



Received  
Office of Oil & Gas  
DEC 22 2014

# Actual Wellpath Report

WEB-13E-HS AWP Proj: 14096'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-13E-HS
Field	Marshall	Wellbore	WEB-13E-HS AWB
Facility	WEB-13 Pad		

51-01665

## 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	Edsaryar
Scale	0.999957	Report Generated	06/Mar/2014 at 10:42
Convergence at slot	0.67° West	Database/Source file	WellArchitectEasternDB/WEB-13E-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	-11.06	28.42	1705681.25	531279.69	39°57'14.136"N	80°32'59.507"W
Facility Reference Pt			1705652.83	531290.75	39°57'14.242"N	80°32'59.873"W
Field Reference Pt			609601.22	0.00	38°23'48.753"N	84°21'09.765"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Nomac 79 (RT) to Facility Vertical Datum	1271.08ft
Horizontal Reference Pt	Slot	Nomac 79 (RT) to Mean Sea Level	1271.08ft
Vertical Reference Pt	Nomac 79 (RT)	Nomac 79 (RT) to Mud Line at Slot (Slot E)	1271.08ft
MD Reference Pt	Nomac 79 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	323.00°



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## WELLPATH DATA (179 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	304.750	0.00	0.00	0.00	0.00	1705681.25	531279.69	39°57'14.136"N	80°32'59.507"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	304.750	26.00	0.00	0.00	0.00	1705681.25	531279.69	39°57'14.136"N	80°32'59.507"W	0.00	0.000	0.00	0.00	0.00
126.00	0.130	304.750	126.00	0.11	0.06	-0.09	1705681.16	531279.75	39°57'14.136"N	80°32'59.508"W	0.11	304.750	0.13	0.13	0.00
226.00	0.160	302.330	226.00	0.35	0.20	-0.30	1705680.95	531279.89	39°57'14.138"N	80°32'59.511"W	0.37	303.828	0.03	0.03	-2.42
326.00	0.180	166.390	326.00	0.33	0.13	-0.39	1705680.86	531279.82	39°57'14.137"N	80°32'59.512"W	0.41	288.103	0.32	0.02	-135.94
426.00	0.100	90.630	426.00	0.14	-0.03	-0.26	1705680.99	531279.66	39°57'14.135"N	80°32'59.510"W	0.26	263.963	0.18	-0.08	-75.76
526.00	0.120	63.010	526.00	0.06	0.02	-0.08	1705681.17	531279.71	39°57'14.136"N	80°32'59.508"W	0.08	283.219	0.06	0.02	-27.62
626.00	0.390	55.850	626.00	0.03	0.26	0.29	1705681.54	531279.95	39°57'14.138"N	80°32'59.503"W	0.39	48.817	0.27	0.27	-7.16
726.00	0.480	48.940	726.00	0.04	0.72	0.89	1705682.14	531280.41	39°57'14.143"N	80°32'59.495"W	1.15	50.941	0.10	0.09	-6.91
826.00	0.430	13.290	825.99	0.31	1.36	1.29	1705682.54	531281.05	39°57'14.149"N	80°32'59.490"W	1.88	43.489	0.28	-0.05	-35.65
926.00	0.690	19.130	925.99	0.89	2.30	1.58	1705682.83	531281.99	39°57'14.159"N	80°32'59.487"W	2.79	34.467	0.27	0.26	5.84
1026.00	0.310	38.110	1025.98	1.29	3.08	1.94	1705683.19	531282.77	39°57'14.166"N	80°32'59.482"W	3.64	32.231	0.41	-0.38	18.98
1126.00	0.380	45.670	1125.98	1.40	3.52	2.35	1705683.60	531283.21	39°57'14.171"N	80°32'59.477"W	4.23	33.649	0.08	0.07	7.56
1138.00	0.350	46.550	1137.98	1.41	3.58	2.40	1705683.65	531283.27	39°57'14.171"N	80°32'59.476"W	4.31	33.868	0.25	-0.25	7.33
1197.00	0.750	66.940	1196.98	1.34	3.85	2.89	1705684.14	531283.54	39°57'14.174"N	80°32'59.470"W	4.81	36.848	0.74	0.68	34.56
1292.00	0.790	52.460	1291.97	1.20	4.50	3.98	1705685.23	531284.19	39°57'14.180"N	80°32'59.456"W	6.00	41.511	0.21	0.04	-15.24
1387.00	1.030	38.040	1386.96	1.42	5.57	5.02	1705686.27	531285.26	39°57'14.191"N	80°32'59.443"W	7.50	42.066	0.35	0.25	-15.18
1482.00	1.330	43.080	1481.94	1.83	7.04	6.30	1705687.55	531286.73	39°57'14.206"N	80°32'59.427"W	9.45	41.821	0.33	0.32	5.31
1576.00	0.430	92.280	1575.93	1.80	7.83	7.40	1705688.65	531287.52	39°57'14.214"N	80°32'59.413"W	10.77	43.396	1.17	-0.96	52.34
1671.00	0.350	173.980	1670.93	1.32	7.52	7.79	1705689.04	531287.21	39°57'14.211"N	80°32'59.408"W	10.83	45.984	0.54	-0.08	86.00
1766.00	0.580	183.040	1765.92	0.71	6.76	7.79	1705689.04	531286.45	39°57'14.203"N	80°32'59.408"W	10.31	49.075	0.25	0.24	9.54
1861.00	0.770	194.760	1860.92	-0.06	5.66	7.60	1705688.85	531285.35	39°57'14.192"N	80°32'59.410"W	9.48	53.347	0.25	0.20	12.34
1893.00	0.610	207.270	1892.91	-0.26	5.30	7.47	1705688.72	531284.99	39°57'14.189"N	80°32'59.412"W	9.16	54.654	0.68	-0.50	39.09
1956.00	0.990	192.730	1955.91	-0.76	4.47	7.20	1705688.45	531284.16	39°57'14.181"N	80°32'59.415"W	8.47	58.158	0.68	0.60	-23.08
2050.00	1.180	206.220	2049.89	-1.72	2.81	6.59	1705687.84	531282.50	39°57'14.164"N	80°32'59.422"W	7.17	66.912	0.34	0.20	14.35
2145.00	1.660	206.460	2144.86	-2.78	0.70	5.55	1705686.80	531280.39	39°57'14.143"N	80°32'59.436"W	5.59	82.803	0.51	0.51	0.25
2240.00	0.660	258.810	2239.84	-3.15	-0.64	4.40	1705685.65	531279.05	39°57'14.130"N	80°32'59.450"W	4.44	98.255	1.43	-1.05	55.11
2336.00	0.960	270.150	2335.83	-2.43	-0.74	3.05	1705684.30	531278.95	39°57'14.129"N	80°32'59.467"W	3.14	103.693	0.35	0.31	11.81
2430.00	1.080	275.180	2429.82	-1.36	-0.66	1.38	1705682.63	531279.03	39°57'14.129"N	80°32'59.489"W	1.53	115.597	0.16	0.13	5.35
2525.00	0.200	96.960	2524.81	-0.87	-0.60	0.65	1705681.90	531279.09	39°57'14.130"N	80°32'59.498"W	0.89	132.605	1.35	-0.93	-187.60



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Field	Marshall	Wellbore	WEB-13E-HS AWB
Facility	WEB-13 Pad		

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## WELLPATH DATA (179 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]
2620.00	0.410	78.230	2619.81	-1.13	-0.55	1.15	1705682.40	531279.14	39°57'14.130"N	80°32'59.492"W	1.28	115.600	0.24	0.22	-19.72
2715.00	0.800	62.240	2714.81	-1.38	-0.17	2.07	1705683.32	531279.52	39°57'14.134"N	80°32'59.480"W	2.08	94.771	0.44	0.41	-16.83
2809.00	0.770	69.880	2808.80	-1.67	0.35	3.24	1705684.49	531280.04	39°57'14.139"N	80°32'59.465"W	3.26	83.838	0.12	-0.03	8.13
2904.00	1.090	65.810	2903.78	-2.06	0.94	4.67	1705685.92	531280.63	39°57'14.145"N	80°32'59.447"W	4.76	78.612	0.34	0.34	-4.28
2998.00	1.020	114.090	2997.77	-2.99	0.96	6.25	1705687.50	531280.65	39°57'14.146"N	80°32'59.427"W	6.32	81.219	0.92	-0.07	51.36
3093.00	1.090	101.880	3092.75	-4.41	0.43	7.90	1705689.15	531280.12	39°57'14.141"N	80°32'59.405"W	7.91	86.858	0.25	0.07	-12.85
3121.00	0.940	102.120	3120.75	-4.78	0.33	8.39	1705689.64	531280.02	39°57'14.140"N	80°32'59.399"W	8.39	87.742	0.54	-0.54	0.86
3244.00	0.090	293.430	3243.74	-5.46	0.16	9.29	1705690.54	531279.85	39°57'14.138"N	80°32'59.387"W	9.29	89.030	0.84	-0.69	-137.15
3339.00	0.070	294.310	3338.74	-5.35	0.21	9.16	1705690.41	531279.90	39°57'14.139"N	80°32'59.389"W	9.17	88.682	0.02	-0.02	0.93
3434.00	0.070	261.500	3433.74	-5.27	0.23	9.05	1705690.30	531279.92	39°57'14.139"N	80°32'59.390"W	9.06	88.569	0.04	0.00	-34.54
3529.00	0.250	321.790	3528.74	-5.03	0.38	8.87	1705690.12	531280.07	39°57'14.140"N	80°32'59.393"W	8.88	87.544	0.24	0.19	63.46
3624.00	0.150	317.030	3623.74	-4.70	0.63	8.66	1705689.90	531280.32	39°57'14.143"N	80°32'59.396"W	8.68	85.809	0.11	-0.11	-5.01
3719.00	0.040	172.390	3718.74	-4.61	0.69	8.57	1705689.82	531280.38	39°57'14.143"N	80°32'59.397"W	8.60	85.384	0.19	-0.12	-152.25
3815.00	2.890	162.140	3814.70	-6.92	-1.64	9.32	1705690.57	531278.05	39°57'14.120"N	80°32'59.387"W	9.47	100.007	2.97	2.97	-10.68
3865.00	6.750	170.310	3864.52	-10.73	-5.74	10.20	1705691.45	531273.95	39°57'14.080"N	80°32'59.375"W	11.71	119.372	7.82	7.72	16.34
3910.00	8.010	176.090	3909.14	-15.70	-11.48	10.86	1705692.11	531268.21	39°57'14.023"N	80°32'59.365"W	15.80	136.578	3.25	2.80	12.84
4005.00	8.360	167.000	4003.18	-27.56	-24.81	12.87	1705694.12	531254.88	39°57'13.892"N	80°32'59.338"W	27.95	152.588	1.41	0.37	-9.57
4099.00	7.710	168.680	4096.26	-39.48	-37.65	15.64	1705696.89	531242.04	39°57'13.765"N	80°32'59.300"W	40.77	157.440	0.74	-0.69	1.79
4133.00	8.810	168.880	4129.90	-43.88	-42.44	16.59	1705697.84	531237.25	39°57'13.718"N	80°32'59.287"W	45.57	158.649	3.24	3.24	0.59
4194.00	9.140	172.640	4190.16	-52.30	-51.83	18.11	1705699.36	531227.86	39°57'13.626"N	80°32'59.266"W	54.91	160.737	1.10	0.54	6.16
4288.00	11.410	174.920	4282.64	-66.68	-68.50	19.89	1705701.14	531211.19	39°57'13.461"N	80°32'59.241"W	71.33	163.806	2.45	2.41	2.43
4383.00	10.800	181.860	4375.87	-81.59	-86.76	20.44	1705701.69	531192.94	39°57'13.281"N	80°32'59.231"W	89.13	166.745	1.55	-0.64	7.31
4478.00	10.230	137.890	4469.42	-96.94	-101.94	25.81	1705707.06	531177.76	39°57'13.131"N	80°32'59.160"W	105.15	165.790	8.27	-0.60	-46.28
4573.00	11.940	136.410	4562.64	-115.11	-115.31	38.25	1705719.49	531164.38	39°57'13.001"N	80°32'58.998"W	121.49	161.650	1.82	1.80	-1.56
4668.00	11.780	175.270	4655.76	-133.10	-132.12	45.83	1705727.08	531147.58	39°57'12.835"N	80°32'58.898"W	139.84	160.868	8.25	-0.17	40.91
4763.00	11.760	182.660	4748.77	-148.75	-151.46	46.18	1705727.43	531128.24	39°57'12.644"N	80°32'58.891"W	158.34	163.042	1.59	-0.02	7.78
4858.00	11.330	189.230	4841.85	-162.66	-170.34	44.24	1705725.49	531109.36	39°57'12.457"N	80°32'58.913"W	175.99	165.442	1.46	-0.45	6.92
4952.00	11.450	147.340	4934.15	-178.38	-187.34	47.80	1705729.05	531092.36	39°57'12.290"N	80°32'58.865"W	193.34	165.687	8.61	0.13	-44.56
5047.00	11.850	161.640	5027.21	-197.03	-204.54	55.96	1705737.21	531075.16	39°57'12.121"N	80°32'58.757"W	212.05	164.698	3.06	0.42	15.05
5142.00	11.800	195.650	5120.31	-212.18	-223.17	56.41	1705737.66	531056.53	39°57'11.937"N	80°32'58.749"W	230.19	165.814	7.23	-0.05	35.80





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5236.00	12.700	191.670	5212.17	-224.84	-242.54	51.73	1705732.98	531037.16	39°57'11.745"N	80°32'58.806"W	248.00	167.960	1.31	0.96	-4.23
5268.00	12.720	193.870	5243.39	-229.38	-249.41	50.17	1705731.42	531030.29	39°57'11.677"N	80°32'58.825"W	254.41	168.626	1.51	0.06	6.88
5299.00	12.650	194.010	5273.63	-233.67	-256.02	48.53	1705729.78	531023.69	39°57'11.611"N	80°32'58.845"W	260.58	169.266	0.25	-0.23	0.45
5331.00	12.790	192.700	5304.84	-238.17	-262.87	46.91	1705728.16	531016.83	39°57'11.543"N	80°32'58.865"W	267.02	169.883	1.00	0.44	-4.09
5380.00	12.710	187.080	5352.64	-245.55	-273.51	45.05	1705726.30	531006.19	39°57'11.438"N	80°32'58.887"W	277.20	170.647	2.54	-0.16	-11.47
5425.00	12.510	179.950	5396.56	-253.00	-283.30	44.44	1705725.69	530996.40	39°57'11.341"N	80°32'58.893"W	286.76	171.084	3.49	-0.44	-15.84
5457.00	12.180	176.540	5427.82	-258.58	-290.13	44.65	1705725.90	530989.57	39°57'11.274"N	80°32'58.890"W	293.55	171.251	2.50	-1.03	-10.66
5520.00	12.030	171.160	5489.42	-269.91	-303.26	46.06	1705727.31	530976.45	39°57'11.144"N	80°32'58.870"W	306.73	171.363	1.81	-0.24	-8.54
5552.00	12.460	170.910	5520.69	-275.90	-309.96	47.12	1705728.37	530969.74	39°57'11.078"N	80°32'58.855"W	313.52	171.356	1.35	1.34	-0.78
5615.00	12.100	171.010	5582.25	-287.74	-323.19	49.22	1705730.47	530956.51	39°57'10.948"N	80°32'58.826"W	326.92	171.340	0.57	-0.57	0.16
5646.00	12.260	169.390	5612.55	-293.55	-329.64	50.34	1705731.59	530950.07	39°57'10.884"N	80°32'58.811"W	333.46	171.318	1.22	0.52	-5.23
5678.00	12.150	170.260	5643.83	-299.59	-336.30	51.53	1705732.78	530943.41	39°57'10.818"N	80°32'58.795"W	340.22	171.288	0.67	-0.34	2.72
5709.00	12.340	173.210	5674.12	-305.35	-342.80	52.48	1705733.73	530936.90	39°57'10.754"N	80°32'58.781"W	346.79	171.296	2.11	0.61	9.52
5741.00	12.300	178.170	5705.39	-311.10	-349.60	52.99	1705734.24	530930.10	39°57'10.687"N	80°32'58.774"W	353.60	171.381	3.31	-0.12	15.50
5772.00	11.950	178.890	5735.69	-316.40	-356.11	53.16	1705734.41	530923.59	39°57'10.623"N	80°32'58.771"W	360.06	171.510	1.23	-1.13	2.32
5804.00	12.160	179.750	5766.99	-321.78	-362.79	53.24	1705734.48	530916.91	39°57'10.557"N	80°32'58.769"W	366.68	171.652	0.86	0.66	2.69
5835.00	13.270	179.520	5797.23	-327.26	-369.62	53.28	1705734.53	530910.09	39°57'10.489"N	80°32'58.767"W	373.44	171.797	3.58	3.58	-0.74
5867.00	12.930	181.640	5828.40	-333.00	-376.87	53.21	1705734.46	530902.84	39°57'10.418"N	80°32'58.767"W	380.61	171.964	1.84	-1.06	6.63
5899.00	12.550	185.000	5859.61	-338.38	-383.91	52.80	1705734.05	530895.80	39°57'10.348"N	80°32'58.771"W	387.53	172.169	2.60	-1.19	10.50
5930.00	12.390	192.110	5889.88	-343.06	-390.52	51.81	1705733.06	530889.19	39°57'10.283"N	80°32'58.783"W	393.94	172.442	4.98	-0.52	22.94
5962.00	11.510	210.450	5921.20	-346.54	-396.63	49.47	1705730.72	530883.08	39°57'10.222"N	80°32'58.812"W	399.70	172.890	12.13	-2.75	57.31
5993.00	11.020	229.980	5951.61	-347.88	-401.20	45.64	1705726.88	530878.50	39°57'10.176"N	80°32'58.861"W	403.79	173.511	12.35	-1.58	63.00
6025.00	9.060	255.660	5983.13	-347.07	-403.80	40.85	1705722.10	530875.91	39°57'10.150"N	80°32'58.922"W	405.86	174.223	15.11	-6.12	80.25
6056.00	8.090	265.370	6013.79	-344.96	-404.58	36.31	1705717.56	530875.13	39°57'10.142"N	80°32'58.980"W	406.20	174.871	5.61	-3.13	31.32
6088.00	7.950	265.760	6045.48	-342.56	-404.92	31.86	1705713.11	530874.79	39°57'10.138"N	80°32'59.037"W	406.17	175.501	0.47	-0.44	1.22
6119.00	8.020	262.770	6076.17	-340.32	-405.35	27.58	1705708.82	530874.36	39°57'10.133"N	80°32'59.092"W	406.29	176.108	1.36	0.23	-9.65
6151.00	9.280	276.920	6107.81	-337.43	-405.32	22.80	1705704.05	530874.39	39°57'10.133"N	80°32'59.153"W	405.96	176.781	7.70	3.94	44.22
6182.00	11.300	292.690	6138.32	-333.07	-403.85	17.51	1705698.76	530875.86	39°57'10.147"N	80°32'59.221"W	404.23	177.517	11.12	6.52	50.87
6214.00	12.850	305.080	6169.62	-326.97	-400.59	11.71	1705692.96	530879.11	39°57'10.178"N	80°32'59.296"W	400.76	178.326	9.41	4.84	38.72
6246.00	15.070	306.410	6200.67	-319.60	-396.08	5.45	1705686.70	530883.63	39°57'10.222"N	80°32'59.377"W	396.12	179.212	7.01	6.94	4.16





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# Actual Wellpath Report

WEB-13E-HS AWP Proj: 14096'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-13E-HS
Field	Marshall	Wellbore	WEB-13E-HS AWB
Facility	WEB-13 Pad		

51-01665

## WELLPATH DATA (179 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]
6277.00	17.150	304.270	6230.45	-311.41	-391.11	-1.57	1705679.68	530888.59	39°57'10.270"N	80°32'59.468"W	391.12	180.231	6.98	6.71	-6.90
6309.00	20.310	303.410	6260.75	-301.71	-385.40	-10.11	1705671.14	530894.31	39°57'10.326"N	80°32'59.579"W	385.53	181.503	9.91	9.87	-2.69
6340.00	22.330	305.900	6289.63	-291.01	-378.98	-19.37	1705661.88	530900.73	39°57'10.388"N	80°32'59.699"W	379.48	182.926	7.14	6.52	8.03
6372.00	24.140	307.600	6319.03	-278.89	-371.42	-29.48	1705651.77	530908.28	39°57'10.462"N	80°32'59.829"W	372.59	184.538	6.03	5.66	5.31
6404.00	26.680	308.680	6347.94	-265.62	-362.94	-40.28	1705640.97	530916.77	39°57'10.544"N	80°32'59.969"W	365.17	186.332	8.07	7.94	3.38
6468.00	31.750	310.640	6403.78	-235.23	-342.98	-64.29	1705616.97	530936.73	39°57'10.739"N	80°33'00.281"W	348.95	190.616	8.06	7.92	3.06
6562.00	41.030	313.230	6479.37	-180.54	-305.65	-105.63	1705575.63	530974.05	39°57'11.103"N	80°33'00.817"W	323.39	199.064	10.00	9.87	2.76
6594.00	45.330	314.420	6502.70	-158.93	-290.49	-121.41	1705559.84	530989.21	39°57'11.251"N	80°33'01.022"W	314.84	202.683	13.68	13.44	3.72
6657.00	51.030	315.380	6544.69	-112.46	-257.35	-154.64	1705526.61	531022.35	39°57'11.575"N	80°33'01.454"W	300.24	211.002	9.12	9.05	1.52
6752.00	60.140	313.800	6598.33	-35.03	-202.43	-210.44	1705470.82	531077.27	39°57'12.111"N	80°33'02.178"W	292.00	226.111	9.69	9.59	-1.66
6847.00	71.200	317.650	6637.42	50.70	-140.48	-270.67	1705410.60	531139.22	39°57'12.716"N	80°33'02.961"W	304.95	242.570	12.21	11.64	4.05
6942.00	78.720	320.690	6662.06	142.17	-71.09	-330.57	1705350.70	531208.60	39°57'13.395"N	80°33'03.740"W	338.13	257.863	8.50	7.92	3.20
7036.00	90.950	321.530	6670.50	235.56	1.64	-389.23	1705292.04	531281.33	39°57'14.107"N	80°33'04.504"W	389.23	270.242	13.04	13.01	0.89
7131.00	91.040	323.420	6668.85	330.53	76.97	-447.08	1705234.19	531356.66	39°57'14.845"N	80°33'05.259"W	453.66	279.769	1.99	0.09	1.99
7226.00	91.110	323.960	6667.07	425.51	153.51	-503.33	1705177.95	531433.20	39°57'15.594"N	80°33'05.992"W	526.22	286.962	0.57	0.07	0.57
7321.00	91.020	323.130	6665.31	520.49	229.91	-559.76	1705121.51	531509.59	39°57'16.343"N	80°33'06.728"W	605.14	292.329	0.88	-0.09	-0.87
7415.00	90.490	322.750	6664.07	614.48	304.92	-616.41	1705064.87	531584.59	39°57'17.077"N	80°33'07.467"W	687.70	296.320	0.69	-0.56	-0.40
7510.00	90.520	320.060	6663.23	709.43	379.16	-675.66	1705005.62	531658.83	39°57'17.804"N	80°33'08.239"W	774.78	299.299	2.83	0.03	-2.83
7605.00	90.650	319.710	6662.26	804.28	451.80	-736.87	1704944.41	531731.47	39°57'18.515"N	80°33'09.036"W	864.35	301.514	0.39	0.14	-0.37
7700.00	90.620	319.800	6661.21	899.13	524.31	-798.24	1704883.05	531803.98	39°57'19.224"N	80°33'09.835"W	955.03	303.298	0.10	-0.03	0.09
7795.00	90.740	322.820	6660.08	994.07	598.45	-857.61	1704823.67	531878.11	39°57'19.950"N	80°33'10.608"W	1045.77	304.908	3.18	0.13	3.18
7889.00	90.620	325.750	6658.96	1088.03	674.76	-912.48	1704768.81	531954.42	39°57'20.698"N	80°33'11.324"W	1134.86	306.482	3.12	-0.13	3.12
7984.00	90.980	328.300	6657.64	1182.78	754.44	-964.17	1704717.12	532034.09	39°57'21.479"N	80°33'12.000"W	1224.26	308.042	2.71	0.38	2.68
8079.00	90.830	326.490	6656.14	1277.48	834.45	-1015.36	1704665.94	532114.11	39°57'22.264"N	80°33'12.669"W	1314.25	309.414	1.91	-0.16	-1.91
8174.00	90.800	329.180	6654.79	1372.12	914.86	-1065.92	1704615.38	532194.51	39°57'23.053"N	80°33'13.331"W	1404.69	310.639	2.83	-0.03	2.83
8268.00	90.680	328.810	6653.57	1465.60	995.42	-1114.34	1704566.96	532275.06	39°57'23.843"N	80°33'13.964"W	1494.19	311.774	0.41	-0.13	-0.39
8364.00	90.580	325.630	6652.52	1561.32	1076.12	-1166.30	1704515.00	532355.76	39°57'24.635"N	80°33'14.644"W	1586.91	312.697	3.31	-0.10	-3.31
8458.00	89.720	323.120	6652.27	1655.29	1152.52	-1221.05	1704460.25	532432.16	39°57'25.383"N	80°33'15.358"W	1679.07	313.346	2.82	-0.91	-2.67
8553.00	89.850	321.140	6652.63	1750.27	1227.51	-1279.37	1704401.94	532507.14	39°57'26.118"N	80°33'16.118"W	1773.00	313.815	2.09	0.14	-2.08
8648.00	90.950	320.820	6651.96	1845.21	1301.31	-1339.17	1704342.14	532580.94	39°57'26.840"N	80°33'16.898"W	1867.30	314.178	1.21	1.16	-0.34





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# Actual Wellpath Report

WEB-13E-HS AWP Proj: 14096'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-13E-HS
Field	Marshall	Wellbore	WEB-13E-HS AWB
Facility	WEB-13 Pad		

51-01665

## WELLPATH DATA (179 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]
8743.00	91.290	320.000	6650.11	1940.09	1374.51	-1399.70	1704281.61	532654.13	39°57'27.556"N	80°33'17.686"W	1961.74	314.480	0.93	0.36	-0.86
8838.00	90.890	318.900	6648.30	2034.89	1446.68	-1461.45	1704219.86	532726.30	39°57'28.262"N	80°33'18.490"W	2056.38	314.709	1.23	-0.42	-1.16
8932.00	90.680	318.620	6647.01	2128.62	1517.35	-1523.41	1704157.91	532796.97	39°57'28.954"N	80°33'19.296"W	2150.15	314.886	0.37	-0.22	-0.30
9027.00	90.800	321.610	6645.78	2223.49	1590.24	-1584.32	1704097.00	532869.85	39°57'29.667"N	80°33'20.089"W	2244.75	315.107	3.15	0.13	3.15
9122.00	90.430	322.110	6644.76	2318.46	1664.95	-1642.99	1704038.34	532944.56	39°57'30.398"N	80°33'20.853"W	2339.11	315.380	0.65	-0.39	0.53
9217.00	90.490	322.680	6644.00	2413.45	1740.21	-1700.95	1703980.37	533019.82	39°57'31.135"N	80°33'21.609"W	2433.43	315.654	0.60	0.06	0.60
9312.00	90.430	322.960	6643.24	2508.45	1815.90	-1758.36	1703922.97	533095.50	39°57'31.876"N	80°33'22.358"W	2527.71	315.922	0.30	-0.06	0.29
9406.00	90.520	323.730	6642.46	2602.44	1891.30	-1814.48	1703866.85	533170.91	39°57'32.615"N	80°33'23.090"W	2620.95	316.188	0.82	0.10	0.82
9500.00	90.650	324.320	6641.50	2696.42	1967.37	-1869.69	1703811.64	533246.97	39°57'33.360"N	80°33'23.810"W	2714.09	316.458	0.64	0.14	0.63
9595.00	90.580	320.950	6640.48	2791.40	2042.86	-1927.34	1703754.00	533322.46	39°57'34.100"N	80°33'24.562"W	2808.54	316.667	3.55	-0.07	-3.55
9689.00	90.060	320.510	6639.95	2885.33	2115.63	-1986.84	1703694.50	533395.23	39°57'34.812"N	80°33'25.337"W	2902.31	316.798	0.72	-0.55	-0.47
9783.00	90.310	322.500	6639.65	2979.29	2189.20	-2045.34	1703636.00	533468.79	39°57'35.532"N	80°33'26.099"W	2996.00	316.946	2.13	0.27	2.12
9878.00	90.490	325.770	6638.99	3074.25	2266.17	-2100.99	1703580.35	533545.76	39°57'36.286"N	80°33'26.825"W	3090.26	317.166	3.45	0.19	3.44
9973.00	89.940	328.030	6638.63	3169.03	2345.75	-2152.87	1703528.48	533625.33	39°57'37.067"N	80°33'27.504"W	3183.93	317.455	2.45	-0.58	2.38
10067.00	90.030	326.770	6638.66	3262.75	2424.94	-2203.51	1703477.84	533704.52	39°57'37.843"N	80°33'28.166"W	3276.55	317.739	1.34	0.10	-1.34
10162.00	90.220	324.160	6638.45	3357.65	2503.19	-2257.36	1703423.99	533782.77	39°57'38.610"N	80°33'28.869"W	3370.70	317.956	2.75	0.20	-2.75
10257.00	90.680	322.240	6637.70	3452.64	2579.25	-2314.26	1703367.09	533858.83	39°57'39.355"N	80°33'29.611"W	3465.31	318.100	2.08	0.48	-2.02
10352.00	90.620	322.890	6636.62	3547.63	2654.68	-2372.01	1703309.35	533934.25	39°57'40.094"N	80°33'30.364"W	3560.02	318.219	0.69	-0.06	0.68
10447.00	90.550	321.780	6635.65	3642.62	2729.88	-2430.05	1703251.31	534009.45	39°57'40.830"N	80°33'31.121"W	3654.78	318.326	1.17	-0.07	-1.17
10541.00	90.430	320.140	6634.85	3736.56	2802.89	-2489.26	1703192.11	534082.45	39°57'41.545"N	80°33'31.892"W	3748.67	318.392	1.75	-0.13	-1.74
10635.00	90.520	321.460	6634.07	3830.48	2875.73	-2548.66	1703132.70	534155.29	39°57'42.258"N	80°33'32.666"W	3842.59	318.450	1.41	0.10	1.40
10730.00	90.550	322.450	6633.18	3925.46	2950.54	-2607.21	1703074.16	534230.09	39°57'42.990"N	80°33'33.429"W	3937.41	318.535	1.04	0.03	1.04
10825.00	90.550	322.430	6632.27	4020.45	3025.84	-2665.12	1703016.25	534305.40	39°57'43.727"N	80°33'34.184"W	4032.19	318.627	0.02	0.00	-0.02
10920.00	90.580	322.260	6631.34	4115.44	3101.05	-2723.15	1702958.22	534380.60	39°57'44.464"N	80°33'34.941"W	4126.99	318.712	0.18	0.03	-0.18
11015.00	90.620	323.770	6630.34	4210.43	3176.93	-2780.30	1702901.08	534456.48	39°57'45.207"N	80°33'35.686"W	4221.72	318.809	1.59	0.04	1.59
11110.00	90.520	326.200	6629.40	4305.36	3254.72	-2834.80	1702846.58	534534.27	39°57'45.969"N	80°33'36.398"W	4316.17	318.945	2.56	-0.11	2.56
11204.00	90.800	326.780	6628.31	4399.18	3333.09	-2886.69	1702794.69	534612.63	39°57'46.738"N	80°33'37.076"W	4409.37	319.105	0.69	0.30	0.62
11299.00	90.710	324.320	6627.06	4494.07	3411.42	-2940.42	1702740.96	534690.96	39°57'47.506"N	80°33'37.778"W	4503.76	319.241	2.59	-0.09	-2.59
11394.00	90.590	322.030	6625.98	4589.06	3487.46	-2997.36	1702684.03	534766.99	39°57'48.250"N	80°33'38.521"W	4598.53	319.322	2.41	-0.13	-2.41
11488.00	90.000	319.390	6625.50	4682.97	3560.20	-3056.87	1702624.51	534839.73	39°57'48.962"N	80°33'39.296"W	4692.49	319.350	2.88	-0.63	-2.81





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# Actual Wellpath Report

WEB-13E-HS AWP Proj: 14096'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-13E-HS
Field	Marshall	Wellbore	WEB-13E-HS AWB
Facility	WEB-13 Pad		

51.01665

## WELLPATH DATA (179 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]
11583.00	90.090	318.650	6625.42	4777.74	3631.92	-3119.17	1702562.22	534911.44	39°57'49.664"N	80°33'40.107"W	4787.49	319.343	0.78	0.09	-0.78
11678.00	89.940	321.340	6625.40	4872.61	3704.68	-3180.24	1702501.15	534984.20	39°57'50.376"N	80°33'40.902"W	4882.48	319.356	2.84	-0.16	2.83
11773.00	90.250	323.880	6625.24	4967.60	3780.15	-3237.92	1702443.47	535059.67	39°57'51.115"N	80°33'41.654"W	4977.32	319.418	2.69	0.33	2.67
11867.00	90.280	324.280	6624.81	5061.58	3856.28	-3293.07	1702388.33	535135.79	39°57'51.860"N	80°33'42.374"W	5071.01	319.504	0.43	0.03	0.43
11962.00	90.460	325.310	6624.19	5156.53	3933.90	-3347.83	1702333.57	535213.41	39°57'52.621"N	80°33'43.089"W	5165.61	319.601	1.10	0.19	1.08
12057.00	90.860	324.930	6623.10	5251.46	4011.83	-3402.16	1702279.25	535291.34	39°57'53.385"N	80°33'43.799"W	5260.17	319.701	0.58	0.42	-0.40
12152.00	90.740	322.650	6621.77	5346.43	4088.46	-3458.27	1702223.14	535367.97	39°57'54.136"N	80°33'44.531"W	5354.92	319.773	2.40	-0.13	-2.40
12246.00	91.020	321.930	6620.33	5440.41	4162.82	-3515.76	1702165.65	535442.32	39°57'54.864"N	80°33'45.280"W	5448.82	319.817	0.82	0.30	-0.77
12341.00	90.740	321.750	6618.87	5535.38	4237.51	-3574.45	1702106.96	535517.01	39°57'55.595"N	80°33'46.045"W	5543.75	319.852	0.35	-0.29	-0.19
12435.00	90.740	321.710	6617.66	5629.35	4311.30	-3632.66	1702048.75	535590.80	39°57'56.317"N	80°33'46.804"W	5637.69	319.883	0.04	0.00	-0.04
12529.00	90.340	322.190	6616.77	5723.33	4385.32	-3690.60	1701990.82	535664.81	39°57'57.042"N	80°33'47.559"W	5731.63	319.917	0.66	-0.43	0.51
12624.00	90.340	320.400	6616.21	5818.28	4459.45	-3750.00	1701931.42	535738.94	39°57'57.767"N	80°33'48.334"W	5826.59	319.939	1.88	0.00	-1.88
12720.00	90.400	321.170	6615.59	5914.21	4533.83	-3810.69	1701870.73	535813.32	39°57'58.495"N	80°33'49.124"W	5922.58	319.953	0.80	0.06	0.80
12815.00	90.400	323.700	6614.92	6009.19	4609.12	-3868.60	1701812.82	535888.61	39°57'59.233"N	80°33'49.879"W	6017.48	319.992	2.66	0.00	2.66
12909.00	90.430	323.970	6614.24	6103.18	4685.01	-3924.07	1701757.35	535964.49	39°57'59.976"N	80°33'50.603"W	6111.27	320.051	0.29	0.03	0.29
13003.00	90.430	324.840	6613.54	6197.15	4761.44	-3978.78	1701702.65	536040.92	39°58'00.725"N	80°33'51.318"W	6205.00	320.117	0.93	0.00	0.93
13098.00	90.460	325.700	6612.80	6292.07	4839.52	-4032.90	1701648.53	536118.99	39°58'01.490"N	80°33'52.024"W	6299.62	320.195	0.91	0.03	0.91
13193.00	90.430	327.850	6612.06	6386.86	4918.98	-4084.95	1701596.48	536198.45	39°58'02.269"N	80°33'52.705"W	6394.00	320.292	2.26	-0.03	2.26
13288.00	90.550	326.650	6611.25	6481.59	4998.87	-4136.34	1701545.09	536278.34	39°58'03.053"N	80°33'53.377"W	6488.30	320.394	1.27	0.13	-1.26
13382.00	90.460	325.680	6610.42	6575.44	5076.95	-4188.68	1701492.76	536356.41	39°58'03.818"N	80°33'54.061"W	6581.83	320.476	1.04	-0.10	-1.03
13477.00	90.400	324.080	6609.71	6670.38	5154.65	-4243.33	1701438.11	536434.11	39°58'04.580"N	80°33'54.775"W	6676.54	320.539	1.69	-0.06	-1.68
13572.00	90.460	324.170	6608.99	6765.36	5231.63	-4299.00	1701382.45	536511.08	39°58'05.334"N	80°33'55.501"W	6771.36	320.589	0.11	0.06	0.09
13666.00	90.400	323.830	6608.29	6859.35	5307.67	-4354.25	1701327.20	536587.12	39°58'06.079"N	80°33'56.223"W	6865.19	320.636	0.37	-0.06	-0.36
13761.00	90.400	321.910	6607.62	6954.34	5383.41	-4411.59	1701269.86	536662.85	39°58'06.820"N	80°33'56.971"W	6960.11	320.666	2.02	0.00	-2.02
13856.00	90.310	319.760	6607.04	7049.26	5457.06	-4471.58	1701209.87	536736.50	39°58'07.541"N	80°33'57.752"W	7055.11	320.668	2.27	-0.09	-2.26
13951.00	90.310	319.390	6606.52	7144.09	5529.38	-4533.18	1701148.27	536808.82	39°58'08.249"N	80°33'58.554"W	7150.09	320.654	0.39	0.00	-0.39
14046.00	90.490	319.720	6605.86	7238.92	5601.67	-4594.81	1701086.65	536881.11	39°58'08.956"N	80°33'59.357"W	7245.07	320.639	0.40	0.19	0.35
14072.00	90.490	320.670	6605.64	7264.89	5621.64	-4611.45	1701070.00	536901.08	39°58'09.151"N	80°33'59.574"W	7271.06	320.638	3.65	0.00	3.65
14096.00	90.490	320.670	6605.43	7288.87	5640.21	-4626.66	1701054.79	536919.64	39°58'09.333"N	80°33'59.772"W	7295.06	320.638	0.00	0.00	0.00





# Actual Wellpath Report

WEB-13E-HS AWP Proj: 14096'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-13E-HS
Field	Marshall	Wellbore	WEB-13E-HS AWB
Facility	WEB-13 Pad		

51-01665

## HOLE & CASING SECTIONS - Ref Wellbore: WEB-13E-HS AWB Ref Wellpath: WEB-13E-HS AWP Proj: 14096'

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]
30in Conductor	26.00	66.00	40.00	26.00	66.00	0.00	0.00	0.01	-0.01
20in Casing Surface	26.00	448.90	422.90	26.00	448.90	0.00	0.00	-0.03	-0.22
13.375in Casing Intermediate	26.00	1200.00	1174.00	26.00	1199.98	0.00	0.00	3.87	2.92

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WEB-13E-HS BHL Rev-2		6595.81	5638.61	-4628.78	1701052.68	536918.05	39°58'09.317"N	80°33'59.799"W	point
WEB-13E-HS LP Rev-1		6663.00	48.75	-416.40	1705264.87	531328.44	39°57'14.569"N	80°33'04.860"W	point
WEB-13 LL		7226.56	11.06	-28.42	1705652.83	531290.75	39°57'14.242"N	80°32'59.873"W	polygon

## WELLPATH COMPOSITION - Ref Wellbore: WEB-13E-HS AWB Ref Wellpath: WEB-13E-HS AWP Proj: 14096'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	1138.00	Generic gyro - northseeking (Standard)	01_VES Gyro <13-3/8"> (100'-1112')	WEB-13E-HS AWB
1138.00	3121.00	ISCWSA MWD, Rev. 2 (Standard)	02_APS <12-1/4"> (1138')(1197'-3121')	WEB-13E-HS AWB
3121.00	14072.00	NaviTrak (MagCorr)	03_BHI AT Curve <8-3/4"> (3121')(3244'-14072')	WEB-13E-HS AWB
14072.00	14096.00	Blind Drilling (std)	Projection to bit	WEB-13E-HS AWB





# Actual Wellpath Report

WEB-13E-HS AWP Proj: 14096'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-13E-HS
Field	Marshall	Wellbore	WEB-13E-HS AWB
Facility	WEB-13 Pad		

51-01665

## COMMENTS

### Wellpath general comments

API: 47-051-01665-0000

BHI Job #: 6148627

Rig: Nomac 79

Duration: 2/18/2014-2/26/2014

VES Gyro <13-3/8"> (100'-1112')

APS <12-1/4"> (1138')(1197'-3121')

BHI AT Curve <8-3/4"> (3121')(3244'-14072')

Projected MD at TD: 14096'

Received  
Office of Oil & Gas  
DEC 22 2014

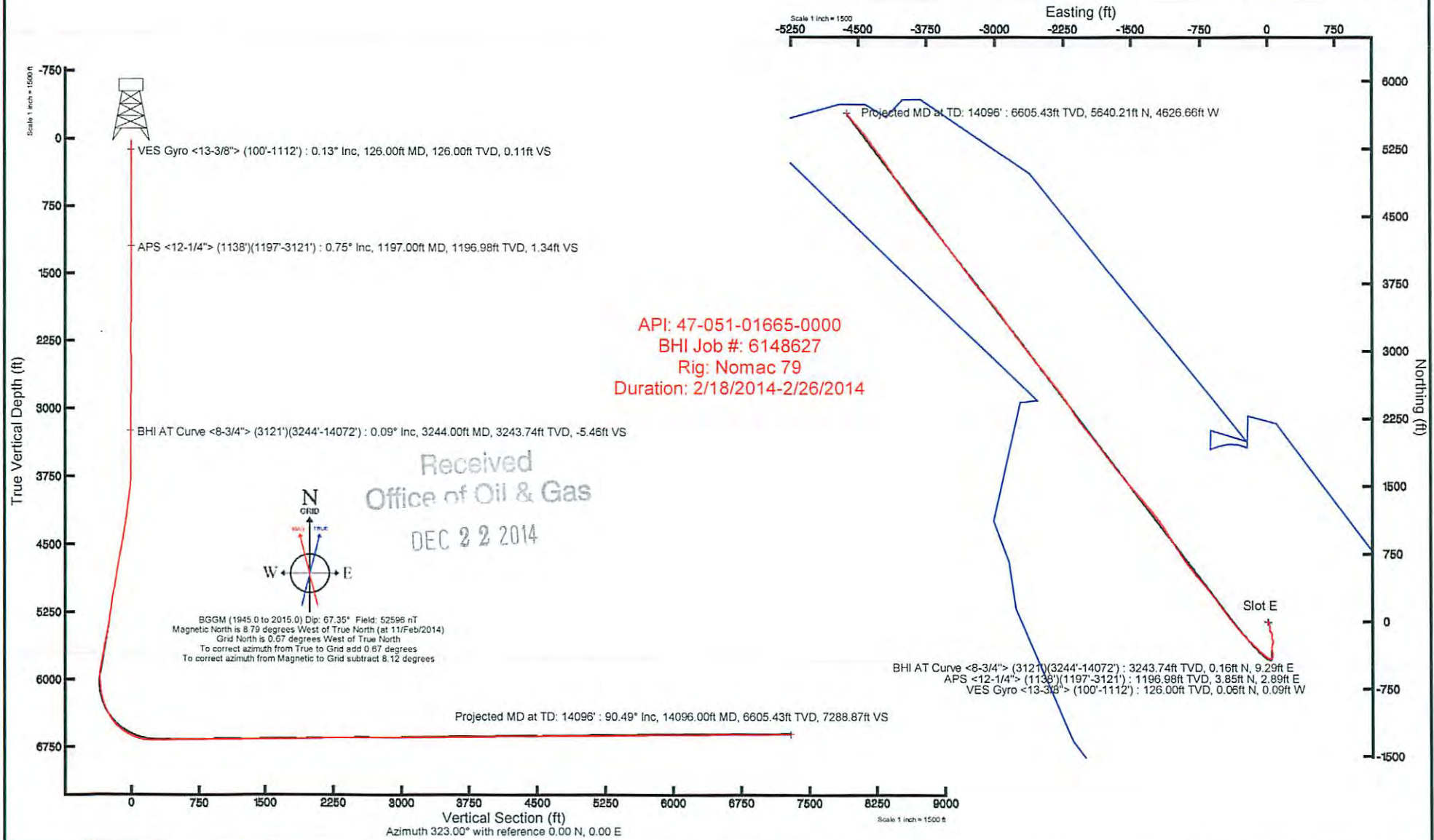


Location: Marshall County, WV  
 Field: Marshall  
 Facility: WEB-13 Pad

Slot: Slot E  
 Well: WEB-13E-HS  
 Wellbore: WEB-13E-HS PWB

Plot reference wellbore is WEB-13E-HS PWB Rev-B 0	
True vertical depths are referenced to Nomac 79 (RT)	Grid System: NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet
Measured depths are referenced to Nomac 79 (RT)	North Reference: Grid north
Nomac 79 (RT) to Mean Sea Level: 1271.08 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot E): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: mchaynar on 06/Mar/2014

Location Information						
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
WEB-13 Pad		1705652.830	531280.750	39°57'14.242"N	80°32'59.873"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot E	-11.06	28.42	1705681.250	531279.690	39°57'14.138"N	80°32'59.507"W
Nomac 79 (RT) to Mud line (At Slot: Slot E)				1271.08ft		
Mean Sea Level to Mud line (At Slot: Slot E)				0ft		
Nomac 79 (RT) to Mean Sea Level				-1271.08ft		



51-01665