

Location: Wetzel County, WV

Field: Wetzel

Facility: William Ritchea WTZ Pad

Slot: 410H

Well: William Ritchea WTZ 410H

Wellbore: William Ritchea WTZ 410H AWB

Plot reference wellpath is William Ritchea WTZ 410H awp Proj: 18972

Grid System: NAD83 / UTM Zone 17 North, US feet

True vertical depths are referenced to SDC 41 (KB)

North Reference: Grid north

Reference wellpath measured depths are referenced to SDC 41 (KB)

Scale: True distance

SDC 41 (KB) to Mean Sea Level: 1588.9 feet

Coordinates are in feet referenced to Slot

Mean Sea Level to Ground level (At Slot: 410H): -1562.9 feet

Depths are in feet

Offset wellpath MDs are referenced to each path's default MD datum

Created by: tranlam on 2023-06-27; Database: WA_MPL_EASTERNUS_Defn

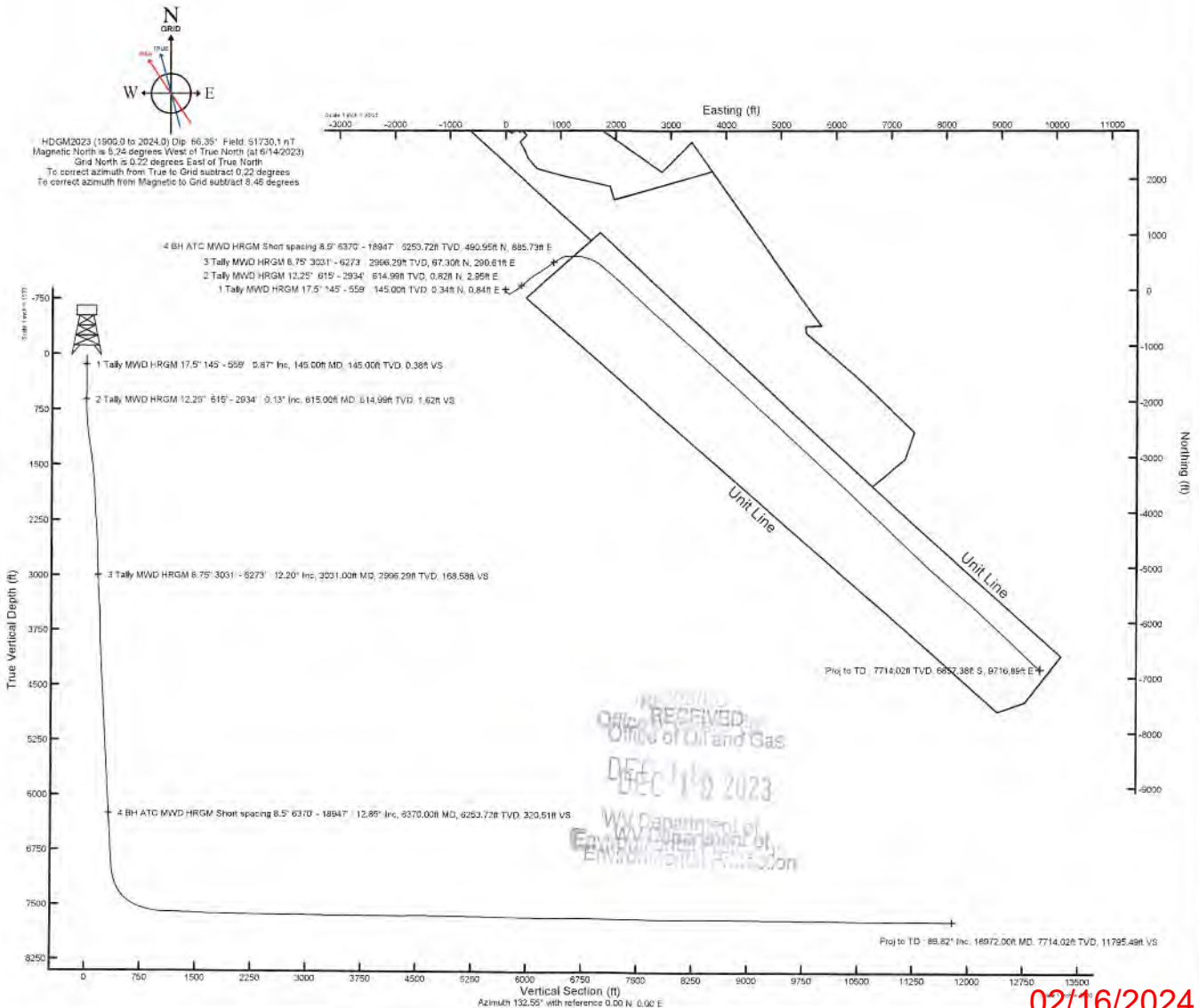
Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
William Ritchea WTZ Pad			1736263.630	14406607.520	39°40'10.5672"N	80°39'33.7968"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
410H	-23.79	-2.10	1736261.530	14406583.740	39°40'10.3322"N	80°39'33.8248"W
SDC 41 (KB) to Ground level (At Slot: 410H)					26ft	
Mean Sea Level to Ground level (At Slot: 410H)					-1562.9ft	
SDC 41 (KB) to Mean Sea Level					1588.9ft	

Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
18972.00	89.820	133.270	7714.02	-6857.38	9716.89	1745974.61	14399729.05	39°39'2.1793"N	80°37'29.9309"W

API: 47103035760000
BH JOB: 111848187
DURATION: 6/23/2023 - 6/26/2023
RIG: SDC 41



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02/16/2024

REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 410H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 410H AWB
Slot	410H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Tranlam
Scale	0.999611	Report Generated	6/27/2023 at 12:28:30 PM
Convergence at slot	0.22° East	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-23.79	-2.10	1736261.53	14406583.74	39°40'10.3322"N	80°39'33.8248"W
Facility Reference Pt			1736263.63	14406607.52	39°40'10.5672"N	80°39'33.7968"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 41 (KB) to Facility Vertical Datum	1588.90ft
Horizontal Reference Pt	Slot	SDC 41 (KB) to Mean Sea Level	1588.90ft
Vertical Reference Pt	SDC 41 (KB)	SDC 41 (KB) to Ground Level at Slot (410H)	26.00ft
MD Reference Pt	SDC 41 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	132.55°

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Actual Wellpath Report

William Ritchea WTZ 410H awp Proj: 18972'
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Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 410H AWB
Slot	410H		

WELLPATH DATA (213 stations) † = interpolated, ‡ = extrapolated station														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Comments
0.00†	0.000	67.750	0.00	0.00	0.00	0.00	1736261.53	14406583.74	39°40'10.3322"N	80°39'33.8248"W	0.00	0.000	0.00	
26.00	0.000	67.750	26.00	0.00	0.00	0.00	1736261.53	14406583.74	39°40'10.3322"N	80°39'33.8248"W	0.00	0.000	0.00	
145.00	0.870	67.750	145.00	0.38	0.34	0.84	1736262.37	14406584.08	39°40'10.3356"N	80°39'33.8141"W	0.90	67.750	0.73	
191.00	0.630	73.370	190.99	0.66	0.55	1.40	1736262.93	14406584.29	39°40'10.3376"N	80°39'33.8069"W	1.50	68.693	0.55	
237.00	0.620	81.930	236.99	0.95	0.65	1.89	1736263.42	14406584.39	39°40'10.3386"N	80°39'33.8006"W	2.00	70.917	0.20	
329.00	0.240	67.550	328.99	1.35	0.80	2.56	1736264.09	14406584.54	39°40'10.3400"N	80°39'33.7920"W	2.68	72.706	0.43	
420.00	0.130	110.330	419.99	1.52	0.83	2.83	1736264.36	14406584.57	39°40'10.3404"N	80°39'33.7885"W	2.95	73.596	0.19	
512.00	0.030	171.760	511.99	1.64	0.77	2.94	1736264.46	14406584.51	39°40'10.3398"N	80°39'33.7872"W	3.04	75.224	0.13	
559.00	0.110	50.590	558.99	1.65	0.79	2.97	1736264.50	14406584.53	39°40'10.3399"N	80°39'33.7868"W	3.08	75.102	0.27	
615.00	0.130	262.490	614.99	1.62	0.82	2.95	1736264.48	14406584.56	39°40'10.3402"N	80°39'33.7870"W	3.06	74.532	0.41	
687.00	0.460	151.050	686.98	1.84	0.55	3.01	1736264.54	14406584.29	39°40'10.3376"N	80°39'33.7863"W	3.06	79.589	0.72	
779.00	2.070	159.550	778.96	3.67	-1.33	3.77	1736265.30	14406582.41	39°40'10.3190"N	80°39'33.7767"W	4.00	109.398	1.76	
870.00	4.120	161.920	869.82	7.99	-5.98	5.36	1736266.89	14406577.77	39°40'10.2730"N	80°39'33.7566"W	8.03	138.117	2.26	
962.00	6.030	162.300	961.46	15.06	-13.72	7.85	1736269.38	14406570.02	39°40'10.1963"N	80°39'33.7250"W	15.81	150.216	2.08	
1053.00	7.330	153.660	1051.84	24.63	-23.48	11.88	1736273.41	14406560.27	39°40'10.0997"N	80°39'33.6740"W	26.31	153.156	1.80	
1144.00	8.750	146.580	1141.94	36.76	-34.46	18.27	1736279.79	14406549.30	39°40'9.9910"N	80°39'33.5928"W	39.00	152.066	1.90	
1234.00	9.100	141.290	1230.86	50.44	-45.73	26.49	1736288.01	14406538.03	39°40'9.8793"N	80°39'33.4882"W	52.85	149.913	0.99	
1326.00	8.200	134.440	1321.81	64.19	-56.00	35.73	1736297.24	14406527.77	39°40'9.7775"N	80°39'33.3707"W	66.42	147.462	1.49	
1418.00	7.280	127.230	1412.97	76.55	-64.12	45.05	1736306.56	14406519.65	39°40'9.6969"N	80°39'33.2518"W	78.36	144.906	1.45	
1510.00	6.120	122.560	1504.35	87.18	-70.28	53.83	1736315.34	14406513.48	39°40'9.6356"N	80°39'33.1399"W	88.53	142.553	1.39	
1601.00	5.280	118.260	1594.90	96.02	-74.88	61.60	1736323.11	14406508.89	39°40'9.5899"N	80°39'33.0406"W	96.96	140.555	1.03	
1691.00	5.910	104.980	1684.47	104.14	-78.04	69.73	1736331.23	14406505.74	39°40'9.5584"N	80°39'32.9369"W	104.65	138.218	1.59	
1783.00	5.850	81.990	1776.00	111.32	-78.61	78.95	1736340.45	14406505.16	39°40'9.5524"N	80°39'32.8190"W	111.41	134.876	2.54	
1873.00	7.370	63.850	1865.41	116.33	-75.42	88.67	1736350.17	14406508.35	39°40'9.5835"N	80°39'32.6945"W	116.41	130.384	2.85	
1967.00	10.800	53.620	1958.22	120.21	-67.54	101.18	1736362.67	14406516.23	39°40'9.6609"N	80°39'32.5342"W	121.65	123.724	4.02	
2058.00	12.030	56.220	2047.42	124.09	-57.21	115.93	1736377.41	14406526.55	39°40'9.7625"N	80°39'32.3451"W	129.27	116.266	1.46	
2148.00	12.060	59.030	2135.44	128.97	-47.16	131.78	1736393.26	14406536.60	39°40'9.8612"N	80°39'32.1418"W	139.97	109.688	0.65	
2239.00	13.420	59.750	2224.20	134.79	-36.94	149.06	1736410.53	14406546.81	39°40'9.9615"N	80°39'31.9204"W	153.57	103.920	1.50	
2331.00	13.860	61.000	2313.60	141.44	-26.22	167.92	1736429.38	14406557.53	39°40'10.0668"N	80°39'31.6787"W	169.95	98.876	0.58	
2421.00	13.060	59.020	2401.13	147.73	-15.76	186.07	1736447.52	14406567.98	39°40'10.1695"N	80°39'31.4462"W	186.73	94.842	1.03	

Actual Wellpath Report

William Ritchea WTZ 410H awp Proj: 18972'

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Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 410H AWB
Slot	410H		

WELLPATH DATA (213 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Comments
2512.00	11.770	53.780	2490.00	152.45	-4.98	202.37	1736463.82	14406578.76	39°40'10.2753"N	80°39'31.2371"W	202.43	91.411	1.88	
2602.00	12.310	48.900	2578.02	155.30	6.75	217.00	1736478.45	14406590.48	39°40'10.3907"N	80°39'31.0494"W	217.11	88.219	1.28	
2694.00	13.360	49.650	2667.72	157.70	20.08	232.50	1736493.93	14406603.81	39°40'10.5219"N	80°39'30.8506"W	233.36	85.065	1.16	
2784.00	13.210	51.470	2755.32	160.58	33.21	248.47	1736509.90	14406616.94	39°40'10.6511"N	80°39'30.6458"W	250.68	82.386	0.49	
2875.00	12.760	52.220	2843.99	163.88	45.85	264.54	1736525.97	14406629.57	39°40'10.7754"N	80°39'30.4396"W	268.49	80.168	0.53	
2934.00	12.590	51.110	2901.55	165.93	53.88	274.70	1736536.12	14406637.60	39°40'10.8543"N	80°39'30.3093"W	279.93	78.903	0.50	
3031.00	12.200	48.550	2996.29	168.58	67.30	290.61	1736552.02	14406651.01	39°40'10.9864"N	80°39'30.1052"W	298.30	76.961	0.69	
3076.00	12.330	47.990	3040.26	169.53	73.66	297.74	1736559.15	14406657.37	39°40'11.0490"N	80°39'30.0137"W	306.72	76.104	0.39	
3167.00	13.360	50.000	3128.99	171.81	86.92	313.02	1736574.42	14406670.63	39°40'11.1795"N	80°39'29.8177"W	324.86	74.480	1.23	
3257.00	14.520	54.280	3216.34	175.46	100.19	330.14	1736591.54	14406683.89	39°40'11.3100"N	80°39'29.5980"W	345.01	73.118	1.72	
3348.00	14.930	58.040	3304.35	180.91	113.06	349.35	1736610.74	14406696.76	39°40'11.4364"N	80°39'29.3518"W	367.19	72.067	1.14	
3438.00	13.210	59.030	3391.65	186.92	124.49	368.00	1736629.39	14406708.18	39°40'11.5487"N	80°39'29.1127"W	388.49	71.310	1.93	
3528.00	11.000	57.630	3479.64	192.07	134.38	384.08	1736645.46	14406718.07	39°40'11.6458"N	80°39'28.9067"W	406.91	70.716	2.48	
3619.00	10.810	47.050	3569.00	195.00	144.84	397.66	1736659.03	14406728.53	39°40'11.7487"N	80°39'28.7325"W	423.21	69.986	2.21	
3709.00	12.500	43.180	3657.15	195.77	157.70	410.50	1736671.87	14406741.38	39°40'11.8753"N	80°39'28.5676"W	439.75	68.985	2.07	
3800.00	14.460	45.300	3745.64	196.42	172.87	425.32	1736686.68	14406756.54	39°40'12.0247"N	80°39'28.3774"W	459.11	67.881	2.22	
3892.00	15.060	48.790	3834.60	198.27	188.83	442.47	1736703.83	14406772.49	39°40'12.1817"N	80°39'28.1572"W	481.08	66.890	1.17	
3984.00	13.170	51.960	3923.82	201.29	203.16	459.72	1736721.07	14406786.82	39°40'12.3227"N	80°39'27.9359"W	502.61	66.158	2.22	
4074.00	11.760	56.000	4011.70	205.10	214.61	475.40	1736736.74	14406798.26	39°40'12.4353"N	80°39'27.7349"W	521.60	65.704	1.84	
4167.00	11.900	53.040	4102.73	209.05	225.67	490.92	1736752.26	14406809.32	39°40'12.5440"N	80°39'27.5359"W	540.30	65.312	0.67	
4259.00	12.500	53.550	4192.65	212.67	237.29	506.51	1736767.84	14406820.94	39°40'12.6583"N	80°39'27.3360"W	559.34	64.898	0.66	
4351.00	12.500	57.970	4282.47	217.22	248.49	522.96	1736784.28	14406832.13	39°40'12.7683"N	80°39'27.1251"W	578.99	64.585	1.04	
4441.00	12.410	56.950	4370.35	222.22	258.93	539.32	1736800.64	14406842.56	39°40'12.8708"N	80°39'26.9153"W	598.25	64.354	0.26	
4532.00	12.720	57.140	4459.17	227.17	269.69	555.93	1736817.24	14406853.33	39°40'12.9766"N	80°39'26.7023"W	617.90	64.121	0.34	
4623.00	12.360	57.440	4548.00	232.20	280.37	572.56	1736833.86	14406864.00	39°40'13.0815"N	80°39'26.4892"W	637.52	63.910	0.40	
4715.00	12.350	56.170	4637.87	237.04	291.15	589.03	1736850.33	14406874.78	39°40'13.1874"N	80°39'26.2780"W	657.05	63.697	0.30	
4806.00	12.390	56.720	4726.76	241.73	301.92	605.27	1736866.57	14406885.55	39°40'13.2933"N	80°39'26.0698"W	676.40	63.489	0.14	
4899.00	12.010	57.030	4817.66	246.59	312.66	621.73	1736883.02	14406896.28	39°40'13.3988"N	80°39'25.8588"W	695.92	63.302	0.41	
4993.00	11.950	55.340	4909.61	251.19	323.52	637.94	1736899.22	14406907.13	39°40'13.5055"N	80°39'25.6509"W	715.29	63.109	0.38	
5085.00	12.480	54.120	4999.53	255.29	334.76	653.83	1736915.10	14406918.37	39°40'13.6160"N	80°39'25.4472"W	734.55	62.887	0.64	

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Slot	410H		

WELLPATH DATA (213 stations)														
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5175.00	12.550	54.180	5087.39	259.21	346.19	669.64	1736930.91	14406929.79	39°40'13.7283"N	80°39'25.2445"W	753.83	62.662	0.08	
5266.00	12.980	55.510	5176.14	263.50	357.76	686.08	1736947.34	14406941.36	39°40'13.8421"N	80°39'25.0337"W	773.75	62.460	0.57	
5357.00	12.650	56.660	5264.87	268.22	369.02	702.83	1736964.08	14406952.62	39°40'13.9527"N	80°39'24.8189"W	793.82	62.298	0.46	
5449.00	12.760	55.940	5354.62	273.03	380.25	719.66	1736980.91	14406963.84	39°40'14.0631"N	80°39'24.6031"W	813.94	62.149	0.21	
5541.00	13.170	56.680	5444.27	277.94	391.70	736.83	1736998.08	14406975.28	39°40'14.1755"N	80°39'24.3829"W	834.48	62.005	0.48	
5632.00	12.520	56.720	5533.00	282.88	402.80	753.74	1737014.98	14406986.39	39°40'14.2847"N	80°39'24.1662"W	854.62	61.880	0.71	
5722.00	12.010	56.070	5620.94	287.46	413.38	769.67	1737030.90	14406996.96	39°40'14.3886"N	80°39'23.9620"W	873.66	61.760	0.59	
5813.00	12.140	55.520	5709.93	291.82	424.09	785.41	1737046.63	14407007.66	39°40'14.4938"N	80°39'23.7601"W	892.59	61.633	0.19	
5906.00	12.470	56.390	5800.79	296.42	435.18	801.83	1737063.05	14407018.75	39°40'14.6028"N	80°39'23.5496"W	912.32	61.510	0.41	
5997.00	12.640	56.410	5889.62	301.15	446.13	818.31	1737079.52	14407029.69	39°40'14.7104"N	80°39'23.3383"W	932.02	61.402	0.19	
6090.00	12.880	56.630	5980.32	306.11	457.46	835.44	1737096.65	14407041.02	39°40'14.8217"N	80°39'23.1187"W	952.49	61.297	0.26	
6181.00	12.350	56.060	6069.12	310.85	468.47	851.99	1737113.18	14407052.03	39°40'14.9299"N	80°39'22.9066"W	972.29	61.196	0.60	
6273.00	12.170	56.240	6159.02	315.45	479.35	868.21	1737129.40	14407062.90	39°40'15.0368"N	80°39'22.6986"W	991.75	61.096	0.20	
6370.00	12.850	56.750	6253.72	320.51	490.95	885.73	1737146.92	14407074.50	39°40'15.1508"N	80°39'22.4739"W	1012.70	61.001	0.71	
6461.00	13.050	56.420	6342.41	325.46	502.18	902.75	1737163.93	14407085.72	39°40'15.2611"N	80°39'22.2557"W	1033.03	60.914	0.23	
6551.00	12.580	56.650	6430.16	330.28	513.19	919.41	1737180.58	14407096.73	39°40'15.3693"N	80°39'22.0422"W	1052.93	60.831	0.53	
6642.00	11.310	56.110	6519.19	334.79	523.61	935.09	1737196.26	14407107.15	39°40'15.4717"N	80°39'21.8411"W	1071.71	60.753	1.40	
6735.00	11.950	57.420	6610.28	339.40	533.88	950.78	1737211.93	14407117.41	39°40'15.5726"N	80°39'21.6400"W	1090.41	60.685	0.74	
6826.00	13.030	58.500	6699.13	344.63	544.31	967.46	1737228.61	14407127.84	39°40'15.6751"N	80°39'21.4261"W	1110.07	60.637	1.21	
6918.00	13.510	57.820	6788.67	350.31	555.46	985.40	1737246.55	14407138.98	39°40'15.7845"N	80°39'21.1962"W	1131.17	60.591	0.55	
7009.00	13.130	58.150	6877.22	355.89	566.57	1003.18	1737264.31	14407150.09	39°40'15.8937"N	80°39'20.9683"W	1152.11	60.543	0.43	
7101.00	13.400	58.910	6966.77	361.71	577.59	1021.18	1737282.31	14407161.10	39°40'16.0019"N	80°39'20.7375"W	1173.21	60.507	0.35	
7195.00	17.730	69.110	7057.32	371.18	588.33	1043.90	1737305.02	14407171.84	39°40'16.1072"N	80°39'20.4465"W	1198.27	60.595	5.43	
7287.00	23.480	80.610	7143.43	388.76	596.32	1075.11	1737336.21	14407179.83	39°40'16.1850"N	80°39'20.0470"W	1229.41	60.984	7.62	
7378.00	31.240	85.310	7224.20	416.01	601.22	1116.58	1737377.67	14407184.72	39°40'16.2318"N	80°39'19.5164"W	1268.15	61.700	8.85	
7470.00	38.260	90.720	7299.76	453.48	602.81	1168.92	1737429.99	14407186.32	39°40'16.2456"N	80°39'18.8470"W	1315.20	62.720	8.33	
7561.00	47.500	92.040	7366.37	500.08	601.26	1230.75	1737491.80	14407184.76	39°40'16.2279"N	80°39'18.0563"W	1369.76	63.963	10.20	
7653.00	55.650	90.990	7423.50	554.38	599.39	1302.74	1737563.76	14407182.90	39°40'16.2067"N	80°39'17.1358"W	1434.01	65.293	8.90	
7745.00	61.750	99.360	7471.34	616.85	592.13	1380.87	1737641.85	14407175.64	39°40'16.1320"N	80°39'16.1370"W	1502.47	66.790	10.21	
7836.00	66.340	107.060	7511.20	688.13	573.35	1460.39	1737721.35	14407156.87	39°40'15.9434"N	80°39'15.1209"W	1568.91	68.565	9.12	

William Ritchea
 WTZ 410H awp Proj: 18972
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Actual Wellpath Report

William Ritchea WTZ 410H awp Proj: 18972

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 410H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 410H AWB
Slot	410H		

WELLPATH DATA (213 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Comments
7928.00	71.980	112.220	7543.94	767.29	544.41	1541.28	1737802.21	14407127.94	39°40'15.6542"N	80°39'14.0879"W	1634.60	70.546	8.06	
8019.00	75.600	116.950	7569.35	850.39	508.04	1620.69	1737881.58	14407091.58	39°40'15.2918"N	80°39'13.0742"W	1698.45	72.595	6.38	
8111.00	80.260	123.830	7588.61	938.26	462.53	1698.20	1737959.06	14407046.09	39°40'14.8391"N	80°39'12.0852"W	1760.06	74.764	8.89	
8203.00	87.350	132.450	7598.55	1029.31	406.10	1769.99	1738030.83	14406989.68	39°40'14.2786"N	80°39'11.1699"W	1815.98	77.078	12.08	
8294.00	87.940	129.720	7602.29	1120.20	346.35	1838.51	1738099.33	14406929.96	39°40'13.6855"N	80°39'10.2966"W	1870.85	79.331	3.07	
8385.00	88.490	130.090	7605.12	1211.05	288.00	1908.29	1738169.07	14406871.63	39°40'13.1062"N	80°39'9.4072"W	1929.90	81.418	0.73	
8477.00	88.280	131.480	7607.71	1302.97	227.93	1977.92	1738238.67	14406811.58	39°40'12.5099"N	80°39'8.5197"W	1991.01	83.426	1.53	
8569.00	88.180	129.250	7610.56	1394.85	168.38	2047.98	1738308.71	14406752.06	39°40'11.9187"N	80°39'7.6267"W	2054.89	85.300	2.43	
8660.00	87.450	130.830	7614.03	1485.70	109.88	2117.59	1738378.29	14406693.58	39°40'11.3379"N	80°39'6.7394"W	2120.44	87.030	1.91	
8752.00	87.660	132.250	7617.95	1577.60	48.93	2186.39	1738447.06	14406632.65	39°40'10.7329"N	80°39'5.8626"W	2186.94	88.718	1.56	
8843.00	87.600	132.030	7621.71	1668.52	-12.07	2253.81	1738514.46	14406571.67	39°40'10.1274"N	80°39'5.0035"W	2253.84	90.307	0.25	
8935.00	89.600	133.180	7623.96	1760.48	-74.33	2321.50	1738582.12	14406509.44	39°40'9.5095"N	80°39'4.1409"W	2322.69	91.834	2.51	
9026.00	89.200	132.210	7624.91	1851.48	-136.03	2388.38	1738648.97	14406447.76	39°40'8.8972"N	80°39'3.2887"W	2392.25	93.260	1.15	
9118.00	89.380	132.510	7626.05	1943.47	-198.01	2456.35	1738716.92	14406385.80	39°40'8.2820"N	80°39'2.4226"W	2464.32	94.609	0.38	
9209.00	88.890	131.870	7627.43	2034.46	-259.12	2523.77	1738784.31	14406324.72	39°40'7.6755"N	80°39'1.5635"W	2537.04	95.862	0.89	
9301.00	89.170	132.250	7628.99	2126.44	-320.74	2592.06	1738852.58	14406263.12	39°40'7.0638"N	80°39'0.6932"W	2611.83	97.054	0.51	
9393.00	89.080	131.190	7630.39	2218.42	-381.96	2660.72	1738921.21	14406201.93	39°40'6.4562"N	80°38'59.8182"W	2688.00	98.169	1.16	
9484.00	89.140	131.090	7631.80	2309.38	-441.82	2729.25	1738989.71	14406142.09	39°40'5.8619"N	80°38'58.9449"W	2764.78	99.196	0.13	
9576.00	89.350	131.380	7633.02	2401.35	-502.46	2798.43	1739058.86	14406081.48	39°40'5.2600"N	80°38'58.0633"W	2843.18	100.179	0.39	
9667.00	89.480	132.200	7633.94	2492.33	-563.10	2866.27	1739126.68	14406020.86	39°40'4.6581"N	80°38'57.1988"W	2921.06	101.115	0.91	
9759.00	89.350	131.340	7634.88	2584.32	-624.38	2934.88	1739195.27	14405959.60	39°40'4.0498"N	80°38'56.3244"W	3000.57	102.010	0.95	
9850.00	89.450	131.290	7635.84	2675.29	-684.45	3003.23	1739263.58	14405899.55	39°40'3.4535"N	80°38'55.4535"W	3080.24	102.839	0.12	
9942.00	89.480	131.850	7636.70	2767.27	-745.50	3072.06	1739332.38	14405838.54	39°40'2.8476"N	80°38'54.5764"W	3161.22	103.640	0.61	
10033.00	89.320	132.680	7637.65	2858.27	-806.70	3139.40	1739399.70	14405777.36	39°40'2.2401"N	80°38'53.7183"W	3241.38	104.411	0.93	
10125.00	88.830	131.970	7639.13	2950.25	-868.63	3207.41	1739467.68	14405715.45	39°40'1.6254"N	80°38'52.8518"W	3322.95	105.153	0.94	
10216.00	89.690	131.360	7640.31	3041.23	-929.12	3275.38	1739535.63	14405654.98	39°40'1.0249"N	80°38'51.9856"W	3404.61	105.837	1.16	
10308.00	89.170	131.580	7641.22	3133.21	-990.04	3344.31	1739604.53	14405594.08	39°40'0.4202"N	80°38'51.1071"W	3487.78	106.491	0.61	
10399.00	89.290	131.890	7642.45	3224.20	-1050.62	3412.21	1739672.41	14405533.54	39°39'59.8189"N	80°38'50.2419"W	3570.29	107.114	0.37	
10491.00	89.380	131.380	7643.52	3316.18	-1111.73	3480.97	1739741.13	14405472.44	39°39'59.2122"N	80°38'49.3658"W	3654.19	107.712	0.56	
10583.00	89.260	131.140	7644.61	3408.15	-1172.40	3550.12	1739810.26	14405411.80	39°39'58.6100"N	80°38'48.4845"W	3738.70	108.275	0.29	

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 410H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 410H AWB
Slot	410H		

WELLPATH DATA (213 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Comments
10674.00	89.780	132.570	7645.37	3499.14	-1233.12	3617.90	1739878.01	14405351.10	39°39'58.0073"N	80°38'47.6209"W	3822.27	108.821	1.67	
10766.00	89.350	132.220	7646.07	3591.13	-1295.15	3685.84	1739945.93	14405289.10	39°39'57.3916"N	80°38'46.7552"W	3906.76	109.361	0.60	
10857.00	89.450	131.800	7647.02	3682.12	-1356.05	3753.45	1740013.51	14405228.23	39°39'56.7872"N	80°38'45.8937"W	3990.90	109.864	0.47	
10949.00	89.910	131.710	7647.54	3774.11	-1417.31	3822.08	1740082.11	14405166.98	39°39'56.1790"N	80°38'45.0192"W	4076.40	110.346	0.51	
11040.00	89.480	130.860	7648.02	3865.09	-1477.35	3890.46	1740150.47	14405106.97	39°39'55.5830"N	80°38'44.1478"W	4161.52	110.794	1.05	
11132.00	89.880	131.800	7648.53	3957.06	-1538.11	3959.54	1740219.52	14405046.24	39°39'54.9798"N	80°38'43.2675"W	4247.79	111.229	1.11	
11223.00	89.600	131.370	7648.95	4048.05	-1598.51	4027.61	1740287.56	14404985.86	39°39'54.3803"N	80°38'42.4002"W	4333.22	111.647	0.56	
11315.00	90.250	131.690	7649.07	4140.03	-1659.50	4096.48	1740356.40	14404924.89	39°39'53.7748"N	80°38'41.5226"W	4419.85	112.053	0.79	
11407.00	90.520	133.330	7648.45	4232.03	-1721.66	4164.29	1740424.19	14404862.75	39°39'53.1578"N	80°38'40.6586"W	4506.16	112.462	1.81	
11498.00	90.310	132.340	7647.79	4323.02	-1783.53	4231.02	1740490.90	14404800.91	39°39'52.5437"N	80°38'39.8085"W	4591.57	112.857	1.11	
11590.00	90.150	132.850	7647.42	4415.02	-1845.80	4298.75	1740558.59	14404738.66	39°39'51.9257"N	80°38'38.9456"W	4678.27	113.238	0.58	
11681.00	90.030	132.530	7647.28	4506.02	-1907.50	4365.64	1740625.46	14404676.99	39°39'51.3133"N	80°38'38.0934"W	4764.17	113.602	0.38	
11773.00	90.120	132.330	7647.16	4598.02	-1969.57	4433.54	1740693.33	14404614.94	39°39'50.6972"N	80°38'37.2283"W	4851.34	113.953	0.24	
11865.00	88.920	131.960	7647.93	4690.02	-2031.30	4501.75	1740761.52	14404553.24	39°39'50.0845"N	80°38'36.3592"W	4938.82	114.286	1.36	
11956.00	90.310	133.730	7648.54	4781.01	-2093.18	4568.47	1740828.21	14404491.38	39°39'49.4704"N	80°38'35.5092"W	5025.16	114.616	2.47	
12048.00	88.860	131.540	7649.21	4873.00	-2155.48	4636.14	1740895.86	14404429.10	39°39'48.8519"N	80°38'34.6470"W	5112.72	114.935	2.85	
12139.00	88.860	131.760	7651.02	4963.97	-2215.95	4704.12	1740963.81	14404368.66	39°39'48.2517"N	80°38'33.7808"W	5199.92	115.223	0.24	
12231.00	88.950	132.390	7652.77	5055.95	-2277.58	4772.40	1741032.06	14404307.05	39°39'47.6398"N	80°38'32.9109"W	5288.02	115.512	0.69	
12322.00	89.010	132.680	7654.39	5146.93	-2339.09	4839.44	1741099.08	14404245.56	39°39'47.0293"N	80°38'32.0568"W	5375.09	115.796	0.33	
12414.00	88.310	131.080	7656.55	5238.90	-2400.49	4907.92	1741167.53	14404184.19	39°39'46.4198"N	80°38'31.1843"W	5463.52	116.064	1.90	
12506.00	90.800	131.990	7657.26	5330.87	-2461.49	4976.78	1741236.36	14404123.22	39°39'45.8143"N	80°38'30.3069"W	5552.23	116.317	2.88	
12597.00	88.220	133.380	7658.04	5421.86	-2523.17	5043.66	1741303.22	14404061.55	39°39'45.2020"N	80°38'29.4548"W	5639.59	116.577	3.22	
12689.00	88.890	133.420	7660.36	5513.82	-2586.37	5110.49	1741370.01	14403998.39	39°39'44.5749"N	80°38'28.6036"W	5727.68	116.844	0.73	
12780.00	88.340	132.170	7662.56	5604.79	-2648.17	5177.24	1741436.74	14403936.61	39°39'43.9615"N	80°38'27.7532"W	5815.20	117.090	1.50	
12872.00	89.140	132.860	7664.58	5696.76	-2710.33	5245.03	1741504.51	14403874.48	39°39'43.3445"N	80°38'26.8895"W	5903.92	117.327	1.15	
12963.00	88.860	133.450	7666.17	5787.74	-2772.56	5311.41	1741570.86	14403812.27	39°39'42.7269"N	80°38'26.0440"W	5991.51	117.565	0.72	
13055.00	89.380	133.640	7667.58	5879.72	-2835.93	5378.09	1741637.51	14403748.92	39°39'42.0979"N	80°38'25.1947"W	6079.99	117.803	0.60	
13147.00	89.320	132.670	7668.63	5971.71	-2898.85	5445.20	1741704.59	14403686.02	39°39'41.4734"N	80°38'24.3398"W	6168.75	118.029	1.06	
13238.00	89.380	132.290	7669.66	6062.70	-2960.30	5512.30	1741771.68	14403624.60	39°39'40.8634"N	80°38'23.4848"W	6256.91	118.237	0.42	
13329.00	89.600	132.570	7670.47	6153.70	-3021.70	5579.47	1741838.81	14403563.23	39°39'40.2540"N	80°38'22.6292"W	6345.17	118.439	0.39	

Actual Wellpath Report

William Ritchea WTZ 410H awp Proj: 18972'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 410H
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Slot	410H		

WELLPATH DATA (213 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Comments
13421.00	90.150	133.620	7670.67	6245.69	-3084.55	5646.65	1741905.97	14403500.40	39°39'39.6302"N	80°38'21.7734"W	6434.21	118.646	1.29	
13512.00	89.480	133.300	7670.96	6336.68	-3147.14	5712.70	1741971.99	14403437.83	39°39'39.0090"N	80°38'20.9321"W	6522.23	118.851	0.82	
13604.00	89.380	132.990	7671.88	6428.67	-3210.06	5779.82	1742039.09	14403374.94	39°39'38.3846"N	80°38'20.0770"W	6611.41	119.047	0.35	
13696.00	89.380	133.120	7672.87	6520.66	-3272.86	5847.04	1742106.28	14403312.16	39°39'37.7612"N	80°38'19.2208"W	6700.71	119.238	0.14	
13787.00	88.920	132.310	7674.22	6611.65	-3334.58	5913.90	1742173.11	14403250.46	39°39'37.1486"N	80°38'18.3691"W	6789.23	119.417	1.02	
13879.00	89.450	132.070	7675.53	6703.64	-3396.36	5982.05	1742241.24	14403188.71	39°39'36.5353"N	80°38'17.5008"W	6878.97	119.586	0.63	
13970.00	89.880	134.460	7676.06	6794.62	-3458.73	6048.31	1742307.47	14403126.37	39°39'35.9163"N	80°38'16.6568"W	6967.41	119.763	2.67	
14062.00	88.490	131.740	7677.37	6886.60	-3521.57	6115.47	1742374.61	14403063.55	39°39'35.2925"N	80°38'15.8013"W	7056.95	119.935	3.32	
14153.00	89.140	132.930	7679.25	6977.58	-3582.84	6182.73	1742441.83	14403002.30	39°39'34.6843"N	80°38'14.9446"W	7145.83	120.092	1.49	
14245.00	89.600	132.900	7680.27	7069.57	-3645.48	6250.10	1742509.18	14402939.88	39°39'34.0626"N	80°38'14.0864"W	7235.56	120.254	0.50	
14337.00	90.340	133.950	7680.31	7161.55	-3708.72	6316.91	1742575.97	14402876.47	39°39'33.4349"N	80°38'13.2353"W	7325.17	120.418	1.40	
14428.00	90.000	134.140	7680.04	7252.52	-3771.99	6382.32	1742641.36	14402813.23	39°39'32.8071"N	80°38'12.4023"W	7413.63	120.583	0.43	
14520.00	89.420	132.850	7680.51	7344.51	-3835.31	6449.06	1742708.07	14402749.93	39°39'32.1786"N	80°38'11.5522"W	7503.33	120.740	1.54	
14612.00	89.420	133.120	7681.44	7436.50	-3898.03	6516.36	1742775.34	14402687.23	39°39'31.5560"N	80°38'10.6950"W	7593.26	120.888	0.29	
14703.00	89.290	133.250	7682.47	7527.49	-3960.31	6582.71	1742841.66	14402624.99	39°39'30.9380"N	80°38'9.8499"W	7682.19	121.032	0.20	
14795.00	88.310	133.680	7684.39	7619.46	-4023.58	6649.46	1742908.39	14402561.74	39°39'30.3100"N	80°38'8.9996"W	7772.04	121.178	1.16	
14886.00	88.920	132.530	7686.59	7710.42	-4085.74	6715.88	1742974.78	14402499.60	39°39'29.6929"N	80°38'8.1536"W	7861.07	121.315	1.43	
14978.00	89.690	132.280	7687.71	7802.41	-4147.78	6783.81	1743042.68	14402437.59	39°39'29.0771"N	80°38'7.2883"W	7951.36	121.443	0.88	
15070.00	89.750	133.590	7688.16	7894.41	-4210.44	6851.16	1743110.01	14402374.94	39°39'28.4551"N	80°38'6.4304"W	8041.54	121.573	1.43	
15161.00	90.740	133.650	7687.77	7985.39	-4273.22	6917.04	1743175.86	14402312.19	39°39'27.8320"N	80°38'5.5914"W	8130.55	121.707	1.09	
15253.00	90.120	133.550	7687.08	8077.37	-4336.66	6983.66	1743242.46	14402248.77	39°39'27.2024"N	80°38'4.7428"W	8220.60	121.839	0.68	
15344.00	90.060	133.660	7686.94	8168.36	-4399.43	7049.56	1743308.33	14402186.04	39°39'26.5795"N	80°38'3.9036"W	8309.70	121.967	0.14	
15436.00	90.580	133.450	7686.42	8260.34	-4462.82	7116.23	1743374.97	14402122.67	39°39'25.9503"N	80°38'3.0544"W	8399.85	122.093	0.61	
15527.00	89.720	133.330	7686.18	8351.33	-4525.33	7182.36	1743441.07	14402060.18	39°39'25.3298"N	80°38'2.2122"W	8489.10	122.213	0.95	
15619.00	88.800	133.860	7687.37	8443.31	-4588.76	7248.98	1743507.67	14401996.77	39°39'24.7003"N	80°38'1.3637"W	8579.30	122.335	1.15	
15711.00	89.720	132.470	7688.56	8535.29	-4651.69	7316.08	1743574.74	14401933.87	39°39'24.0756"N	80°38'0.5091"W	8669.67	122.449	1.81	
15802.00	89.970	133.470	7688.81	8626.29	-4713.72	7382.66	1743641.30	14401871.87	39°39'23.4599"N	80°37'59.6610"W	8759.16	122.558	1.13	
15894.00	89.510	133.520	7689.22	8718.27	-4777.04	7449.40	1743708.01	14401808.57	39°39'22.8315"N	80°37'58.8110"W	8849.50	122.671	0.50	
15985.00	89.450	133.720	7690.05	8809.25	-4839.82	7515.27	1743773.86	14401745.82	39°39'22.2084"N	80°37'57.9720"W	8938.86	122.781	0.23	
16077.00	89.600	133.510	7690.81	8901.23	-4903.28	7581.88	1743840.44	14401682.38	39°39'21.5785"N	80°37'57.1238"W	9029.23	122.891	0.28	

REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 410H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 410H AWB
Slot	410H		

WELLPATH DATA (213 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Comments
16169.00	89.880	133.280	7691.23	8993.22	-4966.48	7648.73	1743907.26	14401619.20	39°39'20.9512"N	80°37'56.2724"W	9119.70	122.997	0.39	
16260.00	90.030	133.670	7691.30	9084.21	-5029.09	7714.76	1743973.27	14401556.62	39°39'20.3297"N	80°37'55.4313"W	9209.20	123.099	0.46	
16351.00	87.200	129.500	7693.50	9175.14	-5089.46	7782.79	1744041.27	14401496.28	39°39'19.7304"N	80°37'54.5648"W	9299.16	123.182	5.54	
16443.00	89.880	130.790	7695.84	9267.02	-5148.75	7853.08	1744111.54	14401437.01	39°39'19.1416"N	80°37'53.6692"W	9390.45	123.250	3.23	
16535.00	89.780	130.630	7696.12	9358.97	-5208.75	7922.82	1744181.25	14401377.03	39°39'18.5458"N	80°37'52.7807"W	9481.67	123.322	0.21	
16626.00	89.820	131.340	7696.44	9449.94	-5268.43	7991.51	1744249.91	14401317.37	39°39'17.9531"N	80°37'51.9056"W	9571.87	123.395	0.78	
16718.00	89.750	132.160	7696.78	9541.93	-5329.69	8060.15	1744318.52	14401256.13	39°39'17.3449"N	80°37'51.0312"W	9662.90	123.474	0.89	
16809.00	88.610	131.410	7698.08	9632.91	-5390.32	8127.99	1744386.34	14401195.53	39°39'16.7430"N	80°37'50.1670"W	9752.94	123.552	1.50	
16901.00	89.420	131.260	7699.66	9724.87	-5451.08	8197.06	1744455.38	14401134.80	39°39'16.1398"N	80°37'49.2871"W	9844.09	123.624	0.90	
16993.00	89.720	131.200	7700.36	9816.85	-5511.71	8266.25	1744524.55	14401074.19	39°39'15.5377"N	80°37'48.4057"W	9935.28	123.694	0.33	
17084.00	89.880	130.780	7700.67	9907.81	-5571.40	8334.94	1744593.21	14401014.52	39°39'14.9450"N	80°37'47.5307"W	10025.55	123.760	0.49	
17176.00	89.780	130.650	7700.95	9999.76	-5631.41	8404.67	1744662.91	14400954.54	39°39'14.3491"N	80°37'46.6423"W	10116.88	123.823	0.18	
17267.00	89.690	131.550	7701.37	10090.73	-5691.23	8473.24	1744731.46	14400894.74	39°39'13.7551"N	80°37'45.7687"W	10207.15	123.888	0.99	
17359.00	88.650	133.840	7702.70	10182.71	-5753.60	8540.85	1744799.04	14400832.39	39°39'13.1360"N	80°37'44.9077"W	10298.06	123.966	2.73	
17450.00	89.450	131.410	7704.21	10273.69	-5815.21	8607.79	1744865.95	14400770.80	39°39'12.5243"N	80°37'44.0551"W	10388.01	124.042	2.81	
17542.00	88.950	135.570	7705.49	10365.65	-5878.51	8674.52	1744932.65	14400707.53	39°39'11.8961"N	80°37'43.2053"W	10478.75	124.125	4.55	
17634.00	89.170	132.900	7707.00	10457.59	-5942.67	8740.42	1744998.53	14400643.39	39°39'11.2592"N	80°37'42.3662"W	10569.31	124.212	2.91	
17725.00	89.480	133.070	7708.08	10548.58	-6004.71	8806.98	1745065.07	14400581.38	39°39'10.6434"N	80°37'41.5184"W	10659.25	124.287	0.39	
17817.00	89.540	133.220	7708.86	10640.57	-6067.63	8874.11	1745132.16	14400518.49	39°39'10.0189"N	80°37'40.6636"W	10750.16	124.362	0.18	
17908.00	89.720	132.810	7709.45	10731.57	-6129.70	8940.64	1745198.67	14400456.44	39°39'9.4027"N	80°37'39.8162"W	10840.13	124.435	0.49	
18000.00	89.660	133.310	7709.95	10823.56	-6192.52	9007.86	1745265.86	14400393.65	39°39'8.7791"N	80°37'38.9602"W	10931.09	124.507	0.55	
18092.00	89.510	132.870	7710.61	10915.56	-6255.36	9075.04	1745333.02	14400330.82	39°39'8.1553"N	80°37'38.1046"W	11022.07	124.578	0.51	
18183.00	89.780	133.040	7711.18	11006.55	-6317.37	9141.64	1745399.60	14400268.84	39°39'7.5397"N	80°37'37.2564"W	11112.10	124.647	0.35	
18275.00	90.120	133.600	7711.26	11098.54	-6380.49	9208.58	1745466.50	14400205.75	39°39'6.9132"N	80°37'36.4040"W	11203.06	124.718	0.71	
18366.00	89.660	133.190	7711.43	11189.53	-6443.01	9274.70	1745532.60	14400143.25	39°39'6.2926"N	80°37'35.5620"W	11293.03	124.787	0.68	
18458.00	89.630	133.110	7712.00	11281.53	-6505.93	9341.82	1745599.69	14400080.36	39°39'5.6680"N	80°37'34.7072"W	11384.05	124.855	0.09	
18549.00	89.970	133.000	7712.32	11372.52	-6568.05	9408.31	1745666.16	14400018.26	39°39'5.0513"N	80°37'33.8604"W	11474.13	124.919	0.39	
18641.00	89.780	133.390	7712.52	11464.52	-6631.03	9475.38	1745733.20	14399955.31	39°39'4.4262"N	80°37'33.0063"W	11565.18	124.985	0.47	
18732.00	89.910	132.970	7712.77	11555.51	-6693.30	9541.74	1745799.53	14399893.06	39°39'3.8081"N	80°37'32.1613"W	11655.26	125.049	0.48	
18824.00	89.570	133.260	7713.18	11647.51	-6756.17	9608.90	1745866.67	14399830.21	39°39'3.1839"N	80°37'31.3050"W	11746.35	125.112	0.49	

REFERENCE WELLPATH IDENTIFICATION				
Operator	SWN PRODUCTION COMPANY, LLC		Well	William Ritchea WTZ 410H
Field	Wetzel		API/Legal	
Facility	William Ritchea WTZ Pad		Wellbore	William Ritchea WTZ 410H AWB
Slot	410H			

WELLPATH DATA (213 stations) † = interpolated, ‡ = extrapolated station														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Comments
18915.00	89.660	132.970	7713.80	11738.50	-6818.37	9675.32	1745933.07	14399768.04	39°39'2.5665"N	80°37'30.4601"W	11836.47	125.173	0.33	
18947.00	89.820	133.270	7713.94	11770.50	-6840.24	9698.68	1745956.42	14399746.18	39°39'2.3494"N	80°37'30.1627"W	11868.16	125.194	1.06	
18972.00‡	89.820	133.270	7714.02	11795.49	-6857.38	9716.89	1745974.61	14399729.05	39°39'2.1793"N	80°37'29.9309"W	11892.92	125.211	0.00	

HOLE & CASING SECTIONS - Ref Wellbore: William Ritchea WTZ 410H AWB Ref Wellpath: William Ritchea WTZ 410H awp Proj: 18972'									
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	614.00	588.00	26.00	613.99	0.00	0.00	0.82	2.95
9.625in Casing	26.00	3004.00	2978.00	26.00	2969.91	0.00	0.00	63.53	286.29

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 410H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 410H AWB
Slot	410H		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1st perf-W. Rit. 205H	7575.90	921.31	1142.70	1737403.78	14407504.69	39°40'19.3942"N	80°39'19.1666"W	rectangle
	3D Rectangle 1200 x 1 x 20.							
1st perf-W. Rit. 610H	7587.90	1251.98	2045.77	1738306.50	14407835.23	39°40'22.6277"N	80°39'7.6012"W	ellipse
	2D Ellipse radii 1300 x 200.							
William Ritchea WTZ 410H LP Rev 4	7598.00	410.64	1802.47	1738063.29	14406994.22	39°40'14.3223"N	80°39'10.7544"W	point
William Ritchea WTZ 410H BHL Rev 3	7714.00	-6854.58	9719.82	1745977.54	14399731.84	39°39'2.2068"N	80°37'29.8932"W	point

WELLPATH COMPOSITION - Ref Wellbore: William Ritchea WTZ 410H AWB Ref Wellpath: William Ritchea WTZ 410H awp Proj: 18972'						
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date	
26.00	559.00	OWSG MWD rev2 + HRGM	1 Tally MWD HRGM 17.5" 145' - 559'	William Ritchea WTZ 410H AWB	6/21/2023	
559.00	2934.00	OWSG MWD rev2 + HRGM	2 Tally MWD HRGM 12.25" 615' - 2934'	William Ritchea WTZ 410H AWB	6/21/2023	
2934.00	6273.00	OWSG MWD rev2 + HRGM	3 Tally MWD HRGM 8.75" 3031' - 6273'	William Ritchea WTZ 410H AWB	6/21/2023	
6273.00	18972.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	4 BH ATC MWD HRGM Short spacing 8.5" 6370' - 18947'	William Ritchea WTZ 410H AWB	6/21/2023	

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