

# **EQT (Chevron Data) 02-13-21**

**Marshall County, WV Chevron**

**Hines Pad EQT**

**Hines M19H**

**OH**

**Design: Hines M19H As Drilled**

## **Standard Survey Report**

**30 June, 2021**

**05/27/2022**

# EQT

## Survey Report

Database: EDM_Definitive	Local Co-ordinate Reference: Well Hines M19H	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Company: EQT (Chevron Data) 02-13-21	TVD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Project: Marshall County, WV Chevron	MD Reference:	True
Site: Hines Pad EQT	North Reference:	Minimum Curvature
Well: Hines M19H	Survey Calculation Method:	
Wellbore: OH		
Design: Hines M19H 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: Hines Pad EQT					
Site Position:		Northing:	514,501.050 usft	Latitude:	39.91
From:	Map	Easting:	1,631,895.930 usft	Longitude:	-80.70
Position Uncertainty:	1.500 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.7653 °

Well: Hines M19H						
Well Position	+N/-S	0.000 usft	Northing:	514,434.684 usft	Latitude:	39.9062128
	+E/-W	0.000 usft	Easting:	1,632,114.482 usft	Longitude:	80.6991313°W
Position Uncertainty		0.000 usft	Wellhead Elevation:	0.000 usft	Ground Level:	1,124.998 usft

Wellbore: OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/16/2019	-7.9500	66.9500	52,377.00000000

Design: Hines M19H As Drilled					
Audit Notes:					
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	154.040	

Survey Program		Date 6/28/2021			
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	761.698	Survey #1 SDI Gyro (OH)	SDI Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
0.00	6,013.000	Survey #4 SDI MWD (OH)	MWD c	MWD - Standard 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	-1,149.998	0.000	0.000	0.000	0.00000	0.00000	0.00000
101.000	0.250	346.670	100.999	-1,048.998	0.214	-0.051	-0.215	0.24753	0.24753	0.00000
126.000	0.220	353.780	125.999	-1,023.998	0.315	-0.069	-0.313	0.16713	-0.12000	28.44006
151.000	0.160	355.060	150.999	-998.999	0.398	-0.077	-0.391	0.24059	-0.24000	5.12001
176.000	0.210	350.330	175.999	-973.999	0.478	-0.087	-0.468	0.20895	0.20000	-18.92004
201.000	0.260	346.640	200.999	-948.999	0.578	-0.108	-0.567	0.20886	0.20000	-14.76003

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Project:	Marshall County, WV Chevron	MD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Site:	Hines Pad EQT	North Reference:	True
Well:	Hines M19H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Hines M19H 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)
226.000	0.230	4.150	225.998	-923.999	0.683	-0.118	-0.666	0.32104	-0.12000	70.04014
250.999	0.190	31.580	250.998	-899.000	0.769	-0.092	-0.731	0.42757	-0.16000	109.72022
275.999	0.160	56.700	275.998	-874.000	0.823	-0.042	-0.758	0.32620	-0.12000	100.48020
300.999	0.130	74.390	300.998	-849.000	0.850	0.015	-0.758	0.21418	-0.12000	70.76014
325.999	0.090	56.250	325.998	-824.000	0.868	0.059	-0.755	0.21026	-0.16000	-72.56015
350.999	0.110	11.470	350.998	-799.000	0.903	0.080	-0.777	0.31358	0.08000	-179.12036
375.999	0.090	297.960	375.998	-774.000	0.936	0.067	-0.812	0.48299	-0.08000	-294.04059
400.999	0.080	324.000	400.997	-749.000	0.959	0.040	-0.845	0.15808	-0.04000	104.16021
410.999	0.140	4.190	410.997	-739.000	0.977	0.036	-0.862	0.94279	0.60000	401.90080
479.369	0.150	89.180	479.367	-670.631	1.061	0.132	-0.896	0.28674	0.01463	124.30916
572.849	0.410	73.970	572.846	-577.152	1.155	0.576	-0.787	0.28686	0.27813	-16.27089
667.459	0.850	77.380	667.450	-482.548	1.402	1.586	-0.567	0.46655	0.46507	3.60428
761.698	0.260	98.690	761.685	-388.313	1.523	2.479	-0.284	0.65267	-0.62606	22.61252
<b>Gyro Tie In/Nudge KOP=762' MD/TVD</b>										
762.000	0.267	99.197	761.986	-388.011	1.522	2.481	-0.283	2.54786	2.42747	168.19996
895.998	3.670	115.380	895.886	-254.112	-0.366	6.665	3.247	2.54786	2.53935	12.07691
989.998	5.170	101.390	989.606	-160.392	-2.492	13.536	8.166	1.95394	1.59575	-14.88301
1,083.998	4.680	85.900	1,083.263	-66.735	-3.055	21.513	12.164	1.50207	-0.52128	-16.47876
1,177.998	4.380	72.860	1,176.971	26.974	-1.723	28.768	14.142	1.13836	-0.31915	-13.87237
1,270.997	4.170	67.670	1,269.713	119.715	0.609	35.289	14.900	0.47310	-0.22581	-5.58066
1,364.997	5.010	77.690	1,363.412	213.414	2.782	42.461	16.085	1.23220	0.89362	10.65960
1,457.997	6.850	92.390	1,455.915	305.917	3.417	51.971	19.678	2.55013	1.97850	15.80648
1,551.997	7.370	98.080	1,549.193	399.195	2.336	63.541	25.715	0.93068	0.56319	6.05320
1,644.997	6.430	93.240	1,641.519	491.521	1.203	74.646	31.594	1.18765	-1.01075	-5.20431
1,738.996	6.300	89.110	1,734.940	584.942	0.986	85.058	36.348	0.50621	-0.13830	-4.39363
1,831.996	6.440	87.690	1,827.365	677.368	1.275	95.372	40.602	0.22662	0.15054	-1.52688
1,925.996	6.990	85.440	1,920.720	770.723	1.942	106.341	44.804	0.64850	0.58511	-2.39362
2,032.996	6.210	85.330	2,027.010	877.012	2.931	118.599	49.281	0.72907	-0.72897	-0.10280
2,133.996	5.300	82.770	2,127.500	977.502	3.963	128.672	52.762	0.93593	-0.90099	-2.53466
2,226.995	5.170	80.450	2,220.112	1,070.114	5.199	137.065	55.325	0.26708	-0.13979	-2.49463
2,320.995	7.280	85.800	2,313.553	1,163.555	6.338	147.182	58.730	2.32558	2.24469	5.69150
2,414.995	12.990	86.490	2,406.048	1,256.050	7.422	163.681	64.977	6.07575	6.07448	0.73404
2,507.995	15.110	86.320	2,496.260	1,346.263	8.840	186.212	73.565	2.28000	2.27957	-0.18280
2,601.995	18.190	78.670	2,586.319	1,436.321	12.510	212.834	81.919	4.01509	3.27660	-8.13831
2,694.994	21.590	73.270	2,673.766	1,523.768	20.290	243.465	88.332	4.15189	3.65592	-5.80646
2,787.994	23.740	79.420	2,759.591	1,609.593	28.655	278.262	96.044	3.43786	2.31183	6.61292
2,883.994	24.260	77.190	2,847.292	1,697.295	36.576	316.489	105.656	1.08899	0.54167	-2.32292
2,977.994	28.330	77.050	2,931.548	1,781.550	45.860	357.074	115.074	4.33030	4.32980	-0.14894
3,070.994	32.920	75.740	3,011.556	1,861.558	57.036	403.096	125.172	4.98712	4.93549	-1.40861
3,164.994	37.750	74.070	3,088.218	1,938.221	71.234	455.554	135.370	5.23962	5.13831	-1.77660

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Well:	Hines M19H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Hines M19H 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)
<b>Hines M01H BHL - Rev-1</b>										
3,258.993	42.280	72.800	3,160.193	2,010.195	88.490	513.459	145.202	4.89662	4.81916	-1.35107
3,352.993	45.740	73.040	3,227.789	2,077.791	107.665	575.880	155.286	3.68513	3.68086	0.25532
3,445.993	50.050	73.460	3,290.130	2,140.132	127.537	641.938	166.335	4.64649	4.63442	0.45161
3,539.993	49.460	72.350	3,350.860	2,200.863	148.625	710.515	177.395	1.09833	-0.62766	-1.18085
<b>Hines NE3 BHL</b>										
3,596.160	49.458	73.105	3,387.368	2,237.371	161.298	751.273	183.842	1.02143	-0.00287	1.34409
3,632.993	49.460	73.600	3,411.309	2,261.312	169.317	778.091	188.371	1.02143	0.00437	1.34408
<b>Hines NE4 BHL2</b>										
3,726.992	49.470	74.930	3,472.403	2,322.405	188.690	846.852	201.053	1.07538	0.01064	1.41490
3,820.992	52.110	74.310	3,531.821	2,381.823	208.012	917.069	214.417	2.85461	2.80852	-0.65958
3,913.992	51.470	74.750	3,589.346	2,439.348	227.505	987.495	227.720	0.78216	-0.68817	0.47312
4,007.992	50.990	75.740	3,648.209	2,498.211	246.172	1,058.364	241.959	0.96696	-0.51064	1.05319
4,100.992	49.740	73.800	3,707.535	2,557.537	264.974	1,127.466	255.303	2.09452	-1.34409	-2.08603
4,194.991	49.200	74.670	3,768.621	2,618.623	284.387	1,196.222	267.946	0.90822	-0.57447	0.92553
4,288.991	48.050	75.650	3,830.753	2,680.755	302.457	1,264.403	281.545	1.45213	-1.22341	1.04256
4,384.991	48.700	73.880	3,894.524	2,744.526	321.319	1,333.634	294.892	1.53551	0.67708	-1.84375
4,478.991	50.560	74.410	3,955.407	2,805.409	340.879	1,402.524	307.462	2.02481	1.97873	0.56383
4,571.991	49.690	74.680	4,015.030	2,865.032	359.899	1,471.314	320.473	0.96165	-0.93549	0.29032
4,665.990	49.530	73.950	4,075.941	2,925.943	379.254	1,540.243	333.244	0.61550	-0.17021	-0.77660
4,758.990	49.210	73.680	4,136.500	2,986.502	398.927	1,608.026	345.227	0.40859	-0.34409	-0.29032
4,852.990	49.640	76.170	4,197.647	3,047.649	417.489	1,676.958	358.713	2.06328	0.45745	2.64894
4,946.990	51.710	75.990	4,257.213	3,107.215	434.982	1,747.533	373.879	2.20711	2.20213	-0.19149
5,039.990	51.500	74.970	4,314.974	3,164.976	453.256	1,818.092	388.336	0.88875	-0.22581	-1.09678
<b>Hines M01H LP - Rev-2</b>										
5,076.841	51.187	75.116	4,337.993	3,187.996	460.683	1,845.894	393.828	0.90414	-0.84984	0.39518
5,132.989	50.710	75.340	4,373.368	3,223.370	471.801	1,888.056	402.288	0.90414	-0.84922	0.39960
5,225.989	50.970	74.610	4,432.097	3,282.099	490.496	1,957.701	415.966	0.66977	0.27957	-0.78495
5,319.989	50.470	73.590	4,491.610	3,341.612	510.427	2,027.677	428.678	0.99419	-0.53192	-1.08511
5,413.989	50.620	73.510	4,551.344	3,401.346	530.980	2,097.286	440.670	0.17258	0.15957	-0.08511
5,506.989	49.600	74.840	4,610.987	3,460.989	550.444	2,165.932	453.219	1.55140	-1.09678	1.43011
5,600.989	49.990	74.620	4,671.666	3,521.668	569.351	2,235.189	466.536	0.45176	0.41489	-0.23404
5,694.988	50.520	74.040	4,731.767	3,581.769	588.874	2,304.778	479.445	0.73687	0.56383	-0.61702
5,791.988	51.060	73.950	4,793.086	3,643.089	609.597	2,377.023	492.438	0.56132	0.55670	-0.09278
5,885.988	49.760	72.390	4,852.993	3,702.995	630.560	2,446.356	503.940	1.88361	-1.38298	-1.65958
<b>Final MWD Survey=5948' MD/ 4894' TVD</b>										
5,947.988	48.770	71.510	4,893.451	3,743.454	645.113	2,491.023	510.408	1.92517	-1.59678	-1.41936
<b>Projection to Top Hole TD=6013' MD/4936' TVD - Hines NE3 LP - Plan @ 6300.0 (Hines M19H OH SDI Plan #1) - (2) Hines M19H BHL - Rev-1</b>										
6,013.000	48.770	71.510	4,936.299	3,786.302	660.619	2,537.392	516.764	0.00000	0.00000	0.00000



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Project:	Marshall County, WV Chevron	MD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Site:	Hines Pad EQT	North Reference:	True
Well:	Hines M19H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Hines M19H As Drilled		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (-8,785.471)	+E/-W (8,889.793)	Northing (usft)	Easting (usft)	Latitude	Longitude
(2) Hines M19H BHL- R <sub>t</sub>	0.000	0.000	6,269.98 4	-8,785.471	8,889.793	505,531.340	1,640,886.220	39.8820900	80.6674534°W
- actual wellpath misses target center by 11461.254usft at 6013.000usft MD (4936.300 TVD, 660.619 N, 2537.393 E)									
- Point									
(1) Hines M19H LP - Re	0.000	0.000	6,269.98 4	546.370	4,347.292	514,922.980	1,636,468.680	39.9077117	80.6836344°W
- actual wellpath misses target center by 2251.112usft at 6013.000usft MD (4936.300 TVD, 660.619 N, 2537.393 E)									
- Point									
Hines M01H BHL - Rev-	0.000	0.000	6,269.98 7	7,502.279	-5,147.181	522,004.997	1,627,067.895	39.9268071	80.7174847°W
- actual wellpath misses target center by 9832.494usft at 3258.993usft MD (3160.193 TVD, 88.490 N, 513.459 E)									
- Point									
Hines M01H LP - Rev-2	0.000	0.000	6,269.98 7	1,127.562	56.643	515,561.390	1,632,186.170	39.9093083	80.6989294°W
- actual wellpath misses target center by 2716.385usft at 5068.183usft MD (4332.571 TVD, 458.947 N, 1839.371 E)									
- Point									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
762.000	761.986	1.522	2.481	Gyro Tie In/Nudge KOP=762' MD/TVD	
5,947.988	4,893.451	645.113	2,491.023	Final MWD Survey=5948' MD/ 4894' TVD	
6,013.000	4,936.299	660.619	2,537.392	Projection to Top Hole TD=6013' MD/4936' TVD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



# EQT (Chevron Data) 02-13-21

KB Elevation= GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)  
 Ground Elevation= 1124.998  
 All measurements were taken from KB Elevation

Project: Marshall County, WV Chevron  
 Site: Hines Pad EQT  
 Well: Hines M19H  
 Wellbore: OH  
 Design: Hines M19H As Drilled

