



EQT (Chevron Data) 02-13-21

Marshall County, WV Chevron

Longworth

M12H

OH

Design: Longworth 12H As Drilled

Standard Survey Report

20 July, 2021

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Office of Oil and Gas
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WV Department of
Environmental Protection

12/16/2022



EQT
Survey Report

Database: EDM_Definitive	Local Co-ordinate Reference: Well M12H
Company: EQT (Chevron Data) 02-13-21	TVD Reference: Air RKB @ 1294.000usft (Highlands 9)
Project: Marshall County, WV Chevron	MD Reference: Air RKB @ 1294.000usft (Highlands 9)
Site: Longworth	North Reference: True
Well: M12H	Survey Calculation Method: Minimum Curvature
Wellbore:	
Design: Longworth 12H As Drilled	

Project: Marshall County, WV Chevron

Map System: US State Plane 1983	System Datum: Mean Sea Level
Geo Datum: North American Datum 1983	
Map Zone: West Virginia Northern Zone	

Site: Longworth

Site Position:	Map	Northing: 493,086.404 usft	Latitude: 39.85
From:		Easting: 1,624,022.636 usft	Longitude: -80.73
Position Uncertainty: 0.000 usft		Slot Radius: 13-3/16 "	Grid Convergence: -0.7825 °

Well: M12H

Well Position: +N/-S 0.000 usft	Northing: 493,074.460 usft	Latitude: 39.8472824
+E/-W 0.000 usft	Easting: 1,624,133.876 usft	Longitude: 80.7265372°W
Position Uncertainty: 0.000 usft	Wellhead Elevation: 0.000 usft	Ground Level: 1,270.000 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	8/14/2015	-8.6974	67.1507	52,367.70367171

Design: Longworth 12H As Drilled

Audit Notes:

NOV 18 2022

Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.000		
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.000	0.000	0.000	157.718

Survey Program	Date	From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
	7/20/2021	0.00	590.930	Surface Gyro (OH)	NS-GYRO-MS c	North sensing gyrocompassing m/s c
		0.00	5,706.000	EM Tool (OH)	11_MWD+IFR1+AX+Sag c	A007Mb: IFR dec & axial + sag corrections c
		0.00	17,799.000	Survey #3 (OH)	11_MWD+IFR1+AX+Sag c	A007Mb: IFR dec & axial + sag corrections c

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.000	0.000	0.000	0.000	-1,294.000	0.000	0.000	0.000	0.00000	0.00000	0.00000
100.000	0.130	151.080	100.000	-1,194.000	-0.099	0.055	0.113	0.13000	-0.13000	0.00000
125.000	0.080	46.850	125.000	-1,169.000	-0.112	0.081	0.135	0.67425	-0.20000	-416.9200
150.000	0.170	211.650	150.000	-1,144.000	-0.132	0.075	0.150	0.99236	0.36000	659.20000
175.000	0.150	166.240	175.000	-1,119.000	-0.195	0.063	0.204	0.49954	-0.08000	-181.6400
										0



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Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Survey

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200.000	0.160	134.220	200.000	-1,094.000	-0.251	0.096	0.269	0.34415	0.04000	-128.0800
225.000	0.240	153.650	225.000	-1,069.000	-0.323	0.144	0.353	0.41519	0.32000	77.72000
250.000	0.310	174.190	249.999	-1,044.001	-0.437	0.174	0.470	0.47932	0.28000	82.16000
275.000	0.160	137.150	274.999	-1,019.001	-0.530	0.205	0.568	0.82479	-0.60000	-148.1600
300.000	0.350	111.510	299.999	-994.001	-0.583	0.299	0.653	0.86836	0.76000	-102.5600
325.000	0.410	117.760	324.998	-969.002	-0.653	0.450	0.775	0.29136	0.24000	25.00000
350.000	0.410	127.800	349.998	-944.002	-0.749	0.599	0.921	0.28701	0.00000	40.16000
375.000	0.430	124.680	374.997	-919.003	-0.858	0.747	1.077	0.12150	0.08000	-12.48000
400.000	0.470	122.380	399.996	-894.004	-0.966	0.911	1.239	0.17553	0.16000	-9.20000
425.000	0.580	129.340	424.995	-869.005	-1.101	1.095	1.434	0.50782	0.44000	27.84000
450.000	0.590	120.880	449.994	-844.006	-1.247	1.304	1.648	0.34749	0.04000	-33.84000
475.000	0.450	114.610	474.993	-819.007	-1.354	1.504	1.823	0.60367	-0.56000	-25.08000
500.000	0.440	106.040	499.992	-794.008	-1.422	1.685	1.954	0.26897	-0.04000	-34.28000
525.000	0.580	118.960	524.991	-769.009	-1.509	1.888	2.113	0.72135	0.56000	51.68000
550.000	0.580	106.330	549.990	-744.010	-1.606	2.120	2.290	0.51037	0.00000	-50.52000
575.000	0.570	95.200	574.988	-719.011	-1.653	2.365	2.427	0.44785	-0.04000	-44.52000
590.930	0.570	87.970	590.918	-703.082	-1.657	2.523	2.491	0.45121	0.00000	-45.38607
601.000	0.870	107.050	600.987	-693.013	-1.678	2.647	2.556	3.77468	2.97915	189.47369
611.000	0.950	109.460	610.986	-683.014	-1.728	2.797	2.660	0.88668	0.80000	24.10000
621.000	0.950	106.710	620.984	-673.016	-1.779	2.955	2.767	0.45590	0.00000	-27.50000
631.000	1.010	108.810	630.983	-663.017	-1.832	3.118	2.877	0.69919	0.60000	21.80000
641.000	1.010	110.830	640.981	-653.019	-1.891	3.284	2.995	0.35605	0.00000	20.20000
651.000	0.970	111.040	650.980	-643.020	-1.953	3.445	3.114	0.40164	-0.40000	2.10000
661.000	0.950	113.550	660.978	-633.022	-2.017	3.600	3.231	0.46562	-0.20000	25.10000
671.000	0.960	112.900	670.977	-623.023	-2.082	3.753	3.350	0.14743	0.10000	-6.50000
681.000	0.890	111.130	680.976	-613.024	-2.143	3.903	3.463	0.75599	-0.70000	-17.70000
691.000	0.840	112.370	690.975	-603.025	-2.199	4.043	3.568	0.53387	-0.50000	12.40000
701.000	0.870	110.430	700.973	-593.027	-2.253	4.182	3.671	0.41686	0.30000	-19.40000
711.000	0.930	113.450	710.972	-583.028	-2.312	4.327	3.780	0.76467	0.60000	30.20000
721.000	0.890	110.680	720.971	-573.029	-2.372	4.475	3.891	0.59448	-0.40000	-27.70000
731.000	0.860	105.330	730.970	-563.030	-2.419	4.620	3.990	0.86995	-0.30000	-53.50000
741.000	0.960	102.430	740.968	-553.031	-2.457	4.774	4.084	1.10066	1.00000	-29.00000
751.000	1.010	101.700	750.967	-543.033	-2.493	4.942	4.181	0.51550	0.50000	-7.30000
761.000	1.040	99.690	760.965	-533.035	-2.526	5.118	4.278	0.46824	0.30000	-20.10000
771.000	1.070	102.800	770.964	-523.036	-2.562	5.298	4.380	0.64633	0.30000	31.10000
781.000	1.030	102.280	780.962	-513.038	-2.602	5.477	4.484	0.41119	-0.40000	-5.20000
791.000	1.050	101.630	790.960	-503.040	-2.639	5.655	4.586	0.23220	0.20000	-6.50000
801.000	0.950	98.400	800.959	-493.041	-2.670	5.826	4.680	1.14756	-1.00000	-32.30000
811.000	0.870	88.340	810.958	-483.042	-2.680	5.984	4.749	1.78360	-0.80000	-100.6000
821.000	0.770	75.930	820.957	-473.043	-2.661	6.125	4.785	2.03230	-1.00000	-124.1000

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Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Survey

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831.000	0.730	70.970	830.956	-463.044	-2.624	6.251	4.798	0.76220	-0.40000	-49.60000
841.000	0.790	60.960	840.955	-453.045	-2.570	6.371	4.794	1.45453	0.60000	-100.10000
851.000	0.830	53.990	850.954	-443.046	-2.494	6.490	4.769	1.06258	0.40000	-69.70000
861.000	0.780	51.010	860.953	-433.047	-2.409	6.602	4.732	0.65198	-0.50000	-29.80000
871.000	0.830	47.310	870.952	-423.048	-2.317	6.708	4.687	0.72102	0.50000	-37.00000
881.000	0.840	45.080	880.951	-413.049	-2.216	6.813	4.633	0.33999	0.10000	-22.30000
891.000	0.890	42.880	890.950	-403.050	-2.107	6.918	4.573	0.60017	0.50000	-22.00000
901.000	0.940	38.260	900.948	-393.052	-1.986	7.021	4.500	0.89085	0.50000	-46.20000
911.000	0.970	39.250	910.947	-383.053	-1.856	7.126	4.419	0.34237	0.30000	9.90000
921.000	0.960	34.980	920.946	-373.054	-1.722	7.227	4.333	0.72588	-0.10000	-42.70000
931.000	0.920	40.000	930.944	-363.056	-1.591	7.327	4.251	0.91515	-0.40000	50.20000
941.000	0.880	33.050	940.943	-353.057	-1.466	7.420	4.170	1.16175	-0.40000	-69.50000
951.000	0.900	39.300	950.942	-343.058	-1.340	7.512	4.089	0.99066	0.20000	62.50000
961.000	0.830	37.990	960.941	-333.059	-1.223	7.606	4.015	0.72735	-0.70000	-13.10000
971.000	0.790	34.430	970.940	-323.060	-1.109	7.690	3.942	0.64268	-0.40000	-35.60000
981.000	0.850	30.660	980.939	-313.061	-0.988	7.767	3.859	0.80660	0.60000	-37.70000
991.000	0.870	30.120	990.938	-303.062	-0.859	7.843	3.768	0.21580	0.20000	-5.40000
1,001.000	0.890	27.170	1,000.936	-293.064	-0.724	7.916	3.671	0.49518	0.20000	-29.50000
1,011.000	0.920	27.940	1,010.935	-283.065	-0.584	7.989	3.569	0.32371	0.30000	7.70000
1,021.000	0.980	28.280	1,020.934	-273.066	-0.438	8.067	3.464	0.60264	0.60000	3.40000
1,031.000	1.010	27.240	1,030.932	-263.068	-0.284	8.148	3.352	0.35015	0.30000	-10.40000
1,041.000	1.000	30.890	1,040.931	-253.069	-0.131	8.233	3.243	0.64785	-0.10000	36.50000
1,051.000	1.060	33.540	1,050.929	-243.071	0.021	8.329	3.138	0.76596	0.60000	26.50000
1,061.000	1.000	32.870	1,060.927	-233.072	0.172	8.428	3.037	0.61196	-0.60000	-6.70000
1,071.000	0.950	34.360	1,070.926	-223.074	0.314	8.522	2.941	0.56057	-0.50000	14.90000
1,081.000	0.910	34.740	1,080.925	-213.075	0.447	8.614	2.852	0.40472	-0.40000	3.80000
1,091.000	0.930	30.290	1,090.923	-203.077	0.583	8.700	2.760	0.74176	0.20000	-44.50000
1,101.000	0.930	29.930	1,100.922	-193.078	0.723	8.781	2.661	0.05843	0.00000	-3.60000
1,111.000	0.960	25.500	1,110.921	-183.079	0.869	8.858	2.555	0.78956	0.30000	-44.30000
1,121.000	0.920	23.900	1,120.919	-173.081	1.018	8.927	2.443	0.47840	-0.40000	-16.00000
1,131.000	0.960	25.580	1,130.918	-163.082	1.167	8.995	2.331	0.48572	0.40000	16.80000
1,141.000	0.850	26.320	1,140.917	-153.083	1.309	9.064	2.226	1.10617	-1.10000	7.40000
1,151.000	0.650	32.630	1,150.916	-143.084	1.423	9.128	2.144	2.16088	-2.00000	63.10000
1,161.000	0.560	38.580	1,160.915	-133.085	1.509	9.189	2.088	1.09644	-0.90000	59.50000
1,171.000	0.400	38.480	1,170.915	-123.085	1.575	9.241	2.047	1.60002	-1.60000	-1.00000
1,181.000	0.320	45.070	1,180.915	-113.085	1.622	9.283	2.019	0.89952	-0.80000	65.90000
1,191.000	0.330	35.450	1,190.915	-103.085	1.665	9.319	1.993	0.55407	0.10000	-96.20000
1,201.000	0.250	48.590	1,200.915	-93.085	1.703	9.352	1.970	1.03538	-0.80000	131.40000
1,211.000	0.220	32.510	1,210.914	-83.086	1.733	9.379	1.952	0.72136	-0.30000	-160.80000
1,221.000	0.160	23.440	1,220.914	-73.086	1.762	9.395	1.931	0.66935	-0.60000	-90.70000
1,231.000	0.200	28.300	1,230.914	-63.086	1.791	9.409	1.911	0.42780	0.40000	48.60000



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Wellbore:	OH		
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1,241.000	0.200	29.430	1,240.914	-53.086	1.821	9.425	1.889	0.03944	0.00000	11.30000
1,251.000	0.200	52.940	1,250.914	-43.086	1.847	9.448	1.873	0.81491	0.00000	235.10000
1,261.000	0.210	82.060	1,260.914	-33.086	1.860	9.480	1.873	1.03525	0.10000	291.20000
1,271.000	0.210	87.570	1,270.914	-23.086	1.863	9.516	1.884	0.20187	0.00000	55.10000
1,281.000	0.200	118.370	1,280.914	-13.086	1.856	9.550	1.904	1.09304	-0.10000	308.00000
1,291.000	0.190	128.170	1,290.914	-3.086	1.837	9.578	1.932	0.34771	-0.10000	98.00000
1,301.000	0.250	141.690	1,300.914	6.914	1.810	9.605	1.967	0.78947	0.60000	135.20000
1,311.000	0.380	158.600	1,310.914	16.914	1.762	9.631	2.021	1.58477	1.30000	169.10000
1,321.000	0.420	164.550	1,320.913	26.914	1.696	9.653	2.091	0.57616	0.40000	59.50000
1,331.000	0.380	172.190	1,330.913	36.913	1.627	9.667	2.159	0.66585	-0.40000	76.40000
1,341.000	0.380	165.420	1,340.913	46.913	1.562	9.680	2.224	0.44874	0.00000	-67.70000
1,351.000	0.360	160.170	1,350.913	56.913	1.501	9.699	2.289	0.39342	-0.20000	-52.50000
1,361.000	0.350	155.080	1,360.913	66.913	1.444	9.722	2.351	0.33072	-0.10000	-50.90000
1,371.000	0.360	150.670	1,370.912	76.912	1.388	9.750	2.412	0.29087	0.10000	-44.10000
1,381.000	0.340	150.510	1,380.912	86.912	1.335	9.780	2.473	0.20024	-0.20000	-1.60000
1,391.000	0.430	154.260	1,390.912	96.912	1.276	9.811	2.540	0.93413	0.90000	37.50000
1,401.000	0.490	172.430	1,400.912	106.912	1.199	9.833	2.619	1.56884	0.60000	181.70000
1,411.000	0.540	173.380	1,410.911	116.911	1.110	9.844	2.705	0.50722	0.50000	9.50000
1,421.000	0.650	182.190	1,420.911	126.911	1.007	9.848	2.802	1.42766	1.10000	88.10000
1,431.000	0.790	190.690	1,430.910	136.910	0.882	9.833	2.912	1.75727	1.40000	85.00000
Nudge KOP=1441' MD/TVD										
1,441.000	0.830	205.000	1,440.909	146.909	0.749	9.789	3.019	2.05637	0.40000	143.10000
1,451.000	1.000	207.770	1,450.908	156.908	0.606	9.718	3.124	1.75612	1.70000	27.70000
1,461.000	1.160	216.770	1,460.906	166.906	0.448	9.617	3.232	2.32722	1.60000	90.00000
1,471.000	1.250	222.100	1,470.904	176.904	0.286	9.483	3.331	1.43656	0.90000	53.30000
1,481.000	1.430	218.280	1,480.901	186.901	0.107	9.333	3.440	2.00851	1.80000	-38.20000
1,491.000	1.550	219.660	1,490.898	196.898	-0.095	9.169	3.565	1.25242	1.20000	13.80000
1,501.000	1.840	220.600	1,500.893	206.893	-0.321	8.978	3.701	2.91320	2.90000	9.40000
1,511.000	2.030	223.990	1,510.888	216.888	-0.571	8.751	3.846	2.21736	1.90000	33.90000
1,521.000	2.210	226.780	1,520.881	226.881	-0.830	8.487	3.986	2.07439	1.80000	27.90000
1,531.000	2.480	228.110	1,530.872	236.872	-1.106	8.186	4.128	2.75411	2.70000	13.30000
1,541.000	2.710	226.980	1,540.862	246.862	-1.412	7.852	4.284	2.35610	2.30000	-11.30000
1,551.000	2.810	230.510	1,550.850	256.850	-1.729	7.490	4.440	1.97165	1.00000	35.30000
1,561.000	3.110	234.720	1,560.837	266.837	-2.042	7.079	4.574	3.70297	3.00000	42.10000
1,571.000	3.270	232.420	1,570.822	276.822	-2.373	6.632	4.710	2.04862	1.60000	-23.00000
1,581.000	3.430	233.660	1,580.804	286.805	-2.724	6.165	4.858	1.75634	1.60000	12.40000
1,591.000	3.620	234.480	1,590.786	296.786	-3.084	5.667	5.003	1.96571	1.90000	8.20000
1,601.000	3.840	234.680	1,600.764	306.764	-3.461	5.137	5.151	2.20384	2.20000	2.00000
1,611.000	4.070	235.320	1,610.741	316.741	-3.857	4.571	5.302	2.34194	2.30000	6.40000
1,621.000	4.350	235.720	1,620.714	326.714	-4.272	3.966	5.457	2.81534	2.80000	4.00000
1,631.000	4.510	236.190	1,630.684	336.684	-4.705	3.326	5.615	1.64066	1.60000	4.70000
1,641.000	4.670	236.420	1,640.652	346.652	-5.149	2.660	5.773	1.61055	1.60000	2.30000
1,651.000	4.840	236.500	1,650.617	356.617	-5.607	1.969	5.935	1.70129	1.70000	0.80000

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M12H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,661.000	5.080	236.390	1,660.580	366.580	-6.085	1.249	6.104	2.40188	2.40000	-1.10000
1,671.000	5.150	236.670	1,670.540	376.540	-6.576	0.505	6.277	0.74318	0.70000	2.80000
1,681.000	5.250	236.140	1,680.499	386.499	-7.078	-0.250	6.455	1.10938	1.00000	-5.30000
1,691.000	5.350	237.240	1,690.456	396.456	-7.585	-1.022	6.631	1.42558	1.00000	11.00000
1,701.000	5.400	235.300	1,700.412	406.412	-8.105	-1.801	6.817	1.88470	0.50000	-19.40000
1,711.000	5.580	234.460	1,710.366	416.366	-8.656	-2.583	7.030	1.97121	1.80000	-8.40000
1,721.000	5.720	232.980	1,720.318	426.318	-9.238	-3.376	7.268	2.02055	1.40000	-14.80000
1,731.000	5.830	233.060	1,730.267	436.267	-9.844	-4.180	7.524	1.10294	1.10000	0.80000
1,741.000	5.920	233.690	1,740.214	446.214	-10.454	-5.002	7.777	1.10716	0.90000	6.30000
1,751.000	6.040	231.660	1,750.160	456.160	-11.086	-5.830	8.048	2.43142	1.20000	-20.30000
1,761.000	6.140	229.850	1,760.103	466.104	-11.757	-6.651	8.357	2.16489	1.00000	-18.10000
1,771.000	6.250	230.170	1,770.045	476.045	-12.451	-7.478	8.685	1.15293	1.10000	3.20000
1,781.000	6.380	226.790	1,779.984	485.984	-13.180	-8.301	9.048	3.93786	1.30000	-33.80000
1,791.000	6.480	225.290	1,789.922	495.922	-13.957	-9.107	9.462	1.95487	1.00000	-15.00000
1,801.000	6.690	225.300	1,799.856	505.856	-14.764	-9.922	9.899	2.10003	2.10000	0.10000
1,811.000	6.780	223.500	1,809.787	515.787	-15.602	-10.743	10.363	2.29472	0.90000	-18.00000
1,821.000	6.820	222.260	1,819.716	525.716	-16.469	-11.548	10.861	1.52169	0.40000	-12.40000
1,831.000	6.870	221.800	1,829.645	535.645	-17.355	-12.346	11.377	0.74200	0.50000	-4.60000
1,841.000	6.940	220.820	1,839.572	545.572	-18.258	-13.140	11.912	1.37042	0.70000	-9.80000
1,851.000	7.050	220.530	1,849.498	555.498	-19.181	-13.933	12.466	1.15530	1.10000	-2.90000
1,861.000	7.170	219.830	1,859.421	565.421	-20.127	-14.732	13.038	1.48008	1.20000	-7.00000
1,871.000	7.310	218.480	1,869.341	575.341	-21.104	-15.528	13.641	2.20322	1.40000	-13.50000
1,881.000	7.430	217.500	1,879.259	585.259	-22.115	-16.317	14.277	1.73787	1.20000	-9.80000
1,891.000	7.590	216.460	1,889.173	595.173	-23.159	-17.103	14.945	2.09937	1.60000	-10.40000
1,901.000	7.670	215.840	1,899.084	605.084	-24.232	-17.886	15.640	1.14789	0.80000	-6.20000
1,911.000	7.780	214.860	1,908.994	614.994	-25.328	-18.664	16.360	1.71615	1.10000	-9.80000
1,921.000	7.910	213.770	1,918.900	624.900	-26.455	-19.433	17.111	1.97567	1.30000	-10.90000
1,931.000	8.110	213.170	1,928.803	634.803	-27.618	-20.202	17.896	2.16770	2.00000	-6.00000
1,941.000	8.290	212.550	1,938.700	644.700	-28.816	-20.975	18.711	2.00546	1.80000	-6.20000
1,951.000	8.300	212.530	1,948.596	654.596	-30.032	-21.752	19.542	0.10408	0.10000	-0.20000
1,961.000	8.350	212.440	1,958.490	664.490	-31.253	-22.529	20.377	0.51670	0.50000	-0.90000
1,971.000	8.440	212.350	1,968.383	674.383	-32.486	-23.311	21.222	0.90954	0.90000	-0.90000
1,981.000	8.440	211.420	1,978.275	684.275	-33.732	-24.087	22.081	1.36498	0.00000	-9.30000
1,991.000	8.420	210.460	1,988.167	694.167	-34.990	-24.840	22.958	1.42149	-0.20000	-9.60000
2,001.000	8.380	209.960	1,998.060	704.060	-36.252	-25.575	23.848	0.83277	-0.40000	-5.00000
2,011.000	8.370	209.260	2,007.953	713.953	-37.518	-26.295	24.747	1.02445	-0.10000	-7.00000
2,021.000	8.370	209.370	2,017.846	723.846	-38.788	-27.008	25.651	0.16012	0.00000	1.10000
2,031.000	8.440	208.710	2,027.739	733.739	-40.066	-27.717	26.564	1.19191	0.70000	-6.60000
2,041.000	8.580	208.480	2,037.629	743.629	-41.365	-28.425	27.498	1.44078	1.40000	-2.30000
2,051.000	8.570	208.090	2,047.517	753.517	-42.678	-29.132	28.445	0.59004	-0.10000	-3.90000
2,061.000	8.580	208.460	2,057.405	763.405	-43.991	-29.838	29.393	0.56067	0.10000	3.70000
2,071.000	8.660	208.620	2,067.292	773.292	-45.308	-30.554	30.339	0.83517	0.80000	1.60000

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M12H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,081.000	8.870	208.740	2,077.176	783.176	-46.645	-31.286	31.299	2.10795	2.10000	1.20000	
2,091.000	9.000	207.880	2,087.054	793.054	-48.012	-32.022	32.285	1.86386	1.30000	-8.60000	
2,101.000	9.100	206.850	2,096.930	802.930	-49.409	-32.745	33.304	1.90388	1.00000	-10.30000	
2,111.000	9.140	206.370	2,106.803	812.803	-50.826	-33.455	34.346	0.85955	0.40000	-4.80000	
2,121.000	9.190	206.100	2,116.676	822.676	-52.255	-34.159	35.401	0.65950	0.50000	-2.70000	
2,131.000	9.250	205.830	2,126.546	832.547	-53.695	-34.861	36.468	0.73970	0.60000	-2.70000	
2,141.000	9.360	205.370	2,136.415	842.415	-55.153	-35.559	37.552	1.32785	1.10000	-4.60000	
2,151.000	9.380	205.230	2,146.281	852.281	-56.625	-36.255	38.650	0.30324	0.20000	-1.40000	
2,161.000	9.400	204.160	2,156.147	862.148	-58.108	-36.937	39.764	1.75714	0.20000	-10.70000	
2,171.000	9.350	204.790	2,166.014	872.014	-59.590	-37.611	40.880	1.14156	-0.50000	6.30000	
2,181.000	9.350	204.430	2,175.881	881.881	-61.067	-38.288	41.990	0.58487	0.00000	-3.60000	
2,191.000	9.390	204.370	2,185.748	891.748	-62.550	-38.961	43.107	0.41176	0.40000	-0.60000	
2,201.000	9.560	203.890	2,195.611	901.611	-64.052	-39.633	44.242	1.87465	1.70000	-4.80000	
2,211.000	9.600	203.300	2,205.472	911.472	-65.577	-40.300	45.400	1.06025	0.40000	-5.90000	
2,221.000	9.660	202.300	2,215.331	921.331	-67.119	-40.948	46.582	1.77717	0.60000	-10.00000	
2,231.000	9.710	200.650	2,225.188	931.188	-68.685	-41.564	47.797	2.82039	0.50000	-16.50000	
2,241.000	9.520	199.230	2,235.048	941.048	-70.255	-42.133	49.033	3.03884	-1.90000	-14.20000	
2,251.000	9.320	197.740	2,244.913	950.913	-71.807	-42.652	50.273	3.15376	-2.00000	-14.90000	
2,261.000	9.040	197.220	2,254.785	960.785	-73.328	-43.132	51.499	2.92028	-2.80000	-5.20000	
2,271.000	8.880	195.950	2,264.663	970.663	-74.821	-43.576	52.711	2.54399	-1.60000	-12.70000	
2,281.000	8.750	195.650	2,274.545	980.545	-76.296	-43.994	53.918	1.37889	-1.30000	-3.00000	
2,291.000	8.970	195.040	2,284.425	990.426	-77.781	-44.401	55.138	2.39219	2.20000	-6.10000	
2,301.000	9.220	195.890	2,294.300	1,000.300	-79.304	-44.823	56.387	2.83812	2.50000	8.50000	
2,311.000	9.570	196.400	2,304.166	1,010.166	-80.872	-45.277	57.666	3.59762	3.50000	5.10000	
2,319.000	9.660	198.610	2,312.053	1,018.053	-82.146	-45.679	58.693	4.74897	1.12500	27.62500	
2,353.000	9.660	208.930	2,345.574	1,051.574	-87.347	-47.969	62.636	5.08657	0.00000	30.35294	
2,392.000	10.010	223.740	2,384.007	1,090.007	-92.660	-51.896	66.064	6.52988	0.89744	37.97436	
2,509.000	9.680	243.350	2,499.316	1,205.316	-104.422	-67.723	70.947	2.86575	-0.28205	16.76068	
2,603.000	9.390	243.080	2,592.017	1,298.017	-111.439	-81.623	72.169	0.31216	-0.30851	-0.28723	
KOP=2696' MD/ 2684' TVD											
2,696.000	8.880	239.860	2,683.838	1,389.838	-118.478	-94.595	73.764	0.77626	-0.54839	-3.46237	
2,794.000	10.970	234.520	2,780.368	1,486.368	-127.689	-108.732	76.927	2.32808	2.13265	-5.44898	
2,888.000	14.310	227.010	2,872.083	1,578.083	-140.806	-124.518	83.079	3.95285	3.55319	-7.98936	
2,982.000	17.110	223.750	2,962.565	1,668.565	-158.720	-142.581	92.806	3.12211	2.97872	-3.46809	
3,074.000	21.810	222.890	3,049.285	1,755.285	-181.030	-163.583	105.488	5.11805	5.10870	-0.93478	
3,168.000	28.960	224.450	3,134.155	1,840.155	-210.107	-191.441	121.831	7.63897	7.60638	1.65957	
3,261.000	33.400	221.860	3,213.704	1,919.704	-245.264	-224.307	141.900	4.98618	4.77419	-2.78495	
3,355.000	37.740	222.070	3,290.146	1,996.146	-285.908	-260.865	165.648	4.61884	4.61702	0.22340	
3,448.000	41.880	224.100	3,361.574	2,067.574	-329.348	-301.558	190.416	4.66533	4.45161	2.18280	
3,542.000	45.600	225.340	3,429.476	2,135.476	-375.501	-347.295	215.780	4.06103	3.95745	1.31915	
3,636.000	45.040	224.550	3,495.572	2,201.573	-422.805	-394.512	241.649	0.84380	-0.59574	-0.84043	
3,731.000	43.470	222.480	3,563.617	2,269.617	-470.864	-440.165	268.810	2.24558	-1.65263	-2.17895	
3,826.000	40.550	224.270	3,634.199	2,340.199	-517.089	-483.801	295.038	3.32205	-3.07368	1.88421	

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Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,921.000	39.890	227.060	3,706.744	2,412.744	-559.957	-527.662	318.074	2.01949	-0.69474	2.93684
4,019.000	38.090	225.100	3,782.915	2,488.915	-602.707	-572.084	340.789	2.22627	-1.83673	-2.00000
4,112.000	36.840	225.540	3,856.730	2,562.730	-642.485	-612.304	362.346	1.37454	-1.34409	0.47312
4,206.000	36.960	225.250	3,931.901	2,637.901	-682.118	-652.487	383.784	0.22496	0.12766	-0.30851
4,299.000	37.020	225.230	4,006.183	2,712.184	-721.518	-692.219	405.177	0.06580	0.06452	-0.02151
4,393.000	39.820	228.990	4,079.833	2,785.833	-761.211	-735.035	425.672	3.87853	2.97872	4.00000
4,487.000	40.900	227.400	4,151.461	2,857.461	-801.793	-780.401	446.022	1.58736	1.14894	-1.69149
4,580.000	41.660	225.450	4,221.352	2,927.353	-844.087	-824.841	468.308	1.60660	0.81720	-2.09677
4,674.000	42.140	224.630	4,291.318	2,997.318	-888.446	-869.259	492.513	0.77468	0.51064	-0.87234
4,768.000	44.300	227.710	4,359.822	3,065.822	-932.985	-915.706	516.115	3.21118	2.29787	3.27660
4,861.000	44.060	228.340	4,426.518	3,132.518	-976.333	-963.890	537.957	0.53803	-0.25806	0.67742
4,958.000	42.030	226.900	4,497.405	3,203.405	-1,020.945	-1,012.804	560.691	2.32509	-2.09278	-1.48454
5,052.000	41.530	230.360	4,567.511	3,273.511	-1,062.331	-1,059.783	581.174	2.50923	-0.53191	3.68085
5,145.000	39.450	228.690	4,638.238	3,344.238	-1,101.510	-1,105.724	600.008	2.52208	-2.23656	-1.79570
5,239.000	37.240	229.270	4,711.957	3,417.957	-1,139.787	-1,149.716	618.747	2.38200	-2.35106	0.61702
5,333.000	36.740	232.750	4,787.046	3,493.046	-1,175.367	-1,193.654	635.011	2.28985	-0.53191	3.70213
5,426.000	37.310	232.170	4,861.295	3,567.295	-1,209.491	-1,238.057	649.750	0.71880	0.61290	-0.62366
5,520.000	38.210	231.370	4,935.609	3,641.609	-1,245.113	-1,283.269	665.570	1.09008	0.95745	-0.85106
5,613.000	39.670	229.000	5,007.947	3,713.947	-1,282.548	-1,328.146	683.193	2.24253	1.56989	-2.54839
5,706.000	40.639	226.734	5,079.031	3,785.031	-1,322.782	-1,372.605	703.566	1.88545	1.04230	-2.43669
5,707.000	40.630	227.280	5,079.790	3,785.790	-1,323.226	-1,373.082	703.797	35.57764	-0.93400	54.61245
5,814.000	40.010	230.490	5,161.380	3,867.380	-1,368.750	-1,425.220	726.152	2.02562	-0.57944	3.00000
5,906.000	39.950	232.120	5,231.878	3,937.878	-1,405.703	-1,471.352	742.854	1.14022	-0.06522	1.77174
5,999.000	39.800	228.800	5,303.259	4,009.259	-1,443.646	-1,517.320	760.535	2.29420	-0.16129	-3.56989
6,091.000	39.840	230.610	5,373.923	4,079.923	-1,481.744	-1,562.252	778.751	1.26059	0.04348	1.96739
6,183.000	39.810	230.510	5,444.579	4,150.579	-1,519.175	-1,607.756	796.133	0.07687	-0.03261	-0.10870
6,276.000	39.720	230.990	5,516.066	4,222.066	-1,556.812	-1,653.822	813.494	0.34403	-0.09677	0.51613
6,368.000	39.740	230.980	5,586.820	4,292.820	-1,593.831	-1,699.511	830.424	0.02282	0.02174	-0.01087
6,460.000	39.620	230.410	5,657.625	4,363.625	-1,631.040	-1,744.964	847.621	0.41654	-0.13043	-0.61957
6,553.000	39.850	230.910	5,729.143	4,435.143	-1,668.725	-1,790.942	865.059	0.42341	0.24731	0.53763
6,645.000	39.810	230.580	5,799.795	4,505.795	-1,706.012	-1,836.572	882.261	0.23383	-0.04348	-0.35870
6,738.000	39.910	230.960	5,871.183	4,577.183	-1,743.708	-1,882.742	899.636	0.28309	0.10753	0.40869
6,830.000	39.870	230.930	5,941.772	4,647.772	-1,780.883	-1,928.559	916.662	0.04825	-0.04348	-0.03261
6,923.000	39.950	229.880	6,013.109	4,719.109	-1,818.911	-1,974.535	934.419	0.72945	0.08602	-1.12903
7,016.000	40.080	219.780	6,084.412	4,790.412	-1,861.206	-2,016.569	957.617	6.97907	0.13978	-10.86022
7,108.000	40.870	209.070	6,154.480	4,860.481	-1,910.336	-2,050.186	990.332	7.59855	0.85870	-11.64130
7,201.000	44.930	198.090	6,222.689	4,928.689	-1,968.253	-2,075.213	1,034.436	9.13362	4.36559	-11.80446
7,293.000	47.860	190.930	6,286.176	4,992.176	-2,032.683	-2,091.783	1,087.772	6.46962	3.18478	-7.78261
7,386.000	53.120	181.270	6,345.407	5,051.407	-2,103.874	-2,099.161	1,150.849	9.79853	5.65591	-10.38710
7,479.000	57.170	171.380	6,398.634	5,104.634	-2,179.850	-2,094.118	1,223.064	9.74569	4.35484	-10.63441
7,571.000	62.340	163.590	6,445.012	5,151.012	-2,257.291	-2,076.783	1,301.296	9.21909	5.61957	-8.46739
7,664.000	69.290	159.190	6,483.105	5,189.105	-2,337.588	-2,049.651	1,385.885	8.62765	7.47312	-4.73118

M12H_LP-OLD

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M12H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,697.663	71.041	156.956	6,494.528	5,200.528	-2,366.959	-2,037.824	1,417.546	8.12511	5.20230	-6.63527
M12H LP										
7,721.635	72.305	155.395	6,502.066	5,208.066	-2,387.775	-2,028.631	1,440.293	8.12511	5.26968	-6.51514
7,757.000	74.190	153.130	6,512.260	5,218.260	-2,418.274	-2,013.925	1,474.091	8.12511	5.33155	-6.40339
Top of Marcellus @ 6514' TVD										
7,763.446	74.498	153.049	6,514.000	5,220.000	-2,423.808	-2,011.116	1,480.278	4.93352	4.78216	-1.25936
7,850.000	78.640	151.980	6,534.100	5,240.100	-2,498.472	-1,972.264	1,564.097	4.93352	4.78515	-1.23486
7,942.000	84.360	147.040	6,547.701	5,253.701	-2,576.807	-1,926.106	1,654.084	8.17514	6.21739	-5.36957
M12H LP2										
8,006.168	87.874	142.024	6,552.048	5,258.048	-2,628.920	-1,888.971	1,716.386	9.52868	5.47647	-7.81689
MD/ 6553' TVD										
8,035.000	89.460	139.780	6,552.719	5,258.719	-2,651.287	-1,870.795	1,743.974	9.52868	5.50034	-7.78323
8,128.000	89.360	141.240	6,553.677	5,259.677	-2,723.052	-1,811.657	1,832.804	1.57349	-0.10753	1.56989
8,219.000	90.030	141.750	6,554.161	5,260.161	-2,794.263	-1,755.003	1,920.179	0.92529	0.73626	0.56044
8,312.000	90.200	137.820	6,553.975	5,259.975	-2,865.266	-1,694.969	2,008.643	4.22975	0.18280	-4.22581
8,405.000	90.670	142.020	6,553.268	5,259.268	-2,936.407	-1,635.106	2,097.169	4.54418	0.50538	4.51613
8,498.000	89.560	142.400	6,553.081	5,259.082	-3,009.900	-1,578.119	2,186.782	1.26155	-1.19355	0.40860
8,591.000	89.430	141.020	6,553.901	5,259.901	-3,082.889	-1,520.496	2,276.170	1.49038	-0.13978	-1.48387
8,683.000	89.530	141.230	6,554.736	5,260.736	-3,154.510	-1,462.757	2,364.335	0.25281	0.10870	0.22826
8,776.000	89.870	141.380	6,555.223	5,261.223	-3,227.094	-1,404.617	2,453.544	0.39959	0.36559	0.16129
8,868.000	89.500	141.750	6,555.729	5,261.729	-3,299.157	-1,347.428	2,541.910	0.56876	-0.40217	0.40217
8,961.000	89.700	141.500	6,556.378	5,262.378	-3,372.064	-1,289.695	2,631.263	0.34425	0.21505	-0.26882
9,053.000	89.630	141.340	6,556.916	5,262.916	-3,443.983	-1,232.324	2,719.565	0.18983	-0.07609	-0.17391
9,146.000	89.770	141.810	6,557.403	5,263.403	-3,516.840	-1,174.527	2,808.896	0.52731	0.15054	0.50538
9,239.000	89.700	141.250	6,557.833	5,263.833	-3,589.652	-1,116.672	2,898.208	0.60683	-0.07527	-0.60215
9,332.000	89.730	141.510	6,558.296	5,264.296	-3,662.312	-1,058.626	2,987.451	0.28142	0.03226	0.27957
9,424.000	89.560	141.280	6,558.866	5,264.866	-3,734.205	-1,001.224	3,075.741	0.31087	-0.18478	-0.25000
9,517.000	89.900	141.380	6,559.304	5,265.304	-3,806.815	-943.115	3,164.961	0.38108	0.36559	0.10753
9,609.000	89.630	141.690	6,559.681	5,265.681	-3,878.849	-885.889	3,253.315	0.44684	-0.29348	0.33696
9,702.000	89.800	141.560	6,560.144	5,266.144	-3,951.757	-828.155	3,342.670	0.23012	0.18280	-0.13978
9,795.000	90.000	141.550	6,560.306	5,266.306	-4,024.595	-770.331	3,431.993	0.21532	0.21505	-0.01075
9,887.000	89.730	141.330	6,560.523	5,266.523	-4,096.534	-712.984	3,520.305	0.37857	-0.29348	-0.23910
9,980.000	89.530	141.280	6,561.124	5,267.124	-4,169.118	-654.844	3,609.513	0.22167	-0.21505	-0.05376
10,072.000	89.660	141.510	6,561.774	5,267.774	-4,241.011	-597.443	3,697.803	0.28717	0.14130	0.25000
10,165.000	89.660	141.480	6,562.326	5,268.326	-4,313.787	-539.543	3,787.098	0.03226	0.00000	-0.03226
10,257.000	89.430	140.750	6,563.056	5,269.056	-4,385.398	-481.792	3,875.259	0.83191	-0.25000	-0.79348
10,350.000	89.400	141.580	6,564.006	5,270.006	-4,457.836	-423.477	3,964.399	0.89301	-0.03226	0.89247
10,442.000	89.730	141.000	6,564.704	5,270.704	-4,529.623	-365.944	4,052.640	0.72532	0.35870	-0.63043
10,535.000	89.700	141.350	6,565.167	5,271.167	-4,602.075	-307.639	4,141.789	0.37772	-0.03226	0.37634

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M12H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,628.00 0	89.430	141.190	6,565.873	5,271.873	-4,674.623	-249.455	4,230.981	0.33747	-0.29032	-0.17204
10,720.00 0	89.600	141.780	6,566.652	5,272.652	-4,746.605	-192.167	4,319.309	0.66737	0.18478	0.64130
10,813.00 0	89.090	141.460	6,567.715	5,273.715	-4,819.503	-134.430	4,408.656	0.64739	-0.54839	-0.34409
10,905.00 0	89.260	141.690	6,569.040	5,275.040	-4,891.570	-77.259	4,497.020	0.31086	0.18478	0.25000
10,997.00 0	89.330	141.440	6,570.172	5,276.172	-4,963.630	-20.074	4,585.381	0.28217	0.07609	-0.27174
11,090.000	89.330	141.770	6,571.259	5,277.259	-5,036.513	37.683	4,674.721	0.35481	0.00000	0.35484
11,182.000	89.330	141.710	6,572.335	5,278.335	-5,108.747	94.648	4,763.161	0.06521	0.00000	-0.06522
11,274.000	89.360	141.420	6,573.387	5,279.387	-5,180.808	151.834	4,851.523	0.31688	0.03261	-0.31522
11,367.000	89.330	141.200	6,574.450	5,280.450	-5,253.393	209.965	4,940.730	0.23873	-0.03226	-0.23656
11,459.000	89.430	141.460	6,575.445	5,281.445	-5,325.218	267.446	5,028.987	0.30278	0.10870	0.28261
11,552.000	89.190	141.420	6,576.565	5,282.565	-5,397.935	325.412	5,118.252	0.26162	-0.25806	-0.04301
11,644.000	89.330	141.830	6,577.753	5,283.753	-5,470.053	382.521	5,206.639	0.47088	0.15217	0.44565
11,736.000	89.090	141.180	6,579.022	5,285.022	-5,542.051	439.780	5,294.971	0.75308	-0.26087	-0.70652
11,829.000	89.330	141.950	6,580.304	5,286.304	-5,614.892	497.586	5,384.291	0.86717	0.25806	0.82796
11,921.000	89.060	141.320	6,581.597	5,287.597	-5,687.019	554.681	5,472.681	0.74496	-0.29348	-0.68478
12,014.00 0	89.260	142.340	6,582.960	5,288.960	-5,760.125	612.148	5,562.117	1.11754	0.21505	1.09677
12,106.00 0	88.690	141.090	6,584.606	5,290.606	-5,832.326	669.138	5,650.536	1.49309	-0.61957	-1.35870
12,198.00 0	87.950	141.400	6,587.303	5,293.303	-5,904.039	726.704	5,738.721	0.87202	-0.80435	0.33696
12,291.00 0	90.570	141.760	6,588.504	5,294.504	-5,976.890	784.486	5,828.041	2.84367	2.81720	0.38710
12,383.00 0	90.840	141.650	6,587.372	5,293.372	-6,049.089	841.495	5,916.464	0.31690	0.29348	-0.11957
12,475.00 0	90.740	140.580	6,586.104	5,292.104	-6,120.694	899.243	6,004.619	1.16800	-0.10870	-1.16304
12,568.00 0	90.070	140.230	6,585.446	5,291.446	-6,192.355	958.515	6,093.402	0.81280	-0.72043	-0.37634
12,660.00 0	89.770	140.010	6,585.575	5,291.575	-6,262.954	1,017.504	6,181.097	0.40437	-0.32609	-0.23913
12,753.00 0	87.310	136.600	6,587.945	5,293.945	-6,332.360	1,079.329	6,268.762	4.52001	-2.64516	-3.66667
12,845.00 0	87.550	135.060	6,592.070	5,298.070	-6,398.281	1,143.367	6,354.041	1.69245	0.26087	-1.67391
12,938.00 0	89.160	141.110	6,594.742	5,300.743	-6,467.424	1,205.436	6,441.555	6.72898	1.73118	6.50538
13,030.00 0	88.890	141.260	6,596.308	5,302.308	-6,539.097	1,263.094	6,529.739	0.33572	-0.29348	0.16304
13,122.00 0	88.690	142.980	6,598.251	5,304.251	-6,611.694	1,319.568	6,618.327	1.88175	-0.21739	1.86957
13,215.00 0	88.890	143.020	6,600.215	5,306.215	-6,685.950	1,375.524	6,708.256	0.21931	0.21505	0.04301

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Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,307.00	88.350	142.280	6,602.430	5,308.430	-6,759.063	1,431.322	6,797.066	0.99555	-0.58696	-0.80435	
0											
13,399.00	88.490	141.570	6,604.967	5,310.967	-6,831.458	1,488.036	6,885.559	0.78631	0.15217	-0.77174	
0											
13,491.00	89.530	141.260	6,606.557	5,312.557	-6,903.361	1,545.404	6,973.845	1.17957	1.13043	-0.33696	
0											
13,584.00	89.300	142.320	6,607.506	5,313.506	-6,976.431	1,602.925	7,063.268	1.16625	-0.24731	1.13978	
0											
13,676.00	89.400	141.950	6,608.550	5,314.550	-7,049.056	1,659.391	7,151.881	0.41658	0.10870	-0.40217	
0											
13,768.00	89.560	141.490	6,609.385	5,315.385	-7,121.272	1,716.383	7,240.314	0.52936	0.17391	-0.50000	
0											
13,860.00	89.400	142.430	6,610.220	5,316.220	-7,193.726	1,773.072	7,328.851	1.03639	-0.17391	1.02174	
0											
13,953.00	88.890	142.520	6,611.608	5,317.608	-7,267.475	1,829.712	7,418.569	0.55686	-0.54839	0.09677	
0											
14,045.00	88.960	142.520	6,613.334	5,319.334	-7,340.470	1,885.683	7,507.336	0.07609	0.07609	0.00000	
0											
14,137.00	88.990	142.230	6,614.979	5,320.979	-7,413.324	1,941.839	7,596.043	0.31685	0.03261	-0.31522	
0											
14,229.00	88.960	141.750	6,616.625	5,322.625	-7,485.800	1,998.483	7,684.584	0.52267	-0.03261	-0.52174	
0											
14,322.00	88.960	142.540	6,618.313	5,324.313	-7,559.217	2,055.544	7,774.154	0.84932	0.00000	0.84946	
0											
14,414.00	88.590	142.260	6,620.280	5,326.280	-7,632.090	2,111.665	7,862.865	0.50431	-0.40217	-0.30435	
0											
14,506.00	88.490	142.700	6,622.624	5,328.624	-7,705.035	2,167.678	7,951.602	0.49031	-0.10870	0.47826	
0											
14,599.00	88.620	142.450	6,624.969	5,330.969	-7,778.868	2,224.178	8,041.344	0.30291	0.13978	-0.26882	
0											
14,691.00	88.860	141.780	6,626.992	5,332.992	-7,851.460	2,280.659	8,129.931	0.77341	0.26087	-0.72826	
0											
14,783.00	88.960	141.120	6,628.742	5,334.743	-7,923.397	2,337.983	8,218.231	0.72545	0.10870	-0.71739	
0											
14,875.00	89.090	141.430	6,630.308	5,336.308	-7,995.161	2,395.528	8,306.456	0.36534	0.14130	0.33696	
0											
14,968.00	89.160	141.060	6,631.728	5,337.728	-8,067.676	2,453.738	8,395.628	0.40486	0.07527	-0.39785	
0											
15,060.00	89.190	141.030	6,633.053	5,339.053	-8,139.212	2,511.574	8,483.751	0.04611	0.03261	-0.03261	
0											
15,153.00	89.300	140.660	6,634.278	5,340.278	-8,211.321	2,570.291	8,572.739	0.41503	0.11828	-0.39785	
0											
15,245.00	88.990	141.290	6,635.651	5,341.651	-8,282.785	2,628.212	8,660.829	0.76313	-0.33696	0.68478	
0											
15,337.00	89.230	141.810	6,637.080	5,343.080	-8,354.826	2,685.414	8,749.179	0.62245	0.26087	0.56522	
0											
15,430.00	89.160	141.640	6,638.387	5,344.387	-8,427.828	2,743.016	8,838.570	0.19767	-0.07527	-0.18280	
0											
15,522.00	89.160	141.610	6,639.735	5,345.736	-8,499.945	2,800.124	8,926.956	0.03261	0.00000	-0.03261	
0											

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Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,614.000	89.090	141.610	6,641.140	5,347.140	-8,572.047	2,857.250	9,015.334	0.07609	-0.07609	0.00000
15,707.000	89.130	141.550	6,642.585	5,348.585	-8,644.901	2,915.035	9,104.658	0.07753	0.04301	-0.06452
15,799.000	88.790	141.930	6,644.255	5,350.255	-8,717.128	2,971.995	9,193.089	0.55419	-0.36957	0.41304
15,892.000	88.620	141.800	6,646.357	5,352.357	-8,790.259	3,029.409	9,282.529	0.23010	-0.18280	-0.13978
15,983.000	88.620	141.560	6,648.548	5,354.548	-8,861.633	3,085.818	9,369.962	0.26366	0.00000	-0.26374
16,077.000	88.720	141.040	6,650.730	5,356.730	-8,934.974	3,144.574	9,460.104	0.56318	0.10638	-0.55319
16,170.000	88.820	141.960	6,652.726	5,358.726	-9,007.739	3,202.454	9,549.382	0.99485	0.10753	0.98925
16,263.000	88.590	141.360	6,654.828	5,360.828	-9,080.664	3,260.130	9,638.730	0.69078	-0.24731	-0.64516
16,355.000	88.790	141.420	6,656.932	5,362.932	-9,152.535	3,317.524	9,726.996	0.22696	0.21739	0.06522
16,447.000	89.090	141.540	6,658.633	5,364.634	-9,224.502	3,374.811	9,815.311	0.35120	0.32609	0.13043
16,540.000	89.160	141.360	6,660.054	5,366.054	-9,297.226	3,432.761	9,904.577	0.20765	0.07527	-0.19355
16,632.000	89.230	141.970	6,661.346	5,367.346	-9,369.383	3,489.819	9,992.980	0.66733	0.07609	0.66304
16,724.000	89.160	141.870	6,662.639	5,368.639	-9,441.794	3,546.555	10,081.496	0.13267	-0.07609	-0.10870
16,817.000	88.990	141.290	6,664.140	5,370.140	-9,514.647	3,604.340	10,170.819	0.64981	-0.18280	-0.62366
16,909.000	89.090	141.410	6,665.682	5,371.682	-9,586.487	3,661.791	10,259.078	0.16977	0.10870	0.13043
17,001.000	89.060	141.860	6,667.167	5,373.167	-9,658.612	3,718.885	10,347.466	0.49015	-0.03261	0.48913
17,093.000	88.890	141.760	6,668.813	5,374.813	-9,730.909	3,775.757	10,435.928	0.21437	-0.18478	-0.10870
17,186.000	88.290	141.790	6,671.101	5,377.101	-9,803.946	3,833.283	10,525.324	0.64597	-0.64516	0.03226
17,278.000	88.390	141.760	6,673.766	5,379.766	-9,876.190	3,890.185	10,613.749	0.11348	0.10870	-0.03261
17,371.000	88.490	141.640	6,676.298	5,382.298	-9,949.147	3,947.803	10,703.105	0.16793	0.10753	-0.12903
17,463.000	88.120	141.450	6,679.019	5,385.019	-10,021.160	4,004.992	10,791.425	0.45206	-0.40217	-0.20652
17,555.000	88.190	141.580	6,681.981	5,387.981	-10,093.138	4,062.215	10,879.725	0.16042	0.07609	0.14130
17,648.000	87.990	141.710	6,685.081	5,391.081	-10,166.026	4,119.892	10,969.040	0.25645	-0.21505	0.13978
17,740.000	88.050	141.100	6,688.259	5,394.260	-10,237.888	4,177.249	11,057.283	0.66585	0.06522	-0.66304

M12H BHL-OLD

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EQT
Survey Report

Database: EDM_Definitive	Local Co-ordinate Reference: Well M12H
Company: EQT (Chevron Data) 02-13-21	TVD Reference: Air RKB @ 1294.000usft (Highlands 9)
Project: Marshall County, WV Chevron	MD Reference: Air RKB @ 1294.000usft (Highlands 9)
Site: Longworth	North Reference: True
Well: M12H	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
Design: Longworth 12H As Drilled	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,769.24 9	88.129	141.511	6,689.235	5,395.235	-10,260.70 3	4,195.524	11,085.324	1.43040	0.27023	1.40542
M12H BHL										
17,772.09 4	88.137	141.551	6,689.327	5,395.327	-10,262.93 0	4,197.293	11,088.055	1.43040	0.27041	1.40535
Final Survey=17777' MD/ 6689' TVD										
17,777.00 0	88.150	141.620	6,689.486	5,395.486	-10,266.77 2	4,200.339	11,092.765	1.43040	0.27045	1.40534
Projection to TD/Deepest Point of Well=17799' MD/ 6690' TVD										
17,799.00 0	88.150	141.620	6,690.196	5,396.196	-10,284.00 9	4,213.992	11,113.892	0.00000	0.00000	0.00000

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (-118.478)	+E/-W (-94.595)	Northing (usft)	Easting (usft)	Latitude	Longitude
Longworth 12H As Drille - hit/miss target - Shape	0.000	0.000	2,683.83 8	-118.478	-94.595	492,957.284	1,624,037.672	39.8469571	80.7268741°W
- actual wellpath hits target center - Point									
Longworth 12H As Drille - actual wellpath hits target center - Point	0.000	0.000	6,552.71 9	-2,651.287	-1,870.795	490,448.961	1,622,227.059	39.8400036	80.7331996°W
Longworth 12H TD - actual wellpath hits target center - Point	0.000	0.000	6,690.19 6	-10,284.00 9	4,213.992	482,733.878	1,628,207.073	39.8190486	80.7115347°W

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,763.446	6,514.000	Top of Marcellus@6514' TVD		0.0000	

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,441.000	1,440.909	0.749	9.789	Nudge KOP=1441' MD/TVD
2,696.000	2,683.838	-118.478	-94.595	KOP=2696' MD/ 2684' TVD
8,035.000	6,552.719	-2,651.287	-1,870.795	LP=8035' MD/ 6553' TVD
17,777.000	6,689.486	-10,266.772	4,200.339	Final Survey=17777' MD/ 6689' TVD
17,799.000	6,690.196	-10,284.009	4,213.992	Projection to TD/Deepest Point of Well=17799' MD/ 6690' TVD

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M12H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 12H As Drilled		

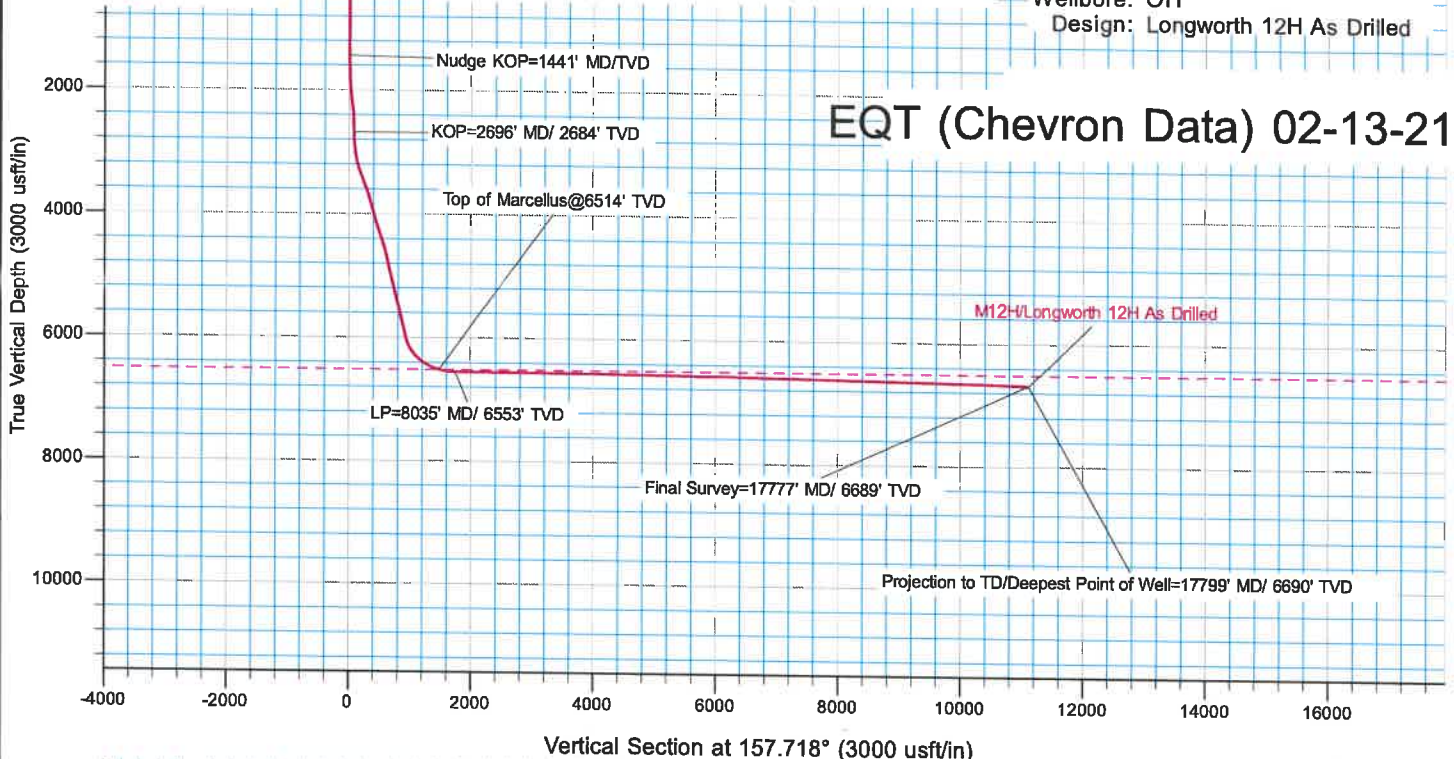
Checked By: _____ Approved By: _____ Date: _____

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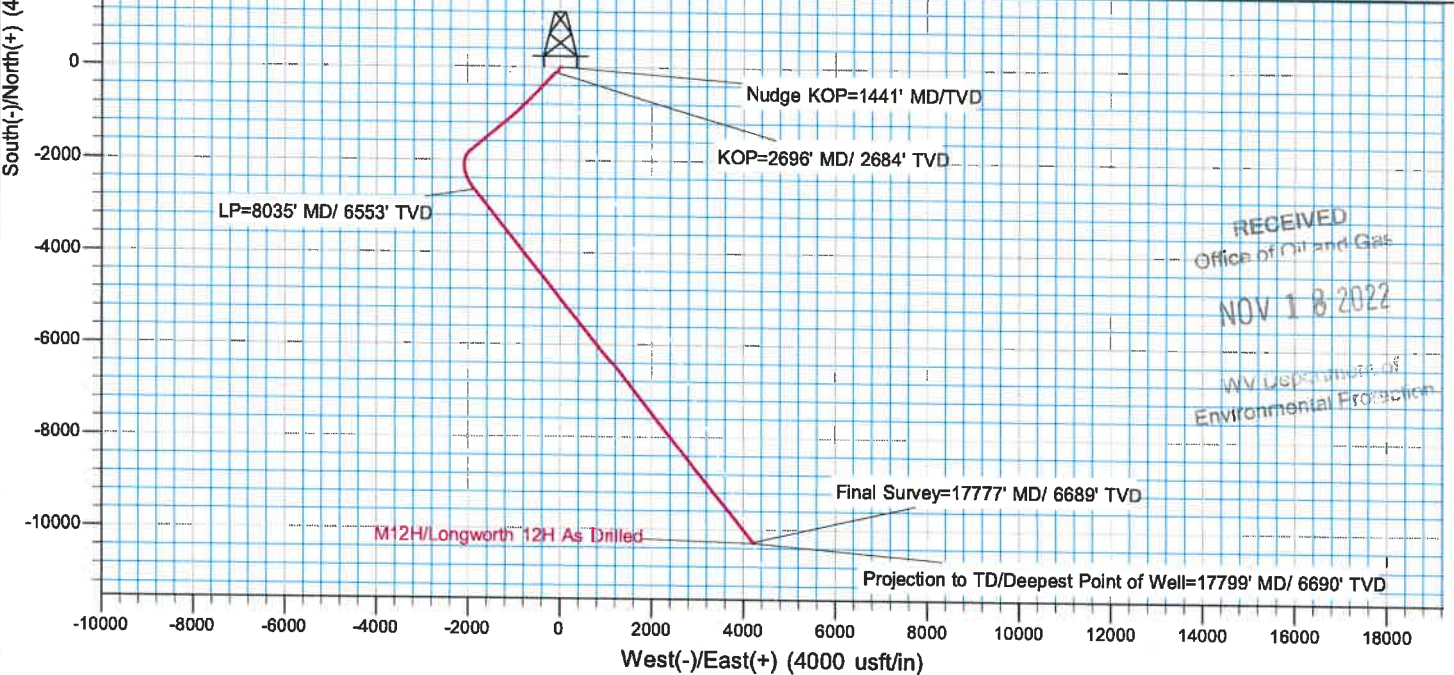


KB Elevation= Air RKB @ 1294.000usft (Highlands 9)
 Ground Elevation= 1270.000
 All measurements were taken from KB Elevation

Project: Marshall County, WV Chevron
 Site: Longworth
 Well: M12H
 Wellbore: OH
 Design: Longworth 12H As Drilled



Surface Location: M12H							
		Ground Level: 1270.000					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.000	0.000	493074.460	1624133.876	39.8472824	80.7265373°W		
DESIGN TARGET DETAILS							
Name	TVD	Northing	Easting	Latitude	Longitude		
Longworth 12H As Drilled KOP	2683.838	492957.285	1624037.672	39.8469571	80.7268742°W		
Longworth 12H As Drilled LP	6552.719	490448.961	1622227.059	39.8400036	80.7331996°W		
Longworth 12H TD	6690.197	482733.878	1628207.073	39.8190485	80.7115348°W		



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