	147.440	7122.22	3225.03	-1932.31	2992.56	1753646.78	14449257.62	39°47'11.5168"N	80°35'48.9596"W	3562.19	122.851	1.63	0.69	1.48	
13008.00	90.310	148.310	7121.00	3316.02	-2009.37	3040.94	1753695.14	14449180.59	39°47'10.7531"N	80°35'48.3443"W	3644.85	123.456	1.39	-1.01	0.96	
13098.00	90.650	148.030	7120.24	3406.02	-2085.83	3088.41	1753742.59	14449104.16	39°47'9.9954"N	80°35'47.7407"W	3726.79	124.034	0.49	0.38	-0.31	
13189.00	90.460	146.700	7119.36	3497.01	-2162.46	3137.48	1753791.64	14449027.56	39°47'9.2359"N	80°35'47.1165"W	3810.51	124.576	1.48	-0.21	-1.46	
13279.00	90.280	147.790	7118.78	3587.00	-2238.14	3186.17	1753840.32	14448951.90	39°47'8.4858"N	80°35'46.4972"W	3893.71	125.086	1.23	-0.20	1.21	
13369.00	89.850	146.950	7118.68	3676.99	-2313.94	3234.70	1753888.83	14448876.14	39°47'7.7345"N	80°35'45.8799"W	3977.14	125.578	1.05	-0.48	-0.93	
13460.00	90.620	149.460	7118.30	3767.98	-2391.28	3282.64	1753936.75	14448798.83	39°47'6.9681"N	80°35'45.2703"W	4061.27	126.072	2.89	0.85	2.76	

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13550.00	90.740	149.510	7117.23	3857.94	-2468.81	3328.34	1753982.43	14448721.33	39°47'6.1999"N	80°35'44.6894"W	4144.01	126.566	0.14	0.13	0.06	
13641.00	90.180	148.120	7116.50	3948.93	-2546.66	3375.46	1754029.53	14448643.52	39°47'5.4285"N	80°35'44.0904"W	4228.37	127.033	1.65	-0.62	-1.53	
13731.00	90.710	149.500	7115.81	4038.91	-2623.64	3422.06	1754076.11	14448566.56	39°47'4.6666"N	80°35'43.4979"W	4312.07	127.477	1.64	0.59	1.53	
13821.00	90.650	149.760	7114.74	4128.87	-2701.28	3467.56	1754121.60	14448488.95	39°47'3.8962"N	80°35'42.9195"W	4395.56	127.919	0.30	-0.07	0.29	
13912.00	90.550	149.570	7113.78	4219.83	-2779.82	3513.52	1754167.54	14448410.44	39°47'3.1180"N	80°35'42.3354"W	4480.20	128.350	0.24	-0.11	-0.21	
14002.00	90.520	148.750	7112.94	4309.80	-2857.09	3559.65	1754213.65	14448333.20	39°47'2.3523"N	80°35'41.7489"W	4564.44	128.752	0.91	-0.03	-0.91	
14093.00	90.710	148.900	7111.97	4400.79	-2934.94	3606.76	1754260.74	14448255.38	39°47'1.5808"N	80°35'41.1501"W	4650.01	129.136	0.27	0.21	0.16	
14184.00	90.860	149.460	7110.72	4491.76	-3013.08	3653.38	1754307.34	14448177.26	39°47'0.8065"N	80°35'40.5575"W	4735.59	129.514	0.64	0.16	0.62	
14274.00	90.220	147.910	7109.87	4581.74	-3089.97	3700.15	1754354.09	14448100.41	39°47'0.0446"N	80°35'39.9628"W	4820.69	129.865	1.86	-0.71	-1.72	
14365.00	90.650	149.330	7109.18	4672.73	-3167.65	3747.53	1754401.46	14448022.76	39°46'59.2747"N	80°35'39.3604"W	4906.94	130.207	1.63	0.47	1.56	
14455.00	91.020	150.030	7107.87	4762.68	-3245.33	3792.96	1754446.87	14447945.11	39°46'58.5050"N	80°35'38.7830"W	4991.87	130.551	0.88	0.41	0.78	
14545.00	90.400	148.920	7106.75	4852.64	-3322.85	3838.67	1754492.56	14447867.62	39°46'57.7369"N	80°35'38.2020"W	5077.08	130.880	1.41	-0.69	-1.23	
14636.00	90.620	148.900	7105.94	4943.63	-3400.78	3885.66	1754539.53	14447789.72	39°46'56.9647"N	80°35'37.6047"W	5163.68	131.193	0.24	0.24	-0.02	
14726.00	90.280	148.530	7105.24	5033.62	-3477.69	3932.39	1754586.25	14447712.84	39°46'56.2025"N	80°35'37.0105"W	5249.57	131.489	0.56	-0.38	-0.41	
14817.00	90.280	149.260	7104.79	5124.61	-3555.60	3979.40	1754633.24	14447634.96	39°46'55.4304"N	80°35'36.4129"W	5336.48	131.781	0.80	0.00	0.80	
14907.00	90.060	147.510	7104.53	5214.60	-3632.24	4026.58	1754680.40	14447558.35	39°46'54.6709"N	80°35'35.8131"W	5422.78	132.053	1.96	-0.24	-1.94	
14997.00	90.090	147.610	7104.41	5304.60	-3708.20	4074.86	1754728.66	14447482.42	39°46'53.9181"N	80°35'35.1991"W	5509.56	132.303	0.12	0.03	0.11	
15088.00	90.120	147.700	7104.24	5395.60	-3785.08	4123.54	1754777.32	14447405.57	39°46'53.1561"N	80°35'34.5800"W	5597.36	132.549	0.10	0.03	0.10	
15178.00	89.910	147.400	7104.22	5485.59	-3861.03	4171.83	1754825.60	14447329.65	39°46'52.4034"N	80°35'33.9659"W	5684.34	132.784	0.41	-0.23	-0.33	
15268.00	89.910	147.720	7104.36	5575.59	-3936.98	4220.11	1754873.85	14447253.73	39°46'51.6506"N	80°35'33.3519"W	5771.41	133.012	0.36	0.00	0.36	
15359.00	90.520	149.090	7104.02	5666.58	-4014.49	4267.79	1754921.51	14447176.25	39°46'50.8824"N	80°35'32.7458"W	5859.19	133.248	1.65	0.67	1.51	
15449.00	90.000	147.540	7103.61	5756.58	-4091.07	4315.06	1754968.76	14447099.69	39°46'50.1235"N	80°35'32.1448"W	5946.14	133.474	1.82	-0.58	-1.72	
15539.00	89.880	147.230	7103.70	5846.57	-4166.88	4363.57	1755017.25	14447023.92	39°46'49.3721"N	80°35'31.5279"W	6033.54	133.679	0.37	-0.13	-0.34	
15630.00	89.880	147.360	7103.89	5937.57	-4243.45	4412.73	1755066.40	14446947.37	39°46'48.6132"N	80°35'30.9026"W	6122.02	133.880	0.14	0.00	0.14	
15721.00	89.880	148.090	7104.08	6028.57	-4320.39	4461.33	1755114.97	14446870.46	39°46'47.8506"N	80°35'30.2847"W	6210.41	134.081	0.80	0.00	0.80	
15811.00	90.030	147.110	7104.16	6118.56	-4396.38	4509.55	1755163.18	14446794.50	39°46'47.0975"N	80°35'29.6714"W	6297.95	134.272	1.10	0.17	-1.09	
15901.00	89.170	147.630	7104.78	6208.55	-4472.17	4558.08	1755211.69	14446718.74	39°46'46.3463"N	80°35'29.0543"W	6385.64	134.455	1.12	-0.96	0.58	
15991.00	89.690	148.740	7105.68	6298.55	-4548.65	4605.52	1755259.11	14446642.30	39°46'45.5884"N	80°35'28.4511"W	6473.10	134.644	1.36	0.58	1.23	
16082.00	89.690	148.160	7106.17	6389.54	-4626.19	4653.13	1755306.71	14446564.78	39°46'44.8199"N	80°35'27.8458"W	6561.50	134.834	0.64	0.00	-0.64	
16172.00	89.780	148.850	7106.59	6479.54	-4702.93	4700.15	1755353.71	14446488.07	39°46'44.0594"N	80°35'27.2481"W	6648.99	135.017	0.77	0.10	0.77	

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**Actual Wellpath Report**  
Charles Jamison MSH 210H AWP Proj: 23950'  
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REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	Charles Jamison MSH 210H
Field	Marshall		API/Legal	
Facility	Charles Jamison MSH Pad		Wellbore	Charles Jamison MSH 210H AWB
Slot	Slot 210H			

WELLPATH DATA (267 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]	
16262.00	89.690	148.670	7107.00	6569.53	-4779.88	4746.83	1755400.37	14446411.15	39°46'43.2968"N	80°35'26.6547"W	6736.44	135.199	0.22	-0.10	-0.20	
16353.00	89.230	148.370	7107.86	6660.52	-4857.49	4794.35	1755447.86	14446333.58	39°46'42.5277"N	80°35'26.0507"W	6825.02	135.375	0.60	-0.51	-0.33	
16444.00	89.570	148.120	7108.81	6751.51	-4934.86	4842.23	1755495.74	14446256.23	39°46'41.7609"N	80°35'25.4418"W	6913.76	135.543	0.46	0.37	-0.27	
16534.00	89.660	147.340	7109.42	6841.51	-5010.96	4890.29	1755543.77	14446180.17	39°46'41.0067"N	80°35'24.8308"W	7001.76	135.698	0.87	0.10	-0.87	
16624.00	89.780	147.650	7109.86	6931.50	-5086.86	4938.65	1755592.11	14446104.30	39°46'40.2544"N	80°35'24.2158"W	7089.88	135.847	0.37	0.13	0.34	
16715.00	89.570	147.640	7110.37	7022.50	-5163.73	4987.35	1755640.79	14446027.46	39°46'39.4925"N	80°35'23.5966"W	7178.98	135.995	0.23	-0.23	-0.01	
16806.00	89.630	148.080	7111.01	7113.50	-5240.78	5035.76	1755689.18	14445950.43	39°46'38.7289"N	80°35'22.9811"W	7268.05	136.143	0.49	0.07	0.48	
16896.00	89.510	148.470	7111.69	7203.50	-5317.33	5083.08	1755736.49	14445873.91	39°46'37.9702"N	80°35'22.3795"W	7356.07	136.290	0.45	-0.13	0.43	
16986.00	89.350	147.280	7112.58	7293.49	-5393.54	5130.94	1755784.33	14445797.73	39°46'37.2148"N	80°35'21.7710"W	7444.25	136.429	1.33	-0.18	-1.32	
17077.00	89.750	148.420	7113.30	7384.48	-5470.59	5179.36	1755832.73	14445720.72	39°46'36.4513"N	80°35'21.1553"W	7533.46	136.566	1.33	0.44	1.25	
17167.00	90.060	147.790	7113.44	7474.48	-5547.00	5226.91	1755880.26	14445644.33	39°46'35.6940"N	80°35'20.5508"W	7621.67	136.702	0.78	0.34	-0.70	
17257.00	89.880	149.500	7113.49	7564.47	-5623.85	5273.74	1755927.07	14445567.51	39°46'34.9323"N	80°35'19.9555"W	7709.74	136.840	1.91	-0.20	1.90	
17347.00	89.450	147.690	7114.02	7654.46	-5700.66	5320.64	1755973.95	14445490.73	39°46'34.1711"N	80°35'19.3594"W	7797.87	136.975	2.07	-0.48	-2.01	
17437.00	89.570	147.760	7114.79	7744.46	-5776.75	5368.69	1756021.99	14445414.67	39°46'33.4170"N	80°35'18.7484"W	7886.30	137.097	0.15	0.13	0.08	
17528.00	89.820	147.990	7115.27	7835.46	-5853.82	5417.08	1756070.36	14445337.63	39°46'32.6532"N	80°35'18.1332"W	7975.71	137.219	0.37	0.27	0.25	
17618.00	89.850	148.280	7115.53	7925.46	-5930.26	5464.59	1756117.85	14445261.23	39°46'31.8956"N	80°35'17.5292"W	8064.10	137.340	0.32	0.03	0.32	
17708.00	89.320	148.400	7116.18	8015.45	-6006.86	5511.83	1756165.07	14445184.65	39°46'31.1364"N	80°35'16.9287"W	8152.46	137.461	0.60	-0.59	0.13	
17799.00	90.180	148.430	7116.58	8106.45	-6084.38	5559.49	1756212.72	14445107.16	39°46'30.3682"N	80°35'16.3228"W	8241.82	137.581	0.95	0.95	0.03	
17889.00	89.940	148.170	7116.49	8196.45	-6160.95	5606.79	1756259.99	14445030.62	39°46'29.6093"N	80°35'15.7216"W	8330.27	137.696	0.39	-0.27	-0.29	
17980.00	88.950	147.940	7117.37	8287.44	-6238.16	5654.93	1756308.12	14444953.44	39°46'28.8440"N	80°35'15.1096"W	8419.80	137.808	1.12	-1.09	-0.25	
18070.00	88.920	148.210	7119.04	8377.42	-6314.54	5702.52	1756355.68	14444877.09	39°46'28.0871"N	80°35'14.5046"W	8508.35	137.916	0.30	-0.03	0.30	
18161.00	89.350	147.640	7120.41	8468.41	-6391.64	5750.83	1756403.98	14444800.02	39°46'27.3229"N	80°35'13.8903"W	8597.97	138.021	0.78	0.47	-0.63	
18250.00	89.020	148.410	7121.68	8557.40	-6467.13	5797.96	1756451.09	14444724.56	39°46'26.5748"N	80°35'13.2913"W	8686.62	138.123	0.94	-0.37	0.87	
18340.00	89.380	149.060	7122.94	8647.39	-6544.05	5844.66	1756497.78	14444647.67	39°46'25.8125"N	80°35'12.6976"W	8774.09	138.231	0.83	0.40	0.72	
18431.00	88.370	147.580	7124.72	8738.36	-6621.47	5892.44	1756545.54	14444570.28	39°46'25.0451"N	80°35'12.0903"W	8863.68	138.334	1.97	-1.11	-1.63	
18521.00	88.280	147.670	7127.35	8828.32	-6697.45	5940.61	1756593.69	14444494.33	39°46'24.2921"N	80°35'11.4778"W	8952.47	138.427	0.14	-0.10	0.10	
18611.00	87.910	147.660	7130.35	8918.27	-6773.45	5988.73	1756641.78	14444418.36	39°46'23.5388"N	80°35'10.8662"W	9041.26	138.519	0.41	-0.41	-0.01	
18701.00	89.510	149.670	7132.37	9008.24	-6850.30	6035.51	1756688.55	14444341.54	39°46'22.7772"N	80°35'10.2715"W	9129.84	138.618	2.85	1.78	2.23	
18792.00	88.590	147.450	7133.88	9099.21	-6927.92	6082.97	1756735.99	14444263.95	39°46'22.0079"N	80°35'9.6683"W	9219.47	138.716	2.64	-1.01	-2.44	
18883.00	89.600	148.690	7135.32	9190.20	-7005.14	6131.09	1756784.09	14444188.76	39°46'21.2426"N	80°35'9.0566"W	9309.26	138.807	1.76	1.11	1.36	

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**Actual Wellpath Report**  
 Charles Jamison MSH 210H AWP Proj: 23950'  
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REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	Charles Jamison MSH 210H
Field	Marshall		API/Legal	
Facility	Charles Jamison MSH Pad		Wellbore	Charles Jamison MSH 210H AWB
Slot	Slot 210H			

WELLPATH DATA (267 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)	
18973.00	88.590	147.940	7136.74	9280.18	-7081.72	6178.35	1756831.34	14444110.21	39°46'20.4837"N	80°35'8.4558"W	9398.02	138.897	1.40	-1.12	-0.83	
19063.00	88.120	147.600	7139.32	9370.14	-7157.82	6226.33	1756879.30	14444034.14	39°46'19.7294"N	80°35'7.8458"W	9486.91	138.981	0.64	-0.52	-0.38	
19154.00	89.290	148.490	7141.38	9461.12	-7235.00	6274.48	1756927.43	14443956.98	39°46'18.9644"N	80°35'7.2338"W	9576.76	139.067	1.62	1.29	0.98	
19244.00	88.950	149.350	7142.76	9551.10	-7312.07	6320.94	1756973.86	14443879.94	39°46'18.2006"N	80°35'6.6434"W	9665.44	139.158	1.03	-0.36	0.96	
19335.00	89.140	147.940	7144.28	9642.07	-7389.77	6368.28	1757021.19	14443802.28	39°46'17.4306"N	80°35'6.0417"W	9755.19	139.246	1.56	0.21	-1.55	
19426.00	89.170	148.090	7145.62	9733.06	-7466.95	6416.48	1757069.37	14443725.13	39°46'16.6657"N	80°35'5.4290"W	9845.13	139.327	0.17	0.03	0.16	
19517.00	89.540	148.250	7146.65	9824.06	-7544.26	6464.47	1757117.34	14443647.85	39°46'15.8995"N	80°35'4.8190"W	9935.05	139.408	0.44	0.41	0.18	
19607.00	90.150	148.910	7146.89	9914.05	-7621.06	6511.38	1757164.24	14443571.08	39°46'15.1383"N	80°35'4.2227"W	10023.91	139.490	1.00	0.68	0.73	
19698.00	89.320	148.450	7147.31	10005.04	-7698.80	6558.69	1757211.52	14443493.37	39°46'14.3679"N	80°35'3.6215"W	10113.75	139.572	1.04	-0.91	-0.51	
19788.00	89.020	148.170	7148.61	10095.03	-7775.37	6605.96	1757258.78	14443416.83	39°46'13.6090"N	80°35'3.0207"W	10202.70	139.649	0.46	-0.33	-0.31	
19879.00	89.450	149.050	7149.83	10186.02	-7853.05	6653.35	1757306.15	14443339.18	39°46'12.8392"N	80°35'2.4183"W	10292.59	139.728	1.08	0.47	0.97	
19969.00	89.050	147.920	7151.01	10276.00	-7929.76	6700.39	1757353.17	14443262.50	39°46'12.0789"N	80°35'1.8205"W	10381.54	139.803	1.33	-0.44	-1.26	
20060.00	88.000	146.250	7153.35	10366.96	-8006.13	6749.82	1757402.58	14443186.16	39°46'11.3219"N	80°35'1.1920"W	10471.78	139.866	2.17	-1.15	-1.84	
20150.00	89.290	148.450	7155.48	10456.92	-8081.88	6798.36	1757451.10	14443110.44	39°46'10.5711"N	80°35'0.5749"W	10560.99	139.930	2.83	1.43	2.44	
20241.00	87.910	147.980	7157.70	10547.89	-8159.20	6846.28	1757499.00	14443033.14	39°46'9.8047"N	80°34'59.9659"W	10651.02	140.000	1.60	-1.52	-0.52	
20332.00	87.880	148.820	7161.04	10638.83	-8236.66	6893.93	1757546.63	14442956.72	39°46'9.0370"N	80°34'59.3603"W	10740.99	140.071	0.92	-0.03	0.92	
20422.00	88.460	148.360	7163.92	10728.77	-8313.43	6940.81	1757593.50	14442878.98	39°46'8.2762"N	80°34'58.7645"W	10829.96	140.142	0.82	0.64	-0.51	
20513.00	87.730	148.670	7166.94	10819.72	-8390.99	6988.31	1757640.98	14442801.45	39°46'7.5075"N	80°34'58.1608"W	10919.94	140.211	0.87	-0.80	0.34	
20604.00	87.820	148.910	7170.48	10910.64	-8468.76	7035.43	1757688.08	14442723.71	39°46'6.7368"N	80°34'57.5620"W	11009.87	140.282	0.28	0.10	0.26	
20694.00	87.660	146.830	7174.03	11000.57	-8544.91	7083.25	1757735.88	14442647.58	39°46'5.9820"N	80°34'56.9541"W	11099.01	140.343	2.32	-0.18	-2.31	
20785.00	87.450	148.390	7177.91	11091.48	-8621.68	7131.95	1757784.57	14442570.84	39°46'5.2210"N	80°34'56.3350"W	11189.20	140.402	1.73	-0.23	1.71	
20875.00	87.850	148.860	7181.60	11181.40	-8698.46	7178.77	1757831.37	14442494.10	39°46'4.4601"N	80°34'55.7400"W	11278.21	140.467	0.69	0.44	0.52	
20966.00	87.570	148.600	7185.23	11272.32	-8776.18	7225.97	1757878.55	14442416.41	39°46'3.6899"N	80°34'55.1402"W	11368.20	140.533	0.42	-0.31	-0.29	
21056.00	87.600	148.800	7189.03	11362.23	-8853.01	7272.69	1757925.24	14442339.61	39°46'2.9284"N	80°34'54.5466"W	11457.21	140.597	0.22	0.03	0.22	
21147.00	87.420	147.350	7192.98	11453.14	-8930.17	7320.76	1757973.30	14442262.48	39°46'2.1637"N	80°34'53.9355"W	11547.36	140.656	1.60	-0.20	-1.69	
21237.00	87.790	147.520	7196.74	11543.06	-9005.95	7369.16	1758021.68	14442186.72	39°46'1.4125"N	80°34'53.3203"W	11636.65	140.708	0.45	0.41	0.19	
21328.00	88.160	147.530	7199.96	11634.00	-9082.68	7417.99	1758070.49	14442110.03	39°46'0.6520"N	80°34'52.6995"W	11726.96	140.761	0.41	0.41	0.01	
21418.00	88.090	147.610	7202.90	11723.95	-9158.60	7466.23	1758118.71	14442034.14	39°45'59.8995"N	80°34'52.0863"W	11816.28	140.813	0.12	-0.08	0.09	
21509.00	88.090	147.870	7205.93	11814.90	-9235.51	7514.77	1758167.24	14441957.25	39°45'59.1372"N	80°34'51.4693"W	11906.57	140.865	0.29	0.00	0.29	
21599.00	87.910	147.340	7209.08	11904.84	-9311.46	7562.96	1758215.41	14441881.34	39°45'58.3844"N	80°34'50.8567"W	11995.90	140.916	0.62	-0.20	-0.59	

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Operator	SWN PRODUCTION COMPANY, LLC		Well	Charles Jamison MSH 210H
Field	Marshall		API/Legal	
Facility	Charles Jamison MSH Pad		Wellbore	Charles Jamison MSH 210H AWB
Slot	Slot 210H			

WELLPATH DATA (267 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]	Build Rate ["/100ft]	Turn Rate ["/100ft]	
21689.00	88.310	147.650	7212.04	11994.79	-9387.32	7611.30	1758263.73	14441805.51	39°45'57.6325"N	80°34'50.2423"W	12085.26	140.965	0.56	0.44	0.34	
21780.00	88.490	147.090	7214.58	12085.74	-9463.92	7660.35	1758312.76	14441728.93	39°45'56.8731"N	80°34'49.6188"W	12175.66	141.012	0.65	0.20	-0.62	
21871.00	88.250	148.090	7217.17	12176.70	-9540.72	7709.10	1758361.49	14441652.17	39°45'56.1119"N	80°34'48.9990"W	12266.03	141.061	1.13	-0.26	1.10	
21961.00	88.280	147.660	7219.90	12266.66	-9616.90	7756.94	1758409.31	14441576.01	39°45'55.3568"N	80°34'48.3910"W	12355.36	141.111	0.48	0.03	-0.48	
22052.00	87.850	147.630	7222.97	12357.61	-9693.73	7805.81	1758457.96	14441499.21	39°45'54.5953"N	80°34'47.7723"W	12445.72	141.158	0.47	-0.47	-0.03	
22142.00	87.880	147.340	7226.32	12447.54	-9769.57	7853.95	1758506.29	14441423.40	39°45'53.8436"N	80°34'47.1578"W	12535.11	141.203	0.32	0.03	-0.32	
22232.00	88.280	147.370	7229.34	12537.49	-9845.31	7902.48	1758554.79	14441347.69	39°45'53.0928"N	80°34'46.5410"W	12624.55	141.247	0.45	0.44	0.03	
22323.00	88.150	147.060	7232.17	12628.43	-9921.78	7951.73	1758604.02	14441271.25	39°45'52.3348"N	80°34'45.9149"W	12715.02	141.290	0.37	-0.14	-0.34	
22414.00	87.790	147.350	7235.40	12719.37	-9998.22	8000.98	1758653.26	14441194.84	39°45'51.5770"N	80°34'45.2888"W	12805.48	141.332	0.51	-0.40	0.32	
22505.00	88.310	147.490	7238.49	12810.31	-10074.86	8049.96	1758702.21	14441118.23	39°45'50.8174"N	80°34'44.6662"W	12895.91	141.375	0.59	0.57	0.15	
22595.00	88.310	147.200	7241.15	12900.27	-10150.60	8098.50	1758750.74	14441042.52	39°45'50.0666"N	80°34'44.0492"W	12985.39	141.416	0.32	0.00	-0.32	
22686.00	88.560	147.460	7243.63	12991.23	-10227.18	8147.60	1758799.82	14440965.97	39°45'49.3076"N	80°34'43.4250"W	13075.88	141.457	0.40	0.27	0.29	
22778.00	88.370	147.140	7246.10	13083.19	-10304.57	8197.29	1758849.48	14440888.61	39°45'48.5405"N	80°34'42.7935"W	13167.37	141.498	0.40	-0.21	-0.35	
22870.00	88.090	146.540	7248.94	13175.12	-10381.55	8247.58	1758899.76	14440811.66	39°45'47.7774"N	80°34'42.1540"W	13258.93	141.535	0.72	-0.30	-0.65	
22963.00	88.280	146.900	7251.88	13268.06	-10459.26	8298.59	1758950.75	14440733.98	39°45'47.0070"N	80°34'41.5056"W	13351.50	141.571	0.44	0.20	0.39	
23053.00	88.650	147.260	7254.30	13358.01	-10534.78	8347.48	1758999.62	14440658.49	39°45'46.2584"N	80°34'40.8840"W	13441.06	141.608	0.57	0.41	0.40	
23146.00	88.310	147.130	7256.76	13450.97	-10612.92	8397.85	1759049.97	14440580.38	39°45'45.4838"N	80°34'40.2438"W	13533.59	141.646	0.39	-0.37	-0.14	
23238.00	88.160	147.210	7259.60	13542.92	-10690.19	8447.71	1759099.81	14440503.14	39°45'44.7179"N	80°34'39.6100"W	13625.12	141.683	0.18	-0.16	0.09	
23331.00	88.430	147.590	7262.36	13635.87	-10768.50	8497.79	1759149.87	14440424.86	39°45'43.9416"N	80°34'38.9734"W	13717.62	141.722	0.50	0.29	0.41	
23424.00	88.090	147.040	7265.19	13728.82	-10846.74	8547.99	1759200.05	14440346.65	39°45'43.1661"N	80°34'38.3354"W	13810.13	141.759	0.70	-0.37	-0.59	
23517.00	87.660	147.580	7268.64	13821.75	-10924.95	8598.18	1759250.23	14440268.47	39°45'42.3908"N	80°34'37.6973"W	13902.64	141.796	0.74	-0.46	0.58	
23610.00	87.850	147.530	7272.28	13914.68	-11003.38	8648.04	1759300.06	14440190.08	39°45'41.6134"N	80°34'37.0637"W	13995.10	141.835	0.21	0.20	-0.05	
23699.00	87.850	147.640	7275.62	14003.61	-11078.45	8695.71	1759347.72	14440115.02	39°45'40.8692"N	80°34'36.4578"W	14083.59	141.871	0.12	0.00	0.12	
23792.00	87.970	147.500	7279.01	14096.55	-11156.90	8745.55	1759397.54	14440036.61	39°45'40.0917"N	80°34'35.8243"W	14176.07	141.908	0.20	0.13	-0.15	
23885.00	88.060	147.960	7282.23	14189.49	-11235.49	8795.18	1759447.14	14439958.05	39°45'39.3127"N	80°34'35.1936"W	14268.54	141.946	0.50	0.10	0.49	
23925.00	87.940	147.250	7283.63	14229.47	-11269.24	8816.59	1759468.55	14439924.31	39°45'38.9781"N	80°34'34.9214"W	14308.32	141.962	1.80	-0.30	-1.78	
23950.00	87.940	147.250	7284.53	14254.45	-11290.25	8830.11	1759482.06	14439903.31	39°45'38.7698"N	80°34'34.7496"W	14333.20	141.971	0.00	0.00	0.00	

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Field	Marshall	API/Legal	
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 210H AWB
Slot	Slot 210H		

HOLE & CASING SECTIONS - Ref Wellbore: Charles Jamison MSH 210H AWB Ref Wellpath: Charles Jamison MSH 210H AWP Proj: 23950'									
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)
20in Conductor	26.00	100.00	74.00	26.00	100.00	0.00	0.00	-0.11	0.06
17.5in Open Hole	100.00	448.00	348.00	100.00	447.99	-0.11	0.06	-2.10	1.36
13.375in Casing Surface	26.00	448.00	422.00	26.00	447.99	0.00	0.00	-2.10	1.36
12.25in Open Hole	448.00	2750.00	2302.00	447.99	2703.25	-2.10	1.36	348.97	20.45
9.625in Casing Intermediate	26.00	2750.00	2724.00	26.00	2703.25	0.00	0.00	348.97	20.45
8.75in Open Hole	2750.00	6470.00	3720.00	2703.25	5874.28	348.97	20.45	2252.58	-106.47
8.5in Open Hole	6470.00	23950.00	17480.00	5874.28	7284.53	2252.58	-106.47	-11290.25	8830.11
5.5in Casing Production	26.00	23950.00	23924.00	26.00	7284.53	0.00	0.00	-11290.25	8830.11

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Field	Marshall	API/Legal	
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 210H AWB
Slot	Slot 210H		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Charles Jamison MSH 210H LP Rev-2	7105.00	2081.10	459.01	1751114.21	14453269.47	39°47'51.2911"N	80°36'21.1874"W	point
Charles Jamison MSH 210H LP Rev-1	7136.20	2081.10	459.01	1751114.21	14453269.47	39°47'51.2911"N	80°36'21.1874"W	point
Charles Jamison MSH 210H BHL Rev-2	7308.00	-11294.84	8822.18	1759474.14	14439898.72	39°45'38.7248"N	80°34'34.8514"W	point
Charles Jamison MSH 210H BHL Rev-1	7322.20	-11294.84	8822.19	1759474.14	14439898.72	39°45'38.7248"N	80°34'34.8514"W	point
Charles Jamison MSH 210H Hardline 1	7402.20	374.64	1499.22	1752154.01	14451563.67	39°47'34.3814"N	80°36'7.9576"W	point

WELLPATH COMPOSITION - Ref Wellbore: Charles Jamison MSH 210H AWB Ref Wellpath: Charles Jamison MSH 210H AWP Proj: 23950'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	388.00	OWSG MWD rev2 + HRGM	01 Premier MWD <17 1/2"> (207'-388')	Charles Jamison MSH 210H AWB	3/27/2020
388.00	2653.00	OWSG MWD rev2 + HRGM	02 Premier MWD <12 1/4"> (495'-2653')	Charles Jamison MSH 210H AWB	3/27/2020
2653.00	6404.00	OWSG MWD rev2 + HRGM	03 Premier MWD <8 3/4"> (2788'-6404')	Charles Jamison MSH 210H AWB	3/27/2020
6404.00	23950.00	BH AutoTrak Curve (2019) (Short spacing)	04 BH AT Curve <8 1/2"> (6498'-23925')	Charles Jamison MSH 210H AWB	3/27/2020

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Field	Marshall	API/Legal	
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Slot	Slot 210H		

COMMENTS
<b>Wellpath general comments</b> API: 47-051-02302-0000 BH Job #: 110351035A Rig: SDC 46 Duration: 03/30/2020 - 04/03/2020

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