

SOUTHWESTERN ENERGY

Location: Ohio County, WV
 Field: Ohio
 Facility: Timmy Minch OHI Pad Wellbore: Timmy Minch OHI 6H PWB

Plot reference wellpath is Timmy Minch OHI 6H PWP Rev B.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 42 (KB)	North Reference: Grid north
Measured depths are referenced to SDC 42 (KB)	Scale: True distance
SDC 42 (KB) to Mean Sea Level: 1234 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot 6H): -1208 feet	Created by: atenjen on 2018-10-25
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn

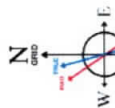
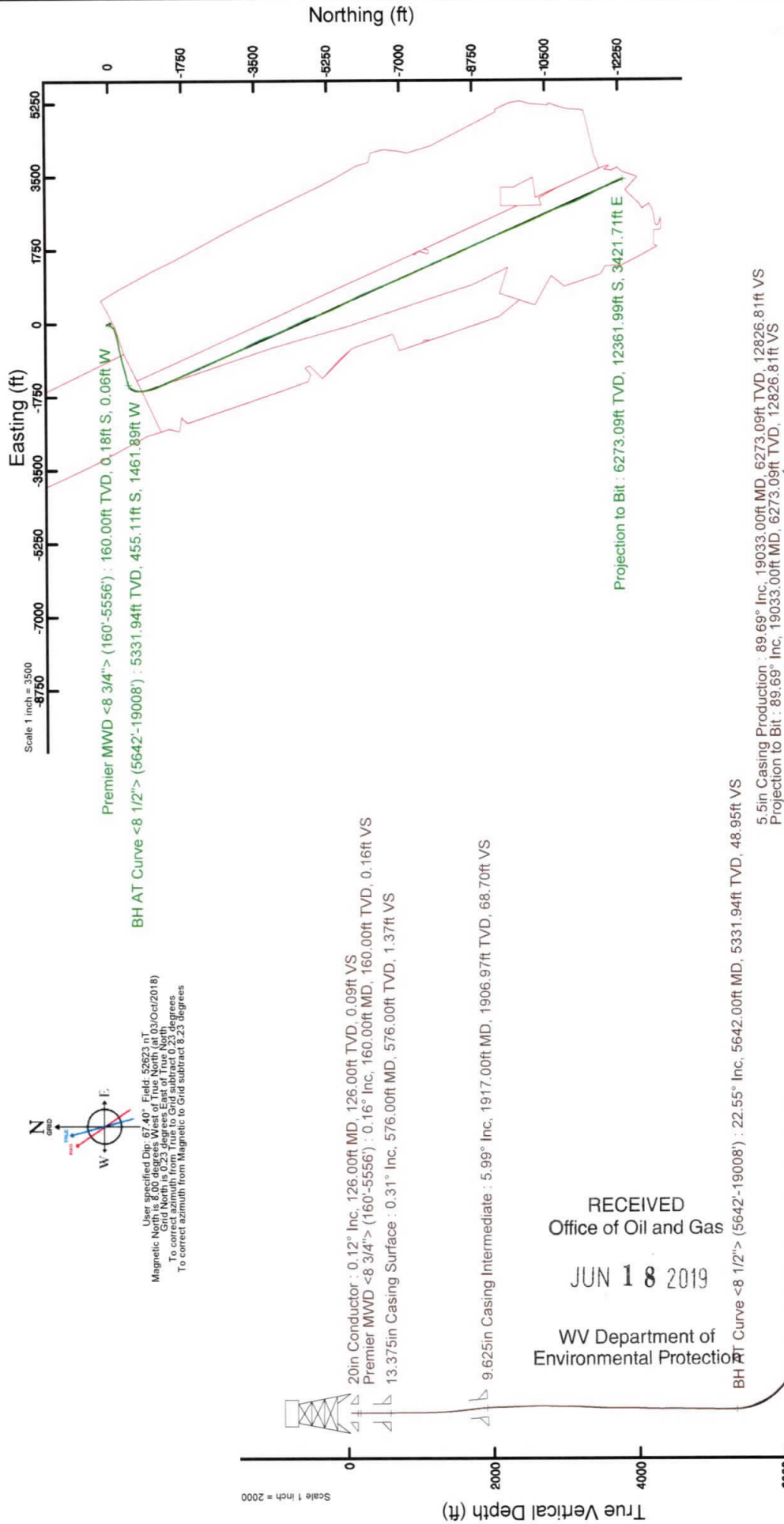


Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Timmy Minch OHI Pad	1739330.759	14558022.602	40° 05'07.3887N	80° 38'46.8937W
Slot	Local N (ft)	Local E (ft)	Grid North (US ft)	Grid East (US ft)
Slot 6H	-48.56	27.86	17393958.612	14557974.058
SDC 42 (KB) to Ground level (At Slot: Slot 6H)	26ft			
Mean Sea Level to Ground level (At Slot: Slot 6H)	-1208ft			
SDC 42 (KB) to Mean Sea Level	1234ft			

Comments

API: 47-069-00268-0000
 BH Job #: 109318243
 Rig: SDC 42
 Duration: 09/29/2018 - 10/04/2018



User specified Dip: 67.40° Field: 52823 nT
 Magnetic North is 8.00 degrees West of True North (at 03/Oct/2018)
 To correct Grid North is 0.23 degrees East of True North
 To correct azimuth from Magnetic to Grid subtract 8.23 degrees

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 JUN 18 2019
 WV Department of
 Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Ohio County, WV	Well	Timmy Minch OHI 6H
Field	Ohio	Wellbore	Timmy Minch OHI 6H AWB
Facility	Timmy Minch OHI Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Atenjen
Scale	0.999611	Report Generated	25/Oct/2018 at 15:28
Convergence at slot	0.23° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Timmy_Minch_OHI_6H_AWP_Proj_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-48.56	27.86	1739358.61	14557974.06	40°05'06.907"N	80°38'46.537"W
Facility Reference Pt			1739330.76	14558022.60	40°05'07.388"N	80°38'46.893"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC 42 (KB) to Facility Vertical Datum	1234.00ft
Horizontal Reference Pt	Slot	SDC 42 (KB) to Mean Sea Level	1234.00ft
Vertical Reference Pt	SDC 42 (KB)	SDC 42 (KB) to Ground Level at Slot (Slot 6H)	26.00ft
MD Reference Pt	SDC 42 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	164.54°

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Actual Wellpath Report

Timmy Minch OHI 6H AWP Proj:

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Ohio County, WV	Well	Timmy Minch OHI 6H
Field	Ohio	Wellbore	Timmy Minch OHI 6H AWB
Facility	Timmy Minch OHI Pad		

WELLPATH DATA (218 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	197.410	0.00	0.00	0.00	0.00	1739358.61	14557974.06	40°05'06.907"N	80°38'46.537"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	197.410	26.00	0.00	0.00	0.00	1739358.61	14557974.06	40°05'06.907"N	80°38'46.537"W	0.00	0.000	0.00	0.00	0.00
160.00	0.160	197.410	160.00	0.16	-0.18	-0.06	1739358.56	14557973.88	40°05'06.905"N	80°38'46.538"W	0.19	197.410	0.12	0.12	-121.34
220.00	0.200	170.600	220.00	0.33	-0.36	-0.06	1739358.55	14557973.70	40°05'06.903"N	80°38'46.538"W	0.37	190.023	0.15	0.07	-44.68
312.00	0.250	249.670	312.00	0.51	-0.59	-0.23	1739358.39	14557973.47	40°05'06.901"N	80°38'46.540"W	0.63	200.956	0.31	0.05	85.95
403.00	0.230	152.660	403.00	0.70	-0.82	-0.33	1739358.28	14557973.24	40°05'06.899"N	80°38'46.541"W	0.88	201.786	0.40	-0.02	-106.60
494.00	0.350	211.110	494.00	1.07	-1.22	-0.39	1739358.22	14557972.84	40°05'06.894"N	80°38'46.542"W	1.28	197.621	0.33	0.13	64.23
512.00	0.390	225.130	512.00	1.14	-1.31	-0.46	1739358.15	14557972.75	40°05'06.890"N	80°38'46.543"W	1.39	199.316	0.55	0.22	77.89
608.00	0.280	196.590	608.00	1.50	-1.77	-0.76	1739357.85	14557972.29	40°05'06.890"N	80°38'46.547"W	1.92	203.226	0.20	-0.11	-29.73
699.00	0.330	163.350	698.99	1.95	-2.23	-0.75	1739357.87	14557971.83	40°05'06.885"N	80°38'46.547"W	2.35	198.504	0.20	0.05	-36.53
790.00	0.460	143.660	789.99	2.55	-2.78	-0.46	1739358.16	14557971.28	40°05'06.880"N	80°38'46.543"W	2.81	189.309	0.20	0.14	-21.64
880.00	0.380	147.450	879.99	3.18	-3.32	-0.08	1739358.53	14557970.74	40°05'06.874"N	80°38'46.538"W	3.32	181.389	0.09	-0.09	4.21
971.00	0.680	109.480	970.99	3.78	-3.75	0.59	1739359.20	14557970.31	40°05'06.870"N	80°38'46.530"W	3.80	171.052	0.49	0.33	-41.73
1061.00	1.070	216.610	1060.98	4.60	-4.61	0.59	1739359.21	14557969.45	40°05'06.861"N	80°38'46.530"W	4.64	172.660	1.59	0.43	119.03
1152.00	3.960	233.090	1151.88	6.27	-7.18	-2.43	1739356.19	14557966.88	40°05'06.836"N	80°38'46.569"W	7.58	198.683	3.24	3.18	18.11
1242.00	7.030	234.140	1241.46	9.33	-12.27	-9.38	1739349.24	14557961.79	40°05'06.786"N	80°38'46.658"W	15.44	217.387	3.41	3.41	1.17
1333.00	9.040	231.050	1331.56	14.12	-20.03	-19.45	1739339.17	14557954.04	40°05'06.710"N	80°38'46.788"W	27.92	224.164	2.26	2.21	-3.40
1423.00	10.450	228.730	1420.26	20.49	-29.86	-31.08	1739327.54	14557944.21	40°05'06.613"N	80°38'46.938"W	43.10	226.155	1.63	1.57	-2.58
1514.00	11.510	227.060	1509.59	28.27	-41.48	-43.93	1739314.69	14557932.59	40°05'06.499"N	80°38'47.104"W	60.43	226.642	1.22	1.16	-1.84
1604.00	11.370	220.830	1597.81	37.34	-54.32	-56.31	1739302.33	14557919.76	40°05'06.372"N	80°38'47.264"W	78.24	226.032	1.38	-0.16	-6.92
1694.00	10.110	211.400	1686.24	47.67	-67.77	-66.23	1739292.41	14557906.31	40°05'06.240"N	80°38'47.392"W	94.76	224.339	2.40	-1.40	-10.48
1785.00	8.610	210.000	1776.02	57.91	-80.49	-73.79	1739284.85	14557893.60	40°05'06.114"N	80°38'47.491"W	109.20	222.515	1.67	-1.65	-1.54
1863.00	6.880	214.570	1853.31	65.00	-89.39	-79.36	1739279.28	14557884.70	40°05'06.027"N	80°38'47.563"W	119.54	221.599	2.35	-2.22	5.86
1942.00	5.600	222.370	1931.84	70.09	-96.14	-84.65	1739274.00	14557877.96	40°05'05.960"N	80°38'47.631"W	128.09	221.363	1.94	-1.62	9.87
1988.00	5.660	218.190	1977.62	72.63	-99.58	-87.56	1739271.08	14557874.52	40°05'05.926"N	80°38'47.669"W	132.60	221.326	0.90	0.13	-9.09
2033.00	6.490	237.630	2022.37	74.69	-102.68	-91.08	1739267.57	14557871.41	40°05'05.896"N	80°38'47.714"W	137.26	221.573	4.90	1.84	43.20
2078.00	10.250	248.470	2066.89	75.85	-105.52	-96.96	1739261.69	14557868.58	40°05'05.868"N	80°38'47.790"W	143.30	222.579	9.03	8.36	24.09
2169.00	13.970	247.580	2155.85	78.04	-112.68	-114.65	1739244.01	14557861.42	40°05'05.798"N	80°38'48.018"W	160.75	225.496	4.09	4.09	-0.98
2259.00	15.590	247.740	2242.87	80.79	-121.40	-135.89	1739222.78	14557852.70	40°05'05.713"N	80°38'48.291"W	182.22	228.221	1.80	1.80	0.18
2349.00	17.380	247.120	2329.16	83.96	-131.21	-159.46	1739199.21	14557842.90	40°05'05.617"N	80°38'48.595"W	206.51	230.551	2.00	1.99	-0.69

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Ohio County, WV	Well	Timmy Minch OHI 6H
Field	Ohio	Wellbore	Timmy Minch OHI 6H AWB
Facility	Timmy Minch OHI Pad		

WELLPATH DATA (218 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]
2439.00	18.460	249.070	2414.80	87.05	-141.53	-185.16	1739173.53	14557832.58	40°05'05.516"N	80°38'48.926"W	233.05	232.607	1.37	1.20	2.17
2530.00	18.810	249.120	2501.03	89.81	-151.91	-212.32	1739146.37	14557822.21	40°05'05.414"N	80°38'49.276"W	261.07	234.418	0.39	0.38	0.05
2620.00	19.730	252.000	2585.98	91.86	-161.77	-240.33	1739118.38	14557812.35	40°05'05.318"N	80°38'49.637"W	289.70	236.054	1.47	1.02	3.20
2711.00	20.240	253.520	2671.50	92.82	-170.98	-270.03	1739088.69	14557803.14	40°05'05.228"N	80°38'50.020"W	319.61	237.658	0.80	0.56	1.67
2801.00	20.140	260.060	2755.98	91.60	-178.08	-300.22	1739058.51	14557796.05	40°05'05.159"N	80°38'50.409"W	349.06	239.326	2.51	-0.11	7.27
2892.00	19.380	259.910	2841.63	88.68	-183.42	-330.52	1739028.22	14557790.70	40°05'05.107"N	80°38'50.799"W	378.01	240.972	0.84	-0.84	-0.16
2982.00	20.510	256.150	2926.23	86.84	-189.82	-360.53	1738998.22	14557784.32	40°05'05.045"N	80°38'51.185"W	407.45	242.234	1.90	1.26	-4.18
3072.00	22.860	254.920	3009.86	86.28	-198.14	-392.73	1738966.04	14557776.00	40°05'04.964"N	80°38'51.600"W	439.88	243.228	2.66	2.61	-1.37
3163.00	24.630	257.200	3093.15	85.29	-206.94	-428.29	1738930.49	14557767.20	40°05'04.879"N	80°38'52.058"W	475.66	244.211	2.19	1.95	2.51
3253.00	25.890	260.950	3174.55	82.22	-214.19	-465.98	1738892.81	14557759.95	40°05'04.809"N	80°38'52.543"W	512.85	245.314	2.26	1.40	4.17
3343.00	25.880	260.930	3255.52	78.06	-220.59	-504.75	1738854.06	14557753.55	40°05'04.747"N	80°38'53.042"W	550.85	246.393	0.32	-0.01	-0.73
3434.00	25.420	260.830	3337.55	73.93	-227.05	-543.61	1738815.22	14557747.09	40°05'04.685"N	80°38'53.542"W	589.12	247.331	0.57	-0.51	0.59
3524.00	26.150	260.960	3418.59	69.60	-233.25	-582.26	1738776.58	14557740.90	40°05'04.625"N	80°38'54.040"W	627.24	248.170	0.81	0.81	0.14
3614.00	25.710	258.810	3499.53	65.92	-240.15	-621.00	1738737.85	14557734.00	40°05'04.558"N	80°38'54.539"W	665.82	248.858	1.15	-0.49	-2.39
3705.00	24.950	255.940	3581.78	63.99	-248.65	-658.98	1738699.89	14557725.51	40°05'04.476"N	80°38'55.028"W	704.33	249.328	1.59	-0.84	-3.15
3795.00	25.860	253.360	3663.08	63.93	-258.88	-696.20	1738662.68	14557715.28	40°05'04.376"N	80°38'55.507"W	742.78	249.603	1.59	1.01	-2.87
3885.00	26.800	254.870	3743.75	64.21	-269.79	-734.60	1738624.30	14557704.37	40°05'04.270"N	80°38'56.002"W	782.58	249.833	1.28	1.04	1.68
3976.00	25.730	254.590	3825.35	64.08	-280.40	-773.45	1738585.47	14557693.77	40°05'04.166"N	80°38'56.502"W	822.70	250.073	1.18	-1.18	-0.31
4066.00	24.960	255.160	3906.69	63.86	-290.45	-810.64	1738548.29	14557683.72	40°05'04.068"N	80°38'56.981"W	861.10	250.287	0.90	-0.86	0.63
4157.00	25.770	259.770	3988.92	61.84	-298.89	-848.67	1738510.28	14557675.29	40°05'03.987"N	80°38'57.471"W	899.76	250.599	2.34	0.89	5.07
4247.00	25.610	258.290	4070.03	58.79	-306.31	-886.97	1738471.99	14557667.87	40°05'03.915"N	80°38'57.994"W	938.37	250.948	0.73	0.18	-1.64
4337.00	25.350	256.830	4151.27	56.75	-314.64	-924.77	1738434.20	14557659.54	40°05'03.834"N	80°38'58.451"W	976.84	251.210	0.76	-0.29	-1.62
4427.00	26.190	256.240	4232.32	55.39	-323.76	-962.82	1738396.16	14557650.43	40°05'03.745"N	80°38'58.941"W	1015.80	251.414	0.98	0.93	-0.66
4518.00	24.940	254.510	4314.41	54.80	-333.66	-1000.82	1738358.18	14557640.53	40°05'03.649"N	80°38'59.430"W	1054.97	251.562	1.60	-1.37	-1.90
4608.00	24.760	253.730	4396.08	55.08	-344.01	-1037.20	1738321.82	14557630.18	40°05'03.548"N	80°38'59.899"W	1092.76	251.651	0.42	-0.20	-0.87
4698.00	25.030	254.240	4477.72	55.45	-354.46	-1073.61	1738285.42	14557619.74	40°05'03.446"N	80°39'00.368"W	1130.61	251.729	0.38	0.30	0.57
4789.00	25.710	255.880	4559.94	55.08	-364.50	-1111.29	1738247.76	14557609.70	40°05'03.348"N	80°39'00.853"W	1169.54	251.840	1.07	0.75	1.80
4879.00	27.050	257.240	4640.57	53.66	-373.79	-1150.18	1738208.88	14557600.42	40°05'03.258"N	80°39'01.354"W	1209.39	251.997	1.63	1.49	1.51
4969.00	27.410	256.330	4720.59	52.05	-383.20	-1190.27	1738168.81	14557591.01	40°05'03.167"N	80°39'01.870"W	1250.43	252.154	0.61	0.40	-1.01
5059.00	25.920	255.210	4801.02	51.18	-393.12	-1229.42	1738129.68	14557581.09	40°05'03.070"N	80°39'02.374"W	1290.74	252.268	1.75	-1.66	-1.24

Actual Wellpath Report

Timmy Minch OHI 6H AWP Proj:

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 6H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 6H
Ohio County, WV	Wellbore	Timmy Minch OHI 6H AWB
Ohio		
Timmy Minch OHI Pad		

WELLPATH DATA (218 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]
5149.00	25.760	256.350	4882.02	50.33	-402.76	-1267.44	1738091.67	14557571.46	40°05'02.976"N	80°39'02.864"W	1329.89	252.371	0.58	-0.18	1.27
5240.00	25.000	256.770	4984.24	48.95	-411.82	-1305.38	1738053.75	14557562.39	40°05'02.888"N	80°39'03.352"W	1368.80	252.490	0.86	-0.84	0.46
5330.00	23.720	255.990	5046.22	47.76	-420.56	-1341.45	1738017.68	14557553.66	40°05'02.803"N	80°39'03.817"W	1405.83	252.593	1.47	-1.42	-0.87
5421.00	23.900	255.060	5129.48	47.13	-429.74	-1377.02	1737982.13	14557544.48	40°05'02.714"N	80°39'04.275"W	1442.52	252.668	0.46	0.20	-1.02
5511.00	23.980	254.270	5211.74	47.05	-439.40	-1412.24	1737946.92	14557534.83	40°05'02.620"N	80°39'04.728"W	1479.02	252.717	0.37	0.09	-0.88
5556.00	23.810	252.500	5252.88	47.41	-444.61	-1429.71	1737929.46	14557529.62	40°05'02.569"N	80°39'04.953"W	1497.25	252.725	1.64	-0.38	-3.93
5642.00	22.550	251.340	5331.94	48.95	-455.11	-1461.89	1737897.30	14557519.13	40°05'02.467"N	80°39'05.368"W	1531.09	252.708	1.56	-1.47	-1.35
5733.00	24.560	233.970	5415.45	56.58	-471.84	-1493.76	1737865.44	14557502.40	40°05'02.302"N	80°39'05.779"W	1566.50	252.470	7.91	2.21	-19.09
5823.00	28.660	218.110	5496.00	76.00	-499.87	-1522.25	1737836.96	14557474.38	40°05'02.027"N	80°39'06.147"W	1602.22	251.821	9.08	4.56	-17.62
5914.00	30.940	210.760	5574.99	105.16	-537.16	-1547.70	1737811.52	14557437.11	40°05'01.659"N	80°39'06.476"W	1638.26	250.860	4.73	2.51	-8.08
6004.00	31.350	204.880	5652.04	139.02	-578.29	-1569.38	1737789.84	14557395.99	40°05'01.253"N	80°39'06.757"W	1672.54	249.772	3.41	0.46	-6.53
6094.00	34.760	197.990	5727.49	178.30	-623.96	-1587.17	1737772.06	14557350.34	40°05'00.803"N	80°39'06.988"W	1705.41	248.539	5.63	3.79	-7.66
6185.00	38.390	188.770	5800.61	225.76	-676.62	-1599.50	1737759.73	14557297.71	40°05'00.283"N	80°39'07.150"W	1736.73	247.071	7.23	3.99	-10.13
6275.00	43.540	180.720	5868.59	281.09	-735.31	-1604.16	1737755.08	14557239.03	40°04'59.703"N	80°39'07.212"W	1764.66	245.374	8.18	5.72	-8.94
6365.00	48.660	175.130	5931.01	344.14	-800.04	-1601.68	1737757.56	14557174.33	40°04'59.063"N	80°39'07.184"W	1790.37	243.458	7.23	5.69	-6.21
6455.00	55.570	171.170	5986.25	414.32	-870.49	-1593.10	1737766.14	14557103.91	40°04'58.367"N	80°39'07.077"W	1815.41	241.347	8.42	7.68	-4.40
6545.00	62.420	167.190	6032.60	491.15	-946.17	-1578.54	1737780.69	14557028.26	40°04'57.618"N	80°39'06.893"W	1840.38	239.062	8.50	7.61	-4.42
6636.00	68.980	163.040	6070.04	574.02	-1026.24	-1557.17	1737802.05	14556948.22	40°04'56.826"N	80°39'06.623"W	1864.93	236.614	8.32	7.21	-4.56
6681.00	72.690	161.750	6094.81	616.48	-1066.74	-1544.32	1737814.90	14556907.73	40°04'56.426"N	80°39'06.459"W	1876.93	235.365	8.68	8.24	-2.87
6726.00	76.080	160.380	6096.92	659.73	-1107.73	-1530.25	1737828.96	14556866.76	40°04'56.020"N	80°39'06.280"W	1889.11	234.100	8.08	7.53	-3.04
6771.00	79.950	158.960	6106.27	703.58	-1148.99	-1514.96	1737844.25	14556825.51	40°04'55.612"N	80°39'06.086"W	1901.39	232.822	9.14	8.60	-3.16
6817.00	83.960	157.120	6112.70	748.83	-1191.22	-1497.92	1737861.27	14556783.30	40°04'55.194"N	80°39'05.869"W	1913.84	231.507	9.57	8.72	-4.00
6907.00	88.370	159.010	6118.72	838.03	-1274.50	-1464.39	1737894.79	14556700.06	40°04'54.369"N	80°39'05.441"W	1941.34	228.966	5.33	4.90	2.10
6997.00	87.810	154.700	6121.72	927.15	-1357.19	-1429.05	1737930.12	14556617.40	40°04'53.551"N	80°39'04.991"W	1970.82	226.477	4.83	-0.62	-4.79
7088.00	87.880	153.650	6125.14	1016.60	-1439.04	-1389.43	1737969.72	14556535.58	40°04'52.740"N	80°39'04.485"W	2000.34	223.995	1.16	0.08	-1.15
7178.00	87.570	156.340	6128.72	1105.27	-1520.54	-1351.42	1738007.72	14556454.12	40°04'51.934"N	80°39'04.001"W	2034.30	221.630	3.01	-0.34	2.99
7268.00	87.480	154.350	6132.60	1194.03	-1602.25	-1313.92	1738045.21	14556372.43	40°04'51.125"N	80°39'03.522"W	2072.10	219.353	2.21	-0.10	-2.21
7359.00	87.570	154.750	6136.53	1283.57	-1684.34	-1274.85	1738084.26	14556290.37	40°04'50.312"N	80°39'03.024"W	2112.40	217.121	0.45	0.10	0.44
7449.00	88.090	155.710	6139.94	1372.32	-1766.00	-1237.17	1738121.93	14556208.75	40°04'49.503"N	80°39'02.543"W	2156.24	215.013	1.21	0.58	1.07
7540.00	88.400	156.190	6142.73	1462.25	-1849.06	-1200.10	1738158.98	14556125.72	40°04'48.681"N	80°39'02.070"W	2204.38	212.985	0.63	0.34	0.53



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Timmy Minch OHI 6H AWP Proj:

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 6H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 6H
Ohio County, WV	Wellbore	Timmy Minch OHI 6H AWB
Ohio		
Timmy Minch OHI Pad		

WELLPATH DATA (218 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]
7630.00	88.280	156.050	6145.34	1551.25	-1931.32	-1163.68	1738195.38	14556043.49	40°04'47.867"N	80°39'01.606"W	2254.81	211.070	0.20	-0.13	-0.16
7721.00	88.920	155.700	6147.56	1641.18	-2014.35	-1126.50	1738232.55	14555960.49	40°04'47.045"N	80°39'01.132"W	2307.95	209.216	0.80	0.70	-0.38
7811.00	88.920	154.470	6149.26	1729.94	-2095.96	-1088.59	1738270.45	14555878.92	40°04'46.237"N	80°39'00.648"W	2361.80	207.446	1.37	0.00	-1.37
7901.00	88.890	156.050	6150.98	1818.74	-2177.68	-1050.94	1738308.09	14555797.23	40°04'45.428"N	80°39'00.168"W	2418.01	205.762	1.76	-0.03	1.76
7992.00	89.260	156.480	6152.45	1908.78	-2260.97	-1014.31	1738344.70	14555713.97	40°04'44.603"N	80°38'59.701"W	2478.07	204.162	0.62	0.41	0.47
8083.00	89.290	157.390	6153.60	1998.97	-2344.69	-978.66	1738380.33	14555630.28	40°04'43.775"N	80°38'59.247"W	2540.74	202.655	1.00	0.03	1.00
8173.00	89.420	157.790	6154.61	2088.31	-2427.89	-944.35	1738414.63	14555547.12	40°04'42.951"N	80°38'58.810"W	2605.08	201.254	0.46	0.14	0.43
8263.00	89.350	156.730	6155.58	2177.57	-2510.88	-909.55	1738449.41	14555464.16	40°04'42.130"N	80°38'58.366"W	2670.54	199.913	1.17	-0.08	-1.17
8354.00	89.380	155.850	6156.58	2267.63	-2594.19	-872.96	1738485.99	14555380.88	40°04'41.305"N	80°38'57.900"W	2737.13	198.598	0.97	0.03	-0.97
8444.00	89.480	156.960	6157.48	2356.71	-2676.66	-836.94	1738522.00	14555298.44	40°04'40.489"N	80°38'57.440"W	2804.46	197.363	1.24	0.11	1.23
8534.00	89.450	158.680	6158.32	2446.09	-2760.00	-802.97	1738555.96	14555215.14	40°04'39.664"N	80°38'57.008"W	2874.43	196.221	1.91	-0.03	1.91
8625.00	89.380	157.490	6159.25	2536.50	-2844.42	-769.01	1738589.91	14555130.75	40°04'38.828"N	80°38'56.575"W	2946.54	195.129	1.31	-0.08	-1.31
8715.00	89.420	155.660	6160.19	2625.63	-2926.99	-733.23	1738625.67	14555048.21	40°04'38.011"N	80°38'56.119"W	3017.43	194.064	2.03	0.04	-2.03
8805.00	89.480	155.530	6161.06	2714.53	-3008.94	-696.05	1738662.84	14554966.29	40°04'37.200"N	80°38'55.645"W	3088.40	193.025	0.16	0.07	-0.14
8896.00	89.380	155.230	6161.96	2804.36	-3091.67	-658.14	1738700.73	14554883.60	40°04'36.381"N	80°38'55.161"W	3160.94	192.017	0.35	-0.11	-0.33
8986.00	89.450	154.160	6162.88	2893.03	-3173.03	-619.67	1738739.18	14554802.27	40°04'35.575"N	80°38'54.671"W	3232.97	191.050	1.19	0.08	-1.19
9077.00	89.420	152.340	6163.78	2982.26	-3254.28	-578.72	1738780.12	14554721.05	40°04'34.771"N	80°38'54.146"W	3305.34	190.084	2.00	-0.03	-2.00
9167.00	89.380	150.770	6164.72	3069.95	-3333.41	-535.85	1738822.97	14554641.95	40°04'33.987"N	80°38'53.601"W	3376.20	189.132	1.74	-0.04	-1.74
9258.00	89.170	153.360	6165.87	3158.79	-3413.79	-493.23	1738865.58	14554561.60	40°04'33.191"N	80°38'53.056"W	3449.24	188.221	2.86	-0.23	2.85
9348.00	89.350	154.290	6167.03	3247.21	-3494.55	-453.53	1738905.26	14554480.87	40°04'32.391"N	80°38'52.550"W	3523.86	187.395	1.05	0.20	1.03
9438.00	89.420	155.590	6168.00	3335.95	-3576.08	-415.41	1738943.36	14554399.38	40°04'31.584"N	80°38'52.064"W	3600.12	186.626	1.45	0.08	1.44
9529.00	89.290	156.910	6168.92	3425.99	-3659.36	-378.77	1738979.99	14554316.13	40°04'30.760"N	80°38'51.596"W	3678.91	185.909	1.45	0.00	1.45
9619.00	89.350	159.070	6169.89	3515.39	-3742.79	-345.04	1739013.71	14554232.73	40°04'29.934"N	80°38'51.167"W	3758.66	185.267	2.40	-0.08	2.40
9710.00	89.450	161.150	6170.84	3606.11	-3828.36	-314.08	1739044.65	14554147.20	40°04'29.087"N	80°38'50.773"W	3841.22	184.690	2.29	0.11	2.29
9800.00	89.480	160.630	6171.68	3695.92	-3913.39	-284.62	1739074.10	14554062.19	40°04'28.246"N	80°38'50.398"W	3923.73	184.160	0.58	0.03	-0.58
9891.00	89.480	157.730	6172.51	3786.51	-3998.44	-252.28	1739106.43	14553977.18	40°04'27.404"N	80°38'49.987"W	4006.39	183.610	3.19	0.00	-3.19
9981.00	89.450	156.280	6173.35	3875.73	-4081.28	-217.13	1739141.57	14553894.37	40°04'26.584"N	80°38'49.539"W	4087.05	183.045	1.61	-0.03	-1.61
10071.00	89.260	155.280	6174.36	3964.67	-4163.35	-180.21	1739178.48	14553812.33	40°04'25.771"N	80°38'49.068"W	4167.25	182.478	1.13	-0.21	-1.11
10162.00	89.320	153.860	6175.49	4054.29	-4245.53	-141.13	1739217.53	14553730.19	40°04'24.958"N	80°38'48.570"W	4247.87	181.904	1.56	0.07	-1.56
10252.00	89.380	152.610	6176.51	4142.53	-4325.88	-100.61	1739258.04	14553649.87	40°04'24.162"N	80°38'48.052"W	4327.05	181.332	1.39	0.07	-1.39

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Timmy Minch OHI 6H AWP Proj:

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Ohio County, WV	Well	Timmy Minch OHI 6H
Field	Ohio	Wellbore	Timmy Minch OHI 6H AWB
Facility	Timmy Minch OHI Pad		

WELLPATH DATA (218 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]
10343.00	89.200	153.360	6177.64	4231.68	-4406.94	-59.28	1739299.36	14553568.84	40°04'23.359"N	80°38'47.525"W	4407.34	180.771	0.85	-0.20	0.82
10433.00	89.230	155.670	6178.87	4320.29	-4488.17	-20.56	1739338.06	14553487.64	40°04'22.555"N	80°38'47.031"W	4488.22	180.262	2.57	0.03	2.57
10524.00	89.290	155.450	6180.05	4410.17	-4571.01	17.09	1739375.69	14553404.83	40°04'21.735"N	80°38'46.551"W	4571.04	179.786	0.25	0.07	-0.24
10614.00	89.230	153.040	6181.21	4498.71	-4652.06	56.19	1739414.78	14553323.82	40°04'20.933"N	80°38'46.052"W	4652.40	179.308	2.68	-0.07	-2.68
10704.00	89.260	156.290	6182.39	4587.36	-4733.38	94.69	1739453.27	14553242.53	40°04'20.127"N	80°38'45.561"W	4734.33	178.854	3.61	0.03	3.61
10795.00	89.290	162.370	6183.55	4677.93	-4818.48	126.80	1739485.36	14553157.46	40°04'19.285"N	80°38'45.152"W	4820.15	178.493	6.68	0.03	6.68
10886.00	89.320	161.840	6184.65	4768.84	-4905.07	154.76	1739513.31	14553070.91	40°04'18.428"N	80°38'44.797"W	4907.51	178.193	0.58	0.03	-0.58
10975.00	89.350	161.880	6185.68	4857.74	-4989.64	182.46	1739541.11	14552986.37	40°04'17.592"N	80°38'44.445"W	4992.97	177.906	0.06	0.03	0.04
11066.00	89.020	160.800	6186.98	4948.58	-5075.85	211.58	1739570.11	14552900.20	40°04'16.739"N	80°38'44.075"W	5080.25	177.613	1.24	-0.36	-1.19
11156.00	88.890	159.850	6188.62	5038.32	-5160.58	241.87	1739600.39	14552815.50	40°04'15.900"N	80°38'43.690"W	5166.24	177.317	1.07	-0.14	-1.06
11246.00	88.920	158.240	6190.34	5127.89	-5244.61	274.05	1739632.56	14552731.50	40°04'15.068"N	80°38'43.280"W	5251.76	177.009	1.79	0.03	-1.79
11337.00	88.950	158.100	6192.03	5218.31	-5329.07	307.89	1739666.38	14552647.07	40°04'14.232"N	80°38'42.849"W	5337.95	176.693	0.16	0.03	-0.15
11427.00	88.890	154.380	6193.73	5307.34	-5411.41	344.13	1739702.61	14552564.76	40°04'13.417"N	80°38'42.387"W	5422.34	176.361	4.13	-0.07	-4.13
11518.00	88.950	153.580	6195.44	5396.78	-5493.17	384.05	1739742.51	14552483.04	40°04'12.608"N	80°38'41.878"W	5506.58	176.001	0.88	0.07	-0.88
11608.00	88.890	153.740	6197.14	5485.15	-5573.81	423.97	1739782.42	14552402.42	40°04'11.809"N	80°38'41.369"W	5589.91	175.650	0.19	-0.07	0.18
11699.00	88.950	154.820	6198.85	5574.68	-5655.78	463.46	1739821.89	14552320.49	40°04'10.998"N	80°38'40.865"W	5674.74	175.315	1.19	0.07	1.19
11789.00	88.950	153.670	6200.50	5663.21	-5736.82	502.56	1739860.97	14552239.48	40°04'10.195"N	80°38'40.366"W	5758.79	174.994	1.28	0.00	-1.28
11880.00	88.920	152.120	6202.20	5752.32	-5817.81	544.01	1739902.41	14552158.52	40°04'09.393"N	80°38'39.837"W	5843.19	174.658	1.70	-0.03	-1.70
11970.00	88.890	152.280	6203.92	5840.22	-5897.47	585.98	1739944.36	14552078.95	40°04'08.605"N	80°38'39.301"W	5926.45	174.326	0.18	-0.03	0.18
12060.00	88.920	153.410	6205.64	5928.34	-5977.47	627.04	1739985.41	14551998.92	40°04'07.812"N	80°38'38.777"W	6010.27	174.012	1.26	0.03	1.26
12151.00	88.830	156.300	6207.42	6018.02	-6059.83	665.70	1740024.05	14551916.60	40°04'06.997"N	80°38'38.284"W	6096.28	173.731	3.18	-0.10	3.18
12242.00	88.950	158.560	6209.19	6108.29	-6143.84	700.62	1740058.96	14551832.62	40°04'06.165"N	80°38'37.840"W	6183.65	173.494	2.49	0.13	2.48
12332.00	88.890	158.090	6210.88	6197.75	-6227.46	733.85	1740092.18	14551749.03	40°04'05.338"N	80°38'37.416"W	6270.55	173.279	0.53	-0.07	-0.52
12423.00	89.110	157.480	6212.47	6288.10	-6311.69	768.25	1740126.56	14551664.84	40°04'04.504"N	80°38'36.978"W	6358.27	173.060	0.71	0.24	-0.67
12513.00	89.110	157.020	6213.87	6377.36	-6394.68	803.05	1740161.35	14551581.88	40°04'03.682"N	80°38'36.535"W	6444.90	172.842	0.51	0.00	-0.51
12603.00	89.170	157.240	6215.22	6466.60	-6477.59	838.03	1740196.31	14551499.00	40°04'02.862"N	80°38'36.089"W	6531.58	172.628	0.25	0.07	0.24
12694.00	89.170	157.260	6216.54	6556.86	-6561.50	873.21	1740231.48	14551415.12	40°04'02.031"N	80°38'35.641"W	6619.35	172.420	0.02	0.00	0.02
12784.00	89.140	157.570	6217.86	6646.15	-6644.59	907.77	1740266.03	14551332.06	40°04'01.209"N	80°38'35.201"W	6706.32	172.220	0.35	-0.03	0.34
12874.00	89.110	157.860	6219.24	6735.50	-6727.86	941.90	1740300.14	14551248.83	40°04'00.384"N	80°38'34.766"W	6793.47	172.030	0.32	-0.03	0.32
12965.00	89.140	157.810	6220.63	6825.87	-6812.13	976.23	1740334.46	14551164.59	40°03'59.550"N	80°38'34.329"W	6881.72	171.845	0.06	0.03	-0.05

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Ohio County, WV	Well	Timmy Minch OHI 6H
Field	Ohio	Wellbore	Timmy Minch OHI 6H AWB
Facility	Timmy Minch OHI Pad		

WELLPATH DATA (218 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]
13055.00	89.110	157.580	6222.00	6915.22	-6895.38	1010.38	1740368.60	14551081.37	40°03'58.726"N	80°38'33.894"W	6969.01	171.664	0.26	-0.03	-0.26
13145.00	89.080	157.550	6223.42	7004.54	-6978.56	1044.72	1740402.93	14550998.22	40°03'57.903"N	80°38'33.457"W	7056.33	171.486	0.05	-0.03	-0.03
13236.00	89.170	156.560	6224.81	7094.75	-7062.35	1080.20	1740438.39	14550914.47	40°03'57.073"N	80°38'33.005"W	7144.48	171.304	1.09	0.10	-1.09
13326.00	89.200	156.830	6226.09	7183.90	-7145.00	1115.80	1740473.98	14550831.85	40°03'56.255"N	80°38'32.551"W	7231.60	171.124	0.30	0.03	0.30
13416.00	89.320	155.200	6227.26	7272.90	-7227.22	1152.38	1740510.54	14550749.67	40°03'55.441"N	80°38'32.085"W	7318.51	170.940	1.82	0.13	-1.81
13507.00	89.290	155.430	6228.36	7362.71	-7309.89	1190.38	1740548.53	14550667.02	40°03'54.623"N	80°38'31.600"W	7406.18	170.751	0.25	-0.03	0.25
13597.00	89.170	155.370	6229.57	7451.56	-7391.72	1227.84	1740585.98	14550585.23	40°03'53.813"N	80°38'31.123"W	7493.00	170.569	0.15	-0.13	-0.07
13688.00	89.200	154.850	6230.86	7541.32	-7474.26	1266.14	1740624.26	14550502.72	40°03'52.995"N	80°38'30.634"W	7580.74	170.385	0.57	0.03	-0.57
13778.00	89.140	154.240	6232.17	7629.95	-7555.51	1304.82	1740662.92	14550421.50	40°03'52.191"N	80°38'30.141"W	7667.35	170.202	0.68	-0.07	-0.68
13868.00	89.140	154.560	6233.52	7718.53	-7636.67	1343.70	1740701.79	14550340.37	40°03'51.387"N	80°38'29.645"W	7753.98	170.021	0.36	0.00	0.36
13958.00	89.200	154.900	6234.82	7807.21	-7718.05	1382.12	1740740.19	14550259.03	40°03'50.582"N	80°38'29.155"W	7840.82	169.847	0.38	0.07	0.38
14048.00	89.110	155.570	6236.15	7896.01	-7799.76	1419.81	1740777.87	14550177.35	40°03'49.773"N	80°38'28.675"W	7927.93	169.683	0.75	-0.10	0.74
14139.00	89.200	156.540	6237.49	7986.01	-7882.92	1456.74	1740814.78	14550094.22	40°03'48.949"N	80°38'28.204"W	8016.39	169.530	1.07	0.10	1.07
14229.00	89.230	158.750	6238.72	8075.34	-7966.14	1490.97	1740849.00	14550011.03	40°03'48.126"N	80°38'27.768"W	8104.47	169.399	2.46	0.03	2.46
14320.00	89.170	159.870	6240.00	8165.95	-8051.26	1523.11	1740881.13	14549925.94	40°03'47.283"N	80°38'27.359"W	8194.07	169.288	1.23	-0.07	1.23
14410.00	89.230	158.740	6241.25	8255.57	-8135.45	1554.92	1740912.92	14549841.79	40°03'46.450"N	80°38'26.955"W	8282.71	169.180	1.26	0.07	-1.26
14501.00	89.170	156.960	6242.52	8345.93	-8219.72	1589.22	1740947.21	14549757.55	40°03'45.616"N	80°38'26.518"W	8371.94	169.057	1.96	-0.07	-1.96
14591.00	89.050	156.120	6243.92	8435.05	-8302.27	1625.05	1740983.02	14549675.03	40°03'44.799"N	80°38'26.061"W	8459.81	168.925	0.94	-0.13	-0.93
14681.00	89.230	155.480	6245.27	8523.99	-8384.35	1661.93	1741019.90	14549592.98	40°03'43.986"N	80°38'25.591"W	8547.48	168.788	0.74	0.20	-0.71
14772.00	89.230	154.850	6246.49	8613.77	-8466.93	1700.15	1741058.10	14549510.44	40°03'43.169"N	80°38'25.104"W	8635.93	168.646	0.69	0.00	-0.69
14862.00	89.200	155.540	6247.73	8702.56	-8548.61	1737.91	1741095.84	14549428.78	40°03'42.360"N	80°38'24.623"W	8723.48	168.509	0.77	-0.03	0.77
14953.00	89.420	155.610	6248.82	8792.45	-8631.46	1775.53	1741133.45	14549345.97	40°03'41.540"N	80°38'24.143"W	8812.19	168.376	0.25	0.24	0.08
15043.00	89.480	154.940	6249.69	8881.27	-8713.21	1813.17	1741171.08	14549264.25	40°03'40.730"N	80°38'23.663"W	8899.87	168.245	0.75	0.07	-0.74
15134.00	89.380	154.120	6250.59	8970.88	-8795.36	1852.30	1741210.19	14549182.13	40°03'39.917"N	80°38'23.164"W	8988.29	168.107	0.91	-0.11	-0.90
15224.00	89.660	156.790	6251.35	9059.74	-8877.22	1889.69	1741247.56	14549100.31	40°03'39.106"N	80°38'22.688"W	9076.12	167.983	2.98	0.31	2.97
15314.00	89.690	157.000	6251.86	9148.93	-8960.00	1925.00	1741282.86	14549017.56	40°03'38.287"N	80°38'22.238"W	9164.45	167.875	0.24	0.03	0.23
15405.00	89.720	157.330	6252.33	9239.18	-9043.86	1960.32	1741318.16	14548933.73	40°03'37.457"N	80°38'21.788"W	9253.88	167.770	0.36	0.03	0.36
15495.00	89.690	157.340	6252.79	9328.47	-9126.91	1995.00	1741352.83	14548850.71	40°03'36.635"N	80°38'21.346"W	9342.41	167.670	0.04	-0.03	0.01
15586.00	89.660	156.580	6253.31	9418.67	-9210.65	2030.61	1741388.43	14548767.01	40°03'35.806"N	80°38'20.893"W	9431.83	167.567	0.84	-0.03	-0.84
15675.00	89.600	156.340	6253.88	9506.79	-9292.24	2066.16	1741423.96	14548685.45	40°03'34.998"N	80°38'20.440"W	9519.18	167.464	0.28	-0.07	-0.27

Actual Wellpath Report

Timmy Minch OHI 6H AWP Proj:

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 6H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 6H
Area	Wellbore	Timmy Minch OHI 6H AWB
Field		
Facility		

WELLPATH DATA (218 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]
15766.00	89.630	156.850	6254.49	9596.91	-9375.75	2102.30	1741460.09	14548601.97	40°03'34.171"N	80°38'19.979"W	9608.56	167.362	0.56	0.03	0.56
15856.00	89.630	157.860	6255.07	9686.20	-9458.81	2136.96	1741494.73	14548518.94	40°03'33.349"N	80°38'19.538"W	9697.20	167.269	1.12	0.00	1.12
15947.00	89.690	157.420	6255.61	9776.54	-9542.97	2171.57	1741529.34	14548434.82	40°03'32.516"N	80°38'19.097"W	9786.93	167.180	0.49	0.07	-0.48
16037.00	89.630	157.380	6256.15	9865.84	-9626.06	2206.16	1741563.91	14548351.76	40°03'31.694"N	80°38'18.657"W	9875.63	167.092	0.08	-0.07	-0.04
16127.00	89.690	157.830	6256.68	9955.18	-9709.27	2240.45	1741598.18	14548268.59	40°03'30.870"N	80°38'18.220"W	9964.41	167.006	0.50	0.07	0.50
16217.00	89.690	157.180	6257.17	10044.50	-9792.42	2274.88	1741632.60	14548185.47	40°03'30.047"N	80°38'17.781"W	10053.18	166.922	0.72	0.00	-0.72
16308.00	89.660	157.170	6257.68	10134.75	-9876.29	2310.18	1741667.89	14548101.63	40°03'29.217"N	80°38'17.332"W	10142.88	166.835	0.03	-0.03	-0.01
16398.00	89.630	157.200	6258.24	10224.01	-9959.25	2345.08	1741702.77	14548018.70	40°03'28.395"N	80°38'16.887"W	10231.62	166.750	0.57	-0.03	0.03
16488.00	89.690	156.690	6258.78	10313.21	-10042.06	2380.32	1741738.00	14547935.93	40°03'27.576"N	80°38'16.438"W	10320.31	166.665	0.57	0.07	-0.57
16579.00	89.600	155.790	6259.34	10403.26	-10125.34	2416.99	1741774.65	14547852.67	40°03'26.751"N	80°38'15.971"W	10409.82	166.574	0.99	-0.10	-0.99
16669.00	89.630	155.440	6259.94	10492.17	-10207.31	2454.14	1741811.80	14547770.74	40°03'25.940"N	80°38'15.498"W	10498.19	166.481	0.39	0.03	-0.39
16760.00	89.720	155.430	6260.46	10582.02	-10290.07	2491.97	1741849.61	14547688.01	40°03'25.120"N	80°38'15.016"W	10587.52	166.387	0.10	0.10	-0.01
16850.00	89.660	154.870	6260.95	10670.81	-10371.74	2529.80	1741887.42	14547606.37	40°03'24.312"N	80°38'14.533"W	10675.80	166.293	0.63	-0.07	-0.62
16940.00	89.630	155.330	6261.51	10759.59	-10453.37	2567.69	1741925.30	14547524.77	40°03'23.503"N	80°38'14.050"W	10764.11	166.200	0.51	-0.03	0.51
17030.00	89.630	155.850	6262.09	10848.49	-10535.32	2604.88	1741962.47	14547442.85	40°03'22.692"N	80°38'13.576"W	10852.58	166.112	0.58	0.00	0.58
17121.00	89.720	156.280	6262.60	10938.50	-10618.50	2641.80	1741999.38	14547359.71	40°03'21.869"N	80°38'13.106"W	10942.19	166.029	0.48	0.10	0.47
17211.00	89.690	155.790	6263.07	11027.51	-10700.74	2678.35	1742035.92	14547277.50	40°03'21.054"N	80°38'12.640"W	11030.84	165.948	0.55	-0.03	-0.54
17302.00	89.630	157.170	6263.61	11117.60	-10784.17	2714.67	1742072.22	14547194.10	40°03'20.228"N	80°38'12.178"W	11120.60	165.871	1.52	-0.07	1.52
17392.00	89.720	158.650	6264.12	11207.00	-10867.56	2748.51	1742106.05	14547110.74	40°03'19.403"N	80°38'11.747"W	11209.74	165.807	1.65	0.10	1.64
17483.00	89.660	159.710	6264.61	11297.60	-10952.62	2780.86	1742138.38	14547025.72	40°03'18.561"N	80°38'11.335"W	11300.13	165.754	1.17	-0.07	1.16
17573.00	89.690	161.940	6265.12	11387.40	-11037.62	2810.41	1742167.93	14546940.75	40°03'17.720"N	80°38'10.960"W	11389.79	165.715	2.48	0.03	2.48
17664.00	89.850	159.510	6265.48	11478.19	-11123.51	2840.45	1742197.95	14546854.90	40°03'16.870"N	80°38'10.578"W	11480.45	165.675	2.68	0.18	-2.67
17755.00	89.690	154.870	6265.85	11568.42	-11207.37	2875.72	1742233.21	14546771.07	40°03'16.040"N	80°38'10.129"W	11570.43	165.609	5.10	-0.18	-5.10
17845.00	89.690	153.830	6266.34	11657.00	-11288.50	2914.68	1742272.15	14546689.97	40°03'15.237"N	80°38'09.632"W	11658.71	165.522	1.16	0.00	-1.16
17935.00	89.690	154.860	6266.82	11745.57	-11369.62	2953.64	1742311.10	14546608.88	40°03'14.433"N	80°38'09.135"W	11747.01	165.437	1.14	0.00	1.14
18026.00	89.600	153.670	6267.39	11835.11	-11451.59	2993.15	1742350.60	14546526.94	40°03'13.622"N	80°38'08.631"W	11836.30	165.352	1.31	-0.10	-1.31
18117.00	89.690	153.200	6267.95	11924.40	-11532.99	3033.85	1742391.27	14546445.58	40°03'12.816"N	80°38'08.112"W	11925.35	165.262	0.53	0.10	-0.52
18207.00	89.690	152.780	6268.44	12012.58	-11613.17	3074.72	1742432.13	14546365.43	40°03'12.022"N	80°38'07.591"W	12013.31	165.171	0.47	0.00	-0.47
18298.00	89.720	152.960	6268.91	12101.70	-11694.15	3116.22	1742473.61	14546284.47	40°03'11.220"N	80°38'07.062"W	12102.23	165.079	0.20	0.03	0.20
18388.00	89.690	153.650	6269.37	12189.97	-11774.56	3156.65	1742514.03	14546204.10	40°03'10.423"N	80°38'06.546"W	12190.35	164.992	0.77	-0.03	0.77

Actual Wellpath Report

Timmy Minch OHI 6H AWP Proj:

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 6H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 6H
Area	Wellbore	Timmy Minch OHI 6H AWB
Field		
Facility		

WELLPATH DATA (218 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]
18478.00	89.630	154.100	6269.90	12278.42	-11855.36	3196.28	1742553.64	14546123.33	40°03'09.623"N	80°38'06.041"W	12278.67	164.911	0.50	-0.07	0.50
18568.00	89.690	154.510	6270.44	12366.98	-11936.46	3235.30	1742592.65	14546042.26	40°03'08.820"N	80°38'05.543"W	12367.14	164.835	0.46	0.07	0.46
18659.00	89.600	153.760	6271.00	12456.48	-12018.34	3275.00	1742632.33	14545960.41	40°03'08.010"N	80°38'05.037"W	12456.57	164.757	0.83	-0.10	-0.82
18749.00	89.660	154.560	6271.58	12545.01	-12099.34	3314.22	1742671.54	14545879.44	40°03'07.208"N	80°38'04.537"W	12545.05	164.681	0.89	0.07	0.89
18839.00	89.780	155.780	6272.02	12633.80	-12181.02	3352.01	1742709.32	14545797.80	40°03'06.399"N	80°38'04.055"W	12633.81	164.614	1.36	0.13	1.36
18930.00	89.630	159.290	6272.49	12724.11	-12265.10	3386.78	1742744.07	14545713.75	40°03'05.567"N	80°38'03.612"W	12724.11	164.563	3.86	-0.16	3.86
19008.00	89.690	160.720	6272.96	12801.86	-12338.40	3413.45	1742770.73	14545640.48	40°03'04.841"N	80°38'03.273"W	12801.86	164.536	1.83	0.08	1.83
19033.00	89.690	160.720	6273.09	12826.81	-12361.99	3421.71	1742778.98	14545616.90	40°03'04.608"N	80°38'03.169"W	12826.81	164.528	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Timmy Minch OHI 6H AWB Ref Wellpath: Timmy Minch OHI 6H AWP Proj:

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]
20in Conductor	26.00	126.00	100.00	26.00	126.00	0.00	0.00	-0.10	-0.03
17.5in Open Hole	126.00	576.00	450.00	126.00	576.00	-0.10	-0.03	-1.62	-0.70
13.375in Casing Surface	26.00	576.00	550.00	26.00	576.00	0.00	0.00	-1.62	-0.70
12.25in Open Hole	576.00	1917.00	1341.00	576.00	1906.97	-1.62	-0.70	-94.23	-82.99
9.625in Casing Intermediate	26.00	1917.00	1891.00	26.00	1906.97	0.00	0.00	-94.23	-82.99
8.75in Open Hole	1917.00	5636.00	3719.00	1906.97	5326.40	-94.23	-82.99	-454.37	-1459.70
8.5in Open Hole	5636.00	19033.00	13397.00	5326.40	6273.09	-454.37	-1459.70	-12361.99	3421.71
5.5in Casing Production	26.00	19033.00	19007.00	26.00	6273.09	0.00	0.00	-12361.99	3421.71

Actual Wellpath Report

Timmy Minch OHI 6H AWP Proj:

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Ohio County, WV	Well	Timmy Minch OHI 6H
Field	Ohio	Wellbore	Timmy Minch OHI 6H AWB
Facility	Timmy Minch OHI Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Timmy Minch OHI 6H LP Rev-3	6108.00	-1216.71	-1481.04	1737878.15	14556757.82	40°04'54.941"N	80°39'05.653"W	point
Timmy Minch OHI 6H BHL Rev-3	6278.86	-12362.47	3419.49	1742776.77	14545616.42	40°03'04.603"N	80°38'03.197"W	point

WELLPATH COMPOSITION - Ref Wellbore: Timmy Minch OHI 6H AWB Ref Wellpath: Timmy Minch OHI 6H AWP Proj:

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	5556.00	OWSG MWD rev2 + HRGM	01_Premier MWD <8-3/4">{(160'-5556')}	Timmy Minch OHI 6H AWB
5556.00	19008.00	BHI AutoTrak Curve (Short)	02_BH AT Curve <8-1/2">{(5556')(5642'-19008')}	Timmy Minch OHI 6H AWB
19008.00	19033.00	Blind Drilling (std)	Projection to bit	Timmy Minch OHI 6H AWB

Actual Wellpath Report

Timmy Minch OHI 6H AWP Proj:

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Ohio County, WV	Well	Timmy Minch OHI 6H
Field	Ohio	Wellbore	Timmy Minch OHI 6H AWB
Facility	Timmy Minch OHI Pad		

COMMENTS

Wellpath general comments

API: 47-069-00268-0000

BH Job #: 109318243

Rig: SDC 42

Duration: 09/29/2018 - 10/04/2018

**Timmy Minch OHI 6H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1/4/2019	18,988	18,894	36
2	1/10/2019	18,861	18,754	42
3	2/11/2019	18,721	18,614	42
4	2/12/2019	18,581	18,474	42
5	2/12/2019	18,441	18,334	42
6	2/13/2019	18,301	18,194	42
7	2/13/2019	18,161	18,054	42
8	2/13/2019	18,021	17,914	42
9	2/14/2019	17,881	17,774	42
10	2/14/2019	17,741	17,634	42
11	2/15/2019	17,601	17,494	42
12	2/15/2019	17,461	17,354	42
13	2/16/2019	17,321	17,214	42
14	2/16/2019	17,181	17,109	30
15	2/16/2019	17,041	16,934	42
16	2/16/2019	16,901	16,794	42
17	2/17/2019	16,761	16,654	42
18	2/17/2019	16,621	16,514	42
19	2/17/2019	16,481	16,374	42
20	2/17/2019	16,341	16,234	42
21	2/18/2019	16,201	16,094	42
22	2/18/2019	16,061	15,954	42
23	2/18/2019	15,921	15,814	42
24	2/18/2019	15,781	15,674	42
25	2/19/2019	15,641	15,534	42
26	2/19/2019	15,501	15,394	42
27	2/19/2019	15,361	15,254	42
28	2/19/2019	15,221	15,114	42
29	2/20/2019	15,081	14,974	42
30	2/20/2019	14,941	14,834	42
31	2/20/2019	14,801	14,694	42
32	2/21/2019	14,661	14,554	42
33	2/21/2019	14,521	14,414	42
34	2/21/2019	14,381	14,274	42
35	2/22/2019	14,241	14,134	42
36	2/22/2019	14,101	13,994	42
37	2/22/2019	13,961	13,854	42
38	2/22/2019	13,821	13,714	42
39	2/22/2019	13,681	13,574	42
40	2/22/2019	13,541	13,434	42
41	2/23/2019	13,401	13,294	42
42	2/23/2019	13,261	13,154	42
43	2/23/2019	13,121	13,014	42

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**Timmy Minch OHI 6H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	2/23/2019	12,981	12,874	42
45	2/23/2019	12,841	12,734	42
46	2/24/2019	12,701	12,594	42
47	2/25/2019	12,561	12,454	42
48	2/25/2019	12,421	12,314	42
49	2/26/2019	12,281	12,174	42
50	2/26/2019	12,141	12,034	42
51	2/26/2019	12,001	11,894	42
52	2/27/2019	11,861	11,754	42
53	2/27/2019	11,721	11,614	36
54	2/28/2019	11,581	11,474	42
55	2/28/2019	11,441	11,334	42
56	2/28/2019	11,301	11,194	42
57	2/28/2019	11,161	11,054	42
58	3/1/2019	11,021	10,914	42
59	3/2/2019	10,881	10,774	42
60	3/2/2019	10,741	10,634	42
61	3/2/2019	10,601	10,494	42
62	3/2/2019	10,461	10,354	42
63	3/2/2019	10,321	10,214	42
64	3/3/2019	10,181	10,074	42
65	3/3/2019	10,041	9,934	42
66	3/3/2019	9,901	9,794	42
67	3/3/2019	9,761	9,654	42
68	3/3/2019	9,621	9,514	42
69	3/4/2019	9,481	9,374	42
70	3/5/2019	9,341	9,234	42
71	3/5/2019	9,201	9,094	42
72	3/5/2019	9,061	8,954	42
73	3/6/2019	8,921	8,814	42
74	3/7/2019	8,781	8,674	42
75	3/7/2019	8,641	8,534	42
76	3/8/2019	8,501	8,394	42
77	3/8/2019	8,361	8,254	42
78	3/8/2019	8,221	8,114	42
79	3/9/2019	8,081	7,974	42
80	3/9/2019	7,941	7,834	42
81	3/9/2019	7,781	7,694	42
82	3/10/2019	7,661	7,554	42
83	3/10/2019	7,521	7,414	42
84	3/10/2019	7,381	7,274	42
85	3/11/2019	7,260	7,134	42
86	3/11/2019	7,101	6,994	42

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Timmy Minch OHI 6H
ATTACHMENT 1
PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
87	3/11/2019	6,961	6,854	42
88	3/12/2019	6,821	6,714	42

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Timmy Minch OHI 6H

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ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bleed	WV Department of Environmental Protection	Permit No.
1	1/10/2019	61	7,534	8,500	3,670	278,696	7,321		0
2	1/13/2019	99.3	8,253	6,428	3,554	234,297	5,224		0
3	2/12/2019	68.3	7,901	5,368	3,665	320,380	11,773		0
4	2/12/2019	84	7,865	6,245	4,280	281,100	6,800		0
5	2/13/2019	80	8,012	4,823	4,220	279,000	8,136		0
6	2/13/2019	85.1	7,976	5,137	4,355	271,960	6,769		0
7	2/13/2019	85.6	7,706	4,983	4,361	280,126	7,033		0
8	2/14/2019	88.8	7,723	4,234	4,562	280,540	6,904		0
9	2/14/2019	89.6	8,062	6,516	4,297	280,300	6,472		0
10	2/14/2019	61.2	7,597	3,364	4,258	281,424	13,472		0
11	2/15/2019	87.5	8,051	5,545	4,323	281,230	6,490		0
12	2/15/2019	86.5	7,676	5,161	4,310	281,057	6,560		0
13	2/16/2019	86.3	7,693	5,023	4,321	282,300	6,888		0
14	2/16/2019	85.4	8,199	5,471	4,414	281,124	6,473		0
15	2/16/2019	88.7	7,888	6,300	4,403	280,040	6,557		0
16	2/16/2019	89.4	8,167	5,426	4,445	280,610	6,392		0
17	2/17/2019	92.1	8,067	5,337	4,199	280,605	7,405		0
18	2/17/2019	94.5	8,280	7,074	4,300	280,240	6,472		0
19	2/17/2019	80.1	7,882	5,481	4,518	278,500	7,530		0
20	2/17/2019	84.3	7,909	5,536	4,504	280,720	6,893		0
21	2/18/2019	93.2	8,317	5,393	4,501	295,036	6,074		0
22	2/18/2019	86.9	8,079	5,615	4,362	283,020	5,214		0
23	2/18/2019	85.4	8,105	5,308	4,555	281,790	5,039		0
24	2/19/2019	85.8	7,968	3,757	4,507	281,670	4,853		0
25	2/19/2019	84.5	8,108	5,715	4,468	285,030	4,899		0
26	2/19/2019	91.2	8,193	5,410	4,571	283,340	4,780		0
27	2/19/2019	81.7	7,840	5,531	4,709	281,130	4,846		0
28	2/20/2019	80	7,807	5,564	4,511	280,790	4,949		0
29	2/20/2019	86.5	8,052	5,560	4,837	280,350	4,564		0
30	2/20/2019	84.2	7,822	5,794	4,532	280,030	4,775		0
31	2/20/2019	77.4	7,816	4,216	4,473	279,900	4,837		0
32	2/21/2019	89.1	7,932	5,568	4,489	280,418	4,643		0
33	2/21/2019	90.9	8,301	6,182	4,639	278,290	4,354		0
34	2/21/2019	82.2	7,976	5,671	4,830	280,290	4,430		0
35	2/22/2019	84.4	7,915	5,899	4,804	280,520	4,384		0
36	2/22/2019	94.7	8,328	5,941	4,586	278,850	4,404		0
37	2/22/2019	90.8	8,188	6,088	4,575	279,220	4,388		0
38	2/22/2019	89.9	8,192	6,013	4,789	284,890	4,421		0
39	2/22/2019	88.7	8,062	5,775	4,653	277,966	4,497		0
40	2/23/2019	83.2	7,932	6,013	4,836	286,686	4,560		0
41	2/23/2019	82.6	8,108	5,992	4,655	279,427	4,240		0
42	2/23/2019	96.7	8,235	5,735	5,044	279,750	4,261		0
43	2/23/2019	92	8,253	5,789	4,678	285,350	4,272		0
44	2/23/2019	88.4	8,151	6,146	4,722	276,896	4,198		0
45	2/23/2019	87.3	7,991	5,994	4,522	276,656	4,296		0
46	2/24/2019	95.2	8,295	5,998	4,748	281,850	4,207		0
47	2/25/2019	90	8,191	5,919	4,633	279,170	4,164		0
48	2/25/2019	90.9	8,087	5,718	4,509	280,485	4,264		0
49	2/26/2019	97.8	8,098	5,312	4,534	285,293	4,490		0
50	2/26/2019	93.5	7,856	5,936	4,471	281,532	4,234		0
51	2/26/2019	95.6	8,136	5,919	4,730	278,688	4,461		0
52	2/27/2019	91.6	7,986	5,602	4,571	281,673	4,513		0
53	2/27/2019	92.9	7,933	5,183	4,489	278,753	4,128		0

Timmy Minch OHI 6H

ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	2/28/2019	97.9	8,083	5,688	4,871	286,238	4,182	0
55	2/28/2019	95.7	8,014	5,499	4,519	279,338	4,326	0
56	2/28/2019	98.5	8,137	5,151	4,660	279,733	3,999	0
57	3/1/2019	95.7	7,605	6,428	4,367	279,632	4,284	0
58	3/2/2019	95.4	7,964	5,684	4,501	279,398	4,331	0
59	3/2/2019	95.9	7,780	4,335	4,511	282,122	4,221	0
60	3/2/2019	96.9	7,800	5,306	4,482	281,114	4,255	0
61	3/2/2019	96.8	7,616	5,459	4,525	281,821	4,275	0
62	3/2/2019	99.6	7,853	5,105	4,448	281,113	4,587	0
63	3/3/2019	97.4	7,715	5,599	4,381	280,860	4,339	0
64	3/3/2019	97.8	7,826	5,337	4,457	280,991	4,268	0
65	3/3/2019	98.9	7,667	4,443	4,395	283,467	4,432	0
66	3/3/2019	85.9	7,760	5,110	4,279	283,085	4,190	0
67	3/3/2019	97.5	7,523	5,052	4,537	280,036	4,294	0
68	3/4/2019	96.6	7,750	5,427	4,908	280,407	4,499	0
69	3/4/2019	97.6	7,413	5,130	4,464	280,778	4,349	0
70	3/5/2019	99.3	7,452	5,406	4,170	280,631	4,260	0
71	3/5/2019	99	7,428	5,208	4,577	284,603	4,178	0
72	3/6/2019	99	7,385	5,286	4,642	281,854	4,132	0
73	3/6/2019	99	7,418	5,265	3,873	281,795	4,378	0
74	3/7/2019	96	7,340	5,351	4,235	281,354	4,186	0
75	3/8/2019	98.2	7,744	5,431	4,655	283,611	4,127	0
76	3/8/2019	97.7	7,453	5,491	4,565	282,359	4,144	0
77	3/8/2019	96.3	7,782	5,471	4,439	280,380	3,904	0
78	3/9/2019	93.1	7,610	5,331	4,297	280,274	3,898	0
79	3/9/2019	97.5	7,330	5,649	4,335	280,034	4,101	0
80	3/9/2019	95.9	7,669	5,383	4,576	279,374	3,940	0
81	3/10/2019	97.1	7,943	5,312	4,608	281,404	3,893	0
82	3/10/2019	99.5	7,125	4,271	4,271	280,650	4,032	0
83	3/10/2019	98.3	8,247	5,677	4,378	282,742	3,854	0
84	3/11/2019	96.4	7,488	5,483	4,065	282,463	3,903	0
85	3/11/2019	98.5	7,352	5,929	4,555	281,558	4,070	0
86	3/11/2019	97.4	7,394	6,138	4,308	281,474	3,951	0
87	3/11/2019	91.1	7,308	6,144	4,238	282,174	3,873	0
88	3/12/2019	94.2	7,887	6,425	4,333	286,570	3,814	0

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