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WV Department of
Environmental Protection

Actual Wellpath Report

Knob Creek N-4HM AWB Proj:19829'

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REFERENCE WELLPATH IDENTIFICATION

Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek N-4HM
Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Scurdan
Scale	0.999608	Report Generated	12/5/2023 at 2:18:26 PM
Convergence at slot	0.19° 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	-3.72	23.91	1723167.43	14443108.55	39°46'11.8977"N	80°42'19.8049"W
Facility Reference Pt			1723143.53	14443112.27	39°46'11.9353"N	80°42'20.1110"W
Field Reference Pt			1920470.12	14528304.49	40°00'0.0000"N	80°00'0.0000"W

WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 294 (RKB) to Facility Vertical Datum	765.00ft
Horizontal Reference Pt	Slot	Patterson 294 (RKB) to Mean Sea Level	765.00ft
Vertical Reference Pt	Patterson 294 (RKB)	Patterson 294 (RKB) to Ground Level at Slot (Slot 04)	28.00ft
MD Reference Pt	Patterson 294 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	333.87°



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WELLPATH DATA (285 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00†	0.000	93.740	0.00	0.00	0.00	0.00	1723167.43	14443108.55	39°46'11.8977"N	80°42'19.8049"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	93.740	28.00	0.00	0.00	0.00	1723167.43	14443108.55	39°46'11.8977"N	80°42'19.8049"W	0.00	0.000	0.00	0.00	0.00
232.00	0.170	93.740	232.00	-0.15	-0.02	0.30	1723167.73	14443108.53	39°46'11.8975"N	80°42'19.8011"W	0.30	93.740	0.08	0.08	0.00
260.00	0.000	93.330	260.00	-0.17	-0.02	0.34	1723167.77	14443108.53	39°46'11.8975"N	80°42'19.8005"W	0.34	93.740	0.61	-0.61	0.00
287.00	0.090	359.930	287.00	-0.15	0.00	0.34	1723167.77	14443108.55	39°46'11.8977"N	80°42'19.8005"W	0.34	90.208	0.33	0.33	0.00
317.00	0.210	78.780	317.00	-0.15	0.03	0.40	1723167.83	14443108.58	39°46'11.8981"N	80°42'19.7998"W	0.40	85.250	0.71	0.40	262.83
349.00	0.150	21.220	349.00	-0.13	0.08	0.47	1723167.90	14443108.63	39°46'11.8986"N	80°42'19.7989"W	0.48	79.929	0.57	-0.19	-179.87
381.00	0.070	69.330	381.00	-0.11	0.13	0.50	1723167.93	14443108.68	39°46'11.8990"N	80°42'19.7985"W	0.52	75.583	0.36	-0.25	150.34
413.00	0.130	157.100	413.00	-0.14	0.10	0.54	1723167.97	14443108.65	39°46'11.8987"N	80°42'19.7981"W	0.55	79.132	0.45	0.19	274.28
445.00	0.130	14.200	445.00	-0.15	0.10	0.56	1723167.99	14443108.65	39°46'11.8988"N	80°42'19.7978"W	0.57	79.396	0.77	0.00	-446.56
476.00	0.190	41.690	476.00	-0.11	0.18	0.60	1723168.03	14443108.73	39°46'11.8995"N	80°42'19.7972"W	0.63	73.599	0.31	0.19	88.68
511.00	0.170	71.470	511.00	-0.09	0.24	0.69	1723168.12	14443108.79	39°46'11.9001"N	80°42'19.7961"W	0.73	71.036	0.27	-0.06	85.09
604.00	0.240	252.780	604.00	-0.08	0.22	0.63	1723168.06	14443108.77	39°46'11.8999"N	80°42'19.7968"W	0.67	70.620	0.44	0.08	-192.14
635.00	0.460	251.500	635.00	-0.05	0.16	0.45	1723167.88	14443108.71	39°46'11.8994"N	80°42'19.7991"W	0.48	70.103	0.71	0.71	-4.13
667.00	0.540	253.050	667.00	-0.01	0.08	0.19	1723167.62	14443108.63	39°46'11.8985"N	80°42'19.8025"W	0.20	67.050	0.25	0.25	4.84
699.00	0.440	239.570	699.00	0.00	-0.03	-0.06	1723167.37	14443108.52	39°46'11.8975"N	80°42'19.8057"W	0.07	246.851	0.47	-0.31	-42.12
731.00	0.150	242.160	731.00	-0.01	-0.11	-0.20	1723167.23	14443108.44	39°46'11.8967"N	80°42'19.8076"W	0.23	242.150	0.91	-0.91	8.09
763.00	0.340	41.950	763.00	0.03	-0.06	-0.18	1723167.25	14443108.49	39°46'11.8972"N	80°42'19.8072"W	0.19	252.224	1.51	0.59	499.34
793.00	0.560	36.700	792.99	0.13	0.13	-0.03	1723167.40	14443108.68	39°46'11.8990"N	80°42'19.8053"W	0.13	346.060	0.75	0.73	-17.50
825.00	0.600	39.350	824.99	0.27	0.38	0.17	1723167.60	14443108.93	39°46'11.9015"N	80°42'19.8028"W	0.42	23.806	0.15	0.12	8.28
856.00	0.780	36.850	855.99	0.43	0.68	0.40	1723167.83	14443109.23	39°46'11.9044"N	80°42'19.7998"W	0.78	30.479	0.59	0.58	-8.06
888.00	0.730	46.810	887.99	0.59	0.99	0.68	1723168.11	14443109.54	39°46'11.9075"N	80°42'19.7962"W	1.20	34.376	0.44	-0.16	31.13
920.00	0.750	55.520	919.98	0.68	1.25	1.00	1723168.43	14443109.80	39°46'11.9100"N	80°42'19.7921"W	1.60	38.662	0.36	0.06	27.22
951.00	0.680	89.450	950.98	0.63	1.36	1.35	1723168.78	14443109.91	39°46'11.9112"N	80°42'19.7876"W	1.92	44.686	1.36	-0.23	109.45
982.00	0.710	100.070	981.98	0.44	1.33	1.72	1723169.15	14443109.88	39°46'11.9109"N	80°42'19.7828"W	2.18	52.275	0.43	0.10	34.26
1014.00	0.850	104.310	1013.98	0.17	1.24	2.15	1723169.58	14443109.79	39°46'11.9099"N	80°42'19.7774"W	2.48	60.016	0.47	0.44	13.25
1046.00	1.090	120.620	1045.97	-0.24	1.03	2.64	1723170.07	14443109.58	39°46'11.9078"N	80°42'19.7711"W	2.83	68.769	1.14	0.75	50.97
1077.00	1.230	122.500	1076.97	-0.77	0.70	3.17	1723170.60	14443109.25	39°46'11.9045"N	80°42'19.7643"W	3.25	77.623	0.47	0.45	6.06
1108.00	1.430	127.360	1107.96	-1.40	0.28	3.76	1723171.19	14443108.83	39°46'11.9004"N	80°42'19.7567"W	3.77	85.697	0.74	0.65	15.68
1140.00	1.690	129.350	1139.95	-2.19	-0.26	4.44	1723171.87	14443108.29	39°46'11.8950"N	80°42'19.7480"W	4.45	93.328	0.83	0.81	6.22



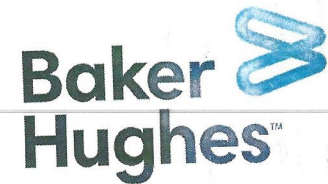
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Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

WELLPATH DATA (285 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]
1172.00	1.920	132.520	1171.93	-3.12	-0.92	5.20	1723172.63	14443107.63	39°46'11.8885"N	80°42'19.7383"W	5.28	100.024	0.78	0.72	9.91
1203.00	2.060	130.770	1202.91	-4.11	-1.63	6.01	1723173.44	14443106.92	39°46'11.8814"N	80°42'19.7280"W	6.23	105.219	0.49	0.45	-5.65
1235.00	2.510	116.970	1234.89	-5.20	-2.33	7.07	1723174.50	14443106.22	39°46'11.8745"N	80°42'19.7145"W	7.44	108.229	2.21	1.41	-43.13
1266.00	3.480	98.650	1265.84	-6.28	-2.78	8.60	1723176.03	14443105.77	39°46'11.8700"N	80°42'19.6949"W	9.04	107.890	4.36	3.13	-59.10
1298.00	4.150	101.860	1297.77	-7.55	-3.16	10.70	1723178.12	14443105.39	39°46'11.8662"N	80°42'19.6681"W	11.16	106.464	2.20	2.09	10.03
1330.00	4.710	96.720	1329.68	-8.98	-3.55	13.14	1723180.56	14443105.00	39°46'11.8622"N	80°42'19.6369"W	13.61	105.137	2.14	1.75	-16.06
1361.00	5.330	94.100	1360.56	-10.39	-3.81	15.84	1723183.26	14443104.75	39°46'11.8596"N	80°42'19.6023"W	16.29	103.511	2.13	2.00	-8.45
1393.00	5.160	96.040	1392.42	-11.90	-4.06	18.75	1723186.17	14443104.49	39°46'11.8570"N	80°42'19.5650"W	19.18	102.227	0.77	-0.53	6.06
1425.00	4.160	101.840	1424.32	-13.39	-4.45	21.32	1723188.74	14443104.10	39°46'11.8530"N	80°42'19.5321"W	21.78	101.798	3.45	-3.12	18.12
1457.00	3.420	108.610	1456.25	-14.77	-5.00	23.36	1723190.78	14443103.56	39°46'11.8476"N	80°42'19.5060"W	23.89	102.072	2.70	-2.31	21.16
1489.00	3.200	114.800	1488.20	-16.14	-5.67	25.07	1723192.49	14443102.88	39°46'11.8409"N	80°42'19.4841"W	25.71	102.752	1.31	-0.69	19.34
1520.00	2.920	117.750	1519.15	-17.45	-6.40	26.56	1723193.98	14443102.15	39°46'11.8336"N	80°42'19.4651"W	27.32	103.560	1.04	-0.90	9.52
1552.00	2.830	117.910	1551.11	-18.74	-7.15	27.98	1723195.39	14443101.40	39°46'11.8261"N	80°42'19.4470"W	28.88	104.345	0.28	-0.28	0.50
1584.00	3.040	114.640	1583.07	-20.04	-7.88	29.45	1723196.86	14443100.68	39°46'11.8189"N	80°42'19.4282"W	30.48	104.978	0.84	0.66	-10.22
1615.00	3.460	106.300	1614.02	-21.31	-8.48	31.09	1723198.51	14443100.07	39°46'11.8129"N	80°42'19.4071"W	32.23	105.262	2.04	1.35	-26.90
1647.00	4.000	99.610	1645.95	-22.61	-8.94	33.12	1723200.53	14443099.61	39°46'11.8083"N	80°42'19.3812"W	34.30	105.107	2.16	1.69	-20.91
1677.00	4.280	93.360	1675.87	-23.77	-9.18	35.27	1723202.68	14443099.37	39°46'11.8059"N	80°42'19.3537"W	36.44	104.591	1.77	0.93	-20.83
1709.00	4.260	89.690	1707.78	-24.88	-9.24	37.65	1723205.06	14443099.31	39°46'11.8052"N	80°42'19.3232"W	38.77	103.796	0.86	-0.06	-11.47
1741.00	3.630	84.980	1739.71	-25.76	-9.15	39.84	1723207.26	14443099.40	39°46'11.8060"N	80°42'19.2950"W	40.88	102.932	2.21	-1.97	-14.72
1772.00	2.850	82.050	1770.66	-26.36	-8.96	41.59	1723209.00	14443099.60	39°46'11.8079"N	80°42'19.2727"W	42.54	102.155	2.57	-2.52	-9.45
1804.00	2.520	74.130	1802.62	-26.73	-8.65	43.05	1723210.46	14443099.90	39°46'11.8108"N	80°42'19.2540"W	43.91	101.366	1.55	-1.03	-24.75
1835.00	2.380	74.350	1833.60	-26.97	-8.29	44.33	1723211.74	14443100.26	39°46'11.8143"N	80°42'19.2376"W	45.10	100.599	0.45	-0.45	0.71
1867.00	2.440	74.790	1865.57	-27.22	-7.94	45.62	1723213.03	14443100.62	39°46'11.8178"N	80°42'19.2210"W	46.31	99.868	0.20	0.19	1.37
1899.00	2.380	83.770	1897.54	-27.57	-7.69	46.94	1723214.35	14443100.87	39°46'11.8203"N	80°42'19.2041"W	47.57	99.298	1.19	-0.19	28.06
1931.00	2.360	86.450	1929.51	-28.05	-7.57	48.26	1723215.67	14443100.98	39°46'11.8213"N	80°42'19.1872"W	48.85	98.918	0.35	-0.06	8.37
1963.00	2.500	87.760	1961.48	-28.59	-7.50	49.61	1723217.02	14443101.05	39°46'11.8220"N	80°42'19.1699"W	50.18	98.601	0.47	0.44	4.09
1994.00	2.390	88.260	1992.45	-29.13	-7.46	50.94	1723218.35	14443101.09	39°46'11.8224"N	80°42'19.1529"W	51.48	98.331	0.36	-0.35	1.61
2026.00	2.300	92.070	2024.43	-29.71	-7.46	52.24	1723219.65	14443101.09	39°46'11.8223"N	80°42'19.1362"W	52.77	98.128	0.56	-0.28	11.91
2058.00	2.240	93.330	2056.40	-30.32	-7.52	53.51	1723220.92	14443101.03	39°46'11.8217"N	80°42'19.1200"W	54.04	98.001	0.24	-0.19	3.94
2089.00	2.310	92.910	2087.38	-30.92	-7.59	54.74	1723222.15	14443100.97	39°46'11.8210"N	80°42'19.1042"W	55.26	97.892	0.23	0.23	-1.35



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2121.00	2.390	94.780	2119.35	-31.58	-7.68	56.05	1723223.46	14443100.88	39°46'11.8201"N	80°42'19.0875"W	56.57	97.799	0.35	0.25	5.84
2153.00	2.500	96.370	2151.32	-32.29	-7.81	57.41	1723224.81	14443100.74	39°46'11.8187"N	80°42'19.0701"W	57.93	97.747	0.40	0.34	4.97
2184.00	2.600	97.200	2182.29	-33.04	-7.97	58.78	1723226.18	14443100.58	39°46'11.8170"N	80°42'19.0525"W	59.31	97.724	0.34	0.32	2.68
2216.00	2.610	95.790	2214.26	-33.83	-8.14	60.22	1723227.63	14443100.42	39°46'11.8154"N	80°42'19.0340"W	60.77	97.695	0.20	0.03	-4.41
2248.00	2.630	96.580	2246.22	-34.61	-8.29	61.67	1723229.08	14443100.26	39°46'11.8138"N	80°42'19.0154"W	62.23	97.660	0.13	0.06	2.47
2279.00	2.610	96.580	2277.19	-35.37	-8.46	63.08	1723230.49	14443100.10	39°46'11.8121"N	80°42'18.9974"W	63.65	97.636	0.06	-0.06	0.00
2372.00	2.650	103.380	2370.09	-37.89	-9.20	67.28	1723234.68	14443099.36	39°46'11.8047"N	80°42'18.9437"W	67.90	97.784	0.34	0.04	7.31
2404.00	2.600	103.710	2402.06	-38.82	-9.54	68.70	1723236.11	14443099.01	39°46'11.8012"N	80°42'18.9255"W	69.36	97.906	0.16	-0.16	1.03
2436.00	2.900	96.300	2434.02	-39.72	-9.80	70.21	1723237.61	14443098.75	39°46'11.7986"N	80°42'18.9062"W	70.89	97.947	1.45	0.94	-23.16
2467.00	3.440	88.510	2464.98	-40.53	-9.86	71.92	1723239.32	14443098.69	39°46'11.7979"N	80°42'18.8843"W	72.59	97.809	2.22	1.74	-25.13
2499.00	3.650	83.750	2496.92	-41.28	-9.73	73.89	1723241.29	14443098.83	39°46'11.7992"N	80°42'18.8590"W	74.53	97.499	1.13	0.66	-14.87
2530.00	3.550	82.170	2527.85	-41.91	-9.49	75.83	1723243.23	14443099.06	39°46'11.8015"N	80°42'18.8343"W	76.42	97.133	0.45	-0.32	-5.10
2562.00	3.440	79.410	2559.80	-42.48	-9.18	77.75	1723245.15	14443099.38	39°46'11.8045"N	80°42'18.8096"W	78.29	96.732	0.63	-0.34	-8.63
2594.00	3.340	77.400	2591.74	-42.96	-8.80	79.60	1723247.00	14443099.76	39°46'11.8082"N	80°42'18.7858"W	80.09	96.307	0.49	-0.31	-6.28
2625.00	3.600	81.940	2622.68	-43.47	-8.46	81.45	1723248.85	14443100.09	39°46'11.8114"N	80°42'18.7622"W	81.89	95.933	1.22	0.84	14.65
2657.00	3.980	87.180	2654.61	-44.22	-8.27	83.55	1723250.95	14443100.28	39°46'11.8133"N	80°42'18.7352"W	83.96	95.652	1.61	1.19	16.38
2689.00	3.970	86.980	2686.54	-45.10	-8.16	85.77	1723253.16	14443100.40	39°46'11.8144"N	80°42'18.7069"W	86.16	95.432	0.05	-0.03	-0.63
2720.00	3.830	85.420	2717.46	-45.90	-8.02	87.87	1723255.27	14443100.54	39°46'11.8157"N	80°42'18.6799"W	88.24	95.213	0.57	-0.45	-5.03
2752.00	3.670	84.970	2749.40	-46.66	-7.84	89.96	1723257.35	14443100.71	39°46'11.8173"N	80°42'18.6532"W	90.30	94.982	0.51	-0.50	-1.41
2783.00	3.690	83.700	2780.33	-47.35	-7.64	91.94	1723259.33	14443100.91	39°46'11.8192"N	80°42'18.6278"W	92.25	94.753	0.27	0.06	-4.10
2815.00	3.610	83.220	2812.27	-48.04	-7.41	93.96	1723261.35	14443101.14	39°46'11.8214"N	80°42'18.6019"W	94.25	94.511	0.27	-0.25	-1.50
2847.00	3.420	82.230	2844.21	-48.67	-7.17	95.91	1723263.30	14443101.39	39°46'11.8238"N	80°42'18.5770"W	96.17	94.273	0.62	-0.59	-3.09
2879.00	3.310	82.100	2876.15	-49.26	-6.91	97.77	1723265.16	14443101.64	39°46'11.8263"N	80°42'18.5531"W	98.01	94.042	0.34	-0.34	-0.41
2910.00	3.120	80.220	2907.10	-49.78	-6.64	99.49	1723266.88	14443101.91	39°46'11.8289"N	80°42'18.5311"W	99.71	93.820	0.70	-0.61	-6.06
2942.00	2.950	81.780	2939.06	-50.28	-6.38	101.16	1723268.55	14443102.18	39°46'11.8314"N	80°42'18.5097"W	101.36	93.607	0.59	-0.53	4.88
2974.00	2.920	80.440	2971.02	-50.76	-6.12	102.78	1723270.17	14443102.43	39°46'11.8339"N	80°42'18.4889"W	102.96	93.410	0.23	-0.09	-4.19
3006.00	2.790	81.230	3002.98	-51.23	-5.87	104.35	1723271.74	14443102.68	39°46'11.8363"N	80°42'18.4688"W	104.52	93.220	0.42	-0.41	2.47
3037.00	2.670	79.660	3033.94	-51.65	-5.63	105.81	1723273.20	14443102.93	39°46'11.8387"N	80°42'18.4501"W	105.96	93.043	0.46	-0.39	-5.06
3069.00	2.430	80.260	3065.91	-52.04	-5.38	107.21	1723274.60	14443103.18	39°46'11.8411"N	80°42'18.4322"W	107.34	92.871	0.75	-0.75	1.88
3101.00	2.520	73.600	3097.88	-52.35	-5.06	108.55	1723275.94	14443103.49	39°46'11.8442"N	80°42'18.4149"W	108.67	92.671	0.94	0.28	-20.81



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Actual Wellpath Report

Knob Creek N-4HM AWB Proj:19829'

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Slot	Slot 04		

WELLPATH DATA (285 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]
3133.00	3.150	63.640	3129.84	-52.47	-4.47	110.02	1723277.40	14443104.08	39°46'11.8499"N	80°42'18.3962"W	110.11	92.329	2.49	1.97	-31.12
3164.00	3.220	60.510	3160.79	-52.41	-3.67	111.54	1723278.92	14443104.88	39°46'11.8579"N	80°42'18.3767"W	111.60	91.883	0.60	0.23	-10.10
3196.00	3.440	55.150	3192.74	-52.22	-2.68	113.11	1723280.49	14443105.87	39°46'11.8676"N	80°42'18.3565"W	113.14	91.356	1.19	0.69	-16.75
3227.00	4.440	48.450	3223.66	-51.76	-1.35	114.77	1723282.15	14443107.20	39°46'11.8807"N	80°42'18.3352"W	114.78	90.673	3.55	3.23	-21.61
3259.00	5.200	42.020	3255.55	-50.89	0.55	116.67	1723284.05	14443109.10	39°46'11.8994"N	80°42'18.3108"W	116.67	89.730	2.91	2.37	-20.09
3291.00	5.350	40.630	3287.42	-49.76	2.76	118.61	1723285.99	14443111.31	39°46'11.9212"N	80°42'18.2858"W	118.64	88.667	0.62	0.47	-4.34
3322.00	5.390	37.880	3318.28	-48.55	5.01	120.44	1723287.83	14443113.55	39°46'11.9433"N	80°42'18.2622"W	120.55	87.620	0.84	0.13	-8.87
3353.00	5.830	34.370	3349.13	-47.14	7.45	122.23	1723289.61	14443116.00	39°46'11.9674"N	80°42'18.2393"W	122.45	86.510	1.80	1.42	-11.32
3385.00	6.550	33.720	3380.94	-45.42	10.31	124.16	1723291.54	14443118.86	39°46'11.9956"N	80°42'18.2145"W	124.58	85.251	2.26	2.25	-2.03
3417.00	7.140	33.100	3412.72	-43.49	13.50	126.26	1723293.64	14443122.04	39°46'12.0270"N	80°42'18.1874"W	126.97	83.898	1.86	1.84	-1.94
3448.00	7.790	32.240	3443.45	-41.40	16.89	128.43	1723295.81	14443125.43	39°46'12.0605"N	80°42'18.1595"W	129.53	82.508	2.13	2.10	-2.77
3480.00	8.570	32.160	3475.13	-39.01	20.74	130.85	1723298.23	14443129.28	39°46'12.0985"N	80°42'18.1282"W	132.49	80.993	2.44	2.44	-0.25
3512.00	9.270	31.650	3506.74	-36.38	24.95	133.48	1723300.85	14443133.49	39°46'12.1400"N	80°42'18.0945"W	135.79	79.410	2.20	2.19	-1.59
3543.00	9.340	31.540	3537.33	-33.70	29.22	136.10	1723303.48	14443137.76	39°46'12.1821"N	80°42'18.0607"W	139.20	77.882	0.23	0.23	-0.35
3575.00	9.390	31.660	3568.91	-30.92	33.66	138.83	1723306.21	14443142.20	39°46'12.2259"N	80°42'18.0255"W	142.85	76.372	0.17	0.16	0.38
3606.00	9.640	32.480	3599.48	-28.22	38.00	141.55	1723308.93	14443146.54	39°46'12.2687"N	80°42'17.9905"W	146.56	74.973	0.92	0.81	2.65
3638.00	9.860	32.790	3631.02	-25.41	42.56	144.47	1723311.85	14443151.10	39°46'12.3137"N	80°42'17.9529"W	150.61	73.584	0.71	0.69	0.97
3669.00	10.540	32.030	3661.53	-22.55	47.20	147.42	1723314.79	14443155.73	39°46'12.3594"N	80°42'17.9150"W	154.79	72.246	2.24	2.19	-2.45
3701.00	11.580	30.080	3692.93	-19.22	52.46	150.58	1723317.95	14443160.99	39°46'12.4113"N	80°42'17.8743"W	159.45	70.792	3.45	3.25	-6.09
3733.00	12.360	26.940	3724.24	-15.37	58.29	153.74	1723321.11	14443166.82	39°46'12.4688"N	80°42'17.8336"W	164.42	69.235	3.17	2.44	-9.81
3765.00	13.160	25.050	3755.45	-11.03	64.65	156.83	1723324.20	14443173.17	39°46'12.5315"N	80°42'17.7937"W	169.63	67.599	2.82	2.50	-5.91
3797.00	13.740	24.340	3786.57	-6.33	71.41	159.94	1723327.31	14443179.93	39°46'12.5982"N	80°42'17.7536"W	175.16	65.941	1.88	1.81	-2.22
3827.00	14.580	23.850	3815.66	-1.63	78.11	162.94	1723330.30	14443186.63	39°46'12.6644"N	80°42'17.7149"W	180.69	64.388	2.83	2.80	-1.63
3859.00	15.470	24.350	3846.56	3.67	85.68	166.33	1723333.69	14443194.20	39°46'12.7391"N	80°42'17.6712"W	187.10	62.745	2.81	2.78	1.56
3891.00	16.100	25.250	3877.36	9.16	93.58	169.98	1723337.34	14443202.09	39°46'12.8170"N	80°42'17.6241"W	194.04	61.165	2.11	1.97	2.81
3923.00	16.530	26.110	3908.07	14.71	101.68	173.87	1723341.24	14443210.19	39°46'12.8970"N	80°42'17.5739"W	201.42	59.681	1.54	1.34	2.69
3954.00	17.180	26.510	3937.74	20.19	109.74	177.86	1723345.22	14443218.25	39°46'12.9765"N	80°42'17.5225"W	208.99	58.325	2.13	2.10	1.29
3986.00	17.680	26.670	3968.27	26.00	118.31	182.15	1723349.51	14443226.81	39°46'13.0610"N	80°42'17.4672"W	217.20	56.995	1.57	1.56	0.50
4017.00	18.510	26.940	3997.73	31.80	126.90	186.49	1723353.85	14443235.40	39°46'13.1458"N	80°42'17.4112"W	225.57	55.765	2.69	2.68	0.87
4049.00	19.220	26.640	4028.01	38.04	136.14	191.15	1723358.51	14443244.64	39°46'13.2370"N	80°42'17.3511"W	234.68	54.541	2.24	2.22	-0.94



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Slot	Slot 04		

WELLPATH DATA (285 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]
4123.00	18.920	22.900	4097.95	53.28	158.08	201.28	1723368.64	14443266.57	39°46'13.4535"N	80°42'17.2205"W	255.94	51.855	1.70	-0.41	-5.05
4218.00	23.560	26.060	4186.48	75.03	189.34	215.63	1723382.97	14443297.82	39°46'13.7619"N	80°42'17.0355"W	286.96	48.714	5.03	4.88	3.33
4313.00	23.540	24.940	4273.57	98.59	223.60	231.97	1723399.31	14443332.06	39°46'14.1000"N	80°42'16.8248"W	322.19	46.052	0.47	-0.02	-1.18
4408.00	23.430	25.320	4360.70	122.28	257.88	248.04	1723415.38	14443366.32	39°46'14.4382"N	80°42'16.6174"W	357.81	43.887	0.20	-0.12	0.40
4503.00	22.490	24.670	4448.17	145.53	291.46	263.71	1723431.03	14443399.90	39°46'14.7696"N	80°42'16.4154"W	393.05	42.138	1.02	-0.99	-0.68
4596.00	22.840	23.830	4533.99	168.39	324.13	278.42	1723445.74	14443432.56	39°46'15.0920"N	80°42'16.2256"W	427.30	40.662	0.51	0.38	-0.90
4692.00	22.820	27.030	4622.47	191.54	357.76	294.41	1723461.73	14443466.17	39°46'15.4238"N	80°42'16.0194"W	463.33	39.452	1.29	-0.02	3.33
4787.00	22.860	27.330	4710.02	213.57	390.57	311.26	1723478.56	14443498.96	39°46'15.7474"N	80°42'15.8023"W	499.42	38.553	0.13	0.04	0.32
4882.00	22.110	27.050	4797.80	235.27	422.88	327.86	1723495.16	14443531.26	39°46'16.0663"N	80°42'15.5883"W	535.09	37.786	0.80	-0.79	-0.29
4977.00	22.740	26.190	4885.62	257.21	455.28	344.09	1723511.39	14443563.65	39°46'16.3859"N	80°42'15.3790"W	570.68	37.081	0.75	0.66	-0.91
5072.00	22.810	26.050	4973.21	279.72	488.30	360.28	1723527.57	14443596.66	39°46'16.7117"N	80°42'15.1702"W	606.83	36.421	0.09	0.07	-0.15
5262.00	22.490	26.160	5148.56	324.53	554.01	392.48	1723559.75	14443662.34	39°46'17.3600"N	80°42'14.7551"W	678.94	35.315	0.17	-0.17	0.06
5357.00	22.630	25.900	5236.29	346.89	586.76	408.47	1723575.74	14443695.07	39°46'17.6831"N	80°42'14.5489"W	714.94	34.844	0.18	0.15	-0.27
5453.00	22.340	25.510	5324.99	369.58	619.84	424.40	1723591.66	14443728.14	39°46'18.0095"N	80°42'14.3436"W	751.21	34.399	0.34	-0.30	-0.41
5547.00	22.780	26.420	5411.80	391.73	652.26	440.19	1723607.45	14443760.55	39°46'18.3294"N	80°42'14.1400"W	786.90	34.014	0.60	0.47	0.97
5642.00	23.080	25.680	5499.29	414.43	685.51	456.44	1723623.69	14443793.79	39°46'18.6575"N	80°42'13.9304"W	823.57	33.657	0.44	0.32	-0.78
5737.00	23.500	25.640	5586.55	437.66	719.37	472.71	1723639.95	14443827.63	39°46'18.9916"N	80°42'13.7207"W	860.78	33.310	0.44	0.44	-0.04
5832.00	23.610	25.900	5673.63	461.09	753.56	489.21	1723656.45	14443861.81	39°46'19.3289"N	80°42'13.5078"W	898.43	32.992	0.16	0.12	0.27
5927.00	24.060	24.540	5760.53	485.06	788.29	505.57	1723672.80	14443896.52	39°46'19.6716"N	80°42'13.2969"W	936.48	32.674	0.75	0.47	-1.43
6022.00	28.980	15.090	5845.55	514.68	828.16	519.61	1723686.84	14443936.39	39°46'20.0653"N	80°42'13.1153"W	977.68	32.105	6.81	5.18	-9.95
6116.00	35.330	0.440	5925.21	556.22	877.46	525.77	1723692.99	14443985.66	39°46'20.5522"N	80°42'13.0344"W	1022.92	30.930	10.66	6.76	-15.59
6210.00	42.070	353.590	5998.56	610.27	936.02	522.45	1723689.68	14444044.20	39°46'21.1311"N	80°42'13.0743"W	1071.96	29.169	8.49	7.17	-7.29
6305.00	49.940	347.880	6064.52	675.63	1003.33	511.25	1723678.47	14444111.49	39°46'21.7967"N	80°42'13.2150"W	1126.07	27.001	9.34	8.28	-6.01
6400.00	57.290	343.190	6120.86	750.47	1077.26	492.02	1723659.26	14444185.39	39°46'22.5279"N	80°42'13.4581"W	1184.31	24.548	8.69	7.74	-4.94
6495.00	65.430	337.390	6166.39	833.22	1155.58	463.79	1723631.04	14444263.68	39°46'23.3029"N	80°42'13.8164"W	1245.18	21.868	10.10	8.57	-6.11
6590.00	73.610	331.720	6199.62	922.09	1235.79	425.50	1723592.76	14444343.85	39°46'24.0967"N	80°42'14.3034"W	1306.99	18.999	10.26	8.61	-5.97
6685.00	81.090	332.960	6220.41	1014.69	1317.84	382.51	1723549.79	14444425.87	39°46'24.9090"N	80°42'14.8505"W	1372.23	16.186	7.98	7.87	1.31
6780.00	85.000	331.960	6231.91	1108.94	1401.43	338.92	1723506.21	14444509.43	39°46'25.7366"N	80°42'15.4053"W	1441.83	13.595	4.25	4.12	-1.05
6875.00	90.710	331.410	6235.47	1203.76	1484.97	293.91	1723461.22	14444592.94	39°46'26.5636"N	80°42'15.9782"W	1513.78	11.195	6.04	6.01	-0.58
6970.00	90.640	330.990	6234.35	1298.65	1568.21	248.14	1723415.47	14444676.15	39°46'27.3878"N	80°42'16.5608"W	1587.73	8.991	0.45	-0.07	-0.44



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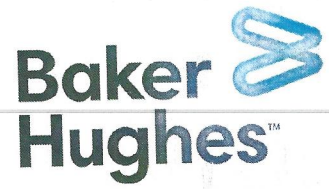
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7065.00	89.380	326.540	6234.33	1393.25	1649.42	198.89	1723366.24	14444757.32	39°46'28.1919"N	80°42'17.1881"W	1661.37	6.876	4.87	-1.33	-4.68
7160.00	89.260	329.200	6235.46	1487.72	1729.86	148.38	1723315.75	14444837.73	39°46'28.9885"N	80°42'17.8317"W	1736.21	4.902	2.80	-0.13	2.80
7255.00	88.920	328.640	6236.97	1582.35	1811.21	99.34	1723266.73	14444919.05	39°46'29.7941"N	80°42'18.4563"W	1813.93	3.139	0.69	-0.36	-0.59
7350.00	89.380	328.350	6238.38	1676.92	1892.20	49.70	1723217.11	14445000.00	39°46'30.5961"N	80°42'19.0887"W	1892.85	1.505	0.57	0.48	-0.31
7444.00	90.060	330.240	6238.84	1770.62	1973.02	1.71	1723169.14	14445080.79	39°46'31.3963"N	80°42'19.7000"W	1973.02	0.050	2.14	0.72	2.01
7539.00	89.660	328.330	6239.07	1865.31	2054.68	-46.81	1723120.63	14445162.42	39°46'32.2050"N	80°42'20.3180"W	2055.22	358.695	2.05	-0.42	-2.01
7634.00	90.150	330.370	6239.23	1960.01	2136.41	-95.24	1723072.23	14445244.12	39°46'33.0142"N	80°42'20.9348"W	2138.53	357.447	2.21	0.52	2.15
7729.00	89.070	330.480	6239.87	2054.83	2219.03	-142.13	1723025.36	14445326.70	39°46'33.8322"N	80°42'21.5318"W	2223.57	356.335	1.14	-1.14	0.12
7823.00	90.640	329.980	6240.11	2148.64	2300.62	-188.80	1722978.71	14445408.26	39°46'34.6401"N	80°42'22.1261"W	2308.35	355.309	1.75	1.67	-0.53
7918.00	90.640	330.400	6239.05	2243.44	2383.04	-236.02	1722931.50	14445490.65	39°46'35.4562"N	80°42'22.7275"W	2394.70	354.344	0.44	0.00	0.44
8013.00	89.660	329.560	6238.80	2338.21	2465.30	-283.55	1722883.99	14445572.87	39°46'36.2706"N	80°42'23.3328"W	2481.55	353.439	1.36	-1.03	-0.88
8108.00	90.180	329.810	6238.93	2432.96	2547.31	-331.50	1722836.06	14445654.85	39°46'37.0826"N	80°42'23.9435"W	2568.79	352.585	0.61	0.55	0.26
8203.00	90.180	330.060	6238.63	2527.74	2629.52	-379.09	1722788.48	14445737.04	39°46'37.8967"N	80°42'24.5496"W	2656.71	351.796	0.26	0.00	0.26
8298.00	89.960	329.210	6238.52	2622.48	2711.49	-427.12	1722740.48	14445818.97	39°46'38.7083"N	80°42'25.1613"W	2744.93	351.048	0.92	-0.23	-0.89
8393.00	90.360	329.550	6238.25	2717.18	2793.24	-475.50	1722692.11	14445900.69	39°46'39.5178"N	80°42'25.7776"W	2833.43	350.339	0.55	0.42	0.36
8488.00	90.670	330.100	6237.40	2811.94	2875.37	-523.25	1722644.38	14445982.78	39°46'40.3310"N	80°42'26.3857"W	2922.59	349.686	0.66	0.33	0.58
8583.00	90.030	330.320	6236.82	2906.75	2957.81	-570.45	1722597.20	14446065.20	39°46'41.1473"N	80°42'26.9868"W	3012.32	349.084	0.71	-0.67	0.23
8678.00	89.560	330.600	6237.16	3001.58	3040.46	-617.29	1722550.39	14446147.81	39°46'41.9656"N	80°42'27.5832"W	3102.49	348.524	0.58	-0.49	0.29
8773.00	89.900	329.750	6237.61	3096.38	3122.88	-664.54	1722503.16	14446230.20	39°46'42.7816"N	80°42'28.1850"W	3192.80	347.987	0.96	0.36	-0.89
8868.00	90.090	329.590	6237.61	3191.12	3204.87	-712.51	1722455.20	14446312.16	39°46'43.5935"N	80°42'28.7960"W	3283.12	347.466	0.26	0.20	-0.17
8962.00	90.150	330.440	6237.42	3284.91	3286.29	-759.49	1722408.24	14446393.55	39°46'44.3996"N	80°42'29.3943"W	3372.91	346.987	0.91	0.06	0.90
9057.00	89.660	330.490	6237.58	3379.74	3368.95	-806.32	1722361.43	14446476.17	39°46'45.2180"N	80°42'29.9907"W	3464.09	346.540	0.52	-0.52	0.05
9152.00	89.690	329.290	6238.11	3474.51	3451.13	-853.97	1722313.79	14446558.31	39°46'46.0316"N	80°42'30.5977"W	3555.21	346.101	1.26	0.03	-1.26
9247.00	90.150	329.750	6238.25	3569.23	3533.00	-902.16	1722265.62	14446640.15	39°46'46.8423"N	80°42'31.2114"W	3646.36	345.675	0.68	0.48	0.48
9342.00	90.210	330.330	6237.95	3664.02	3615.30	-949.60	1722218.20	14446722.43	39°46'47.6572"N	80°42'31.8157"W	3737.93	345.283	0.61	0.06	0.61
9437.00	90.030	328.090	6237.75	3758.70	3696.91	-998.23	1722169.59	14446804.00	39°46'48.4652"N	80°42'32.4351"W	3829.30	344.889	2.37	-0.19	-2.36
9532.00	91.040	330.590	6236.86	3853.39	3778.61	-1046.67	1722121.18	14446885.67	39°46'49.2743"N	80°42'33.0521"W	3920.90	344.517	2.84	1.06	2.63
9627.00	89.440	329.780	6236.46	3948.19	3861.04	-1093.90	1722073.96	14446968.06	39°46'50.0903"N	80°42'33.6537"W	4013.00	344.182	1.89	-1.68	-0.85
9721.00	90.950	330.890	6236.14	4042.01	3942.71	-1140.42	1722027.46	14447049.71	39°46'50.8990"N	80°42'34.2462"W	4104.33	343.868	1.99	1.61	1.18
9816.00	89.440	330.470	6235.82	4136.86	4025.54	-1186.94	1721980.96	14447132.50	39°46'51.7190"N	80°42'34.8386"W	4196.88	343.572	1.65	-1.59	-0.44



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REFERENCE WELLPATH IDENTIFICATION

Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek N-4HM
Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

WELLPATH DATA (285 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]
9911.00	91.260	331.730	6235.24	4231.74	4108.70	-1232.85	1721935.07	14447215.63	39°46'52.5424"N	80°42'35.4231"W	4289.68	343.298	2.33	1.92	1.33
10006.00	89.690	328.130	6234.45	4326.49	4190.90	-1280.44	1721887.50	14447297.79	39°46'53.3562"N	80°42'36.0293"W	4382.14	343.011	4.13	-1.65	-3.79
10101.00	90.090	329.990	6234.64	4421.15	4272.37	-1329.28	1721838.68	14447379.24	39°46'54.1630"N	80°42'36.6515"W	4474.39	342.717	2.00	0.42	1.96
10197.00	89.560	328.400	6234.93	4516.83	4354.83	-1378.44	1721789.53	14447461.66	39°46'54.9794"N	80°42'37.2778"W	4567.78	342.436	1.75	-0.55	-1.66
10292.00	89.100	330.810	6236.04	4611.55	4436.76	-1426.50	1721741.49	14447543.56	39°46'55.7906"N	80°42'37.8900"W	4660.44	342.176	2.58	-0.48	2.54
10387.00	90.950	331.870	6236.00	4706.45	4520.11	-1472.06	1721695.95	14447626.88	39°46'56.6159"N	80°42'38.4701"W	4753.78	341.961	2.24	1.95	1.12
10483.00	89.350	327.310	6235.75	4802.16	4602.88	-1520.64	1721647.39	14447709.62	39°46'57.4354"N	80°42'39.0890"W	4847.56	341.718	5.03	-1.67	-4.75
10578.00	90.030	330.740	6236.26	4896.80	4684.32	-1569.52	1721598.53	14447791.02	39°46'58.2418"N	80°42'39.7118"W	4940.27	341.476	3.68	0.72	3.61
10673.00	89.100	329.870	6236.98	4991.61	4766.84	-1616.58	1721551.49	14447873.51	39°46'59.0588"N	80°42'40.3111"W	5033.50	341.267	1.34	-0.98	-0.92
10768.00	91.560	330.000	6236.43	5086.38	4849.05	-1664.17	1721503.92	14447955.69	39°46'59.8728"N	80°42'40.9173"W	5126.67	341.058	2.59	2.59	0.14
10862.00	88.980	330.550	6235.99	5180.19	4930.67	-1710.77	1721457.33	14448037.28	39°47'0.6809"N	80°42'41.5109"W	5219.03	340.865	2.81	-2.74	0.59
10957.00	89.470	330.690	6237.28	5275.02	5013.45	-1757.38	1721410.75	14448120.02	39°47'1.5004"N	80°42'42.1044"W	5312.54	340.683	0.54	0.52	0.15
11052.00	91.100	329.830	6236.80	5369.83	5095.93	-1804.50	1721363.64	14448202.47	39°47'2.3171"N	80°42'42.7046"W	5405.99	340.501	1.94	1.72	-0.91
11147.00	89.470	330.700	6236.33	5464.64	5178.42	-1851.62	1721316.54	14448284.93	39°47'3.1337"N	80°42'43.3048"W	5499.50	340.325	1.94	-1.72	0.92
11241.00	89.690	329.650	6237.02	5558.44	5259.96	-1898.37	1721269.81	14448366.44	39°47'3.9411"N	80°42'43.9002"W	5592.05	340.155	1.14	0.23	-1.12
11336.00	91.070	330.340	6236.39	5653.22	5342.23	-1945.87	1721222.33	14448448.67	39°47'4.7556"N	80°42'44.5054"W	5685.58	339.986	1.62	1.45	0.73
11432.00	89.230	329.100	6236.14	5748.96	5425.12	-1994.27	1721173.94	14448531.54	39°47'5.5764"N	80°42'45.1220"W	5780.06	339.817	2.31	-1.92	-1.29
11527.00	90.520	329.510	6236.35	5843.65	5506.81	-2042.77	1721125.47	14448613.19	39°47'6.3852"N	80°42'45.7398"W	5873.49	339.648	1.42	1.36	0.43
11622.00	90.390	331.720	6235.59	5938.49	5589.58	-2089.38	1721078.88	14448695.93	39°47'7.2047"N	80°42'46.3334"W	5967.32	339.504	2.33	-0.14	2.33
11717.00	89.010	329.480	6236.09	6033.33	5672.34	-2136.01	1721032.26	14448778.65	39°47'8.0240"N	80°42'46.9274"W	6061.18	339.365	2.77	-1.45	-2.36
11812.00	89.690	330.020	6237.17	6128.07	5754.40	-2183.86	1720984.43	14448860.68	39°47'8.8365"N	80°42'47.5370"W	6154.86	339.218	0.91	0.72	0.57
11907.00	89.290	330.680	6238.01	6222.89	5836.95	-2230.86	1720937.45	14448943.20	39°47'9.6539"N	80°42'48.1356"W	6248.74	339.083	0.81	-0.42	0.69
12001.00	89.840	330.330	6238.73	6316.73	5918.77	-2277.14	1720891.19	14449024.99	39°47'10.4639"N	80°42'48.7251"W	6341.70	338.957	0.69	0.59	-0.37
12097.00	89.350	330.160	6239.41	6412.53	6002.11	-2324.78	1720843.57	14449108.29	39°47'11.2890"N	80°42'49.3319"W	6436.61	338.827	0.54	-0.51	-0.18
12192.00	91.840	331.350	6238.42	6507.38	6084.99	-2371.18	1720797.18	14449191.14	39°47'12.1095"N	80°42'49.9230"W	6530.67	338.710	2.90	2.62	1.25
12286.00	89.780	329.310	6237.09	6601.18	6166.65	-2417.70	1720750.68	14449272.77	39°47'12.9180"N	80°42'50.5156"W	6623.66	338.592	3.08	-2.19	-2.17
12381.00	90.700	329.600	6236.69	6695.89	6248.46	-2465.98	1720702.42	14449354.55	39°47'13.7281"N	80°42'51.1307"W	6717.47	338.463	1.02	0.97	0.31
12476.00	89.660	330.700	6236.39	6790.69	6330.86	-2513.27	1720655.15	14449436.91	39°47'14.5438"N	80°42'51.7330"W	6811.48	338.348	1.59	-1.09	1.16
12572.00	89.720	330.290	6236.91	6886.52	6414.40	-2560.55	1720607.89	14449520.43	39°47'15.3710"N	80°42'52.3352"W	6906.59	338.239	0.43	0.06	-0.43
12667.00	89.620	328.090	6237.46	6981.20	6495.99	-2609.20	1720559.26	14449601.98	39°47'16.1788"N	80°42'52.9552"W	7000.42	338.116	2.32	-0.11	-2.32



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REFERENCE WELLPATH IDENTIFICATION

Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek N-4HM
Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

WELLPATH DATA (285 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]
12762.00	90.300	330.510	6237.53	7075.89	6577.67	-2657.70	1720510.78	14449683.63	39°47'16.9876"N	80°42'53.5731"W	7094.30	337.999	2.65	0.72	2.55
12857.00	89.870	329.780	6237.39	7170.69	6660.06	-2704.99	1720463.51	14449765.99	39°47'17.8033"N	80°42'54.1755"W	7188.42	337.895	0.89	-0.45	-0.77
12952.00	89.990	330.020	6237.50	7265.46	6742.25	-2752.63	1720415.88	14449848.14	39°47'18.6170"N	80°42'54.7825"W	7282.51	337.791	0.28	0.13	0.25
13048.00	89.930	329.460	6237.57	7361.21	6825.17	-2801.01	1720367.52	14449931.03	39°47'19.4380"N	80°42'55.3988"W	7377.57	337.687	0.59	-0.06	-0.58
13142.00	89.960	329.890	6237.66	7454.96	6906.31	-2848.47	1720320.08	14450012.14	39°47'20.2414"N	80°42'56.0035"W	7470.67	337.587	0.46	0.03	0.46
13237.00	89.900	330.010	6237.78	7549.73	6988.54	-2896.04	1720272.53	14450094.33	39°47'21.0555"N	80°42'56.6096"W	7564.84	337.491	0.14	-0.06	0.13
13332.00	90.210	329.030	6237.68	7644.46	7070.41	-2944.23	1720224.36	14450176.17	39°47'21.8661"N	80°42'57.2235"W	7658.93	337.392	1.08	0.33	-1.03
13427.00	91.350	330.730	6236.39	7739.22	7152.57	-2991.89	1720176.72	14450258.30	39°47'22.6796"N	80°42'57.8308"W	7753.11	337.301	2.15	1.20	1.79
13522.00	89.590	328.240	6235.61	7833.92	7234.40	-3040.12	1720128.50	14450340.10	39°47'23.4898"N	80°42'58.4453"W	7847.22	337.206	3.21	-1.85	-2.62
13617.00	90.450	329.820	6235.58	7928.58	7315.85	-3089.01	1720079.64	14450421.52	39°47'24.2963"N	80°42'59.0682"W	7941.26	337.109	1.89	0.91	1.66
13712.00	91.070	329.900	6234.32	8023.34	7398.00	-3136.71	1720031.96	14450503.64	39°47'25.1096"N	80°42'59.6759"W	8035.51	337.023	0.66	0.65	0.08
13808.00	89.560	329.530	6233.79	8119.08	7480.90	-3185.12	1719983.57	14450586.50	39°47'25.9304"N	80°43'0.2927"W	8130.73	336.937	1.62	-1.57	-0.39
13902.00	91.780	330.740	6232.69	8212.87	7562.40	-3231.92	1719936.79	14450667.97	39°47'26.7373"N	80°43'0.8890"W	8224.06	336.860	2.69	2.36	1.29
13997.00	88.980	329.540	6232.06	8307.65	7644.78	-3279.21	1719889.51	14450750.31	39°47'27.5529"N	80°43'1.4915"W	8318.40	336.783	3.21	-2.95	-1.26
14092.00	89.750	329.190	6233.11	8402.35	7726.51	-3327.62	1719841.13	14450832.02	39°47'28.3622"N	80°43'2.1083"W	8412.61	336.700	0.89	0.81	-0.37
14187.00	90.520	331.730	6232.89	8497.18	7809.16	-3374.45	1719794.31	14450914.63	39°47'29.1804"N	80°43'2.7049"W	8507.05	336.630	2.79	0.81	2.67
14282.00	89.930	330.560	6232.52	8592.07	7892.36	-3420.29	1719748.48	14450997.80	39°47'30.0040"N	80°43'3.2888"W	8601.61	336.570	1.38	-0.62	-1.23
14377.00	89.440	330.410	6233.04	8686.90	7975.03	-3467.09	1719701.70	14451080.44	39°47'30.8225"N	80°43'3.8851"W	8696.08	336.503	0.54	-0.52	-0.16
14472.00	89.350	330.020	6234.04	8781.70	8057.47	-3514.28	1719654.53	14451162.85	39°47'31.6387"N	80°43'4.4863"W	8790.51	336.435	0.42	-0.09	-0.41
14567.00	89.410	330.380	6235.07	8876.50	8139.91	-3561.49	1719607.34	14451245.25	39°47'32.4549"N	80°43'5.0877"W	8884.95	336.369	0.38	0.06	0.38
14662.00	89.220	330.310	6236.21	8971.31	8222.46	-3608.49	1719560.36	14451327.77	39°47'33.2722"N	80°43'5.6865"W	8979.42	336.305	0.21	-0.20	-0.07
14757.00	89.440	329.950	6237.32	9066.10	8304.83	-3655.80	1719513.07	14451410.11	39°47'34.0877"N	80°43'6.2893"W	9073.87	336.241	0.44	0.23	-0.38
14947.00	89.560	329.990	6238.97	9255.66	8469.32	-3750.89	1719418.02	14451574.53	39°47'35.7162"N	80°43'7.5007"W	9262.75	336.112	0.07	0.06	0.02
15041.00	89.650	329.750	6239.62	9349.43	8550.62	-3798.07	1719370.86	14451655.80	39°47'36.5211"N	80°43'8.1019"W	9356.20	336.050	0.27	0.10	-0.26
15137.00	91.070	330.080	6239.02	9445.19	8633.68	-3846.19	1719322.76	14451738.83	39°47'37.3435"N	80°43'8.7151"W	9451.65	335.988	1.52	1.48	0.34
15232.00	89.220	328.570	6238.78	9539.89	8715.38	-3894.65	1719274.31	14451820.50	39°47'38.1524"N	80°43'9.3327"W	9546.01	335.922	2.51	-1.95	-1.59
15327.00	91.780	329.810	6237.95	9634.56	8796.96	-3943.30	1719225.68	14451902.05	39°47'38.9602"N	80°43'9.9527"W	9640.34	335.855	2.99	2.69	1.31
15422.00	89.750	329.310	6236.68	9729.27	8878.86	-3991.43	1719177.58	14451983.91	39°47'39.7710"N	80°43'10.5659"W	9734.76	335.794	2.20	-2.14	-0.53
15517.00	89.750	328.170	6237.10	9823.89	8960.06	-4040.72	1719128.30	14452065.08	39°47'40.5750"N	80°43'11.1942"W	9829.05	335.726	1.20	0.00	-1.20
15612.00	90.890	328.830	6236.57	9918.47	9041.06	-4090.36	1719078.68	14452146.05	39°47'41.3770"N	80°43'11.8268"W	9923.30	335.657	1.39	1.20	0.69



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Actual Wellpath Report

Knob Creek N-4HM AWB Proj:19829'

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REFERENCE WELLPATH IDENTIFICATION

Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek N-4HM
Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

WELLPATH DATA (285 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]
15708.00	89.410	330.570	6236.31	10014.21	9123.94	-4138.79	1719030.27	14452228.89	39°47'42.1976"N	80°43'12.4440"W	10018.78	335.600	2.38	-1.54	1.81
15802.00	90.890	328.840	6236.07	10107.96	9205.10	-4186.21	1718982.87	14452310.02	39°47'43.0011"N	80°43'13.0482"W	10112.28	335.545	2.42	1.57	-1.84
15897.00	90.120	329.130	6235.23	10202.61	9286.51	-4235.15	1718933.95	14452391.40	39°47'43.8072"N	80°43'13.6720"W	10206.66	335.484	0.87	-0.81	0.31
15992.00	89.840	329.270	6235.26	10297.29	9368.11	-4283.80	1718885.32	14452472.97	39°47'44.6152"N	80°43'14.2920"W	10301.09	335.427	0.33	-0.29	0.15
16086.00	89.690	329.410	6235.65	10391.00	9448.97	-4331.73	1718837.41	14452553.80	39°47'45.4157"N	80°43'14.9028"W	10394.57	335.372	0.22	-0.16	0.15
16181.00	90.020	329.390	6235.89	10485.71	9530.74	-4380.09	1718789.07	14452635.54	39°47'46.2253"N	80°43'15.5191"W	10489.05	335.318	0.35	0.35	-0.02
16276.00	89.960	329.350	6235.91	10580.41	9612.49	-4428.49	1718740.68	14452717.25	39°47'47.0347"N	80°43'16.1360"W	10583.55	335.264	0.08	-0.06	-0.04
16371.00	89.840	329.390	6236.07	10675.12	9694.23	-4476.89	1718692.30	14452798.96	39°47'47.8440"N	80°43'16.7528"W	10678.05	335.212	0.13	-0.13	0.04
16465.00	89.780	329.620	6236.38	10768.85	9775.23	-4524.59	1718644.62	14452879.93	39°47'48.6460"N	80°43'17.3607"W	10771.59	335.162	0.25	-0.06	0.24
16560.00	89.620	329.800	6236.88	10863.60	9857.26	-4572.51	1718596.72	14452961.92	39°47'49.4581"N	80°43'17.9713"W	10866.16	335.115	0.25	-0.17	0.19
16655.00	89.530	329.090	6237.59	10958.31	9939.07	-4620.80	1718548.45	14453043.70	39°47'50.2680"N	80°43'18.5868"W	10960.70	335.066	0.75	-0.09	-0.75
16750.00	89.720	329.220	6238.21	11052.99	10020.63	-4669.51	1718499.76	14453125.23	39°47'51.0756"N	80°43'19.2076"W	11055.19	335.015	0.24	0.20	0.14
16844.00	89.780	329.290	6238.62	11146.68	10101.41	-4717.56	1718451.73	14453205.98	39°47'51.8754"N	80°43'19.8200"W	11148.72	334.966	0.10	0.06	0.07
16939.00	90.050	329.360	6238.76	11241.38	10183.12	-4766.03	1718403.28	14453287.66	39°47'52.6844"N	80°43'20.4377"W	11243.26	334.919	0.29	0.28	0.07
17034.00	89.960	329.390	6238.75	11336.09	10264.87	-4814.42	1718354.90	14453369.37	39°47'53.4938"N	80°43'21.0545"W	11337.82	334.873	0.10	-0.09	0.03
17129.00	89.960	329.230	6238.82	11430.79	10346.57	-4862.91	1718306.43	14453451.04	39°47'54.3026"N	80°43'21.6724"W	11432.38	334.826	0.17	0.00	-0.17
17224.00	89.960	329.170	6238.88	11525.47	10428.17	-4911.56	1718257.81	14453532.61	39°47'55.1106"N	80°43'22.2924"W	11526.93	334.780	0.06	0.00	-0.06
17319.00	90.270	328.680	6238.69	11620.12	10509.53	-4960.59	1718208.79	14453613.94	39°47'55.9162"N	80°43'22.9175"W	11621.43	334.732	0.61	0.33	-0.52
17414.00	90.790	329.030	6237.81	11714.75	10590.84	-5009.72	1718159.68	14453695.21	39°47'56.7212"N	80°43'23.5437"W	11715.93	334.685	0.66	0.55	0.37
17509.00	89.560	329.780	6237.52	11809.46	10672.61	-5058.07	1718111.35	14453776.95	39°47'57.5308"N	80°43'24.1599"W	11810.53	334.642	1.52	-1.29	0.79
17604.00	89.900	329.510	6237.97	11904.20	10754.58	-5106.08	1718063.36	14453858.89	39°47'58.3424"N	80°43'24.7718"W	11905.17	334.602	0.46	0.36	-0.28
17698.00	90.050	329.850	6238.01	11997.95	10835.73	-5153.54	1718015.93	14453940.00	39°47'59.1457"N	80°43'25.3766"W	11998.83	334.564	0.40	0.16	0.36
17793.00	89.960	329.880	6238.00	12092.72	10917.89	-5201.23	1717968.25	14454022.13	39°47'59.9591"N	80°43'25.9844"W	12093.51	334.527	0.10	-0.09	0.03
17888.00	90.270	330.250	6237.81	12187.51	11000.21	-5248.64	1717920.86	14454104.43	39°48'0.7742"N	80°43'26.5885"W	12188.23	334.492	0.51	0.33	0.39
17983.00	89.780	330.150	6237.77	12282.31	11082.65	-5295.85	1717873.67	14454186.83	39°48'1.5903"N	80°43'27.1902"W	12282.96	334.459	0.53	-0.52	-0.11
18077.00	89.930	329.470	6238.01	12376.07	11163.90	-5343.12	1717826.42	14454268.05	39°48'2.3947"N	80°43'27.7926"W	12376.65	334.424	0.74	0.16	-0.72
18172.00	90.580	329.850	6237.59	12470.82	11245.89	-5391.10	1717778.45	14454350.00	39°48'3.2064"N	80°43'28.4042"W	12471.33	334.388	0.79	0.68	0.40
18267.00	90.640	329.980	6236.58	12565.58	11328.08	-5438.72	1717730.85	14454432.17	39°48'4.0202"N	80°43'29.0111"W	12566.03	334.354	0.15	0.06	0.14
18362.00	90.480	330.230	6235.65	12660.37	11410.44	-5486.07	1717683.52	14454514.49	39°48'4.8355"N	80°43'29.6145"W	12660.77	334.322	0.31	-0.17	0.26
18456.00	89.900	330.220	6235.34	12754.18	11492.03	-5532.75	1717636.86	14454596.05	39°48'5.6432"N	80°43'30.2093"W	12754.53	334.292	0.62	-0.62	-0.01



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Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek N-4HM
Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

WELLPATH DATA (285 stations) † = interpolated, ‡ = extrapolated station															
ID	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]
18551.00	90.390	329.500	6235.10	12848.95	11574.18	-5580.45	1717589.18	14454678.17	39°48'6.4566"N	80°43'30.8173"W	12849.25	334.259	0.92	0.52	-0.76
18646.00	90.910	330.180	6234.02	12943.71	11656.32	-5628.18	1717541.47	14454760.27	39°48'7.2697"N	80°43'31.4255"W	12943.96	334.227	0.90	0.55	0.72
18741.00	89.870	330.900	6233.37	13038.54	11739.03	-5674.90	1717494.77	14454842.95	39°48'8.0886"N	80°43'32.0209"W	13038.76	334.200	1.33	-1.09	0.76
18836.00	90.180	329.060	6233.33	13133.32	11821.28	-5722.42	1717447.26	14454925.17	39°48'8.9029"N	80°43'32.6266"W	13133.50	334.169	1.96	0.33	-1.94
18931.00	91.040	330.340	6232.32	13228.06	11903.30	-5770.35	1717399.36	14455007.16	39°48'9.7149"N	80°43'33.2374"W	13228.20	334.137	1.62	0.91	1.35
19026.00	90.210	330.820	6231.28	13322.90	11986.04	-5817.01	1717352.71	14455089.87	39°48'10.5340"N	80°43'33.8321"W	13323.02	334.112	1.01	-0.87	0.51
19121.00	89.990	330.130	6231.12	13417.73	12068.70	-5863.83	1717305.92	14455172.50	39°48'11.3523"N	80°43'34.4287"W	13417.83	334.086	0.76	-0.23	-0.73
19216.00	89.960	330.130	6231.16	13512.53	12151.08	-5911.14	1717258.62	14455254.84	39°48'12.1679"N	80°43'35.0317"W	13512.60	334.058	0.03	-0.03	0.00
19310.00	90.390	330.240	6230.87	13606.33	12232.64	-5957.88	1717211.90	14455336.37	39°48'12.9753"N	80°43'35.6273"W	13606.39	334.032	0.47	0.46	0.12
19405.00	90.390	330.240	6230.22	13701.14	12315.11	-6005.03	1717164.77	14455418.80	39°48'13.7917"N	80°43'36.2283"W	13701.18	334.005	0.00	0.00	0.00
19500.00	90.360	330.010	6229.60	13795.93	12397.48	-6052.35	1717117.47	14455501.15	39°48'14.6072"N	80°43'36.8313"W	13795.96	333.979	0.24	-0.03	-0.24
19595.00	90.390	330.180	6228.98	13890.73	12479.83	-6099.71	1717070.12	14455583.46	39°48'15.4225"N	80°43'37.4350"W	13890.74	333.952	0.18	0.03	0.18
19690.00	90.270	329.720	6228.43	13985.50	12562.06	-6147.28	1717022.57	14455665.66	39°48'16.2366"N	80°43'38.0413"W	13985.51	333.925	0.50	-0.13	-0.48
19784.00	90.210	329.970	6228.04	14079.27	12643.34	-6194.50	1716975.37	14455746.91	39°48'17.0412"N	80°43'38.6432"W	14079.27	333.898	0.27	-0.06	0.27
19829.00‡	90.210	329.970	6227.87	14124.17	12682.30	-6217.02	1716952.86	14455785.85	39°48'17.4269"N	80°43'38.9302"W	14124.17	333.885	0.00	0.00	0.00

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Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek N-4HM
Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

HOLE & CASING SECTIONS - Ref Wellbore: Knob Creek N-4HM AWB Ref Wellpath: Knob Creek N-4HM AWB Proj:19829'									
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]
30in Conductor	28.00	148.00	120.00	28.00	148.00	0.00	0.00	-0.01	0.10
17.5in Open Hole	148.00	529.00	381.00	148.00	529.00	-0.01	0.10	0.25	0.73
13.375in Casing Surface	28.00	529.00	501.00	28.00	529.00	0.00	0.00	0.25	0.73
12.25in Open Hole	529.00	2321.00	1792.00	529.00	2319.15	0.25	0.73	-8.73	64.98
9.625in Casing Intermediate	28.00	2321.00	2293.00	28.00	2319.15	0.00	0.00	-8.73	64.98
8.75in Open Hole	2321.00	4116.00	1795.00	2319.15	4091.33	-8.73	64.98	155.99	200.39
8.5in Open Hole	4116.00	19829.00	15713.00	4091.33	6227.87	155.99	200.39	12682.30	-6217.02
8.5in Open Hole	4116.00	19829.00	15713.00	4091.33	6227.87	155.99	200.39	12682.30	-6217.02
5.5in Casing Production	28.00	19829.00	19801.00	28.00	6227.87	0.00	0.00	12682.30	-6217.02

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Knob Creek N-4HM BHL Rev-1	6231.00	12681.32	-6221.02	1716948.86	14455784.87	39°48'17.4173"N	80°43'38.9815"W	point
Knob Creek N-4HM LP Rev-1	6231.00	1418.51	331.56	1723498.86	14444526.50	39°46'25.9056"N	80°42'15.4988"W	point

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Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

WELLPATH COMPOSITION - Ref Wellbore: Knob Creek N-4HM AWB Ref Wellpath: Knob Creek N-4HM AWB Proj:19829'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	511.00	OWSG MWD rev2 - Standard	01_MWD<17-1/2">(203-511')	Knob Creek N-4HM AWB	10/3/2023
511.00	2279.00	OWSG MWD rev2 - Standard	02_MWD<12-1/4">(511')(604'-2279')	Knob Creek N-4HM AWB	10/3/2023
2279.00	4049.00	OWSG MWD rev2 - Standard	03_MWD<8-3/4">(2279')(2372'-4049')	Knob Creek N-4HM AWB	10/3/2023
4049.00	4503.00	BH AutoTrak Curve/eXpress (2019) (IFR1, Short spacing)	04_BH ATCurve +IFR1+Short<8-1/2">(4049')(4123'-4503')	Knob Creek N-4HM AWB	11/25/2023
4503.00	19829.00	OWSG MWD rev2 + IFR1 + Sag + Multi-Station Correction	05_BH Lucida +SQC IFR1+SAG+FDIR<8-1/2">(4503')(4596'-19784')	Knob Creek N-4HM AWB	11/25/2023

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Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek N-4HM
Field	Marshall	API	47-051-02267-0000
Facility	Knob Creek	Wellbore	Knob Creek N-4HM AWB
Slot	Slot 04		

COMMENTS

Wellpath general comments

API: 47-051-02267-0000

BH Job #: 111995213

Rig: Patterson 294

Duration: 11/29/2023-12/02/2023

01_MWD<17-1/2">(203-511')

02_MWD<12-1/4">(511')(604'-2279')

03_MWD<8-3/4">(2279')(2372'-4049')

04_BH ATCurve +IFR1+Short<8-1/2">(4049')(4123'-4503')

05_BH Lucida +SQC IFR1+SAG+FDIR<8-1/2">(4503')(4596'-19784')

Landing Pt. @ 6875' MD

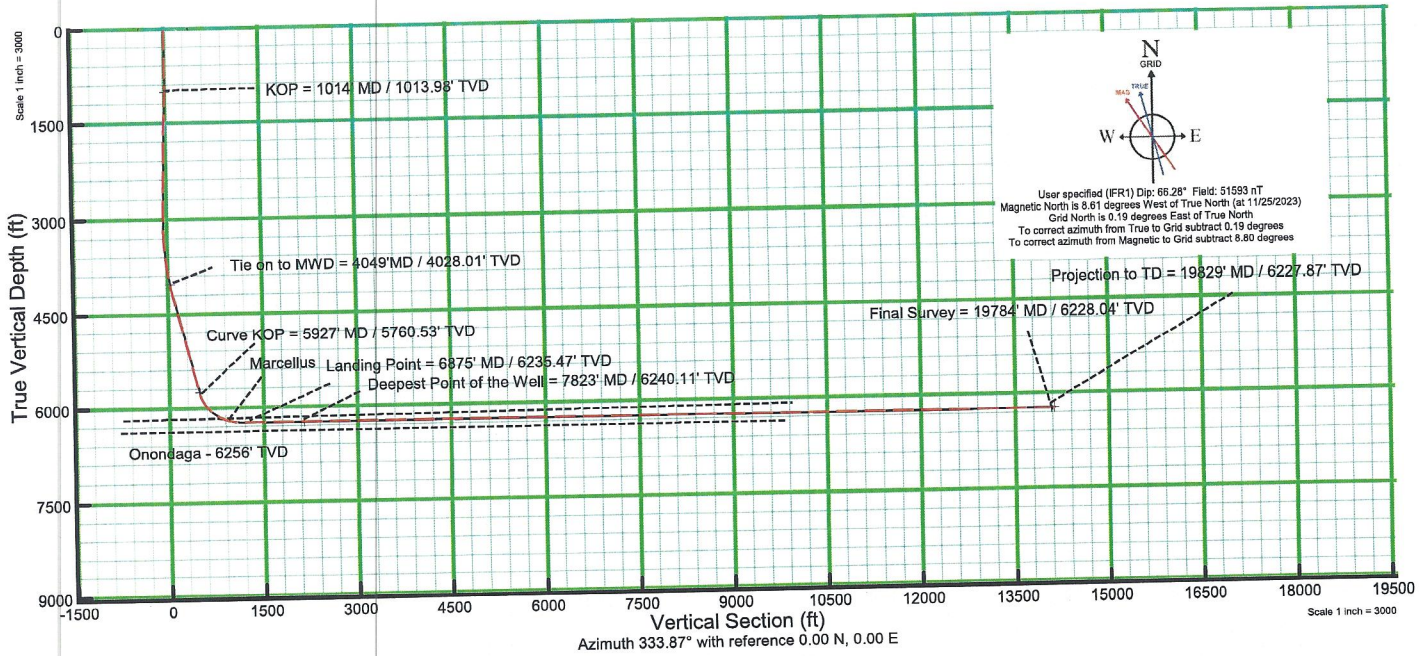
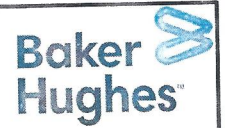
Final Survey @ 19784' MD

Projected MD at TD: 19829'

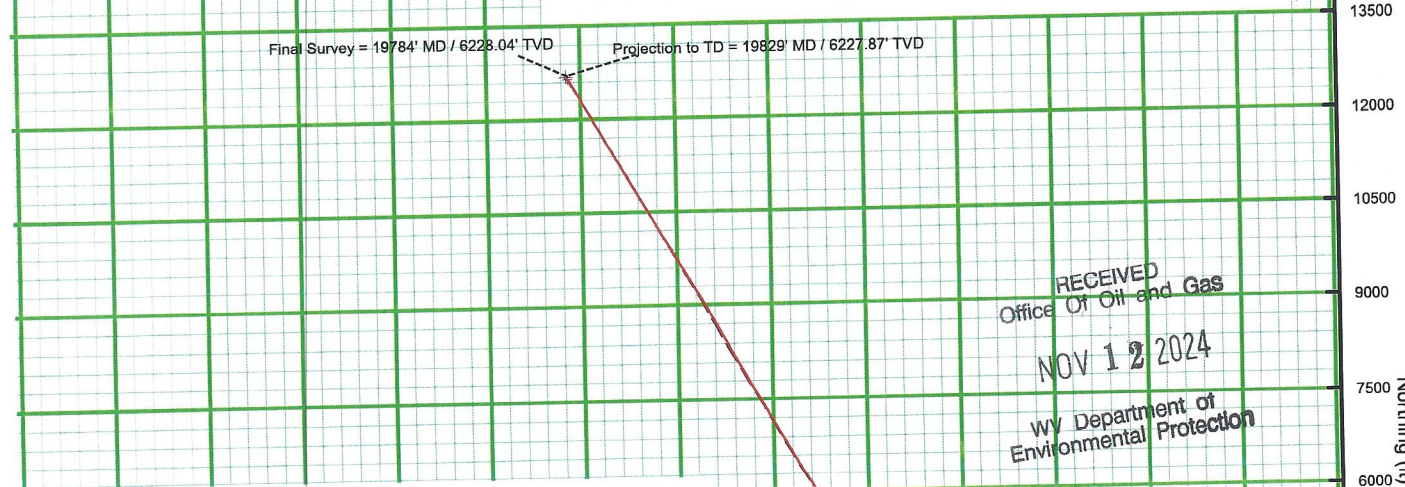
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KB Elevation=765 FT
 Ground Elevation=737 FT
 All Survey Measurements were taken from KB Elevation



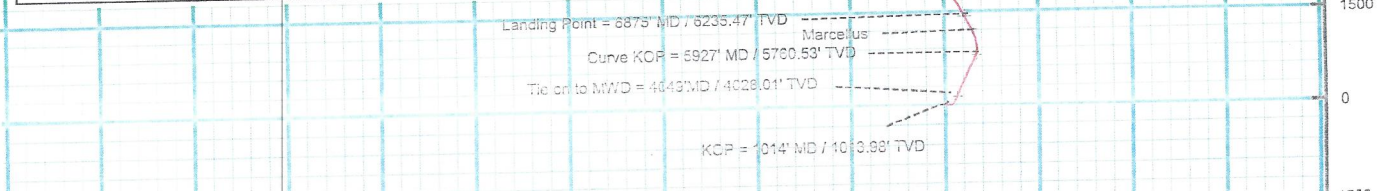
Bottom Hole Location									
MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
19829.00	90.210	329.970	6227.87	12882.30	-6217.02	1718952.86	14455786.85	39.8045408	-80.7274808



Landing Point									
MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
6875	90.71	331.41	6235.47	1484.97	293.91	1723461.22	14444592.94	39.7740455	-80.7044384

KOP									
MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
1014	0.85	104.31	1013.98	1.24	2.15	1723169.58	14443109.79	39.7699716	80.7055014

Surface Location			
Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
1723167.43	14443108.55	39.7699716	80.7055014



02/07/2025