

Location: Marshall County, WV
Field: Marshall
Facility: O E Burge MSH Pad

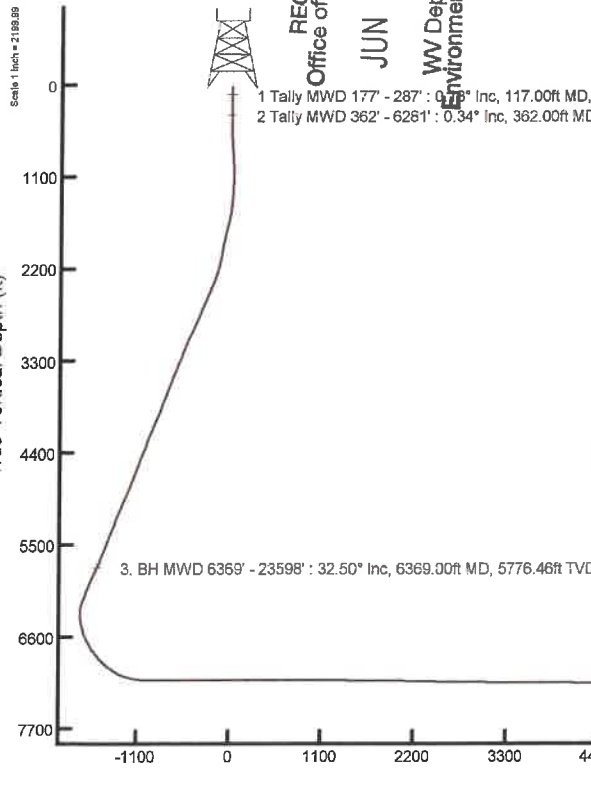
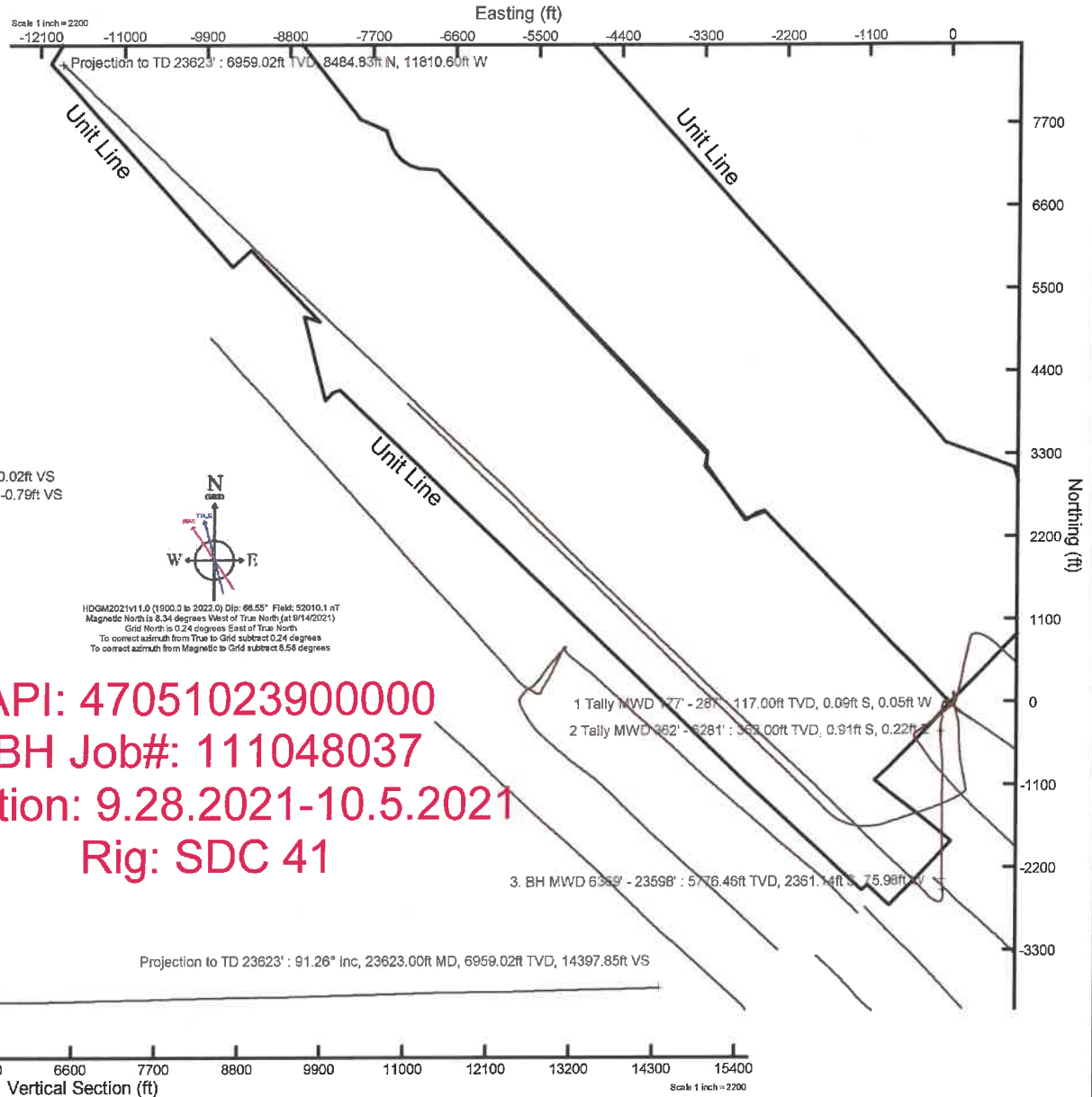
Slot: Slot 401H
Well: O E Burge MSH 401H
Wellbore: O E Burge MSH 401H AWB

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
O E Burge MSH Pad	1743822.680	14438242.840	39°45'2616"N	80°37'54.2568"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot 401H	11.11	-25.99	1743836.700	14438254.050
SDC 41 (RKB) to Well Line (At Slot Slot 401H)			268	
Mean Sea Level to Mud line (At Slot Slot 401H)			-1342.28	
SDC 41 (RKB) to Mean Sea Level			1388.28	

Plot reference w/ depth is O E Burge MSH 401H AWB_wep_177 - 23598 Proj. 2/2021	Grid System: NAD83 / UTM Zone 17 North, US Feet
True vertical depths are referenced to SDC 41 (RKB)	North Reference: Grid north
Reference w/ depth measured depths are referenced to SDC 41 (RKB)	Scale: True distance
SDC 41 (RKB) to Mean Sea Level: 1388.28 feet	Coordinates are in feet referenced to GRS
Mean Sea Level to Mud line (At Slot Slot 401H): 1342.2 feet	Depth: 0 to 7700
Grid w/ depth MDs are referenced to each well's default MD datum	Created by: Jandrea on 2021-10-13, Deliberate: V9, JPL, BA, STP/PLS, Dcm

Wellpath Composition						
Well ID	Event ID	Tool	Rate	Log Interval	Interval	Survey Date
2P-01	2P-01	0965 MWD-rod	0965 MWD-rod - MWD	1 Tally MWD 177 - 287	08 Burge MSH 401H AWB	8/2021
3P-01	3P-01	0965 MWD-rod	0965 MWD-rod - MWD	1 Tally MWD 362 - 6281	O E Burge MSH 401H AWB	9/2021
3P-02	3P-02	0965 MWD-rod	0965 MWD-rod - MWD	2 BH MWD 6369 - 23598	O E Burge MSH 401H AWB	10/2021

Bottom Hole Location						
MD (ft)	Inc (ft)	Alt (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)
23623.00	91.260	313.260	6959.02	8434.83	-118.00	1743900.71
						14444735.65
						39°47'17"N
						80°49'25.4065"W



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1 Tally MWD 177 - 287' : 0.28° Inc, 117.00ft MD, 117.00ft TVD, -0.02ft VS
2 Tally MWD 362 - 6281' : 0.34° Inc, 362.00ft MD, 362.00ft TVD, -0.79ft VS

HDM2021v11.0 (1900.0 to 2022.0) Dip: 66.55° Field: 52010.1 nT
Magnetic North is 8.34 degrees West of True North (at 8/14/2021)
Grid North is 0.24 degrees East of True North
To correct azimuth from True to Grid subtract 0.24 degrees
To correct azimuth from Magnetic to Grid subtract 8.58 degrees

API: 47051023900000
BH Job#: 111048037
Duration: 9.28.2021-10.5.2021
Rig: SDC 41

1 Tally MWD 177 - 287' : 117.00ft TVD, 0.09ft S, 0.05ft W
2 Tally MWD 362 - 6281' : 362.00ft TVD, 0.91ft S, 0.22ft W

3 BH MWD 6369' - 23598' : 5776.46ft TVD, 2361.44ft S, 75.98ft W

Projection to TD 23623' : 91.26° Inc, 23623.00ft MD, 6959.02ft TVD, 14397.85ft VS

Scale 1 inch = 2200
Azimuth 313.78° with reference 0.00 N, 0.00 E



Actual Wellpath Report

O E Burge MSH 401H AWB_ awp 177' - 23598' Proj: 23623'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	O E Burge MSH 401H
Field	Marshall	API	47051023900000
Facility	O E Burge MSH Pad	Wellbore	O E Burge MSH 401H AWB
Slot	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	0.999612	Report Generated	10/14/2021 at 4:37:59 PM
Convergence at slot	0.24° 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	11.11	-25.99	1743896.70	14436254.05	39°45'3.3725"N	80°37'54.5890"W
Facility Reference Pt			1743922.68	14436242.94	39°45'3.2616"N	80°37'54.2568"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 (RKB) to Facility Vertical Datum	1368.20ft
Horizontal Reference Pt	Slot	SDC 41 (RKB) to Mean Sea Level	1368.20ft
Vertical Reference Pt	SDC 41 (RKB)	SDC 41 (RKB) to Mud Line at Slot (Slot 401H)	26.00ft
MD Reference Pt	SDC 41 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	313.78°

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 JUN 7 2022
 WY Department of
 Environmental Protection

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Operator	SWN PRODUCTION COMPANY, LLC	Well	O E Burge MSH 401H
Field	Marshall	API	4705102390000
Facility	O E Burge MSH Pad	Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H		

WELLPATH DATA (263 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Course Length [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]
0.00†	0.00	0.000	210.110	0.00	0.00	0.00	0.00	1743896.70	14436254.05	39°45'3.3725"N	80°37'54.5890"W	0.00	0.000	0.00
26.00	26.00	0.000	210.110	26.00	0.00	0.00	0.00	1743896.70	14436254.05	39°45'3.3725"N	80°37'54.5890"W	0.00	0.000	0.00
177.00	151.00	0.210	210.110	177.00	-0.07	-0.24	-0.14	1743896.56	14436253.81	39°45'3.3701"N	80°37'54.5908"W	0.28	210.110	0.14
222.00	45.00	0.250	165.080	222.00	-0.17	-0.41	-0.15	1743896.55	14436253.64	39°45'3.3685"N	80°37'54.5910"W	0.43	200.904	0.40
287.00	65.00	0.250	153.910	287.00	-0.42	-0.67	-0.06	1743896.64	14436253.38	39°45'3.3658"N	80°37'54.5898"W	0.67	184.781	0.07
362.00	75.00	0.340	115.640	362.00	-0.79	-0.91	0.22	1743896.92	14436253.14	39°45'3.3634"N	80°37'54.5863"W	0.94	166.661	0.28
423.00	61.00	0.360	113.110	423.00	-1.14	-1.07	0.56	1743897.26	14436252.98	39°45'3.3619"N	80°37'54.5820"W	1.20	152.473	0.04
513.00	90.00	1.670	258.240	512.99	-0.66	-1.45	-0.47	1743896.23	14436252.81	39°45'3.3582"N	80°37'54.5951"W	1.52	197.945	2.20
603.00	90.00	3.910	256.010	602.87	1.72	-2.45	-4.73	1743891.97	14436251.60	39°45'3.3484"N	80°37'54.6497"W	5.33	242.576	2.49
694.00	91.00	5.510	262.330	693.56	6.09	-3.79	-12.07	1743884.63	14436250.26	39°45'3.3355"N	80°37'54.7438"W	12.65	252.579	1.85
785.00	91.00	7.330	263.550	783.99	12.53	-5.02	-22.17	1743874.54	14436249.03	39°45'3.3237"N	80°37'54.8731"W	22.73	257.234	2.01
875.00	90.00	8.040	258.900	873.18	19.83	-6.88	-34.05	1743862.66	14436247.17	39°45'3.3058"N	80°37'55.0253"W	34.74	258.578	1.05
967.00	92.00	9.380	243.430	964.13	26.05	-11.47	-47.07	1743849.65	14436242.58	39°45'3.2610"N	80°37'55.1923"W	48.45	256.303	2.92
1059.00	92.00	11.270	228.360	1054.65	29.29	-20.80	-60.50	1743836.22	14436233.26	39°45'3.1693"N	80°37'55.3647"W	63.98	251.025	3.57
1150.00	91.00	11.050	213.440	1143.95	28.43	-33.99	-71.95	1743824.77	14436220.07	39°45'3.0395"N	80°37'55.5120"W	79.58	244.714	3.17
1243.00	93.00	10.230	200.490	1235.36	23.57	-49.17	-79.76	1743816.97	14436204.90	39°45'2.8898"N	80°37'55.6127"W	93.69	238.348	2.71
1335.00	92.00	9.570	192.230	1326.00	16.34	-64.29	-84.24	1743812.50	14436189.78	39°45'2.7405"N	80°37'55.6709"W	105.97	232.648	1.70
1425.00	90.00	7.700	182.250	1414.98	8.42	-77.63	-86.06	1743810.67	14436176.45	39°45'2.6087"N	80°37'55.6949"W	115.90	227.947	2.66
1516.00	91.00	10.030	176.050	1504.89	-1.49	-91.63	-85.75	1743810.98	14436162.45	39°45'2.4704"N	80°37'55.6917"W	125.50	223.102	2.76
1606.00	90.00	14.270	172.860	1592.85	-15.90	-110.46	-83.83	1743812.90	14436143.63	39°45'2.2842"N	80°37'55.6681"W	138.67	217.195	4.77
1698.00	92.00	17.190	174.510	1681.40	-35.01	-135.25	-81.12	1743815.61	14436118.85	39°45'2.0391"N	80°37'55.6347"W	157.72	210.954	3.21
1789.00	91.00	19.240	180.310	1767.84	-55.52	-163.64	-79.92	1743816.81	14436090.48	39°45'1.7585"N	80°37'55.6208"W	182.11	206.030	3.00
1880.00	91.00	19.320	185.730	1853.74	-75.11	-193.61	-81.50	1743815.23	14436060.51	39°45'1.4624"N	80°37'55.6427"W	210.07	202.829	1.97
1972.00	92.00	18.610	189.980	1940.75	-92.66	-223.21	-85.56	1743811.17	14436030.92	39°45'1.1700"N	80°37'55.6962"W	239.05	200.973	1.69
2062.00	90.00	19.240	195.840	2025.90	-107.60	-251.63	-92.10	1743804.63	14436002.52	39°45'0.8895"N	80°37'55.7814"W	267.95	200.104	2.22
2154.00	92.00	21.850	192.420	2112.04	-123.62	-282.93	-99.92	1743796.82	14435971.23	39°45'0.5804"N	80°37'55.8832"W	300.06	199.451	3.12
2245.00	91.00	25.320	186.480	2195.44	-144.23	-318.82	-105.76	1743790.98	14435935.35	39°45'0.2259"N	80°37'55.9599"W	335.91	198.352	4.62
2337.00	92.00	28.680	183.930	2277.40	-170.31	-360.41	-109.50	1743787.24	14435893.78	39°44'59.8151"N	80°37'56.0099"W	376.67	196.900	3.86
2428.00	91.00	28.510	179.080	2357.31	-199.58	-403.91	-110.65	1743786.10	14435850.29	39°44'59.3852"N	80°37'56.0269"W	418.79	195.319	2.56
2519.00	91.00	30.940	174.360	2436.34	-232.63	-448.92	-108.00	1743788.74	14435805.30	39°44'58.9403"N	80°37'55.9953"W	461.73	193.527	3.71

REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	O E Burge MSH 401H
Field	Marshall		API	47051023900000
Facility	O E Burge MSH Pad		Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H			

WELLPATH DATA (263 stations)														
MD [ft]	Course Length [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]
2610.00	91.00	30.830	175.880	2514.44	-267.70	-495.46	-104.02	1743792.72	14435758.78	39°44'58.4802"N	80°37'55.9469"W	506.26	191.857	0.87
2700.00	90.00	28.280	177.140	2592.73	-300.32	-539.76	-101.30	1743795.44	14435714.50	39°44'58.0423"N	80°37'55.9144"W	549.19	190.629	2.92
2793.00	93.00	28.500	175.470	2674.54	-332.91	-583.89	-98.45	1743798.29	14435670.39	39°44'57.6061"N	80°37'55.8802"W	592.13	189.571	0.89
2901.00	108.00	28.050	173.660	2769.66	-371.63	-634.81	-93.61	1743803.13	14435619.49	39°44'57.1026"N	80°37'55.8209"W	641.68	188.389	0.90
2993.00	92.00	29.940	174.010	2850.12	-405.76	-679.15	-88.83	1743807.91	14435575.17	39°44'56.6643"N	80°37'55.7620"W	684.93	187.451	2.06
3087.00	94.00	31.090	175.280	2931.10	-441.85	-726.67	-84.38	1743812.35	14435527.67	39°44'56.1945"N	80°37'55.7075"W	731.55	186.624	1.40
3177.00	90.00	31.750	175.150	3007.91	-477.03	-773.42	-80.47	1743816.26	14435480.93	39°44'55.7323"N	80°37'55.6599"W	777.60	185.940	0.74
3270.00	93.00	30.680	177.830	3087.44	-512.44	-821.52	-77.50	1743819.23	14435432.85	39°44'55.2568"N	80°37'55.6244"W	825.16	185.389	1.89
3360.00	90.00	29.800	179.200	3165.20	-544.65	-866.82	-76.32	1743820.41	14435387.57	39°44'54.8090"N	80°37'55.6117"W	870.18	185.031	1.24
3452.00	92.00	29.530	179.190	3245.14	-576.61	-912.35	-75.68	1743821.05	14435342.05	39°44'54.3591"N	80°37'55.6059"W	915.48	184.742	0.29
3543.00	91.00	29.740	179.520	3324.24	-608.11	-957.35	-75.17	1743821.56	14435297.08	39°44'53.9144"N	80°37'55.6018"W	960.29	184.490	0.29
3634.00	91.00	30.230	179.290	3403.06	-639.91	-1002.82	-74.70	1743822.03	14435251.62	39°44'53.4649"N	80°37'55.5981"W	1005.60	184.260	0.55
3724.00	90.00	29.710	181.450	3481.02	-670.81	-1047.77	-74.98	1743821.75	14435206.68	39°44'53.0207"N	80°37'55.6041"W	1050.45	184.093	1.33
3815.00	91.00	29.300	179.620	3560.22	-701.51	-1092.58	-75.41	1743821.32	14435161.89	39°44'52.5779"N	80°37'55.6119"W	1095.18	183.948	1.09
3906.00	91.00	28.990	182.890	3639.71	-731.46	-1136.88	-76.37	1743820.36	14435117.62	39°44'52.1402"N	80°37'55.6265"W	1139.44	183.843	1.78
3997.00	91.00	29.280	182.710	3719.19	-760.51	-1181.13	-78.53	1743818.20	14435073.38	39°44'51.7029"N	80°37'55.6566"W	1183.74	183.804	0.33
4090.00	93.00	29.190	181.950	3800.35	-790.58	-1226.51	-80.38	1743816.35	14435028.02	39°44'51.2545"N	80°37'55.6826"W	1229.14	183.750	0.41
4181.00	91.00	29.470	180.590	3879.68	-820.70	-1271.07	-81.37	1743815.37	14434983.47	39°44'50.8142"N	80°37'55.6976"W	1273.68	183.663	0.79
4273.00	92.00	30.660	179.250	3959.31	-852.64	-1317.16	-81.29	1743815.44	14434937.40	39°44'50.3587"N	80°37'55.6990"W	1319.67	183.532	1.49
4366.00	93.00	30.310	177.740	4039.45	-886.16	-1364.32	-80.06	1743816.68	14434890.26	39°44'49.8926"N	80°37'55.6857"W	1366.67	183.358	0.91
4456.00	90.00	30.310	178.490	4117.15	-918.65	-1409.72	-78.56	1743818.17	14434844.88	39°44'49.4439"N	80°37'55.6690"W	1411.90	183.190	0.42
4547.00	91.00	29.790	178.940	4195.92	-950.91	-1455.27	-77.54	1743819.19	14434799.34	39°44'48.9936"N	80°37'55.6582"W	1457.34	183.050	0.62
4639.00	92.00	29.280	181.250	4275.96	-982.23	-1500.62	-77.61	1743819.12	14434754.02	39°44'48.5455"N	80°37'55.6615"W	1502.62	182.961	1.36
4731.00	92.00	29.110	180.160	4356.28	-1012.88	-1545.49	-78.16	1743818.57	14434709.16	39°44'48.1021"N	80°37'55.6709"W	1547.46	182.895	0.61
4822.00	91.00	28.800	177.480	4435.91	-1044.00	-1589.52	-77.26	1743819.47	14434665.15	39°44'47.6669"N	80°37'55.6617"W	1591.40	182.783	1.47
4914.00	92.00	28.820	179.330	4516.52	-1075.55	-1633.84	-76.02	1743820.71	14434620.85	39°44'47.2289"N	80°37'55.6482"W	1635.61	182.664	0.97
5009.00	95.00	28.150	179.850	4600.02	-1107.13	-1679.14	-75.70	1743821.03	14434575.56	39°44'46.7811"N	80°37'55.6464"W	1680.85	182.581	0.75
5100.00	91.00	29.020	180.010	4679.93	-1137.29	-1722.68	-75.65	1743821.08	14434532.04	39°44'46.3508"N	80°37'55.6481"W	1724.34	182.514	0.96
5191.00	91.00	30.110	179.100	4759.08	-1168.61	-1767.58	-75.29	1743821.44	14434487.16	39°44'45.9071"N	80°37'55.6459"W	1769.18	182.439	1.30
5282.00	91.00	29.720	179.500	4837.95	-1200.41	-1812.96	-74.74	1743821.99	14434441.80	39°44'45.4586"N	80°37'55.6412"W	1814.50	182.361	0.48

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Field	Marshall		API	47051023900000
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Slot	Slot 401H			

WELLPATH DATA (263 stations)

MD [ft]	Course Length [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]
5374.00	92.00	30.600	178.990	4917.50	-1232.83	-1859.18	-74.12	1743822.61	14434395.60	39°44'45.0018"N	80°37'55.6358"W	1860.65	182.283	1.00
5466.00	92.00	30.420	178.810	4996.76	-1265.79	-1905.88	-73.23	1743823.50	14434348.92	39°44'44.5403"N	80°37'55.6267"W	1907.28	182.200	0.22
5556.00	90.00	30.730	179.930	5074.25	-1297.82	-1951.65	-72.73	1743824.00	14434303.16	39°44'44.0879"N	80°37'55.6227"W	1953.01	182.134	0.72
5647.00	91.00	30.730	178.820	5152.47	-1330.36	-1998.15	-72.22	1743824.51	14434256.68	39°44'43.6284"N	80°37'55.6187"W	1999.45	182.070	0.62
5739.00	92.00	30.670	183.280	5231.59	-1362.21	-2045.08	-73.08	1743823.65	14434209.77	39°44'43.1646"N	80°37'55.6321"W	2046.38	182.046	2.48
5830.00	91.00	29.170	180.410	5310.46	-1392.52	-2090.43	-74.56	1743822.17	14434164.43	39°44'42.7164"N	80°37'55.6535"W	2091.76	182.043	2.28
5921.00	91.00	29.110	179.260	5389.94	-1423.27	-2134.74	-74.44	1743822.29	14434120.14	39°44'42.2785"N	80°37'55.6542"W	2136.04	181.997	0.62
6010.00	89.00	29.900	180.390	5467.40	-1453.68	-2178.57	-74.31	1743822.42	14434076.33	39°44'41.8454"N	80°37'55.6549"W	2179.84	181.954	1.09
6102.00	92.00	30.270	181.250	5547.01	-1485.11	-2224.68	-74.97	1743821.76	14434030.23	39°44'41.3897"N	80°37'55.6658"W	2225.95	181.930	0.62
6191.00	89.00	29.600	180.820	5624.13	-1515.25	-2269.09	-75.77	1743820.96	14433985.85	39°44'40.9509"N	80°37'55.6784"W	2270.35	181.913	0.79
6281.00	90.00	31.260	180.580	5701.73	-1546.39	-2314.67	-76.33	1743820.40	14433940.28	39°44'40.5005"N	80°37'55.6879"W	2315.93	181.889	1.85
6369.00	88.00	32.500	178.590	5776.46	-1578.79	-2361.14	-75.98	1743820.75	14433893.83	39°44'40.0412"N	80°37'55.6859"W	2362.36	181.843	1.85
6459.00	90.00	31.930	174.540	5852.61	-1613.98	-2409.01	-73.12	1743823.61	14433845.98	39°44'39.5680"N	80°37'55.6518"W	2410.11	181.739	2.48
6548.00	89.00	29.230	175.360	5929.23	-1648.07	-2454.10	-69.12	1743827.61	14433800.91	39°44'39.1222"N	80°37'55.6030"W	2455.07	181.613	3.07
6598.00	50.00	27.660	176.470	5973.19	-1665.73	-2477.85	-67.42	1743829.31	14433777.16	39°44'38.8874"N	80°37'55.5824"W	2478.77	181.559	3.31
6643.00	45.00	27.030	175.680	6013.16	-1681.02	-2498.48	-66.00	1743830.72	14433756.55	39°44'38.6835"N	80°37'55.5654"W	2499.35	181.513	1.62
6734.00	91.00	28.120	174.810	6093.82	-1712.59	-2540.45	-62.51	1743834.22	14433714.59	39°44'38.2685"N	80°37'55.5228"W	2541.22	181.409	1.28
6825.00	91.00	30.510	182.820	6173.20	-1743.92	-2584.91	-61.70	1743835.02	14433670.15	39°44'37.8292"N	80°37'55.5149"W	2585.64	181.367	5.04
6916.00	91.00	22.950	198.170	6254.51	-1766.80	-2624.94	-68.39	1743828.34	14433630.13	39°44'37.4338"N	80°37'55.6026"W	2625.83	181.492	11.19
7006.00	90.00	17.320	226.370	6339.17	-1773.80	-2650.94	-83.61	1743813.13	14433604.15	39°44'37.1775"N	80°37'55.7988"W	2652.26	181.806	12.30
7099.00	93.00	15.890	266.390	6428.57	-1764.52	-2661.32	-106.41	1743790.34	14433593.76	39°44'37.0758"N	80°37'56.0912"W	2663.45	182.290	12.15
7192.00	93.00	19.440	282.310	6517.23	-1742.68	-2658.82	-134.26	1743762.50	14433596.26	39°44'37.1016"N	80°37'56.4476"W	2662.21	182.891	6.41
7283.00	91.00	23.030	293.480	6602.07	-1713.05	-2648.50	-165.40	1743731.36	14433606.59	39°44'37.2049"N	80°37'56.8458"W	2653.66	183.574	5.93
7374.00	91.00	28.190	296.260	6684.10	-1675.83	-2631.88	-201.03	1743695.75	14433623.19	39°44'37.3706"N	80°37'57.3010"W	2639.55	184.368	5.82
7465.00	91.00	33.600	311.620	6762.29	-1630.07	-2605.59	-239.22	1743657.58	14433649.48	39°44'37.6320"N	80°37'57.7885"W	2616.55	185.246	10.47
7555.00	90.00	40.230	319.900	6834.25	-1576.19	-2566.75	-276.62	1743620.19	14433688.30	39°44'38.0173"N	80°37'58.2652"W	2581.61	186.151	9.20
7646.00	91.00	45.610	315.240	6900.88	-1514.41	-2521.14	-318.48	1743578.34	14433733.89	39°44'38.4698"N	80°37'58.7988"W	2541.17	187.200	6.86
7736.00	90.00	50.960	315.210	6960.75	-1447.27	-2473.47	-365.78	1743531.06	14433781.55	39°44'38.9428"N	80°37'59.4018"W	2500.37	188.412	5.94
7827.00	91.00	56.370	314.910	7014.64	-1374.01	-2421.60	-417.55	1743479.31	14433833.39	39°44'39.4575"N	80°38'0.0618"W	2457.33	189.783	5.95
7919.00	92.00	64.800	315.730	7059.79	-1293.97	-2364.65	-473.83	1743423.05	14433890.32	39°44'40.0226"N	80°38'0.7794"W	2411.66	191.331	9.20

REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	O E Burge MSH 401H
Field	Marshall	API	47051023900000
Facility	O E Burge MSH Pad	Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H		

WELLPATH DATA (263 stations)														
MD [ft]	Course Length [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]
8010.00	91.00	75.030	315.540	7091.00	-1208.67	-2303.64	-533.52	1743363.39	14433951.31	39°44'40.6280"N	80°38'1.5402"W	2364.61	193.040	11.24
8102.00	92.00	80.510	315.950	7110.48	-1118.84	-2239.26	-596.23	1743300.70	14434015.66	39°44'41.2667"N	80°38'2.3398"W	2317.28	194.910	5.97
8195.00	93.00	89.480	313.120	7118.59	-1026.31	-2174.37	-662.21	1743234.75	14434080.53	39°44'41.9107"N	80°38'3.1810"W	2272.97	196.938	10.11
8287.00	92.00	89.850	312.640	7119.12	-934.32	-2111.77	-729.63	1743167.36	14434143.11	39°44'42.5321"N	80°38'4.0408"W	2234.26	199.060	0.66
8378.00	91.00	88.860	313.140	7120.15	-843.34	-2049.84	-796.29	1743100.72	14434205.01	39°44'43.1468"N	80°38'4.8910"W	2199.07	201.229	1.22
8469.00	91.00	90.220	313.090	7120.88	-752.35	-1987.65	-862.72	1743034.32	14434267.18	39°44'43.7641"N	80°38'5.7382"W	2166.80	203.463	1.50
8561.00	92.00	90.460	314.360	7120.33	-660.36	-1924.06	-929.20	1742967.86	14434330.74	39°44'44.3952"N	80°38'6.5860"W	2136.68	205.778	1.40
8654.00	93.00	90.370	314.880	7119.66	-567.37	-1858.74	-995.39	1742901.69	14434396.04	39°44'45.0434"N	80°38'7.4300"W	2108.49	208.170	0.57
8747.00	93.00	88.180	312.600	7120.84	-474.39	-1794.45	-1062.57	1742834.54	14434460.30	39°44'45.6814"N	80°38'8.2867"W	2085.45	210.632	3.40
8839.00	92.00	90.370	314.910	7122.00	-382.41	-1730.84	-1129.01	1742768.13	14434523.89	39°44'46.3127"N	80°38'9.1339"W	2066.51	213.116	3.46
8932.00	93.00	89.880	314.470	7121.80	-289.42	-1665.44	-1195.12	1742702.04	14434589.26	39°44'46.9618"N	80°38'9.9769"W	2049.88	215.663	0.71
9023.00	91.00	90.060	314.470	7121.85	-198.43	-1601.69	-1260.06	1742637.13	14434652.99	39°44'47.5944"N	80°38'10.8050"W	2037.93	218.192	0.20
9115.00	92.00	90.250	314.810	7121.60	-106.44	-1537.04	-1325.52	1742571.69	14434717.61	39°44'48.2358"N	80°38'11.6397"W	2029.66	220.774	0.42
9207.00	92.00	87.840	313.290	7123.13	-14.46	-1473.09	-1391.63	1742505.61	14434781.53	39°44'48.8705"N	80°38'12.4827"W	2026.48	223.371	3.10
9297.00	90.00	90.430	314.480	7124.49	75.52	-1410.72	-1456.48	1742440.79	14434843.88	39°44'49.4895"N	80°38'13.3097"W	2027.67	225.914	3.17
9388.00	91.00	89.880	314.600	7124.24	166.51	-1346.89	-1521.34	1742375.95	14434907.69	39°44'50.1229"N	80°38'14.1368"W	2031.89	228.481	0.62
9478.00	90.00	89.750	313.870	7124.53	256.51	-1284.10	-1585.83	1742311.49	14434970.45	39°44'50.7460"N	80°38'14.9591"W	2040.53	231.002	0.82
9567.00	89.00	90.340	314.680	7124.46	345.50	-1221.97	-1649.55	1742247.79	14435032.55	39°44'51.3625"N	80°38'15.7717"W	2052.86	233.469	1.13
9659.00	92.00	89.940	315.190	7124.24	437.48	-1157.00	-1714.68	1742182.69	14435097.51	39°44'52.0073"N	80°38'16.6021"W	2068.51	235.990	0.70
9749.00	90.00	89.940	314.770	7124.33	527.46	-1093.38	-1778.34	1742119.06	14435161.10	39°44'52.6385"N	80°38'17.4138"W	2087.57	238.415	0.47
9837.00	88.00	90.220	312.540	7124.21	615.46	-1032.63	-1842.00	1742055.42	14435221.82	39°44'53.2414"N	80°38'18.2258"W	2111.71	240.725	2.55
9926.00	89.00	90.000	313.370	7124.04	704.45	-971.99	-1907.14	1741990.30	14435282.44	39°44'53.8433"N	80°38'19.0566"W	2140.55	242.994	0.96
10016.00	90.00	90.580	312.130	7123.58	794.43	-910.90	-1973.23	1741924.24	14435343.51	39°44'54.4497"N	80°38'19.8995"W	2173.33	245.221	1.52
10105.00	89.00	89.510	312.980	7123.51	883.41	-850.71	-2038.78	1741858.71	14435403.67	39°44'55.0471"N	80°38'20.7357"W	2209.15	247.351	1.54
10195.00	90.00	90.340	313.390	7123.63	973.40	-789.12	-2104.41	1741793.11	14435465.24	39°44'55.6584"N	80°38'21.5727"W	2247.50	249.445	1.03
10284.00	89.00	90.490	314.040	7122.99	1062.40	-727.61	-2168.73	1741728.81	14435526.72	39°44'56.2688"N	80°38'22.3931"W	2287.54	251.453	0.75
10373.00	89.00	89.020	312.680	7123.37	1151.39	-666.51	-2233.44	1741664.13	14435587.80	39°44'56.8752"N	80°38'23.2183"W	2330.77	253.384	2.25
10462.00	89.00	89.600	312.250	7124.44	1240.36	-606.43	-2299.09	1741598.51	14435647.86	39°44'57.4716"N	80°38'24.0557"W	2377.72	255.224	0.81
10552.00	90.00	90.250	313.750	7124.56	1330.35	-545.05	-2364.91	1741532.72	14435709.21	39°44'58.0808"N	80°38'24.8953"W	2426.90	257.021	1.82
10642.00	90.00	89.350	313.480	7124.87	1420.35	-482.97	-2430.06	1741467.58	14435771.27	39°44'58.6969"N	80°38'25.7263"W	2477.59	258.759	1.04

REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	O E Burge MSH 401H
Field	Marshall		API	47051023900000
Facility	O E Burge MSH Pad		Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H			

WELLPATH DATA (263 stations)														
MD [ft]	Course Length [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]
10730.00	88.00	89.720	313.720	7125.58	1508.34	-422.29	-2493.79	1741403.88	14435831.93	39°44'59.2992"N	80°38'26.5390"W	2529.29	260.389	0.50
10819.00	89.00	89.510	313.500	7126.18	1597.34	-360.90	-2558.23	1741339.47	14435893.29	39°44'59.9084"N	80°38'27.3609"W	2583.56	261.970	0.34
10909.00	90.00	88.980	312.670	7127.37	1687.33	-299.43	-2623.95	1741273.77	14435954.74	39°45'0.5185"N	80°38'28.1992"W	2640.98	263.490	1.09
10998.00	89.00	89.200	313.050	7128.78	1776.30	-238.90	-2689.18	1741208.57	14436015.25	39°45'1.1193"N	80°38'29.0312"W	2699.77	264.923	0.49
11086.00	88.00	89.720	312.560	7129.61	1864.29	-179.10	-2753.74	1741144.03	14436075.02	39°45'1.7128"N	80°38'29.8547"W	2759.56	266.279	0.81
11174.00	88.00	89.690	312.740	7130.06	1952.27	-119.48	-2818.47	1741079.33	14436134.61	39°45'2.3045"N	80°38'30.6803"W	2821.00	267.573	0.21
11263.00	89.00	88.740	312.540	7131.28	2041.24	-59.20	-2883.93	1741013.90	14436194.87	39°45'2.9029"N	80°38'31.5154"W	2884.54	268.824	1.09
11353.00	90.00	88.830	312.860	7133.19	2131.20	1.82	-2950.06	1740947.79	14436255.87	39°45'3.5085"N	80°38'32.3589"W	2950.06	270.035	0.37
11444.00	91.00	88.710	313.380	7135.15	2222.18	64.00	-3016.46	1740881.41	14436318.03	39°45'4.1257"N	80°38'33.2060"W	3017.14	271.216	0.59
11536.00	92.00	88.710	313.250	7137.22	2314.15	127.10	-3083.39	1740814.52	14436381.10	39°45'4.7519"N	80°38'34.0596"W	3086.00	272.360	0.14
11629.00	93.00	89.350	313.910	7138.79	2407.14	191.20	-3150.75	1740747.18	14436445.18	39°45'5.3880"N	80°38'34.9187"W	3156.54	273.473	0.99
11719.00	90.00	88.890	313.310	7140.17	2497.12	253.27	-3215.90	1740682.05	14436507.22	39°45'6.0040"N	80°38'35.7498"W	3225.86	274.503	0.84
11810.00	91.00	88.890	314.010	7141.94	2588.11	316.08	-3281.72	1740616.26	14436570.01	39°45'6.6274"N	80°38'36.5893"W	3296.91	275.502	0.77
11900.00	90.00	90.030	314.940	7142.78	2678.09	379.13	-3345.94	1740552.07	14436633.04	39°45'7.2530"N	80°38'37.4082"W	3367.35	276.465	1.63
11990.00	90.00	89.080	313.720	7143.48	2768.08	442.02	-3410.31	1740487.72	14436695.90	39°45'7.8770"N	80°38'38.2293"W	3438.84	277.385	1.72
12082.00	92.00	89.450	314.090	7144.66	2860.07	505.81	-3476.59	1740421.46	14436759.67	39°45'8.5101"N	80°38'39.0746"W	3513.20	278.278	0.57
12172.00	90.00	89.260	313.570	7145.68	2950.07	568.14	-3541.51	1740356.57	14436821.97	39°45'9.1285"N	80°38'39.9027"W	3586.80	279.114	0.62
12262.00	90.00	89.420	313.060	7146.71	3040.06	629.87	-3606.99	1740291.11	14436883.68	39°45'9.7412"N	80°38'40.7379"W	3661.58	279.905	0.59
12354.00	92.00	89.540	313.400	7147.55	3132.05	692.88	-3674.02	1740224.11	14436946.66	39°45'10.3666"N	80°38'41.5929"W	3738.79	280.680	0.39
12444.00	90.00	89.050	313.880	7148.66	3222.04	754.99	-3739.15	1740159.01	14437008.75	39°45'10.9829"N	80°38'42.4236"W	3814.61	281.415	0.76
12536.00	92.00	89.200	312.180	7150.06	3314.02	817.76	-3806.39	1740091.79	14437071.49	39°45'11.6058"N	80°38'43.2814"W	3893.24	282.125	1.85
12628.00	92.00	91.170	315.670	7149.76	3406.00	881.57	-3872.64	1740025.57	14437135.27	39°45'12.2390"N	80°38'44.1263"W	3971.71	282.824	4.36
12720.00	92.00	88.950	312.310	7149.67	3497.98	945.45	-3938.82	1739959.42	14437199.13	39°45'12.8730"N	80°38'44.9704"W	4050.70	283.498	4.38
12813.00	93.00	90.830	313.640	7149.85	3590.97	1008.84	-4006.86	1739891.41	14437262.50	39°45'13.5021"N	80°38'45.8384"W	4131.91	284.132	2.48
12901.00	88.00	89.420	314.090	7149.65	3678.96	1069.82	-4070.30	1739827.99	14437323.46	39°45'14.1072"N	80°38'46.6476"W	4208.55	284.726	1.68
12993.00	92.00	89.230	313.820	7150.74	3770.96	1133.67	-4136.52	1739761.79	14437387.28	39°45'14.7408"N	80°38'47.4923"W	4289.06	285.326	0.36
13084.00	91.00	88.920	313.140	7152.21	3861.94	1196.28	-4202.55	1739695.79	14437449.87	39°45'15.3621"N	80°38'48.3344"W	4369.50	285.889	0.82
13176.00	92.00	89.290	313.910	7153.64	3953.93	1259.63	-4269.24	1739629.12	14437513.19	39°45'15.9908"N	80°38'49.1852"W	4451.19	286.439	0.93
13267.00	91.00	90.400	313.290	7153.89	4044.93	1322.39	-4335.14	1739563.25	14437575.92	39°45'16.6135"N	80°38'50.0258"W	4532.35	286.964	1.40
13360.00	93.00	88.740	314.230	7154.59	4137.92	1386.70	-4402.31	1739496.11	14437640.21	39°45'17.2518"N	80°38'50.8825"W	4615.54	287.484	2.05



Actual Wellpath Report

O E Burge MSH 401H AWB_ awp 177' - 23598' Proj: 23623'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	O E Burge MSH 401H
Field	Marshall	API	4705102390000
Facility	O E Burge MSH Pad	Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H		

WELLPATH DATA (263 stations)

MD [ft]	Course Length [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]
13452.00	92.00	89.010	313.480	7156.39	4229.90	1450.43	-4468.63	1739429.81	14437703.92	39°45'17.8842"N	80°38'51.7286"W	4698.13	287.982	0.87
13543.00	91.00	89.450	313.530	7157.62	4320.89	1513.07	-4534.63	1739363.84	14437766.53	39°45'18.5058"N	80°38'52.5704"W	4780.40	288.452	0.49
13635.00	92.00	89.780	313.600	7158.24	4412.89	1576.48	-4601.29	1739297.20	14437829.91	39°45'19.1349"N	80°38'53.4208"W	4863.86	288.912	0.37
13728.00	93.00	89.480	313.340	7158.84	4505.89	1640.46	-4668.78	1739229.74	14437893.87	39°45'19.7699"N	80°38'54.2817"W	4948.60	289.360	0.43
13820.00	92.00	89.320	313.590	7159.80	4597.88	1703.74	-4735.55	1739162.99	14437957.13	39°45'20.3979"N	80°38'55.1335"W	5032.71	289.788	0.32
13913.00	93.00	92.250	314.540	7158.53	4690.86	1768.40	-4802.36	1739096.21	14438021.77	39°45'21.0395"N	80°38'55.9857"W	5117.61	290.216	3.31
14003.00	90.00	90.490	317.110	7156.37	4780.76	1832.93	-4865.05	1739033.54	14438086.26	39°45'21.6796"N	80°38'56.7851"W	5198.88	290.644	3.46
14095.00	92.00	92.400	315.890	7154.05	4872.63	1899.64	-4928.36	1738970.26	14438152.95	39°45'22.3413"N	80°38'57.5923"W	5281.79	291.079	2.46
14187.00	92.00	88.520	312.650	7153.31	4964.59	1963.83	-4994.21	1738904.43	14438217.12	39°45'22.9783"N	80°38'58.4323"W	5366.45	291.466	5.49
14279.00	92.00	89.820	313.810	7154.65	5056.57	2026.84	-5061.24	1738837.44	14438280.10	39°45'23.6035"N	80°38'59.2873"W	5451.99	291.824	1.89
14371.00	92.00	90.860	313.950	7154.10	5148.57	2090.61	-5127.55	1738771.15	14438343.84	39°45'24.2363"N	80°39'0.1332"W	5537.36	292.182	1.14
14462.00	91.00	91.200	314.540	7152.47	5239.55	2154.09	-5192.72	1738706.00	14438407.30	39°45'24.8662"N	80°39'0.9646"W	5621.79	292.530	0.75
14554.00	92.00	89.970	314.310	7151.53	5331.54	2218.48	-5258.42	1738640.33	14438471.67	39°45'25.5051"N	80°39'1.8026"W	5707.25	292.874	1.36
14645.00	91.00	90.860	314.520	7150.87	5422.53	2282.17	-5323.42	1738575.35	14438535.33	39°45'26.1370"N	80°39'2.6317"W	5791.99	293.205	1.00
14737.00	92.00	91.390	315.080	7149.06	5514.50	2346.98	-5388.69	1738510.11	14438600.11	39°45'26.7800"N	80°39'3.4642"W	5877.61	293.535	0.84
14826.00	89.00	90.890	314.890	7147.29	5603.46	2409.88	-5451.62	1738447.20	14438662.99	39°45'27.4041"N	80°39'4.2669"W	5960.52	293.848	0.60
14918.00	92.00	91.140	314.960	7145.66	5695.43	2474.84	-5516.75	1738382.10	14438727.93	39°45'28.0486"N	80°39'5.0976"W	6046.44	294.161	0.28
15009.00	91.00	90.340	314.920	7144.49	5786.40	2539.11	-5581.16	1738317.71	14438792.17	39°45'28.6862"N	80°39'5.9191"W	6131.60	294.463	0.88
15099.00	90.00	90.520	314.610	7143.81	5876.38	2602.49	-5645.06	1738253.84	14438855.53	39°45'29.3150"N	80°39'6.7341"W	6216.08	294.751	0.40
15191.00	92.00	90.460	315.400	7143.02	5968.36	2667.55	-5710.11	1738188.82	14438920.56	39°45'29.9604"N	80°39'7.5637"W	6302.47	295.040	0.86
15284.00	93.00	89.970	314.770	7142.67	6061.33	2733.40	-5775.77	1738123.18	14438986.39	39°45'30.6138"N	80°39'8.4012"W	6389.91	295.326	0.86
15375.00	91.00	90.620	314.650	7142.21	6152.32	2797.42	-5840.44	1738058.54	14439050.38	39°45'31.2490"N	80°39'9.2261"W	6475.82	295.593	0.73
15467.00	92.00	90.950	313.460	7140.95	6244.31	2861.39	-5906.55	1737992.45	14439114.32	39°45'31.8836"N	80°39'10.0695"W	6563.14	295.848	1.34
15558.00	91.00	91.230	313.720	7139.21	6335.29	2924.12	-5972.45	1737926.58	14439177.03	39°45'32.5061"N	80°39'10.9102"W	6649.86	296.086	0.42
15650.00	92.00	91.170	313.320	7137.29	6427.27	2987.46	-6039.14	1737859.91	14439240.34	39°45'33.1346"N	80°39'11.7611"W	6737.67	296.321	0.44
15742.00	92.00	91.200	312.800	7135.38	6519.24	3050.26	-6106.35	1737792.73	14439303.12	39°45'33.7578"N	80°39'12.6185"W	6825.80	296.543	0.57
15832.00	90.00	91.380	312.070	7133.36	6609.19	3110.97	-6172.75	1737726.35	14439363.81	39°45'34.3604"N	80°39'13.4658"W	6912.38	296.747	0.84
15923.00	91.00	92.220	314.660	7130.50	6700.14	3173.42	-6238.87	1737660.26	14439426.23	39°45'34.9800"N	80°39'14.3094"W	6999.58	296.960	2.99
16016.00	93.00	91.510	313.020	7127.47	6793.08	3237.80	-6305.91	1737593.24	14439490.59	39°45'35.6188"N	80°39'15.1646"W	7088.57	297.178	1.92
16108.00	92.00	91.170	312.470	7125.32	6885.04	3300.22	-6373.46	1737525.73	14439552.99	39°45'36.2384"N	80°39'16.0264"W	7177.22	297.375	0.70

REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	O E Burge MSH 401H
Field	Marshall	API	47051023900000
Facility	O E Burge MSH Pad	Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H		

WELLPATH DATA (263 stations)														
MD [ft]	Course Length [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]
16198.00	90.00	91.230	313.170	7123.44	6975.01	3361.38	-6439.46	1737459.75	14439614.12	39°45'36.8453"N	80°39'16.8685"W	7263.99	297.564	0.78
16291.00	93.00	91.050	312.190	7121.59	7067.97	3424.41	-6507.81	1737391.42	14439677.13	39°45'37.4708"N	80°39'17.7407"W	7353.79	297.753	1.07
16381.00	90.00	91.110	312.190	7119.89	7157.92	3484.85	-6574.48	1737324.78	14439737.54	39°45'38.0706"N	80°39'18.5914"W	7440.97	297.926	0.07
16472.00	91.00	91.170	312.640	7118.08	7248.88	3546.21	-6641.65	1737257.64	14439798.88	39°45'38.6796"N	80°39'19.4485"W	7529.09	298.099	0.50
16564.00	92.00	91.200	313.220	7116.18	7340.85	3608.86	-6709.00	1737190.32	14439861.51	39°45'39.3013"N	80°39'20.3078"W	7618.04	298.276	0.63
16654.00	90.00	91.020	313.610	7114.43	7430.83	3670.71	-6774.36	1737124.98	14439923.32	39°45'39.9150"N	80°39'21.1417"W	7704.94	298.451	0.48
16744.00	90.00	91.020	313.740	7112.83	7520.82	3732.85	-6839.45	1737059.92	14439985.44	39°45'40.5315"N	80°39'21.9721"W	7791.80	298.625	0.14
16835.00	91.00	91.290	313.350	7111.00	7611.80	3795.53	-6905.39	1736994.00	14440048.10	39°45'41.1535"N	80°39'22.8134"W	7879.75	298.795	0.52
16926.00	91.00	91.200	313.520	7109.02	7702.77	3858.08	-6971.46	1736927.96	14440110.62	39°45'41.7742"N	80°39'23.6563"W	7967.81	298.961	0.21
17016.00	90.00	91.850	313.840	7106.62	7792.74	3920.21	-7036.52	1736862.92	14440172.73	39°45'42.3907"N	80°39'24.4865"W	8054.86	299.123	0.80
17109.00	93.00	91.910	313.750	7103.57	7885.69	3984.54	-7103.62	1736795.85	14440237.04	39°45'43.0290"N	80°39'25.3424"W	8144.81	299.289	0.12
17199.00	90.00	91.110	313.970	7101.20	7975.66	4046.88	-7168.49	1736731.01	14440299.35	39°45'43.6475"N	80°39'26.1701"W	8231.91	299.446	0.92
17290.00	91.00	91.140	313.960	7099.42	8066.64	4110.04	-7233.97	1736665.55	14440362.49	39°45'44.2742"N	80°39'27.0055"W	8320.02	299.603	0.03
17382.00	92.00	91.080	313.310	7097.63	8158.62	4173.51	-7300.54	1736599.00	14440425.94	39°45'44.9040"N	80°39'27.8549"W	8409.29	299.755	0.71
17473.00	91.00	91.170	314.280	7095.85	8249.60	4236.48	-7366.22	1736533.36	14440488.88	39°45'45.5287"N	80°39'28.6928"W	8497.58	299.904	1.07
17566.00	93.00	91.200	313.660	7093.92	8342.58	4301.03	-7433.13	1736466.46	14440553.41	39°45'46.1692"N	80°39'29.5465"W	8587.80	300.055	0.67
17656.00	90.00	91.290	314.340	7091.97	8432.56	4363.54	-7497.86	1736401.76	14440615.89	39°45'46.7894"N	80°39'30.3723"W	8675.16	300.198	0.76
17748.00	92.00	90.950	314.100	7090.17	8524.54	4427.69	-7563.78	1736335.87	14440680.01	39°45'47.4258"N	80°39'31.2133"W	8764.43	300.344	0.45
17840.00	92.00	91.020	312.770	7088.59	8616.52	4490.93	-7630.57	1736269.10	14440743.23	39°45'48.0533"N	80°39'32.0656"W	8854.04	300.479	1.45
17931.00	91.00	91.080	313.360	7086.92	8707.50	4553.06	-7697.05	1736202.65	14440805.33	39°45'48.6698"N	80°39'32.9137"W	8942.86	300.606	0.65
18024.00	93.00	91.050	312.900	7085.19	8800.48	4616.62	-7764.91	1736134.82	14440868.88	39°45'49.3006"N	80°39'33.7796"W	9033.66	300.734	0.50
18208.00	184.00	90.800	314.030	7082.22	8984.45	4743.18	-7898.43	1736001.35	14440995.38	39°45'50.5563"N	80°39'35.4833"W	9213.20	300.986	0.63
18301.00	93.00	90.920	313.930	7080.83	9077.44	4807.75	-7965.35	1735934.46	14441059.93	39°45'51.1970"N	80°39'36.3371"W	9303.83	301.115	0.17
18392.00	91.00	91.110	314.050	7079.21	9168.42	4870.95	-8030.81	1735869.02	14441123.10	39°45'51.8239"N	80°39'37.1723"W	9392.55	301.238	0.25
18484.00	92.00	90.580	312.900	7077.86	9260.41	4934.24	-8097.56	1735802.30	14441186.37	39°45'52.4519"N	80°39'38.0240"W	9482.47	301.356	1.38
18574.00	90.00	90.980	313.430	7076.63	9350.39	4995.80	-8163.20	1735736.68	14441247.90	39°45'53.0628"N	80°39'38.8616"W	9570.57	301.466	0.74
18666.00	92.00	91.510	314.180	7074.63	9442.37	5059.47	-8229.58	1735670.33	14441311.55	39°45'53.6945"N	80°39'39.7085"W	9660.44	301.583	1.00
18759.00	93.00	91.690	314.860	7072.04	9535.33	5124.65	-8295.86	1735604.07	14441376.70	39°45'54.3411"N	80°39'40.5542"W	9751.07	301.705	0.76
18851.00	92.00	91.570	313.170	7069.42	9627.29	5188.55	-8361.99	1735537.96	14441440.58	39°45'54.9751"N	80°39'41.3980"W	9840.93	301.819	1.84
18943.00	92.00	91.380	313.290	7067.05	9719.25	5251.54	-8429.00	1735470.98	14441503.54	39°45'55.6001"N	80°39'42.2531"W	9931.10	301.924	0.24

REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	O E Burge MSH 401H
Field	Marshall		API	47051023900000
Facility	O E Burge MSH Pad		Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H			

WELLPATH DATA (263 stations)														
MD [ft]	Course Length [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]
19034.00	91.00	91.570	313.550	7064.71	9810.22	5314.07	-8495.08	1735404.93	14441566.05	39°45'56.2205"N	80°39'43.0962"W	10020.26	302.028	0.35
19125.00	91.00	91.540	313.420	7062.24	9901.18	5376.67	-8561.08	1735338.96	14441628.62	39°45'56.8416"N	80°39'43.9384"W	10109.43	302.130	0.15
19215.00	90.00	91.140	313.360	7060.13	9991.16	5438.48	-8626.46	1735273.60	14441690.41	39°45'57.4549"N	80°39'44.7727"W	10197.69	302.229	0.45
19306.00	91.00	91.170	313.690	7058.30	10082.14	5501.13	-8692.43	1735207.66	14441753.04	39°45'58.0766"N	80°39'45.6144"W	10286.93	302.328	0.36
19397.00	91.00	91.690	313.660	7056.03	10173.11	5563.96	-8758.23	1735141.88	14441815.84	39°45'58.6999"N	80°39'46.4540"W	10376.14	302.427	0.57
19488.00	91.00	91.320	313.650	7053.64	10264.08	5626.75	-8824.05	1735076.09	14441878.61	39°45'59.3229"N	80°39'47.2938"W	10465.38	302.524	0.41
19579.00	91.00	91.540	314.300	7051.37	10355.05	5689.92	-8889.51	1735010.65	14441941.75	39°45'59.9496"N	80°39'48.1292"W	10554.55	302.622	0.75
19671.00	92.00	91.320	313.370	7049.07	10447.02	5753.61	-8955.85	1734944.34	14442005.42	39°46'0.5816"N	80°39'48.9757"W	10644.78	302.718	1.04
19763.00	92.00	91.290	313.620	7046.98	10538.99	5816.92	-9022.58	1734877.64	14442068.70	39°46'1.2097"N	80°39'49.8271"W	10735.15	302.810	0.27
19856.00	93.00	91.380	313.420	7044.81	10631.97	5880.94	-9090.00	1734810.25	14442132.70	39°46'1.8449"N	80°39'50.6874"W	10826.52	302.902	0.24
19948.00	92.00	91.600	313.500	7042.42	10723.93	5944.20	-9156.75	1734743.52	14442195.94	39°46'2.4725"N	80°39'51.5393"W	10916.94	302.990	0.25
20039.00	91.00	92.000	314.480	7039.56	10814.89	6007.37	-9222.19	1734678.10	14442259.08	39°46'3.0993"N	80°39'52.3742"W	11006.24	303.080	1.16
20130.00	91.00	91.600	313.850	7036.70	10905.84	6070.75	-9287.43	1734612.88	14442322.43	39°46'3.7279"N	80°39'53.2067"W	11095.51	303.171	0.82
20221.00	91.00	91.660	313.750	7034.11	10996.80	6133.70	-9353.09	1734547.26	14442385.36	39°46'4.3526"N	80°39'54.0445"W	11184.93	303.257	0.13
20313.00	92.00	91.750	313.830	7031.37	11088.76	6197.34	-9419.47	1734480.90	14442448.98	39°46'4.9839"N	80°39'54.8916"W	11275.35	303.342	0.13
20404.00	91.00	91.540	313.580	7028.76	11179.72	6260.19	-9485.23	1734415.17	14442511.80	39°46'5.6075"N	80°39'55.7307"W	11364.84	303.425	0.36
20494.00	90.00	91.660	313.590	7026.25	11269.69	6322.22	-9550.40	1734350.03	14442573.80	39°46'6.2229"N	80°39'56.5623"W	11453.40	303.504	0.13
20585.00	91.00	91.630	313.590	7023.64	11360.65	6384.93	-9616.28	1734284.17	14442636.50	39°46'6.8451"N	80°39'57.4030"W	11542.97	303.583	0.03
20676.00	91.00	91.320	313.780	7021.29	11451.62	6447.77	-9682.06	1734218.41	14442699.30	39°46'7.4685"N	80°39'58.2425"W	11632.54	303.662	0.40
20767.00	91.00	91.350	313.820	7019.17	11542.60	6510.73	-9747.73	1734152.77	14442762.25	39°46'8.0932"N	80°39'59.0804"W	11722.11	303.740	0.05
20858.00	91.00	90.890	314.110	7017.40	11633.58	6573.90	-9813.21	1734087.31	14442825.38	39°46'8.7198"N	80°39'59.9160"W	11811.66	303.818	0.60
20950.00	92.00	90.890	314.140	7015.97	11725.56	6637.94	-9879.24	1734021.31	14442889.40	39°46'9.3552"N	80°40'0.7586"W	11902.17	303.897	0.03
21041.00	91.00	90.250	314.080	7015.06	11816.56	6701.28	-9944.58	1733956.00	14442952.72	39°46'9.9835"N	80°40'1.5923"W	11991.74	303.975	0.71
21131.00	90.00	90.430	313.500	7014.53	11906.56	6763.56	-10009.55	1733891.05	14443014.97	39°46'10.6014"N	80°40'2.4214"W	12080.43	304.047	0.67
21222.00	91.00	90.580	313.620	7013.73	11997.55	6826.26	-10075.49	1733825.14	14443077.65	39°46'11.2235"N	80°40'3.2629"W	12170.18	304.118	0.21
21312.00	90.00	90.340	313.380	7013.00	12087.55	6888.21	-10140.77	1733759.88	14443139.58	39°46'11.8381"N	80°40'4.0959"W	12258.98	304.187	0.38
21403.00	91.00	90.550	313.260	7012.30	12178.54	6950.65	-10206.97	1733693.71	14443201.99	39°46'12.4575"N	80°40'4.9408"W	12348.84	304.254	0.27
21493.00	90.00	90.800	313.440	7011.24	12268.53	7012.42	-10272.41	1733628.29	14443263.74	39°46'13.0705"N	80°40'5.7760"W	12437.71	304.319	0.34
21584.00	91.00	91.110	314.020	7009.72	12359.52	7075.32	-10338.16	1733562.57	14443326.61	39°46'13.6944"N	80°40'6.6150"W	12527.48	304.387	0.72
21675.00	91.00	91.260	314.240	7007.84	12450.50	7138.67	-10403.46	1733497.29	14443389.93	39°46'14.3229"N	80°40'7.4483"W	12617.15	304.457	0.29

REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	O E Burge MSH 401H
Field	Marshall		API	4705102390000
Facility	O E Burge MSH Pad		Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H			

WELLPATH DATA (263 stations) † = interpolated, ‡ = extrapolated station														
MD [ft]	Course Length [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]
21766.00	91.00	91.720	314.410	7005.47	12541.46	7202.23	-10468.54	1733432.24	14443453.47	39°46'14.9534"N	80°40'8.2788"W	12706.79	304.527	0.54
21856.00	90.00	91.350	313.290	7003.06	12631.43	7264.55	-10533.42	1733367.38	14443515.77	39°46'15.5717"N	80°40'9.1067"W	12795.57	304.593	1.31
21946.00	90.00	91.540	313.890	7000.79	12721.40	7326.59	-10598.59	1733302.24	14443577.78	39°46'16.1872"N	80°40'9.9384"W	12884.45	304.655	0.70
22038.00	92.00	91.450	313.290	6998.39	12813.37	7390.00	-10665.20	1733235.66	14443641.17	39°46'16.8163"N	80°40'10.7885"W	12975.31	304.718	0.66
22128.00	90.00	91.450	314.140	6996.11	12903.34	7452.18	-10730.23	1733170.65	14443703.32	39°46'17.4331"N	80°40'11.6184"W	13064.18	304.780	0.94
22219.00	91.00	91.450	313.770	6993.81	12994.31	7515.32	-10795.72	1733105.19	14443766.44	39°46'18.0595"N	80°40'12.4541"W	13153.99	304.843	0.41
22310.00	91.00	91.380	313.380	6991.56	13085.28	7578.03	-10861.62	1733039.31	14443829.12	39°46'18.6816"N	80°40'13.2952"W	13243.92	304.903	0.44
22401.00	91.00	91.350	313.380	6989.39	13176.25	7640.51	-10927.74	1732973.22	14443891.58	39°46'19.3016"N	80°40'14.1391"W	13333.90	304.961	0.03
22492.00	91.00	91.380	313.930	6987.23	13267.23	7703.31	-10993.56	1732907.42	14443954.36	39°46'19.9246"N	80°40'14.9791"W	13423.84	305.019	0.61
22584.00	92.00	91.450	314.510	6984.96	13359.19	7767.45	-11059.48	1732841.53	14444018.48	39°46'20.5609"N	80°40'15.8202"W	13514.63	305.082	0.63
22675.00	91.00	91.480	313.950	6982.63	13450.16	7830.91	-11124.66	1732776.37	14444081.91	39°46'21.1903"N	80°40'16.6521"W	13604.46	305.143	0.62
22767.00	92.00	91.380	313.800	6980.33	13542.13	7894.65	-11190.96	1732710.10	14444145.62	39°46'21.8227"N	80°40'17.4982"W	13695.37	305.201	0.20
22853.00	86.00	91.380	313.240	6978.26	13628.11	7953.85	-11253.30	1732647.78	14444204.80	39°46'22.4101"N	80°40'18.2938"W	13780.44	305.253	0.65
22940.00	87.00	91.320	313.730	6976.21	13715.08	8013.71	-11316.41	1732584.70	14444264.63	39°46'23.0039"N	80°40'19.0992"W	13866.53	305.304	0.57
23026.00	86.00	91.480	313.440	6974.11	13801.05	8072.98	-11378.68	1732522.45	14444323.89	39°46'23.5919"N	80°40'19.8940"W	13951.61	305.355	0.39
23112.00	86.00	91.510	314.090	6971.87	13887.02	8132.45	-11440.77	1732460.39	14444383.33	39°46'24.1818"N	80°40'20.6864"W	14036.66	305.406	0.76
23201.00	89.00	91.380	313.740	6969.62	13976.00	8194.16	-11504.86	1732396.32	14444445.01	39°46'24.7940"N	80°40'21.5044"W	14124.66	305.460	0.42
23292.00	91.00	91.230	313.970	6967.55	14066.97	8257.19	-11570.46	1732330.74	14444508.02	39°46'25.4193"N	80°40'22.3416"W	14214.67	305.513	0.30
23381.00	89.00	91.630	313.550	6965.33	14155.94	8318.73	-11634.72	1732266.51	14444569.53	39°46'26.0297"N	80°40'23.1617"W	14302.73	305.564	0.65
23468.00	87.00	91.510	313.190	6962.95	14242.91	8378.45	-11697.94	1732203.32	14444629.23	39°46'26.6222"N	80°40'23.9686"W	14388.89	305.611	0.44
23559.00	91.00	91.540	313.530	6960.52	14333.87	8440.90	-11764.08	1732137.20	14444691.66	39°46'27.2418"N	80°40'24.8128"W	14479.04	305.660	0.37
23598.00	39.00	91.260	313.290	6959.57	14372.86	8467.70	-11792.41	1732108.89	14444718.45	39°46'27.5076"N	80°40'25.1743"W	14517.67	305.681	0.95
23623.00‡	25.00	91.260	313.290	6959.02	14397.85	8484.83	-11810.60	1732090.71	14444735.58	39°46'27.6777"N	80°40'25.4065"W	14542.44	305.694	0.00

REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	O E Burge MSH 401H
Field	Marshall	API	47051023900000
Facility	O E Burge MSH Pad	Wellbore	O E Burge MSH 401H AWB
Slot	Slot 401H		

HOLE & CASING SECTIONS									
- Ref Wellbore: O E Burge MSH 401H AWB Ref Wellpath: O E Burge MSH 401H AWB_ awp 177' - 23598' Proj: 23623'									
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	329.00	303.00	26.00	329.00	0.00	0.00	-0.82	0.06
9.625in Casing	26.00	2845.00	2819.00	26.00	2720.29	0.00	0.00	-608.52	-96.31
5.5in Casing	26.00	23621.00	23595.00	26.00	6959.06	0.00	0.00	8483.46	-11809.14

TARGETS									
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
O E Burge MSH 401H BHL Rev 5	6971.20	8491.26	-11804.30	1732097.00	14444742.00	39°46'27.7409"N	80°40'25.3255"W	point	
O E Burge MSH 401H LP Rev 4	7124.10	-2173.31	-674.84	1743222.12	14434081.59	39°44'41.9217"N	80°38'3.3427"W	point	

WELLPATH COMPOSITION - Ref Wellbore: O E Burge MSH 401H AWB Ref Wellpath: O E Burge MSH 401H AWB_ awp 177' - 23598' Proj: 23623'									
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date				
26.00	287.00	OWSG MWD rev2 + HRGM	1 Tally MWD 177' - 287'	O E Burge MSH 401H AWB	9/26/2021				
287.00	6281.00	OWSG MWD rev2 + HRGM	2 Tally MWD 362' - 6281'	O E Burge MSH 401H AWB	9/28/2021				
6281.00	23623.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	3. BH MWD 6369' - 23598'	O E Burge MSH 401H AWB	10/1/2021				



Well Name: O E BURGE MSH 401H

47051023900000

LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	228.00	228.00	
Top of Salt Water	1188.00	1188.00	NA	NA	
Pittsburgh Coal	1091.00	1091.00	1097.00	1097.00	
Maxton (ss)	2225.00	2177.00	2296.00	2241.00	
Big Injun (ss)	2296.00	2241.00	2967.00	2827.00	
Berea (siltstone)	2967.00	2827.00	7065.00	6395.00	
Rhinestreet (shale)	7065.00	6395.00	7437.00	6738.00	
Cashaqua (shale)	7437.00	6738.00	7585.00	6856.00	
Middlesex (shale)	7585.00	6856.00	7720.00	6950.00	
Burket (shale)	7720.00	6950.00	7757.00	6973.00	
Tully (ls)	7757.00	6973.00	7793.00	6994.00	
Mahantango (shale)	7793.00	6994.00	8018.00	7092.00	
Marcellus (shale)	8018.00	7092.00	NA	NA	GAS

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