



**REFERENCE WELLPATH IDENTIFICATION**

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

**REPORT SETUP INFORMATION**

Projection System	NAD83 / UTM Zone 17 North, US feet		
North Reference	Grid	Software System	WellArchitect® 6.0
Scale	0.999614	User	Manajohj
Convergence at slot	0.26° East	Report Generated	9/16/2021 at 10:46:17 AM
		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	12.82	24.62	1751408.81	14606711.13	40°13'8.2094"N	80°36'8.6376"W
Facility Reference Pt			1751384.20	14606698.31	40°13'8.0838"N	80°36'8.9557"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

**WELLPATH DATUM**

Calculation method	Minimum curvature	SDC 40 (RKB) to Facility Vertical Datum	1174.50ft
Horizontal Reference Pt	Slot	SDC 40 (RKB) to Mean Sea Level	1174.50ft
Vertical Reference Pt	SDC 40 (RKB)	SDC 40 (RKB) to Ground Level at Slot (Slot 405H)	26.00ft
MD Reference Pt	SDC 40 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	337.58°



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**WELLPATH DATA (271 stations) † = interpolated, ‡ = extrapolated station**

MD	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	281.570	0.00	0.00	0.00	0.00	1751408.81	14606711.13	40°13'8.2094"N	80°36'8.6376"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	281.570	26.00	0.00	0.00	0.00	1751408.81	14606711.13	40°13'8.2094"N	80°36'8.6376"W	0.00	0.000	0.00	0.00	0.00
224.00	0.440	281.570	224.00	0.43	0.15	-0.74	1751408.07	14606711.28	40°13'8.2109"N	80°36'8.6472"W	0.76	281.570	0.22	0.22	0.00
315.00	0.810	359.380	314.99	1.22	0.87	-1.09	1751407.72	14606712.00	40°13'8.2180"N	80°36'8.6517"W	1.40	308.355	0.92	0.41	85.51
381.00	0.790	18.800	380.99	1.99	1.76	-0.95	1751407.86	14606712.89	40°13'8.2269"N	80°36'8.6498"W	2.00	331.618	0.41	-0.03	29.42
510.00	0.830	33.710	509.97	3.18	3.38	-0.15	1751408.66	14606714.51	40°13'8.2428"N	80°36'8.6393"W	3.39	357.505	0.17	0.03	11.56
610.00	1.710	110.340	609.95	2.57	3.47	1.65	1751410.46	14606714.59	40°13'8.2436"N	80°36'8.6161"W	3.84	25.508	1.72	0.88	76.63
706.00	4.570	128.260	705.80	-1.73	0.60	6.00	1751414.81	14606711.73	40°13'8.2151"N	80°36'8.5602"W	6.03	84.298	3.11	2.98	18.67
802.00	7.050	132.150	801.30	-10.39	-5.72	13.37	1751422.18	14606705.41	40°13'8.1523"N	80°36'8.4656"W	14.55	113.171	2.61	2.58	4.05
898.00	8.800	130.340	896.38	-22.24	-14.43	23.34	1751432.14	14606696.70	40°13'8.0658"N	80°36'8.3376"W	27.44	121.730	1.84	1.82	-1.89
994.00	10.170	128.480	991.07	-36.18	-24.46	35.57	1751444.37	14606686.68	40°13'7.9661"N	80°36'8.1805"W	43.17	124.513	1.46	1.43	-1.94
1090.00	11.200	117.950	1085.41	-50.76	-34.10	50.44	1751459.23	14606677.04	40°13'7.8702"N	80°36'7.9894"W	60.89	124.062	2.29	1.07	-10.97
1186.00	12.170	110.110	1179.43	-64.79	-41.95	68.18	1751476.97	14606669.19	40°13'7.7918"N	80°36'7.7611"W	80.06	121.604	1.94	1.01	-8.17
1282.00	13.640	106.590	1273.00	-78.75	-48.66	88.53	1751497.31	14606662.48	40°13'7.7246"N	80°36'7.4992"W	101.03	118.796	1.74	1.53	-3.67
1378.00	16.300	105.790	1365.73	-94.21	-55.56	112.35	1751521.12	14606655.59	40°13'7.6554"N	80°36'7.1926"W	125.34	116.315	2.78	2.77	-0.83
1475.00	18.360	106.810	1458.33	-112.30	-63.69	140.08	1751548.83	14606647.47	40°13'7.5739"N	80°36'6.8356"W	153.87	114.449	2.15	2.12	1.05
1571.00	19.230	106.880	1549.21	-131.87	-72.65	169.68	1751578.42	14606638.51	40°13'7.4840"N	80°36'6.4546"W	184.58	113.179	0.91	0.91	0.07
1622.00	19.410	105.440	1597.33	-142.39	-77.35	185.88	1751594.62	14606633.81	40°13'7.4369"N	80°36'6.2459"W	201.33	112.592	1.00	0.35	-2.82
1712.00	21.410	102.860	1681.68	-161.06	-84.98	216.32	1751625.04	14606626.18	40°13'7.3600"N	80°36'5.8541"W	232.41	111.448	2.44	2.22	-2.87
1807.00	21.610	103.500	1770.07	-181.34	-92.93	250.23	1751658.94	14606618.24	40°13'7.2800"N	80°36'5.4173"W	266.93	110.373	0.32	0.21	0.67
1904.00	21.980	102.730	1860.13	-202.27	-101.10	285.31	1751694.01	14606610.07	40°13'7.1977"N	80°36'4.9657"W	302.69	109.511	0.48	0.38	-0.79
1999.00	23.330	99.400	1947.80	-222.42	-108.09	321.21	1751729.90	14606603.08	40°13'7.1271"N	80°36'4.5033"W	338.91	108.598	1.96	1.42	-3.51
2095.00	23.950	96.280	2035.75	-241.81	-113.32	359.33	1751768.01	14606597.85	40°13'7.0736"N	80°36'4.0121"W	376.78	107.504	1.45	0.65	-3.25
2192.00	24.560	92.390	2124.19	-259.72	-116.32	399.05	1751807.70	14606594.86	40°13'7.0423"N	80°36'3.5003"W	415.66	106.251	1.76	0.63	-4.01
2288.00	27.570	86.740	2210.43	-275.39	-115.89	441.18	1751849.82	14606595.29	40°13'7.0447"N	80°36'2.9572"W	456.14	104.718	4.06	3.14	-5.89
2384.00	29.220	84.150	2294.88	-289.36	-112.23	486.67	1751895.29	14606598.94	40°13'7.0787"N	80°36'2.3706"W	499.45	102.986	2.14	1.72	-2.70
2480.00	30.400	86.320	2378.18	-303.85	-108.29	534.23	1751942.83	14606602.89	40°13'7.1156"N	80°36'1.7573"W	545.09	101.459	1.67	1.23	2.26
2575.00	31.010	84.650	2459.86	-318.76	-104.46	582.58	1751991.16	14606606.71	40°13'7.1513"N	80°36'1.1338"W	591.87	100.166	1.10	0.64	-1.76
2671.00	33.070	89.250	2541.25	-335.69	-101.81	633.40	1752041.97	14606609.36	40°13'7.1752"N	80°36'0.4785"W	641.53	99.132	3.33	2.15	4.79
2767.00	34.480	90.940	2621.05	-356.14	-101.92	686.77	1752095.31	14606609.25	40°13'7.1716"N	80°35'59.7906"W	694.29	98.441	1.76	1.47	1.76



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**WELLPATH DATA (271 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]
2863.00	35.790	91.640	2699.55	-378.36	-103.17	742.00	1752150.52	14606608.00	40°13'7.1570"N	80°35'59.0787"W	749.14	97.915	1.43	1.36	0.73
2960.00	36.120	89.130	2778.08	-400.43	-103.54	798.94	1752207.44	14606607.63	40°13'7.1507"N	80°35'58.3447"W	805.62	97.384	1.56	0.34	-2.59
3055.00	36.690	86.880	2854.54	-420.09	-101.57	855.28	1752263.76	14606609.60	40°13'7.1677"N	80°35'57.6183"W	861.29	96.773	1.53	0.60	-2.37
3152.00	37.080	84.980	2932.13	-438.42	-97.44	913.35	1752321.80	14606613.73	40°13'7.2059"N	80°35'56.8696"W	918.53	96.089	1.24	0.40	-1.96
3248.00	36.320	82.790	3009.10	-454.53	-91.34	970.38	1752378.82	14606619.88	40°13'7.2637"N	80°35'56.1340"W	974.67	95.377	1.58	-0.79	-2.28
3344.00	35.900	82.670	3086.66	-469.32	-84.18	1026.51	1752434.92	14606626.99	40°13'7.3319"N	80°35'55.4101"W	1029.95	94.688	0.44	-0.44	-0.13
3440.00	35.480	83.510	3164.63	-484.29	-77.44	1082.10	1752490.49	14606633.72	40°13'7.3960"N	80°35'54.6930"W	1084.87	94.093	0.67	-0.44	0.88
3536.00	35.100	84.050	3242.99	-499.76	-71.43	1137.24	1752545.61	14606639.73	40°13'7.4530"N	80°35'53.9819"W	1139.48	93.594	0.51	-0.40	0.56
3632.00	34.560	86.520	3321.79	-516.43	-66.91	1191.87	1752600.22	14606644.24	40°13'7.4951"N	80°35'53.2774"W	1193.75	93.213	1.57	-0.56	2.57
3728.00	35.510	87.610	3400.40	-534.81	-64.10	1246.91	1752655.23	14606647.06	40°13'7.5205"N	80°35'52.5678"W	1248.55	92.943	1.18	0.99	1.14
3824.00	36.280	88.470	3478.17	-554.49	-62.18	1303.16	1752711.46	14606648.98	40°13'7.5370"N	80°35'51.8426"W	1304.64	92.732	0.96	0.80	0.90
3920.00	35.860	85.510	3555.77	-573.28	-59.22	1359.59	1752767.87	14606651.94	40°13'7.5637"N	80°35'51.1150"W	1360.88	92.494	1.87	-0.44	-3.08
4025.00	36.230	86.440	3640.67	-592.78	-54.88	1421.22	1752829.48	14606656.27	40°13'7.6037"N	80°35'50.3203"W	1422.28	92.211	0.63	0.35	0.89
4120.00	36.170	82.990	3717.34	-609.30	-49.72	1477.07	1752885.31	14606661.43	40°13'7.6523"N	80°35'49.6000"W	1477.90	91.928	2.15	-0.06	-3.63
4217.00	36.160	84.690	3795.65	-625.33	-43.57	1533.97	1752942.19	14606667.57	40°13'7.7104"N	80°35'48.8661"W	1534.59	91.627	1.03	-0.01	1.75
4312.00	35.800	85.370	3872.53	-642.06	-38.74	1589.58	1752997.77	14606672.41	40°13'7.7557"N	80°35'48.1491"W	1590.05	91.396	0.57	-0.38	0.72
4408.00	36.210	84.440	3950.19	-658.87	-33.72	1645.78	1753053.96	14606677.42	40°13'7.8027"N	80°35'47.4242"W	1646.13	91.174	0.71	0.43	-0.97
4505.00	35.860	84.890	4028.63	-675.63	-28.42	1702.60	1753110.75	14606682.72	40°13'7.8526"N	80°35'46.6915"W	1702.84	90.956	0.45	-0.36	0.46
4601.00	36.270	84.160	4106.23	-692.10	-23.02	1758.86	1753166.98	14606688.12	40°13'7.9034"N	80°35'45.9660"W	1759.01	90.750	0.62	0.43	-0.76
4697.00	36.160	84.180	4183.68	-708.29	-17.26	1815.28	1753223.39	14606693.87	40°13'7.9578"N	80°35'45.2383"W	1815.36	90.545	0.12	-0.11	0.02
4792.00	36.070	84.730	4260.43	-724.55	-11.85	1871.01	1753279.10	14606699.28	40°13'8.0087"N	80°35'44.5195"W	1871.05	90.363	0.35	-0.09	0.58
4888.00	35.490	84.680	4338.31	-741.07	-6.67	1926.90	1753334.96	14606704.46	40°13'8.0574"N	80°35'43.7988"W	1926.91	90.198	0.60	-0.60	-0.05
4985.00	35.900	84.350	4417.08	-757.56	-1.26	1983.24	1753391.28	14606709.87	40°13'8.1083"N	80°35'43.0722"W	1983.24	90.036	0.47	0.42	-0.34
5081.00	36.100	84.500	4494.75	-773.91	4.22	2039.40	1753447.42	14606715.35	40°13'8.1600"N	80°35'42.3480"W	2039.40	89.881	0.23	0.21	0.16
5177.00	36.080	84.130	4572.33	-790.19	9.82	2095.67	1753503.67	14606720.95	40°13'8.2128"N	80°35'41.6223"W	2095.69	89.731	0.23	-0.02	-0.39
5273.00	36.290	84.420	4649.81	-806.48	15.48	2152.07	1753560.04	14606726.60	40°13'8.2661"N	80°35'40.8950"W	2152.12	89.588	0.28	0.22	0.30
5369.00	36.070	84.990	4727.30	-823.16	20.71	2208.49	1753616.45	14606731.83	40°13'8.3153"N	80°35'40.1672"W	2208.59	89.463	0.42	-0.23	0.59
5466.00	36.130	84.430	4805.67	-840.00	25.98	2265.40	1753673.33	14606737.10	40°13'8.3648"N	80°35'39.4333"W	2265.55	89.343	0.35	0.06	-0.58
5562.00	35.700	84.960	4883.42	-856.57	31.18	2321.47	1753729.38	14606742.30	40°13'8.4137"N	80°35'38.7102"W	2321.68	89.230	0.55	-0.45	0.55
5658.00	35.420	84.530	4961.52	-873.04	36.30	2377.07	1753784.95	14606747.41	40°13'8.4617"N	80°35'37.9933"W	2377.34	89.125	0.39	-0.29	-0.45



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5754.00	35.340	85.360	5039.79	-889.63	41.19	2432.43	1753840.30	14606752.31	40°13'8.5076"N	80°35'37.2793"W	2432.78	89.030	0.51	-0.08	0.86
5850.00	35.100	85.200	5118.22	-906.47	45.75	2487.61	1753995.46	14606756.86	40°13'8.5501"N	80°35'36.5677"W	2488.03	88.946	0.27	-0.25	-0.17
5946.00	32.630	69.580	5198.08	-915.74	57.11	2539.48	1753947.30	14606768.22	40°13'8.6600"N	80°35'35.8985"W	2540.12	88.712	9.40	-2.57	-16.27
6042.00	35.260	45.680	5278.07	-906.27	85.64	2583.76	1753991.57	14606796.73	40°13'8.9399"N	80°35'35.3259"W	2585.18	88.102	14.09	2.74	-24.90
6138.00	36.390	42.570	5355.91	-883.89	125.97	2622.86	1754030.65	14606837.05	40°13'9.3367"N	80°35'34.8196"W	2625.88	87.250	2.23	1.18	-3.24
6234.00	35.820	42.460	5433.47	-859.92	167.67	2661.09	1754068.86	14606878.73	40°13'9.7470"N	80°35'34.3243"W	2666.36	86.395	0.60	-0.59	-0.11
6330.00	41.780	34.170	5508.31	-830.34	214.93	2698.07	1754105.83	14606925.98	40°13'10.2124"N	80°35'33.8447"W	2706.62	85.445	8.22	6.21	-8.64
6426.00	47.870	23.590	5576.46	-787.91	274.15	2730.35	1754138.11	14606985.17	40°13'10.7961"N	80°35'33.4251"W	2744.08	84.266	10.01	6.34	-11.02
6523.00	51.280	14.810	5639.42	-732.72	343.80	2754.46	1754162.20	14607054.79	40°13'11.4833"N	80°35'33.1102"W	2775.83	82.885	7.73	3.52	-9.05
6618.00	55.860	6.130	5695.89	-668.57	418.85	2768.15	1754175.89	14607129.82	40°13'12.2243"N	80°35'32.9293"W	2799.66	81.396	8.78	4.82	-9.14
6714.00	58.930	5.020	5747.62	-597.16	499.33	2775.99	1754183.73	14607210.26	40°13'13.0192"N	80°35'32.8234"W	2820.54	79.803	3.34	3.20	-1.16
6811.00	63.980	357.770	5794.00	-519.26	584.40	2777.94	1754185.67	14607295.31	40°13'13.8598"N	80°35'32.7933"W	2838.74	78.120	8.38	5.21	-7.47
6907.00	70.880	351.110	5830.86	-434.50	672.50	2769.23	1754176.97	14607383.37	40°13'14.7308"N	80°35'32.9003"W	2849.72	76.350	9.62	7.19	-6.94
7003.00	78.980	347.760	5855.80	-343.85	763.53	2752.20	1754159.94	14607474.36	40°13'15.6311"N	80°35'33.1145"W	2856.15	74.495	9.08	8.44	-3.49
7099.00	87.170	342.680	5867.38	-249.51	855.56	2727.88	1754135.63	14607566.36	40°13'16.5416"N	80°35'33.4225"W	2858.90	72.587	10.02	8.53	-5.29
7195.00	90.030	340.480	5869.72	-153.79	946.60	2697.56	1754105.32	14607657.36	40°13'17.4426"N	80°35'33.8080"W	2858.82	70.664	3.76	2.98	-2.29
7291.00	89.780	340.430	5869.88	-57.91	1037.06	2665.44	1754073.22	14607747.79	40°13'18.3381"N	80°35'34.2167"W	2860.09	68.740	0.27	-0.26	-0.05
7387.00	90.860	340.510	5869.35	37.97	1127.54	2633.35	1754041.14	14607838.23	40°13'19.2336"N	80°35'34.6250"W	2864.59	66.821	1.13	1.13	0.08
7483.00	90.800	340.320	5867.95	133.84	1217.97	2601.18	1754008.98	14607928.63	40°13'20.1287"N	80°35'35.0345"W	2872.21	64.909	0.21	-0.06	-0.20
7579.00	90.620	340.540	5866.76	229.71	1308.42	2569.02	1753976.84	14608019.04	40°13'21.0239"N	80°35'35.4436"W	2883.03	63.010	0.30	-0.19	0.23
7675.00	90.800	340.560	5865.58	325.58	1398.94	2537.06	1753944.88	14608109.52	40°13'21.9198"N	80°35'35.8504"W	2897.19	61.128	0.19	0.19	0.02
7772.00	90.890	340.660	5864.14	422.43	1490.42	2504.86	1753912.70	14608200.98	40°13'22.8254"N	80°35'36.2601"W	2914.74	59.247	0.14	0.09	0.10
7868.00	90.860	340.490	5862.68	518.29	1580.95	2472.93	1753880.79	14608291.47	40°13'23.7214"N	80°35'36.6663"W	2935.10	57.409	0.18	-0.03	-0.18
7964.00	90.710	340.850	5861.36	614.14	1671.53	2441.16	1753849.02	14608382.01	40°13'24.6179"N	80°35'37.0705"W	2958.59	55.599	0.41	-0.16	0.37
8060.00	90.580	340.690	5860.28	709.99	1762.17	2409.54	1753817.42	14608472.61	40°13'25.5150"N	80°35'37.4728"W	2985.15	53.821	0.21	-0.14	-0.17
8156.00	90.490	340.610	5859.39	805.84	1852.74	2377.74	1753785.63	14608563.15	40°13'26.4115"N	80°35'37.8775"W	3014.35	52.074	0.13	-0.09	-0.08
8252.00	90.060	341.120	5858.93	901.69	1943.43	2346.27	1753754.17	14608653.81	40°13'27.3091"N	80°35'38.2778"W	3046.62	50.365	0.69	-0.45	0.53
8348.00	89.910	340.200	5858.95	997.55	2034.02	2314.48	1753722.39	14608744.36	40°13'28.2057"N	80°35'38.6823"W	3081.24	48.690	0.97	-0.16	-0.96
8445.00	90.220	338.410	5858.84	1094.50	2124.75	2280.20	1753688.13	14608835.06	40°13'29.1039"N	80°35'39.1189"W	3116.71	47.021	1.87	0.32	-1.85
8541.00	91.480	340.820	5857.42	1190.42	2214.72	2246.77	1753654.71	14608924.99	40°13'29.9944"N	80°35'39.5446"W	3154.83	45.412	2.83	1.31	2.51





# Actual Wellpath Report

Robert Bone BRK 405H AWP Proj: 25827

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

## WELLPATH DATA (271 stations)

MD	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]	Buidl Rate [°/100ft]	Turn Rate [°/100ft]
8637.00	90.620	340.810	5855.66	1286.25	2305.38	2215.23	1753623.18	14609015.61	40°13'30.8917"N	80°35'39.9459"W	3197.18	43.858	0.90	-0.90	-0.01
8733.00	90.710	341.030	5854.54	1382.08	2396.10	2183.85	1753591.81	14609106.30	40°13'31.7896"N	80°35'40.3450"W	3241.98	42.347	0.25	0.09	0.23
8829.00	90.030	340.870	5853.92	1477.91	2486.84	2152.51	1753560.49	14609197.00	40°13'32.6877"N	80°35'40.7436"W	3289.02	40.878	0.73	-0.71	-0.17
8925.00	90.180	339.050	5853.75	1573.82	2577.02	2119.62	1753527.61	14609287.15	40°13'33.5803"N	80°35'41.1624"W	3336.74	39.438	1.90	0.16	-1.90
9021.00	91.690	341.070	5852.18	1669.71	2667.24	2086.88	1753494.89	14609377.34	40°13'34.4734"N	80°35'41.5791"W	3386.63	38.040	2.63	1.57	2.10
9117.00	90.710	340.930	5850.17	1765.52	2757.99	2055.64	1753463.65	14609468.05	40°13'35.3716"N	80°35'41.9766"W	3439.79	36.699	1.03	-1.02	-0.15
9213.00	90.950	341.830	5848.78	1861.30	2848.96	2024.99	1753433.01	14609558.98	40°13'36.2718"N	80°35'42.3664"W	3495.30	35.405	0.97	0.25	0.94
9309.00	90.520	341.440	5847.55	1957.05	2940.05	1994.75	1753402.78	14609650.91	40°13'37.1735"N	80°35'42.7509"W	3552.88	34.156	0.60	-0.45	-0.41
9405.00	90.580	341.030	5846.63	2052.85	3030.95	1963.86	1753371.91	14609740.91	40°13'38.0730"N	80°35'43.1437"W	3611.57	32.941	0.43	0.06	-0.43
9501.00	90.030	340.470	5846.12	2148.70	3121.58	1932.22	1753340.28	14609831.50	40°13'38.9701"N	80°35'43.5464"W	3671.20	31.757	0.82	-0.57	-0.58
9597.00	90.890	340.550	5845.34	2244.57	3212.08	1900.19	1753308.26	14609921.96	40°13'39.8658"N	80°35'43.9540"W	3732.05	30.608	0.90	0.90	0.08
9693.00	90.400	340.610	5844.26	2340.43	3302.61	1868.27	1753276.36	14610012.46	40°13'40.7618"N	80°35'44.3602"W	3794.43	29.497	0.51	-0.51	0.06
9789.00	90.830	338.860	5843.23	2436.35	3392.66	1835.02	1753243.12	14610102.47	40°13'41.6532"N	80°35'44.7835"W	3857.13	28.408	1.88	0.45	-1.82
9886.00	92.000	340.270	5840.84	2533.26	3483.52	1801.17	1753209.28	14610193.30	40°13'42.5526"N	80°35'45.2147"W	3921.62	27.341	1.89	1.21	1.45
9982.00	91.480	340.240	5837.92	2629.11	3573.84	1768.75	1753176.87	14610283.58	40°13'43.4465"N	80°35'45.6273"W	3987.58	26.332	0.54	-0.54	-0.03
10078.00	91.260	340.610	5835.63	2724.97	3664.26	1736.60	1753144.73	14610373.97	40°13'44.3415"N	80°35'46.0366"W	4054.95	25.358	0.45	-0.23	0.39
10174.00	90.740	340.500	5833.95	2820.82	3754.77	1704.64	1753112.79	14610464.45	40°13'45.2374"N	80°35'46.4432"W	4123.61	24.418	0.55	-0.54	-0.11
10270.00	90.740	340.240	5832.71	2916.70	3845.19	1672.39	1753080.55	14610554.82	40°13'46.1323"N	80°35'46.8537"W	4193.13	23.506	0.27	0.00	-0.27
10366.00	90.520	339.460	5831.66	3012.62	3935.30	1639.33	1753047.50	14610644.91	40°13'47.0243"N	80°35'47.2747"W	4263.10	22.615	0.84	-0.23	-0.81
10462.00	91.290	339.070	5830.14	3108.56	4025.07	1605.34	1753013.53	14610734.64	40°13'47.9129"N	80°35'47.7076"W	4333.40	21.744	0.90	0.80	-0.41
10558.00	91.660	341.570	5827.67	3204.42	4115.43	1573.03	1752981.23	14610824.96	40°13'48.8072"N	80°35'48.1190"W	4405.81	20.918	2.63	0.39	2.60
10654.00	90.090	340.310	5826.20	3300.23	4206.15	1541.68	1752949.89	14610915.65	40°13'49.7051"N	80°35'48.5178"W	4479.79	20.129	2.10	-1.64	-1.31
10750.00	90.770	339.370	5825.48	3396.15	4296.27	1508.60	1752916.82	14611005.73	40°13'50.5971"N	80°35'48.9391"W	4553.43	19.348	1.21	0.71	-0.98
10846.00	92.120	339.920	5823.06	3492.06	4386.24	1475.22	1752883.45	14611095.67	40°13'51.4877"N	80°35'49.3642"W	4627.67	18.589	1.52	1.41	0.57
10942.00	89.880	340.560	5821.39	3587.93	4476.57	1442.77	1752851.02	14611185.96	40°13'52.3818"N	80°35'49.7772"W	4703.32	17.864	2.43	-2.33	0.67
11038.00	91.380	339.000	5820.33	3683.85	4566.64	1409.59	1752817.85	14611276.00	40°13'53.2734"N	80°35'50.1997"W	4779.24	17.154	2.25	1.56	-1.63
11134.00	91.230	341.670	5818.14	3779.71	4657.01	1377.30	1752785.57	14611366.33	40°13'54.1678"N	80°35'50.6108"W	4856.41	16.475	2.78	-0.16	2.78
11230.00	90.180	337.400	5816.96	3875.62	4746.92	1343.74	1752752.03	14611456.21	40°13'55.0578"N	80°35'51.0382"W	4933.45	15.806	4.58	-1.09	-4.45
11326.00	91.260	341.820	5815.76	3971.53	4836.88	1310.31	1752718.61	14611546.13	40°13'55.9482"N	80°35'51.4640"W	5011.21	15.158	4.74	1.13	4.60
11422.00	90.400	340.690	5814.37	4067.32	4927.77	1279.46	1752687.77	14611636.99	40°13'56.8478"N	80°35'51.8564"W	5091.16	14.555	1.48	-0.90	-1.18



# Actual Wellpath Report

Robert Bone BRK 405H AWP Proj: 25827'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

## WELLPATH DATA (271 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]	Buidl Rate [°/100ft]	Turn Rate [°/100ft]
11518.00	90.280	339.100	5813.80	4163.24	5017.92	1246.46	1752654.79	14611727.10	40°13'57.7401"N	80°35'52.2766"W	5170.41	13.950	1.66	-0.12	-1.66
11614.00	91.780	339.880	5812.07	4259.16	5107.81	1212.83	1752621.17	14611816.96	40°13'58.6300"N	80°35'52.7049"W	5249.83	13.357	1.76	1.56	0.81
11711.00	91.050	340.850	5809.67	4356.02	5199.14	1180.25	1752588.60	14611908.26	40°13'59.5339"N	80°35'53.1197"W	5331.42	12.790	1.25	-0.75	1.00
11807.00	90.580	341.090	5808.31	4451.84	5289.89	1148.95	1752557.31	14611998.97	40°14'0.4320"N	80°35'53.5180"W	5413.22	12.254	0.55	-0.49	0.25
11903.00	89.600	340.360	5808.16	4547.69	5380.50	1117.26	1752525.64	14612089.55	40°14'1.3289"N	80°35'53.9212"W	5495.28	11.731	1.27	-1.02	-0.76
11999.00	92.090	339.780	5806.74	4643.58	5470.74	1084.54	1752492.93	14612179.75	40°14'2.2221"N	80°35'54.3378"W	5577.20	11.213	2.66	2.59	-0.60
12095.00	90.400	340.580	5804.66	4739.46	5561.03	1052.00	1752460.40	14612270.00	40°14'3.1157"N	80°35'54.7521"W	5659.66	10.712	1.95	-1.76	0.83
12191.00	90.740	340.200	5803.70	4835.34	5651.45	1019.79	1752428.20	14612360.39	40°14'4.0107"N	80°35'55.1622"W	5742.72	10.229	0.53	0.35	-0.40
12287.00	90.830	340.520	5802.39	4931.22	5741.86	987.52	1752395.95	14612450.76	40°14'4.9056"N	80°35'55.5730"W	5826.16	9.759	0.35	0.09	0.33
12384.00	90.950	340.360	5800.88	5028.08	5833.25	955.04	1752363.48	14612542.12	40°14'5.8101"N	80°35'55.9864"W	5910.91	9.298	0.21	0.12	-0.18
12480.00	90.890	340.610	5799.34	5123.95	5923.72	922.97	1752331.42	14612632.55	40°14'6.7055"N	80°35'56.3947"W	5995.19	8.856	0.28	-0.06	0.27
12576.00	90.920	340.240	5797.82	5219.82	6014.16	890.81	1752299.27	14612722.96	40°14'7.6007"N	80°35'56.8041"W	6079.77	8.425	0.39	0.03	-0.39
12672.00	90.890	337.840	5796.31	5315.77	6103.79	856.48	1752264.95	14612812.55	40°14'8.4879"N	80°35'57.2416"W	6163.59	7.988	2.50	-0.03	-2.50
12768.00	90.770	336.110	5794.91	5411.75	6192.13	818.93	1752227.43	14612900.86	40°14'9.3626"N	80°35'57.7205"W	6246.05	7.534	1.81	-0.12	-1.80
12864.00	90.860	336.230	5793.55	5507.71	6279.93	780.15	1752188.66	14612988.63	40°14'10.2320"N	80°35'58.2154"W	6328.21	7.082	0.16	0.08	0.12
12960.00	90.710	336.160	5792.23	5603.67	6367.76	741.41	1752149.93	14613076.42	40°14'11.1016"N	80°35'58.7099"W	6410.78	6.641	0.17	-0.16	-0.07
13056.00	90.890	336.070	5790.89	5699.63	6455.53	702.54	1752111.08	14613164.16	40°14'11.9706"N	80°35'59.2059"W	6493.64	6.211	0.21	0.19	-0.09
13152.00	90.620	335.940	5789.63	5795.59	6543.23	663.50	1752072.06	14613251.82	40°14'12.8390"N	80°35'59.7042"W	6576.78	5.790	0.31	-0.28	-0.14
13248.00	90.830	336.120	5788.41	5891.54	6630.94	624.51	1752033.07	14613339.50	40°14'13.7075"N	80°36'0.2019"W	6660.28	5.380	0.29	0.22	0.19
13344.00	90.680	336.080	5787.15	5987.50	6718.70	585.62	1751994.20	14613427.22	40°14'14.5765"N	80°36'0.6983"W	6744.17	4.981	0.16	-0.16	-0.04
13440.00	90.950	336.120	5785.78	6083.46	6806.46	546.73	1751955.32	14613514.95	40°14'15.4454"N	80°36'1.1946"W	6828.38	4.592	0.28	0.28	0.04
13536.00	90.800	336.120	5784.32	6179.42	6894.23	507.87	1751916.48	14613602.69	40°14'16.3145"N	80°36'1.6906"W	6912.91	4.213	0.16	-0.16	0.00
13632.00	90.490	336.190	5783.24	6275.38	6982.03	469.06	1751877.69	14613690.45	40°14'17.1838"N	80°36'2.1859"W	6997.77	3.843	0.33	-0.32	0.07
13728.00	90.460	336.130	5782.44	6371.35	7069.84	430.26	1751838.90	14613778.22	40°14'18.0532"N	80°36'2.6811"W	7082.92	3.483	0.07	-0.03	-0.06
13825.00	90.580	336.050	5781.56	6468.31	7158.51	390.95	1751799.61	14613866.86	40°14'18.9312"N	80°36'3.1829"W	7169.18	3.126	0.15	0.12	-0.08
13921.00	90.580	336.120	5780.59	6564.28	7246.26	352.03	1751760.71	14613954.58	40°14'19.8001"N	80°36'3.6796"W	7254.81	2.781	0.07	0.00	0.07
14017.00	90.890	335.730	5779.36	6660.23	7333.90	312.88	1751721.56	14614042.19	40°14'20.6679"N	80°36'4.1794"W	7340.58	2.443	0.52	0.32	-0.41
14113.00	91.020	335.950	5777.76	6756.17	7421.48	273.59	1751682.29	14614129.73	40°14'21.5351"N	80°36'4.6809"W	7426.52	2.111	0.27	0.14	0.23
14209.00	90.860	335.820	5776.18	6852.12	7509.09	234.37	1751643.09	14614217.31	40°14'22.4026"N	80°36'5.1815"W	7512.75	1.788	0.21	-0.17	-0.14
14305.00	91.170	336.120	5774.48	6948.06	7596.76	195.29	1751604.02	14614304.94	40°14'23.2706"N	80°36'5.6804"W	7599.27	1.473	0.45	0.32	0.31



**REFERENCE WELLPATH IDENTIFICATION**

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

**WELLPATH DATA (271 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]	Buid Rate [°/100ft]	Turn Rate [°/100ft]
14401.00	90.980	335.740	5772.68	7044.00	7684.40	156.14	1751564.89	14614392.55	40°14'24.1384"N	80°36'6.1802"W	7685.98	1.164	0.44	-0.20	-0.40
14497.00	90.620	335.850	5771.34	7139.95	7771.95	116.78	1751525.55	14614480.06	40°14'25.0053"N	80°36'6.6826"W	7772.82	0.861	0.39	-0.37	0.11
14593.00	90.860	335.870	5770.10	7235.90	7859.54	77.53	1751486.31	14614567.63	40°14'25.8727"N	80°36'7.1837"W	7859.93	0.565	0.25	0.25	0.02
14690.00	90.800	336.150	5768.70	7332.85	7948.16	38.09	1751446.89	14614656.20	40°14'26.7500"N	80°36'7.6871"W	7948.25	0.275	0.30	-0.06	0.29
14786.00	90.680	336.100	5767.46	7428.81	8035.93	-0.76	1751408.05	14614743.95	40°14'27.6192"N	80°36'8.1830"W	8035.93	359.995	0.14	-0.12	-0.05
14882.00	91.260	335.940	5765.83	7524.76	8123.64	-39.77	1751369.05	14614831.61	40°14'28.4875"N	80°36'8.6810"W	8123.73	359.719	0.63	0.60	-0.17
14978.00	90.370	335.330	5764.46	7620.70	8211.07	-79.37	1751329.47	14614919.02	40°14'29.3534"N	80°36'9.1866"W	8211.46	359.446	1.12	-0.93	-0.64
15074.00	91.230	334.370	5763.12	7716.58	8297.96	-120.17	1751288.69	14615005.87	40°14'30.2138"N	80°36'9.7076"W	8298.83	359.170	1.34	0.90	-1.00
15170.00	90.710	337.290	5761.50	7812.51	8385.53	-159.46	1751249.41	14615093.40	40°14'31.0808"N	80°36'10.2093"W	8387.04	368.911	3.09	-0.54	3.04
15266.00	90.460	336.510	5760.52	7908.49	8473.82	-197.12	1751211.76	14615181.67	40°14'31.9550"N	80°36'10.6898"W	8476.12	358.667	0.85	-0.26	-0.81
15362.00	90.150	335.700	5760.01	8004.46	8561.59	-236.01	1751172.89	14615269.40	40°14'32.8240"N	80°36'11.1862"W	8564.85	358.421	0.90	-0.32	-0.84
15458.00	90.830	334.950	5759.19	8100.38	8648.82	-276.08	1751132.83	14615356.60	40°14'33.6878"N	80°36'11.9979"W	8653.23	358.172	1.05	0.71	-0.78
15554.00	91.200	335.880	5757.49	8196.30	8736.11	-316.02	1751092.92	14615443.85	40°14'34.5521"N	80°36'12.2079"W	8741.82	357.928	1.04	0.39	0.97
15650.00	91.720	335.910	5755.04	8292.22	8823.70	-355.21	1751053.74	14615531.41	40°14'35.4195"N	80°36'12.7082"W	8830.85	357.695	0.54	0.54	0.03
15746.00	90.250	337.010	5753.39	8388.19	8911.70	-393.55	1751015.42	14615619.37	40°14'36.2907"N	80°36'13.1975"W	8920.38	357.471	1.91	-1.53	1.15
15843.00	89.970	335.090	5753.20	8485.15	9000.34	-432.92	1750976.06	14615707.98	40°14'37.1684"N	80°36'13.7001"W	9010.75	357.246	2.00	-0.29	-1.98
15939.00	91.080	335.190	5752.32	8581.05	9087.44	-473.28	1750935.72	14615795.05	40°14'38.0309"N	80°36'14.2155"W	9099.76	357.019	1.16	1.16	0.10
16035.00	91.110	336.060	5750.49	8676.98	9174.87	-512.89	1750896.12	14615882.44	40°14'38.8965"N	80°36'14.7213"W	9189.19	356.800	0.91	0.03	0.91
16131.00	91.140	336.310	5748.60	8772.93	9262.68	-551.64	1750857.38	14615970.21	40°14'39.7660"N	80°36'15.2160"W	9279.09	356.592	0.26	0.03	0.26
16227.00	90.980	336.040	5746.83	8868.89	9350.48	-590.42	1750818.62	14616057.98	40°14'40.6353"N	80°36'15.7110"W	9369.10	356.387	0.33	-0.17	-0.28
16323.00	91.450	336.590	5744.79	8964.84	9438.38	-628.98	1750780.08	14616145.84	40°14'41.5056"N	80°36'16.2031"W	9459.31	356.187	0.75	0.49	0.57
16419.00	91.020	336.630	5742.72	9060.81	9526.47	-667.07	1750742.00	14616233.90	40°14'42.3778"N	80°36'16.6894"W	9549.79	355.995	0.45	-0.45	0.04
16516.00	90.370	336.390	5741.55	9157.78	9615.42	-705.73	1750703.35	14616322.82	40°14'43.2585"N	80°36'17.1828"W	9641.28	355.802	0.71	-0.67	-0.25
16612.00	90.580	335.610	5740.75	9253.74	9703.12	-744.78	1750664.32	14616410.48	40°14'44.1268"N	80°36'17.6813"W	9731.66	355.611	0.84	0.22	-0.81
16708.00	91.170	336.440	5739.29	9349.69	9790.82	-783.78	1750625.33	14616498.15	40°14'44.9952"N	80°36'18.1793"W	9822.14	355.423	1.06	0.61	0.86
16804.00	90.460	336.370	5737.92	9445.66	9878.79	-822.20	1750586.93	14616586.09	40°14'45.8662"N	80°36'18.6697"W	9912.94	355.242	0.74	-0.74	-0.07
16900.00	90.370	335.780	5737.22	9541.63	9966.54	-861.13	1750548.01	14616673.80	40°14'46.7350"N	80°36'19.1667"W	10003.67	355.062	0.62	-0.09	-0.61
16997.00	90.550	335.470	5736.45	9638.57	10054.89	-901.17	1750507.99	14616762.12	40°14'47.6098"N	80°36'19.6779"W	10095.19	354.879	0.37	0.19	-0.32
17093.00	90.860	335.850	5735.26	9734.50	10142.35	-940.73	1750468.45	14616849.54	40°14'48.4758"N	80°36'20.1831"W	10185.88	354.701	0.51	0.32	0.40
17189.00	90.490	336.080	5734.13	9830.46	10230.02	-979.83	1750429.36	14616937.18	40°14'49.3439"N	80°36'20.6822"W	10276.83	354.529	0.45	-0.39	0.24



# Actual Wellpath Report

Robert Bone BRK 405H AWP Proj: 25827'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

## WELLPATH DATA (271 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]
17285.00	90.520	334.870	5733.29	9926.39	10317.35	-1019.67	1750389.53	14617024.48	40°14'50.2086"N	80°36'21.1911"W	10367.62	354.356	1.26	0.03	-1.26
17381.00	90.520	334.270	5732.42	10022.25	10404.05	-1060.89	1750348.33	14617111.14	40°14'51.0672"N	80°36'21.7177"W	10458.00	354.178	0.62	0.00	-0.62
17478.00	90.920	333.880	5731.20	10119.06	10491.28	-1103.30	1750305.94	14617198.34	40°14'51.9310"N	80°36'22.2596"W	10549.13	353.997	0.58	0.41	-0.40
17574.00	91.320	335.570	5729.32	10214.92	10578.07	-1144.28	1750264.98	14617285.09	40°14'52.7905"N	80°36'22.7831"W	10639.78	353.826	1.81	0.42	1.76
17670.00	90.340	335.780	5727.93	10310.86	10665.53	-1183.82	1750225.45	14617372.53	40°14'53.6565"N	80°36'23.2880"W	10731.03	353.666	1.04	-1.02	0.22
17766.00	89.600	334.660	5727.98	10406.77	10752.69	-1224.05	1750185.23	14617459.65	40°14'54.5196"N	80°36'23.8019"W	10822.14	353.506	1.40	-0.77	-1.17
17862.00	90.890	334.320	5727.57	10502.63	10839.33	-1265.40	1750143.91	14617546.26	40°14'55.3775"N	80°36'24.3301"W	10912.94	353.341	1.39	1.34	-0.35
17958.00	91.380	335.250	5725.67	10598.50	10926.17	-1306.28	1750103.02	14617633.06	40°14'56.2374"N	80°36'24.8525"W	11003.98	353.182	1.09	0.51	0.97
18054.00	90.740	335.590	5723.89	10694.41	11013.45	-1346.21	1750063.12	14617720.31	40°14'57.1017"N	80°36'25.3624"W	11095.42	353.031	0.75	-0.67	0.35
18151.00	90.830	331.890	5722.56	10791.17	11100.42	-1389.12	1750020.23	14617807.24	40°14'57.9629"N	80°36'25.9108"W	11187.00	352.867	3.82	0.09	-3.81
18247.00	91.850	334.260	5720.32	10886.84	11185.98	-1432.57	1749976.79	14617892.77	40°14'58.8104"N	80°36'26.4663"W	11277.34	352.702	2.69	1.06	2.47
18343.00	90.620	333.260	5718.25	10982.60	11272.06	-1475.00	1749934.38	14617978.82	40°14'59.6629"N	80°36'27.0086"W	11368.16	352.545	1.65	-1.28	-1.04
18439.00	90.310	332.920	5717.47	11078.30	11357.67	-1518.45	1749890.95	14618064.39	40°15'0.5107"N	80°36'27.5641"W	11458.72	352.385	0.48	-0.32	-0.35
18535.00	90.770	333.150	5716.56	11173.99	11443.22	-1561.98	1749847.44	14618149.92	40°15'1.3581"N	80°36'28.1206"W	11549.34	352.227	0.54	0.48	0.24
18631.00	90.310	333.170	5715.66	11269.70	11528.88	-1605.32	1749804.11	14618235.54	40°15'2.2064"N	80°36'28.6747"W	11640.11	352.073	0.48	-0.48	0.02
18727.00	90.250	333.070	5715.19	11365.41	11614.51	-1648.73	1749760.72	14618321.13	40°15'3.0544"N	80°36'29.2296"W	11730.94	351.921	0.12	-0.06	-0.10
18823.00	90.280	332.930	5714.75	11461.10	11700.04	-1692.31	1749717.16	14618406.63	40°15'3.9016"N	80°36'29.7868"W	11821.80	351.770	0.15	0.03	-0.13
18920.00	90.340	332.920	5714.22	11557.78	11786.41	-1736.46	1749673.03	14618492.97	40°15'4.7570"N	80°36'30.3512"W	11913.64	351.619	0.06	0.06	-0.01
19016.00	90.580	333.260	5713.45	11653.49	11872.01	-1779.91	1749629.60	14618578.54	40°15'5.6048"N	80°36'30.9067"W	12004.70	351.473	0.43	0.25	0.35
19112.00	90.800	333.250	5712.30	11749.20	11957.74	-1823.10	1749586.41	14618664.23	40°15'6.4538"N	80°36'31.4589"W	12095.91	351.331	0.23	0.23	-0.01
19208.00	90.830	333.440	5710.93	11844.93	12043.52	-1866.17	1749543.37	14618749.98	40°15'7.3034"N	80°36'32.0094"W	12187.25	351.192	0.20	0.03	0.20
19304.00	90.340	333.180	5709.95	11940.66	12129.29	-1909.28	1749500.27	14618835.72	40°15'8.1528"N	80°36'32.5607"W	12278.64	351.054	0.58	-0.51	-0.27
19400.00	90.490	333.340	5709.25	12036.39	12215.02	-1952.48	1749457.09	14618921.41	40°15'9.0018"N	80°36'33.1129"W	12370.08	350.919	0.23	0.16	0.17
19496.00	90.250	333.400	5708.63	12132.12	12300.84	-1995.51	1749414.08	14619007.19	40°15'9.8517"N	80°36'33.6629"W	12461.65	350.785	0.26	-0.25	0.06
19592.00	89.850	333.120	5708.55	12227.85	12386.57	-2038.70	1749370.90	14619092.89	40°15'10.7008"N	80°36'34.2151"W	12553.22	350.654	0.51	-0.42	-0.29
19688.00	90.060	333.410	5708.63	12323.58	12472.31	-2081.89	1749327.73	14619178.60	40°15'11.5499"N	80°36'34.7673"W	12644.87	350.524	0.37	0.22	0.30
19784.00	89.940	333.070	5708.63	12419.30	12558.02	-2125.11	1749284.52	14619264.26	40°15'12.3988"N	80°36'35.3199"W	12736.56	350.395	0.38	-0.12	-0.35
19880.00	90.220	333.380	5708.49	12515.03	12643.73	-2168.36	1749241.29	14619349.98	40°15'13.2477"N	80°36'35.8728"W	12828.32	350.269	0.44	0.29	0.32
19976.00	90.000	332.580	5708.31	12610.72	12729.25	-2211.97	1749197.70	14619435.44	40°15'14.0947"N	80°36'36.4304"W	12920.01	350.142	0.86	-0.23	-0.83
20072.00	90.090	332.460	5708.23	12706.34	12814.42	-2256.27	1749153.42	14619520.58	40°15'14.9382"N	80°36'36.9969"W	13011.54	350.014	0.16	0.09	-0.13





# Actual Wellpath Report

Robert Bone BRK 405H AWP Proj: 25827'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

## WELLPATH DATA (271 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]
20168.00	90.460	332.900	5707.77	12801.99	12899.71	-2300.33	1749109.37	14619605.84	40°15'15.7829"N	80°36'37.5603"W	13103.21	349.889	0.60	0.39	0.46
20264.00	90.120	332.600	5707.29	12897.65	12985.06	-2344.28	1749065.44	14619691.15	40°15'16.6282"N	80°36'38.1224"W	13194.97	349.766	0.47	-0.35	-0.31
20360.00	90.620	334.200	5706.67	12993.39	13070.89	-2387.27	1749022.47	14619776.95	40°15'17.4783"N	80°36'38.6719"W	13287.11	349.650	1.75	0.52	1.67
20456.00	90.520	334.330	5705.71	13089.22	13157.36	-2428.95	1748980.80	14619863.39	40°15'18.3346"N	80°36'39.2046"W	13379.69	349.541	0.17	-0.10	0.14
20552.00	91.020	334.660	5704.42	13185.07	13244.00	-2470.28	1748939.49	14619949.99	40°15'19.1925"N	80°36'39.7328"W	13472.41	349.435	0.62	0.52	0.34
20648.00	90.980	334.170	5702.74	13280.91	13330.57	-2511.73	1748898.05	14620036.53	40°15'20.0498"N	80°36'40.2626"W	13565.14	349.329	0.51	-0.04	-0.51
20744.00	90.430	333.790	5701.56	13376.71	13416.84	-2553.84	1748855.96	14620122.76	40°15'20.9040"N	80°36'40.8008"W	13657.73	349.223	0.70	-0.57	-0.40
20841.00	90.310	334.240	5700.94	13473.52	13504.03	-2596.34	1748813.48	14620209.92	40°15'21.7675"N	80°36'41.3440"W	13751.35	349.117	0.48	-0.12	0.46
20937.00	90.740	334.290	5700.06	13569.36	13590.50	-2638.02	1748771.81	14620296.36	40°15'22.6238"N	80°36'41.8767"W	13844.16	349.015	0.45	0.45	0.05
21033.00	90.370	334.040	5699.13	13665.18	13676.90	-2679.86	1748729.99	14620382.73	40°15'23.4794"N	80°36'42.4114"W	13936.98	348.914	0.47	-0.39	-0.26
21129.00	90.280	333.810	5698.58	13760.99	13763.13	-2722.05	1748687.81	14620468.92	40°15'24.3333"N	80°36'42.9508"W	14029.73	348.813	0.26	-0.09	-0.24
21225.00	90.620	333.780	5697.83	13856.77	13849.26	-2764.44	1748645.44	14620555.02	40°15'25.1863"N	80°36'43.4927"W	14122.47	348.712	0.36	0.35	-0.03
21321.00	90.650	334.050	5696.77	13952.57	13935.48	-2806.65	1748603.25	14620641.20	40°15'26.0401"N	80°36'44.0322"W	14215.30	348.613	0.28	0.03	0.28
21417.00	90.830	334.050	5695.53	14048.38	14021.79	-2848.66	1748561.26	14620727.48	40°15'26.8948"N	80°36'44.5691"W	14308.23	348.516	0.19	0.19	0.00
21514.00	90.280	334.300	5694.59	14145.21	14109.10	-2890.91	1748519.02	14620814.76	40°15'27.7594"N	80°36'45.1092"W	14402.22	348.421	0.62	-0.57	0.26
21610.00	90.430	334.240	5693.99	14241.04	14195.58	-2932.59	1748477.36	14620901.20	40°15'28.6158"N	80°36'45.6419"W	14495.33	348.328	0.17	0.16	-0.06
21706.00	90.490	333.820	5693.22	14336.86	14281.88	-2974.62	1748435.34	14620987.47	40°15'29.4704"N	80°36'46.1792"W	14588.37	348.235	0.44	0.06	-0.44
21802.00	90.430	334.130	5692.45	14432.66	14368.14	-3016.74	1748393.24	14621073.70	40°15'30.3247"N	80°36'46.7176"W	14681.43	348.142	0.33	-0.06	0.32
21898.00	90.430	336.180	5691.73	14528.57	14455.25	-3057.07	1748352.92	14621160.77	40°15'31.1872"N	80°36'47.2329"W	14774.98	348.059	2.14	0.00	2.14
21994.00	90.430	336.440	5691.01	14624.54	14543.16	-3095.65	1748314.37	14621248.65	40°15'32.0576"N	80°36'47.7255"W	14868.98	347.983	0.27	0.00	0.27
22090.00	90.650	338.680	5690.10	14720.53	14631.88	-3132.29	1748277.74	14621337.34	40°15'32.9359"N	80°36'48.1931"W	14963.39	347.917	2.34	0.23	2.33
22186.00	90.400	338.380	5689.22	14816.52	14721.22	-3167.42	1748242.62	14621426.64	40°15'33.8202"N	80°36'48.6413"W	15058.11	347.857	0.41	-0.26	-0.31
22283.00	90.250	338.210	5688.67	14913.51	14811.34	-3203.29	1748206.76	14621516.72	40°15'34.7123"N	80°36'49.0989"W	15153.77	347.796	0.23	-0.15	-0.18
22379.00	90.520	338.760	5688.03	15009.49	14900.65	-3238.50	1748171.57	14621606.00	40°15'35.5963"N	80°36'49.5480"W	15248.51	347.738	0.64	0.28	0.57
22475.00	90.370	338.140	5687.28	15105.48	14989.93	-3273.76	1748136.32	14621695.25	40°15'36.4801"N	80°36'49.9978"W	15343.26	347.680	0.66	-0.16	-0.65
22571.00	90.310	338.100	5686.71	15201.47	15079.01	-3309.54	1748100.56	14621784.30	40°15'37.3620"N	80°36'50.4543"W	15437.93	347.621	0.08	-0.06	-0.04
22667.00	90.340	338.390	5686.17	15297.46	15168.18	-3345.12	1748064.99	14621873.42	40°15'38.2446"N	80°36'50.9082"W	15532.65	347.563	0.30	0.03	0.30
22763.00	90.370	338.200	5685.57	15393.45	15257.37	-3380.62	1748029.50	14621962.58	40°15'39.1275"N	80°36'51.3611"W	15627.41	347.507	0.20	0.03	-0.20
22859.00	90.000	338.440	5685.26	15489.44	15346.58	-3416.08	1747994.05	14622051.75	40°15'40.0105"N	80°36'51.8136"W	15722.18	347.451	0.46	-0.39	0.25
22956.00	90.150	338.650	5685.14	15586.43	15436.85	-3451.56	1747958.58	14622142.00	40°15'40.9042"N	80°36'52.2661"W	15818.02	347.396	0.27	0.15	0.22





# Actual Wellpath Report

Robert Bone BRK 405H AWP Proj: 25827'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

## WELLPATH DATA (271 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]	Buid Rate ["/100ft]	Turn Rate ["/100ft]
23052.00	89.940	338.590	5685.06	15682.42	15526.25	-3486.56	1747923.60	14622231.36	40°15'41.7891"N	80°36'52.7126"W	15912.90	347.344	0.23	-0.22	-0.06
23148.00	89.820	338.680	5685.26	15778.40	15615.65	-3521.53	1747888.64	14622320.72	40°15'42.6740"N	80°36'53.1587"W	16007.80	347.292	0.16	-0.12	0.09
23244.00	90.000	338.550	5685.41	15874.38	15705.04	-3556.54	1747853.65	14622410.08	40°15'43.5588"N	80°36'53.6052"W	16102.71	347.240	0.23	0.19	-0.14
23339.00	90.000	338.770	5685.41	15969.37	15793.53	-3591.11	1747819.09	14622498.53	40°15'44.4347"N	80°36'54.0461"W	16196.65	347.190	0.23	0.00	0.23
23436.00	90.000	338.340	5685.41	16066.35	15883.81	-3626.57	1747783.64	14622588.78	40°15'45.3284"N	80°36'54.4985"W	16292.56	347.139	0.44	0.00	-0.44
23546.00	89.970	338.030	5685.44	16176.35	15985.93	-3667.45	1747742.78	14622690.86	40°15'46.3393"N	80°36'55.0201"W	16401.23	347.079	0.28	-0.03	-0.28
23642.00	89.720	336.570	5685.70	16272.34	16074.49	-3704.50	1747705.75	14622779.39	40°15'47.2161"N	80°36'55.4930"W	16495.84	347.022	1.54	-0.26	-1.52
23738.00	89.750	336.600	5686.15	16368.33	16162.59	-3742.65	1747667.62	14622867.45	40°15'48.0882"N	80°36'55.9802"W	16590.26	346.962	0.04	0.03	0.03
23834.00	89.970	337.200	5686.38	16464.32	16250.89	-3780.31	1747629.97	14622955.72	40°15'48.9624"N	80°36'56.4611"W	16684.79	346.905	0.67	0.23	0.63
23930.00	89.780	337.580	5686.59	16560.32	16339.51	-3817.22	1747593.07	14623044.30	40°15'49.8397"N	80°36'56.9322"W	16779.48	346.850	0.44	-0.20	0.40
24026.00	89.750	337.680	5686.98	16656.32	16428.29	-3853.75	1747556.55	14623133.04	40°15'50.7186"N	80°36'57.3985"W	16874.24	346.798	0.11	-0.03	0.10
24122.00	90.620	340.560	5686.67	16752.27	16517.97	-3887.97	1747522.35	14623222.69	40°15'51.6063"N	80°36'57.8348"W	16969.37	346.755	3.13	0.91	3.00
24218.00	90.030	341.560	5686.13	16848.09	16608.77	-3919.12	1747491.21	14623313.46	40°15'52.5049"N	80°36'58.2317"W	17064.90	346.723	1.21	-0.61	1.04
24314.00	90.120	341.960	5686.00	16943.83	16699.95	-3949.17	1747461.17	14623404.60	40°15'53.4071"N	80°36'58.6142"W	17160.54	346.695	0.43	0.09	0.42
24410.00	90.430	342.230	5685.54	17039.53	16791.30	-3978.69	1747431.67	14623495.91	40°15'54.3111"N	80°36'58.9898"W	17256.23	346.670	0.43	0.32	0.28
24506.00	90.430	342.360	5684.82	17135.21	16882.75	-4007.88	1747402.49	14623587.33	40°15'55.2160"N	80°36'59.3613"W	17351.95	346.645	0.14	0.00	0.14
24602.00	90.150	342.050	5684.34	17230.89	16974.15	-4037.22	1747373.16	14623678.70	40°15'56.1205"N	80°36'59.7346"W	17447.66	346.621	0.44	-0.29	-0.32
24698.00	90.250	342.230	5684.00	17326.59	17065.53	-4066.66	1747343.73	14623770.04	40°15'57.0247"N	80°37'0.1093"W	17543.37	346.597	0.21	0.10	0.19
24794.00	91.110	342.560	5682.86	17422.24	17157.02	-4095.69	1747314.71	14623861.50	40°15'57.9301"N	80°37'0.4787"W	17639.11	346.574	0.96	0.90	0.34
24890.00	90.550	342.870	5681.47	17517.85	17248.68	-4124.21	1747286.20	14623953.12	40°15'58.8370"N	80°37'0.8415"W	17734.88	346.563	0.67	-0.58	0.32
24986.00	90.150	341.970	5680.89	17613.50	17340.19	-4153.21	1747257.21	14624044.59	40°15'59.7426"N	80°37'1.2105"W	17830.63	346.531	1.03	-0.42	-0.94
25083.00	90.490	342.760	5680.34	17710.16	17432.63	-4182.59	1747227.84	14624137.00	40°16'0.6573"N	80°37'1.5844"W	17927.37	346.508	0.89	0.35	0.81
25179.00	90.180	342.120	5679.78	17805.81	17524.15	-4211.56	1747198.89	14624228.49	40°16'1.5630"N	80°37'1.9529"W	18023.13	346.486	0.74	-0.32	-0.67
25275.00	90.250	342.880	5679.42	17901.46	17615.71	-4240.42	1747170.03	14624320.01	40°16'2.4689"N	80°37'2.3202"W	18118.90	346.465	0.80	0.07	0.79
25371.00	90.340	343.110	5678.93	17997.03	17707.51	-4268.50	1747141.97	14624411.77	40°16'3.3773"N	80°37'2.6773"W	18214.72	346.447	0.26	0.09	0.24
25467.00	90.620	343.470	5678.12	18092.55	17799.45	-4296.10	1747114.37	14624503.68	40°16'4.2870"N	80°37'3.0282"W	18310.57	346.431	0.48	0.29	0.38
25563.00	91.020	343.690	5676.75	18188.01	17891.53	-4323.24	1747087.25	14624595.72	40°16'5.1980"N	80°37'3.3731"W	18406.44	346.416	0.48	0.42	0.23
25660.00	91.050	343.890	5675.00	18284.43	17984.66	-4350.31	1747060.19	14624688.81	40°16'6.1195"N	80°37'3.7172"W	18503.33	346.402	0.21	0.03	0.21
25756.00	91.510	343.670	5672.85	18379.84	18076.81	-4377.12	1747033.39	14624780.93	40°16'7.0313"N	80°37'4.0579"W	18599.20	346.388	0.53	0.48	-0.23
25802.00	91.510	344.270	5671.64	18425.54	18121.01	-4389.82	1747020.70	14624825.11	40°16'7.4686"N	80°37'4.2192"W	18645.14	346.382	1.30	0.00	1.30



**REFERENCE WELLPATH IDENTIFICATION**

Operator	SWN PRODUCTION COMPANY, LLC			Well	Robert Bone BRK 405H
Field	Brooke			API	47-009-00319-0000
Facility	Robert Bone BRK Pad			Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H				

**WELLPATH DATA (271 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]
25827.00†	91.510	344.270	5670.98	18450.36	18145.06	-4396.59	1747013.92	14624849.15	40°16'7.7066"N	80°37'4.3053"W	18670.12	346.380	0.00	0.00	0.00

**HOLE & CASING SECTIONS - Ref Wellbore: Robert Bone BRK 405H AWB Ref Wellpath: Robert Bone BRK 405H AWP Proj: 25827'**

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	0.00	126.00	126.00	0.00	126.00	0.00	0.00	0.04	-0.19
17.5in Open Hole	126.00	463.00	337.00	126.00	462.98	0.04	-0.19	2.81	-0.49
13.375in Casing Surface	26.00	425.00	399.00	26.00	424.98	0.00	0.00	2.33	-0.73
12.25in Open Hole	463.00	1708.00	1245.00	462.98	1677.96	2.81	-0.49	-84.66	214.90
9.625in Casing Intermediate	26.00	1689.00	1663.00	26.00	1660.23	0.00	0.00	-83.09	208.24
8.75in Open Hole	1708.00	4001.00	2293.00	1677.96	3621.30	-84.66	214.90	-55.79	1407.08
8.5in Open Hole	4001.00	25827.00	21826.00	3621.30	5670.98	-55.79	1407.08	18145.06	-4396.59
5.5in Casing Production	26.00	25827.00	25801.00	26.00	5670.98	0.00	0.00	18145.06	-4396.59



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Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

**TARGETS**

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Robert Bone BRK 405H BHL Rev-4	5667.70	18143.15	-4404.07	1747006.45	14624847.24	40°16'7.6880"N	80°37'4.4019"W	point
Robert Bone BRK 405H LP Rev-5	5868.00	841.46	2735.35	1754143.10	14607552.27	40°13'16.4020"N	80°35'33.3271"W	point
Buffalo Creek Hardline	5995.50	16516.83	-3812.51	1747597.77	14623221.55	40°15'51.5917"N	80°36'56.8616"W	polygon
2D Polygon: dimensions not calculated								

**WELLPATH COMPOSITION - Ref Wellbore: Robert Bone BRK 405H AWB Ref Wellpath: Robert Bone BRK 405H AWP Proj: 25827'**

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	381.00	OWSG MWD rev2 + HRGM	01_Premier MWD <17'-1/2"> (224'-381')	Robert Bone BRK 405H AWB	8/19/2021
381.00	1622.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12'-1/4"> (510'-1622')	Robert Bone BRK 405H AWB	8/19/2021
1622.00	3920.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8'-3/4"> (1712'-3920')	Robert Bone BRK 405H AWB	8/19/2021
3920.00	25827.00	BH AutoTrak Curve(eXpress (2019) (HRGM, Short spacing)	04_BH AT Curve <8'-1/2"> (4025'-25802')	Robert Bone BRK 405H AWB	8/19/2021



**REFERENCE WELLPATH IDENTIFICATION**

Operator	SWN PRODUCTION COMPANY, LLC	Well	Robert Bone BRK 405H
Field	Brooke	API	47-009-00319-0000
Facility	Robert Bone BRK Pad	Wellbore	Robert Bone BRK 405H AWB
Slot	Slot 405H		

**COMMENTS**

Wellpath general comments  
API: 47009003190000  
BH Job#: 110934645  
Rig: SDC40  
Duration: 08.24.2021 - 09.05.2021