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WV Department of
Environmental Protection

Actual Wellpath Report

Knob Creek S-8HM AWB Proj: 15434'

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REFERENCE WELLPATH IDENTIFICATION

Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek S-8HM
Field	Marshall	API	47-051-02283-0000
Facility	Knob Creek	Wellbore	Knob Creek S-8HM AWB
Slot	Slot 08		

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	11/7/2023 at 8:56:56 AM
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	46.90	37.43	1723180.95	14443159.15	39°46'12.3976"N	80°42'19.6296"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 08)	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	148.83°



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Facility	Knob Creek	Wellbore	Knob Creek S-8HM AWB
Slot	Slot 08		

WELLPATH DATA (236 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	292.250	0.00	0.00	0.00	0.00	1723180.95	14443159.15	39°46'12.3976"N	80°42'19.6296"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	292.250	28.00	0.00	0.00	0.00	1723180.95	14443159.15	39°46'12.3976"N	80°42'19.6296"W	0.00	0.000	0.00	0.00	0.00
171.00	0.490	292.250	171.00	-0.49	0.23	-0.57	1723180.38	14443159.38	39°46'12.3999"N	80°42'19.6368"W	0.61	292.250	0.34	0.34	0.00
201.00	0.480	302.630	201.00	-0.71	0.35	-0.79	1723180.16	14443159.50	39°46'12.4010"N	80°42'19.6397"W	0.86	293.752	0.29	-0.03	34.60
230.00	0.500	305.290	230.00	-0.93	0.49	-1.00	1723179.95	14443159.64	39°46'12.4024"N	80°42'19.6423"W	1.11	296.030	0.10	0.07	9.17
260.00	0.490	302.070	260.00	-1.17	0.63	-1.21	1723179.74	14443159.78	39°46'12.4038"N	80°42'19.6451"W	1.37	297.480	0.10	-0.03	-10.73
290.00	0.390	292.700	289.99	-1.36	0.74	-1.41	1723179.54	14443159.89	39°46'12.4049"N	80°42'19.6477"W	1.60	297.543	0.41	-0.33	-31.23
320.00	0.420	289.750	319.99	-1.53	0.81	-1.61	1723179.34	14443159.96	39°46'12.4057"N	80°42'19.6502"W	1.81	296.797	0.12	0.10	-9.83
351.00	0.380	297.720	350.99	-1.71	0.90	-1.81	1723179.14	14443160.05	39°46'12.4065"N	80°42'19.6527"W	2.02	296.449	0.22	-0.13	25.71
383.00	0.360	299.910	382.99	-1.89	1.00	-1.99	1723178.96	14443160.15	39°46'12.4075"N	80°42'19.6550"W	2.23	296.665	0.08	-0.06	6.84
414.00	0.420	288.560	413.99	-2.06	1.08	-2.18	1723178.77	14443160.23	39°46'12.4084"N	80°42'19.6575"W	2.44	296.418	0.31	0.19	-36.61
445.00	0.360	298.590	444.99	-2.23	1.17	-2.38	1723178.57	14443160.32	39°46'12.4092"N	80°42'19.6600"W	2.65	296.162	0.29	-0.19	32.35
476.00	0.480	308.420	475.99	-2.43	1.29	-2.56	1723178.39	14443160.44	39°46'12.4104"N	80°42'19.6624"W	2.87	296.794	0.45	0.39	31.71
512.00	0.350	310.520	511.99	-2.68	1.46	-2.77	1723178.19	14443160.61	39°46'12.4121"N	80°42'19.6649"W	3.13	297.829	0.36	-0.36	5.83
570.00	0.370	313.770	569.99	-3.03	1.70	-3.04	1723177.92	14443160.85	39°46'12.4145"N	80°42'19.6684"W	3.48	299.316	0.05	0.03	5.60
602.00	0.440	303.840	601.99	-3.24	1.84	-3.21	1723177.74	14443160.99	39°46'12.4159"N	80°42'19.6706"W	3.70	299.865	0.31	0.22	-31.03
633.00	0.500	306.030	632.99	-3.47	1.99	-3.42	1723177.53	14443161.14	39°46'12.4173"N	80°42'19.6733"W	3.96	300.195	0.20	0.19	7.06
665.00	0.500	319.650	664.98	-3.74	2.18	-3.62	1723177.33	14443161.33	39°46'12.4192"N	80°42'19.6759"W	4.23	301.017	0.37	0.00	42.56
695.00	0.730	327.160	694.98	-4.06	2.44	-3.81	1723177.14	14443161.59	39°46'12.4218"N	80°42'19.6783"W	4.53	302.613	0.81	0.77	25.03
727.00	0.710	324.000	726.98	-4.46	2.77	-4.04	1723176.91	14443161.92	39°46'12.4251"N	80°42'19.6812"W	4.90	304.450	0.14	-0.06	-9.88
759.00	0.720	331.790	758.98	-4.86	3.11	-4.25	1723176.70	14443162.26	39°46'12.4284"N	80°42'19.6839"W	5.27	306.177	0.31	0.03	24.34
791.00	0.880	327.100	790.97	-5.31	3.49	-4.48	1723176.47	14443162.64	39°46'12.4322"N	80°42'19.6868"W	5.68	307.939	0.54	0.50	-14.66
822.00	1.060	329.310	821.97	-5.83	3.94	-4.75	1723176.20	14443163.09	39°46'12.4366"N	80°42'19.6903"W	6.17	309.634	0.59	0.58	7.13
854.00	1.170	331.590	853.96	-6.45	4.48	-5.06	1723175.89	14443163.63	39°46'12.4420"N	80°42'19.6942"W	6.76	311.514	0.37	0.34	7.13
886.00	1.120	338.500	885.96	-7.09	5.06	-5.33	1723175.62	14443164.21	39°46'12.4477"N	80°42'19.6976"W	7.35	313.495	0.46	-0.16	21.59
917.00	1.240	328.350	916.95	-7.72	5.63	-5.62	1723175.33	14443164.77	39°46'12.4533"N	80°42'19.7013"W	7.95	315.038	0.78	0.39	-32.74
949.00	1.040	325.870	948.94	-8.36	6.16	-5.96	1723174.99	14443165.31	39°46'12.4586"N	80°42'19.7057"W	8.57	315.936	0.64	-0.62	-7.75
981.00	0.770	350.140	980.94	-8.85	6.61	-6.16	1723174.79	14443165.76	39°46'12.4631"N	80°42'19.7082"W	9.04	317.019	1.45	-0.84	75.84
1012.00	0.650	349.070	1011.94	-9.21	6.99	-6.23	1723174.72	14443166.14	39°46'12.4669"N	80°42'19.7091"W	9.37	318.287	0.39	-0.39	-3.45
1044.00	0.420	345.810	1043.94	-9.49	7.28	-6.30	1723174.66	14443166.43	39°46'12.4697"N	80°42'19.7099"W	9.63	319.162	0.72	-0.72	-10.19



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Slot	Slot 08		

WELLPATH DATA (236 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]
1076.00	0.310	25.030	1075.94	-9.65	7.48	-6.29	1723174.67	14443166.62	39°46'12.4716"N	80°42'19.7098"W	9.77	319.934	0.83	-0.34	122.56
1108.00	0.480	92.860	1107.94	-9.62	7.55	-6.12	1723174.84	14443166.69	39°46'12.4723"N	80°42'19.7076"W	9.71	320.976	1.45	0.53	211.97
1140.00	0.780	100.940	1139.93	-9.40	7.50	-5.77	1723175.18	14443166.65	39°46'12.4719"N	80°42'19.7031"W	9.46	322.429	0.98	0.94	25.25
1171.00	0.890	118.290	1170.93	-9.05	7.34	-5.35	1723175.60	14443166.49	39°46'12.4703"N	80°42'19.6978"W	9.09	323.931	0.88	0.35	55.97
1203.00	0.950	120.230	1202.93	-8.61	7.09	-4.90	1723176.05	14443166.24	39°46'12.4678"N	80°42'19.6921"W	8.62	325.355	0.21	0.19	6.06
1234.00	0.840	114.670	1233.92	-8.19	6.87	-4.47	1723176.48	14443166.02	39°46'12.4656"N	80°42'19.6866"W	8.20	326.928	0.45	-0.35	-17.94
1265.00	0.620	91.700	1264.92	-7.91	6.77	-4.10	1723176.85	14443165.92	39°46'12.4646"N	80°42'19.6818"W	7.91	328.804	1.17	-0.71	-74.10
1297.00	0.500	67.190	1296.92	-7.80	6.82	-3.80	1723177.15	14443165.97	39°46'12.4651"N	80°42'19.6779"W	7.80	330.886	0.83	-0.37	-76.59
1328.00	0.490	35.940	1327.92	-7.83	6.98	-3.59	1723177.36	14443166.13	39°46'12.4666"N	80°42'19.6753"W	7.85	332.745	0.86	-0.03	-100.81
1360.00	0.950	1.910	1359.92	-8.11	7.35	-3.51	1723177.45	14443166.50	39°46'12.4704"N	80°42'19.6742"W	8.15	334.513	1.90	1.44	-106.34
1392.00	1.330	3.350	1391.91	-8.64	7.99	-3.48	1723177.48	14443167.14	39°46'12.4766"N	80°42'19.6738"W	8.71	336.494	1.19	1.19	4.50
1423.00	1.610	350.960	1422.90	-9.34	8.78	-3.52	1723177.43	14443167.93	39°46'12.4844"N	80°42'19.6743"W	9.46	338.138	1.36	0.90	-39.97
1455.00	1.910	339.160	1454.88	-10.28	9.72	-3.78	1723177.17	14443168.87	39°46'12.4938"N	80°42'19.6776"W	10.43	338.738	1.47	0.94	-36.87
1487.00	2.340	323.640	1486.86	-11.45	10.75	-4.36	1723176.59	14443169.89	39°46'12.5039"N	80°42'19.6850"W	11.60	337.917	2.23	1.34	-48.50
1519.00	2.520	8.230	1518.84	-12.65	11.97	-4.65	1723176.31	14443171.11	39°46'12.5160"N	80°42'19.6886"W	12.84	338.782	5.78	0.56	139.34
1550.00	2.810	337.640	1549.80	-13.92	13.35	-4.84	1723176.11	14443172.49	39°46'12.5296"N	80°42'19.6910"W	14.20	340.074	4.62	0.94	-98.68
1582.00	3.220	329.900	1581.76	-15.60	14.85	-5.59	1723175.37	14443173.99	39°46'12.5445"N	80°42'19.7005"W	15.87	339.380	1.80	1.28	-24.19
1614.00	3.570	326.940	1613.70	-17.49	16.46	-6.58	1723174.37	14443175.60	39°46'12.5605"N	80°42'19.7132"W	17.73	338.208	1.22	1.09	-9.25
1645.00	3.900	328.950	1644.64	-19.51	18.17	-7.65	1723173.30	14443177.32	39°46'12.5774"N	80°42'19.7268"W	19.72	337.167	1.15	1.06	6.48
1677.00	4.160	326.280	1676.56	-21.76	20.07	-8.86	1723172.10	14443179.21	39°46'12.5962"N	80°42'19.7422"W	21.94	336.188	1.00	0.81	-8.34
1709.00	4.470	325.170	1708.47	-24.16	22.06	-10.21	1723170.74	14443181.20	39°46'12.6159"N	80°42'19.7595"W	24.31	335.156	1.00	0.97	-3.47
1740.00	4.670	328.450	1739.37	-26.63	24.13	-11.56	1723169.39	14443183.27	39°46'12.6364"N	80°42'19.7767"W	26.76	334.392	1.06	0.65	10.58
1772.00	4.850	328.770	1771.26	-29.28	26.39	-12.95	1723168.01	14443185.53	39°46'12.6588"N	80°42'19.7943"W	29.40	333.871	0.57	0.56	1.00
1803.00	5.010	324.580	1802.14	-31.95	28.62	-14.41	1723166.54	14443187.76	39°46'12.6809"N	80°42'19.8129"W	32.04	333.271	1.27	0.52	-13.52
1835.00	5.230	328.420	1834.02	-34.80	31.00	-15.98	1723164.97	14443190.14	39°46'12.7044"N	80°42'19.8330"W	34.88	332.722	1.27	0.69	12.00
1867.00	5.400	327.910	1865.88	-37.76	33.52	-17.55	1723163.41	14443192.65	39°46'12.7294"N	80°42'19.8529"W	37.83	332.365	0.55	0.53	-1.59
1898.00	5.640	328.360	1896.74	-40.74	36.05	-19.12	1723161.84	14443195.19	39°46'12.7545"N	80°42'19.8730"W	40.81	332.057	0.79	0.77	1.45
1930.00	5.870	329.040	1928.57	-43.95	38.79	-20.79	1723160.17	14443197.93	39°46'12.7816"N	80°42'19.8942"W	44.01	331.812	0.75	0.72	2.12
1962.00	5.960	327.920	1960.40	-47.25	41.60	-22.51	1723158.45	14443200.74	39°46'12.8094"N	80°42'19.9162"W	47.30	331.580	0.46	0.28	-3.50
1994.00	5.410	325.880	1992.25	-50.42	44.26	-24.24	1723156.72	14443203.39	39°46'12.8357"N	80°42'19.9382"W	50.46	331.289	1.83	-1.72	-6.38



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Slot	Slot 08		

WELLPATH DATA (236 stations)

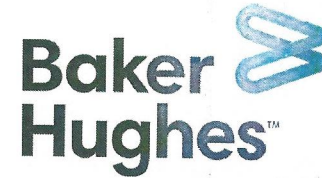
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2025.00	5.450	324.420	2023.11	-53.34	46.67	-25.92	1723155.04	14443205.80	39°46'12.8596"N	80°42'19.9595"W	53.38	330.953	0.46	0.13	-4.71
2057.00	5.400	323.300	2054.96	-56.36	49.11	-27.70	1723153.26	14443208.24	39°46'12.8838"N	80°42'19.9823"W	56.38	330.573	0.37	-0.16	-3.50
2087.00	5.530	322.340	2084.83	-59.20	51.39	-29.43	1723151.53	14443210.52	39°46'12.9063"N	80°42'20.0043"W	59.22	330.200	0.53	0.43	-3.20
2119.00	5.750	323.070	2116.67	-62.33	53.89	-31.33	1723149.63	14443213.02	39°46'12.9311"N	80°42'20.0286"W	62.34	329.823	0.72	0.69	2.28
2150.00	5.920	324.310	2147.51	-65.46	56.43	-33.20	1723147.76	14443215.56	39°46'12.9563"N	80°42'20.0524"W	65.47	329.529	0.68	0.55	4.00
2181.00	5.520	326.950	2178.36	-68.55	58.98	-34.95	1723146.02	14443218.10	39°46'12.9815"N	80°42'20.0746"W	68.55	329.351	1.54	-1.29	8.52
2213.00	5.570	327.800	2210.21	-71.64	61.58	-36.61	1723144.35	14443220.71	39°46'13.0073"N	80°42'20.0959"W	71.64	329.266	0.30	0.16	2.66
2244.00	5.460	329.530	2241.06	-74.62	64.12	-38.16	1723142.80	14443223.25	39°46'13.0325"N	80°42'20.1156"W	74.62	329.242	0.64	-0.35	5.58
2276.00	5.220	333.910	2272.93	-77.59	66.74	-39.57	1723141.39	14443225.87	39°46'13.0585"N	80°42'20.1336"W	77.59	329.335	1.48	-0.75	13.69
2301.00	5.100	336.230	2297.82	-79.83	68.78	-40.52	1723140.44	14443227.90	39°46'13.0786"N	80°42'20.1456"W	79.83	329.496	0.96	-0.48	9.28
2374.00	4.830	333.900	2370.55	-86.10	74.51	-43.18	1723137.78	14443233.63	39°46'13.1353"N	80°42'20.1795"W	86.12	329.906	0.46	-0.37	-3.19
2406.00	4.630	332.920	2402.44	-88.73	76.87	-44.36	1723136.60	14443235.99	39°46'13.1587"N	80°42'20.1945"W	88.75	330.010	0.67	-0.63	-3.06
2438.00	4.630	329.560	2434.34	-91.31	79.13	-45.61	1723135.36	14443238.25	39°46'13.1811"N	80°42'20.2103"W	91.33	330.045	0.85	0.00	-10.50
2470.00	4.490	328.560	2466.24	-93.86	81.32	-46.91	1723134.06	14443240.43	39°46'13.2027"N	80°42'20.2270"W	93.88	330.019	0.50	-0.44	-3.13
2501.00	4.700	333.480	2497.14	-96.34	83.49	-48.11	1723132.86	14443242.61	39°46'13.2242"N	80°42'20.2422"W	96.36	330.046	1.44	0.68	15.87
2533.00	4.520	340.350	2529.03	-98.88	85.85	-49.12	1723131.85	14443244.96	39°46'13.2476"N	80°42'20.2551"W	98.91	330.222	1.81	-0.56	21.47
2565.00	4.680	339.480	2560.93	-101.40	88.26	-50.00	1723130.97	14443247.37	39°46'13.2714"N	80°42'20.2663"W	101.44	330.466	0.55	0.50	-2.72
2597.00	4.530	337.440	2592.83	-103.93	90.65	-50.95	1723130.02	14443249.76	39°46'13.2951"N	80°42'20.2782"W	103.98	330.663	0.69	-0.47	-6.37
2628.00	4.450	336.160	2623.73	-106.33	92.88	-51.90	1723129.07	14443251.99	39°46'13.3171"N	80°42'20.2904"W	106.40	330.803	0.41	-0.26	-4.13
2660.00	4.440	332.310	2655.64	-108.80	95.11	-52.98	1723127.99	14443254.22	39°46'13.3392"N	80°42'20.3041"W	108.87	330.881	0.93	-0.03	-12.03
2692.00	4.270	332.340	2687.54	-111.23	97.26	-54.11	1723126.86	14443256.37	39°46'13.3605"N	80°42'20.3184"W	111.30	330.913	0.53	-0.53	0.09
2724.00	4.240	328.790	2719.45	-113.60	99.33	-55.27	1723125.70	14443258.44	39°46'13.3810"N	80°42'20.3333"W	113.67	330.905	0.83	-0.09	-11.09
2755.00	4.480	336.090	2750.37	-115.95	101.42	-56.36	1723124.61	14443260.53	39°46'13.4017"N	80°42'20.3471"W	116.02	330.939	1.95	0.77	23.55
2787.00	5.030	338.200	2782.25	-118.57	103.86	-57.39	1723123.59	14443262.97	39°46'13.4259"N	80°42'20.3601"W	118.66	331.078	1.80	1.72	6.59
2818.00	4.900	337.710	2813.14	-121.22	106.35	-58.39	1723122.58	14443265.46	39°46'13.4505"N	80°42'20.3729"W	121.33	331.230	0.44	-0.42	-1.58
2848.00	4.670	337.190	2843.03	-123.69	108.66	-59.35	1723121.62	14443267.77	39°46'13.4733"N	80°42'20.3851"W	123.81	331.356	0.78	-0.77	-1.73
2880.00	4.560	333.200	2874.93	-126.25	111.00	-60.43	1723120.54	14443270.10	39°46'13.4965"N	80°42'20.3988"W	126.38	331.434	1.06	-0.34	-12.47
2912.00	4.430	331.580	2906.83	-128.75	113.22	-61.59	1723119.38	14443272.32	39°46'13.5185"N	80°42'20.4136"W	128.89	331.453	0.57	-0.41	-5.06
2942.00	4.350	330.180	2936.74	-131.05	115.22	-62.71	1723118.26	14443274.33	39°46'13.5383"N	80°42'20.4278"W	131.18	331.443	0.45	-0.27	-4.67
2974.00	4.560	336.960	2968.65	-133.52	117.45	-63.81	1723117.16	14443276.55	39°46'13.5603"N	80°42'20.4419"W	133.66	331.484	1.77	0.66	21.19



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Knob Creek S-8HM AWB Proj: 15434'
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Slot	Slot 08		

WELLPATH DATA (236 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]
3006.00	5.060	339.130	3000.53	-136.17	119.94	-64.81	1723116.16	14443279.04	39°46'13.5850"N	80°42'20.4546"W	136.33	331.614	1.66	1.56	6.78
3037.00	5.240	339.610	3031.41	-138.90	122.54	-65.79	1723115.18	14443281.64	39°46'13.6107"N	80°42'20.4670"W	139.09	331.769	0.60	0.58	1.55
3069.00	4.890	336.920	3063.28	-141.69	125.17	-66.84	1723114.14	14443284.27	39°46'13.6367"N	80°42'20.4803"W	141.89	331.899	1.32	-1.09	-8.41
3101.00	4.650	335.490	3095.17	-144.33	127.60	-67.91	1723113.07	14443286.70	39°46'13.6608"N	80°42'20.4939"W	144.55	331.978	0.84	-0.75	-4.47
3132.00	4.610	336.210	3126.07	-146.81	129.88	-68.93	1723112.04	14443288.98	39°46'13.6834"N	80°42'20.5069"W	147.04	332.044	0.23	-0.13	-2.32
3164.00	4.460	332.710	3157.97	-149.33	132.17	-70.02	1723110.96	14443291.26	39°46'13.7060"N	80°42'20.5208"W	149.57	332.086	0.98	-0.47	-10.94
3196.00	4.440	330.450	3189.88	-151.81	134.35	-71.20	1723109.78	14443293.45	39°46'13.7276"N	80°42'20.5358"W	152.05	332.077	0.55	-0.06	-7.06
3227.00	4.850	333.250	3220.77	-154.31	136.56	-72.38	1723108.59	14443295.66	39°46'13.7495"N	80°42'20.5508"W	154.56	332.075	1.51	1.32	9.03
3259.00	6.040	334.570	3252.63	-157.34	139.29	-73.72	1723107.26	14443298.39	39°46'13.7765"N	80°42'20.5678"W	157.60	332.111	3.74	3.72	4.12
3290.00	7.200	335.150	3283.42	-160.89	142.53	-75.23	1723105.75	14443301.62	39°46'13.8086"N	80°42'20.5871"W	161.17	332.173	3.75	3.74	1.87
3322.00	8.370	334.490	3315.13	-165.20	146.45	-77.08	1723103.90	14443305.54	39°46'13.8474"N	80°42'20.6105"W	165.50	332.242	3.67	3.66	-2.06
3354.00	9.250	335.630	3346.75	-170.07	150.90	-79.14	1723101.84	14443309.99	39°46'13.8914"N	80°42'20.6368"W	170.39	332.323	2.80	2.75	3.56
3386.00	9.860	336.980	3378.30	-175.34	155.76	-81.28	1723099.71	14443314.85	39°46'13.9395"N	80°42'20.6639"W	175.69	332.444	2.03	1.91	4.22
3417.00	10.460	337.270	3408.82	-180.75	160.80	-83.40	1723097.58	14443319.88	39°46'13.9894"N	80°42'20.6909"W	181.14	332.586	1.94	1.94	0.94
3449.00	11.180	338.540	3440.25	-186.68	166.36	-85.66	1723095.33	14443325.45	39°46'14.0445"N	80°42'20.7196"W	187.12	332.757	2.37	2.25	3.97
3481.00	12.250	338.800	3471.58	-193.08	172.42	-88.02	1723092.96	14443331.50	39°46'14.1044"N	80°42'20.7496"W	193.59	332.955	3.35	3.34	0.81
3512.00	13.130	339.790	3501.82	-199.78	178.79	-90.43	1723090.56	14443337.87	39°46'14.1674"N	80°42'20.7801"W	200.35	333.171	2.92	2.84	3.19
3544.00	14.080	338.970	3532.93	-207.18	185.83	-93.08	1723087.91	14443344.91	39°46'14.2371"N	80°42'20.8138"W	207.84	333.395	3.03	2.97	-2.56
3576.00	14.760	340.620	3563.92	-215.00	193.31	-95.83	1723085.16	14443352.38	39°46'14.3111"N	80°42'20.8487"W	215.76	333.631	2.48	2.13	5.16
3607.00	15.520	340.530	3593.84	-222.93	200.95	-98.52	1723082.47	14443360.02	39°46'14.3866"N	80°42'20.8829"W	223.80	333.882	2.45	2.45	-0.29
3639.00	16.360	341.610	3624.61	-231.52	209.26	-101.37	1723079.62	14443368.33	39°46'14.4689"N	80°42'20.9190"W	232.52	334.153	2.78	2.62	3.37
3666.00	16.790	341.600	3640.90	-236.25	213.86	-102.90	1723078.09	14443372.93	39°46'14.5144"N	80°42'20.9384"W	237.33	334.305	2.53	2.53	-0.06
3738.00	19.570	340.500	3718.80	-261.25	238.05	-111.23	1723069.77	14443397.11	39°46'14.7537"N	80°42'21.0440"W	262.75	334.956	3.42	3.39	-1.34
3834.00	19.560	340.680	3809.26	-292.72	268.37	-121.91	1723059.09	14443427.41	39°46'15.0537"N	80°42'21.1796"W	294.76	335.570	0.06	-0.01	0.19
3929.00	19.680	340.830	3898.75	-323.94	298.49	-132.42	1723048.58	14443457.52	39°46'15.3517"N	80°42'21.3129"W	326.54	336.076	0.14	0.13	0.16
4024.00	21.670	340.540	3987.62	-356.76	330.14	-143.52	1723037.49	14443489.16	39°46'15.6649"N	80°42'21.4537"W	359.98	336.504	2.10	2.09	-0.31
4119.00	23.360	340.550	4075.38	-392.38	364.44	-155.64	1723025.38	14443523.44	39°46'16.0042"N	80°42'21.6075"W	396.28	336.875	1.78	1.78	0.01
4214.00	25.170	340.660	4161.98	-430.60	401.26	-168.60	1723012.42	14443560.25	39°46'16.3686"N	80°42'21.7719"W	435.24	337.209	1.91	1.91	0.12
4309.00	25.250	339.590	4247.93	-470.28	439.31	-182.36	1722998.67	14443598.29	39°46'16.7451"N	80°42'21.9465"W	475.66	337.457	0.49	0.08	-1.13
4403.00	25.180	339.570	4332.98	-509.62	476.84	-196.33	1722984.70	14443635.80	39°46'17.1164"N	80°42'22.1239"W	515.68	337.622	0.08	-0.07	-0.02



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Slot	Slot 08		

WELLPATH DATA (236 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]
4499.00	25.370	339.860	4419.79	-549.87	515.29	-210.54	1722970.50	14443674.24	39°46'17.4968"N	80°42'22.3042"W	556.64	337.776	0.24	0.20	0.30
4594.00	25.670	339.700	4505.52	-590.05	553.69	-224.68	1722956.36	14443712.63	39°46'17.8768"N	80°42'22.4838"W	597.55	337.913	0.32	0.32	-0.17
4689.00	25.310	339.550	4591.27	-630.21	592.02	-238.92	1722942.13	14443750.94	39°46'18.2561"N	80°42'22.6645"W	638.41	338.023	0.38	-0.38	-0.16
4784.00	25.920	339.680	4676.93	-670.56	630.52	-253.22	1722927.83	14443789.42	39°46'18.6370"N	80°42'22.8461"W	679.47	338.119	0.64	0.64	0.14
4879.00	25.670	339.440	4762.47	-711.17	669.26	-267.66	1722913.40	14443828.14	39°46'19.0203"N	80°42'23.0293"W	720.79	338.202	0.29	-0.26	-0.25
4974.00	25.000	339.410	4848.33	-751.13	707.31	-281.95	1722899.12	14443866.18	39°46'19.3969"N	80°42'23.2107"W	761.44	338.267	0.71	-0.71	-0.03
5069.00	25.670	339.720	4934.19	-791.07	745.41	-296.14	1722884.93	14443904.26	39°46'19.7738"N	80°42'23.3908"W	802.08	338.333	0.72	0.71	0.33
5164.00	25.500	339.700	5019.88	-831.36	783.89	-310.36	1722870.71	14443942.73	39°46'20.1545"N	80°42'23.5714"W	843.09	338.400	0.18	-0.18	-0.02
5260.00	24.600	339.480	5106.85	-871.29	821.98	-324.54	1722856.54	14443980.81	39°46'20.5315"N	80°42'23.7514"W	883.73	338.455	0.94	-0.94	-0.23
5355.00	25.650	339.510	5192.86	-910.93	859.76	-338.67	1722842.42	14444018.57	39°46'20.9053"N	80°42'23.9307"W	924.06	338.500	1.11	1.11	0.03
5450.00	23.990	339.550	5279.08	-950.11	897.12	-352.61	1722828.48	14444055.92	39°46'21.2749"N	80°42'24.1078"W	963.93	338.543	1.75	-1.75	0.04
5545.00	23.590	339.440	5366.01	-987.77	933.02	-366.04	1722815.06	14444091.80	39°46'21.6301"N	80°42'24.2782"W	1002.25	338.579	0.42	-0.42	-0.12
5640.00	15.540	340.460	5455.45	-1018.97	962.86	-376.99	1722804.11	14444121.63	39°46'21.9254"N	80°42'24.4172"W	1034.03	338.618	8.48	-8.47	1.07
5734.00	10.630	2.810	5547.04	-1038.52	983.41	-380.78	1722800.32	14444142.17	39°46'22.1286"N	80°42'24.4649"W	1054.55	338.834	7.41	-5.22	23.78
5829.00	5.160	91.690	5641.36	-1043.49	992.06	-376.06	1722805.04	14444150.82	39°46'22.2140"N	80°42'24.4041"W	1060.95	339.240	12.33	-5.76	93.56
5924.00	10.540	131.420	5735.49	-1032.86	986.18	-365.26	1722815.83	14444144.94	39°46'22.1555"N	80°42'24.2660"W	1051.65	339.676	7.73	5.66	41.82
6019.00	17.590	142.110	5827.60	-1010.28	969.08	-349.91	1722831.18	14444127.85	39°46'21.9860"N	80°42'24.0701"W	1030.32	340.147	7.88	7.42	11.25
6114.00	27.290	142.170	5915.30	-974.31	940.48	-327.68	1722853.40	14444099.26	39°46'21.7026"N	80°42'23.7866"W	995.93	340.791	10.21	10.21	0.06
6208.00	36.770	143.120	5994.90	-924.80	900.87	-297.51	1722883.56	14444059.66	39°46'21.3102"N	80°42'23.4019"W	948.72	341.724	10.10	10.09	1.01
6303.00	46.530	146.800	6065.81	-861.89	849.14	-261.48	1722919.58	14444007.96	39°46'20.7978"N	80°42'22.9426"W	888.49	342.885	10.59	10.27	3.87
6398.00	55.140	146.970	6125.76	-788.35	787.50	-221.28	1722959.76	14443946.34	39°46'20.1874"N	80°42'22.4304"W	818.00	344.305	9.06	9.06	0.18
6493.00	64.340	146.580	6173.58	-706.43	718.94	-176.36	1723004.66	14443877.81	39°46'19.5084"N	80°42'21.8579"W	740.26	346.217	9.69	9.68	-0.41
6588.00	73.510	148.710	6207.70	-617.91	644.12	-129.02	1723051.99	14443803.01	39°46'18.7674"N	80°42'21.2548"W	656.91	348.674	9.88	9.65	2.24
6683.00	83.420	149.580	6226.68	-524.94	564.31	-81.35	1723099.63	14443723.23	39°46'17.9770"N	80°42'20.6476"W	570.14	351.797	10.47	10.43	0.92
6777.00	88.140	149.230	6233.59	-431.23	483.63	-33.65	1723147.32	14443642.59	39°46'17.1783"N	80°42'20.0401"W	484.80	356.020	5.03	5.02	-0.37
6872.00	88.330	148.990	6236.52	-336.28	402.15	15.10	1723196.05	14443561.14	39°46'16.3714"N	80°42'19.4192"W	402.43	2.151	0.32	0.20	-0.25
6967.00	88.300	150.210	6239.31	-241.33	320.25	63.15	1723244.08	14443479.27	39°46'15.5604"N	80°42'18.8073"W	326.41	11.156	1.28	-0.03	1.28
7062.00	88.760	149.980	6241.75	-146.38	237.92	110.50	1723291.41	14443396.98	39°46'14.7453"N	80°42'18.2044"W	262.33	24.912	0.54	0.48	-0.24
7157.00	88.790	150.310	6243.78	-51.43	155.55	157.78	1723338.67	14443314.64	39°46'13.9297"N	80°42'17.6024"W	221.56	45.408	0.35	0.03	0.35
7252.00	88.860	150.460	6245.73	43.52	72.98	204.72	1723385.59	14443232.10	39°46'13.1121"N	80°42'17.0047"W	217.34	70.380	0.17	0.07	0.16



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7347.00	88.860	149.860	6247.62	138.47	-9.41	251.98	1723432.83	14443149.74	39°46'12.2964"N	80°42'16.4030"W	252.15	92.139	0.63	0.00	-0.63
7442.00	88.920	149.870	6249.46	233.44	-91.56	299.66	1723480.50	14443067.63	39°46'11.4830"N	80°42'15.7957"W	313.34	106.989	0.06	0.06	0.01
7536.00	88.640	149.440	6251.46	327.41	-172.66	347.14	1723527.95	14442986.56	39°46'10.6799"N	80°42'15.1911"W	387.71	116.445	0.55	-0.30	-0.46
7631.00	89.040	149.590	6253.38	422.38	-254.51	395.33	1723576.12	14442904.74	39°46'9.8695"N	80°42'14.5775"W	470.17	122.773	0.45	0.42	0.16
7726.00	88.980	149.900	6255.03	517.35	-336.56	443.18	1723623.96	14442822.73	39°46'9.0570"N	80°42'13.9681"W	556.49	127.213	0.33	-0.06	0.33
7821.00	89.070	149.670	6256.64	612.33	-418.64	490.99	1723671.74	14442740.68	39°46'8.2443"N	80°42'13.3594"W	645.23	130.453	0.26	0.09	-0.24
7916.00	89.470	149.960	6257.85	707.30	-500.75	538.75	1723719.49	14442658.60	39°46'7.4313"N	80°42'12.7512"W	735.53	132.907	0.52	0.42	0.31
8011.00	89.410	150.520	6258.78	802.27	-583.22	585.90	1723766.62	14442576.16	39°46'6.6147"N	80°42'12.1509"W	826.69	134.868	0.59	-0.06	0.59
8106.00	89.290	149.890	6259.86	897.24	-665.65	633.10	1723813.80	14442493.76	39°46'5.7985"N	80°42'11.5499"W	918.65	136.436	0.68	-0.13	-0.66
8201.00	89.190	149.320	6261.12	992.22	-747.59	681.16	1723861.85	14442411.86	39°46'4.9872"N	80°42'10.9379"W	1011.37	137.662	0.61	-0.11	-0.60
8295.00	89.100	149.510	6262.52	1086.20	-828.50	728.99	1723909.65	14442330.97	39°46'4.1860"N	80°42'10.3288"W	1103.56	138.656	0.22	-0.10	0.20
8390.00	89.220	149.940	6263.91	1181.18	-910.54	776.88	1723957.52	14442248.97	39°46'3.3737"N	80°42'9.7191"W	1196.92	139.529	0.47	0.13	0.45
8485.00	89.380	149.570	6265.07	1276.16	-992.60	824.72	1724005.35	14442166.94	39°46'2.5611"N	80°42'9.1098"W	1290.51	140.278	0.42	0.17	-0.39
8580.00	89.350	149.910	6266.13	1371.14	-1074.65	872.59	1724053.20	14442084.92	39°46'1.7487"N	80°42'8.5003"W	1384.30	140.924	0.36	-0.03	0.36
8675.00	89.160	149.560	6267.36	1466.12	-1156.69	920.47	1724101.06	14442002.91	39°46'0.9363"N	80°42'7.8906"W	1478.24	141.488	0.42	-0.20	-0.37
8770.00	89.100	149.240	6268.81	1561.11	-1238.45	968.82	1724149.39	14441921.18	39°46'0.1267"N	80°42'7.2749"W	1572.38	141.965	0.34	-0.06	-0.34
8865.00	89.250	150.550	6270.17	1656.08	-1320.63	1016.47	1724197.02	14441839.04	39°45'59.3130"N	80°42'6.6683"W	1666.51	142.415	1.39	0.16	1.38
8960.00	89.280	150.650	6271.39	1751.03	-1403.39	1063.10	1724243.63	14441756.31	39°45'58.4936"N	80°42'6.0746"W	1760.59	142.855	0.11	0.03	0.11
9055.00	89.130	150.610	6272.71	1845.97	-1486.17	1109.69	1724290.20	14441673.57	39°45'57.6739"N	80°42'5.4815"W	1854.75	143.252	0.16	-0.16	-0.04
9150.00	89.250	150.330	6274.05	1940.92	-1568.82	1156.51	1724337.00	14441590.95	39°45'56.8556"N	80°42'4.8855"W	1949.03	143.603	0.32	0.13	-0.29
9244.00	88.820	150.670	6275.64	2034.87	-1650.62	1202.79	1724383.26	14441509.18	39°45'56.0456"N	80°42'4.2963"W	2042.36	143.920	0.58	-0.46	0.36
9339.00	88.820	150.290	6277.59	2129.81	-1733.27	1249.59	1724430.04	14441426.56	39°45'55.2273"N	80°42'3.7006"W	2136.75	144.211	0.40	0.00	-0.40
9434.00	88.700	150.510	6279.65	2224.75	-1815.85	1296.50	1724476.94	14441344.01	39°45'54.4096"N	80°42'3.1033"W	2231.20	144.474	0.26	-0.13	0.23
9530.00	88.700	150.460	6281.83	2320.69	-1899.38	1343.78	1724524.20	14441260.52	39°45'53.5827"N	80°42'2.5014"W	2326.67	144.721	0.05	0.00	-0.05
9625.00	88.850	150.570	6283.86	2415.62	-1982.05	1390.53	1724570.93	14441177.88	39°45'52.7640"N	80°42'1.9063"W	2421.18	144.948	0.20	0.16	0.12
9719.00	88.980	150.590	6285.64	2509.56	-2063.92	1436.70	1724617.08	14441096.05	39°45'51.9535"N	80°42'1.3186"W	2514.72	145.158	0.14	0.14	0.02
9814.00	89.310	151.000	6287.06	2604.50	-2146.83	1483.04	1724663.41	14441013.17	39°45'51.1325"N	80°42'0.7287"W	2609.27	145.363	0.55	0.35	0.43
9909.00	89.280	150.330	6288.22	2699.44	-2229.64	1529.58	1724709.93	14440930.39	39°45'50.3126"N	80°42'0.1363"W	2703.87	145.549	0.71	-0.03	-0.71
10099.00	89.440	150.160	6290.35	2889.37	-2394.58	1623.87	1724804.18	14440765.51	39°45'48.6794"N	80°41'58.9359"W	2893.26	145.857	0.12	0.08	-0.09
10194.00	89.870	150.710	6290.92	2984.33	-2477.21	1670.74	1724851.04	14440682.92	39°45'47.8613"N	80°41'58.3392"W	2987.97	146.002	0.73	0.45	0.58



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REFERENCE WELLPATH IDENTIFICATION

Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek S-8HM
Field	Marshall	API	47-051-02283-0000
Facility	Knob Creek	Wellbore	Knob Creek S-8HM AWB
Slot	Slot 08		

WELLPATH DATA (236 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]
10290.00	88.880	150.790	6291.97	3080.27	-2560.96	1717.65	1724897.92	14440599.20	39°45'47.0320"N	80°41'57.7422"W	3083.64	146.150	1.03	-1.03	0.08
10385.00	88.640	150.260	6294.02	3175.21	-2643.65	1764.38	1724944.64	14440516.55	39°45'46.2133"N	80°41'57.1473"W	3178.35	146.281	0.61	-0.25	-0.56
10480.00	88.730	150.220	6296.20	3270.15	-2726.10	1811.52	1724991.76	14440434.13	39°45'45.3970"N	80°41'56.5472"W	3273.11	146.395	0.10	0.09	-0.04
10575.00	88.790	150.420	6298.26	3365.10	-2808.61	1858.55	1725038.77	14440351.64	39°45'44.5799"N	80°41'55.9485"W	3367.87	146.506	0.22	0.06	0.21
10670.00	88.730	150.460	6300.31	3460.04	-2891.23	1905.41	1725085.61	14440269.06	39°45'43.7619"N	80°41'55.3521"W	3462.63	146.614	0.08	-0.06	0.04
10765.00	88.890	150.600	6302.29	3554.97	-2973.92	1952.14	1725132.32	14440186.40	39°45'42.9431"N	80°41'54.7573"W	3557.39	146.718	0.22	0.17	0.15
10860.00	88.950	150.580	6304.08	3649.91	-3056.66	1998.78	1725178.94	14440103.69	39°45'42.1239"N	80°41'54.1636"W	3652.16	146.819	0.07	0.06	-0.02
10955.00	89.720	150.130	6305.18	3744.87	-3139.22	2045.76	1725225.91	14440021.17	39°45'41.3064"N	80°41'53.5655"W	3746.98	146.909	0.94	0.81	-0.47
11049.00	89.960	151.690	6305.44	3838.81	-3221.36	2091.46	1725271.59	14439939.06	39°45'40.4931"N	80°41'52.9839"W	3840.75	147.006	1.68	0.26	1.66
11144.00	89.040	150.920	6306.27	3933.71	-3304.69	2137.07	1725317.18	14439855.76	39°45'39.6681"N	80°41'52.4034"W	3935.49	147.110	1.26	-0.97	-0.81
11239.00	91.320	151.280	6305.97	4028.63	-3387.85	2182.98	1725363.07	14439772.63	39°45'38.8447"N	80°41'51.8191"W	4030.25	147.204	2.43	2.40	0.38
11334.00	88.360	150.300	6306.24	4123.56	-3470.76	2229.34	1725409.41	14439689.76	39°45'38.0238"N	80°41'51.2292"W	4125.06	147.287	3.28	-3.12	-1.03
11429.00	88.460	149.510	6308.87	4218.51	-3552.92	2276.96	1725457.01	14439607.63	39°45'37.2102"N	80°41'50.6230"W	4219.93	147.345	0.84	0.11	-0.83
11524.00	88.640	153.350	6311.28	4313.36	-3636.31	2322.36	1725502.40	14439524.27	39°45'36.3846"N	80°41'50.0451"W	4314.64	147.435	4.05	0.19	4.04
11619.00	88.730	150.820	6313.46	4408.18	-3720.23	2366.82	1725546.84	14439440.39	39°45'35.5538"N	80°41'49.4795"W	4409.30	147.535	2.66	0.09	-2.66
11714.00	89.410	150.770	6315.00	4503.11	-3803.14	2413.17	1725593.17	14439357.51	39°45'34.7328"N	80°41'48.8896"W	4504.14	147.604	0.72	0.72	-0.05
11809.00	89.440	151.510	6315.95	4598.03	-3886.34	2459.02	1725639.00	14439274.35	39°45'33.9091"N	80°41'48.3061"W	4598.96	147.677	0.78	0.03	0.78
11904.00	88.180	150.480	6317.93	4692.93	-3969.40	2505.08	1725685.04	14439191.31	39°45'33.0867"N	80°41'47.7200"W	4693.78	147.744	1.71	-1.33	-1.08
11999.00	88.490	150.710	6320.69	4787.85	-4052.13	2551.70	1725731.64	14439108.62	39°45'32.2676"N	80°41'47.1266"W	4788.62	147.801	0.41	0.33	0.24
12094.00	88.550	151.060	6323.14	4882.76	-4135.10	2597.91	1725777.83	14439025.68	39°45'31.4461"N	80°41'46.5385"W	4883.46	147.861	0.37	0.06	0.37
12189.00	88.860	150.860	6325.29	4977.67	-4218.13	2644.01	1725823.92	14438942.68	39°45'30.6239"N	80°41'45.9518"W	4978.29	147.920	0.39	0.33	-0.21
12284.00	88.270	150.940	6327.67	5072.57	-4301.11	2690.20	1725870.09	14438859.73	39°45'29.8023"N	80°41'45.3640"W	5073.14	147.975	0.63	-0.62	0.08
12378.00	88.300	152.220	6330.48	5166.42	-4383.75	2734.91	1725914.79	14438777.13	39°45'28.9841"N	80°41'44.7950"W	5166.91	148.041	1.36	0.03	1.36
12474.00	87.690	150.120	6333.84	5262.28	-4467.79	2781.18	1725961.03	14438693.12	39°45'28.1520"N	80°41'44.2063"W	5262.71	148.098	2.28	-0.64	-2.19
12569.00	88.150	151.110	6337.29	5357.17	-4550.51	2827.76	1726007.59	14438610.43	39°45'27.3329"N	80°41'43.6134"W	5357.55	148.143	1.15	0.48	1.04
12664.00	88.420	150.750	6340.13	5452.06	-4633.51	2873.90	1726053.71	14438527.47	39°45'26.5112"N	80°41'43.0263"W	5452.40	148.191	0.47	0.28	-0.38
12760.00	88.490	150.730	6342.72	5547.97	-4717.23	2920.80	1726100.60	14438443.78	39°45'25.6822"N	80°41'42.4293"W	5548.27	148.235	0.08	0.07	-0.02
12855.00	88.420	150.560	6345.28	5642.89	-4800.00	2967.35	1726147.13	14438361.04	39°45'24.8626"N	80°41'41.8369"W	5643.15	148.276	0.19	-0.07	-0.18
12950.00	88.730	150.530	6347.64	5737.82	-4882.69	3014.06	1726193.82	14438278.38	39°45'24.0438"N	80°41'41.2425"W	5738.05	148.313	0.33	0.33	-0.03
13045.00	88.980	150.940	6349.54	5832.75	-4965.55	3060.49	1726240.23	14438195.55	39°45'23.2234"N	80°41'40.6516"W	5832.95	148.353	0.51	0.26	0.43



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Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek S-8HM
Field	Marshall	API	47-051-02283-0000
Facility	Knob Creek	Wellbore	Knob Creek S-8HM AWB
Slot	Slot 08		

WELLPATH DATA (236 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]
13140.00	88.820	150.770	6351.37	5927.67	-5048.51	3106.75	1726286.47	14438112.63	39°45'22.4020"N	80°41'40.0629"W	5927.84	148.393	0.25	-0.17	-0.18
13235.00	88.760	150.370	6353.37	6022.60	-5131.23	3153.41	1726333.12	14438029.94	39°45'21.5829"N	80°41'39.4690"W	6022.75	148.427	0.43	-0.06	-0.42
13330.00	88.390	150.540	6355.73	6117.54	-5213.85	3200.24	1726379.93	14437947.35	39°45'20.7648"N	80°41'38.8730"W	6117.67	148.459	0.43	-0.39	0.18
13424.00	88.460	150.790	6358.32	6211.45	-5295.77	3246.28	1726425.95	14437865.47	39°45'19.9537"N	80°41'38.2871"W	6211.56	148.492	0.28	0.07	0.27
13519.00	88.760	150.110	6360.62	6306.39	-5378.39	3293.12	1726472.77	14437782.88	39°45'19.1356"N	80°41'37.6910"W	6306.48	148.521	0.78	0.32	-0.72
13615.00	88.580	150.260	6362.85	6402.33	-5461.66	3340.84	1726520.47	14437699.65	39°45'18.3111"N	80°41'37.0837"W	6402.41	148.546	0.24	-0.19	0.16
13710.00	88.300	149.260	6365.44	6497.28	-5543.70	3388.66	1726568.28	14437617.64	39°45'17.4987"N	80°41'36.4749"W	6497.35	148.564	1.09	-0.29	-1.05
13805.00	88.850	149.590	6367.80	6592.25	-5625.46	3436.97	1726616.56	14437535.90	39°45'16.6890"N	80°41'35.8600"W	6592.31	148.576	0.68	0.58	0.35
13900.00	88.760	149.390	6369.78	6687.22	-5707.29	3485.19	1726664.77	14437454.11	39°45'15.8787"N	80°41'35.2462"W	6687.28	148.589	0.23	-0.09	-0.21
13994.00	88.240	149.170	6372.24	6781.19	-5788.07	3533.19	1726712.75	14437373.36	39°45'15.0787"N	80°41'34.6351"W	6781.24	148.599	0.60	-0.55	-0.23
14090.00	90.700	150.920	6373.13	6877.15	-5871.24	3581.12	1726760.66	14437290.23	39°45'14.2552"N	80°41'34.0251"W	6877.20	148.619	3.14	2.56	1.82
14184.00	89.810	149.970	6372.71	6971.11	-5953.00	3627.48	1726807.00	14437208.49	39°45'13.4456"N	80°41'33.4350"W	6971.15	148.644	1.38	-0.95	-1.01
14280.00	89.130	148.620	6373.60	7067.10	-6035.54	3676.50	1726856.00	14437125.99	39°45'12.6282"N	80°41'32.8111"W	7067.13	148.653	1.57	-0.71	-1.41
14375.00	89.130	149.210	6375.04	7162.09	-6116.89	3725.54	1726905.02	14437044.67	39°45'11.8226"N	80°41'32.1867"W	7162.12	148.656	0.62	0.00	0.62
14469.00	89.100	149.210	6376.49	7256.07	-6197.63	3773.66	1726953.12	14436963.96	39°45'11.0230"N	80°41'31.5743"W	7256.11	148.663	0.03	-0.03	0.00
14564.00	89.320	149.380	6377.80	7351.06	-6279.30	3822.16	1727001.60	14436882.32	39°45'10.2142"N	80°41'30.9568"W	7351.09	148.671	0.29	0.23	0.18
14659.00	88.760	149.340	6379.39	7446.04	-6361.03	3870.57	1727049.99	14436800.63	39°45'9.4049"N	80°41'30.3406"W	7446.07	148.680	0.59	-0.59	-0.04
14755.00	88.890	149.360	6381.36	7542.02	-6443.60	3919.50	1727098.90	14436718.09	39°45'8.5872"N	80°41'29.7178"W	7542.04	148.689	0.14	0.14	0.02
14849.00	87.960	149.470	6383.95	7635.98	-6524.49	3967.31	1727146.69	14436637.23	39°45'7.7862"N	80°41'29.1092"W	7636.00	148.698	1.00	-0.99	0.12
14944.00	88.150	149.730	6387.17	7730.92	-6606.38	4015.35	1727194.72	14436555.37	39°45'6.9753"N	80°41'28.4977"W	7730.93	148.709	0.34	0.20	0.27
15039.00	88.020	149.570	6390.35	7825.85	-6688.32	4063.33	1727242.68	14436473.47	39°45'6.1639"N	80°41'27.8871"W	7825.87	148.720	0.22	-0.14	-0.17
15134.00	87.990	149.220	6393.65	7920.79	-6770.03	4111.66	1727290.99	14436391.79	39°45'5.3547"N	80°41'27.2718"W	7920.80	148.728	0.37	-0.03	-0.37
15229.00	88.120	150.100	6396.88	8015.72	-6851.97	4159.62	1727338.93	14436309.88	39°45'4.5432"N	80°41'26.6614"W	8015.74	148.739	0.94	0.14	0.93
15324.00	88.790	149.890	6399.44	8110.67	-6934.21	4207.11	1727386.41	14436227.67	39°45'3.7289"N	80°41'26.0570"W	8110.68	148.754	0.74	0.71	-0.22
15409.00	88.110	149.340	6401.74	8195.63	-7007.51	4250.09	1727429.37	14436154.40	39°45'3.0030"N	80°41'25.5100"W	8195.64	148.763	1.03	-0.80	-0.65
15434.00†	88.110	149.340	6402.56	8220.62	-7029.00	4262.83	1727442.10	14436132.92	39°45'2.7902"N	80°41'25.3478"W	8220.62	148.765	0.00	0.00	0.00



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Slot	Slot 08		

HOLE & CASING SECTIONS - Ref Wellbore: Knob Creek S-8HM AWB Ref Wellpath: Knob Creek S-8HM AWB Proj: 15434'

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	0.16	-0.40
17.5in Open Hole	148.00	512.00	364.00	148.00	511.99	0.16	-0.40	1.46	-2.77
13.375in Casing Surface	28.00	512.00	484.00	28.00	511.99	0.00	0.00	1.46	-2.77
12.25in Open Hole	28.00	2312.00	2284.00	28.00	2308.78	0.00	0.00	69.67	-40.92
9.625in Casing Intermediate	28.00	2312.00	2284.00	28.00	2308.78	0.00	0.00	69.67	-40.92
8.5in Open Hole	2312.00	15434.00	13122.00	2308.78	6402.56	69.67	-40.92	-7029.00	4262.83
5.5in Casing Production	28.00	15434.00	15406.00	28.00	6402.56	0.00	0.00	-7029.00	4262.83

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Knob Creek S-8HM LP Rev-1	6233.00	504.61	-46.57	1723134.39	14443663.57	39°46'17.3860"N	80°42'20.2048"W	point
Knob Creek S-8HM BHL Rev-1	6346.60	-7034.15	4255.87	1727435.15	14436127.77	39°45'2.7395"N	80°41'25.4372"W	point

WELLPATH COMPOSITION - Ref Wellbore: Knob Creek S-8HM AWB Ref Wellpath: Knob Creek S-8HM AWB Proj: 15434'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	512.00	OWSG MWD rev2 - Standard	01 MWD<17-1/2">(171'-512')	Knob Creek S-8HM AWB	10/3/2023
512.00	2301.00	OWSG MWD rev2 - Standard	02 MWD<12-1/4">(512')(570'-2301')	Knob Creek S-8HM AWB	10/3/2023
2301.00	3656.00	OWSG MWD rev2 - Standard	03 MWD (2301')(2374'-3656')	Knob Creek S-8HM AWB	10/3/2023
3656.00	15434.00	OWSG MWD rev2 + IFR1 + Sag + Multi-Station Correction	04 BH Lucida+SQC IFR1+SAG+FDIR<8-1/2">(3656')(3738'-15409')	Knob Creek S-8HM AWB	10/26/2023



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Actual Wellpath Report

Knob Creek S-8HM AWB Proj: 15434'
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REFERENCE WELLPATH IDENTIFICATION

Operator	EQT (TUG HILL OPERATING, LLC)	Well	Knob Creek S-8HM
Field	Marshall	API	47-051-02283-0000
Facility	Knob Creek	Wellbore	Knob Creek S-8HM AWB
Slot	Slot 08		

COMMENTS

Wellpath general comments

API: 47-051-02283-0000

BH Job #: 111995196

Rig: Patterson 294

Duration:10/29/2023-11/1/2023

01_MWD<17-1/2">(171'-512')

02_MWD<12-1/4">(512')(570'-2301')

03_MWD (2301')(2374'-3656')

04_BH Lucida+SQC IFR1+SAG+FDIR<8-1/2">(3656')(3738'-15409')

Landing Pt. @ 6777' MD

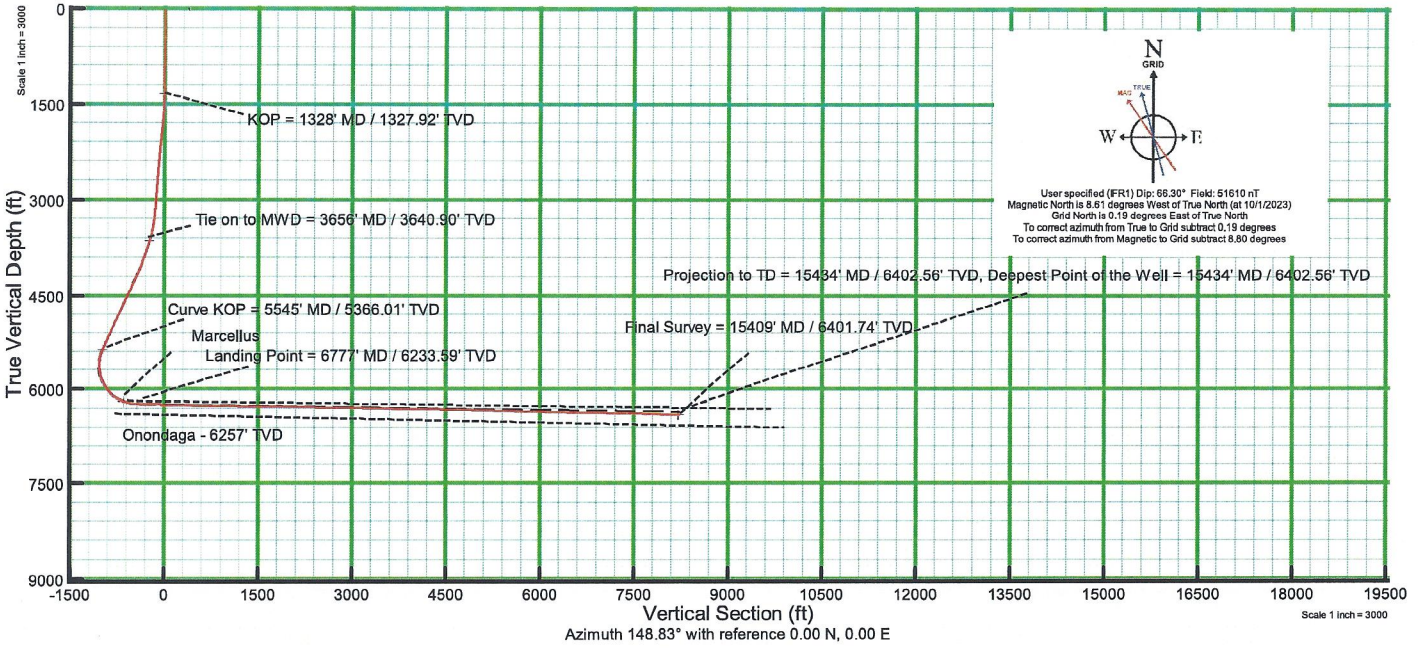
Final Survey @ 15409' MD

Projected MD at TD: 15434'

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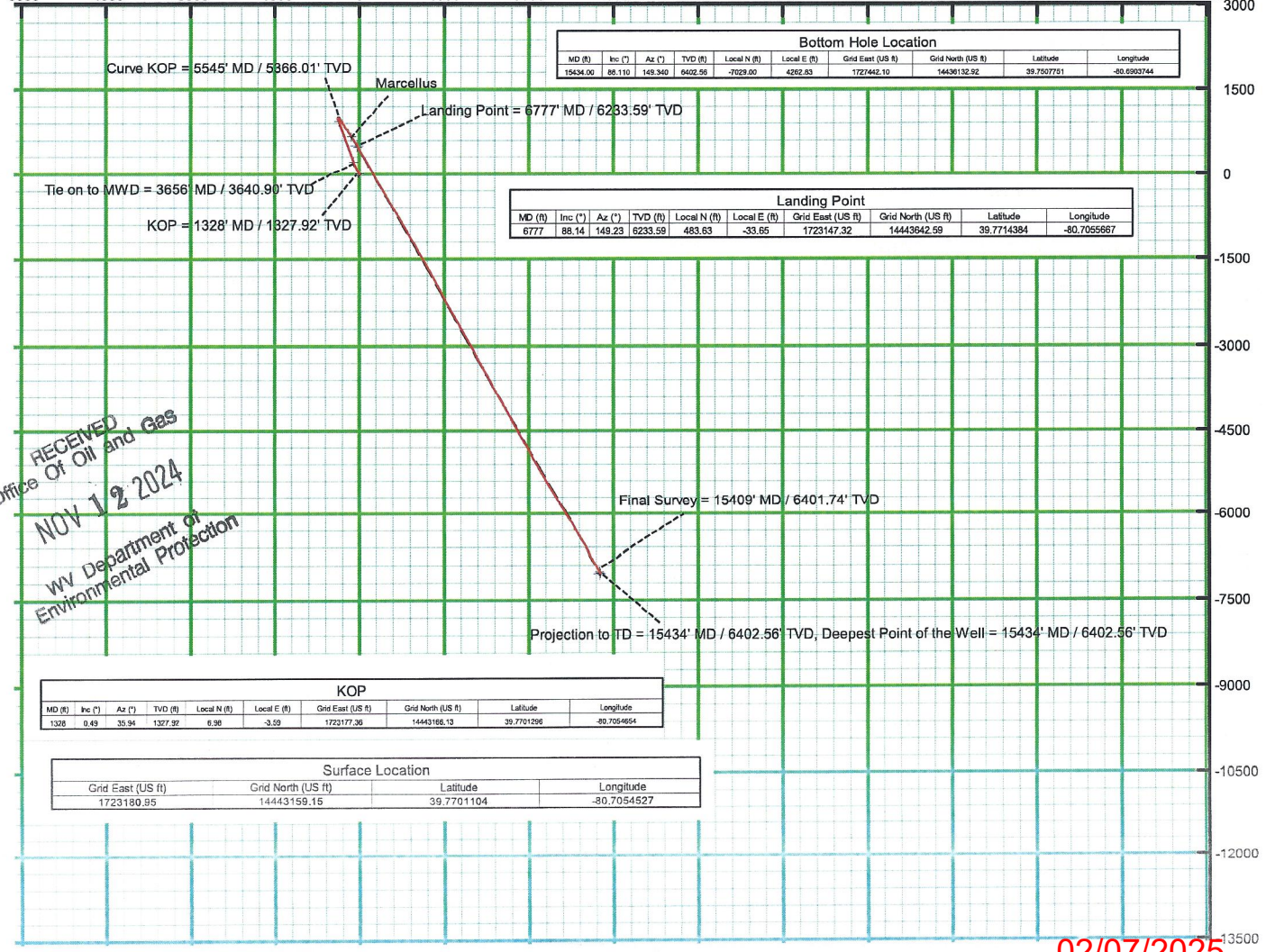
KB Elevation=765 FT
 Ground Elevation=737 FT
 All Survey Measurements were taken from KB Elevation



GRID

User specified (FR1) Dip: 88.30° Field: 51610 nT
 Magnetic North is 8.61 degrees West of True North (at 10/1/2023)
 Grid North is 0.19 degrees East of True North
 To correct azimuth from True to Grid subtract 0.19 degrees
 To correct azimuth from Magnetic to Grid subtract 8.80 degrees

Scale 1 inch = 3000
 Easting (ft)
 Azimuth 148.83° with reference 0.00 N, 0.00 E
 Scale 1 inch = 3000



Bottom Hole Location									
MD (ft)	Incl (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
15434.00	88.110	148.340	6402.56	-7029.00	4202.83	1727442.10	14436132.92	39.7507751	-80.6902744

Landing Point									
MD (ft)	Incl (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
6777	88.14	148.23	6233.59	483.63	-33.65	1723147.32	14443642.59	39.7714384	-80.7055667

KOP									
MD (ft)	Incl (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
1328	0.49	35.34	1327.92	6.36	-3.39	1723177.36	14443186.13	39.7701296	-80.7054654

Surface Location			
Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
1723180.95	14443159.15	39.7701104	-80.7054527

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