

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot H
Area	Marshall County, WV	Well	WEB-22H-HS
Field	Marshall	Wellbore	WEB-22H-HS (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	27/Jun/2014 at 10:23
Convergence at slot	0.65° West	Database/Source file	WA_Pennsylvania/WEB-22H-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	-56.68	56.66	1713982.47	519795.86	39°55'21.593"N	80°31'11.242"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°23'48.733"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 H)	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-22H-HS (AWP) Proj:12185
Page 2 of 7

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Area	Marshall County, WV	Well	WEB-22H-HS
Field	Marshall	Wellbore	WEB-22H-HS (AWB)
Facility	WEB-22 Pad		

WELLPATH DATA (162 stations) 1 = 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 [7100ft]
0.007	0.000	265.090	0.00	0.00	0.00	0.00	1713982.47	519795.86	39°55'21.593"N	80°31'11.242"W	0.00	0.000	0.00
18.60	0.000	265.090	18.60	0.00	0.00	0.00	1713982.47	519795.86	39°55'21.593"N	80°31'11.242"W	0.00	0.000	0.00
57.00	1.290	265.090	57.00	-0.22	-0.04	-0.43	1713982.04	519795.82	39°55'21.592"N	80°31'11.247"W	0.43	265.090	3.36
154.00	1.550	301.310	153.97	-1.97	-0.55	-2.64	1713979.83	519796.41	39°55'21.598"N	80°31'11.275"W	2.70	281.798	0.95
243.00	1.290	289.620	242.94	-3.88	1.51	-4.61	1713977.86	519797.37	39°55'21.607"N	80°31'11.301"W	4.85	288.167	0.44
341.00	1.120	304.030	340.92	-5.68	2.42	-6.44	1713976.03	519798.28	39°55'21.616"N	80°31'11.325"W	6.88	290.580	0.35
423.00	0.760	315.550	422.91	-6.96	3.26	-7.49	1713974.98	519799.12	39°55'21.624"N	80°31'11.338"W	8.17	293.499	0.49
455.00	0.710	350.100	454.91	-7.35	3.60	-7.67	1713974.80	519799.46	39°55'21.627"N	80°31'11.341"W	8.48	295.157	1.37
484.00	0.710	49.790	483.90	-7.53	3.90	-7.57	1713974.90	519799.76	39°55'21.630"N	80°31'11.339"W	8.51	297.247	2.44
510.00	1.500	96.560	509.90	-7.32	3.96	-7.10	1713975.37	519799.82	39°55'21.631"N	80°31'11.333"W	8.13	299.143	4.38
552.00	2.740	102.980	511.87	-6.21	3.67	-5.58	1713976.89	519799.53	39°55'21.628"N	80°31'11.314"W	6.68	303.354	3.00
582.00	3.550	111.070	581.83	-4.91	3.18	-4.01	1713978.46	519799.04	39°55'21.624"N	80°31'11.294"W	5.12	308.365	3.07
614.00	3.500	114.060	613.76	-3.25	2.42	-2.20	1713980.27	519798.28	39°55'21.616"N	80°31'11.270"W	3.27	317.790	0.60
647.00	2.970	116.430	646.71	-1.63	1.63	-0.51	1713981.96	519797.49	39°55'21.609"N	80°31'11.248"W	1.71	342.555	1.66
678.00	2.080	117.400	677.68	-0.43	1.02	0.71	1713983.18	519796.88	39°55'21.603"N	80°31'11.233"W	1.24	34.781	2.87
708.00	1.220	115.110	707.67	0.33	0.63	1.48	1713983.95	519796.49	39°55'21.599"N	80°31'11.223"W	1.61	66.918	2.87
740.00	1.040	120.560	739.66	0.89	0.34	2.04	1713984.51	519796.20	39°55'21.596"N	80°31'11.215"W	2.06	80.585	0.65
771.00	0.690	131.640	770.66	1.33	0.07	2.42	1713984.89	519795.93	39°55'21.594"N	80°31'11.211"W	2.42	88.326	1.25
803.00	0.630	136.390	802.66	1.69	-0.18	2.68	1713985.15	519795.68	39°55'21.591"N	80°31'11.207"W	2.69	93.937	0.25
834.00	0.530	120.040	833.66	1.99	-0.38	2.93	1713985.40	519795.48	39°55'21.589"N	80°31'11.204"W	2.95	97.399	0.62
866.00	0.460	158.630	865.65	2.25	-0.57	3.10	1713985.57	519795.29	39°55'21.587"N	80°31'11.202"W	3.15	100.482	1.04
896.00	0.410	157.220	895.65	2.47	-0.78	3.19	1713985.66	519795.08	39°55'21.585"N	80°31'11.201"W	3.28	103.837	0.17
929.00	0.580	222.720	928.65	2.62	-1.02	3.12	1713985.59	519794.84	39°55'21.583"N	80°31'11.201"W	3.28	108.052	1.68
960.00	0.600	243.990	959.65	2.63	-1.20	2.87	1713985.34	519794.66	39°55'21.581"N	80°31'11.201"W	3.11	112.766	0.71
992.00	1.220	249.880	991.65	2.52	-1.39	2.40	1713984.87	519794.47	39°55'21.579"N	80°31'11.211"W	2.77	120.185	1.96
1023.00	1.370	245.490	1022.64	2.36	-1.66	1.75	1713984.22	519794.20	39°55'21.577"N	80°31'11.219"W	2.41	133.525	0.58
1055.00	1.750	252.080	1054.63	2.15	-1.97	0.94	1713983.41	519793.89	39°55'21.573"N	80°31'11.229"W	2.18	154.596	1.31
1086.00	1.880	245.930	1085.61	1.91	-2.32	0.02	1713982.49	519793.54	39°55'21.570"N	80°31'11.241"W	2.32	179.487	0.75
1181.00	2.330	234.230	1180.55	1.65	-4.09	-2.97	1713979.50	519791.77	39°55'21.552"N	80°31'11.279"W	5.05	215.995	0.65
1208.00	1.980	231.510	1207.53	1.68	-4.70	-3.78	1713978.69	519791.16	39°55'21.546"N	80°31'11.289"W	6.03	218.813	1.35
1327.00	2.060	219.600	1326.45	2.37	-7.63	-6.75	1713975.72	519788.23	39°55'21.517"N	80°31'11.327"W	10.19	217.521	0.36
1361.00	1.890	215.080	1360.43	2.73	-8.56	-7.46	1713975.01	519787.31	39°55'21.507"N	80°31'11.336"W	11.35	221.101	0.68
1390.00	1.480	195.980	1389.42	3.13	-9.31	-7.84	1713974.63	519786.55	39°55'21.500"N	80°31'11.341"W	12.17	220.116	2.38
1424.00	1.400	140.050	1423.41	3.82	-10.05	-7.70	1713974.77	519785.81	39°55'21.493"N	80°31'11.339"W	12.66	217.450	3.98
1453.00	2.140	112.290	1452.40	4.62	-10.52	-6.97	1713975.50	519785.34	39°55'21.488"N	80°31'11.329"W	12.62	213.505	3.84
1486.00	3.420	103.720	1485.36	5.88	-10.99	-5.44	1713977.03	519784.87	39°55'21.484"N	80°31'11.310"W	12.26	206.335	4.07
1515.00	4.670	98.720	1514.29	7.35	-11.80	-3.43	1713979.04	519784.06	39°55'21.480"N	80°31'11.284"W	11.88	196.795	4.47
1547.00	5.900	97.900	1546.15	9.37	-11.81	-0.52	1713979.95	519784.06	39°55'21.476"N	80°31'11.284"W	11.81	182.507	3.85
1578.00	6.480	99.210	1576.97	11.67	-12.30	2.79	1713985.26	519783.56	39°55'21.472"N	80°31'11.204"W	12.61	167.225	1.93
1609.00	6.290	99.020	1607.78	14.07	-12.84	6.19	1713988.66	519783.02	39°55'21.467"N	80°31'11.160"W	14.26	154.261	0.62
1641.00	6.370	100.350	1639.58	16.55	-13.44	9.67	1713992.14	519782.42	39°55'21.461"N	80°31'11.115"W	16.56	144.262	0.52
1705.00	6.200	99.310	1703.20	21.49	-14.64	16.57	1713999.04	519781.23	39°55'21.450"N	80°31'11.027"W	22.11	131.447	0.32
1768.00	6.180	103.210	1765.83	26.40	-15.96	23.23	1714000.70	519779.90	39°55'21.438"N	80°31'10.941"W	28.19	124.490	0.67
1795.00	6.070	108.170	1795.66	28.87	-16.82	26.31	1714008.78	519779.04	39°55'21.429"N	80°31'10.901"W	31.23	122.596	1.80
1889.00	6.330	113.540	1886.13	37.00	-20.33	35.48	1714017.95	519775.53	39°55'21.396"N	80°31'10.783"W	40.89	119.809	0.70

Actual Wellpath Report

WEB-22H-HS (AWP) Proj:12185
Page 3 of 7

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Area	Marshall County, WV	Well	WEB-22H-HS
Field	Marshall	Wellbore	WEB-22H-HS (AWB)
Facility	WEB-22 Pad		

WELLPATH DATA (162 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 [1/100ft]
1979.00	4.990	116.240	1975.69	44.67	-24.04	43.54	1714026.01	519771.82	39°55'21.360"N	80°31'10.679"W	49.74	118.904	1.52
2069.00	2.850	120.440	2065.47	50.13	-26.90	48.98	1714031.45	519768.96	39°55'21.332"N	80°31'10.609"W	55.88	118.779	2.40
2159.00	0.300	146.320	2155.43	52.40	-28.23	51.04	1714033.51	519767.63	39°55'21.319"N	80°31'10.582"W	58.33	118.950	2.87
2248.00	0.070	286.130	2244.43	52.60	-28.41	51.12	1714033.59	519767.45	39°55'21.318"N	80°31'10.581"W	58.48	119.067	0.40
2338.00	0.150	261.000	2334.43	52.50	-28.42	50.95	1714033.42	519767.44	39°55'21.318"N	80°31'10.584"W	58.34	119.150	0.10
2427.00	0.110	118.540	2423.43	52.53	-28.48	50.91	1714033.38	519767.39	39°55'21.317"N	80°31'10.584"W	58.33	119.220	0.28
2517.00	0.280	216.510	2513.43	52.67	-28.69	50.85	1714033.32	519767.17	39°55'21.315"N	80°31'10.585"W	58.39	119.433	0.35
2606.00	0.300	231.510	2602.43	52.76	-29.01	50.54	1714033.01	519766.85	39°55'21.312"N	80°31'10.589"W	58.28	119.858	0.09
2696.00	0.130	245.240	2692.43	52.75	-29.20	50.27	1714032.73	519766.66	39°55'21.310"N	80°31'10.592"W	58.13	120.155	0.20
2785.00	0.280	259.770	2781.43	52.64	-29.28	49.96	1714032.43	519766.58	39°55'21.309"N	80°31'10.596"W	57.91	120.377	0.18
2875.00	0.030	215.760	2871.43	52.56	-29.34	49.73	1714032.20	519766.52	39°55'21.308"N	80°31'10.599"W	57.74	120.542	0.29
2964.00	0.300	298.360	2960.43	52.36	-29.25	49.51	1714031.98	519766.61	39°55'21.309"N	80°31'10.602"W	57.51	120.574	0.33
3053.00	0.280	247.660	3049.43	52.10	-29.22	49.10	1714031.57	519766.64	39°55'21.309"N	80°31'10.607"W	57.14	120.757	0.28
3143.00	0.180	235.030	3139.43	52.05	-29.39	48.79	1714031.25	519766.47	39°55'21.308"N	80°31'10.611"W	56.95	121.063	0.12
3233.00	0.140	342.360	3229.42	51.95	-29.36	48.64	1714031.10	519766.50	39°55'21.308"N	80°31'10.613"W	56.81	121.120	0.29
3322.00	0.120	241.170	3318.42	51.84	-29.30	48.52	1714030.99	519766.56	39°55'21.309"N	80°31'10.615"W	56.68	121.130	0.23
3398.00	0.280	280.210	3381.42	51.72	-29.31	48.31	1714030.78	519766.55	39°55'21.309"N	80°31'10.617"W	56.51	121.243	0.32
3488.00	0.410	256.570	3494.42	51.37	-29.35	47.65	1714030.12	519766.51	39°55'21.308"N	80°31'10.626"W	55.96	121.636	0.17
3587.00	0.540	281.200	3583.42	50.95	-29.35	46.93	1714029.39	519766.52	39°55'21.308"N	80°31'10.635"W	55.35	122.021	0.27
3677.00	0.680	298.940	3673.41	50.17	-29.01	46.04	1714028.51	519766.86	39°55'21.311"N	80°31'10.646"W	54.42	122.210	0.26
3766.00	0.240	304.490	3762.41	49.52	-28.64	45.43	1714027.89	519767.22	39°55'21.315"N	80°31'10.654"W	53.70	122.234	0.50
3856.00	1.270	120.010	3852.40	50.25	-29.04	46.14	1714028.60	519766.82	39°55'21.311"N	80°31'10.645"W	54.51	122.185	1.68
3946.00	0.810	137.530	3942.39	51.78	-30.00	47.43	1714029.90	519765.86	39°55'21.302"N	80°31'10.628"W	56.12	122.319	0.62
4035.00	0.550	120.070	4031.38	52.79	-30.68	48.22	1714030.69	519765.18	39°55'21.293"N	80°31'10.618"W	57.16	122.467	0.37
4125.00	0.500	94.490	4121.38	53.43	-30.93	48.99	1714031.46	519764.93	39°55'21.292"N	80°31'10.608"W	57.94	122.467	0.26
4215.00	0.440	104.390	4211.38	53.95	-31.05	49.71	1714032.18	519764.81	39°55'21.292"N	80°31'10.599"W	58.61	121.985	0.11
4304.00	0.460	70.130	4300.37	54.30	-31.01	50.38	1714032.85	519764.85	39°55'21.292"N	80°31'10.590"W	59.16	121.612	0.30
4394.00	0.330	48.300	4390.37	54.36	-30.71	50.91	1714033.38	519765.15	39°55'21.295"N	80°31'10.584"W	59.46	121.101	0.22
4484.00	0.440	335.760	4480.37	53.99	-30.23	50.97	1714033.43	519765.63	39°55'21.300"N	80°31'10.583"W	59.26	120.671	0.52
4573.00	0.700	4.330	4569.37	53.24	-29.37	50.87	1714033.33	519766.49	39°55'21.308"N	80°31'10.584"W	58.74	120.004	0.42
4663.00	0.780	339.630	4659.36	52.22	-28.25	50.70	1714033.16	519767.61	39°55'21.319"N	80°31'10.587"W	58.04	119.130	0.36
4752.00	0.560	329.570	4748.35	51.20	-27.31	50.26	1714032.73	519768.55	39°55'21.329"N	80°31'10.592"W	57.20	118.515	0.28
4842.00	0.800	326.800	4838.35	50.13	-26.40	49.70	1714032.17	519769.46	39°55'21.337"N	80°31'10.600"W	56.28	117.981	0.27
4931.00	0.310	357.860	4927.34	49.31	-25.64	49.35	1714031.82	519770.22	39°55'21.345"N	80°31'10.604"W	55.61	117.458	0.63
5021.00	0.410	332.500	5017.34	48.79	-25.11	49.19	1714031.66	519770.75	39°55'21.350"N	80°31'10.607"W	55.23	117.046	0.21
5111.00	0.330	307.030	5107.34	48.22	-24.67	48.84	1714031.30	519771.19	39°55'21.354"N	80°31'10.611"W	54.71	116.803	0.20
5200.00	1.630	187.760	5196.33	48.91	-25.77	48.46	1714030.93	519770.09	39°55'21.343"N	80°31'10.616"W	54.89	118.005	2.04
5290.00	1.340	182.970	5286.30	50.68	-28.09	48.23	1714030.70	519767.77	39°55'21.321"N	80°31'10.618"W	55.82	120.217	0.35
5380.00	1.010	174.480	5376.28	52.20	-29.93	48.25	1714030.72	519765.93	39°55'21.302"N	80°31'10.618"W	56.78	121.811	0.41
5469.00	0.780	168.920	5465.27	53.43	-31.31	48.45	1714030.91	519764.55	39°55'21.289"N	80°31'10.615"W	57.68	122.872	0.28
5557.00	3.820	26.630	5583.19	52.30	-28.58	50.36	1714032.83	519767.28	39°55'21.316"N	80°31'10.591"W	57.91	119.574	3.78
5677.00	8.770	15.870	5672.62	46.54	-19.29	53.59	1714036.05	519776.57	39°55'21.408"N	80°31'10.551"W	56.95	109.802	5.63
5767.00	10.840	16.130	5761.30	36.90	-4.56	57.81	1714040.28	519791.30	39°55'21.554"N	80°31'10.499"W	57.99	94.513	2.30
5856.00	14.150	18.130	5848.18	25.12	13.82	63.52	1714045.99	519809.68	39°55'21.736"N	80°31'10.428"W	65.01	77.727	3.75
5902.00	16.450	20.080	5892.55	18.01	25.28	67.51	1714049.98	519821.14	39°55'21.850"N	80°31'10.379"W	72.09	69.470	5.12

Actual Wellpath Report

WEB-22H-HS (AWP) Proj:12185
Page 4 of 7

REFERENCE WELLPATH IDENTIFICATION

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

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]
5946.00	16.580	22.260	5934.74	11.05	36.94	72.03	1714054.49	519832.80	39°55'21.966"N	80°31'10.323"W	80.95	62.847	1.44
6035.00	15.730	21.690	6020.22	-2.44	59.91	81.30	1714063.76	519855.76	39°55'22.194"N	80°31'10.207"W	100.98	53.615	0.97
6125.00	15.620	20.830	6106.87	-15.95	82.57	90.11	1714072.58	519878.42	39°55'22.419"N	80°31'10.097"W	122.22	47.503	0.29
6215.00	17.070	24.370	6193.24	-29.48	99.87	99.87	1714082.34	519901.78	39°55'22.651"N	80°31'09.975"W	145.59	43.316	1.95
6304.00	16.880	46.370	6278.45	-38.09	126.76	114.63	1714097.10	519922.61	39°55'22.858"N	80°31'09.789"W	170.91	42.124	7.18
6394.00	17.390	78.470	6364.64	-34.68	138.49	137.32	1714119.78	519934.34	39°55'22.977"N	80°31'09.499"W	195.03	44.756	10.40
6483.00	19.440	105.920	6449.24	-17.86	137.08	164.65	1714147.18	519932.94	39°55'22.966"N	80°31'09.148"W	214.24	50.219	9.92
6573.00	23.410	126.170	6533.12	10.74	122.40	193.53	1714175.99	519918.25	39°55'22.824"N	80°31'08.776"W	228.99	57.689	9.27
6663.00	31.920	131.340	6612.77	50.86	96.08	225.89	1714208.35	519891.93	39°55'22.568"N	80°31'08.356"W	245.48	66.959	9.82
6752.00	42.360	129.950	6683.62	102.83	61.19	266.66	1714249.12	519857.04	39°55'22.227"N	80°31'07.828"W	273.59	77.077	11.77
6842.00	51.990	130.480	6744.72	166.58	18.60	316.99	1714299.44	519814.46	39°55'21.812"N	80°31'07.176"W	317.54	86.642	10.71
6931.00	60.060	132.020	6794.42	238.22	-30.06	372.40	1714354.85	519765.81	39°55'21.337"N	80°31'06.458"W	373.61	94.614	9.18
7021.00	68.320	134.420	6833.58	317.47	-85.53	431.35	1714413.80	519710.33	39°55'20.796"N	80°31'05.693"W	439.74	101.215	9.49
7111.00	76.620	138.590	6860.67	402.26	-147.77	490.30	1714472.74	519648.10	39°55'20.187"N	80°31'04.928"W	512.08	106.772	10.22
7200.00	76.760	140.150	6881.16	488.45	-213.49	546.69	1714529.14	519582.38	39°55'19.544"N	80°31'04.194"W	586.90	111.332	1.71
7289.00	84.420	143.610	6895.71	576.05	-282.53	600.82	1714583.26	519513.35	39°55'18.868"N	80°31'03.490"W	663.93	115.184	9.42
7379.00	89.170	145.340	6900.74	665.87	-355.64	653.01	1714635.45	519440.24	39°55'18.152"N	80°31'02.809"W	743.58	118.573	5.62
7469.00	89.200	145.240	6902.02	755.86	-429.61	704.26	1714686.69	519366.27	39°55'17.426"N	80°31'02.141"W	824.95	121.384	0.12
7558.00	89.230	146.590	6903.24	844.84	-503.31	754.13	1714736.56	519292.57	39°55'16.703"N	80°31'01.490"W	906.66	123.720	1.52
7648.00	89.230	146.430	6904.45	934.80	-578.37	803.79	1714786.22	519217.52	39°55'15.967"N	80°31'00.842"W	990.24	125.737	0.18
7738.00	89.170	143.060	6905.70	1024.78	-651.84	855.72	1714838.15	519144.05	39°55'15.247"N	80°31'00.165"W	1075.71	127.298	3.74
7827.00	89.230	140.090	6906.95	1113.60	-721.55	911.02	1714893.45	519074.34	39°55'14.564"N	80°30'59.445"W	1162.15	128.380	3.34
7917.00	89.200	139.790	6908.18	1203.24	-790.43	968.94	1714951.37	519005.47	39°55'13.890"N	80°30'58.691"W	1250.45	129.206	0.33
8006.00	89.140	142.930	6909.47	1292.04	-859.93	1024.50	1715006.92	518935.97	39°55'13.210"N	80°30'57.968"W	1337.57	130.009	3.53
8096.00	89.140	147.390	6910.82	1382.01	-933.77	1075.90	1715058.32	518862.13	39°55'12.486"N	80°30'57.298"W	1424.60	130.955	4.95
8185.00	89.230	147.790	6912.09	1470.91	-1008.90	1123.60	1715106.01	518787.01	39°55'11.749"N	80°30'56.675"W	1510.08	131.921	0.46
8275.00	89.170	146.360	6913.34	1560.84	-1084.43	1172.51	1715154.92	518711.48	39°55'11.008"N	80°30'56.036"W	1597.11	132.765	1.59
8365.00	89.420	142.870	6914.45	1650.82	-1157.79	1224.61	1715207.02	518638.12	39°55'10.289"N	80°30'55.357"W	1685.28	133.393	3.89
8454.00	89.080	141.220	6915.62	1739.69	-1227.96	1279.35	1715261.75	518567.96	39°55'09.601"N	80°30'54.644"W	1773.30	133.826	1.89
8544.00	89.200	146.680	6916.97	1829.63	-1300.69	1332.28	1715314.69	518495.23	39°55'08.888"N	80°30'53.954"W	1861.93	134.313	6.07
8634.00	89.200	148.760	6918.23	1919.51	-1376.77	1380.34	1715362.75	518419.16	39°55'08.142"N	80°30'53.327"W	1949.57	134.926	2.31
8723.00	89.110	147.870	6919.54	2008.35	-1452.49	1427.08	1715409.48	518343.44	39°55'07.399"N	80°30'52.716"W	2036.25	135.506	1.00
8813.00	89.230	147.130	6920.84	2098.26	-1528.39	1475.43	1715457.83	518267.54	39°55'06.654"N	80°30'52.084"W	2124.35	136.010	0.83
8902.00	89.260	147.250	6922.01	2187.19	-1603.19	1523.66	1715506.05	518192.75	39°55'05.921"N	80°30'51.455"W	2211.73	136.457	0.14
8992.00	89.350	147.610	6923.11	2277.10	-1679.03	1572.10	1715554.50	518116.91	39°55'05.176"N	80°30'50.822"W	2300.14	136.884	0.41
9081.00	89.230	148.020	6924.21	2365.98	-1754.34	1619.50	1715601.90	518041.60	39°55'04.437"N	80°30'50.203"W	2387.57	137.289	0.48
9171.00	89.200	148.130	6925.44	2455.85	-1830.72	1667.09	1715649.81	517965.22	39°55'03.688"N	80°30'49.581"W	2476.03	137.678	0.13
9260.00	89.200	147.130	6926.69	2544.74	-1905.89	1714.74	1715697.12	517890.07	39°55'02.951"N	80°30'48.959"W	2563.73	138.022	1.12
9350.00	89.450	143.370	6927.75	2634.72	-1979.81	1766.02	1715748.41	517816.14	39°55'02.226"N	80°30'48.290"W	2653.02	138.267	4.19
9440.00	89.450	139.920	6928.61	2724.55	-2050.38	1821.86	1715804.24	517745.58	39°55'01.535"N	80°30'47.563"W	2742.85	138.377	3.83
9529.00	89.410	137.670	6929.50	2813.02	-2117.33	1880.48	1715862.86	517678.63	39°55'00.880"N	80°30'46.801"W	2831.84	138.390	2.53
9619.00	89.480	136.910	6930.37	2902.20	-2183.46	1941.53	1715923.90	517612.51	39°55'00.233"N	80°30'46.008"W	2921.82	138.357	0.85
9708.00	89.200	138.930	6931.39	2990.51	-2249.51	2001.16	1715983.54	517546.46	39°54'59.587"N	80°30'45.233"W	3010.80	138.344	2.29
9798.00	89.350	141.970	6932.53	3080.21	-2318.89	2058.46	1716040.83	517477.08	39°54'58.908"N	80°30'44.488"W	3100.73	138.405	3.38
9887.00	89.540	147.890	6933.39	3169.16	-2391.69	2109.57	1716091.94	517404.28	39°54'58.194"N	80°30'43.821"W	3189.12	138.586	6.65

Actual Wellpath Report

WEB-22H-HS (AWP) Proj:12188

Page 5 of 7

REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (162 stations)

ID [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]
9977.00	89.820	151.100	6933.90	3258.87	-2469.23	2155.25	1716137.62	517326.75	39°54'57.433"N	80°30'43.224"W	3277.53	138.884	3.58
10066.00	89.630	149.780	6934.32	3347.47	-2546.64	2199.16	1716181.52	517249.34	39°54'56.673"N	80°30'42.649"W	3364.77	139.188	1.50
10156.00	89.540	146.750	6934.98	3437.31	-2623.17	2246.49	1716228.85	517172.81	39°54'55.922"N	80°30'42.031"W	3453.66	139.423	3.37
10246.00	89.540	143.740	6935.70	3527.30	-2697.11	2297.79	1716280.15	517098.88	39°54'55.197"N	80°30'41.362"W	3543.19	139.571	3.34
10336.00	89.570	143.320	6936.40	3617.26	-2769.48	2351.28	1716333.64	517026.51	39°54'54.487"N	80°30'40.665"W	3632.98	139.669	0.47
10425.00	89.480	145.740	6937.14	3706.25	-2841.95	2402.92	1716385.27	516954.04	39°54'53.777"N	80°30'39.992"W	3721.66	139.785	2.72
10515.00	89.570	147.390	6937.88	3796.21	-2917.05	2452.51	1716434.86	516878.95	39°54'53.040"N	80°30'39.345"W	3811.04	139.945	1.84
10605.00	89.570	149.210	6938.56	3886.05	-2993.62	2499.79	1716482.14	516802.38	39°54'52.289"N	80°30'38.727"W	3900.10	140.137	2.02
10694.00	89.510	150.710	6939.27	3974.72	-3070.66	2544.35	1716526.69	516725.34	39°54'51.533"N	80°30'38.144"W	3987.81	140.355	1.69
10784.00	89.540	151.290	6940.02	4064.22	-3149.38	2587.98	1716570.32	516646.64	39°54'50.760"N	80°30'37.573"W	4076.30	140.589	0.65
10874.00	89.630	151.280	6940.67	4153.68	-3228.31	2631.22	1716613.56	516567.71	39°54'49.984"N	80°30'37.007"W	4164.76	140.818	0.10
10963.00	89.690	148.800	6941.20	4242.32	-3305.40	2675.66	1716658.00	516490.61	39°54'49.227"N	80°30'36.425"W	4252.63	141.011	2.79
11053.00	89.570	148.230	6941.78	4332.15	-3382.15	2722.66	1716705.00	516413.87	39°54'48.474"N	80°30'35.811"W	4341.87	141.166	0.65
11143.00	89.630	147.190	6942.41	4422.05	-3458.23	2770.74	1716753.08	516337.79	39°54'47.728"N	80°30'35.183"W	4431.29	141.298	1.16
11232.00	89.690	145.650	6942.94	4511.02	-3532.38	2819.96	1716802.30	516263.65	39°54'47.001"N	80°30'34.541"W	4519.94	141.399	1.73
11322.00	89.540	142.560	6943.54	4600.99	-3605.27	2872.72	1716855.05	516190.76	39°54'46.286"N	80°30'33.853"W	4609.83	141.452	3.44
11412.00	89.450	140.980	6944.33	4690.84	-3675.97	2928.41	1716910.74	516120.07	39°54'45.594"N	80°30'33.128"W	4699.82	141.458	1.76
11501.00	89.570	142.260	6945.10	4779.68	-3745.73	2983.67	1716965.99	516050.31	39°54'44.910"N	80°30'32.409"W	4788.82	141.461	1.44
11591.00	89.540	145.080	6945.79	4869.65	-3818.23	3036.98	1717019.30	515977.82	39°54'44.200"N	80°30'31.715"W	4878.74	141.502	3.13
11680.00	89.510	146.140	6946.53	4958.64	-3891.67	3087.25	1717069.57	515904.38	39°54'43.480"N	80°30'31.059"W	4967.51	141.575	1.19
11770.00	89.600	147.600	6947.23	5048.58	-3967.03	3136.43	1717118.75	515829.02	39°54'42.740"N	80°30'30.417"W	5057.13	141.669	1.63
11860.00	89.540	143.740	6947.91	5138.56	-4041.34	3187.18	1717169.49	515754.72	39°54'42.012"N	80°30'29.755"W	5146.89	141.739	4.29
11949.00	89.480	139.480	6948.67	5227.38	-4111.08	3242.43	1717224.75	515684.98	39°54'41.329"N	80°30'29.036"W	5235.87	141.737	4.79
12039.00	89.720	137.030	6949.30	5316.75	-4178.22	3302.35	1717284.66	515617.84	39°54'40.672"N	80°30'28.258"W	5325.70	141.678	2.74
12128.00	89.780	135.870	6949.69	5404.76	-4242.72	3363.67	1717345.98	515553.34	39°54'40.041"N	80°30'27.461"W	5414.33	141.592	1.31
12160.00	89.850	136.580	6949.79	5436.38	-4265.83	3385.81	1717368.11	515530.23	39°54'39.815"N	80°30'27.174"W	5446.19	141.561	2.23
12185.00	89.850	136.580	6949.85	5461.11	-4283.99	3402.99	1717385.30	515512.08	39°54'39.638"N	80°30'26.951"W	5471.10	141.538	0.00

Actual Wellpath Report

WEB-22H-HS (AWP) Proj:12185
Page 6 of 7

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot H
NOBLE ENERGY	Well	WEB-22H-HS
Area	Wellbore	WEB-22H-HS (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-22H-HS BHL-Rev-1		6900.00	-4283.41	3403.83	1717386.14	515512.66	39°54'39.644"N	80°30'26.940"W	point
WEB-22H-HS LP:Rev-1		6900.00	-299.86	614.53	1714596.97	519496.01	39°55'18.698"N	80°31'03.311"W	point
WEB-22H-HS BHL Plat		6913.00	-4283.41	3403.83	1717386.14	515512.66	39°54'39.644"N	80°30'26.940"W	point
WEB-22H-HS LP Plat		6913.00	-299.86	614.53	1714596.97	519496.01	39°55'18.698"N	80°31'03.311"W	point

WELLPATH COMPOSITION - Ref Wellbore: WEB-22H-HS (AWB) Ref Wellpath: WEB-22H-HS (AWP) Proj:12185

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
18.60	423.00	Generic gyro - northseeking (Standard)	01_Gyrodata Surveys 17 1/2" (57'-423')	WEB-22H-HS (AWB)
423.00	1208.00	Generic gyro - northseeking (Standard)	02_Gyro Surveys 17 1/2" (423')(455'-1208') Proj:1263	WEB-22H-HS (AWB)
1208.00	1486.00	NavTrak (Standard)	03_BHI UBHO Surveys (1208')(1327'-1486')	WEB-22H-HS (AWB)
1486.00	3385.00	NavTrak (MagCorr)	04_BHI MWD Surveys (MagCorr) (1515'-3385') Proj:3438	WEB-22H-HS (AWB)
3385.00	5469.00	NavTrak (Standard)	05_BHI MWD Surveys 8 3/4" (3498'-5469') Proj:5517	WEB-22H-HS (AWB)
5469.00	12160.00	NavTrak (AT Curve Short Spaced)	06_BHI AT Curve <8-3/4"> (5587'-12160)	WEB-22H-HS (AWB)
12160.00	12185.00	Blind Drilling (std)	Projection to bit	WEB-22H-HS (AWB)

REFERENCE WELLPATH IDENTIFICATION

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

COMMENTS

Wellpath general comments
 API: 47-051-01728-0000
 Rig: Precision 542
 BHI Job #: 6260427
 Gyrodata Surveys (57'-423')
 Gyro Surveys (423')(455'-1208')
 BHI UBHO Surveys (1208')(1327'-1486')
 BHI MWD Surveys (MagCorr) (1515'-3385')
 BHI MWD Surveys (3498'-5469')
 BHI AT Curve (5587'-12160')
 TD Projected to MD: 12185'



NOBLE ENERGY



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

Slot H
 Well: WEB-22H-HS
 Wellbore: WEB-22H-HS.PWB

Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
 North Reference: Grid north
 Measured depths are referenced to Precision 542 (RT)
 Precision 542 (RT) to Mean Sea Level: 1343.6 feet
 Scale: True distance
 Mean Sea Level to Mud line (At Slot: Slot H): -1325 feet
 Depths are in feet
 Coordinates are in feet referenced to Slot
 Created by: kscspr on 27/Jun/2014

Location Information		Well Data	
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
WEB-22 Pad	1713925.810	519652.540	80°31'11.977"W
Slot	Local E (ft)	Local N (ft)	Longitude
Slot H	56.66	519795.860	80°31'11.242"W
Precision 542 (RT) to Mud line (At Slot: Slot H) 18.6ft			
Mean Sea Level to Mud line (At Slot: Slot H) -1325ft			
Precision 542 (RT) to Mean Sea Level 1343.6ft			

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid North (US ft)	Grid East (US ft)	Latitude	Longitude
WEB-22H-HS BHL Rev-1	1273.91	6900.00	-4283.41	3403.83	515512.66	1717286.14	39°54'39.644"N	80°31'26.940"W
WEB-22H-HS L.P. Rev-1	7310.91	6900.00	-259.86	614.53	514496.01	1714596.97	39°55'18.698"N	80°31'03.311"W
WEB-22H-HS BHL Pad	6913.00	6913.00	-4283.41	3403.83	515512.66	1717286.14	39°54'39.644"N	80°31'26.940"W
WEB-22H-HS L.P. Pad	6913.00	6913.00	-259.86	614.53	514496.01	1714596.97	39°55'18.698"N	80°31'03.311"W

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid North (US ft)	Grid East (US ft)	Latitude	Longitude
BHI AT Curve (5587-12160)	: 5583.19ft	TVD, 28.58ft	S, 50.36ft	E				
BHI MWD Surveys (3498-5465)	: 3494.42ft	TVD, 29.35ft	S, 47.65ft	E				
BHI MWD Surveys (MagCorr) (1515-3385)	: 1514.29ft	TVD, 11.38ft	S, 3.43ft	W				
BHI UBHO Surveys (1208)(1327-1486)	: 1326.45ft	TVD, 7.63ft	S, 6.75ft	W				
Gyro Surveys (423)(455-1208)	: 454.91ft	TVD, 3.60ft	N, 7.67ft	W				
Gyrodata Surveys (57-423)	: 57.00ft	TVD, 0.04ft	S, 0.43ft	W				



API: 47-051-01728-0000
 Rig: Precision 542
 BHI Job #: 6260427
 Duration: 06/14/2014-06/26/2014

Office of Oil and Gas
 WV Dept. of Environmental Protection

Scale 1 inch = 1500 ft

Scale 1 inch = 2000 ft

Scale 1 inch = 1500 ft

TD Projected to MD: 12185° : 89.85° Inc., 12185.00ft MD, 6949.85ft TVD, 5461.11ft VS

TD Projected to MD: 12185° : 89.85° Inc., 12185.00ft MD, 6949.85ft TVD, 5461.11ft VS

TD Projected to MD: 12185° : 89.85° Inc., 12185.00ft MD, 6949.85ft TVD, 5461.11ft VS

TD Projected to MD: 12185° : 89.85° Inc., 12185.00ft MD, 6949.85ft TVD, 5461.11ft VS

Use specified MWD for 4733' from 5316.6 ft
 Magnetic North is 85 degrees West of True North (at 16/Jun/2014)
 Grid North is 0.65 degrees West of True North
 To correct azimuth from True to Grid add 0.65 degrees
 To correct azimuth from Magnetic to Grid subtract 7.34 degrees

06/12/2015