

SWN PRODUCTION COMPANY, LLC

Location: Marshall County, WV Slot: Slot 10H
 Field: Marshall Well: Betty Schafer MSH 10H
 Facility: Betty Schafer MSH Pad Wellbore: Betty Schafer MSH 10H PWB

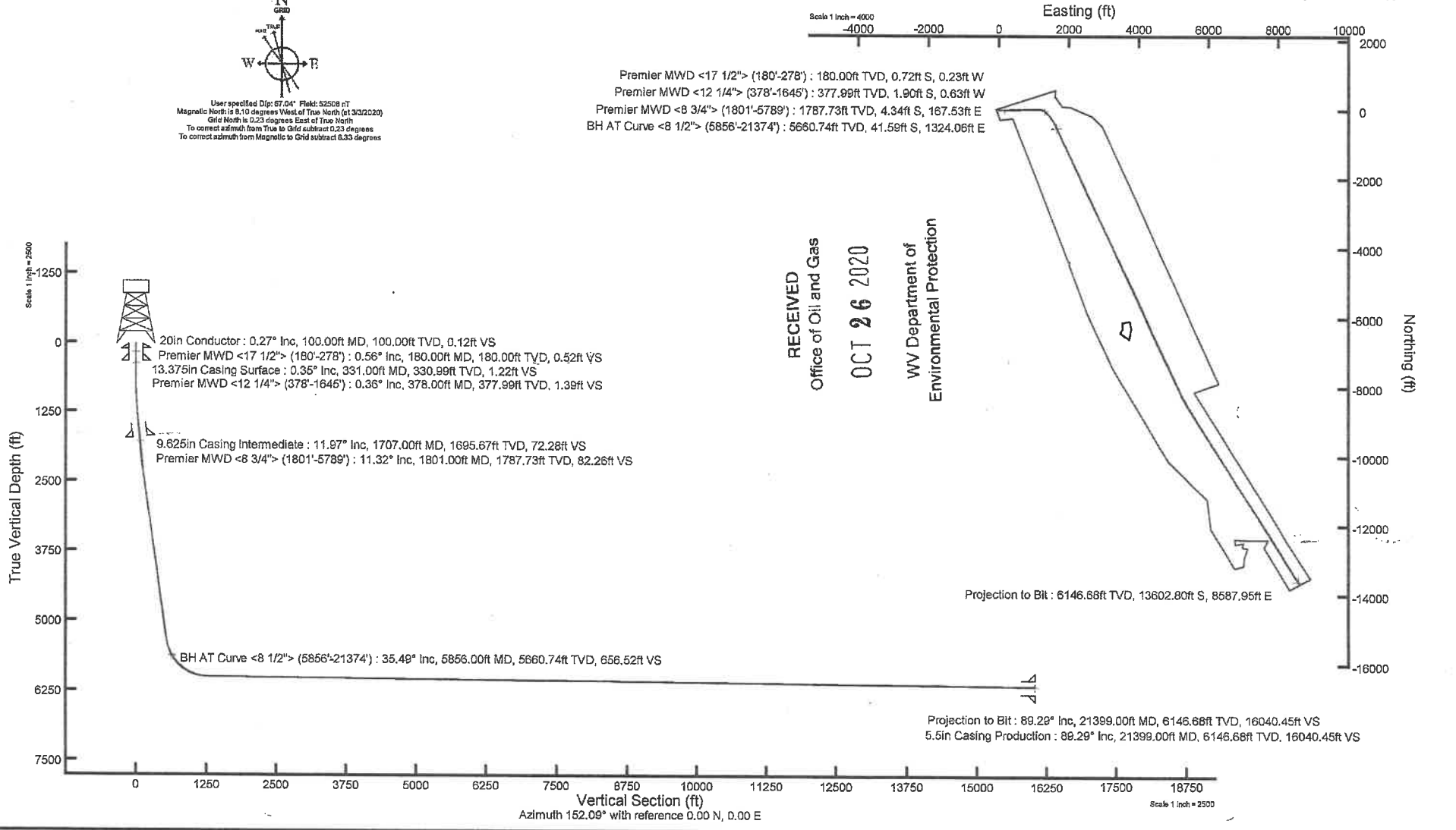


Plot reference wellpath is Betty Schafer MSH 10H PWB Rev-A.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 41 (KB)	North Reference: Grid north
Reference wellpath measured depths are referenced to SDC 41 (KB)	Scale: True distance
SDC 41 (KB) to Mean Sea Level: 874.5 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Mud line (At Slot: Slot 10H): -848.5 feet	Depths are in feet
Offset wellpath MDs are referenced to each pair's default MD datum	Created by: cforjen on 2020-03-18; Database: WA_MPL_EASTERNUS_Delta

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Betty Schafer MSH Pad	1742482.899	14523614.942	39°58'27.1070"N	80°38'8.1350"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot 10H	32.86	1.27	1742484.170	14523647.790
SDC 41 (KB) to Mud line (At Slot: Slot 10H)			26ft	
Mean Sea Level to Mud line (At Slot: Slot 10H)			-848.5ft	
SDC 41 (KB) to Mean Sea Level			874.5ft	

API: 47-051-02298-0000
 BH Job #: 110294059A
 Rig: SDC 41
 Duration: 03/13/2020 - 03/16/2020

Users specified Dip: 67.04° Field: 52599 nT
 Magnetic North is 8.10 degrees West of True North (at 3/3/2020)
 Grid North is 0.23 degrees East of True North
 To correct azimuth from True to Grid subtract 0.23 degrees
 To correct azimuth from Magnetic to Grid subtract 8.33 degrees



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Betty Schafer MSH 10H AWP Proj: 21399'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Betty Schafer MSH 10H
Field	Marshall	API/Legal	
Facility	Betty Schafer MSH Pad	Wellbore	Betty Schafer MSH 10H AWB
Slot	Slot 10H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Atenjen
Scale	0.999612	Report Generated	3/18/2020 at 4:21:47 PM
Convergence at slot	0.23° 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	32.86	1.27	1742484.17	14523647.79	39°59'27.4317"N	80°38'8.1169"W
Facility Reference Pt			1742482.90	14523614.94	39°59'27.1070"N	80°38'8.1350"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	874.50ft
Horizontal Reference Pt	Slot	SDC 41 (KB) to Mean Sea Level	874.50ft
Vertical Reference Pt	SDC 41 (KB)	SDC 41 (KB) to Mud Line at Slot (Slot 10H)	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	152.09°



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Slot	Slot 10H		

WELLPATH DATA (240 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	198.120	0.00	0.00	0.00	0.00	1742484.17	14523647.79	39°59'27.4317"N	80°38'8.1169"W	0.00	0.000	0.00	0.00	0.00	
26.00	0.000	198.120	26.00	0.00	0.00	0.00	1742484.17	14523647.79	39°59'27.4317"N	80°38'8.1169"W	0.00	0.000	0.00	0.00	0.00	
180.00	0.560	198.120	180.00	0.52	-0.72	-0.23	1742483.94	14523647.08	39°59'27.4246"N	80°38'8.1200"W	0.75	198.120	0.36	0.36	0.00	
210.00	0.420	173.430	210.00	0.73	-0.96	-0.27	1742483.90	14523646.83	39°59'27.4222"N	80°38'8.1204"W	1.00	195.488	0.83	-0.47	-82.30	
278.00	0.330	211.950	278.00	1.06	-1.38	-0.34	1742483.83	14523646.41	39°59'27.4181"N	80°38'8.1214"W	1.42	193.950	0.38	-0.13	56.65	
378.00	0.360	205.780	377.99	1.39	-1.90	-0.63	1742483.54	14523645.89	39°59'27.4129"N	80°38'8.1251"W	2.01	198.334	0.05	0.03	-6.17	
408.00	0.190	178.430	407.99	1.49	-2.04	-0.67	1742483.50	14523645.75	39°59'27.4116"N	80°38'8.1257"W	2.15	198.208	0.70	-0.57	-91.17	
499.00	0.590	73.300	498.99	1.71	-2.06	-0.22	1742483.95	14523645.74	39°59'27.4114"N	80°38'8.1198"W	2.07	186.052	0.73	0.44	-115.53	
590.00	1.830	68.270	589.97	1.96	-1.38	1.58	1742485.75	14523646.41	39°59'27.4180"N	80°38'8.0967"W	2.10	131.184	1.37	1.36	-5.53	
680.00	3.230	65.710	679.88	2.28	0.19	5.23	1742489.39	14523647.98	39°59'27.4334"N	80°38'8.0498"W	5.23	87.895	1.56	1.56	-2.84	
771.00	4.270	72.910	770.68	3.07	2.24	10.80	1742494.97	14523650.03	39°59'27.4534"N	80°38'7.9780"W	11.03	78.273	1.25	1.14	7.91	
862.00	5.490	77.290	861.35	4.85	4.20	18.29	1742502.45	14523651.98	39°59'27.4724"N	80°38'7.8818"W	18.76	77.078	1.40	1.34	4.81	
952.00	6.780	82.910	950.84	7.87	5.80	27.76	1742511.92	14523653.59	39°59'27.4879"N	80°38'7.7600"W	28.36	78.201	1.58	1.43	6.24	
1043.00	7.070	91.540	1041.17	12.53	6.31	38.69	1742522.84	14523654.10	39°59'27.4925"N	80°38'7.6195"W	39.20	80.735	1.19	0.32	9.48	
1133.00	7.450	92.540	1130.45	18.21	5.90	50.05	1742534.20	14523653.69	39°59'27.4880"N	80°38'7.4735"W	50.40	83.273	0.44	0.42	1.11	
1224.00	9.010	90.340	1220.51	24.58	5.60	63.07	1742547.22	14523653.39	39°59'27.4845"N	80°38'7.3063"W	63.32	84.926	1.75	1.71	-2.42	
1315.00	9.920	89.210	1310.27	31.52	5.67	78.04	1742562.18	14523653.45	39°59'27.4845"N	80°38'7.1140"W	78.24	85.847	1.02	1.00	-1.24	
1405.00	9.090	96.440	1399.04	39.07	4.98	92.85	1742576.99	14523652.76	39°59'27.4771"N	80°38'6.9237"W	92.99	86.933	1.61	-0.92	8.03	
1496.00	9.550	101.340	1488.84	47.90	2.68	107.40	1742591.53	14523650.47	39°59'27.4539"N	80°38'6.7369"W	107.43	88.568	1.01	0.51	5.38	
1587.00	11.430	99.170	1578.32	58.11	-0.24	123.70	1742607.83	14523647.55	39°59'27.4243"N	80°38'6.5276"W	123.70	90.110	2.11	2.07	-2.38	
1645.00	12.410	96.140	1635.06	65.07	-1.82	135.57	1742619.69	14523645.97	39°59'27.4082"N	80°38'6.3752"W	135.59	90.769	2.00	1.69	-5.22	
1801.00	11.320	92.740	1787.73	82.26	-4.34	167.53	1742651.64	14523643.45	39°59'27.3820"N	80°38'5.9647"W	167.59	91.485	0.83	-0.70	-2.18	
1892.00	11.340	90.980	1876.96	91.13	-4.92	185.40	1742669.50	14523642.87	39°59'27.3755"N	80°38'5.7352"W	185.47	91.521	0.38	0.02	-1.93	
1983.00	11.760	87.700	1966.12	99.47	-4.71	203.61	1742687.70	14523643.09	39°59'27.3770"N	80°38'5.5012"W	203.67	91.324	0.86	0.46	-3.60	
2073.00	12.090	82.980	2054.18	106.79	-3.19	222.13	1742706.22	14523644.61	39°59'27.3912"N	80°38'5.2632"W	222.15	90.821	1.14	0.37	-5.24	
2164.00	13.320	82.300	2142.95	113.81	-0.62	241.98	1742726.05	14523647.17	39°59'27.4158"N	80°38'5.0081"W	241.98	90.146	1.36	1.35	-0.75	
2255.00	14.020	78.760	2231.37	120.59	2.94	263.18	1742747.25	14523650.73	39°59'27.4501"N	80°38'4.7355"W	263.20	89.361	1.20	0.77	-3.89	
2345.00	16.020	78.080	2318.29	127.14	7.63	286.03	1742770.08	14523655.41	39°59'27.4955"N	80°38'4.4417"W	286.13	88.472	2.23	2.22	-0.76	
2436.00	16.360	86.270	2405.69	135.85	11.06	311.10	1742795.15	14523658.84	39°59'27.5284"N	80°38'4.1193"W	311.30	87.965	2.53	0.37	9.00	
2527.00	16.780	86.470	2492.91	146.52	12.70	337.00	1742821.04	14523660.48	39°59'27.5435"N	80°38'3.7865"W	337.24	87.842	0.47	0.46	0.22	



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Facility	Betty Schafer MSH Pad	Wellbore	Betty Schafer MSH 10H AWB
Slot	Slot 10H		

WELLPATH DATA (240 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]
2617.00	16.730	88.240	2579.09	157.60	13.90	362.92	1742846.95	14523661.68	39°59'27.5543"N	80°38'3.4535"W	363.18	87.807	0.57	-0.06	1.97
2708.00	17.210	85.540	2666.13	168.73	15.35	389.43	1742873.45	14523663.13	39°59'27.5676"N	80°38'3.1128"W	389.73	87.743	1.01	0.53	-2.97
2798.00	17.190	90.820	2752.11	180.42	16.19	416.01	1742900.01	14523663.97	39°59'27.5748"N	80°38'2.7713"W	416.32	87.771	1.73	-0.02	5.87
2889.00	17.650	90.180	2838.94	193.38	15.95	443.25	1742927.24	14523663.74	39°59'27.5714"N	80°38'2.4213"W	443.53	87.939	0.55	0.51	-0.70
2980.00	17.960	85.910	2925.58	205.54	16.91	471.04	1742955.02	14523664.70	39°59'27.5797"N	80°38'2.0642"W	471.34	87.944	1.47	0.34	-4.69
3070.00	18.480	91.090	3011.08	218.06	17.63	499.14	1742983.12	14523665.41	39°59'27.5857"N	80°38'1.7031"W	499.45	87.977	1.89	0.58	5.76
3161.00	18.680	89.850	3097.33	231.84	17.39	528.13	1743012.10	14523665.18	39°59'27.5822"N	80°38'1.3306"W	528.42	88.114	0.49	0.22	-1.36
3252.00	16.930	90.440	3183.97	244.92	17.33	555.96	1743039.91	14523665.11	39°59'27.5804"N	80°38'0.9731"W	556.23	88.215	1.93	-1.92	0.65
3342.00	16.540	87.720	3270.16	256.69	17.74	581.86	1743065.81	14523665.52	39°59'27.5834"N	80°38'0.6403"W	582.13	88.254	0.97	-0.43	-3.02
3433.00	16.300	91.290	3357.45	268.52	17.97	607.57	1743091.51	14523665.75	39°59'27.5846"N	80°38'0.3100"W	607.84	88.306	1.14	-0.26	3.92
3524.00	16.030	87.730	3444.86	280.19	18.18	632.90	1743116.82	14523665.96	39°59'27.5857"N	80°37'59.9846"W	633.16	88.355	1.13	-0.30	-3.91
3614.00	15.140	81.990	3531.55	289.56	20.31	656.95	1743140.87	14523668.09	39°59'27.6058"N	80°37'59.6754"W	657.27	88.229	1.98	-0.99	-6.38
3705.00	18.480	90.500	3618.66	300.48	21.84	683.15	1743167.06	14523669.62	39°59'27.6198"N	80°37'59.3387"W	683.50	88.169	4.55	3.67	9.35
3796.00	18.210	85.280	3705.05	312.94	22.88	711.75	1743195.64	14523670.66	39°59'27.6290"N	80°37'58.9713"W	712.12	88.159	1.83	-0.30	-5.74
3886.00	17.950	88.460	3790.60	324.64	24.41	739.63	1743223.51	14523672.19	39°59'27.6430"N	80°37'58.6130"W	740.03	88.110	1.13	-0.29	3.53
3977.00	17.370	86.190	3877.32	336.41	25.69	767.20	1743251.07	14523673.47	39°59'27.6545"N	80°37'58.2587"W	767.63	88.082	0.99	-0.64	-2.49
4068.00	17.160	89.490	3964.22	348.14	26.71	794.18	1743278.04	14523674.49	39°59'27.6635"N	80°37'57.9121"W	794.63	88.073	1.10	-0.23	3.63
4158.00	16.850	87.370	4050.28	359.82	27.43	820.48	1743304.33	14523675.21	39°59'27.6695"N	80°37'57.5740"W	820.94	88.085	0.77	-0.34	-2.36
4249.00	16.480	90.120	4137.46	371.51	28.01	846.57	1743330.41	14523675.79	39°59'27.6741"N	80°37'57.2389"W	847.03	88.105	0.96	-0.41	3.02
4340.00	16.320	86.360	4224.76	382.84	28.79	872.24	1743356.07	14523676.57	39°59'27.6809"N	80°37'56.9091"W	872.71	88.109	1.18	-0.18	-4.13
4430.00	16.270	89.330	4311.15	393.80	29.74	897.46	1743381.28	14523677.52	39°59'27.6892"N	80°37'56.5849"W	897.96	88.102	0.93	-0.06	3.30
4521.00	15.830	86.460	4398.60	404.76	30.66	922.60	1743406.41	14523678.44	39°59'27.6972"N	80°37'56.2619"W	923.11	88.097	1.00	-0.48	-3.15
4612.00	15.620	90.200	4486.20	415.65	31.38	947.24	1743431.04	14523679.16	39°59'27.7034"N	80°37'55.9453"W	947.76	88.102	1.14	-0.23	4.11
4702.00	16.730	91.740	4572.64	427.77	30.95	972.30	1743456.09	14523678.73	39°59'27.6981"N	80°37'55.6233"W	972.79	88.177	1.32	1.23	1.71
4793.00	16.550	87.110	4659.83	439.73	31.20	998.34	1743482.12	14523678.98	39°59'27.6995"N	80°37'55.2888"W	998.83	88.210	1.47	-0.20	-5.09
4883.00	16.500	90.920	4746.11	451.32	31.64	1023.92	1743507.69	14523679.42	39°59'27.7028"N	80°37'54.9601"W	1024.41	88.230	1.21	-0.06	4.23
4974.00	16.450	88.690	4833.38	463.32	31.73	1049.72	1743533.48	14523679.51	39°59'27.7026"N	80°37'54.6286"W	1050.20	88.269	0.70	-0.05	-2.45
5065.00	16.190	91.990	4920.71	475.41	31.59	1075.28	1743559.04	14523679.36	39°59'27.7002"N	80°37'54.3002"W	1075.75	88.317	1.06	-0.29	3.63
5155.00	15.670	90.270	5007.26	487.41	31.09	1099.98	1743583.72	14523678.87	39°59'27.6943"N	80°37'53.9829"W	1100.42	88.381	0.78	-0.58	-1.91
5246.00	16.750	90.260	5094.64	499.40	30.97	1125.38	1743609.11	14523678.75	39°59'27.6921"N	80°37'53.6566"W	1125.81	88.423	1.19	1.19	-0.01



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5337.00	16.600	92.840	5181.81	512.24	30.27	1151.48	1743635.20	14523678.05	39°59'27.6841"N	80°37'53.3213"W	1151.88	88.494	0.83	-0.16	2.84
5427.00	16.940	93.720	5267.99	525.69	28.78	1177.40	1743661.11	14523676.56	39°59'27.6683"N	80°37'52.9883"W	1177.75	88.600	0.47	0.38	0.98
5518.00	16.380	92.490	5355.17	539.13	27.37	1203.45	1743687.15	14523675.15	39°59'27.6532"N	80°37'52.6538"W	1203.76	88.697	0.73	-0.62	-1.35
5608.00	19.830	114.160	5440.79	557.62	20.56	1230.10	1743713.79	14523668.34	39°59'27.5849"N	80°37'52.3118"W	1230.27	89.043	8.34	3.83	24.08
5699.00	24.700	123.230	5525.01	586.47	3.81	1260.11	1743743.79	14523651.59	39°59'27.4181"N	80°37'51.9271"W	1260.11	89.827	6.54	5.35	9.97
5789.00	30.760	124.810	5604.64	623.43	-19.66	1294.77	1743778.43	14523628.14	39°59'27.1848"N	80°37'51.4830"W	1294.92	90.870	6.78	6.73	1.76
5856.00	35.490	128.590	5660.74	656.52	-41.59	1324.06	1743807.71	14523606.22	39°59'26.9669"N	80°37'51.1079"W	1324.71	91.799	7.70	7.06	5.64
5947.00	40.590	133.470	5732.40	708.84	-78.46	1366.23	1743849.86	14523569.36	39°59'26.6007"N	80°37'50.5681"W	1368.48	93.287	6.50	5.60	5.36
6037.00	46.310	137.730	5797.72	768.18	-122.73	1409.41	1743893.03	14523525.11	39°59'26.1615"N	80°37'50.0157"W	1414.74	94.977	7.14	6.36	4.73
6128.00	51.340	140.900	5857.62	834.95	-174.69	1453.98	1743937.58	14523473.17	39°59'25.6462"N	80°37'49.4458"W	1464.43	96.851	6.12	5.53	3.48
6219.00	57.560	143.930	5910.52	907.90	-233.37	1499.05	1743982.63	14523414.51	39°59'25.0645"N	80°37'48.8699"W	1517.10	98.849	7.35	6.84	3.33
6309.00	66.210	147.310	5952.90	986.70	-298.86	1543.74	1744027.31	14523349.05	39°59'24.4155"N	80°37'48.2992"W	1572.40	100.957	10.16	9.61	3.76
6400.00	72.950	150.800	5984.64	1071.80	-371.97	1587.51	1744071.06	14523275.96	39°59'23.6911"N	80°37'47.7407"W	1630.51	103.187	8.23	7.41	3.84
6491.00	82.250	153.980	6004.16	1160.56	-450.65	1628.61	1744112.15	14523197.31	39°59'22.9119"N	80°37'47.2169"W	1689.81	105.467	10.77	10.22	3.49
6581.00	87.810	154.040	6011.96	1250.14	-531.22	1667.89	1744151.41	14523116.78	39°59'22.1142"N	80°37'46.7166"W	1750.44	107.666	6.18	6.18	0.07
6672.00	89.600	156.270	6014.01	1340.97	-613.76	1706.11	1744189.61	14523034.27	39°59'21.2968"N	80°37'46.2299"W	1813.15	109.786	3.14	1.97	2.45
6763.00	89.660	155.430	6014.60	1431.78	-696.80	1743.34	1744226.83	14522951.27	39°59'20.4747"N	80°37'45.7561"W	1877.43	111.786	0.93	0.07	-0.92
6853.00	89.480	156.230	6015.27	1521.58	-778.90	1780.19	1744263.66	14522869.19	39°59'19.6618"N	80°37'45.2870"W	1943.13	113.631	0.91	-0.20	0.89
6944.00	89.140	154.920	6016.37	1612.40	-861.75	1817.81	1744301.27	14522786.37	39°59'18.8416"N	80°37'44.8081"W	2011.73	115.364	1.49	-0.37	-1.44
7035.00	89.660	155.360	6017.32	1703.27	-944.31	1856.06	1744339.51	14522703.84	39°59'18.0241"N	80°37'44.3210"W	2082.48	116.966	0.75	0.57	0.48
7125.00	89.570	155.300	6017.93	1793.12	-1026.10	1893.63	1744377.06	14522622.09	39°59'17.2143"N	80°37'43.8428"W	2153.77	118.452	0.12	-0.10	-0.07
7216.00	89.720	156.370	6018.49	1883.93	-1109.12	1930.88	1744414.30	14522539.10	39°59'16.3923"N	80°37'43.3687"W	2226.76	119.874	1.19	0.16	1.18
7307.00	89.630	155.910	6019.01	1974.70	-1192.34	1967.69	1744451.09	14522455.91	39°59'15.5684"N	80°37'42.9002"W	2300.76	121.214	0.52	-0.10	-0.51
7397.00	89.350	155.170	6019.81	2064.53	-1274.26	2004.95	1744488.34	14522374.03	39°59'14.7573"N	80°37'42.4259"W	2375.62	122.438	0.88	-0.31	-0.82
7488.00	89.910	155.080	6020.40	2155.40	-1356.82	2043.23	1744526.60	14522291.50	39°59'13.9399"N	80°37'41.9385"W	2452.70	123.586	0.62	0.62	-0.10
7579.00	89.140	156.320	6021.15	2246.21	-1439.75	2080.68	1744564.03	14522208.60	39°59'13.1188"N	80°37'41.4619"W	2530.23	124.682	1.60	-0.85	1.36
7670.00	89.450	155.720	6022.27	2336.99	-1522.89	2117.66	1744601.00	14522125.50	39°59'12.2957"N	80°37'40.9913"W	2608.38	125.721	0.74	0.34	-0.66
7760.00	89.660	155.380	6022.97	2426.83	-1604.81	2154.91	1744638.24	14522043.60	39°59'11.4845"N	80°37'40.5171"W	2686.83	126.676	0.44	0.23	-0.38
7851.00	89.540	155.600	6023.61	2517.66	-1687.61	2192.66	1744675.97	14521960.84	39°59'10.6648"N	80°37'40.0366"W	2766.91	127.584	0.28	-0.13	0.24
7942.00	88.860	156.210	6024.88	2608.45	-1770.67	2229.80	1744713.10	14521877.81	39°59'9.8424"N	80°37'39.5638"W	2847.33	128.453	1.00	-0.75	0.67



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Facility	Betty Schafer MSH Pad	Wellbore	Betty Schafer MSH 10H AWB
Slot	Slot 10H		

WELLPATH DATA (240 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]	
8032.00	89.780	156.760	6025.94	2698.18	-1853.19	2265.71	1744749.00	14521795.32	39°59'9.0254"N	80°37'39.1070"W	2927.07	129.281	1.19	1.02	0.61	
8123.00	89.290	156.190	6026.68	2788.91	-1936.63	2302.03	1744785.30	14521711.92	39°59'8.1994"N	80°37'38.6448"W	3008.30	130.073	0.83	-0.54	-0.63	
8213.00	89.260	155.140	6027.82	2878.73	-2018.62	2339.11	1744822.37	14521629.96	39°59'7.3876"N	80°37'38.1728"W	3089.71	130.794	1.17	-0.03	-1.17	
8304.00	89.970	155.910	6028.43	2969.56	-2101.44	2376.81	1744860.06	14521547.17	39°59'6.5676"N	80°37'37.6930"W	3172.59	131.481	1.15	0.78	0.85	
8395.00	89.110	155.680	6029.16	3060.37	-2184.44	2414.12	1744897.35	14521464.20	39°59'5.7459"N	80°37'37.2181"W	3255.73	132.141	0.98	-0.95	-0.25	
8486.00	90.060	155.930	6029.82	3151.17	-2267.44	2451.42	1744934.63	14521381.23	39°59'4.9241"N	80°37'36.7435"W	3339.27	132.767	1.08	1.04	0.27	
8576.00	89.260	156.430	6030.36	3240.94	-2349.77	2487.76	1744970.96	14521298.93	39°59'4.1089"N	80°37'36.2810"W	3422.05	133.366	1.05	-0.89	0.56	
8667.00	89.450	154.580	6031.38	3331.77	-2432.57	2525.49	1745008.67	14521216.17	39°59'3.2891"N	80°37'35.8008"W	3506.50	133.926	2.04	0.21	-2.03	
8757.00	89.480	154.340	6032.22	3421.69	-2513.78	2564.29	1745047.46	14521134.99	39°59'2.4850"N	80°37'35.3067"W	3590.91	134.430	0.27	0.03	-0.27	
8848.00	89.170	154.600	6033.29	3512.60	-2595.88	2603.51	1745086.66	14521052.92	39°59'1.6720"N	80°37'34.8073"W	3676.53	134.916	0.44	-0.34	0.29	
8939.00	89.380	154.330	6034.45	3603.52	-2677.99	2642.73	1745125.87	14520970.85	39°59'0.8590"N	80°37'34.3079"W	3762.40	135.380	0.38	0.23	-0.30	
9029.00	89.450	153.780	6035.36	3693.46	-2758.91	2682.10	1745165.23	14520889.95	39°59'0.0576"N	80°37'33.8064"W	3847.76	135.809	0.62	0.08	-0.61	
9120.00	89.200	154.520	6036.44	3784.39	-2840.80	2721.78	1745204.89	14520808.10	39°58'59.2468"N	80°37'33.3011"W	3934.24	136.226	0.86	-0.27	0.81	
9210.00	89.540	153.690	6037.43	3874.33	-2921.76	2761.08	1745244.17	14520727.17	39°58'58.4451"N	80°37'32.8006"W	4019.98	136.620	1.00	0.38	-0.92	
9301.00	89.350	153.430	6038.31	3965.30	-3003.24	2801.60	1745284.67	14520645.72	39°58'57.6382"N	80°37'32.2845"W	4107.11	136.989	0.35	-0.21	-0.29	
9391.00	88.950	152.720	6039.64	4055.27	-3083.47	2842.35	1745325.41	14520565.52	39°58'56.8436"N	80°37'31.7654"W	4193.65	137.330	0.91	-0.44	-0.79	
9482.00	89.910	154.360	6040.55	4146.23	-3164.93	2882.89	1745365.93	14520484.09	39°58'56.0369"N	80°37'31.2489"W	4281.10	137.670	2.09	1.05	1.80	
9572.00	89.660	154.270	6040.89	4236.17	-3246.04	2921.90	1745404.93	14520403.02	39°58'55.2338"N	80°37'30.7522"W	4367.41	138.008	0.30	-0.28	-0.10	
9663.00	89.420	154.490	6041.62	4327.09	-3328.09	2961.24	1745444.26	14520321.00	39°58'54.4213"N	80°37'30.2512"W	4454.79	138.338	0.36	-0.26	0.24	
9754.00	89.750	155.250	6042.28	4417.98	-3410.47	2999.89	1745482.89	14520238.65	39°58'53.6056"N	80°37'29.7592"W	4542.10	138.665	0.91	0.36	0.84	
9844.00	89.570	154.600	6042.81	4507.87	-3491.99	3038.03	1745521.01	14520157.16	39°58'52.7984"N	80°37'29.2737"W	4628.56	138.977	0.75	-0.20	-0.72	
9935.00	89.170	153.690	6043.81	4598.80	-3573.87	3077.71	1745560.68	14520075.31	39°58'51.9876"N	80°37'28.7683"W	4716.45	139.266	1.09	-0.44	-1.00	
10025.00	88.920	154.040	6045.31	4688.75	-3654.66	3117.35	1745600.30	14519994.56	39°58'51.1876"N	80°37'28.2635"W	4803.58	139.537	0.48	-0.28	0.39	
10116.00	89.570	155.320	6046.51	4779.64	-3736.91	3156.26	1745639.20	14519912.34	39°58'50.3732"N	80°37'27.7681"W	4891.47	139.815	1.58	0.71	1.41	
10207.00	89.690	153.990	6047.10	4870.55	-3819.15	3195.22	1745678.14	14519830.13	39°58'49.5588"N	80°37'27.2722"W	4979.49	140.083	1.47	0.13	-1.46	
10297.00	89.260	155.100	6047.92	4960.46	-3900.40	3233.90	1745716.80	14519748.91	39°58'48.7542"N	80°37'26.7797"W	5066.68	140.337	1.32	-0.48	1.23	
10388.00	89.320	154.460	6049.05	5051.35	-3982.72	3272.67	1745755.56	14519666.62	39°58'47.9391"N	80°37'26.2861"W	5154.85	140.590	0.71	0.07	-0.70	
10478.00	89.230	154.180	6050.19	5141.28	-4063.83	3311.67	1745794.54	14519585.55	39°58'47.1360"N	80°37'25.7895"W	5242.31	140.823	0.33	-0.10	-0.31	
10569.00	89.480	154.740	6051.21	5232.19	-4145.93	3350.90	1745833.76	14519503.48	39°58'46.3230"N	80°37'25.2900"W	5330.78	141.054	0.67	0.27	0.62	
10660.00	89.380	153.400	6052.12	5323.13	-4227.76	3390.69	1745873.53	14519421.68	39°58'45.5126"N	80°37'24.7833"W	5419.48	141.270	1.48	-0.11	-1.47	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Betty Schafer MSH 10H
Field	Marshall	API/Legal	
Facility	Betty Schafer MSH Pad	Wellbore	Betty Schafer MSH 10H AWB
Slot	Slot 10H		

WELLPATH DATA (240 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]
10750.00	89.380	153.960	6053.09	5413.09	-4308.43	3430.59	1745913.42	14519341.04	39°58'44.7138"N	80°37'24.2752"W	5507.40	141.471	0.62	0.00	0.62
10841.00	89.820	155.310	6053.73	5504.00	-4390.65	3469.57	1745952.39	14519258.85	39°58'43.8996"N	80°37'23.7789"W	5596.04	141.684	1.56	0.48	1.48
10931.00	89.480	154.510	6054.28	5593.89	-4472.16	3507.73	1745990.53	14519177.38	39°58'43.0926"N	80°37'23.2931"W	5683.69	141.891	0.97	-0.38	-0.89
11022.00	89.450	154.540	6055.13	5684.80	-4554.30	3546.87	1746029.66	14519095.26	39°58'42.2791"N	80°37'22.7948"W	5772.52	142.089	0.05	-0.03	0.03
11112.00	89.480	153.970	6055.97	5774.73	-4635.37	3585.96	1746068.73	14519014.23	39°58'41.4764"N	80°37'22.2970"W	5860.52	142.274	0.63	0.03	-0.63
11203.00	89.690	154.770	6056.63	5865.66	-4717.41	3625.32	1746108.08	14518932.22	39°58'40.6640"N	80°37'21.7959"W	5949.53	142.458	0.91	0.23	0.88
11294.00	89.260	154.700	6057.46	5956.55	-4799.70	3664.16	1746146.90	14518849.96	39°58'39.8492"N	80°37'21.3015"W	6038.48	142.641	0.48	-0.47	-0.08
11384.00	89.450	154.260	6058.47	6046.47	-4880.92	3702.93	1746185.66	14518768.78	39°58'39.0450"N	80°37'20.8079"W	6126.58	142.814	0.53	0.21	-0.49
11475.00	89.140	154.130	6059.59	6137.40	-4962.83	3742.54	1746225.25	14518686.89	39°58'38.2338"N	80°37'20.3035"W	6215.81	142.980	0.37	-0.34	-0.14
11565.00	88.920	154.070	6061.12	6227.33	-5043.78	3781.85	1746264.54	14518605.97	39°58'37.4322"N	80°37'19.8030"W	6304.14	143.137	0.25	-0.24	-0.07
11656.00	89.110	154.510	6062.68	6318.25	-5125.76	3821.32	1746304.00	14518524.03	39°58'36.6204"N	80°37'19.3005"W	6393.43	143.295	0.53	0.21	0.48
11746.00	89.010	154.440	6064.16	6408.16	-5206.97	3860.10	1746342.76	14518442.85	39°58'35.8163"N	80°37'18.8068"W	6481.73	143.449	0.14	-0.11	-0.08
11837.00	89.570	156.560	6065.28	6498.99	-5289.76	3897.84	1746380.48	14518360.09	39°58'34.9965"N	80°37'18.3265"W	6570.74	143.615	2.40	0.62	2.32
11928.00	88.710	155.240	6066.65	6589.78	-5372.81	3934.99	1746417.63	14518277.07	39°58'34.1742"N	80°37'17.8538"W	6659.68	143.781	1.72	-0.95	-1.44
12018.00	88.860	154.380	6068.56	6679.65	-5454.23	3973.29	1746455.91	14518195.68	39°58'33.3680"N	80°37'17.3663"W	6748.02	143.927	0.97	0.17	-0.96
12109.00	89.350	155.930	6069.98	6770.51	-5536.80	4011.52	1746494.13	14518113.15	39°58'32.5504"N	80°37'16.8797"W	6837.28	144.076	1.79	0.54	1.70
12199.00	88.860	154.460	6071.39	6860.36	-5618.48	4049.27	1746531.86	14518031.50	39°58'31.7416"N	80°37'16.3993"W	6925.60	144.219	1.72	-0.54	-1.63
12290.00	89.350	154.900	6072.81	6951.26	-5700.73	4088.19	1746570.76	14517949.28	39°58'30.9272"N	80°37'15.9039"W	7015.10	144.354	0.72	0.54	0.48
12380.00	89.820	155.910	6073.46	7041.10	-5782.56	4125.64	1746608.20	14517867.48	39°58'30.1169"N	80°37'15.4272"W	7103.45	144.494	1.24	0.52	1.12
12471.00	89.750	154.880	6073.80	7131.95	-5865.30	4163.53	1746646.08	14517784.78	39°58'29.2977"N	80°37'14.9451"W	7192.82	144.631	1.13	-0.08	-1.13
12562.00	89.720	155.220	6074.22	7222.83	-5947.80	4201.92	1746684.45	14517702.31	39°58'28.4808"N	80°37'14.4565"W	7282.34	144.760	0.38	-0.03	0.37
12652.00	89.420	155.260	6074.90	7312.69	-6029.53	4239.61	1746722.13	14517620.61	39°58'27.6716"N	80°37'13.9769"W	7370.85	144.887	0.34	-0.33	0.04
12743.00	90.250	155.620	6075.16	7403.53	-6112.29	4277.43	1746759.93	14517537.88	39°58'26.8521"N	80°37'13.4956"W	7460.33	145.015	0.99	0.91	0.40
12833.00	89.690	155.510	6075.21	7493.37	-6194.23	4314.66	1746797.15	14517455.97	39°58'26.0408"N	80°37'13.0218"W	7548.83	145.140	0.63	-0.62	-0.12
12924.00	89.820	155.310	6075.60	7584.21	-6276.98	4352.53	1746835.00	14517373.26	39°58'25.2214"N	80°37'12.5400"W	7638.39	145.262	0.26	0.14	-0.22
13014.00	89.820	155.100	6075.88	7674.08	-6358.68	4390.27	1746872.73	14517291.59	39°58'24.4124"N	80°37'12.0597"W	7727.05	145.377	0.23	0.00	-0.23
13105.00	90.030	155.900	6076.00	7764.92	-6441.49	4428.01	1746910.45	14517208.82	39°58'23.5926"N	80°37'11.5795"W	7816.65	145.495	0.91	0.23	0.88
13196.00	89.910	154.490	6076.05	7855.78	-6524.09	4466.18	1746948.61	14517126.25	39°58'22.7746"N	80°37'11.0937"W	7906.36	145.606	1.56	-0.13	-1.55
13286.00	89.540	155.020	6076.48	7945.68	-6605.49	4504.57	1746986.98	14517044.88	39°58'21.9686"N	80°37'10.6051"W	7995.23	145.708	0.72	-0.41	0.59
13377.00	89.970	154.700	6076.87	8036.58	-6687.87	4543.23	1747025.63	14516962.53	39°58'21.1529"N	80°37'10.1131"W	8085.08	145.811	0.59	0.47	-0.35



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WELLPATH DATA (240 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]
13467.00	89.880	154.380	6076.98	8126.49	-6769.13	4581.92	1747064.30	14516881.30	39°58'20.3482"N	80°37'9.6206"W	8174.05	145.907	0.37	-0.10	-0.36
13558.00	90.250	156.720	6076.88	8217.32	-6851.96	4619.58	1747101.95	14516798.50	39°58'19.5280"N	80°37'9.1414"W	8263.77	146.012	2.60	0.41	2.57
13649.00	89.940	155.050	6076.73	8308.12	-6935.02	4656.76	1747139.11	14516715.48	39°58'18.7057"N	80°37'8.6684"W	8353.43	146.119	1.87	-0.34	-1.84
13739.00	90.090	155.800	6076.71	8397.96	-7016.87	4694.19	1747176.53	14516633.66	39°58'17.8953"N	80°37'8.1921"W	8442.26	146.218	0.85	0.17	0.83
13830.00	89.200	155.190	6077.27	8488.80	-7099.67	4731.93	1747214.25	14516550.89	39°58'17.0754"N	80°37'7.7119"W	8532.08	146.317	1.19	-0.98	-0.67
13921.00	89.540	155.200	6078.27	8579.66	-7182.26	4770.10	1747252.41	14516468.33	39°58'16.2575"N	80°37'7.2261"W	8622.00	146.410	0.37	0.37	0.01
14011.00	89.350	154.430	6079.14	8669.56	-7263.70	4808.40	1747290.70	14516386.92	39°58'15.4511"N	80°37'6.7387"W	8711.03	146.496	0.88	-0.21	-0.86
14102.00	89.540	154.620	6080.02	8760.47	-7345.85	4847.54	1747329.82	14516304.80	39°58'14.6376"N	80°37'6.2405"W	8801.15	146.579	0.30	0.21	0.21
14193.00	89.510	154.640	6080.78	8851.38	-7428.07	4886.53	1747368.79	14516222.61	39°58'13.8235"N	80°37'5.7443"W	8891.26	146.661	0.04	-0.03	0.02
14283.00	89.380	155.070	6081.65	8941.27	-7509.54	4924.77	1747407.02	14516141.18	39°58'13.0168"N	80°37'5.2576"W	8980.34	146.743	0.50	-0.14	0.48
14374.00	89.320	155.550	6082.68	9032.12	-7592.22	4962.78	1747445.01	14516058.53	39°58'12.1981"N	80°37'4.7740"W	9070.33	146.829	0.53	-0.07	0.53
14464.00	89.630	155.790	6083.51	9121.94	-7674.22	4999.86	1747482.07	14515976.56	39°58'11.3862"N	80°37'4.3022"W	9159.27	146.915	0.44	0.34	0.27
14555.00	89.290	155.530	6084.36	9212.76	-7757.13	5037.36	1747519.56	14515893.69	39°58'10.5653"N	80°37'3.8251"W	9249.22	147.001	0.47	-0.37	-0.29
14646.00	89.570	155.460	6085.27	9303.59	-7839.93	5075.10	1747557.29	14515810.92	39°58'9.7454"N	80°37'3.3449"W	9339.22	147.083	0.32	0.31	-0.08
14737.00	89.540	155.450	6085.98	9394.43	-7922.70	5112.90	1747595.08	14515728.18	39°58'8.9258"N	80°37'2.8640"W	9429.26	147.164	0.03	-0.03	-0.01
14827.00	89.380	154.790	6086.83	9484.30	-8004.34	5150.77	1747632.93	14515646.57	39°58'8.1174"N	80°37'2.3822"W	9518.40	147.239	0.75	-0.18	-0.73
14918.00	89.200	154.710	6087.95	9575.20	-8086.64	5189.58	1747671.73	14515564.30	39°58'7.3025"N	80°37'1.8882"W	9608.62	147.310	0.22	-0.20	-0.09
15009.00	89.480	154.780	6089.00	9666.09	-8168.94	5228.40	1747710.53	14515482.04	39°58'6.4876"N	80°37'1.3941"W	9698.85	147.379	0.32	0.31	0.08
15099.00	89.570	152.880	6089.75	9756.04	-8249.71	5268.09	1747750.21	14515401.30	39°58'5.6877"N	80°37'0.8888"W	9788.28	147.439	2.11	0.10	-2.11
15190.00	89.320	150.640	6090.63	9847.03	-8329.87	5311.15	1747793.24	14515321.17	39°58'4.8937"N	80°37'0.3403"W	9879.02	147.478	2.48	-0.27	-2.46
15281.00	89.480	150.710	6091.58	9938.00	-8409.20	5355.71	1747837.79	14515241.87	39°58'4.1078"N	80°36'59.7723"W	9969.87	147.507	0.19	0.18	0.08
15371.00	89.380	151.200	6092.48	10027.98	-8487.88	5399.40	1747881.47	14515163.22	39°58'3.3284"N	80°36'59.2154"W	10059.70	147.538	0.56	-0.11	0.54
15462.00	89.380	148.430	6093.46	10118.89	-8566.53	5445.15	1747927.20	14515084.60	39°58'2.5493"N	80°36'58.6322"W	10150.62	147.559	3.04	0.00	-3.04
15552.00	89.480	147.890	6094.36	10208.67	-8642.98	5492.63	1747974.66	14515008.18	39°58'1.7917"N	80°36'58.0267"W	10240.61	147.564	0.61	0.11	-0.60
15643.00	89.380	148.680	6095.26	10299.47	-8720.39	5540.46	1748022.47	14514930.80	39°58'1.0247"N	80°36'57.4166"W	10331.60	147.570	0.88	-0.11	0.87
15733.00	89.540	147.980	6096.11	10389.27	-8796.98	5587.71	1748069.70	14514854.24	39°58'0.2658"N	80°36'56.8140"W	10421.58	147.577	0.80	0.18	-0.78
15824.00	89.450	148.540	6096.91	10480.06	-8874.37	5635.58	1748117.55	14514776.88	39°57'59.4990"N	80°36'56.2035"W	10512.57	147.583	0.62	-0.10	0.62
15914.00	89.540	149.130	6097.71	10569.91	-8951.38	5682.16	1748164.11	14514699.91	39°57'58.7360"N	80°36'55.6096"W	10602.55	147.593	0.66	0.10	0.66
16005.00	89.480	147.870	6098.48	10660.73	-9028.96	5729.70	1748211.64	14514622.35	39°57'57.9673"N	80°36'55.0033"W	10693.53	147.601	1.39	-0.07	-1.38
16096.00	89.540	148.670	6099.26	10751.52	-9106.36	5777.56	1748259.47	14514544.98	39°57'57.2004"N	80°36'54.3929"W	10784.52	147.607	0.88	0.07	0.88



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Betty Schafer MSH 10H AWP Proj: 21399'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Betty Schafer MSH 10H
Field	Marshall	API/Legal	
Facility	Betty Schafer MSH Pad	Wellbore	Betty Schafer MSH 10H AWB
Slot	Slot 10H		

WELLPATH DATA (240 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]
16186.00	89.600	148.590	6099.94	10841.36	-9183.20	5824.41	1748306.30	14514468.17	39°57'56.4390"N	80°36'53.7955"W	10874.51	147.615	0.11	0.07	-0.09
16277.00	89.630	147.940	6100.55	10932.15	-9260.59	5872.27	1748354.15	14514390.81	39°57'55.6721"N	80°36'53.1851"W	10965.50	147.621	0.72	0.03	-0.71
16367.00	89.630	148.270	6101.13	11021.93	-9337.00	5919.82	1748401.68	14514314.43	39°57'54.9150"N	80°36'52.5786"W	11055.49	147.625	0.37	0.00	0.37
16458.00	89.420	147.820	6101.89	11112.70	-9414.21	5967.98	1748449.82	14514237.25	39°57'54.1500"N	80°36'51.9644"W	11146.49	147.628	0.55	-0.23	-0.49
16549.00	89.660	148.280	6102.62	11203.47	-9491.42	6016.14	1748497.96	14514160.07	39°57'53.3849"N	80°36'51.3502"W	11237.48	147.631	0.57	0.26	0.51
16639.00	89.420	148.140	6103.34	11293.26	-9567.92	6063.55	1748545.35	14514083.61	39°57'52.6269"N	80°36'50.7456"W	11327.47	147.636	0.31	-0.27	-0.16
16730.00	89.260	147.720	6104.39	11384.02	-9645.02	6111.86	1748593.65	14514006.53	39°57'51.8628"N	80°36'50.1294"W	11418.47	147.638	0.49	-0.18	-0.46
16821.00	89.320	148.660	6105.51	11474.80	-9722.35	6159.82	1748641.59	14513929.23	39°57'51.0966"N	80°36'49.5177"W	11509.45	147.643	1.03	0.07	1.03
16911.00	89.380	148.120	6106.54	11564.61	-9798.99	6206.99	1748688.74	14513852.62	39°57'50.3372"N	80°36'48.9162"W	11599.44	147.649	0.60	0.07	-0.60
17002.00	89.480	148.330	6107.44	11655.39	-9876.35	6254.91	1748736.64	14513775.29	39°57'49.5707"N	80°36'48.3051"W	11690.43	147.653	0.26	0.11	0.23
17092.00	89.600	148.600	6108.16	11745.21	-9953.06	6301.98	1748783.69	14513698.62	39°57'48.8107"N	80°36'47.7049"W	11780.42	147.659	0.33	0.13	0.30
17183.00	89.480	148.200	6108.89	11836.02	-10030.56	6349.66	1748831.35	14513621.14	39°57'48.0427"N	80°36'47.0968"W	11871.41	147.665	0.46	-0.13	-0.44
17274.00	89.320	148.070	6109.85	11926.80	-10107.84	6397.70	1748879.37	14513543.89	39°57'47.2769"N	80°36'46.4842"W	11962.40	147.668	0.23	-0.18	-0.14
17364.00	89.690	148.450	6110.62	12016.59	-10184.38	6445.04	1748926.70	14513467.38	39°57'46.5185"N	80°36'45.8805"W	12052.39	147.673	0.59	0.41	0.42
17455.00	89.290	148.430	6111.43	12107.40	-10261.92	6492.67	1748974.31	14513389.88	39°57'45.7502"N	80°36'45.2731"W	12143.38	147.679	0.44	-0.44	-0.02
17545.00	89.320	147.830	6112.53	12197.18	-10338.34	6540.18	1749021.80	14513313.48	39°57'44.9929"N	80°36'44.6672"W	12233.37	147.682	0.67	0.03	-0.67
17636.00	89.420	148.750	6113.53	12287.98	-10415.75	6588.01	1749069.61	14513236.10	39°57'44.2259"N	80°36'44.0573"W	12324.36	147.686	1.02	0.11	1.01
17727.00	89.420	148.290	6114.45	12378.79	-10493.35	6635.53	1749117.11	14513158.53	39°57'43.4570"N	80°36'43.4514"W	12415.34	147.693	0.51	0.00	-0.51
17817.00	89.420	149.090	6115.36	12468.63	-10570.24	6682.30	1749163.86	14513081.67	39°57'42.6951"N	80°36'42.8551"W	12505.32	147.700	0.89	0.00	0.89
17908.00	89.380	148.170	6116.31	12559.46	-10647.94	6729.67	1749211.21	14513004.01	39°57'41.9253"N	80°36'42.2511"W	12596.31	147.706	1.01	-0.04	-1.01
17998.00	89.380	148.660	6117.29	12649.27	-10724.60	6776.80	1749258.33	14512927.37	39°57'41.1657"N	80°36'41.6500"W	12686.29	147.711	0.54	0.00	0.54
18089.00	89.510	147.800	6118.17	12740.06	-10801.96	6824.71	1749306.22	14512850.04	39°57'40.3991"N	80°36'41.0391"W	12777.29	147.715	0.96	0.14	-0.95
18180.00	89.630	148.720	6118.85	12830.85	-10879.35	6872.58	1749354.07	14512772.69	39°57'39.6323"N	80°36'40.4287"W	12868.28	147.719	1.02	0.13	1.01
18270.00	89.450	147.240	6119.57	12920.61	-10955.65	6920.30	1749401.77	14512696.41	39°57'38.8762"N	80°36'39.8202"W	12958.27	147.721	1.66	-0.20	-1.64
18361.00	89.780	147.890	6120.18	13011.33	-11032.45	6969.10	1749450.56	14512619.64	39°57'38.1151"N	80°36'39.1977"W	13049.27	147.720	0.80	0.36	0.71
18451.00	89.780	146.940	6120.53	13101.03	-11108.28	7017.57	1749499.00	14512543.84	39°57'37.3636"N	80°36'38.5795"W	13139.27	147.718	1.06	0.00	-1.06
18542.00	90.090	147.300	6120.63	13191.68	-11184.71	7066.97	1749548.39	14512467.45	39°57'36.6062"N	80°36'37.9494"W	13230.26	147.714	0.52	0.34	0.40
18632.00	90.000	146.760	6120.56	13281.33	-11260.21	7115.95	1749597.35	14512391.97	39°57'35.8580"N	80°36'37.3246"W	13320.25	147.709	0.61	-0.10	-0.60
18723.00	90.090	147.380	6120.49	13371.98	-11336.59	7165.42	1749646.80	14512315.62	39°57'35.1010"N	80°36'36.6936"W	13411.25	147.705	0.69	0.10	0.68
18814.00	89.140	147.550	6121.10	13462.68	-11413.31	7214.36	1749695.72	14512238.93	39°57'34.3408"N	80°36'36.0695"W	13502.24	147.703	1.06	-1.04	0.19

HOLE & CASING SECTIONS - Ref Wellbore: Betty Schafer MSH 10H AWB Ref Wellpath: Betty Schafer MSH 10H AWP Proj: 21399'									
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	-0.17	-0.05
17.5in Open Hole	100.00	331.00	231.00	100.00	330.99	-0.17	-0.05	-1.65	-0.50
13.375in Casing Surface	26.00	331.00	305.00	26.00	330.99	0.00	0.00	-1.65	-0.50
12.25in Open Hole	331.00	1707.00	1376.00	330.99	1695.67	-1.65	-0.50	-3.08	148.61
9.625in Casing Intermediate	26.00	1707.00	1681.00	26.00	1695.67	0.00	0.00	-3.08	148.61
8.75in Open Hole	1707.00	5856.00	4149.00	1695.67	5660.74	-3.08	148.61	-41.59	1324.06
8.5in Open Hole	5856.00	21399.00	15543.00	5660.74	6146.68	-41.59	1324.06	-13602.80	8587.95
5.5in Casing Production	26.00	21399.00	21373.00	26.00	6146.68	0.00	0.00	-13602.80	8587.95

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Betty Schafer MSH 10H LP Rev-3	6013.00	-523.48	1659.22	1744142.74	14523124.51	39°59'22.1909"N	80°37'46.8275"W	point
Betty Schafer MSH 10H BHL Rev-5	6141.00	-13604.05	8584.87	1751065.69	14510049.05	39°57'12.6317"N	80°36'18.5940"W	point
Betty Schafer Southeast Unit 1	6499.40	-637.18	3047.81	1745530.79	14523010.86	39°59'21.0100"N	80°37'28.9936"W	polygon
2D Polygon: dimensions not calculated								
Betty Schafer Southeast Unit 2	6499.40	-6572.00	3726.80	1746209.52	14517078.35	39°58'22.3322"N	80°37'20.5932"W	polygon
2D Polygon: dimensions not calculated								

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Betty Schafer MSH 10H
Field	Marshall	API/Legal	
Facility	Betty Schafer MSH Pad	Wellbore	Betty Schafer MSH 10H AWB
Slot	Slot 10H		

WELLPATH COMPOSITION - Ref Wellbore: Betty Schafer MSH 10H AWB : Ref Wellpath: Betty Schafer MSH 10H AWP Proj: 21399'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	278.00	OWSG MWD rev2 + HRGM	01_Premier MWD <17 1/2"> (180'-278')	Betty Schafer MSH 10H AWB	3/9/2020
278.00	1645.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12 1/4"> (378'-1645')	Betty Schafer MSH 10H AWB	3/9/2020
1645.00	5789.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8 3/4"> (1801'-5789')	Betty Schafer MSH 10H AWB	3/9/2020
5789.00	21399.00	BH AutoTrak Curve (2019) (Short spacing)	04_BH AT Curve <8 1/2"> (5789')(5856'-21374')	Betty Schafer MSH 10H AWB	3/9/2020

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Betty Schafer MSH 10H AWP Proj: 21399'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Betty Schafer MSH 10H
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Slot	Slot 10H		

COMMENTS

Wellpath general comments
API: 47-051-02298-0000
BH Job #: 110294059A
Rig: SDC 41
Duration: 03/13/2020 - 03/16/2020