

**REFERENCE WELLPATH IDENTIFICATION**

Operator	NOBLE ENERGY	Slot	Slot J
Area	Marshall County, WV	Well	WEB-22J-HS
Field	Marshall	Wellbore	WEB 22JHS (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	Frisjesl
Scale	0.999954	Report Generated	7/9/2014 at 1:17:40 PM
Convergence at slot	0.65° West	Database/Source file	WA_EasternUS/WEB_22JHS_AWB_.xml

**WELLPATH LOCATION**

	Local coordinates			Grid coordinates			Geographic coordinates		
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude			
Slot Location	-70.59	42.19	1713968.00	519781.95	39°55'21.454"N	80°31'11.425"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 J)	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	145.00°

Received

APR 20 2015

Office of Oil and Gas  
 WV Dept. of Environmental Protection

06/12/2015



# Actual Wellpath Report

WEB 22JHS (AWP) Proj: 12280'

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Area	Marshall County, WV	WEB-22J-HS
Field	Marshall	WEB 22JHS (AWB)
Facility	WEB-22 Pad	

## WELLPATH DATA (156 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	11960	0.00	0.00	0.00	0.00	1713968.00	519781.95	39°55'21.454"N	80°31'11.425"W	0.00	0.000	0.00
18.60	0.000	11960	18.60	0.00	0.00	0.00	1713968.00	519781.95	39°55'21.454"N	80°31'11.425"W	0.00	0.000	0.00
52.00	0.600	11960	52.00	-0.12	0.17	0.04	1713968.04	519782.12	39°55'21.455"N	80°31'11.425"W	0.17	11.960	1.80
148.00	1.040	1260	147.99	-1.16	1.53	0.16	1713968.16	519783.48	39°55'21.469"N	80°31'11.423"W	1.54	5.939	0.48
245.00	0.760	353.990	244.98	-2.43	3.06	0.13	1713968.13	519785.01	39°55'21.484"N	80°31'11.424"W	3.06	2.510	0.30
335.00	0.610	0.560	334.97	-3.33	4.13	0.10	1713968.10	519786.08	39°55'21.494"N	80°31'11.425"W	4.13	1.344	0.18
397.00	0.610	359.860	396.97	-3.87	4.79	0.10	1713968.10	519786.74	39°55'21.501"N	80°31'11.425"W	4.79	1.187	0.01
429.00	0.610	4.340	428.97	-4.14	5.13	0.11	1713968.11	519787.08	39°55'21.504"N	80°31'11.425"W	5.13	1.248	0.15
460.00	0.230	231.160	459.97	-4.26	5.26	0.08	1713968.08	519787.21	39°55'21.506"N	80°31'11.425"W	5.26	0.826	2.53
491.00	1.320	202.670	490.96	-4.07	4.89	-0.11	1713967.89	519786.84	39°55'21.502"N	80°31'11.427"W	4.89	358.707	3.62
521.00	1.730	196.430	520.95	-3.60	4.13	-0.37	1713967.63	519786.08	39°55'21.494"N	80°31'11.431"W	4.15	354.864	1.47
552.00	1.650	182.540	551.94	-2.95	3.24	-0.52	1713967.48	519785.19	39°55'21.486"N	80°31'11.432"W	3.28	350.817	1.34
582.00	1.290	185.620	581.93	-2.36	2.47	-0.58	1713967.42	519784.42	39°55'21.478"N	80°31'11.433"W	2.54	346.885	1.23
612.00	0.960	170.320	611.92	-1.87	1.89	-0.57	1713967.43	519783.84	39°55'21.472"N	80°31'11.433"W	1.97	343.293	1.48
645.00	1.120	155.110	644.92	-1.30	1.32	-0.38	1713967.62	519783.27	39°55'21.467"N	80°31'11.430"W	1.38	343.795	0.96
677.00	1.400	154.500	676.91	-0.61	0.69	-0.08	1713967.92	519782.64	39°55'21.460"N	80°31'11.426"W	0.69	352.977	0.88
709.00	1.520	150.540	708.90	0.20	-0.04	0.29	1713968.29	519781.91	39°55'21.453"N	80°31'11.421"W	0.29	96.988	0.49
740.00	1.070	153.620	739.89	0.89	-0.65	0.62	1713968.62	519781.30	39°55'21.447"N	80°31'11.417"W	0.90	136.341	1.47
771.00	0.860	127.770	770.89	1.40	-1.05	0.94	1713968.94	519780.90	39°55'21.443"N	80°31'11.413"W	1.41	138.426	1.54
803.00	0.630	83.460	802.88	1.71	-1.18	1.30	1713969.30	519780.77	39°55'21.442"N	80°31'11.408"W	1.76	132.269	1.68
834.00	0.840	84.960	833.88	1.91	-1.14	1.70	1713969.70	519780.81	39°55'21.443"N	80°31'11.403"W	2.05	123.968	0.88
866.00	0.840	76.430	865.88	2.11	-1.07	2.16	1713970.16	519780.88	39°55'21.443"N	80°31'11.397"W	2.41	116.312	0.39
897.00	1.400	68.780	896.87	2.26	-0.91	2.64	1713970.64	519781.04	39°55'21.445"N	80°31'11.391"W	2.79	109.049	0.76
929.00	1.400	61.570	928.87	2.38	-0.62	3.26	1713971.26	519781.33	39°55'21.448"N	80°31'11.383"W	3.31	100.793	1.22
960.00	1.450	47.770	959.86	2.37	-0.18	3.88	1713971.88	519781.77	39°55'21.452"N	80°31'11.375"W	3.88	92.608	1.12
992.00	1.170	22.450	991.85	2.14	0.40	4.30	1713972.30	519782.35	39°55'21.458"N	80°31'11.370"W	4.32	84.724	1.99
1023.00	1.120	6.800	1022.84	1.75	0.99	4.46	1713972.46	519782.94	39°55'21.464"N	80°31'11.368"W	4.57	77.476	1.02
1086.00	1.120	306.670	1085.83	0.70	1.97	4.04	1713972.04	519783.92	39°55'21.474"N	80°31'11.374"W	4.49	64.002	1.78
1118.00	1.750	281.970	1117.82	0.05	2.26	3.31	1713971.31	519784.21	39°55'21.476"N	80°31'11.383"W	4.01	55.702	2.72
1149.00	2.510	274.060	1148.80	-0.72	2.40	2.17	1713970.17	519784.35	39°55'21.478"N	80°31'11.398"W	3.24	42.071	2.62
1181.00	2.970	269.750	1180.76	-1.64	2.45	0.64	1713968.64	519784.40	39°55'21.478"N	80°31'11.417"W	2.53	14.686	1.57
1209.00	3.250	263.680	1208.72	-2.43	2.36	-0.87	1713967.13	519784.31	39°55'21.477"N	80°31'11.437"W	2.52	339.716	0.94
1336.00	3.890	247.800	1335.48	-5.12	0.34	-8.44	1713959.56	519782.29	39°55'21.456"N	80°31'11.534"W	8.45	272.277	0.92
1431.00	5.020	230.460	1430.19	-5.50	-3.53	-14.63	1713953.37	519778.42	39°55'21.417"N	80°31'11.612"W	15.05	256.439	1.84
1525.00	5.110	206.150	1523.84	-3.15	-9.90	-19.65	1713948.36	519772.05	39°55'21.354"N	80°31'11.676"W	22.00	243.243	2.27
1616.00	6.730	172.400	1614.38	3.54	-18.83	-20.73	1713947.27	519763.12	39°55'21.265"N	80°31'11.688"W	28.00	227.743	4.14
1714.00	6.980	166.610	1711.68	14.17	-30.32	-18.59	1713949.41	519751.64	39°55'21.152"N	80°31'11.659"W	35.56	211.515	0.75
1809.00	7.100	166.640	1805.96	25.00	-41.64	-15.90	1713952.11	519740.31	39°55'21.040"N	80°31'11.623"W	44.57	200.891	0.13
1899.00	4.730	157.510	1895.48	33.79	-50.49	-13.19	1713954.81	519731.47	39°55'20.953"N	80°31'11.587"W	52.18	194.642	2.83
1988.00	4.070	151.920	1984.22	40.51	-56.66	-10.30	1713957.70	519725.29	39°55'20.893"N	80°31'11.549"W	57.59	190.302	0.78
2078.00	2.490	154.050	2074.06	45.61	-61.24	-7.94	1713960.06	519720.71	39°55'20.848"N	80°31'11.518"W	61.75	187.388	1.76
2167.00	1.090	140.160	2163.02	48.36	-63.63	-6.55	1713961.45	519718.33	39°55'20.824"N	80°31'11.500"W	63.96	185.879	1.64
2257.00	0.920	122.130	2253.01	49.88	-64.67	-5.39	1713962.61	519717.28	39°55'20.814"N	80°31'11.485"W	64.89	184.766	0.40
2347.00	0.870	133.820	2343.00	51.22	-65.53	-4.29	1713963.71	519716.43	39°55'20.806"N	80°31'11.471"W	65.67	183.743	0.21
2436.00	0.520	130.720	2431.99	52.27	-66.26	-3.49	1713964.51	519715.70	39°55'20.798"N	80°31'11.460"W	66.35	183.018	0.40



# Actual Wellpath Report

WEB 22JHS (AWP) Proj: 12280'  
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Facility	WEB-22 Pad		

## WELLPATH DATA (156 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]
2525.00	0.760	128.920	2520.98	53.23	-66.89	-2.73	1713965.27	519715.06	39°55'20.792"N	80°31'11.450"W	66.95	182.335	0.27
2615.00	0.570	134.100	2610.98	54.24	-67.58	-1.94	1713966.06	519714.38	39°55'20.786"N	80°31'11.440"W	67.61	181.646	0.22
2705.00	0.500	133.670	2700.97	55.07	-68.16	-1.34	1713966.66	519713.79	39°55'20.780"N	80°31'11.432"W	68.17	181.123	0.08
2794.00	0.370	110.480	2789.97	55.68	-68.53	-0.79	1713967.21	519713.42	39°55'20.776"N	80°31'11.425"W	68.53	180.658	0.24
2884.00	0.320	115.660	2879.97	56.14	-68.74	-0.29	1713967.71	519713.21	39°55'20.774"N	80°31'11.419"W	68.74	180.240	0.07
2973.00	0.910	307.320	2968.97	55.69	-68.42	-0.63	1713967.37	519713.53	39°55'20.777"N	80°31'11.423"W	68.42	180.524	1.38
3062.00	1.290	312.520	3057.95	54.04	-67.31	-1.93	1713966.07	519714.64	39°55'20.788"N	80°31'11.440"W	67.34	181.639	0.44
3241.00	1.110	315.170	3147.93	52.19	-66.01	-3.29	1713964.71	519715.94	39°55'20.801"N	80°31'11.458"W	66.09	182.851	0.21
3241.00	1.050	316.240	3236.91	50.53	-64.81	-4.46	1713963.54	519717.14	39°55'20.813"N	80°31'11.473"W	64.96	183.936	0.07
3331.00	0.900	312.370	3326.90	49.03	-63.74	-5.55	1713962.45	519718.21	39°55'20.823"N	80°31'11.487"W	63.98	184.978	0.18
3371.00	0.820	321.160	3366.90	48.43	-63.30	-5.96	1713962.04	519718.65	39°55'20.827"N	80°31'11.493"W	63.58	185.382	0.39
3496.00	0.960	327.450	3491.88	46.50	-61.72	-7.09	1713960.91	519720.23	39°55'20.843"N	80°31'11.507"W	62.13	186.551	0.14
3586.00	0.980	311.950	3581.87	44.99	-60.57	-8.07	1713959.93	519721.38	39°55'20.854"N	80°31'11.520"W	61.11	187.585	0.29
3675.00	1.020	300.580	3670.85	43.53	-59.66	-9.31	1713958.69	519722.29	39°55'20.863"N	80°31'11.536"W	60.39	188.873	0.23
3765.00	0.650	292.980	3760.85	42.37	-59.06	-10.47	1713957.55	519722.90	39°55'20.869"N	80°31'11.551"W	59.98	190.057	0.43
3853.00	0.400	284.840	3848.84	41.71	-58.78	-11.23	1713956.77	519723.17	39°55'20.872"N	80°31'11.561"W	59.85	190.816	0.30
3942.00	0.260	211.780	3937.84	41.55	-58.87	-11.64	1713956.36	519723.08	39°55'20.871"N	80°31'11.566"W	60.01	191.181	0.46
4031.00	0.130	247.870	4026.84	41.61	-59.08	-11.84	1713956.16	519722.87	39°55'20.868"N	80°31'11.569"W	60.26	191.328	0.19
4124.00	0.180	302.660	4119.84	41.45	-59.04	-12.06	1713955.94	519722.91	39°55'20.869"N	80°31'11.571"W	60.26	191.541	0.16
4214.00	0.380	340.480	4209.84	41.03	-58.69	-12.28	1713955.72	519723.27	39°55'20.872"N	80°31'11.574"W	59.96	191.815	0.29
4303.00	0.350	357.930	4298.84	40.52	-58.14	-12.38	1713955.62	519723.82	39°55'20.878"N	80°31'11.576"W	59.44	192.025	0.13
4393.00	0.400	351.750	4388.83	40.01	-57.55	-12.44	1713955.56	519724.40	39°55'20.884"N	80°31'11.576"W	58.88	192.196	0.07
4482.00	0.620	343.520	4477.83	39.27	-56.78	-12.62	1713955.38	519725.17	39°55'20.891"N	80°31'11.579"W	58.17	192.531	0.26
4572.00	0.600	347.120	4567.83	38.38	-55.86	-12.86	1713955.14	519726.10	39°55'20.900"N	80°31'11.582"W	57.32	192.969	0.05
4662.00	0.830	331.270	4657.82	37.29	-54.83	-13.28	1713954.72	519727.13	39°55'20.910"N	80°31'11.588"W	56.41	193.618	0.33
4751.00	0.820	318.010	4746.81	36.02	-53.79	-14.02	1713953.98	519728.17	39°55'20.921"N	80°31'11.597"W	55.58	194.608	0.21
4841.00	0.690	340.460	4836.80	34.86	-52.80	-14.63	1713953.37	519729.16	39°55'20.930"N	80°31'11.605"W	54.79	195.488	0.36
4930.00	0.590	346.390	4925.80	33.91	-51.85	-14.92	1713953.08	519730.11	39°55'20.940"N	80°31'11.609"W	53.95	196.051	0.13
5020.00	0.400	348.800	5015.79	33.20	-51.09	-15.09	1713952.91	519730.86	39°55'20.947"N	80°31'11.611"W	53.27	196.453	0.21
5109.00	0.220	66.000	5104.79	32.94	-50.71	-14.99	1713953.01	519731.24	39°55'20.951"N	80°31'11.610"W	52.88	196.468	0.46
5199.00	0.110	22.070	5194.79	32.93	-50.56	-14.80	1713953.20	519731.39	39°55'20.952"N	80°31'11.608"W	52.69	196.316	0.18
5289.00	0.320	287.530	5284.79	32.68	-50.41	-15.01	1713952.99	519731.54	39°55'20.954"N	80°31'11.611"W	52.59	196.580	0.39
5379.00	0.420	305.400	5374.79	32.17	-50.14	-15.52	1713952.48	519731.81	39°55'20.956"N	80°31'11.617"W	52.49	197.195	0.17
5468.00	0.690	313.020	5463.79	31.34	-49.59	-16.17	1713952.83	519732.37	39°55'20.962"N	80°31'11.626"W	52.16	198.066	0.31
5557.00	0.280	326.550	5552.78	30.60	-49.04	-16.69	1713951.31	519732.91	39°55'20.967"N	80°31'11.632"W	51.80	198.791	0.48
5647.00	0.110	330.000	5642.78	30.29	-48.78	-16.85	1713951.15	519733.17	39°55'20.970"N	80°31'11.634"W	51.61	199.057	0.19
5762.00	5.650	253.540	5757.59	28.38	-50.29	-22.34	1713945.66	519731.66	39°55'20.954"N	80°31'11.705"W	55.03	203.951	4.89
5851.00	14.470	251.500	5845.14	23.82	-55.07	-37.11	1713930.89	519726.88	39°55'20.905"N	80°31'11.894"W	66.41	213.978	9.92
5941.00	20.130	245.100	5931.04	17.91	-65.17	-61.85	1713906.16	519716.79	39°55'20.803"N	80°31'12.209"W	89.84	223.503	6.63
6031.00	19.600	241.080	6015.69	13.59	-78.99	-89.11	1713878.90	519702.97	39°55'20.663"N	80°31'12.557"W	119.08	228.445	1.63
6120.00	19.920	243.600	6099.45	9.74	-92.95	-115.76	1713852.25	519689.01	39°55'20.522"N	80°31'12.897"W	148.46	231.236	1.02
6209.00	19.870	252.600	6183.16	3.04	-104.35	-143.73	1713824.27	519677.60	39°55'20.406"N	80°31'13.255"W	177.62	234.020	3.23
6299.00	17.900	254.190	6268.31	-6.00	-112.83	-171.59	1713796.41	519669.12	39°55'20.319"N	80°31'13.611"W	205.37	236.673	2.32
6389.00	17.840	236.490	6354.03	-10.90	-124.22	-196.42	1713771.59	519657.74	39°55'20.204"N	80°31'13.928"W	232.40	237.689	6.01
6478.00	19.800	209.470	6438.43	-4.75	-144.91	-215.24	1713752.77	519637.05	39°55'19.997"N	80°31'14.166"W	259.47	236.049	9.95



# Actual Wellpath Report

WEB 22JHS (AWP) Proj: 12280'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot J
Area	Marshall County, WV	Well	WEB-22J-HIS
Field	Marshall	Wellbore	WEB 22JHS (AWB)
Facility	WEB-22 Pad		

## WELLPATH DATA (156 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]
6568.00	25.960	192.980	6521.39	15.04	-177.44	-232.18	1713740.83	519604.52	39°55'19.675"N	80°31'14.315"W	288.27	232.008	9.82
6657.00	33.720	183.020	6598.58	47.62	-221.19	-222.87	1713735.14	519560.77	39°55'19.242"W	80°31'14.382"W	321.17	226.474	10.32
6747.00	41.610	173.890	6669.82	93.57	-275.98	-231.00	1713737.01	519505.99	39°55'18.701"N	80°31'14.350"W	359.90	219.931	10.72
6836.00	47.750	162.780	6733.17	150.95	-336.97	-218.07	1713749.94	519444.99	39°55'18.099"N	80°31'14.175"W	401.38	212.909	11.15
6926.00	53.770	158.200	6790.10	218.09	-402.57	-194.70	1713773.31	519379.39	39°55'17.454"N	80°31'13.865"W	447.19	205.811	7.76
7016.00	61.030	153.970	6838.57	292.44	-471.77	-163.89	1713804.11	519310.20	39°55'16.773"N	80°31'13.460"W	499.43	199.158	8.98
7105.00	69.240	151.620	6875.96	372.38	-543.49	-126.96	1713841.04	519238.48	39°55'16.069"N	80°31'12.975"W	558.13	193.149	9.53
7195.00	79.420	150.310	6900.24	458.45	-619.14	-84.94	1713883.06	519162.84	39°55'15.326"N	80°31'12.425"W	624.94	187.812	11.40
7284.00	87.660	147.420	6910.25	546.60	-694.76	-39.24	1713928.76	519087.23	39°55'14.584"N	80°31'11.828"W	695.86	183.233	9.80
7374.00	89.750	141.520	6912.28	636.53	-767.94	13.02	1713981.02	519014.04	39°55'13.866"N	80°31'11.146"W	768.05	179.029	6.95
7464.00	88.610	140.180	6913.57	726.28	-837.73	69.83	1714037.83	518944.26	39°55'13.183"N	80°31'10.407"W	840.63	175.235	1.95
7553.00	88.580	144.170	6915.76	815.13	-907.99	124.38	1714092.38	518874.00	39°55'12.495"N	80°31'09.697"W	916.47	172.200	4.48
7643.00	89.380	151.040	6917.36	904.97	-983.93	172.57	1714140.56	518798.07	39°55'11.750"N	80°31'09.067"W	998.95	170.052	7.68
7733.00	89.720	151.640	6918.07	994.41	-1062.90	215.73	1714183.72	518719.10	39°55'10.974"N	80°31'08.502"W	1084.57	168.527	0.77
7822.00	91.320	151.780	6917.26	1082.80	-1141.26	257.91	1714225.89	518640.74	39°55'10.205"N	80°31'07.949"W	1170.04	167.266	1.80
7912.00	88.400	143.040	6917.48	1172.62	-1217.01	306.33	1714274.31	518565.00	39°55'09.461"N	80°31'07.317"W	1254.97	165.872	10.24
8001.00	88.950	138.650	6919.54	1261.34	-1283.99	362.50	1714330.48	518496.02	39°55'08.786"N	80°31'06.586"W	1336.10	164.258	4.97
8091.00	90.060	137.350	6920.32	1350.66	-1352.87	422.71	1714390.69	518429.15	39°55'08.132"N	80°31'05.803"W	1417.37	162.648	1.90
8180.00	88.430	131.090	6921.49	1438.04	-1414.90	486.46	1714454.43	518367.12	39°55'07.526"N	80°31'04.976"W	1496.19	161.026	7.27
8270.00	87.910	129.150	6922.36	1524.97	-1472.86	555.24	1714523.21	518309.16	39°55'06.961"N	80°31'04.085"W	1574.04	159.344	2.23
8360.00	87.780	139.250	6927.76	1613.20	-1535.48	619.63	1714587.60	518246.54	39°55'06.349"N	80°31'03.250"W	1655.79	158.024	11.22
8449.00	87.870	145.260	6931.14	1701.99	-1605.77	674.05	1714642.02	518176.25	39°55'05.661"N	80°31'02.541"W	1741.51	157.229	6.75
8539.00	88.650	145.090	6933.87	1791.95	-1679.62	725.42	1714693.39	518102.41	39°55'04.937"N	80°31'01.871"W	1829.58	156.641	0.89
8629.00	89.020	147.590	6935.70	1881.90	-1754.51	775.29	1714743.26	518027.52	39°55'04.202"N	80°31'01.220"W	1918.17	156.160	2.81
8718.00	89.420	147.930	6936.91	1970.79	-1829.78	822.77	1714790.73	517952.26	39°55'03.464"N	80°31'00.600"W	2006.25	155.789	0.59
8808.00	89.850	148.970	6937.49	2060.62	-1906.47	869.86	1714837.81	517875.57	39°55'02.711"N	80°30'59.985"W	2095.54	155.474	1.25
8897.00	89.320	151.160	6937.70	2149.27	-1983.60	914.27	1714882.22	517798.45	39°55'01.954"N	80°30'59.403"W	2184.16	155.254	2.46
8987.00	89.320	150.530	6938.32	2238.80	-2062.19	958.11	1714926.06	517719.86	39°55'01.182"N	80°30'58.829"W	2273.90	155.080	0.94
9076.00	89.380	146.520	6939.33	2327.61	-2138.08	1004.57	1714972.52	517643.98	39°55'00.438"N	80°30'58.222"W	2362.31	154.834	4.51
9166.00	89.380	144.440	6940.31	2417.59	-2212.22	1055.56	1715023.51	517569.84	39°54'59.711"N	80°30'57.557"W	2451.15	154.492	2.31
9255.00	89.480	144.620	6941.19	2506.58	-2284.70	1107.21	1715075.15	517497.36	39°54'59.000"N	80°30'56.884"W	2538.85	154.144	0.23
9345.00	89.350	147.750	6942.11	2596.55	-2359.46	1157.28	1715125.23	517422.60	39°54'58.267"N	80°30'56.230"W	2628.00	153.873	3.48
9435.00	89.420	148.100	6943.08	2686.43	-2435.72	1205.07	1715173.02	517346.35	39°54'57.519"N	80°30'55.606"W	2717.52	153.676	0.40
9524.00	89.380	146.210	6944.01	2775.35	-2510.49	1253.34	1715221.28	517271.59	39°54'56.785"N	80°30'54.976"W	2805.96	153.470	2.12
9613.00	89.420	143.930	6944.94	2864.34	-2583.44	1304.29	1715272.23	517198.63	39°54'56.070"N	80°30'54.311"W	2894.02	153.212	2.56
9703.00	89.380	141.630	6945.88	2954.27	-2655.14	1358.72	1715326.66	517126.97	39°54'55.368"N	80°30'53.602"W	2982.57	152.899	2.56
9793.00	89.420	143.470	6946.83	3044.17	-2726.55	1413.45	1715381.38	517055.53	39°54'54.668"N	80°30'52.890"W	3071.14	152.598	2.04
9882.00	89.380	144.830	6947.76	3133.16	-2798.68	1465.57	1715433.50	516983.40	39°54'53.961"N	80°30'52.211"W	3159.19	152.361	1.53
9972.00	89.350	144.790	6948.76	3223.15	-2872.23	1517.43	1715485.36	516909.86	39°54'53.240"N	80°30'51.534"W	3248.43	152.152	0.06
10061.00	89.480	143.650	6949.67	3312.14	-2944.42	1569.46	1715537.39	516837.67	39°54'52.523"N	80°30'50.856"W	3336.59	151.941	1.29
10151.00	89.380	141.680	6950.56	3402.11	-3016.92	1622.78	1715590.71	516765.17	39°54'51.822"N	80°30'50.161"W	3425.67	151.724	0.12
10241.00	89.540	148.650	6951.41	3492.06	-3091.65	1672.88	1715640.80	516690.44	39°54'51.089"N	80°30'49.508"W	3515.23	151.582	5.52
10331.00	89.690	151.870	6952.01	3581.66	-3169.79	1717.52	1715685.43	516612.31	39°54'50.322"N	80°30'48.924"W	3605.19	151.549	3.58
10420.00	89.780	153.020	6952.43	3669.91	-3248.69	1758.69	1715726.60	516533.42	39°54'49.547"N	80°30'48.384"W	3694.18	151.571	1.30
10510.00	89.540	149.790	6952.96	3759.34	-3327.70	1801.76	1715769.67	516454.41	39°54'47.820"W	80°30'47.820"W	3784.17	151.567	3.60



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot J
Area	Marshall County, WV	Well	WEB-22J-HIS
Field	Marshall	Wellbore	WEB 22JHS (AWB)
Facility	WEB-22 Pad		

WELLPATH DATA (156 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]
10600.00	89.660	142.060	6953.59	3849.25	-3402.19	1852.14	1715820.05	516379.92	39°54'48.040"N	80°30'47.162"W	3873.67	151.436	8.59
10689.00	89.420	141.160	6954.30	3938.09	-3471.94	1907.41	1715875.32	516310.17	39°54'47.357"N	80°30'46.443"W	3961.39	151.217	1.05
10779.00	89.350	142.830	6955.27	4027.96	-3542.85	1962.82	1715930.73	516239.27	39°54'46.663"N	80°30'45.722"W	4050.24	151.013	1.86
10869.00	89.420	144.570	6956.24	4117.93	-3615.38	2016.10	1715984.00	516166.74	39°54'45.952"N	80°30'45.028"W	4139.52	150.854	1.93
10958.00	89.750	145.540	6956.88	4206.93	-3688.33	2067.07	1716034.97	516093.80	39°54'45.237"N	80°30'44.363"W	4228.07	150.732	1.15
11048.00	89.780	140.680	6957.25	4296.85	-3760.29	2121.08	1716088.98	516021.84	39°54'44.531"N	80°30'43.660"W	4317.26	150.574	5.40
11137.00	89.380	139.120	6957.90	4385.49	-3828.36	2178.40	1716146.30	515953.77	39°54'43.865"N	80°30'42.914"W	4404.75	150.359	1.81
11227.00	89.420	139.720	6958.85	4475.06	-3896.71	2236.95	1716204.84	515885.42	39°54'43.196"N	80°30'42.153"W	4493.14	150.142	0.67
11317.00	89.320	140.160	6959.83	4564.70	-3965.59	2294.87	1716262.76	515816.55	39°54'42.522"N	80°30'41.400"W	4581.74	149.942	0.50
11406.00	89.480	146.170	6960.77	4653.61	-4036.79	2348.19	1716316.08	515745.35	39°54'41.824"N	80°30'40.705"W	4670.08	149.813	6.75
11496.00	89.720	148.590	6961.40	4743.53	-4112.59	2396.71	1716364.59	515669.56	39°54'41.081"N	80°30'40.072"W	4760.00	149.768	2.70
11586.00	89.850	148.120	6961.73	4833.37	-4189.20	2443.92	1716411.81	515592.95	39°54'40.329"N	80°30'39.455"W	4849.97	149.741	0.54
11675.00	89.780	149.700	6962.02	4922.16	-4265.42	2489.88	1716457.76	515516.74	39°54'39.581"N	80°30'38.854"W	4938.96	149.726	1.78
11765.00	89.690	150.560	6962.44	5011.80	-4343.46	2534.70	1716502.58	515438.70	39°54'38.815"N	80°30'38.268"W	5028.95	149.734	0.96
11854.00	89.660	150.890	6962.94	5100.35	-4421.09	2578.22	1716546.10	515361.07	39°54'38.052"N	80°30'37.698"W	5117.94	149.751	0.37
11944.00	89.880	148.020	6963.30	5190.07	-4498.59	2623.96	1716591.83	515283.57	39°54'37.291"N	80°30'37.100"W	5207.93	149.746	3.20
12034.00	90.180	141.740	6963.26	5280.03	-4572.17	2675.71	1716643.58	515210.00	39°54'36.570"N	80°30'36.425"W	5297.56	149.663	6.99
12123.00	90.120	141.550	6963.02	5368.87	-4641.96	2730.93	1716698.80	515140.21	39°54'35.887"N	80°30'35.707"W	5385.71	149.531	0.22
12213.00	90.000	143.190	6962.93	5458.78	-4713.24	2785.88	1716753.75	515068.94	39°54'35.188"N	80°30'34.991"W	5475.01	149.414	1.83
12255.00	90.220	143.740	6962.85	5500.76	-4746.98	2810.89	1716778.75	515035.19	39°54'34.858"N	80°30'34.666"W	5516.79	149.368	1.41
12280.00	90.220	143.740	6962.75	5525.75	-4767.14	2825.67	1716793.54	515015.04	39°54'34.660"N	80°30'34.473"W	5541.67	149.343	0.00



**REFERENCE WELLPATH IDENTIFICATION**

Operator	Slot	Slot J
NOBLE ENERGY	Well	WEB-22J-HS
Area	Wellbore	WEB 22JHS (AWB)
Field		
Facility		

**TARGETS**

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WEB-22J-HS BHL:Rev-1		6908.00	-4754.80	2842.02	1716809.88	515027.38	39°54'34.784"N	80°30'34.265"W	point
WEB-22J-HS LP:Rev-1		6908.00	-700.00	2.82	1713970.82	519081.98	39°55'14.537"N	80°31'11.287"W	point
WEB-22J-HS BHL Plat		6913.00	-4754.80	2842.02	1716809.88	515027.38	39°54'34.784"N	80°30'34.265"W	point
WEB-22J-HS LP Plat		6913.00	-700.00	2.82	1713970.82	519081.98	39°55'14.537"N	80°31'11.287"W	point

**WELLPATH COMPOSITION - Ref Wellbore: WEB 22JHS (AWB) Ref Wellpath: WEB 22JHS (AWP) Proj: 12280'**

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.60	397.00	Generic gyro - northseeking (Standard)	01 Gyrodatta Surveys 17 1/2" (52-397)	WEB 22JHS (AWB)
397.00	1209.00	Generic gyro - northseeking (Standard)	02 Gyro Surveys 17 1/2" (397)(429-1209) Proj:1264'	WEB 22JHS (AWB)
1209.00	3371.00	NaviTrak (MagCorr)	03 BHI UBHO / Motor Surveys 12 1/4" (1209)(1336-3371)Proj:3426'	WEB 22JHS (AWB)
3371.00	5647.00	NaviTrak (MagCorr)	04 BHI LCP 8 3/4" (3371)(3496-5647)	WEB 22JHS (AWB)
5647.00	12255.00	NaviTrak (AT Curve Short Spaced)	05 BHI AT Curve 8 3/4" (5647)(5762-12255)	WEB 22JHS (AWB)
12255.00	12280.00	Blind Drilling (std)	Projection to bit	WEB 22JHS (AWB)

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot J
Area	Marshall County, WV	Well	WEB-22J-HS
Field	Marshall	Wellbore	WEB 22JHS (AWB)
Facility	WEB-22 Pad		

COMMENTS

Wellpath general comments  
 API#: 47-051-01723-0000  
 Rig: Precision 542  
 BHI Job#: 6260422  
 Duration: 07/03/14-07/08/14  
 Gyrodata Surveys: (52-397)  
 Gyro Surveys: (429-1209)  
 BHI Motor / LCP Surveys: (1209)(1336-5647)  
 BHI A.T.Curve Surveys: (5762-12255)  
 TD Projected to MD: 12280'





# NOBLE ENERGY

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

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



### Location Information

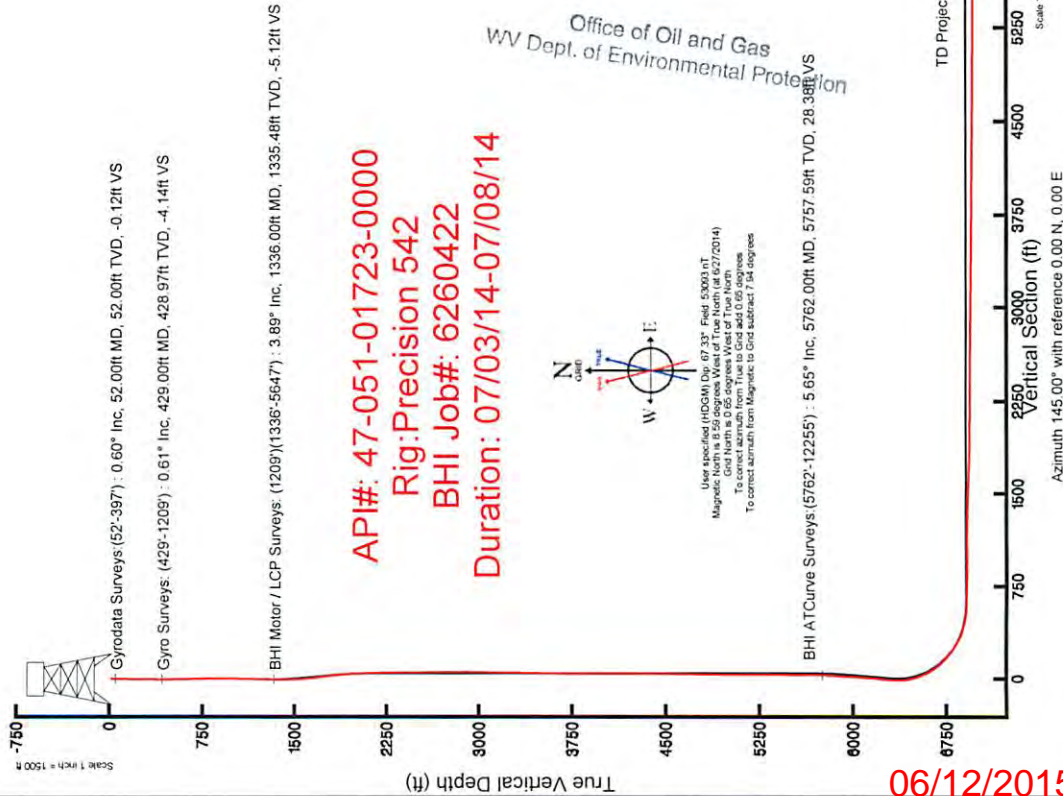
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
WEB-22 Pad	1713925.810	519852.540	39°55'22.147"N	80°31'11.977"W
Local N (ft)	Local E (ft)	Grid North (US ft)	Latitude	Longitude
-70.59	42.19	519781.950	39°55'21.454"N	80°31'11.425"W
Slot J			18.6ft	
Precision 542 (RT) to Mud line (At Slot, Slot J)			-1325ft	
Mean Sea Level to Mud line (At Slot, Slot J)			1343.6ft	
Precision 542 (RT) to Mean Sea Level				

### Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (*100ft)	VS (ft)
Tie On	1209.00	3.250	263.680	1208.72	2.36	-0.87	1.54	-2.43
Projection	1264.00	3.050	243.880	1263.64	1.54	-3.74	2.00	-3.41
End of Tangent	1338.00	3.050	243.880	1337.54	-0.19	-7.27	0.00	-4.02
End of 3D Arc (J)	1516.01	6.000	180.000	1517.05	-11.71	-11.57	3.00	2.96
End of Tangent (J)	1668.01	6.000	180.000	1665.14	-48.30	-11.57	0.00	32.93
End of Drop (J)	2168.01	0.000	248.938	2164.59	-63.99	-11.57	2.00	45.78
End of Tangent (J)	5600.00	0.000	248.938	5596.58	-63.99	-11.57	0.00	45.78
End of Build (J)	5956.31	17.815	248.938	5947.18	-83.74	-82.85	5.00	32.55
End of Tangent (J)	6348.67	17.815	248.938	6320.72	-126.88	-174.87	0.00	3.63
LP	7280.93	90.000	145.000	6908.00	-700.01	2.82	10.00	575.03
BHL	12240.92	90.000	145.000	6908.00	-4754.80	2942.02	0.00	5525.02

### Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
WEB-22J-HS BHL Rev-1	12240.92	6908.00	-754.80	2942.02	1716009.68	515027.36	39°54'34.747"N	80°30'34.265"W
WEB-22J-HS IP Rev-1	7280.93	6908.00	-700.00	2.82	1715970.82	519681.96	39°55'14.537"N	80°31'11.287"W
WEB-22J-HS BHL Pad	6913.00	6913.00	-4754.80	2942.02	1716009.68	515027.36	39°54'34.747"N	80°30'34.265"W
WEB-22J-HS IP Pad	6913.00	6913.00	-700.00	2.82	1715970.82	519681.96	39°55'14.537"N	80°31'11.287"W



06/12/2015