

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

**Marshall County, WV Chevron**

**Hines Pad EQT**

**Hines M20H**

**OH**

**Design: Hines M20H As Drilled**

## **Standard Survey Report**

**30 June, 2021**

**05/27/2022**

# EQT

## Survey Report

Database: EDM_Definitive	Local Co-ordinate Reference: Well Hines M20H	Company: EQT (Chevron Data) 02-13-21	TVD Reference: GL @ 1125.00' & 25' KB @ 1149.998usft (PD572)
Project: Marshall County, WV Chevron	MD Reference: GL @ 1125.00' & 25' KB @ 1149.998usft (PD572)	Site: Hines Pad EQT	North Reference: True
Well: Hines M20H	Survey Calculation Method: Minimum Curvature	Wellbore: OH	
Design: Hines M20H 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:	Map	Northing: 514,501.050 usft	Latitude: 39.91	
From:		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 M20H				
Well Position	+N/-S	0.000 usft	Northing: 514,419.720 usft	Latitude: 39.9061717
	+E/-W	0.000 usft	Easting: 1,632,113.940 usft	Longitude: 80.6991326°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	6/1/2019	-7.9500	66.9667	52,381.30000000

Design: Hines M20H 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	154.060	

Survey Program Date: 6/28/2021					
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,225.997	Survey #2 SS Gyro (OH)	ADK 105	AdK w/ Gyrocompass HS reference Ver 1.0.5	
0.00	5,793.000	Survey #3 SDI MWD (OH)	MWD c	MWD - Standard c	

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)	
0.000	0.000	0.000	0.000	-1,149.998	0.000	0.000	0.000	0.00000	0.00000	0.00000	
508.999	0.690	332.020	508.987	-641.011	2.707	-1.438	-3.063	0.13556	0.13556	0.00000	
601.999	0.710	315.780	601.980	-548.018	3.614	-2.102	-4.170	0.21369	0.02151	-17.46240	
632.999	0.740	282.380	632.977	-517.020	3.795	-2.432	-4.476	1.34727	0.09677	-107.74215	
664.999	0.860	266.900	664.974	-485.024	3.826	-2.874	-4.697	0.76909	0.37500	-48.37510	
757.998	1.310	255.190	757.957	-392.041	3.516	-4.598	-5.174	0.53698	0.48387	-12.59142	

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Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Project:	Marshall County, WV Chevron	MD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Site:	Hines Pad EQT	North Reference:	True
Well:	Hines M20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Hines M20H 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)
851.998	1.170	249.150	851.935	-298.063	2.900	-6.534	-5.466	0.20356	-0.14894	-6.42554
944.998	0.270	89.540	944.929	-205.068	2.564	-7.202	-5.456	1.53354	-0.96774	-171.62400
1,038.998	0.740	84.960	1,038.925	-111.072	2.619	-6.376	-5.144	0.50144	0.50000	-4.87235
1,364.997	1.020	87.360	1,364.886	214.888	2.938	-1.380	-3.246	0.08661	0.08589	0.73620
<b>Nudge KOP=1365' MD/ TVD</b>										
1,365.000	1.020	87.360	1,364.888	214.891	2.938	-1.380	-3.246	0.03127	0.00000	0.00000
1,457.997	1.750	84.270	1,457.858	307.860	3.118	0.859	-2.428	0.78878	0.78497	-3.32268
1,551.997	2.750	80.400	1,551.784	401.786	3.637	4.511	-1.297	1.07544	1.06383	-4.11703
1,645.997	4.280	75.660	1,645.604	495.607	4.882	10.133	0.042	1.65538	1.62766	-5.04256
1,738.996	5.540	76.690	1,738.261	588.263	6.775	17.864	1.722	1.35810	1.35484	1.10753
1,832.996	5.660	83.290	1,831.813	681.816	8.361	26.883	4.241	0.69654	0.12766	7.02129
1,925.996	5.620	87.350	1,924.363	774.365	9.108	35.987	7.552	0.43110	-0.04301	4.36560
2,022.996	4.690	90.910	2,020.970	870.972	9.264	44.697	11.221	1.01344	-0.95876	3.67011
2,101.996	3.830	92.290	2,099.751	949.753	9.108	50.563	13.928	1.09624	-1.08861	1.74684
2,197.995	5.020	86.630	2,195.463	1,045.465	9.226	57.959	17.056	1.31894	1.23959	-5.89585
2,291.995	4.900	83.200	2,289.111	1,139.113	9.943	66.051	19.951	0.34027	-0.12766	-3.64894
2,384.995	4.730	81.760	2,381.783	1,231.785	10.963	73.790	22.419	0.22428	-0.18280	-1.54839
2,478.995	6.400	77.270	2,475.337	1,325.339	12.673	82.737	24.795	1.83465	1.77660	-4.77661
2,571.995	9.890	75.180	2,567.384	1,417.387	15.859	95.517	27.521	3.76556	3.75270	-2.24732
2,665.995	13.190	76.600	2,659.471	1,509.474	20.411	113.759	31.407	3.52337	3.51065	1.51064
2,758.994	15.900	76.540	2,749.482	1,599.484	25.836	136.474	36.465	2.91403	2.91398	-0.06452
2,852.994	19.120	71.870	2,839.119	1,689.121	33.626	163.635	41.341	3.73486	3.42554	-4.96810
2,946.994	24.540	70.980	2,926.346	1,776.348	44.786	196.745	45.788	5.77655	5.76597	-0.94681
3,039.994	28.840	73.470	3,009.420	1,859.422	57.468	236.526	51.785	4.77657	4.62367	2.67742
3,133.994	34.710	75.100	3,089.298	1,939.300	70.812	284.166	60.625	6.31059	6.24469	1.73405
3,227.993	40.980	74.780	3,163.490	2,013.492	85.801	339.826	71.494	6.67348	6.67023	-0.34043
3,322.993	45.260	72.460	3,232.821	2,082.823	104.156	402.087	82.222	4.80395	4.50527	-2.44211
3,416.993	46.790	71.200	3,298.088	2,148.091	125.258	466.353	91.358	1.89197	1.62766	-1.34043
3,509.993	45.230	70.290	3,362.679	2,212.681	147.316	529.519	99.153	1.81913	-1.67742	-0.97850
3,603.993	44.580	69.650	3,429.257	2,279.259	170.042	591.862	105.988	0.84212	-0.69149	-0.68085
3,697.992	42.590	68.770	3,497.343	2,347.345	193.034	652.448	111.814	2.21318	-2.11703	-0.93617
3,790.992	42.240	67.580	3,566.004	2,416.006	216.352	710.678	116.317	0.94154	-0.37634	-1.27957
3,884.992	40.590	68.430	3,636.496	2,486.498	239.646	768.328	120.587	1.85441	-1.75532	0.90426
3,977.992	39.540	70.850	3,707.673	2,557.676	260.482	824.434	126.393	2.01974	-1.12903	2.60216
4,071.992	40.670	71.810	3,779.570	2,629.572	279.860	881.801	134.061	1.37035	1.20213	1.02128
<b>Hines A NE4 BHL</b>										
4,165.991	41.900	72.890	3,850.204	2,700.207	298.657	940.902	143.010	1.51221	1.30851	1.14894
4,258.991	42.160	73.260	3,919.284	2,769.287	316.783	1,000.470	152.767	0.38615	0.27957	0.39785
4,352.991	41.450	72.800	3,989.353	2,839.355	335.070	1,060.401	162.539	0.82275	-0.75532	-0.48936
4,445.991	40.660	71.490	4,059.483	2,909.485	353.791	1,118.539	171.134	1.25595	-0.84946	-1.40861
4,539.991	41.370	71.070	4,130.409	2,980.411	373.591	1,176.962	178.886	0.81024	0.75532	-0.44681

# EQT Survey Report

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Company: EOT (Chevron Data) 02-13-21	TVD Reference: GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Project: Marshall County, WV Chevron	MD Reference: GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Site: Hines Pad EQT	North Reference: True
Well: Hines M20H	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
Design: Hines M20H 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)
4,635.991	41.770	71.230	4,202.231	3,052.233	394.171	1,237.245	186.748	0.43109	0.41667	0.16667
4,728.990	40.610	71.230	4,272.215	3,122.217	413.878	1,295.233	194.392	1.24731	-1.24731	0.00000
4,822.990	41.030	70.940	4,343.351	3,193.353	433.797	1,353.360	201.907	0.49021	0.44681	-0.30851
4,915.990	42.740	70.830	4,412.585	3,262.587	454.130	1,412.025	209.284	1.84041	1.83871	-0.11828
<b>Hines A NE4 AZI</b>										
4,956.849	42.343	70.421	4,442.689	3,292.692	463.294	1,438.086	212.443	1.18301	-0.97044	-1.00067
5,009.990	41.830	69.880	4,482.127	3,332.129	475.387	1,471.588	216.223	1.18301	-0.96628	-1.01830
<b>Hines A NE4 AZI1 b</b>										
5,079.397	41.778	69.850	4,533.865	3,383.868	491.313	1,515.026	220.903	0.07969	-0.07447	-0.04254
5,103.990	41.760	69.840	4,552.207	3,402.209	496.958	1,530.405	222.554	0.07969	-0.07446	-0.04260
5,196.989	41.430	71.410	4,621.759	3,471.762	517.441	1,588.642	229.609	1.17552	-0.35484	1.68818
5,290.989	40.230	70.560	4,692.884	3,542.886	537.459	1,646.747	237.025	1.40683	-1.27660	-0.90426
5,384.989	39.520	70.960	4,765.023	3,615.025	557.319	1,703.645	244.054	0.80308	-0.75532	0.42553
5,477.989	38.760	73.730	4,837.159	3,687.162	575.130	1,759.567	252.500	2.04984	-0.81721	2.97850
5,571.989	40.060	73.960	4,909.784	3,759.787	591.732	1,816.887	262.643	1.39168	1.38298	0.24468
5,665.988	42.050	72.590	4,980.665	3,830.668	609.511	1,876.002	272.515	2.32327	2.11703	-1.45745
<b>Final Survey=5728' MD/5025' TVD</b>										
5,727.988	42.770	71.880	5,026.442	3,876.445	622.271	1,915.822	278.459	1.39465	1.16129	-1.14516
<b>Projection to TD=5793' MD/5074' TVD - Hines M09H 70° - Hines A NE4 LP - Hines A NE4 LP -271 VS - Interp @ 6254.639 (Hines M20H OH)</b>										
5,793.000	42.770	71.880	5,074.166	3,924.169	636.001	1,957.779	284.465	0.00000	0.00000	0.00000

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (118.769)	+E/-W (3,144.874)	Northing (usft)	Easting (usft)	Latitude	Longitude	
(1) Hines M20H LP - Re	0.000	0.000	6,269.98	118.769	3,144.874	514,496.502	1,635,260.120	39.9064973	80.6879222°W	
- actual wellpath misses target center by 1762.587usft at 5793.000usft MD (5074.166 TVD, 636.001 N, 1957.779 E)										
- Point										
(2) Hines M20H BHL- R1	0.000	0.000	6,269.98	-7,750.407	6,972.222	506,576.942	1,638,982.093	39.8848921	80.6742867°W	
- actual wellpath misses target center by 9844.108usft at 5793.000usft MD (5074.166 TVD, 636.001 N, 1957.779 E)										
- Point										
Hines M01H LP - Rev-2	0.000	0.000	6,269.98	1,142.532	56.985	515,561.390	1,632,186.170	39.9093083	80.6989294°W	
- actual wellpath misses target center by 2291.135usft at 5595.054usft MD (4927.375 TVD, 595.898 N, 1831.213 E)										
- Point										

# EQT

## Survey Report

<b>Database:</b> EDM_Definitive <b>Company:</b> EQT (Chevron Data) 02-13-21  <b>Project:</b> Marshall County, WV Chevron  <b>Site:</b> Hines Pad EQT <b>Well:</b> Hines M20H <b>Wellbore:</b> OH <b>Design:</b> Hines M20H As Drilled	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b>  <b>MD Reference:</b>  <b>North Reference:</b> True <b>Survey Calculation Method:</b> Minimum Curvature	<b>Well Hines M20H</b> GL @ 1125.00' & 25' KB @ 1149.998usft (PD572) GL @ 1125.00' & 25' KB @ 1149.998usft (PD572) True Minimum Curvature
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Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,365.000	1,364.888	2.938	-1.380	Nudge KOP=1365' MD/ TVD	
5,727.988	5,026.442	622.271	1,915.822	Final Survey=5728' MD/5026' TVD	
5,793.000	5,074.166	636.001	1,957.779	Projection to TD=5793' MD/5074' TVD	

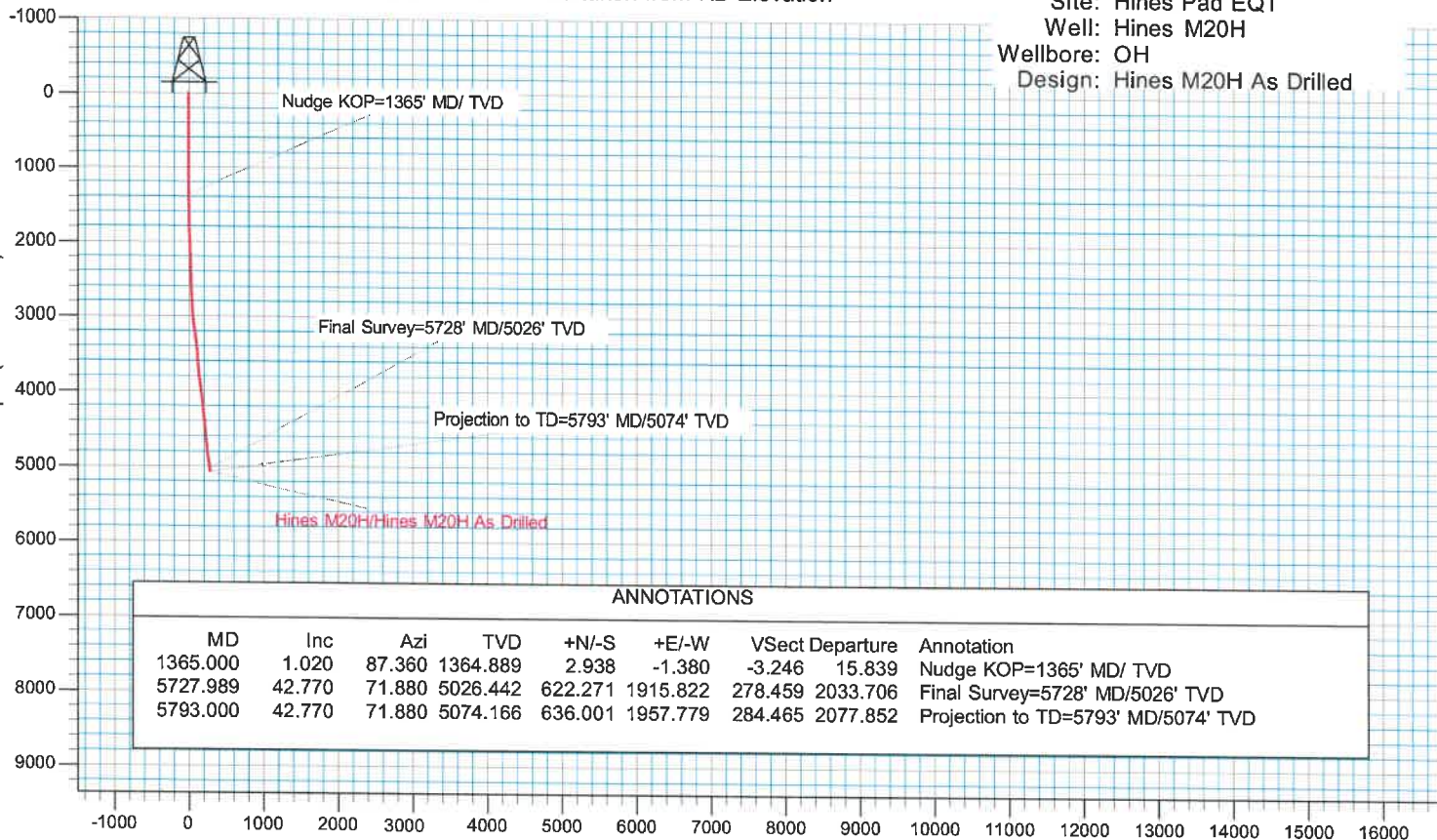
**Checked By:** \_\_\_\_\_ **Approved By:** \_\_\_\_\_ **Date:** \_\_\_\_\_



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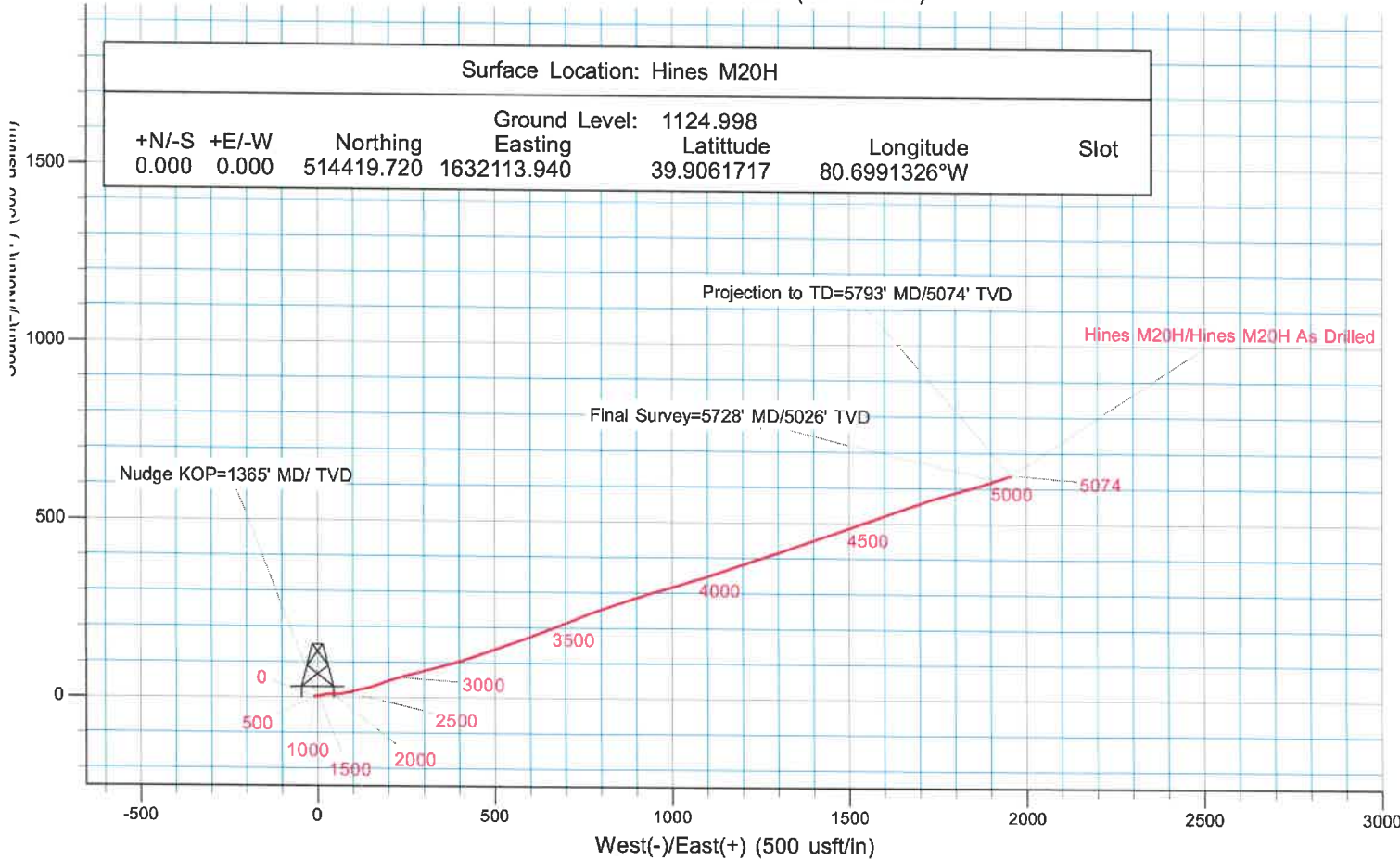
KB Elevation= GL @ 1125.00 & 25' KB @ 1149.99usft (PD572)  
 Ground Elevation= 1124.998  
 All measurements were taken from KB Elevation

Project: Marshall County, WV Chevron  
 Site: Hines Pad EQT  
 Well: Hines M20H  
 Wellbore: OH  
 Design: Hines M20H As Drilled



ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation	
1365.000	1.020	87.360	1364.889	2.938	-1.380	-3.246	15.839	Nudge KOP=1365' MD/ TVD	
5727.989	42.770	71.880	5026.442	622.271	1915.822	278.459	2033.706	Final Survey=5728' MD/5026' TVD	
5793.000	42.770	71.880	5074.166	636.001	1957.779	284.465	2077.852	Projection to TD=5793' MD/5074' TVD	

Vertical Section at 154.060° (2500 usft/in)



Surface Location: Hines M20H							
				Ground Level: 1124.998			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot	
0.000	0.000	514419.720	1632113.940	39.9061717	80.6991326°W		