

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-22E-HS
Field	Marshall	Wellbore	WEB-22EHS AWB
Facility	WEB-22 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	Kroschr
Scale	0.999954	Report Generated	18/Aug/2014 at 15:38
Convergence at slot	0.65° West	Database/Source file	WA_Pennsylvania/WEB-22EHS_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-27.77	-0.23	1713925.58	519824.77	39°55'21.872"N	80°31'11.976"W
Facility Reference Pt			1713925.81	519852.54	39°55'22.147"N	80°31'11.977"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 (RT) to Facility Vertical Datum	18.60ft
Horizontal Reference Pt	Slot	Precision 542 (RT) to Mean Sea Level	1343.60ft
Vertical Reference Pt	Precision 542 (RT)	Precision 542 (RT) to Mud Line at Slot (Slot E)	18.60ft
MD Reference Pt	Precision 542 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	325.00°

06/12/2015

Received
APR 20 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot E
NOBLE ENERGY	WEB-22E-HS	WEB-22E-HS
Area	Marshall County, WV	WEB-22EHS AWB
Field	Marshall	
Facility	WEB-22 Pad	

WELLPATH DATA (200 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]
0.00†	0.000	57.530	0.00	0.00	0.00	0.00	1713925.58	519824.77	39°55'21.872"N	80°31'11.976"W	0.00	0.000	0.000
18.60	0.000	57.530	18.60	0.00	0.00	0.00	1713925.58	519824.77	39°55'21.872"N	80°31'11.976"W	0.00	0.000	0.000
57.00	2.180	57.530	56.99	-0.03	0.39	0.62	1713926.20	519825.16	39°55'21.876"N	80°31'11.968"W	0.73	57.530	5.68
102.00	2.380	56.560	101.96	-0.10	1.37	2.12	1713927.70	519826.16	39°55'21.886"N	80°31'11.949"W	2.52	57.170	0.45
147.00	1.980	58.230	146.92	-0.16	2.29	3.56	1713929.14	519827.06	39°55'21.895"N	80°31'11.931"W	4.23	57.230	0.90
192.00	1.570	60.780	191.90	-0.27	3.00	4.76	1713930.34	519827.77	39°55'21.902"N	80°31'11.915"W	5.62	57.757	0.93
237.00	1.450	62.360	236.89	-0.41	3.57	5.80	1713931.38	519828.34	39°55'21.908"N	80°31'11.902"W	6.81	58.415	0.28
282.00	1.450	73.090	281.87	-0.66	4.00	6.85	1713932.43	519828.77	39°55'21.912"N	80°31'11.889"W	7.93	59.741	0.60
335.00	1.090	88.830	334.86	-1.14	4.20	7.99	1713933.57	519828.97	39°55'21.914"N	80°31'11.874"W	9.03	62.279	0.94
395.00	0.990	78.980	397.85	-1.70	4.32	9.13	1713934.71	519829.09	39°55'21.916"N	80°31'11.859"W	10.10	64.687	0.32
429.00	1.120	97.970	428.84	-2.01	4.33	9.69	1713935.27	519829.02	39°55'21.915"N	80°31'11.852"W	10.61	65.941	1.20
460.00	1.170	96.910	459.84	-2.43	4.25	10.31	1713935.88	519829.02	39°55'21.915"N	80°31'11.844"W	11.15	67.605	0.18
491.00	1.010	129.530	490.83	-2.91	4.03	10.83	1713936.41	519828.80	39°55'21.913"N	80°31'11.838"W	11.56	69.568	2.04
521.00	1.220	179.730	520.83	-3.42	3.55	11.04	1713936.61	519828.32	39°55'21.908"N	80°31'11.835"W	11.59	72.183	3.22
551.00	2.230	197.490	550.81	-4.04	2.67	10.86	1713936.44	519827.44	39°55'21.900"N	80°31'11.837"W	11.19	76.186	3.77
582.00	3.550	205.490	581.77	-4.88	1.23	10.27	1713935.85	519826.00	39°55'21.885"N	80°31'11.844"W	10.34	83.174	4.44
612.00	4.820	208.120	611.69	-5.91	-0.72	9.27	1713934.85	519824.05	39°55'21.866"N	80°31'11.857"W	9.30	94.446	4.28
645.00	6.070	212.520	644.54	-7.20	-3.42	7.68	1713933.26	519821.36	39°55'21.839"N	80°31'11.877"W	8.41	113.968	3.99
677.00	6.500	213.130	676.35	-8.53	-6.36	5.78	1713931.36	519818.41	39°55'21.810"N	80°31'11.901"W	8.59	137.716	1.36
708.00	5.640	212.080	707.18	-9.77	-9.12	4.01	1713929.59	519815.65	39°55'21.782"N	80°31'11.923"W	9.96	156.239	2.80
740.00	4.650	211.640	739.05	-10.90	-11.56	2.50	1713928.08	519813.22	39°55'21.758"N	80°31'11.942"W	11.82	167.798	3.10
771.00	4.080	210.670	769.96	-11.85	-13.57	1.28	1713926.86	519811.20	39°55'21.738"N	80°31'11.958"W	13.63	174.625	1.85
803.00	4.140	209.880	801.87	-12.81	-15.55	0.12	1713925.70	519809.22	39°55'21.718"N	80°31'11.972"W	15.55	179.554	0.26
834.00	4.340	211.460	832.79	-13.75	-17.53	-1.05	1713924.53	519807.25	39°55'21.699"N	80°31'11.987"W	17.56	183.424	0.75
866.00	4.490	211.550	864.69	-14.74	-19.63	-2.34	1713923.24	519805.15	39°55'21.678"N	80°31'12.003"W	19.76	186.788	0.47
897.00	3.780	212.960	895.61	-15.60	-21.52	-3.53	1713922.05	519803.25	39°55'21.659"N	80°31'12.018"W	21.80	189.309	2.31
929.00	2.710	216.390	927.56	-16.24	-23.01	-4.55	1713921.03	519801.76	39°55'21.644"N	80°31'12.031"W	23.46	191.184	3.40
960.00	2.060	218.670	958.53	-16.63	-24.04	-5.33	1713920.25	519800.74	39°55'21.634"N	80°31'12.041"W	24.62	192.509	2.12
992.00	1.320	223.330	990.52	-16.87	-24.75	-5.94	1713919.64	519800.02	39°55'21.627"N	80°31'12.049"W	25.46	193.505	2.35
1023.00	0.580	290.580	1021.52	-16.81	-24.96	-6.34	1713919.24	519799.81	39°55'21.625"N	80°31'12.054"W	25.75	194.246	3.93
1055.00	1.140	0.830	1053.51	-16.42	-24.58	-6.48	1713919.10	519800.19	39°55'21.628"N	80°31'12.056"W	25.42	194.776	3.41
1086.00	1.980	15.680	1084.50	-15.83	-23.76	-6.33	1713919.25	519801.01	39°55'21.637"N	80°31'12.054"W	24.59	194.929	2.99
1117.00	2.080	18.500	1115.48	-15.15	-22.71	-6.01	1713919.57	519802.06	39°55'21.647"N	80°31'12.050"W	23.49	194.826	0.46
1149.00	1.950	7.860	1147.46	-14.41	-21.62	-5.75	1713919.83	519803.15	39°55'21.658"N	80°31'12.047"W	22.37	194.900	1.24
1180.00	2.000	359.590	1178.44	-13.58	-20.56	-5.68	1713919.90	519804.22	39°55'21.668"N	80°31'12.046"W	21.33	195.458	0.93
1217.00	1.800	3.370	1215.42	-12.59	-19.33	-5.65	1713919.93	519805.44	39°55'21.680"N	80°31'12.046"W	20.14	196.306	0.64
1337.00	0.620	1335.40	1335.40	-10.63	-16.80	-5.47	1713920.11	519807.97	39°55'21.705"N	80°31'12.052"W	17.54	198.041	0.98
1432.00	0.860	258.280	1430.39	-9.96	-16.44	-6.11	1713919.47	519808.33	39°55'21.709"N	80°31'12.052"W	17.54	200.406	1.27
1526.00	0.760	228.640	1524.38	-9.75	-16.99	-7.27	1713918.31	519807.78	39°55'21.703"N	80°31'12.067"W	18.48	203.173	0.45
1621.00	0.500	186.120	1619.38	-10.13	-17.82	-7.79	1713917.79	519806.95	39°55'21.695"N	80°31'12.073"W	19.45	203.613	0.54
1715.00	0.900	179.370	1713.37	-11.05	-18.97	-7.83	1713917.25	519805.80	39°55'21.684"N	80°31'12.074"W	20.52	202.422	0.43
1810.00	0.420	171.000	1808.36	-11.98	-20.06	-7.76	1713917.82	519804.71	39°55'21.673"N	80°31'12.073"W	21.51	201.160	0.51
1900.00	0.590	159.460	1898.36	-12.72	-20.82	-7.55	1713918.03	519803.95	39°55'21.665"N	80°31'12.070"W	22.14	199.934	0.22
1989.00	0.650	142.440	1987.35	-13.67	-21.65	-7.08	1713918.50	519803.13	39°55'21.657"N	80°31'12.064"W	22.77	198.114	0.22
2079.00	0.940	149.900	2077.35	-14.92	-22.69	-6.40	1713919.18	519802.08	39°55'21.647"N	80°31'12.055"W	23.57	195.751	0.34

Actual Wellpath Report

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NOBLE ENERGY		
Area	Marshall County, WV	WEB-22E-HS
Field	Marshall	WEB-22EHS AWB
Facility	Wellbore	

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 [1/100ft]
2168.00	1.000	138.890	2166.33	-16.42	-23.91	-5.52	1713920.06	519800.87	39°55'21.635"N	80°31'12.043"W	24.54	193.008	0.22
2258.00	0.990	156.120	2256.32	-17.96	-25.21	-4.69	1713920.89	519799.56	39°55'21.622"N	80°31'12.032"W	25.64	190.542	0.33
2347.00	0.390	170.500	2345.31	-18.99	-26.21	-4.33	1713921.25	519798.56	39°55'21.613"N	80°31'12.028"W	26.57	189.381	0.70
2437.00	0.410	348.520	2435.31	-18.97	-26.20	-4.34	1713921.24	519798.57	39°55'21.613"N	80°31'12.028"W	26.55	189.415	0.89
2526.00	0.600	10.210	2524.31	-18.35	-25.43	-4.32	1713921.26	519799.34	39°55'21.620"N	80°31'12.028"W	25.79	189.653	0.30
2615.00	0.440	16.540	2613.30	-17.81	-24.64	-4.14	1713921.44	519800.13	39°55'21.628"N	80°31'12.026"W	24.99	189.548	0.19
2705.00	0.260	9.700	2703.30	-17.45	-24.11	-4.01	1713921.57	519800.66	39°55'21.633"N	80°31'12.024"W	24.44	189.448	0.20
2795.00	0.590	21.760	2793.30	-17.05	-23.48	-3.81	1713921.77	519801.30	39°55'21.640"N	80°31'12.021"W	23.78	189.208	0.38
2884.00	0.480	358.950	2882.30	-16.49	-22.68	-3.64	1713921.94	519802.09	39°55'21.648"N	80°31'12.019"W	22.97	189.125	0.27
2974.00	0.570	337.820	2972.29	-15.74	-21.89	-3.82	1713921.76	519802.88	39°55'21.655"N	80°31'12.022"W	22.22	189.897	0.24
3063.00	0.430	312.580	3061.29	-14.98	-21.25	-4.23	1713921.35	519803.52	39°55'21.662"N	80°31'12.027"W	21.67	191.262	0.29
3153.00	0.350	354.590	3151.29	-14.41	-20.75	-4.51	1713921.07	519804.02	39°55'21.667"N	80°31'12.031"W	21.23	192.253	0.32
3242.00	0.320	313.420	3240.29	-13.93	-20.31	-4.71	1713920.87	519804.46	39°55'21.671"N	80°31'12.033"W	20.85	193.065	0.27
3332.00	0.430	320.550	3330.28	-13.35	-19.87	-5.11	1713920.47	519804.90	39°55'21.675"N	80°31'12.039"W	20.52	194.419	0.13
3382.00	0.360	327.190	3380.28	-13.00	-19.60	-5.31	1713920.27	519805.17	39°55'21.678"N	80°31'12.041"W	20.30	195.172	0.17
3472.00	0.100	296.890	3470.28	-12.65	-19.32	-5.54	1713920.04	519805.45	39°55'21.680"N	80°31'12.044"W	20.10	195.990	0.31
3561.00	0.040	313.320	3559.28	-12.55	-19.27	-5.63	1713919.95	519805.50	39°55'21.681"N	80°31'12.045"W	20.07	196.286	0.07
3651.00	2.960	240.050	3649.24	-12.32	-20.41	-7.67	1713917.91	519804.37	39°55'21.670"N	80°31'12.071"W	21.80	200.589	3.28
3741.00	6.080	228.950	3738.95	-12.62	-24.70	-13.27	1713912.31	519800.07	39°55'21.627"N	80°31'12.143"W	28.04	208.259	3.58
3830.00	8.200	219.180	3827.26	-14.84	-32.71	-20.84	1713904.74	519792.06	39°55'21.546"N	80°31'12.239"W	38.79	212.500	2.74
3920.00	9.430	223.980	3916.20	-18.00	-42.99	-30.02	1713895.57	519781.78	39°55'21.444"N	80°31'12.355"W	52.44	214.920	1.59
4009.00	11.130	237.070	4003.78	-19.09	-52.91	-42.29	1713883.29	519771.86	39°55'21.344"N	80°31'12.511"W	67.74	218.634	3.23
4099.00	13.400	227.130	4091.73	-20.20	-64.73	-57.23	1713868.35	519760.04	39°55'21.226"N	80°31'12.701"W	86.40	221.479	3.44
4188.00	15.030	216.900	4178.01	-25.20	-80.98	-71.72	1713853.86	519743.79	39°55'21.064"N	80°31'12.885"W	108.17	221.529	3.36
4278.00	16.370	211.330	4264.66	-33.92	-101.15	-85.32	1713840.26	519723.63	39°55'20.863"N	80°31'13.056"W	132.33	220.149	2.24
4368.00	16.590	209.930	4350.96	-44.45	-123.12	-98.33	1713827.26	519701.66	39°55'20.644"N	80°31'13.220"W	157.56	218.613	0.50
4457.00	17.850	214.400	4435.97	-54.64	-145.38	-112.37	1713813.21	519679.39	39°55'20.423"N	80°31'13.397"W	183.75	217.702	2.05
4547.00	21.410	217.800	4520.73	-64.35	-169.75	-130.24	1713795.34	519655.02	39°55'20.180"N	80°31'13.623"W	213.96	217.497	4.15
4600.00	21.390	216.940	4570.08	-70.21	-185.12	-141.98	1713783.61	519639.66	39°55'20.027"N	80°31'13.771"W	233.30	217.486	0.59
4690.00	18.330	214.040	4654.72	-80.36	-209.97	-159.77	1713765.82	519614.81	39°55'19.779"N	80°31'13.996"W	263.85	217.267	3.57
4780.00	15.400	211.740	4740.84	-90.15	-231.87	-173.98	1713751.61	519592.91	39°55'19.561"N	80°31'14.175"W	289.88	216.882	3.34
4870.00	9.800	219.990	4828.64	-96.85	-247.91	-185.20	1713740.39	519576.87	39°55'19.401"N	80°31'14.317"W	309.45	216.761	6.52
4959.00	16.440	225.790	4915.27	-100.84	-262.52	-199.11	1713726.48	519562.27	39°55'19.256"N	80°31'14.493"W	329.48	217.179	7.60
5049.00	19.500	227.910	5000.87	-104.73	-281.47	-219.39	1713706.20	519543.31	39°55'19.066"N	80°31'14.751"W	356.87	217.935	3.48
5138.00	21.630	229.140	5084.20	-108.24	-302.16	-242.82	1713682.77	519522.62	39°55'18.859"N	80°31'15.048"W	387.64	218.786	2.44
5228.00	23.490	227.830	5167.31	-112.17	-325.06	-268.66	1713656.93	519499.73	39°55'18.630"N	80°31'15.377"W	421.71	219.574	2.14
5318.00	27.090	224.630	5248.67	-118.10	-351.69	-296.37	1713629.23	519473.10	39°55'18.363"N	80°31'15.728"W	459.91	220.120	4.28
5407.00	28.150	220.290	5327.54	-127.08	-382.13	-324.18	1713601.41	519442.66	39°55'18.059"N	80°31'16.081"W	501.12	220.310	2.55
5497.00	31.280	217.720	5405.70	-139.41	-416.82	-352.21	1713573.38	519407.97	39°55'17.714"N	80°31'16.435"W	545.70	220.198	3.75
5586.00	31.510	217.290	5481.67	-153.35	-453.60	-380.44	1713545.16	519371.20	39°55'17.347"N	80°31'16.792"W	592.02	219.987	0.36
5676.00	34.930	218.830	5556.95	-167.69	-492.39	-410.85	1713514.75	519332.40	39°55'16.960"N	80°31'17.177"W	641.29	219.842	3.91
5766.00	35.600	220.620	5630.43	-181.37	-532.35	-444.07	1713481.54	519292.45	39°55'16.562"N	80°31'17.597"W	693.25	219.834	1.37
5855.00	40.050	223.340	5700.72	-193.60	-572.86	-480.60	1713445.00	519251.94	39°55'16.157"N	80°31'18.060"W	747.76	219.995	5.34
5945.00	43.300	226.310	5767.94	-204.12	-615.25	-522.81	1713402.80	519209.55	39°55'15.733"N	80°31'18.596"W	807.38	220.356	4.22
6034.00	44.290	225.470	5832.18	-213.87	-658.13	-567.03	1713358.58	519166.67	39°55'15.305"N	80°31'19.157"W	868.71	220.748	1.29

Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot E
NOBLE ENERGY		
Area	Marshall County, WV	WEB-22E-HS
Field	Marshall	WEB-22EHS AWB
Facility	WEB-22 Pad	

WELLPATH DATA (200 stations)

MID [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]
6124.00	45.720	224.930	5895.82	-224.71	-702.97	-612.19	1713313.42	519121.83	39°55'14.857"N	80°31'17.730"W	932.17	221.051	1.64
6214.00	45.640	225.350	5958.70	-235.73	-748.39	-657.83	1713261.78	519076.41	39°55'14.403"N	80°31'20.309"W	996.41	221.315	0.35
6303.00	45.660	224.270	6020.91	-246.99	-793.54	-702.68	1713222.94	519031.26	39°55'13.951"N	80°31'20.878"W	1059.94	221.525	0.87
6393.00	45.670	223.760	6083.81	-259.81	-840.22	-747.00	1713178.62	518984.59	39°55'13.485"N	80°31'21.440"W	1124.27	221.639	1.20
6482.00	45.800	223.190	6145.93	-273.09	-886.86	-790.45	1713135.17	518937.96	39°55'13.019"N	80°31'21.991"W	1187.99	221.770	0.38
6572.00	45.810	226.560	6208.68	-284.43	-932.57	-835.96	1713089.66	518892.24	39°55'12.562"N	80°31'22.568"W	1252.40	221.873	2.68
6662.00	45.770	230.710	6271.45	-291.58	-975.18	-884.36	1713041.27	518849.63	39°55'12.136"N	80°31'23.183"W	1316.46	222.204	3.31
6751.00	45.760	231.440	6333.54	-295.94	-1015.25	-933.96	1712991.66	518809.57	39°55'11.734"N	80°31'23.814"W	1379.50	222.612	0.59
6840.00	47.190	233.710	6394.84	-297.52	-1053.52	-985.88	1712939.75	518771.30	39°55'11.350"N	80°31'24.475"W	1442.87	223.100	3.83
6930.00	52.530	250.750	6453.04	-287.37	-1084.02	-1047.12	1712878.51	518740.80	39°55'11.042"N	80°31'25.256"W	1507.17	224.008	14.06
7020.00	53.010	255.060	6507.50	-265.34	-1105.07	-1115.59	1712810.04	518719.75	39°55'10.826"N	80°31'26.132"W	1570.26	225.271	3.85
7109.00	52.920	257.860	6561.11	-239.36	-1121.70	-1184.65	1712740.99	518703.12	39°55'10.654"N	80°31'27.016"W	1631.44	226.563	2.51
7199.00	53.020	264.620	6615.36	-207.62	-1132.63	-1255.59	1712670.05	518692.19	39°55'10.538"N	80°31'27.924"W	1690.96	227.947	6.00
7289.00	54.950	276.480	6668.40	-165.35	-1131.84	-1328.16	1712597.48	518692.19	39°55'10.538"N	80°31'28.856"W	1745.01	229.651	10.86
7378.00	58.610	286.850	6717.24	-111.22	-1116.68	-1400.88	1712524.77	518708.14	39°55'10.679"N	80°31'29.791"W	1791.49	231.441	10.57
7468.00	63.900	293.400	6760.54	-46.50	-1089.46	-1474.84	1712450.81	518735.36	39°55'10.940"N	80°31'30.745"W	1833.60	233.547	8.67
7557.00	70.450	297.740	6795.06	24.92	-1054.02	-1548.74	1712376.93	518770.80	39°55'11.282"N	80°31'31.698"W	1873.38	235.762	8.62
7647.00	69.900	303.090	6825.61	101.88	-1011.18	-1621.73	1712303.91	518813.64	39°55'11.697"N	80°31'32.641"W	1911.15	238.056	5.63
7736.00	70.870	308.440	6855.50	181.00	-962.19	-1689.72	1712233.94	518862.62	39°55'12.174"N	80°31'33.521"W	1944.47	240.341	5.77
7826.00	78.100	313.490	6879.58	265.06	-905.35	-1755.09	1712160.57	518919.47	39°55'12.728"N	80°31'34.368"W	1974.84	242.713	9.68
7916.00	83.920	317.660	6893.64	352.70	-841.88	-1817.25	1712108.41	518982.93	39°55'13.348"N	80°31'35.175"W	2002.79	245.143	7.92
8005.00	89.940	321.750	6898.41	441.14	-774.14	-1874.68	1712050.99	519050.67	39°55'14.011"N	80°31'35.922"W	2028.23	247.562	8.17
8095.00	90.000	323.110	6898.45	531.04	-702.81	-1929.56	1711996.11	519122.00	39°55'14.710"N	80°31'36.637"W	2053.57	249.987	1.51
8185.00	90.400	325.300	6898.14	621.03	-629.81	-1982.19	1711943.48	519194.99	39°55'15.425"N	80°31'37.323"W	2079.85	252.373	2.47
8274.00	90.550	326.900	6897.40	710.01	-555.95	-2031.83	1711893.85	519268.85	39°55'16.149"N	80°31'37.971"W	2106.52	254.697	1.81
8364.00	90.580	328.750	6896.54	799.89	-479.77	-2079.75	1711843.93	519345.02	39°55'16.897"N	80°31'38.597"W	2134.37	257.010	2.06
8453.00	90.580	332.120	6895.66	888.47	-402.38	-2123.66	1711802.02	519422.41	39°55'17.657"N	80°31'39.172"W	2161.44	259.271	3.79
8543.00	90.680	331.950	6894.67	977.79	-322.89	-2165.86	1711759.83	519501.89	39°55'18.437"N	80°31'39.725"W	2189.79	261.521	0.22
8633.00	90.710	330.810	6893.58	1067.22	-243.89	-2208.96	1711716.72	519580.89	39°55'19.213"N	80°31'40.290"W	2222.39	263.699	1.27
8722.00	90.620	329.260	6892.54	1155.87	-166.80	-2253.41	1711672.28	519657.98	39°55'19.970"N	80°31'40.872"W	2259.58	265.767	1.74
8812.00	90.680	330.680	6891.52	1245.52	-88.89	-2298.45	1711627.24	519735.89	39°55'20.735"N	80°31'41.461"W	2300.17	267.461	1.58
8901.00	90.620	327.440	6890.51	1334.28	-12.57	-2344.20	1711581.49	519812.20	39°55'21.484"N	80°31'42.060"W	2344.23	269.693	3.64
8991.00	90.770	323.650	6889.42	1424.26	61.63	-2395.10	1711530.59	519886.39	39°55'22.211"N	80°31'42.724"W	2395.90	271.474	4.21
9080.00	90.830	323.210	6888.18	1513.21	133.10	-2448.13	1711477.57	519957.86	39°55'22.911"N	80°31'43.415"W	2451.74	273.112	0.50
9170.00	90.770	324.880	6886.92	1603.19	205.94	-2500.96	1711424.74	520030.70	39°55'23.625"N	80°31'44.104"W	2509.43	274.707	1.86
9259.00	90.800	324.640	6885.70	1692.18	278.62	-2552.31	1711373.39	520103.38	39°55'24.338"N	80°31'44.773"W	2567.47	276.230	0.27
9349.00	90.680	322.840	6884.54	1782.15	351.19	-2605.53	1711320.17	520175.94	39°55'25.049"N	80°31'45.467"W	2629.09	277.676	2.00
9438.00	90.650	321.720	6883.51	1871.04	421.58	-2659.98	1711266.73	520246.33	39°55'25.738"N	80°31'46.176"W	2693.18	279.006	1.26
9528.00	90.800	324.780	6882.37	1960.98	493.68	-2713.82	1711211.89	520318.42	39°55'26.445"N	80°31'46.878"W	2758.36	280.310	3.40
9618.00	90.770	325.320	6881.13	2050.97	567.44	-2765.37	1711160.34	520392.18	39°55'27.168"N	80°31'47.550"W	2822.99	281.596	6.67
9707.00	90.770	319.740	6879.94	2139.85	638.04	-2819.49	1711106.23	520462.78	39°55'27.859"N	80°31'48.255"W	2890.78	282.751	0.20
9797.00	90.740	316.780	6878.75	2229.21	705.18	-2879.39	1711046.32	520529.92	39°55'28.516"N	80°31'49.034"W	2964.49	283.761	3.29
9887.00	90.650	319.360	6877.66	2318.53	772.13	-2939.52	1710986.20	520596.86	39°55'29.171"N	80°31'49.815"W	3039.24	284.718	2.87
9976.00	90.580	328.630	6876.70	2407.42	844.05	-2991.78	1710933.94	520668.78	39°55'29.875"N	80°31'50.497"W	3108.57	285.755	10.42
10066.00	90.580	330.410	6875.79	2497.13	921.60	-3037.43	1710888.30	520746.33	39°55'30.637"N	80°31'51.094"W	3174.17	286.879	1.98

Actual Wellpath Report

WEB-22E-HS AWP Proj: 15765'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-22E-HS
Field	Marshall	Wellbore	WEB-22EHS AWB
Facility	WEB-22 Pad		

WELLPATH DATA (200 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sct [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]
10156.00	90.680	327.880	6874.80	2586.88	998.85	-3083.58	1710842.15	520823.58	39°55'31.395"N	80°31'51.698"W	3241.32	287.948	2.81
10245.00	90.680	326.060	6873.75	2675.82	1073.46	-3132.09	1710793.64	520898.18	39°55'32.127"N	80°31'52.331"W	3310.94	288.918	2.04
10335.00	90.460	327.110	6872.85	2765.78	1148.58	-3181.65	1710744.08	520973.29	39°55'32.863"N	80°31'52.978"W	3382.62	289.850	1.19
10425.00	90.460	324.460	6872.17	2855.76	1222.99	-3232.25	1710693.49	521047.77	39°55'33.639"N	80°31'53.639"W	3455.89	290.725	2.95
10514.00	90.180	323.260	6871.72	2944.74	1294.87	-3284.74	1710641.00	521119.57	39°55'34.297"N	80°31'54.323"W	3530.75	291.515	1.37
10604.00	90.060	326.730	6871.54	3034.73	1368.57	-3336.36	1710589.38	521193.28	39°55'35.020"N	80°31'54.996"W	3606.14	292.303	3.86
10694.00	90.250	329.440	6871.29	3124.59	1444.96	-3383.93	1710534.81	521269.66	39°55'35.769"N	80°31'55.618"W	3679.52	293.123	3.02
10783.00	90.250	328.050	6870.90	3213.39	1521.04	-3430.11	1710495.64	521345.74	39°55'36.516"N	80°31'56.222"W	3752.23	293.914	1.56
10873.00	90.220	324.460	6870.53	3303.36	1595.87	-3480.09	1710445.65	521420.56	39°55'37.250"N	80°31'56.875"W	3828.56	294.635	3.99
10963.00	90.150	322.810	6870.24	3393.33	1668.34	-3533.45	1710393.30	521493.03	39°55'37.960"N	80°31'57.570"W	3907.51	295.275	1.83
11052.00	90.280	322.130	6870.01	3482.24	1738.92	-3587.67	1710338.08	521563.60	39°55'38.651"N	80°31'58.277"W	3986.88	295.859	0.76
11142.00	90.220	318.880	6869.72	3571.95	1808.36	-3644.90	1710280.85	521633.04	39°55'39.331"N	80°31'59.021"W	4068.84	296.388	3.61
11231.00	90.090	320.290	6869.48	3660.55	1876.12	-3702.60	1710223.16	521700.80	39°55'39.994"N	80°31'59.772"W	4150.79	296.871	1.59
11321.00	90.280	322.250	6869.19	3750.36	1946.32	-3758.91	1710166.85	521771.00	39°55'40.681"N	80°32'00.505"W	4232.91	297.375	2.19
11411.00	90.340	323.120	6868.70	3840.28	2017.90	-3813.46	1710110.30	521842.57	39°55'41.382"N	80°32'01.216"W	4314.44	297.886	0.97
11500.00	90.340	325.060	6868.17	3929.26	2089.98	-3863.66	1710060.10	521914.65	39°55'42.088"N	80°32'01.896"W	4394.47	298.398	2.18
11590.00	90.490	325.930	6867.52	4019.26	2164.14	-3916.64	1710009.13	521988.81	39°55'42.816"N	80°32'02.562"W	4474.77	298.923	0.98
11680.00	90.340	326.160	6866.87	4109.24	2238.79	-3966.91	1709951.19	522063.46	39°55'43.548"N	80°32'03.218"W	4555.06	299.439	0.31
11769.00	90.550	329.050	6866.18	4198.13	2313.93	-4014.58	1709864.45	522138.59	39°55'44.285"N	80°32'03.841"W	4633.70	299.958	3.26
11859.00	90.490	328.370	6865.36	4287.94	2390.84	-4061.33	1709818.94	522215.49	39°55'45.039"N	80°32'04.452"W	4712.80	300.485	0.76
11948.00	90.430	330.120	6864.67	4376.69	2467.32	-4106.83	1709772.83	522292.97	39°55'45.797"N	80°32'05.048"W	4791.01	300.997	1.97
12038.00	90.310	328.330	6864.02	4466.45	2544.60	-4152.95	1709726.25	522369.25	39°55'46.548"N	80°32'05.651"W	4870.52	301.497	2.10
12127.00	90.310	323.720	6863.44	4555.41	2618.34	-4202.73	1709680.52	522442.98	39°55'47.271"N	80°32'06.301"W	4951.63	301.923	5.07
12217.00	90.310	322.910	6862.96	4645.37	2690.51	-4256.50	1709639.28	522515.15	39°55'47.978"N	80°32'07.002"W	5035.54	302.297	0.90
12306.00	90.340	324.250	6862.45	4734.34	2762.13	-4309.34	1709591.65	522586.76	39°55'48.680"N	80°32'07.691"W	5118.57	302.658	1.51
12396.00	90.340	323.700	6861.92	4824.32	2834.91	-4362.27	1709553.52	522659.55	39°55'49.393"N	80°32'08.381"W	5202.51	303.019	0.61
12485.00	90.220	325.010	6861.48	4913.31	2907.24	-4414.13	1709511.66	522731.87	39°55'50.102"N	80°32'09.057"W	5285.51	303.370	1.48
12575.00	90.340	325.720	6861.04	5003.31	2981.29	-4465.28	1709460.51	522805.91	39°55'50.828"N	80°32'09.725"W	5369.06	303.729	0.80
12665.00	90.370	326.590	6860.48	5093.29	3056.03	-4515.41	1709410.39	522880.66	39°55'51.561"N	80°32'10.379"W	5452.36	304.090	0.97
12754.00	90.370	326.530	6859.91	5182.25	3130.30	-4564.45	1709361.35	522954.92	39°55'52.289"N	80°32'11.020"W	5534.71	304.442	0.07
12844.00	90.430	326.310	6859.28	5272.22	3205.28	-4614.23	1709311.57	523029.89	39°55'53.025"N	80°32'11.670"W	5618.27	304.786	0.25
12933.00	90.740	331.130	6858.37	5361.00	3281.31	-4660.42	1709265.38	523105.93	39°55'53.771"N	80°32'12.274"W	5699.70	305.149	5.43
13023.00	90.710	329.460	6857.23	5450.61	3359.48	-4705.02	1709220.79	523184.09	39°55'54.538"N	80°32'12.858"W	5781.29	305.528	1.86
13112.00	90.460	321.860	6856.32	5539.53	3432.91	-4755.18	1709170.63	523257.51	39°55'55.258"N	80°32'13.513"W	5864.86	305.827	8.54
13202.00	90.460	313.360	6855.60	5628.70	3499.32	-4815.80	1709110.01	523333.92	39°55'55.907"N	80°32'14.300"W	5952.91	306.003	9.44
13292.00	90.550	316.730	6854.81	5717.33	3562.99	-4879.38	1709046.44	523387.59	39°55'56.529"N	80°32'15.126"W	6041.79	306.137	3.75
13381.00	90.520	318.730	6853.97	5805.61	3628.85	-4939.24	1708986.58	523453.44	39°55'57.173"N	80°32'15.904"W	6128.99	306.305	2.25
13471.00	90.520	321.640	6853.16	5895.28	3697.97	-4996.86	1708928.96	523522.56	39°55'57.850"N	80°32'16.654"W	6216.39	306.504	3.23
13561.00	90.520	326.970	6852.34	5985.23	3771.03	-5049.35	1708876.47	523595.62	39°55'58.566"N	80°32'17.338"W	6302.11	306.754	5.92
13650.00	90.400	330.020	6851.63	6074.05	3846.90	-5095.85	1708829.97	523671.48	39°55'59.310"N	80°32'17.947"W	6384.85	307.049	3.43
13740.00	90.550	331.650	6850.88	6163.58	3925.48	-5139.71	1708786.12	523750.06	39°56'00.082"N	80°32'18.521"W	6467.30	307.371	1.82
13830.00	90.580	328.800	6849.99	6253.19	4003.59	-5184.39	1708741.44	523828.17	39°56'00.848"N	80°32'19.106"W	6550.32	307.677	3.17
13919.00	90.490	324.750	6849.16	6342.13	4078.02	-5233.15	1708692.68	523902.60	39°56'01.578"N	80°32'19.743"W	6634.46	307.928	4.55
14009.00	90.580	323.840	6848.32	6432.12	4151.10	-5285.67	1708640.17	523975.67	39°56'02.294"N	80°32'20.428"W	6720.86	308.144	1.02
14098.00	90.310	324.770	6847.63	6521.11	4223.38	-5337.59	1708588.24	524047.94	39°56'03.003"N	80°32'21.106"W	6806.38	308.353	1.09

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Actual Wellpath Report

WEB-22E-HS AWP Proj: 15765'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot E
Area	Marshall County, WV	Well	WEB-22E-HS
Field	Marshall	Wellbore	WEB-22EHS AWB
Facility	WEB-22 Pad		

WELLPATH DATA (200 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 [°]	Dr.S ["/100ft]
14188.00	90.150	320.500	6847.27	6611.01	4294.89	-5392.20	1708533.64	524119.46	39°56'03.703"N	80°32'21.817"W	6893.61	308.537	4.75
14277.00	90.280	317.650	6846.93	6699.52	4362.13	-5450.50	1708475.34	524186.69	39°56'04.361"N	80°32'22.575"W	6981.12	308.671	3.21
14367.00	90.370	322.190	6846.42	6789.14	4430.97	-5508.43	1708417.42	524255.53	39°56'05.035"N	80°32'23.329"W	7069.39	308.813	5.05
14456.00	90.370	327.740	6845.68	6878.11	4503.82	-5559.50	1708366.37	524328.37	39°56'05.749"N	80°32'23.996"W	7154.88	309.011	6.24
14546.00	90.370	332.570	6844.94	6967.71	4581.85	-5604.27	1708321.58	524406.40	39°56'06.515"N	80°32'24.582"W	7238.87	309.268	5.37
14635.00	90.370	328.730	6844.36	7056.26	4659.41	-5647.89	1708277.96	524483.96	39°56'07.276"N	80°32'25.153"W	7321.80	309.522	4.31
14725.00	90.340	325.070	6843.81	7146.20	4734.79	-5697.03	1708228.83	524559.34	39°56'08.015"N	80°32'25.795"W	7407.72	309.730	4.07
14814.00	90.280	324.100	6843.32	7235.19	4807.32	-5748.60	1708177.26	524631.86	39°56'08.726"N	80°32'26.468"W	7493.78	309.904	1.09
14904.00	90.460	324.890	6842.74	7325.18	4880.59	-5800.87	1708124.99	524705.12	39°56'09.444"N	80°32'27.150"W	7580.91	310.076	0.90
14994.00	90.460	325.360	6842.02	7415.18	4954.42	-5852.33	1708073.53	524778.95	39°56'10.168"N	80°32'27.821"W	7667.86	310.250	0.52
15083.00	90.550	326.190	6841.18	7504.17	5028.01	-5902.38	1708023.48	524852.54	39°56'10.889"N	80°32'28.475"W	7753.64	310.426	0.95
15173.00	90.460	322.490	6840.33	7594.14	5101.11	-5954.84	1707971.03	524925.64	39°56'11.606"N	80°32'29.159"W	7841.01	310.584	4.11
15262.00	90.680	321.220	6839.45	7683.00	5171.10	-6009.81	1707916.06	524995.63	39°56'12.291"N	80°32'29.875"W	7928.31	310.710	1.45
15352.00	90.980	321.620	6838.48	7772.82	5241.46	-6065.93	1707859.97	525065.97	39°56'12.980"N	80°32'30.606"W	8016.75	310.830	0.47
15442.00	90.580	327.620	6837.28	7862.77	5314.79	-6118.01	1707807.86	525139.31	39°56'13.699"N	80°32'31.286"W	8104.14	310.981	6.68
15532.00	90.650	330.570	6836.00	7952.52	5392.00	-6164.22	1707761.65	525216.51	39°56'14.456"N	80°32'31.890"W	8189.71	311.177	3.30
15621.00	90.580	328.610	6835.04	8041.23	5468.75	-6209.27	1707716.61	525293.26	39°56'15.210"N	80°32'32.480"W	8274.19	311.372	2.20
15711.00	90.620	325.540	6834.10	8131.15	5544.28	-6258.18	1707667.70	525368.78	39°56'15.950"N	80°32'33.119"W	8360.85	311.539	3.41
15739.00	90.620	324.660	6833.80	8159.15	5567.24	-6274.20	1707651.68	525391.75	39°56'16.176"N	80°32'33.328"W	8388.07	311.583	3.14
15765.00	90.620	324.660	6833.52	8185.15	5588.45	-6289.24	1707636.64	525412.95	39°56'16.383"N	80°32'33.524"W	8413.40	311.623	0.00

TARGETS

Name	MD [ft]	TVYD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WEB-22E-HS BHL Rev-1		6898.00	5579.81	-6301.88	1707624.00	525404.31	39°56'16.297"N	80°32'33.685"W	point
WEB-22E-HS LP Rev-1		6898.00	-769.52	-1856.04	1712069.63	519055.28	39°55'14.059"N	80°31'35.683"W	point

WELLPATH COMPOSITION - Ref Wellbore: WEB-22EHS AWB Ref Wellpaths: WEB-22E-HS AWP Proj: 15765'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment
18.60	398.00	Generic gyro - northseeking (Standard)	01_Gyro Surveys 17 1/2" (57'-398')
398.00	1217.00	Generic gyro - northseeking (Standard)	02_BHI Motor / Gyro Surveys 17 1/2" (398') (429'-1217') Proj:1272'
1217.00	3382.00	NavITrak (MagCorr)	03_BHI MWD <12-1/4"> (1217') (1337'-3382')
3382.00	15739.00	NavITrak (AT Curve Short Spaced)	04_BHI AT Curve <8-3/4"> (3382') (3472'-15739')
15739.00	15765.00	Blind Drilling (std)	Projection to bit

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot E
NOBLE ENERGY	Well	WEB-22E-HS
Marshall County, WV	Wellbore	WEB-22EHS AWB
Field		
Marshall		
Facility		
WEB-22 Pad		

COMMENTS

Wellpath general comments
 API: 47-051-01734-0000
 BHI Job #: 6234557
 Rig: Precision 542
 Duration: 08.03.2014 - 08.17.2014
 Gyro <17-.1/2"> (57'-398')
 BHI MWD <17-.1/2"> (398')(429'-1217')
 BHI MWD <12-.1/4"> (1217')(1337'-3382)
 BHI AT Curve <8.3/4"> (3382')(3472'-15739')
 Projected MD at TD: 15765'

Location: Marshall County, WV
 Field: Marshall
 Facility: WEB-22 Pad

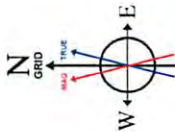
Slot: Slot E
 Well: WEB-22E-HS
 Wellbore: WEB-22E-HS-PWB

Location Information

Facility Name	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
WEB-22 Pad	1713925.810	519852.540	39°52'22.147"N	80°31'11.877"W
SVL	Local E (ft)	Local N (ft)	Latitude	Longitude
Slot E	-27.77	-0.23	39°52'21.872"N	80°31'11.876"W
Precision 542 (RT) to Mud line (At Slot, Slot E)	18.6ft			
Mean Sea Level to Mud line (At Slot, Slot E)	-1325ft			
Precision 542 (RT) to Mean Sea Level	1343.8ft			

Well Profile Data

Design Comment	MD (ft)	Inc (ft)	Az (T)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (ft/100ft)	VS (ft)
The Oh	4760.00	15.400	211.740	4740.84	-231.87	-173.98	3.34	-90.15
Prof. to Bottom	4811.00	15.400	211.740	4770.73	-238.87	-178.31	0.00	-93.40
End of 3D Arc (J)	6554.25	49.346	228.993	624.03	-869.82	-818.88	2.00	-259.15
Tangent	6813.24	49.346	228.993	6392.76	-1018.74	-967.25	0.00	-279.71
Landing Pt.	7995.16	50.000	325.000	6898.00	-769.52	-1856.04	8.00	434.23
BHL	15746.25	90.000	325.000	6898.00	5579.81	-4301.88	0.00	8165.32



User specified (HDCM) Dr. 67.33° Field, 53079.0T
 Magnetic North West of True North (at 6/4/2014)
 To correct azimuth from True to Grid add 0.65 degrees
 To correct azimuth from Magnetic to Grid subtract 7.84 degrees

Received
 APR 20 2015
 Office of Oil and Gas
 WV Dept. of Environmental Protection

API: 47-051-01734-0000
 BHI Job #: 6234557
 Rig: Precision 542
 Duration: 08.03.2014 - 08.17.2014

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
WEB-22E-HS BHL Rev-1	15746.25	6898.00	5579.81	-6301.88	1707624.00	524504.31	39°56'16.297"N	80°32'33.685"W
WEB-22E-HS LP Rev-1	7995.16	6898.00	-769.52	-1856.04	1712069.03	519852.28	39°55'14.059"N	80°31'16.683"W

Plot reference wellbore is WEB-22E-HS PWB Rev-C-0
 True vertical depths are referenced to Precision 542 (RT)
 Measured depths are referenced to Precision 542 (RT)
 Precision 542 (RT) to Mean Sea Level: 1343.8 feet
 Mean Sea Level to Mud line (At Slot, Slot E): -1325 feet
 Depths are in feet
 Coordinates are in feet referenced to Slot
 Created by: gaffar# on 8/19/2014

