



# Actual Wellpath Report

SHR-40A-HS AWP Proj: 16202'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Tyler County, WV	Well	SHR-40A-HS
Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

## REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Gotfbral
Scale	0.999947	Report Generated	22/Jun/2015 at 11:51
Convergence at slot	0.85° West	Database/Source file	WANorthEast/SHR-40A-HS_AWB.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.26	0.30	1622922.89	336042.72	39°24'53.803"N	80°50'04.866"W
Facility Reference Pt			1622922.59	336042.46	39°24'53.800"N	80°50'04.870"W
Field Reference Pt			609601.22	0.00	38°23'48.753"N	84°21'09.765"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Precision 542 (RKB) to Facility Vertical Datum	788.74ft
Horizontal Reference Pt	Slot	Precision 542 (RKB) to Mean Sea Level	788.74ft
Vertical Reference Pt	Precision 542 (RKB)	Precision 542 (RKB) to Mud Line at Slot (Slot A)	19.40ft
MD Reference Pt	Precision 542 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	160.00°



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## WELLPATH DATA (197 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00†	0.000	293.050	0.00	0.00	0.00	0.00	39°24'53.803"N	80°50'04.866"W	0.00	0.000	0.00	0.00	0.00
19.40	0.000	293.050	19.40	0.00	0.00	0.00	39°24'53.803"N	80°50'04.866"W	0.00	0.000	0.00	0.00	0.00
104.00	0.120	293.050	104.00	-0.06	0.03	-0.08	39°24'53.803"N	80°50'04.867"W	0.09	293.050	0.14	0.14	0.00
204.00	0.110	135.920	204.00	-0.04	0.01	-0.11	39°24'53.803"N	80°50'04.868"W	0.11	273.467	0.23	-0.01	-157.13
304.00	0.180	231.510	304.00	0.09	-0.16	-0.17	39°24'53.801"N	80°50'04.868"W	0.23	226.274	0.22	0.07	95.59
404.00	0.350	181.120	404.00	0.43	-0.56	-0.30	39°24'53.797"N	80°50'04.870"W	0.64	207.743	0.27	0.17	-50.39
504.00	0.560	147.900	504.00	1.19	-1.28	-0.04	39°24'53.790"N	80°50'04.867"W	1.28	181.897	0.33	0.21	-33.22
604.00	0.200	142.410	603.99	1.83	-1.83	0.32	39°24'53.785"N	80°50'04.862"W	1.86	169.995	0.36	-0.36	-5.49
704.00	0.630	139.920	703.99	2.52	-2.39	0.78	39°24'53.779"N	80°50'04.856"W	2.52	161.862	0.43	0.43	-2.49
804.00	0.400	163.930	803.99	3.38	-3.15	1.23	39°24'53.772"N	80°50'04.850"W	3.38	158.595	0.31	-0.23	24.01
904.00	0.440	109.520	903.98	3.97	-3.61	1.69	39°24'53.767"N	80°50'04.844"W	3.99	154.893	0.39	0.04	-54.41
1004.00	0.480	120.390	1003.98	4.54	-3.95	2.42	39°24'53.764"N	80°50'04.835"W	4.63	148.567	0.10	0.04	10.87
1104.00	0.050	218.130	1103.98	4.89	-4.20	2.75	39°24'53.762"N	80°50'04.830"W	5.02	146.776	0.49	-0.43	97.74
1204.00	0.220	44.090	1203.98	4.83	-4.10	2.86	39°24'53.763"N	80°50'04.829"W	4.99	145.102	0.27	0.17	-174.04
1304.00	0.160	178.110	1303.98	4.88	-4.10	3.00	39°24'53.763"N	80°50'04.827"W	5.08	143.833	0.35	-0.06	134.02
1404.00	0.140	242.820	1403.98	5.02	-4.29	2.89	39°24'53.761"N	80°50'04.829"W	5.18	146.040	0.16	-0.02	64.71
1504.00	0.210	10.080	1503.98	4.88	-4.17	2.81	39°24'53.762"N	80°50'04.830"W	5.03	145.970	0.32	0.07	127.26
1604.00	0.200	192.420	1603.98	4.87	-4.16	2.81	39°24'53.762"N	80°50'04.830"W	5.02	145.958	0.41	-0.01	-177.66
1704.00	0.280	258.140	1703.98	4.98	-4.38	2.53	39°24'53.760"N	80°50'04.833"W	5.06	149.957	0.27	0.08	65.72
1804.00	0.250	325.800	1803.98	4.74	-4.25	2.17	39°24'53.761"N	80°50'04.838"W	4.77	152.936	0.30	-0.03	67.66
1904.00	0.210	325.990	1903.98	4.35	-3.92	1.95	39°24'53.764"N	80°50'04.841"W	4.37	153.581	0.04	-0.04	0.19
2004.00	0.170	12.140	2003.98	4.04	-3.62	1.87	39°24'53.767"N	80°50'04.842"W	4.08	152.621	0.15	-0.04	46.15
2104.00	0.080	271.340	2103.98	3.89	-3.47	1.84	39°24'53.769"N	80°50'04.842"W	3.93	152.138	0.20	-0.09	-100.80
2204.00	0.080	157.400	2203.98	3.94	-3.54	1.79	39°24'53.768"N	80°50'04.843"W	3.96	153.111	0.13	0.00	-113.94
2304.00	0.360	167.470	2303.97	4.32	-3.91	1.89	39°24'53.764"N	80°50'04.841"W	4.34	154.209	0.28	0.28	10.07



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Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

## WELLPATH DATA (197 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2404.00	0.530	181.950	2403.97	5.06	-4.68	1.94	39°24'53.757"N	80°50'04.841"W	5.06	157.462	0.20	0.17	14.48
2504.00	0.620	192.330	2503.97	5.94	-5.67	1.81	39°24'53.747"N	80°50'04.842"W	5.95	162.294	0.14	0.09	10.38
2604.00	0.480	213.160	2603.96	6.65	-6.55	1.46	39°24'53.738"N	80°50'04.846"W	6.71	167.389	0.24	-0.14	20.83
2704.00	0.370	221.370	2703.96	7.06	-7.14	1.02	39°24'53.732"N	80°50'04.852"W	7.21	171.853	0.13	-0.11	8.21
2804.00	0.320	228.070	2803.96	7.32	-7.57	0.60	39°24'53.728"N	80°50'04.857"W	7.59	175.460	0.06	-0.05	6.70
2904.00	0.480	181.970	2903.96	7.81	-8.17	0.38	39°24'53.722"N	80°50'04.860"W	8.18	177.347	0.35	0.16	-46.10
3002.00	0.110	133.780	3001.95	8.27	-8.65	0.43	39°24'53.717"N	80°50'04.859"W	8.66	177.137	0.42	-0.38	-49.17
3021.00	0.630	77.130	3020.95	8.30	-8.64	0.55	39°24'53.717"N	80°50'04.858"W	8.66	176.373	3.04	2.74	-298.16
3066.00	1.800	73.440	3065.94	8.38	-8.38	1.47	39°24'53.720"N	80°50'04.846"W	8.51	170.077	2.60	2.60	-8.20
3110.00	2.840	73.520	3109.91	8.49	-7.88	3.17	39°24'53.725"N	80°50'04.824"W	8.49	158.049	2.36	2.36	0.18
3154.00	3.930	73.490	3153.83	8.64	-7.14	5.66	39°24'53.733"N	80°50'04.793"W	9.11	141.562	2.48	2.48	-0.07
3198.00	5.360	73.520	3197.68	8.86	-6.13	9.08	39°24'53.743"N	80°50'04.749"W	10.95	124.002	3.25	3.25	0.07
3242.00	6.980	73.150	3241.43	9.14	-4.77	13.61	39°24'53.758"N	80°50'04.692"W	14.42	109.305	3.68	3.68	-0.84
3287.00	8.700	73.100	3286.00	9.47	-2.99	19.48	39°24'53.776"N	80°50'04.617"W	19.71	98.712	3.82	3.82	-0.11
3375.00	11.040	73.920	3372.70	10.41	1.28	33.95	39°24'53.820"N	80°50'04.434"W	33.98	87.835	2.66	2.66	0.93
3463.00	13.460	72.240	3458.69	11.38	6.74	51.80	39°24'53.877"N	80°50'04.208"W	52.24	82.585	2.78	2.75	-1.91
3552.00	15.340	73.100	3544.89	12.42	13.32	72.93	39°24'53.945"N	80°50'03.940"W	74.14	79.647	2.13	2.11	0.97
3640.00	17.360	75.670	3629.32	14.35	19.96	96.79	39°24'54.014"N	80°50'03.637"W	98.83	78.349	2.44	2.30	2.92
3728.00	19.070	78.320	3712.91	17.73	26.12	123.59	39°24'54.079"N	80°50'03.297"W	126.32	78.068	2.16	1.94	3.01
3817.00	21.630	78.100	3796.35	22.14	32.45	153.89	39°24'54.146"N	80°50'02.912"W	157.27	78.094	2.88	2.88	-0.25
3905.00	24.700	76.670	3877.25	26.57	40.03	187.66	39°24'54.226"N	80°50'02.483"W	191.88	77.958	3.55	3.49	-1.62
3994.00	28.730	75.790	3956.73	30.89	49.57	226.50	39°24'54.326"N	80°50'01.990"W	231.87	77.655	4.55	4.53	-0.99
4082.00	32.990	73.740	4032.26	34.58	61.48	270.03	39°24'54.450"N	80°50'01.438"W	276.94	77.174	4.99	4.84	-2.33
4170.00	33.200	70.560	4105.99	36.38	76.21	315.75	39°24'54.602"N	80°50'00.858"W	324.82	76.431	1.99	0.24	-3.61
4259.00	32.640	67.770	4180.70	35.69	93.40	360.95	39°24'54.779"N	80°50'00.285"W	372.84	75.493	1.82	-0.63	-3.13



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Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

## WELLPATH DATA (197 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
4347.00	30.730	69.190	4255.58	34.45	110.37	403.94	39°24'54.953"N	80°49'59.741"W	418.74	74.718	2.33	-2.17	1.61
4435.00	28.850	72.000	4331.95	34.87	124.92	445.15	39°24'55.102"N	80°49'59.219"W	462.35	74.325	2.66	-2.14	3.19
4524.00	29.410	74.710	4409.70	37.41	137.31	486.65	39°24'55.231"N	80°49'58.692"W	505.65	74.243	1.61	0.63	3.04
4612.00	29.490	74.060	4486.33	40.72	148.96	528.32	39°24'55.352"N	80°49'58.164"W	548.92	74.254	0.37	0.09	-0.74
4700.00	31.490	76.260	4562.16	44.76	160.37	571.48	39°24'55.471"N	80°49'57.616"W	593.56	74.325	2.60	2.27	2.50
4789.00	32.830	75.810	4637.50	49.74	171.81	617.45	39°24'55.591"N	80°49'57.032"W	640.91	74.451	1.53	1.51	-0.51
4877.00	34.320	74.490	4710.82	54.09	184.29	664.49	39°24'55.721"N	80°49'56.436"W	689.57	74.499	1.89	1.69	-1.50
4966.00	35.930	73.990	4783.61	57.88	198.20	713.77	39°24'55.866"N	80°49'55.810"W	740.77	74.481	1.84	1.81	-0.56
5054.00	36.430	73.620	4854.64	61.32	212.69	763.65	39°24'56.017"N	80°49'55.178"W	792.72	74.437	0.62	0.57	-0.42
5142.00	35.980	72.620	4925.65	64.15	227.78	813.39	39°24'56.173"N	80°49'54.547"W	844.68	74.356	0.84	-0.51	-1.14
5231.00	33.690	71.030	4998.69	65.79	243.62	861.69	39°24'56.337"N	80°49'53.934"W	895.47	74.213	2.77	-2.57	-1.79
5319.00	32.480	72.420	5072.43	67.23	258.69	907.30	39°24'56.492"N	80°49'53.356"W	943.46	74.086	1.62	-1.38	1.58
5407.00	30.840	73.710	5147.33	69.69	272.15	951.48	39°24'56.632"N	80°49'52.796"W	989.64	74.038	2.02	-1.86	1.47
5496.00	29.930	75.930	5224.10	73.46	283.95	994.91	39°24'56.755"N	80°49'52.245"W	1034.64	74.071	1.62	-1.02	2.49
5584.00	29.200	78.590	5300.65	78.93	293.53	1037.25	39°24'56.856"N	80°49'51.707"W	1077.99	74.199	1.71	-0.83	3.02
5672.00	29.860	78.460	5377.22	85.36	302.16	1079.76	39°24'56.947"N	80°49'51.167"W	1121.24	74.366	0.75	0.75	-0.15
5761.00	29.750	77.700	5454.45	91.58	311.30	1123.04	39°24'57.044"N	80°49'50.618"W	1165.39	74.507	0.44	-0.12	-0.85
5849.00	29.890	76.390	5530.79	96.94	321.11	1165.69	39°24'57.147"N	80°49'50.076"W	1209.11	74.599	0.76	0.16	-1.49
5937.00	30.800	74.820	5606.74	101.28	332.17	1208.74	39°24'57.262"N	80°49'49.530"W	1253.55	74.634	1.37	1.03	-1.78
6026.00	31.330	74.030	5682.97	104.82	344.50	1252.98	39°24'57.391"N	80°49'48.968"W	1299.48	74.627	0.75	0.60	-0.89
6114.00	31.330	74.960	5758.14	108.40	356.73	1297.07	39°24'57.518"N	80°49'48.409"W	1345.23	74.622	0.55	0.00	1.06
6132.00	31.200	75.210	5773.53	109.23	359.14	1306.10	39°24'57.543"N	80°49'48.294"W	1354.57	74.625	1.02	-0.72	1.39
6215.00	30.360	73.520	5844.84	112.47	370.58	1347.00	39°24'57.662"N	80°49'47.776"W	1397.04	74.618	1.45	-1.01	-2.04
6259.00	31.170	76.580	5882.65	114.46	376.37	1368.74	39°24'57.723"N	80°49'47.500"W	1419.54	74.625	4.00	1.84	6.95
6305.00	32.310	83.910	5921.78	118.78	380.44	1392.55	39°24'57.766"N	80°49'47.197"W	1443.59	74.720	8.74	2.48	15.93



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Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

WELLPATH DATA (197 stations)													
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
6350.00	34.370	91.820	5959.39	126.40	381.32	1417.22	39°24'57.779"N	80°49'46.883"W	1467.62	74.941	10.68	4.58	17.58
6395.00	35.910	97.840	5996.20	137.29	379.11	1443.00	39°24'57.761"N	80°49'46.554"W	1491.97	75.280	8.42	3.42	13.38
6440.00	37.400	103.830	6032.31	151.06	374.04	1469.35	39°24'57.714"N	80°49'46.217"W	1516.21	75.718	8.61	3.31	13.31
6484.00	39.380	108.270	6066.81	167.15	366.47	1495.59	39°24'57.643"N	80°49'45.882"W	1539.83	76.232	7.71	4.50	10.09
6529.00	41.500	112.630	6101.06	186.10	356.26	1522.91	39°24'57.546"N	80°49'45.532"W	1564.03	76.834	7.85	4.71	9.69
6574.00	43.790	117.780	6134.17	207.73	343.26	1550.46	39°24'57.422"N	80°49'45.178"W	1588.01	77.517	9.27	5.09	11.44
6619.00	46.180	122.950	6166.00	232.23	327.16	1577.88	39°24'57.267"N	80°49'44.826"W	1611.44	78.286	9.70	5.31	11.49
6664.00	48.540	128.540	6196.50	259.59	307.81	1604.70	39°24'57.080"N	80°49'44.481"W	1633.96	79.141	10.53	5.24	12.42
6709.00	52.040	133.100	6225.25	289.81	285.17	1630.86	39°24'56.860"N	80°49'44.143"W	1655.61	80.082	11.01	7.78	10.13
6754.00	54.620	136.230	6252.13	322.43	259.80	1656.51	39°24'56.613"N	80°49'43.811"W	1676.76	81.087	8.00	5.73	6.96
6799.00	58.900	139.510	6276.80	357.29	231.88	1681.73	39°24'56.341"N	80°49'43.485"W	1697.64	82.150	11.30	9.51	7.29
6843.00	62.710	142.650	6298.26	393.62	201.99	1705.84	39°24'56.049"N	80°49'43.172"W	1717.75	83.247	10.67	8.66	7.14
6888.00	66.450	145.080	6317.57	432.65	169.17	1729.79	39°24'55.728"N	80°49'42.861"W	1738.04	84.414	9.64	8.31	5.40
6933.00	69.700	147.410	6334.38	473.20	134.46	1752.97	39°24'55.388"N	80°49'42.559"W	1758.12	85.614	8.67	7.22	5.18
6978.00	72.490	149.200	6348.95	514.88	98.24	1775.33	39°24'55.034"N	80°49'42.267"W	1778.04	86.833	7.25	6.20	3.98
7023.00	75.090	150.940	6361.52	557.44	60.80	1796.88	39°24'54.667"N	80°49'41.986"W	1797.91	88.062	6.87	5.78	3.87
7068.00	79.140	154.120	6371.55	600.92	21.89	1817.10	39°24'54.285"N	80°49'41.721"W	1817.23	89.310	11.33	9.00	7.07
7112.00	82.750	156.580	6378.48	644.22	-17.60	1835.21	39°24'53.898"N	80°49'41.483"W	1835.30	90.549	9.89	8.20	5.59
7157.00	87.230	157.670	6382.41	688.98	-58.89	1852.63	39°24'53.492"N	80°49'41.253"W	1853.57	91.821	10.24	9.96	2.42
7202.00	89.050	158.220	6383.87	733.92	-100.57	1869.52	39°24'53.083"N	80°49'41.030"W	1872.22	93.079	4.22	4.04	1.22
7291.00	88.920	157.840	6385.44	822.86	-183.10	1902.81	39°24'52.272"N	80°49'40.590"W	1911.60	95.496	0.45	-0.15	-0.43
7381.00	89.750	159.150	6386.49	912.82	-266.82	1935.80	39°24'51.449"N	80°49'40.154"W	1954.10	97.848	1.72	0.92	1.46
7470.00	89.110	160.950	6387.37	1001.81	-350.48	1966.17	39°24'50.627"N	80°49'39.752"W	1997.16	100.107	2.15	-0.72	2.02
7560.00	88.770	164.310	6389.04	1091.68	-436.34	1993.03	39°24'49.782"N	80°49'39.393"W	2040.23	102.349	3.75	-0.38	3.73
7650.00	88.920	160.490	6390.85	1181.57	-522.10	2020.23	39°24'48.939"N	80°49'39.031"W	2086.60	104.490	4.25	0.17	-4.24



# Actual Wellpath Report

SHR-40A-HS AWP Proj: 16202'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Tyler County, WV	Well	SHR-40A-HS
Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

## WELLPATH DATA (197 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
7739.00	89.320	159.690	6392.22	1270.56	-605.77	2050.53	39°24'48.116"N	80°49'38.629"W	2138.14	106.458	1.00	0.45	-0.90
7829.00	90.180	160.950	6392.61	1360.55	-690.51	2080.84	39°24'47.283"N	80°49'38.227"W	2192.42	108.358	1.69	0.96	1.40
7918.00	90.280	161.340	6392.26	1449.53	-774.73	2109.60	39°24'46.455"N	80°49'37.844"W	2247.36	110.165	0.45	0.11	0.44
8008.00	90.250	162.150	6391.84	1539.49	-860.20	2137.79	39°24'45.615"N	80°49'37.469"W	2304.37	111.919	0.90	-0.03	0.90
8097.00	90.250	161.700	6391.45	1628.44	-944.81	2165.41	39°24'44.783"N	80°49'37.101"W	2362.55	113.573	0.51	0.00	-0.51
8187.00	89.850	160.250	6391.37	1718.42	-1029.89	2194.74	39°24'43.946"N	80°49'36.712"W	2424.37	115.138	1.67	-0.44	-1.61
8277.00	89.940	160.010	6391.54	1808.42	-1114.53	2225.33	39°24'43.114"N	80°49'36.306"W	2488.83	116.603	0.28	0.10	-0.27
8366.00	90.060	160.240	6391.54	1897.42	-1198.23	2255.59	39°24'42.291"N	80°49'35.905"W	2554.10	117.978	0.29	0.13	0.26
8456.00	90.060	159.050	6391.44	1987.42	-1282.61	2286.90	39°24'41.462"N	80°49'35.490"W	2622.02	119.286	1.32	0.00	-1.32
8545.00	90.000	157.880	6391.40	2076.39	-1365.39	2319.57	39°24'40.649"N	80°49'35.058"W	2691.59	120.483	1.32	-0.07	-1.31
8635.00	89.910	157.940	6391.47	2166.33	-1448.79	2353.41	39°24'39.830"N	80°49'34.612"W	2763.61	121.617	0.12	-0.10	0.07
8724.00	90.220	159.890	6391.37	2255.31	-1531.82	2385.43	39°24'39.014"N	80°49'34.188"W	2834.91	122.707	2.22	0.35	2.19
8814.00	90.180	161.780	6391.05	2345.29	-1616.83	2414.97	39°24'38.178"N	80°49'33.796"W	2906.24	123.802	2.10	-0.04	2.10
8903.00	89.970	161.950	6390.94	2434.24	-1701.41	2442.67	39°24'37.346"N	80°49'33.427"W	2976.82	124.859	0.30	-0.24	0.19
8993.00	90.060	161.260	6390.91	2524.21	-1786.81	2471.07	39°24'36.506"N	80°49'33.049"W	3049.41	125.870	0.77	0.10	-0.77
9083.00	90.030	160.610	6390.84	2614.20	-1871.87	2500.47	39°24'35.670"N	80°49'32.659"W	3123.50	126.819	0.72	-0.03	-0.72
9172.00	90.090	160.470	6390.75	2703.19	-1955.79	2530.12	39°24'34.845"N	80°49'32.265"W	3197.91	127.704	0.17	0.07	-0.16
9261.00	90.120	159.690	6390.58	2792.19	-2039.46	2560.44	39°24'34.022"N	80°49'31.863"W	3273.42	128.538	0.88	0.03	-0.88
9351.00	89.940	160.450	6390.54	2882.19	-2124.07	2591.12	39°24'33.191"N	80°49'31.456"W	3350.46	129.343	0.87	-0.20	0.84
9440.00	89.970	162.490	6390.61	2971.16	-2208.45	2619.41	39°24'32.361"N	80°49'31.080"W	3426.16	130.135	2.29	0.03	2.29
9530.00	89.970	160.880	6390.65	3061.11	-2293.89	2647.69	39°24'31.521"N	80°49'30.704"W	3503.17	130.905	1.79	0.00	-1.79
9620.00	90.030	160.870	6390.65	3151.10	-2378.92	2677.17	39°24'30.685"N	80°49'30.312"W	3581.42	131.624	0.07	0.07	-0.01
9709.00	90.280	159.780	6390.41	3240.10	-2462.73	2707.14	39°24'29.861"N	80°49'29.915"W	3659.73	132.293	1.26	0.28	-1.22
9798.00	90.310	159.010	6389.96	3329.09	-2546.03	2738.46	39°24'29.042"N	80°49'29.500"W	3739.17	132.915	0.87	0.03	-0.87
9888.00	90.150	158.840	6389.59	3419.08	-2630.01	2770.82	39°24'28.217"N	80°49'29.072"W	3820.26	133.507	0.26	-0.18	-0.19



# Actual Wellpath Report

SHR-40A-HS AWP Proj: 16202'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Tyler County, WV	Well	SHR-40A-HS
Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

## WELLPATH DATA (197 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
9977.00	90.250	158.290	6389.28	3508.05	-2712.85	2803.35	39°24'27.403"N	80°49'28.642"W	3901.07	134.060	0.63	0.11	-0.62
10067.00	90.370	158.660	6388.80	3598.02	-2796.58	2836.37	39°24'26.581"N	80°49'28.206"W	3983.19	134.595	0.43	0.13	0.41
10156.00	90.030	157.990	6388.49	3686.98	-2879.28	2869.24	39°24'25.768"N	80°49'27.772"W	4064.82	135.100	0.84	-0.38	-0.75
10246.00	90.030	159.610	6388.44	3776.95	-2963.19	2901.78	39°24'24.944"N	80°49'27.341"W	4147.39	135.600	1.80	0.00	1.80
10335.00	90.090	159.800	6388.35	3865.95	-3046.66	2932.65	39°24'24.123"N	80°49'26.933"W	4228.78	136.092	0.22	0.07	0.21
10425.00	90.060	158.570	6388.23	3955.94	-3130.79	2964.63	39°24'23.296"N	80°49'26.509"W	4311.71	136.561	1.37	-0.03	-1.37
10514.00	90.340	158.500	6387.92	4044.91	-3213.61	2997.20	39°24'22.483"N	80°49'26.079"W	4394.37	136.996	0.32	0.31	-0.08
10604.00	90.180	159.210	6387.51	4134.89	-3297.55	3029.67	39°24'21.658"N	80°49'25.650"W	4478.03	137.424	0.81	-0.18	0.79
10694.00	90.120	158.620	6387.27	4224.88	-3381.53	3062.04	39°24'20.833"N	80°49'25.221"W	4561.89	137.838	0.66	-0.07	-0.66
10784.00	89.880	157.300	6387.27	4314.82	-3464.95	3095.82	39°24'20.013"N	80°49'24.776"W	4646.50	138.220	1.49	-0.27	-1.47
10873.00	89.910	157.080	6387.44	4403.71	-3546.99	3130.32	39°24'19.207"N	80°49'24.321"W	4730.75	138.571	0.25	0.03	-0.25
10962.00	89.820	157.310	6387.65	4492.60	-3629.03	3164.81	39°24'18.402"N	80°49'23.866"W	4815.17	138.909	0.28	-0.10	0.26
11052.00	89.750	155.710	6387.98	4582.43	-3711.57	3200.69	39°24'17.591"N	80°49'23.393"W	4901.03	139.227	1.78	-0.08	-1.78
11142.00	89.480	159.930	6388.59	4672.34	-3794.89	3234.65	39°24'16.773"N	80°49'22.945"W	4986.40	139.557	4.70	-0.30	4.69
11231.00	89.480	163.820	6389.40	4761.28	-3879.45	3262.34	39°24'15.941"N	80°49'22.577"W	5068.82	139.939	4.37	0.00	4.37
11320.00	89.480	165.830	6390.20	4849.95	-3965.34	3285.63	39°24'15.096"N	80°49'22.264"W	5149.69	140.355	2.26	0.00	2.26
11410.00	90.030	165.550	6390.59	4939.51	-4052.55	3307.88	39°24'14.237"N	80°49'21.964"W	5231.17	140.777	0.69	0.61	-0.31
11500.00	89.940	163.660	6390.61	5029.21	-4139.31	3331.77	39°24'13.383"N	80°49'21.644"W	5313.62	141.169	2.10	-0.10	-2.10
11590.00	89.780	162.770	6390.83	5119.07	-4225.48	3357.76	39°24'12.535"N	80°49'21.296"W	5397.15	141.528	1.00	-0.18	-0.99
11679.00	89.720	161.320	6391.22	5208.01	-4310.14	3385.19	39°24'11.703"N	80°49'20.931"W	5480.59	141.854	1.63	-0.07	-1.63
11769.00	89.420	157.290	6391.90	5297.98	-4394.31	3416.99	39°24'10.876"N	80°49'20.510"W	5566.49	142.132	4.49	-0.33	-4.48
11858.00	89.380	159.100	6392.83	5386.93	-4476.94	3450.05	39°24'10.064"N	80°49'20.074"W	5652.06	142.381	2.03	-0.04	2.03
11948.00	89.420	160.800	6393.77	5476.92	-4561.47	3480.90	39°24'09.233"N	80°49'19.665"W	5737.92	142.652	1.89	0.04	1.89
12037.00	90.400	161.010	6393.91	5565.91	-4645.58	3510.01	39°24'08.406"N	80°49'19.278"W	5822.51	142.927	1.13	1.10	0.24
12127.00	91.050	159.390	6392.77	5655.90	-4730.25	3540.50	39°24'07.574"N	80°49'18.874"W	5908.50	143.186	1.94	0.72	-1.80



# Actual Wellpath Report

SHR-40A-HS AWP Proj: 16202'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Tyler County, WV	Well	SHR-40A-HS
Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

## WELLPATH DATA (197 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
12217.00	89.570	152.710	6392.29	5745.63	-4812.45	3577.01	39°24'06.767"N	80°49'18.394"W	5996.22	143.377	7.60	-1.64	-7.42
12306.00	89.630	155.050	6392.91	5834.11	-4892.35	3616.19	39°24'05.983"N	80°49'17.880"W	6083.74	143.530	2.63	0.07	2.63
12396.00	89.910	155.990	6393.27	5923.84	-4974.26	3653.48	39°24'05.179"N	80°49'17.389"W	6171.80	143.704	1.09	0.31	1.04
12486.00	89.720	157.430	6393.56	6013.69	-5056.92	3689.06	39°24'04.367"N	80°49'16.920"W	6259.52	143.889	1.61	-0.21	1.60
12575.00	89.420	162.570	6394.23	6102.65	-5140.52	3719.49	39°24'03.545"N	80°49'16.517"W	6345.05	144.112	5.78	-0.34	5.78
12665.00	89.820	164.750	6394.82	6192.46	-5226.88	3744.81	39°24'02.695"N	80°49'16.179"W	6429.92	144.380	2.46	0.44	2.42
12754.00	89.660	165.220	6395.23	6281.12	-5312.84	3767.87	39°24'01.849"N	80°49'15.869"W	6513.30	144.656	0.56	-0.18	0.53
12844.00	90.120	163.750	6395.40	6370.85	-5399.56	3791.94	39°24'00.996"N	80°49'15.546"W	6598.03	144.921	1.71	0.51	-1.63
12933.00	89.910	160.630	6395.38	6459.77	-5484.28	3819.16	39°24'00.162"N	80°49'15.183"W	6683.06	145.147	3.51	-0.24	-3.51
13023.00	89.880	158.260	6395.54	6549.76	-5568.55	3850.76	39°23'59.334"N	80°49'14.765"W	6770.31	145.335	2.63	-0.03	-2.63
13113.00	89.820	156.330	6395.78	6639.65	-5651.57	3885.49	39°23'58.519"N	80°49'14.307"W	6858.37	145.491	2.15	-0.07	-2.14
13203.00	89.910	155.600	6395.99	6729.43	-5733.76	3922.15	39°23'57.712"N	80°49'13.825"W	6946.89	145.626	0.82	0.10	-0.81
13292.00	90.430	156.440	6395.73	6818.21	-5815.08	3958.32	39°23'56.914"N	80°49'13.349"W	7034.45	145.757	1.11	0.58	0.94
13382.00	90.340	156.710	6395.12	6908.05	-5897.66	3994.10	39°23'56.103"N	80°49'12.878"W	7122.87	145.893	0.32	-0.10	0.30
13471.00	90.400	155.430	6394.55	6996.84	-5979.01	4030.20	39°23'55.304"N	80°49'12.403"W	7210.48	146.018	1.44	0.07	-1.44
13561.00	90.250	154.870	6394.04	7086.51	-6060.67	4068.02	39°23'54.502"N	80°49'11.906"W	7299.35	146.130	0.64	-0.17	-0.62
13650.00	90.180	159.120	6393.70	7175.37	-6142.58	4102.79	39°23'53.698"N	80°49'11.447"W	7386.75	146.260	4.78	-0.08	4.78
13740.00	90.090	160.660	6393.49	7265.37	-6227.09	4133.74	39°23'52.867"N	80°49'11.038"W	7474.25	146.423	1.71	-0.10	1.71
13829.00	90.120	162.150	6393.33	7354.34	-6311.44	4162.11	39°23'52.038"N	80°49'10.660"W	7560.25	146.597	1.67	0.03	1.67
13919.00	90.090	163.400	6393.16	7444.23	-6397.40	4188.77	39°23'51.192"N	80°49'10.305"W	7646.73	146.785	1.39	-0.03	1.39
14009.00	90.370	167.090	6392.80	7533.84	-6484.42	4211.68	39°23'50.336"N	80°49'09.997"W	7732.14	146.996	4.11	0.31	4.10
14098.00	90.800	168.420	6391.89	7622.02	-6571.38	4230.56	39°23'49.479"N	80°49'09.740"W	7815.41	147.227	1.57	0.48	1.49
14188.00	91.200	165.770	6390.32	7711.31	-6659.09	4250.65	39°23'48.615"N	80°49'09.468"W	7900.10	147.449	2.98	0.44	-2.94
14278.00	90.580	160.880	6388.92	7801.12	-6745.27	4276.47	39°23'47.767"N	80°49'09.123"W	7986.66	147.626	5.48	-0.69	-5.43
14367.00	90.250	159.470	6388.28	7890.11	-6828.99	4306.65	39°23'46.944"N	80°49'08.723"W	8073.56	147.763	1.63	-0.37	-1.58





# Actual Wellpath Report

SHR-40A-HS AWP Proj: 16202'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY	Slot	Slot A
Area	Tyler County, WV	Well	SHR-40A-HS
Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

WELLPATH DATA (197 stations)													
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
14456.00	90.250	161.380	6387.89	7979.10	-6912.84	4336.47	39°23'46.120"N	80°49'08.327"W	8160.41	147.900	2.15	0.00	2.15
14546.00	90.060	160.770	6387.65	8069.09	-6997.97	4365.66	39°23'45.283"N	80°49'07.939"W	8248.07	148.042	0.71	-0.21	-0.68
14636.00	90.000	161.050	6387.60	8159.08	-7083.02	4395.09	39°23'44.447"N	80°49'07.549"W	8335.83	148.180	0.32	-0.07	0.31
14725.00	90.310	160.110	6387.36	8248.07	-7166.96	4424.68	39°23'43.621"N	80°49'07.156"W	8422.77	148.310	1.11	0.35	-1.06
14815.00	90.180	159.900	6386.97	8338.07	-7251.53	4455.46	39°23'42.790"N	80°49'06.748"W	8510.92	148.433	0.27	-0.14	-0.23
14904.00	90.710	160.630	6386.28	8427.06	-7335.30	4485.51	39°23'41.967"N	80°49'06.350"W	8598.05	148.554	1.01	0.60	0.82
14994.00	89.940	162.650	6385.77	8517.02	-7420.71	4513.85	39°23'41.127"N	80°49'05.973"W	8685.73	148.689	2.40	-0.86	2.24
15084.00	89.880	162.160	6385.91	8606.94	-7506.50	4541.06	39°23'40.283"N	80°49'05.610"W	8773.19	148.828	0.55	-0.07	-0.54
15173.00	89.450	161.040	6386.43	8695.90	-7590.95	4569.15	39°23'39.452"N	80°49'05.237"W	8860.00	148.955	1.35	-0.48	-1.26
15263.00	89.480	157.100	6387.27	8785.87	-7674.99	4601.29	39°23'38.626"N	80°49'04.812"W	8948.60	149.057	4.38	0.03	-4.38
15352.00	89.780	155.120	6387.85	8874.66	-7756.36	4637.33	39°23'37.827"N	80°49'04.338"W	9036.93	149.126	2.25	0.34	-2.22
15442.00	90.220	157.260	6387.85	8964.45	-7838.70	4673.67	39°23'37.019"N	80°49'03.859"W	9126.24	149.195	2.43	0.49	2.38
15532.00	90.310	160.010	6387.43	9054.42	-7922.50	4706.45	39°23'36.196"N	80°49'03.426"W	9215.03	149.287	3.06	0.10	3.06
15621.00	90.220	160.280	6387.02	9143.42	-8006.21	4736.68	39°23'35.373"N	80°49'03.026"W	9302.45	149.390	0.32	-0.10	0.30
15711.00	90.220	159.710	6386.67	9233.42	-8090.78	4767.47	39°23'34.541"N	80°49'02.618"W	9390.92	149.491	0.63	0.00	-0.63
15800.00	90.220	158.640	6386.33	9322.40	-8173.96	4799.11	39°23'33.724"N	80°49'02.199"W	9478.67	149.582	1.20	0.00	-1.20
15890.00	90.000	156.090	6386.16	9412.30	-8257.02	4833.74	39°23'32.908"N	80°49'01.743"W	9567.84	149.655	2.84	-0.24	-2.83
15980.00	90.060	157.090	6386.11	9502.14	-8339.61	4869.50	39°23'32.097"N	80°49'01.272"W	9657.18	149.719	1.11	0.07	1.11
16069.00	89.720	159.190	6386.28	9591.09	-8422.21	4902.64	39°23'31.286"N	80°49'00.834"W	9745.23	149.796	2.39	-0.38	2.36
16159.00	89.690	159.570	6386.75	9681.08	-8506.44	4934.33	39°23'30.458"N	80°49'00.415"W	9833.98	149.883	0.42	-0.03	0.42
16175.00	89.630	159.820	6386.84	9697.08	-8521.45	4939.88	39°23'30.310"N	80°49'00.341"W	9849.75	149.899	1.61	-0.38	1.56
16202.00	89.630	159.820	6387.02	9724.08	-8546.79	4949.20	39°23'30.061"N	80°49'00.218"W	9876.34	149.926	0.00	0.00	0.00



# Actual Wellpath Report

SHR-40A-HS AWP Proj: 16202'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Tyler County, WV	Well	SHR-40A-HS
Field	Tyler	Wellbore	SHR-40A-HS AWB
Facility	SHR-40 Pad		

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SHR-40A-HS BHL Rev-2		6374.29	-8551.32	4939.41	1627862.03	327491.87	39°23'30.015"N	80°49'00.342"W	point
SHR-40A-HS LP Plat		6376.90	-103.48	1864.65	1624787.44	335939.25	39°24'53.053"N	80°49'41.091"W	point
SHR-40A-HS LP Rev-2		6390.00	-94.19	1861.27	1624784.06	335948.54	39°24'53.144"N	80°49'41.136"W	point
SHR-40 Pad LL		6599.24	-0.26	-0.30	1622922.59	336042.46	39°24'53.800"N	80°50'04.870"W	polygon

## WELLPATH COMPOSITION - Ref Wellbore: SHR-40A-HS AWB Ref Wellpath: SHR-40A-HS AWP Proj: 16202'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
19.40	3002.00	Generic gyro - northseeking (Standard)	01_MS Gyro <8-3/4"> (100'-2998')	SHR-40A-HS AWB
3002.00	6114.00	ISCWSA MWD, Rev. 2 (Standard)	02_SDI MWD <8-3/4"> (2998')(3017'-6110')	SHR-40A-HS AWB
6114.00	16175.00	NaviTrak (AT Curve Short Spaced)	03_BHI AT Curve <8-1/2"> (6114')(6132'-16175')	SHR-40A-HS AWB
16175.00	16202.00	Blind Drilling (std)	Projection to bit	SHR-40A-HS AWB



## Actual Wellpath Report

SHR-40A-HS AWP Proj: 16202'

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### REFERENCE WELLPATH IDENTIFICATION

Operator	<b>NOBLE ENERGY</b>	Slot	<b>Slot A</b>
Area	<b>Tyler County, WV</b>	Well	<b>SHR-40A-HS</b>
Field	<b>Tyler</b>	Wellbore	<b>SHR-40A-HS AWB</b>
Facility	<b>SHR-40 Pad</b>		

### COMMENTS

**Wellpath general comments**

API: 47-095-02206-0000

BHI Job #: 7301310

Rig: Precision 542

Duration: 06.12.2015 - 06.19.2015

MS Gyro <8-3/4"> (100'-2998')

SDI MWD <8-3/4"> (2998')(3017'-6110')

BHI AT Curve <8-1/2"> (6114')(6132'-16175')

Projected MD at TD: 16202'



# NOBLE ENERGY



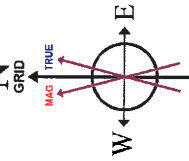
Location: Tyler County, WV  
 Field: Tyler  
 Facility: SHR-40 Pad

Slot: Slot A  
 Well: SHR-40A-HS  
 Wellbore: SHR-40A-HS PWB

Location Information	
Facility Name	SHR-40 Pad
Slot	Slot A
Local N (ft)	0.00
Local E (ft)	0.00
Comment	Renamed Well: 8/19/14
Precision 542 (RKB) to Mud line (At Slot Slot A)	19.4ft
Precision 542 (RKB) to Mean Sea Level	793.34ft
Mean Sea Level to Mud line (At Slot Slot A)	783.74ft



MS Gyro <8-3/4"> (100-2998) : 0.12° Inc, 104.00ft MD, 104.00ft TVD, -0.06ft VS



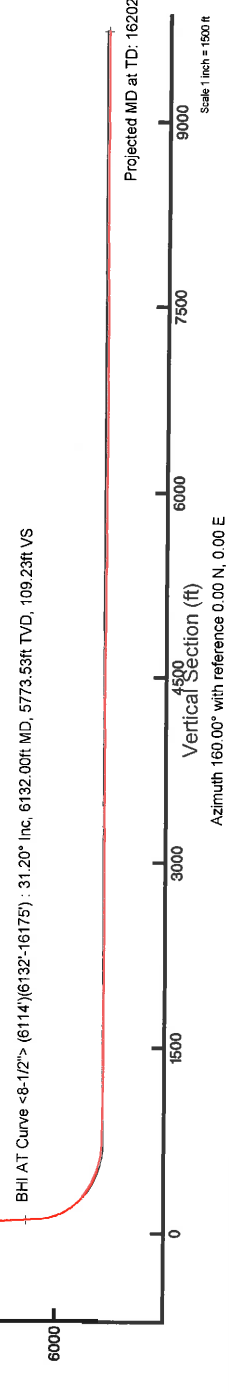
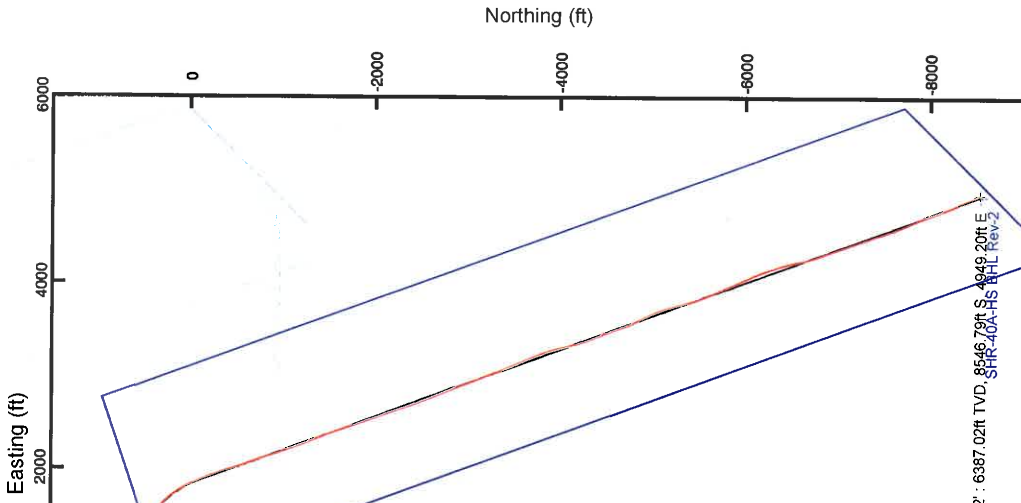
User specified (HDGM) Dip: 66.91° Field: 52312 nT  
 Magnetic North is 7.59 degrees West of True North (at 21/May/2015)  
 Grid North is 0.85 degrees West of True North  
 To correct azimuth from True to Grid add 0.85 degrees  
 To correct azimuth from Magnetic to Grid subtract 6.74 degrees

SDI MWD <8-3/4"> (2998)(3017-6110) : 0.63° Inc, 3021.00ft MD, 3020.95ft TVD, 8.30ft VS

API: 47-095-02206-0000  
 BHI Job #: 7301310  
 Rig: Precision 542  
 Duration: 06.12.2015 - 06.19.2015

BHI AT Curve <8-1/2"> (6114)(6132-16175) : 31.20° Inc, 6132.00ft MD, 5773.53ft TVD, 109.23ft VS

Projected MD at TD: 16202 : 89.63° Inc, 16202.00ft MD, 6387.02ft TVD, 9724.08ft VS



Vertical Section (ft)  
 Azimuth 160.00° with reference 0.00 N, 0.00 E