



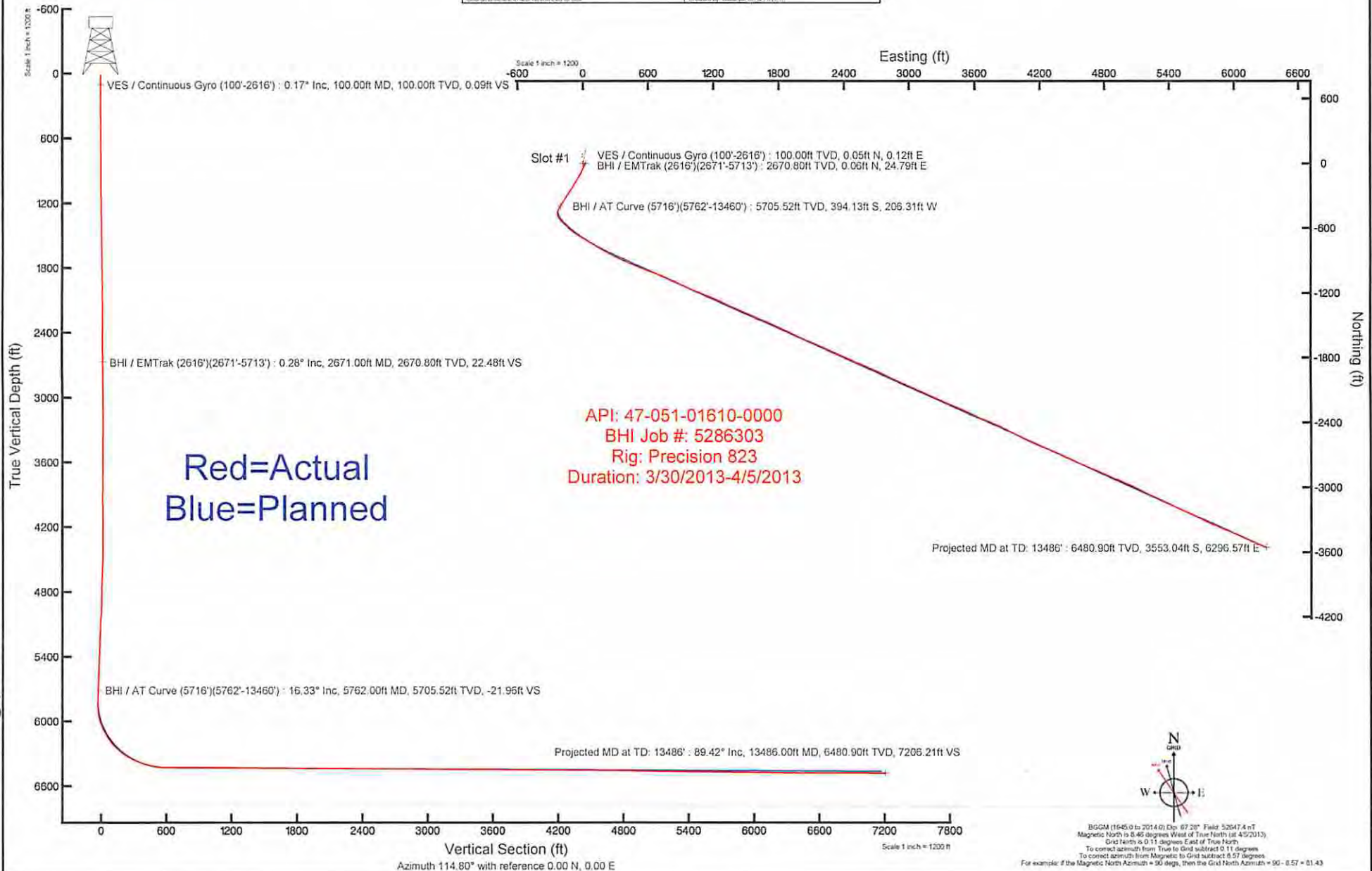
# GASTAR EXPLORATION USA, INC.

Location: Marshall County, WV  
 Field: Marshall  
 Facility: Goudy

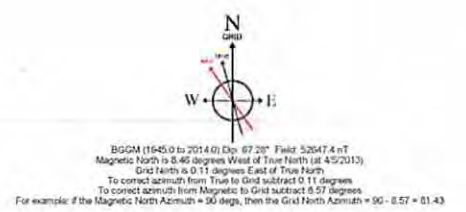
Slot: Slot #1  
 Well: Goudy 1H  
 Wellbore: Goudy 1H (PWB)



Plot reference wellpath is Goudy 1H Rev 0.0 (PWB)	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to Precision 823 (RT)	North Reference: Grid north
Measured depths are referenced to Precision 823 (RT)	Scale: True distance
Precision 823 (RT) to Mean Sea Level: 125.1 feet	Depths are in feet
Mean Sea Level to Mudline (At Slot: Slot #1): 1233 feet	Created by: veburak on 4/15/2013
Coordinates are in feet referenced to Slot	



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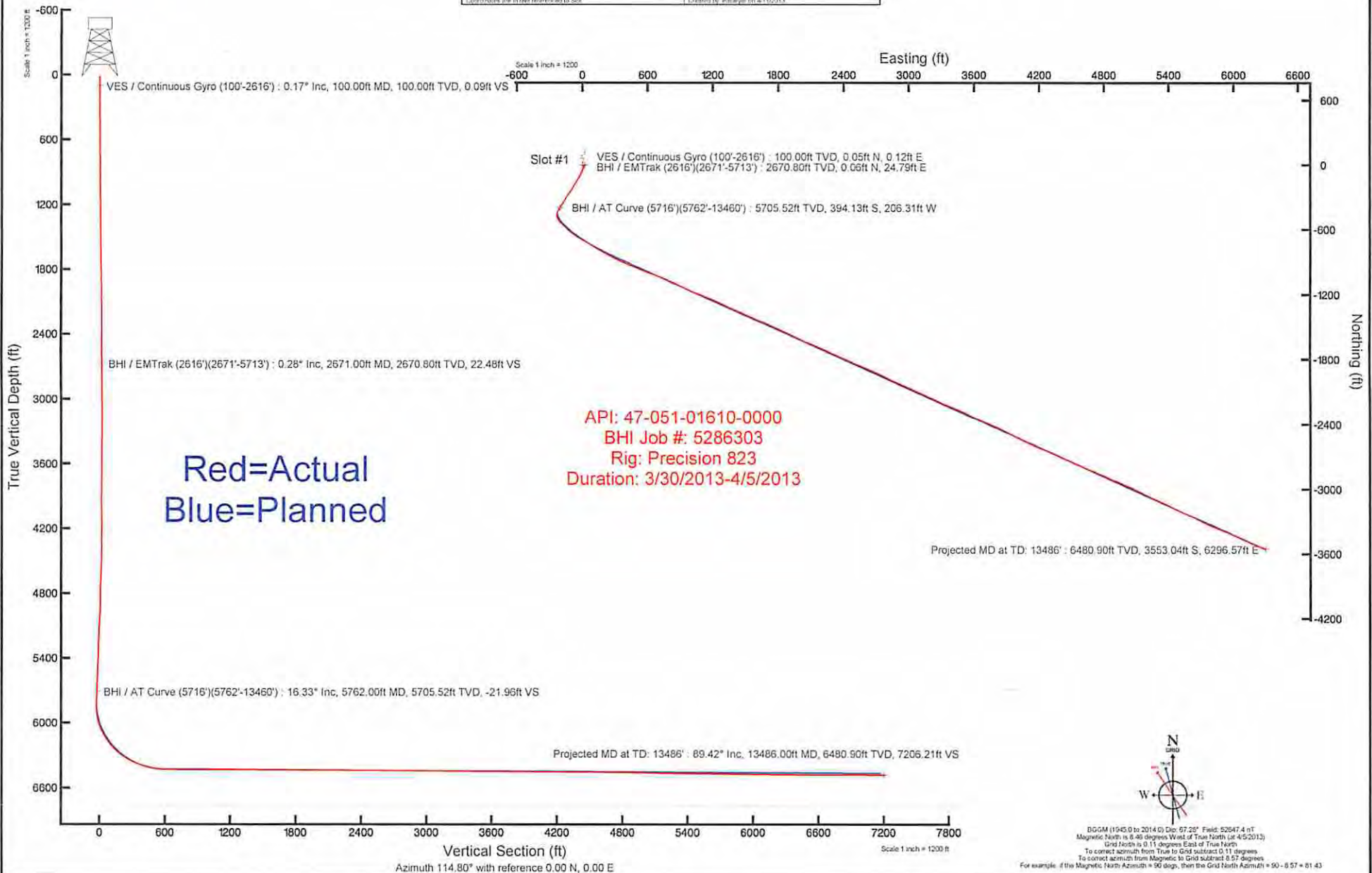
# GASTAR EXPLORATION USA, INC.

Location: Marshall County, WV  
Field: Marshall  
Facility: Goudy

Slot: Slot #1  
Well: Goudy 1H  
Wellbore: Goudy 1H (PWB)



Plot reference wellpath is Goudy 1H Rev-B 0 (PWB)	
True vertical depths are referenced to Precision 823 (RT)	Grid System: NAD83 / UTM Zone 17 North, US feet
Measured depths are referenced to Precision 823 (RT)	North Reference: Grid north
Precision 823 (RT) to Mean Sea Level: 129.1 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #1): -1238 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: arstanger on 4/11/2013







# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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### REFERENCE WELLPATH IDENTIFICATION

Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

### REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 3.0.3
North Reference	Grid	User	Edsaryar
Scale	0.999603	Report Generated	4/11/2013 at 2:09:10 PM
Convergence at slot	0.11° East	Database/Source file	Well Architect Eastern US/Goudy_1H_AWB_.xml

### WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-78.63	-14.91	1688545.20	14430864.40	39°44'11.734"N	80°49'43.679"W
Facility Reference Pt			1688560.10	14430943.00	39°44'12.511"N	80°49'43.486"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

### WELLPATH DATUM

Calculation method	Minimum curvature	Precision 823 (RT) to Facility Vertical Datum	13.00ft
Horizontal Reference Pt	Slot	Precision 823 (RT) to Mean Sea Level	1251.00ft
Vertical Reference Pt	Precision 823 (RT)	Precision 823 (RT) to Mud Line at Slot (Slot #1)	13.00ft
MD Reference Pt	Precision 823 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	114.80°

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

WELLPATH DATA (268 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	69.050	0.00	0.00	0.00	0.00	1688545.20	14430864.40	39°44'11.734"N	80°49'43.679"W	0.00	0.000	0.00	0.00	0.00
13.00	0.000	69.050	13.00	0.00	0.00	0.00	1688545.20	14430864.40	39°44'11.734"N	80°49'43.679"W	0.00	0.000	0.00	0.00	0.00
103.00	0.180	69.050	103.00	0.10	0.05	0.13	1688545.33	14430864.45	39°44'11.734"N	80°49'43.677"W	0.14	69.050	0.20	0.20	0.00
203.00	0.310	211.860	203.00	0.18	-0.12	0.14	1688545.34	14430864.28	39°44'11.733"N	80°49'43.677"W	0.18	132.155	0.47	0.13	142.81
303.00	0.070	200.000	303.00	0.15	-0.41	-0.03	1688545.17	14430863.99	39°44'11.730"N	80°49'43.679"W	0.41	183.872	0.24	-0.24	-11.86
403.00	0.310	141.920	403.00	0.39	-0.68	0.12	1688545.32	14430863.72	39°44'11.727"N	80°49'43.677"W	0.69	170.148	0.28	0.24	-58.08
503.00	0.450	117.680	503.00	1.03	-1.08	0.63	1688545.83	14430863.32	39°44'11.723"N	80°49'43.671"W	1.25	149.539	0.21	0.14	-24.24
603.00	0.030	120.290	602.99	1.44	-1.27	1.00	1688546.20	14430863.13	39°44'11.721"N	80°49'43.666"W	1.62	141.729	0.42	-0.42	2.61
703.00	0.570	121.690	702.99	1.96	-1.55	1.45	1688546.65	14430862.85	39°44'11.719"N	80°49'43.660"W	2.12	136.856	0.54	0.54	1.40
803.00	0.170	130.340	802.99	2.60	-1.90	1.99	1688547.18	14430862.50	39°44'11.715"N	80°49'43.654"W	2.75	133.793	0.40	-0.40	8.65
903.00	0.260	158.730	902.99	2.91	-2.21	2.18	1688547.38	14430862.19	39°44'11.712"N	80°49'43.651"W	3.11	135.393	0.14	0.09	28.39
1003.00	0.340	141.970	1002.99	3.33	-2.66	2.45	1688547.64	14430861.75	39°44'11.708"N	80°49'43.648"W	3.61	137.359	0.12	0.08	-16.76
1103.00	0.480	109.180	1102.99	4.02	-3.03	3.02	1688548.22	14430861.37	39°44'11.704"N	80°49'43.640"W	4.28	135.029	0.27	0.14	-32.79
1203.00	0.590	106.290	1202.98	4.94	-3.31	3.91	1688549.11	14430861.09	39°44'11.701"N	80°49'43.629"W	5.13	130.215	0.11	0.11	-2.89
1303.00	0.730	98.850	1302.98	6.06	-3.55	5.04	1688550.24	14430860.85	39°44'11.699"N	80°49'43.615"W	6.16	125.186	0.16	0.14	-7.44
1403.00	0.920	108.040	1402.97	7.47	-3.90	6.43	1688551.63	14430860.50	39°44'11.695"N	80°49'43.597"W	7.52	121.226	0.23	0.19	9.19
1503.00	0.790	80.520	1502.95	8.84	-4.03	7.87	1688553.07	14430860.37	39°44'11.694"N	80°49'43.578"W	8.85	117.125	0.43	-0.13	-27.52
1603.00	1.100	88.480	1602.94	10.27	-3.89	9.51	1688554.71	14430860.51	39°44'11.695"N	80°49'43.557"W	10.28	112.263	0.34	0.31	7.96
1703.00	1.300	89.910	1702.92	12.16	-3.87	11.61	1688556.80	14430860.53	39°44'11.695"N	80°49'43.530"W	12.23	108.427	0.20	0.20	1.43
1803.00	1.390	81.840	1802.89	14.21	-3.69	13.94	1688559.14	14430860.71	39°44'11.697"N	80°49'43.501"W	14.42	104.837	0.21	0.09	-8.07
1903.00	1.330	68.270	1902.86	16.02	-3.09	16.22	1688561.41	14430861.31	39°44'11.703"N	80°49'43.471"W	16.51	100.790	0.33	-0.06	-13.57
2003.00	0.940	58.260	2002.84	17.27	-2.23	18.00	1688563.19	14430862.17	39°44'11.712"N	80°49'43.449"W	18.13	97.065	0.44	-0.39	-10.01
2103.00	1.100	67.500	2102.83	18.38	-1.43	19.58	1688564.77	14430862.97	39°44'11.719"N	80°49'43.428"W	19.63	94.181	0.23	0.16	9.24
2203.00	0.690	84.420	2202.82	19.55	-1.01	21.07	1688566.26	14430863.39	39°44'11.724"N	80°49'43.409"W	21.09	92.733	0.48	-0.41	16.92
2303.00	0.850	68.520	2302.81	20.58	-0.68	22.36	1688567.55	14430863.72	39°44'11.727"N	80°49'43.393"W	22.37	91.730	0.27	0.16	-15.90
2403.00	0.190	89.450	2402.80	21.24	-0.40	23.21	1688568.40	14430864.00	39°44'11.729"N	80°49'43.382"W	23.22	90.993	0.68	-0.66	20.93
2503.00	0.430	91.950	2502.80	21.74	-0.41	23.75	1688568.94	14430863.99	39°44'11.729"N	80°49'43.375"W	23.76	90.997	0.24	0.24	2.50
2603.00	0.500	55.650	2602.80	22.31	-0.18	24.49	1688569.68	14430864.22	39°44'11.732"N	80°49'43.365"W	24.49	90.421	0.30	0.07	-36.30
2619.00	0.350	36.650	2618.80	22.35	-0.10	24.58	1688569.77	14430864.30	39°44'11.732"N	80°49'43.364"W	24.58	90.236	1.27	-0.94	-118.75
2674.00	0.280	75.030	2673.80	22.49	0.07	24.81	1688570.00	14430864.47	39°44'11.734"N	80°49'43.361"W	24.81	89.843	0.40	-0.13	69.78

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**Actual Wellpath Report**  
 MWD Surveys (S716)(S762-13460) Proj:13486  
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**REFERENCE WELLPATH IDENTIFICATION**

Operator	GASTAR EXPLORATION USA, INC.
Area	Marshall County, WV
Field	Marshall
Facility	Goudy
Slot	Wellbore
Slot #1	Goudy 1H (AWB)

WELLPATH DATA (268 stations)															
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
2737.00	0.180	16.450	2736.80	22.59	0.20	24.98	1688570.17	14430864.60	39°44'11.735"N	80°49'43.359"W	24.98	89.535	0.38	-0.16	-92.98
2800.00	0.220	11.980	2799.80	22.55	0.42	25.04	1688570.23	14430864.82	39°44'11.738"N	80°49'43.358"W	25.04	89.048	0.07	0.06	-7.10
2863.00	0.220	354.700	2862.79	22.46	0.65	25.05	1688570.24	14430865.05	39°44'11.740"N	80°49'43.358"W	25.06	88.503	0.10	0.00	-27.43
2927.00	0.140	57.930	2926.79	22.45	0.82	25.10	1688570.29	14430865.22	39°44'11.741"N	80°49'43.358"W	25.12	88.132	0.31	-0.12	98.80
2990.00	0.420	25.390	2989.79	22.49	1.07	25.27	1688570.46	14430865.47	39°44'11.744"N	80°49'43.355"W	25.29	87.580	0.49	0.44	-51.65
3054.00	0.370	32.320	3053.79	22.52	1.45	25.48	1688570.67	14430865.85	39°44'11.748"N	80°49'43.353"W	25.52	86.733	0.11	-0.08	10.83
3117.00	0.130	29.490	3116.79	22.55	1.69	25.62	1688570.81	14430866.09	39°44'11.750"N	80°49'43.351"W	25.68	86.229	0.38	-0.38	-4.49
3180.00	0.370	45.550	3179.79	22.63	1.89	25.80	1688570.99	14430866.29	39°44'11.752"N	80°49'43.349"W	25.87	85.803	0.39	0.38	25.49
3243.00	0.460	17.280	3242.79	22.67	2.28	26.02	1688571.21	14430866.68	39°44'11.756"N	80°49'43.346"W	26.12	84.999	0.35	0.14	-44.87
3305.00	0.340	346.660	3304.79	22.52	2.69	26.06	1688571.25	14430867.09	39°44'11.760"N	80°49'43.345"W	26.19	84.097	0.39	-0.19	-49.39
3368.00	0.260	307.730	3367.79	22.27	2.96	25.90	1688571.09	14430867.36	39°44'11.763"N	80°49'43.347"W	26.07	83.473	0.34	-0.13	-61.79
3431.00	0.280	339.440	3430.79	22.02	3.19	25.73	1688570.92	14430867.59	39°44'11.765"N	80°49'43.349"W	25.93	82.922	0.24	0.03	50.33
3494.00	0.340	317.910	3493.79	21.74	3.48	25.55	1688570.74	14430867.88	39°44'11.768"N	80°49'43.352"W	25.79	82.250	0.21	0.10	-34.17
3558.00	0.310	318.340	3557.78	21.40	3.75	25.31	1688570.50	14430868.15	39°44'11.770"N	80°49'43.355"W	25.59	81.577	0.05	-0.05	0.67
3621.00	0.400	267.550	3620.78	21.05	3.87	24.98	1688570.17	14430868.26	39°44'11.772"N	80°49'43.359"W	25.28	81.202	0.50	0.14	-80.62
3684.00	1.730	220.870	3683.77	20.59	3.14	24.14	1688569.33	14430867.54	39°44'11.764"N	80°49'43.370"W	24.34	82.594	2.36	2.11	-74.10
3715.00	3.020	209.350	3714.74	20.40	2.07	23.43	1688568.62	14430866.47	39°44'11.754"N	80°49'43.379"W	23.52	84.947	4.42	4.16	-37.16
3747.00	4.470	211.520	3746.68	20.19	0.27	22.36	1688567.56	14430864.67	39°44'11.736"N	80°49'43.393"W	22.37	89.298	4.55	4.53	6.78
3779.00	5.320	210.030	3778.56	19.91	-2.07	20.97	1688566.16	14430862.33	39°44'11.713"N	80°49'43.411"W	21.07	95.647	2.69	2.66	-4.66
3810.00	5.660	211.190	3809.42	19.60	-4.63	19.46	1688564.65	14430859.78	39°44'11.688"N	80°49'43.430"W	20.00	103.371	1.15	1.10	3.74
3841.00	5.480	214.870	3840.27	19.18	-7.15	17.82	1688563.01	14430857.26	39°44'11.663"N	80°49'43.451"W	19.20	111.855	1.29	-0.58	11.87
3873.00	5.360	214.480	3872.13	18.66	-9.63	16.10	1688561.29	14430854.77	39°44'11.638"N	80°49'43.473"W	18.76	120.892	0.39	-0.37	-1.22
3904.00	5.420	216.180	3902.99	18.12	-12.01	14.42	1688559.61	14430852.40	39°44'11.615"N	80°49'43.495"W	18.76	129.792	0.55	0.19	5.48
3936.00	4.980	204.510	3934.86	17.83	-14.49	12.95	1688558.14	14430849.91	39°44'11.590"N	80°49'43.514"W	19.43	138.220	3.57	-1.37	-36.47
3968.00	5.750	200.200	3966.72	17.97	-17.26	11.82	1688557.01	14430847.15	39°44'11.563"N	80°49'43.528"W	20.92	145.599	2.71	2.41	-13.47
3999.00	7.080	197.220	3997.52	18.35	-20.54	10.72	1688555.91	14430843.87	39°44'11.531"N	80°49'43.542"W	23.17	152.449	4.42	4.29	-9.61
4030.00	8.270	196.780	4028.25	18.91	-24.50	9.51	1688554.70	14430839.91	39°44'11.492"N	80°49'43.558"W	26.28	158.792	3.84	3.84	-1.42
4062.00	9.160	197.240	4059.88	19.56	-29.14	8.09	1688553.29	14430835.27	39°44'11.446"N	80°49'43.576"W	30.24	164.486	2.79	2.78	1.44
4093.00	9.970	200.030	4090.44	20.11	-34.02	6.44	1688551.64	14430830.40	39°44'11.398"N	80°49'43.597"W	34.62	169.283	3.01	2.61	9.00
4125.00	10.380	202.510	4121.94	20.46	-39.28	4.39	1688549.58	14430825.13	39°44'11.346"N	80°49'43.624"W	39.53	173.630	1.87	1.28	7.75

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

## WELLPATH DATA (268 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]
4156.00	11.180	204.770	4152.39	20.57	-44.59	2.06	1688547.26	14430819.83	39°44'11.293"N	80°49'43.654"W	44.64	177.359	2.92	2.58	7.29
4188.00	11.830	205.590	4183.75	20.53	-50.37	-0.66	1688544.54	14430814.05	39°44'11.236"N	80°49'43.689"W	50.37	180.750	2.09	2.03	2.56
4220.00	12.810	205.690	4215.01	20.43	-56.52	-3.61	1688541.59	14430807.90	39°44'11.175"N	80°49'43.727"W	56.64	183.659	3.06	3.06	0.31
4251.00	13.190	206.660	4245.22	20.26	-62.78	-6.69	1688538.51	14430801.65	39°44'11.114"N	80°49'43.766"W	63.14	186.083	1.41	1.23	3.13
4283.00	13.500	205.020	4276.36	20.13	-69.43	-9.91	1688535.30	14430795.00	39°44'11.048"N	80°49'43.807"W	70.13	188.122	1.53	0.97	-5.12
4314.00	13.960	204.320	4306.47	20.14	-76.11	-12.98	1688532.23	14430788.32	39°44'10.982"N	80°49'43.847"W	77.21	189.677	1.58	1.48	-2.26
4346.00	14.380	203.710	4337.50	20.25	-83.27	-16.17	1688529.04	14430781.16	39°44'10.911"N	80°49'43.888"W	84.82	190.987	1.39	1.31	-1.91
4377.00	15.340	203.860	4367.46	20.39	-90.54	-19.37	1688525.83	14430773.89	39°44'10.839"N	80°49'43.929"W	92.59	192.077	3.10	3.10	0.48
4409.00	15.750	204.920	4398.29	20.45	-98.35	-22.92	1688522.29	14430766.09	39°44'10.762"N	80°49'43.975"W	100.99	193.115	1.56	1.28	3.31
4440.00	16.090	207.060	4428.10	20.27	-105.99	-26.64	1688518.57	14430758.45	39°44'10.687"N	80°49'44.023"W	109.29	194.109	2.19	1.10	6.90
4472.00	16.250	210.090	4458.83	19.69	-113.82	-30.90	1688514.31	14430750.63	39°44'10.610"N	80°49'44.077"W	117.94	195.191	2.68	0.50	9.47
4503.00	16.370	211.000	4488.59	18.82	-121.32	-35.33	1688509.89	14430743.13	39°44'10.536"N	80°49'44.134"W	126.35	196.236	0.91	0.39	2.94
4535.00	16.490	211.850	4519.28	17.77	-129.04	-40.05	1688505.17	14430735.41	39°44'10.459"N	80°49'44.195"W	135.11	197.242	0.84	0.37	2.66
4567.00	16.590	210.460	4549.96	16.76	-136.83	-44.76	1688500.46	14430727.62	39°44'10.382"N	80°49'44.255"W	143.97	198.114	1.28	0.31	-4.34
4598.00	16.290	211.200	4579.69	15.84	-144.37	-49.26	1688495.96	14430720.09	39°44'10.308"N	80°49'44.313"W	152.54	198.839	1.18	-0.97	2.39
4630.00	15.650	211.480	4610.45	14.84	-151.89	-53.84	1688491.39	14430712.57	39°44'10.234"N	80°49'44.372"W	161.15	199.516	2.01	-2.00	0.88
4662.00	14.710	214.800	4641.34	13.63	-158.90	-58.41	1688486.82	14430705.56	39°44'10.165"N	80°49'44.430"W	169.30	200.182	4.00	-2.94	10.38
4725.00	14.240	212.090	4702.34	11.26	-172.04	-67.09	1688478.14	14430692.43	39°44'10.035"N	80°49'44.542"W	184.66	201.304	1.31	-0.75	-4.30
4787.00	14.250	210.170	4762.43	9.58	-185.10	-74.98	1688470.25	14430679.38	39°44'09.906"N	80°49'44.643"W	199.70	202.051	0.76	0.02	-3.10
4850.00	14.030	207.750	4823.52	8.46	-198.56	-82.43	1688462.80	14430665.92	39°44'09.773"N	80°49'44.739"W	214.99	202.545	1.00	-0.35	-3.84
4912.00	14.610	209.590	4883.60	7.42	-212.01	-89.79	1688455.45	14430652.48	39°44'09.640"N	80°49'44.833"W	230.24	202.953	1.19	0.94	2.97
4975.00	15.420	211.580	4944.45	5.77	-226.05	-98.10	1688447.14	14430638.44	39°44'09.502"N	80°49'44.940"W	246.42	203.459	1.52	1.29	3.16
5038.00	15.440	215.880	5005.18	3.17	-239.98	-107.40	1688437.84	14430624.51	39°44'09.364"N	80°49'45.060"W	262.92	204.110	1.82	0.03	6.83
5102.00	14.440	216.740	5067.01	-0.12	-253.28	-117.17	1688428.08	14430611.22	39°44'09.233"N	80°49'45.185"W	279.07	204.825	1.60	-1.56	1.34
5165.00	13.620	215.170	5128.13	-3.08	-265.64	-126.14	1688419.11	14430598.87	39°44'09.111"N	80°49'45.300"W	294.07	205.401	1.43	-1.30	-2.49
5228.00	13.630	214.050	5189.36	-5.61	-277.85	-134.57	1688410.69	14430586.66	39°44'08.990"N	80°49'45.408"W	308.72	205.841	0.42	0.02	-1.78
5291.00	13.930	211.850	5250.55	-7.73	-290.45	-142.73	1688402.53	14430574.07	39°44'08.866"N	80°49'45.513"W	323.62	206.170	0.96	0.48	-3.49
5354.00	14.080	210.750	5311.68	-9.46	-303.47	-150.64	1688394.62	14430561.05	39°44'08.738"N	80°49'45.615"W	338.81	206.400	0.49	0.24	-1.75
5417.00	14.070	210.700	5372.78	-11.04	-316.64	-158.47	1688386.79	14430547.88	39°44'08.608"N	80°49'45.715"W	354.09	206.587	0.02	-0.02	-0.08
5481.00	14.990	212.930	5434.74	-13.01	-330.28	-166.94	1688378.32	14430534.25	39°44'08.473"N	80°49'45.824"W	370.07	206.815	1.68	1.44	3.48

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

### WELLPATH DATA (268 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]
5544.00	14.840	211.150	5495.61	-15.06	-344.02	-175.55	1688369.72	14430520.51	39°44'08.337"N	80°49'45.934"W	386.22	207.034	0.77	-0.24	-2.83
5607.00	15.040	211.590	5556.48	-16.91	-357.89	-184.00	1688361.27	14430506.65	39°44'08.200"N	80°49'46.043"W	402.42	207.209	0.36	0.32	0.70
5670.00	16.180	211.840	5617.16	-18.96	-372.31	-192.91	1688352.36	14430492.24	39°44'08.058"N	80°49'46.157"W	419.32	207.391	1.81	1.81	0.40
5716.00	16.170	211.770	5661.35	-20.52	-383.17	-199.65	1688345.63	14430481.39	39°44'07.951"N	80°49'46.244"W	432.06	207.522	0.24	-0.24	-0.15
5762.00	16.330	210.810	5705.52	-21.96	-394.13	-206.31	1688338.97	14430470.42	39°44'07.843"N	80°49'46.329"W	444.87	207.630	0.81	0.57	-2.09
5806.00	15.970	211.070	5747.79	-23.27	-404.63	-212.60	1688332.68	14430459.93	39°44'07.739"N	80°49'46.410"W	457.09	207.719	0.83	-0.82	0.59
5851.00	16.190	211.550	5791.03	-24.69	-415.28	-219.08	1688326.21	14430449.29	39°44'07.634"N	80°49'46.493"W	469.53	207.814	0.57	0.49	1.07
5896.00	16.210	206.870	5834.24	-25.65	-426.23	-225.20	1688320.09	14430438.34	39°44'07.526"N	80°49'46.572"W	482.07	207.850	2.90	0.04	-10.40
5941.00	17.580	199.330	5877.30	-25.23	-438.25	-230.29	1688315.00	14430426.33	39°44'07.407"N	80°49'46.637"W	495.07	207.721	5.74	3.04	-16.76
5985.00	20.140	189.350	5918.95	-22.58	-452.00	-233.72	1688311.57	14430412.58	39°44'07.271"N	80°49'46.682"W	508.85	207.343	9.34	5.82	-22.68
6030.00	22.310	175.060	5960.92	-16.27	-468.17	-234.25	1688311.05	14430396.42	39°44'07.112"N	80°49'46.689"W	523.50	206.581	12.43	4.82	-31.76
6075.00	23.590	159.390	6002.40	-5.61	-485.12	-230.34	1688314.95	14430379.47	39°44'06.944"N	80°49'46.639"W	537.03	205.399	13.83	2.84	-34.82
6120.00	25.150	145.490	6043.42	9.04	-501.44	-221.74	1688323.54	14430363.16	39°44'06.782"N	80°49'46.530"W	548.28	203.856	13.18	3.47	-30.89
6164.00	28.380	140.330	6082.71	26.52	-517.20	-209.77	1688335.52	14430347.41	39°44'06.626"N	80°49'46.377"W	558.12	202.077	9.04	7.34	-11.73
6209.00	32.490	138.480	6121.50	47.25	-534.49	-194.92	1688350.36	14430330.12	39°44'06.455"N	80°49'46.187"W	568.92	200.036	9.37	9.13	-4.11
6254.00	36.290	137.320	6158.63	70.63	-553.34	-177.88	1688367.40	14430311.28	39°44'06.269"N	80°49'45.969"W	581.22	197.821	8.57	8.44	-2.58
6299.00	39.690	134.790	6194.09	96.44	-573.26	-158.64	1688386.62	14430291.37	39°44'06.072"N	80°49'45.724"W	594.80	195.469	8.31	7.56	-5.62
6343.00	44.230	132.360	6226.80	124.29	-593.51	-137.32	1688407.93	14430271.13	39°44'05.871"N	80°49'45.451"W	609.19	193.027	10.96	10.32	-5.52
6388.00	48.850	129.460	6257.75	155.67	-614.86	-112.63	1688432.62	14430249.78	39°44'05.659"N	80°49'45.136"W	625.09	190.380	11.28	10.27	-6.44
6433.00	52.560	126.600	6286.25	189.56	-636.29	-85.19	1688460.04	14430228.36	39°44'05.447"N	80°49'44.785"W	641.97	187.626	9.60	8.24	-6.36
6478.00	56.230	123.730	6312.45	225.54	-657.34	-55.28	1688489.94	14430207.32	39°44'05.239"N	80°49'44.403"W	659.66	184.807	9.66	8.16	-6.38
6522.00	60.630	121.010	6335.48	262.69	-677.38	-23.62	1688521.59	14430187.29	39°44'05.040"N	80°49'43.998"W	677.80	181.997	11.30	10.00	-6.18
6567.00	64.430	120.620	6356.23	302.39	-697.83	10.67	1688555.86	14430166.85	39°44'04.837"N	80°49'43.559"W	697.91	179.124	8.48	8.44	-0.87
6612.00	68.310	120.890	6374.27	343.39	-718.91	46.09	1688591.27	14430145.78	39°44'04.628"N	80°49'43.107"W	720.39	176.332	8.64	8.62	0.60
6657.00	71.440	120.870	6389.75	385.40	-740.59	82.35	1688627.51	14430124.10	39°44'04.413"N	80°49'42.643"W	745.16	173.655	6.96	6.96	-0.04
6702.00	75.380	121.760	6402.60	428.24	-763.01	119.18	1688664.33	14430101.70	39°44'04.191"N	80°49'42.172"W	772.26	171.122	8.96	8.76	1.98
6746.00	77.820	120.550	6412.79	470.77	-785.15	155.81	1688700.95	14430079.57	39°44'03.972"N	80°49'41.704"W	800.46	168.776	6.16	5.55	-2.75
6791.00	80.790	118.830	6421.14	514.82	-807.04	194.22	1688739.34	14430057.68	39°44'03.754"N	80°49'41.213"W	830.08	166.469	7.59	6.60	-3.82
6836.00	85.380	117.650	6426.56	559.40	-828.17	233.56	1688778.67	14430036.56	39°44'03.545"N	80°49'40.710"W	860.48	164.250	10.53	10.20	-2.62
6881.00	90.030	117.850	6428.36	604.29	-849.10	273.34	1688818.43	14430015.64	39°44'03.337"N	80°49'40.201"W	892.02	162.156	10.34	10.33	0.44

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

### WELLPATH DATA (268 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]
6926.00	90.120	116.730	6428.30	649.25	-869.73	313.33	1688858.41	14429995.01	39°44'03.133"N	80°49'39.689"W	924.45	160.188	2.50	0.20	-2.49
6970.00	90.310	114.770	6428.14	693.24	-888.85	352.96	1688898.02	14429975.91	39°44'02.943"N	80°49'39.183"W	956.37	158.342	4.48	0.43	-4.45
7015.00	89.780	113.580	6428.10	738.24	-907.28	394.02	1688939.06	14429957.49	39°44'02.760"N	80°49'38.658"W	989.14	156.525	2.89	-1.18	-2.64
7060.00	89.850	112.680	6428.25	783.22	-924.95	435.40	1688980.42	14429939.82	39°44'02.585"N	80°49'38.128"W	1022.31	154.793	2.01	0.16	-2.00
7105.00	89.850	112.220	6428.36	828.18	-942.14	476.99	1689022.00	14429922.64	39°44'02.414"N	80°49'37.596"W	1056.00	153.148	1.02	0.00	-1.02
7149.00	89.630	111.210	6428.56	872.12	-958.42	517.86	1689062.86	14429906.37	39°44'02.252"N	80°49'37.074"W	1089.38	151.616	2.35	-0.50	-2.30
7194.00	89.570	111.150	6428.88	917.02	-974.68	559.82	1689104.80	14429890.11	39°44'02.091"N	80°49'36.537"W	1124.01	150.128	0.19	-0.13	-0.13
7239.00	89.630	111.010	6429.19	961.93	-990.86	601.81	1689146.77	14429873.94	39°44'01.930"N	80°49'36.000"W	1159.30	148.727	0.34	0.13	-0.31
7284.00	89.600	111.430	6429.49	1006.84	-1007.15	643.76	1689188.70	14429857.65	39°44'01.768"N	80°49'35.463"W	1195.31	147.414	0.94	-0.07	0.93
7328.00	89.630	111.660	6429.79	1050.77	-1023.31	684.68	1689229.61	14429841.50	39°44'01.608"N	80°49'34.940"W	1231.24	146.214	0.53	0.07	0.52
7373.00	89.600	111.420	6430.09	1095.69	-1039.83	726.54	1689271.45	14429824.99	39°44'01.444"N	80°49'34.405"W	1268.50	145.058	0.54	-0.07	-0.53
7418.00	89.600	112.460	6430.41	1140.64	-1056.64	768.28	1689313.17	14429808.18	39°44'01.277"N	80°49'33.871"W	1306.42	143.979	2.31	0.00	2.31
7463.00	89.600	114.290	6430.72	1185.62	-1074.49	809.58	1689354.46	14429790.34	39°44'01.100"N	80°49'33.343"W	1345.35	143.004	4.07	0.00	4.07
7508.00	89.290	115.050	6431.16	1230.62	-1093.27	850.47	1689395.33	14429771.56	39°44'00.913"N	80°49'32.820"W	1385.12	142.120	1.82	-0.69	1.69
7552.00	89.420	115.400	6431.65	1274.61	-1112.02	890.27	1689435.12	14429752.82	39°44'00.727"N	80°49'32.311"W	1424.50	141.320	0.85	0.30	0.80
7597.00	89.450	116.040	6432.10	1319.60	-1131.55	930.81	1689475.64	14429733.30	39°44'00.533"N	80°49'31.792"W	1465.20	140.559	1.42	0.07	1.42
7642.00	89.510	115.300	6432.50	1364.60	-1151.04	971.37	1689516.18	14429713.82	39°44'00.340"N	80°49'31.274"W	1506.14	139.839	1.65	0.13	-1.64
7687.00	89.320	113.210	6432.96	1409.59	-1169.53	1012.39	1689557.19	14429695.34	39°44'00.156"N	80°49'30.749"W	1546.85	139.119	4.66	-0.42	-4.64
7732.00	89.290	111.560	6433.51	1454.54	-1186.66	1054.00	1689598.78	14429678.21	39°43'59.986"N	80°49'30.217"W	1587.16	138.388	3.67	-0.07	-3.67
7776.00	89.570	111.380	6433.95	1498.47	-1202.77	1094.94	1689639.71	14429662.11	39°43'59.826"N	80°49'29.693"W	1626.51	137.687	0.76	0.64	-0.41
7821.00	89.600	111.640	6434.27	1543.39	-1219.27	1136.81	1689681.55	14429645.62	39°43'59.662"N	80°49'29.158"W	1667.02	137.004	0.58	0.07	0.58
7866.00	89.600	112.810	6434.59	1588.35	-1236.29	1178.46	1689723.19	14429628.61	39°43'59.493"N	80°49'28.625"W	1707.98	136.372	2.60	0.00	2.60
7910.00	89.600	113.710	6434.89	1632.33	-1253.66	1218.89	1689763.60	14429611.24	39°43'59.321"N	80°49'28.108"W	1748.53	135.806	2.05	0.00	2.05
7955.00	89.630	115.100	6435.20	1677.32	-1272.25	1259.86	1689804.56	14429592.65	39°43'59.136"N	80°49'27.584"W	1790.50	135.280	3.09	0.07	3.09
8000.00	89.630	115.390	6435.49	1722.32	-1291.45	1300.56	1689845.24	14429573.47	39°43'58.946"N	80°49'27.063"W	1832.84	134.798	0.64	0.00	0.64
8045.00	89.630	115.040	6435.78	1767.32	-1310.62	1341.28	1689885.94	14429554.31	39°43'58.756"N	80°49'26.543"W	1875.30	134.338	0.78	0.00	-0.78
8089.00	89.570	114.870	6436.09	1811.32	-1329.18	1381.17	1689925.81	14429535.75	39°43'58.571"N	80°49'26.033"W	1916.86	133.901	0.41	-0.14	-0.39
8134.00	89.570	113.890	6436.42	1856.32	-1347.75	1422.15	1689966.78	14429517.18	39°43'58.387"N	80°49'25.509"W	1959.33	133.461	2.18	0.00	-2.18
8179.00	89.600	113.360	6436.75	1901.31	-1365.79	1463.38	1690007.99	14429499.16	39°43'58.208"N	80°49'24.981"W	2001.71	133.024	1.18	0.07	-1.18
8224.00	89.570	113.980	6437.08	1946.30	-1383.85	1504.59	1690049.19	14429481.10	39°43'58.029"N	80°49'24.454"W	2044.22	132.606	1.38	-0.07	1.38

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

### WELLPATH DATA (268 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]
8269.00	89.540	113.650	6437.42	1991.29	-1402.02	1545.76	1690090.34	14429462.94	39°43'57.848"N	80°49'23.928"W	2086.87	132.208	0.74	-0.07	-0.73
8313.00	89.570	114.480	6437.77	2035.28	-1419.96	1585.93	1690130.50	14429445.00	39°43'57.670"N	80°49'23.414"W	2128.73	131.840	1.89	0.07	1.89
8358.00	89.570	114.500	6438.10	2080.28	-1438.62	1626.88	1690171.43	14429426.36	39°43'57.485"N	80°49'22.890"W	2171.72	131.486	0.04	0.00	0.04
8403.00	89.600	114.320	6438.43	2125.28	-1457.21	1667.86	1690212.39	14429407.77	39°43'57.301"N	80°49'22.366"W	2214.78	131.144	0.41	0.07	-0.40
8448.00	89.660	114.320	6438.72	2170.28	-1475.75	1708.87	1690253.38	14429389.24	39°43'57.117"N	80°49'21.842"W	2257.89	130.813	0.13	0.13	0.00
8492.00	89.600	114.500	6439.00	2214.27	-1493.93	1748.93	1690293.43	14429371.07	39°43'56.936"N	80°49'21.329"W	2300.13	130.504	0.43	-0.14	0.41
8537.00	89.600	114.670	6439.32	2259.27	-1512.65	1789.85	1690334.34	14429352.35	39°43'56.750"N	80°49'20.806"W	2343.43	130.202	0.38	0.00	0.38
8582.00	89.600	114.880	6439.63	2304.27	-1531.51	1830.71	1690375.18	14429333.50	39°43'56.563"N	80°49'20.284"W	2386.84	129.915	0.47	0.00	0.47
8627.00	89.600	115.450	6439.95	2349.27	-1550.64	1871.44	1690415.89	14429314.38	39°43'56.373"N	80°49'19.763"W	2430.38	129.645	1.27	0.00	1.27
8671.00	89.570	116.610	6440.27	2393.26	-1569.95	1910.97	1690455.41	14429295.08	39°43'56.182"N	80°49'19.257"W	2473.17	129.405	2.64	-0.07	2.64
8716.00	89.600	115.990	6440.59	2438.24	-1589.89	1951.31	1690495.73	14429275.15	39°43'55.984"N	80°49'18.741"W	2517.02	129.172	1.38	0.07	-1.38
8761.00	89.630	114.590	6440.89	2483.24	-1609.11	1992.00	1690536.40	14429255.93	39°43'55.793"N	80°49'18.221"W	2560.72	128.931	3.11	0.07	-3.11
8806.00	89.540	113.590	6441.22	2528.23	-1627.48	2033.08	1690577.46	14429237.57	39°43'55.611"N	80°49'17.696"W	2604.24	128.677	2.23	-0.20	-2.22
8850.00	89.600	112.900	6441.55	2572.21	-1644.84	2073.50	1690617.88	14429220.21	39°43'55.438"N	80°49'17.179"W	2646.68	128.424	1.57	0.14	-1.57
8895.00	89.660	112.920	6441.84	2617.19	-1662.36	2114.95	1690659.31	14429202.70	39°43'55.264"N	80°49'16.649"W	2690.07	128.167	0.14	0.13	0.04
8940.00	89.600	113.560	6442.13	2662.17	-1680.12	2156.30	1690700.64	14429184.95	39°43'55.088"N	80°49'16.120"W	2733.57	127.925	1.43	-0.13	1.42
8985.00	89.510	113.210	6442.48	2707.15	-1697.98	2197.60	1690741.93	14429167.10	39°43'54.911"N	80°49'15.592"W	2777.15	127.691	0.80	-0.20	-0.78
9029.00	89.630	114.280	6442.81	2751.15	-1715.69	2237.88	1690782.18	14429149.39	39°43'54.735"N	80°49'15.077"W	2819.87	127.476	2.45	0.27	2.43
9074.00	89.690	114.900	6443.08	2796.14	-1734.42	2278.79	1690823.08	14429130.67	39°43'54.549"N	80°49'14.553"W	2863.76	127.275	1.38	0.13	1.38
9119.00	89.660	114.790	6443.33	2841.14	-1753.33	2319.63	1690863.90	14429111.77	39°43'54.361"N	80°49'14.031"W	2907.72	127.084	0.25	-0.07	-0.24
9164.00	89.600	114.230	6443.62	2886.14	-1771.99	2360.57	1690904.83	14429093.11	39°43'54.176"N	80°49'13.508"W	2951.65	126.894	1.25	-0.13	-1.24
9208.00	89.480	114.110	6443.98	2930.14	-1790.01	2400.71	1690944.96	14429075.11	39°43'53.997"N	80°49'12.994"W	2994.59	126.709	0.39	-0.27	-0.27
9253.00	89.630	113.380	6444.33	2975.13	-1808.13	2441.90	1690986.13	14429056.99	39°43'53.817"N	80°49'12.468"W	3038.46	126.518	1.66	0.33	-1.62
9298.00	89.540	113.960	6444.65	3020.12	-1826.19	2483.12	1691027.32	14429038.94	39°43'53.638"N	80°49'11.941"W	3082.34	126.332	1.30	-0.20	1.29
9343.00	89.690	113.450	6444.96	3065.11	-1844.28	2524.32	1691068.51	14429020.85	39°43'53.458"N	80°49'11.414"W	3126.27	126.152	1.18	0.33	-1.13
9387.00	89.600	112.600	6445.23	3109.09	-1861.49	2564.81	1691108.99	14429003.65	39°43'53.287"N	80°49'10.896"W	3169.14	125.971	1.94	-0.20	-1.93
9432.00	89.510	112.540	6445.58	3154.05	-1878.76	2606.36	1691150.52	14428986.39	39°43'53.116"N	80°49'10.364"W	3212.93	125.785	0.24	-0.20	-0.13
9477.00	89.570	113.420	6445.94	3199.03	-1896.33	2647.79	1691191.93	14428968.83	39°43'52.942"N	80°49'09.835"W	3256.82	125.610	1.96	0.13	1.96
9522.00	89.600	114.140	6446.26	3244.02	-1914.48	2688.97	1691233.10	14428950.69	39°43'52.761"N	80°49'09.308"W	3300.88	125.450	1.60	0.07	1.60
9566.00	89.540	115.800	6446.59	3288.01	-1933.05	2728.85	1691272.96	14428932.12	39°43'52.577"N	80°49'08.798"W	3344.15	125.313	3.78	-0.14	3.77

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

## WELLPATH DATA (268 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]
9611.00	89.420	116.370	6447.00	3333.00	-1952.84	2769.27	1691313.36	14428912.34	39°43'52.381"N	80°49'08.281"W	3388.57	125.191	1.29	-0.27	1.27
9656.00	89.660	117.020	6447.36	3377.97	-1973.05	2809.47	1691353.55	14428892.14	39°43'52.180"N	80°49'07.767"W	3433.08	125.080	1.54	0.53	1.44
9701.00	89.750	115.260	6447.60	3422.96	-1992.87	2849.87	1691393.93	14428872.32	39°43'51.983"N	80°49'07.251"W	3477.54	124.965	3.92	0.20	-3.91
9746.00	89.690	113.240	6447.82	3467.96	-2011.36	2890.89	1691434.94	14428853.85	39°43'51.800"N	80°49'06.726"W	3521.76	124.828	4.49	-0.13	-4.49
9790.00	89.480	113.000	6448.13	3511.93	-2028.63	2931.36	1691475.39	14428836.58	39°43'51.628"N	80°49'06.209"W	3564.86	124.685	0.72	-0.48	-0.55
9835.00	89.600	113.050	6448.50	3556.91	-2046.23	2972.77	1691516.78	14428818.98	39°43'51.454"N	80°49'05.679"W	3608.94	124.541	0.29	0.27	0.11
9880.00	89.510	114.520	6448.85	3601.90	-2064.38	3013.95	1691557.94	14428800.84	39°43'51.273"N	80°49'05.152"W	3653.16	124.409	3.27	-0.20	3.27
9924.00	89.630	114.870	6449.18	3645.90	-2082.76	3053.92	1691597.90	14428782.47	39°43'51.091"N	80°49'04.641"W	3696.53	124.294	0.84	0.27	0.80
9969.00	89.630	114.640	6449.47	3690.90	-2101.61	3094.79	1691638.75	14428763.63	39°43'50.904"N	80°49'04.119"W	3740.92	124.180	0.51	0.00	-0.51
10014.00	89.600	114.660	6449.77	3735.90	-2120.37	3135.68	1691679.63	14428744.87	39°43'50.718"N	80°49'03.596"W	3785.30	124.067	0.08	-0.07	0.04
10059.00	89.540	114.310	6450.11	3780.90	-2139.02	3176.64	1691720.57	14428726.23	39°43'50.532"N	80°49'03.072"W	3829.68	123.955	0.79	-0.13	-0.78
10104.00	89.540	114.870	6450.47	3825.89	-2157.75	3217.55	1691761.47	14428707.51	39°43'50.347"N	80°49'02.549"W	3874.08	123.847	1.24	0.00	1.24
10148.00	89.600	114.550	6450.80	3869.89	-2176.14	3257.52	1691801.42	14428689.13	39°43'50.164"N	80°49'02.038"W	3917.53	123.744	0.74	0.14	-0.73
10193.00	89.600	114.540	6451.11	3914.89	-2194.83	3298.46	1691842.34	14428670.44	39°43'49.978"N	80°49'01.514"W	3961.96	123.640	0.02	0.00	-0.02
10238.00	89.660	113.120	6451.40	3959.88	-2213.01	3339.62	1691883.48	14428652.27	39°43'49.798"N	80°49'00.988"W	4006.30	123.531	3.16	0.13	-3.16
10282.00	89.570	112.950	6451.70	4003.86	-2230.23	3380.11	1691923.96	14428635.06	39°43'49.627"N	80°49'00.470"W	4049.58	123.417	0.44	-0.20	-0.39
10327.00	89.600	112.470	6452.02	4048.83	-2247.60	3421.62	1691965.45	14428617.69	39°43'49.454"N	80°48'59.939"W	4093.80	123.300	1.07	0.07	-1.07
10372.00	89.630	113.370	6452.33	4093.80	-2265.13	3463.06	1692006.88	14428600.18	39°43'49.280"N	80°48'59.409"W	4138.07	123.188	2.00	0.07	2.00
10416.00	89.540	115.380	6452.65	4137.80	-2283.29	3503.14	1692046.94	14428582.03	39°43'49.100"N	80°48'58.897"W	4181.55	123.096	4.57	-0.20	4.57
10461.00	89.510	116.430	6453.02	4182.79	-2302.94	3543.62	1692087.40	14428562.38	39°43'48.905"N	80°48'58.379"W	4226.20	123.019	2.33	-0.07	2.33
10506.00	89.630	115.950	6453.36	4227.77	-2322.80	3583.99	1692127.76	14428542.52	39°43'48.708"N	80°48'57.863"W	4270.88	122.947	1.10	0.27	-1.07
10551.00	89.720	114.990	6453.61	4272.77	-2342.16	3624.62	1692168.37	14428523.18	39°43'48.516"N	80°48'57.343"W	4315.50	122.870	2.14	0.20	-2.13
10595.00	89.570	114.140	6453.88	4316.77	-2360.45	3664.64	1692208.37	14428504.90	39°43'48.334"N	80°48'56.832"W	4359.04	122.786	1.96	-0.34	-1.93
10640.00	89.570	113.420	6454.22	4361.76	-2378.59	3705.81	1692249.53	14428486.76	39°43'48.154"N	80°48'56.305"W	4403.49	122.695	1.60	0.00	-1.60
10685.00	89.660	113.260	6454.52	4406.74	-2396.42	3747.13	1692290.83	14428468.94	39°43'47.977"N	80°48'55.777"W	4447.90	122.600	0.41	0.20	-0.36
10730.00	89.570	113.660	6454.83	4451.73	-2414.33	3788.41	1692332.10	14428451.03	39°43'47.799"N	80°48'55.249"W	4492.33	122.509	0.91	-0.20	0.89
10774.00	89.570	114.800	6455.16	4495.73	-2432.39	3828.53	1692372.20	14428432.98	39°43'47.620"N	80°48'54.736"W	4535.88	122.429	2.59	0.00	2.59
10819.00	89.630	116.370	6455.47	4540.72	-2451.82	3869.12	1692412.77	14428413.56	39°43'47.427"N	80°48'54.217"W	4580.56	122.362	3.49	0.13	3.49
10864.00	89.570	118.590	6455.79	4585.67	-2472.59	3909.04	1692452.68	14428392.80	39°43'47.221"N	80°48'53.706"W	4625.39	122.315	4.94	-0.13	4.93
10909.00	89.630	118.740	6456.10	4630.56	-2494.17	3948.52	1692492.14	14428371.23	39°43'47.007"N	80°48'53.202"W	4670.30	122.279	0.36	0.13	0.33

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

## WELLPATH DATA (268 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]
10953.00	89.630	117.570	6456.38	4674.49	-2514.93	3987.31	1692530.92	14428350.47	39°43'46.801"N	80°48'52.706"W	4714.19	122.241	2.66	0.00	-2.66
10998.00	89.110	115.610	6456.88	4719.46	-2535.07	4027.55	1692571.14	14428330.34	39°43'46.601"N	80°48'52.191"W	4758.96	122.188	4.51	-1.16	-4.36
11043.00	89.110	114.550	6457.58	4764.45	-2554.14	4068.30	1692611.88	14428311.28	39°43'46.412"N	80°48'51.670"W	4803.62	122.121	2.36	0.00	-2.36
11088.00	89.110	115.780	6458.28	4809.45	-2573.28	4109.02	1692652.58	14428292.15	39°43'46.222"N	80°48'51.149"W	4848.28	122.057	2.73	0.00	2.73
11132.00	89.200	115.030	6458.93	4853.44	-2592.15	4148.76	1692692.31	14428273.28	39°43'46.035"N	80°48'50.641"W	4891.98	121.997	1.72	0.20	-1.70
11177.00	89.380	112.320	6459.48	4898.42	-2610.22	4189.97	1692733.50	14428255.22	39°43'45.855"N	80°48'50.114"W	4936.51	121.922	6.04	0.40	-6.02
11222.00	88.890	110.200	6460.16	4943.33	-2626.53	4231.90	1692775.41	14428238.92	39°43'45.693"N	80°48'49.578"W	4980.73	121.826	4.83	-1.09	-4.71
11266.00	89.050	110.810	6460.95	4987.20	-2641.94	4273.11	1692816.60	14428223.51	39°43'45.540"N	80°48'49.051"W	5023.87	121.727	1.43	0.36	1.39
11311.00	88.980	112.410	6461.73	5032.12	-2658.51	4314.94	1692858.41	14428206.95	39°43'45.375"N	80°48'48.516"W	5068.17	121.638	3.56	-0.16	3.56
11356.00	89.050	113.670	6462.50	5077.09	-2676.12	4356.34	1692899.80	14428189.35	39°43'45.200"N	80°48'47.987"W	5112.66	121.563	2.80	0.16	2.80
11401.00	88.800	114.880	6463.35	5122.08	-2694.62	4397.35	1692940.80	14428170.86	39°43'45.017"N	80°48'47.462"W	5157.29	121.499	2.75	-0.56	2.69
11446.00	88.770	115.180	6464.30	5167.07	-2713.65	4438.12	1692981.54	14428151.83	39°43'44.828"N	80°48'46.941"W	5202.00	121.443	0.67	-0.07	0.67
11490.00	89.050	115.080	6465.14	5211.06	-2732.33	4477.94	1693021.36	14428133.16	39°43'44.642"N	80°48'46.432"W	5245.73	121.391	0.68	0.64	-0.23
11535.00	89.350	114.230	6465.76	5256.06	-2751.10	4518.84	1693062.23	14428114.39	39°43'44.456"N	80°48'45.909"W	5290.41	121.333	2.00	0.67	-1.89
11580.00	89.320	113.940	6466.29	5301.05	-2769.47	4559.92	1693103.30	14428096.04	39°43'44.274"N	80°48'45.384"W	5335.05	121.272	0.65	-0.07	-0.64
11625.00	89.260	113.650	6466.84	5346.04	-2787.62	4601.09	1693144.45	14428077.89	39°43'44.094"N	80°48'44.857"W	5379.67	121.210	0.66	-0.13	-0.64
11669.00	89.320	113.320	6467.39	5390.02	-2805.15	4641.44	1693184.79	14428060.37	39°43'43.919"N	80°48'44.341"W	5423.27	121.148	0.76	0.14	-0.75
11714.00	89.380	113.000	6467.90	5435.00	-2822.85	4682.81	1693226.14	14428042.68	39°43'43.744"N	80°48'43.812"W	5467.83	121.082	0.72	0.13	-0.71
11759.00	89.450	112.930	6468.36	5479.98	-2840.41	4724.24	1693267.56	14428025.13	39°43'43.569"N	80°48'43.282"W	5512.39	121.016	0.22	0.16	-0.16
11804.00	89.540	113.220	6468.76	5524.95	-2858.05	4765.64	1693308.94	14428007.50	39°43'43.394"N	80°48'42.753"W	5556.96	120.952	0.67	0.20	0.64
11848.00	89.540	113.540	6469.11	5568.94	-2875.50	4806.03	1693349.31	14427990.04	39°43'43.221"N	80°48'42.236"W	5600.57	120.893	0.73	0.00	0.73
11893.00	89.380	113.140	6469.53	5613.92	-2893.33	4847.34	1693390.61	14427972.22	39°43'43.044"N	80°48'41.708"W	5645.18	120.833	0.96	-0.36	-0.89
11938.00	89.350	112.860	6470.03	5658.90	-2910.91	4888.76	1693432.01	14427954.65	39°43'42.869"N	80°48'41.178"W	5689.76	120.771	0.63	-0.07	-0.62
11983.00	89.350	112.990	6470.54	5703.87	-2928.44	4930.21	1693473.44	14427937.13	39°43'42.695"N	80°48'40.648"W	5734.34	120.709	0.29	0.00	0.29
12027.00	89.380	113.270	6471.03	5747.85	-2945.72	4970.67	1693513.88	14427919.85	39°43'42.523"N	80°48'40.131"W	5777.96	120.652	0.64	0.07	0.64
12072.00	89.420	113.160	6471.50	5792.83	-2963.46	5012.02	1693555.22	14427902.12	39°43'42.347"N	80°48'39.602"W	5822.58	120.595	0.26	0.09	-0.24
12117.00	89.320	114.240	6472.00	5837.82	-2981.55	5053.22	1693596.40	14427884.04	39°43'42.168"N	80°48'39.075"W	5867.26	120.542	2.41	-0.22	2.40
12162.00	89.380	116.740	6472.51	5882.81	-3000.91	5093.84	1693637.00	14427864.69	39°43'41.975"N	80°48'38.556"W	5912.08	120.503	5.56	0.13	5.56
12206.00	89.420	117.550	6472.97	5926.77	-3020.98	5132.99	1693676.14	14427844.62	39°43'41.776"N	80°48'38.056"W	5956.00	120.479	1.84	0.09	1.84
12251.00	89.320	116.490	6473.46	5971.73	-3041.43	5173.07	1693716.21	14427824.19	39°43'41.573"N	80°48'37.543"W	6000.91	120.453	2.37	-0.22	-2.36

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# Actual Wellpath Report

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## REFERENCE WELLPATH IDENTIFICATION

Operator	GASTAR EXPLORATION USA, INC.
Area	Marshall County, WV
Field	Marshall
Facility	Goudy
Well	Goudy IH (AWB)
Slot	Wellbore
Slot #1	Goudy IH

## WELLPATH DATA (268 stations)

MWD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US r]	[US r]	[ft]	[ft]	[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
12296.00	89.320	115.640	6474.00	6016.72	-3061.20	5213.49	1693756.61	14427804.42	39°43'41.377"N	80°48'37.026"W	6045.78	120.420	1.89	0.00	-1.89
12341.00	89.380	114.510	6474.51	6061.71	-3080.27	5254.25	1693797.35	14427785.36	39°43'41.188"N	80°48'36.505"W	6090.58	120.381	2.51	0.13	-2.51
12386.00	89.380	113.990	6474.99	6106.71	-3098.75	5295.27	1693838.36	14427766.89	39°43'41.004"N	80°48'35.981"W	6135.32	120.336	1.16	0.00	-1.16
12430.00	89.290	114.590	6475.50	6150.70	-3116.85	5335.38	1693878.45	14427748.80	39°43'40.825"N	80°48'35.468"W	6179.08	120.293	1.38	-0.20	1.36
12475.00	89.420	115.600	6476.01	6195.70	-3135.93	5376.13	1693919.18	14427729.72	39°43'40.635"N	80°48'34.947"W	6223.89	120.255	2.26	0.29	2.24
12520.00	89.380	116.650	6476.48	6240.68	-3155.74	5416.53	1693959.56	14427709.92	39°43'40.438"N	80°48'34.430"W	6268.77	120.226	2.33	-0.09	2.33
12565.00	89.660	116.220	6476.86	6285.66	-3175.78	5456.82	1693999.84	14427689.89	39°43'40.240"N	80°48'33.915"W	6313.67	120.199	1.14	0.62	-0.96
12609.00	89.690	114.430	6477.11	6329.66	-3194.60	5496.59	1694039.59	14427671.08	39°43'40.053"N	80°48'33.407"W	6357.51	120.165	4.07	0.07	-4.07
12654.00	89.600	114.440	6477.39	6374.66	-3213.21	5537.56	1694080.55	14427652.47	39°43'39.868"N	80°48'32.883"W	6402.29	120.125	0.20	-0.20	0.02
12699.00	89.690	115.270	6477.67	6419.66	-3232.13	5578.39	1694121.36	14427633.57	39°43'39.680"N	80°48'32.361"W	6447.10	120.088	1.86	0.20	1.84
12744.00	89.630	116.590	6477.93	6464.65	-3251.80	5618.86	1694161.81	14427613.90	39°43'39.485"N	80°48'31.843"W	6491.98	120.059	2.94	-0.13	2.93
12788.00	89.970	117.520	6478.09	6508.61	-3271.81	5658.04	1694200.98	14427593.89	39°43'39.286"N	80°48'31.342"W	6535.92	120.039	2.25	0.77	2.11
12833.00	89.880	117.200	6478.15	6553.57	-3292.50	5698.01	1694240.93	14427573.22	39°43'39.081"N	80°48'30.831"W	6580.87	120.021	0.74	-0.20	-0.71
12878.00	90.060	115.580	6478.17	6598.55	-3312.50	5738.32	1694281.22	14427553.23	39°43'38.883"N	80°48'30.316"W	6625.78	119.996	3.62	0.40	-3.60
12923.00	90.030	113.510	6478.13	6643.54	-3331.19	5779.25	1694322.14	14427534.54	39°43'38.697"N	80°48'29.793"W	6670.57	119.959	4.60	-0.07	-4.60
12967.00	89.970	112.720	6478.13	6687.52	-3348.46	5819.71	1694362.59	14427517.27	39°43'38.525"N	80°48'29.275"W	6714.26	119.915	1.80	-0.14	-1.80
13012.00	90.000	112.520	6478.15	6732.49	-3365.77	5861.25	1694404.11	14427499.97	39°43'38.353"N	80°48'28.744"W	6758.90	119.866	0.45	0.07	-0.44
13057.00	90.030	112.230	6478.13	6777.45	-3382.90	5902.86	1694445.71	14427482.85	39°43'38.183"N	80°48'28.212"W	6803.52	119.817	0.65	0.07	-0.64
13102.00	89.910	112.600	6478.16	6822.41	-3400.06	5944.46	1694487.29	14427465.70	39°43'38.013"N	80°48'27.680"W	6848.14	119.768	0.86	-0.27	0.82
13146.00	89.940	113.460	6478.22	6866.39	-3417.27	5984.96	1694527.77	14427448.49	39°43'37.842"N	80°48'27.162"W	6891.84	119.725	1.96	0.07	1.95
13191.00	89.850	114.290	6478.30	6911.39	-3435.49	6026.11	1694568.90	14427430.29	39°43'37.661"N	80°48'26.636"W	6936.61	119.687	1.86	-0.20	1.84
13236.00	89.480	115.030	6478.56	6956.38	-3454.26	6067.00	1694609.78	14427411.52	39°43'37.475"N	80°48'26.113"W	6981.43	119.655	1.84	-0.82	1.64
13280.00	89.480	115.220	6478.96	7000.38	-3472.94	6106.84	1694649.60	14427392.85	39°43'37.289"N	80°48'25.604"W	7025.30	119.627	0.43	0.00	0.43
13325.00	89.420	114.240	6479.39	7045.38	-3491.77	6147.71	1694690.45	14427374.03	39°43'37.102"N	80°48'25.081"W	7070.13	119.596	2.18	-0.13	-2.18
13370.00	89.480	112.700	6479.82	7090.36	-3509.69	6188.98	1694731.71	14427356.11	39°43'36.924"N	80°48'24.553"W	7114.87	119.557	3.42	0.13	-3.42
13415.00	89.510	111.550	6480.22	7135.31	-3526.63	6230.67	1694773.38	14427339.17	39°43'36.756"N	80°48'24.020"W	7159.49	119.510	2.56	0.07	-2.56
13460.00	89.420	111.970	6480.64	7180.25	-3543.32	6272.46	1694815.15	14427322.50	39°43'36.590"N	80°48'23.486"W	7204.08	119.462	0.95	-0.20	0.93
13486.00	89.420	111.970	6480.90	7206.21	-3553.04	6296.57	1694839.25	14427312.78	39°43'36.493"N	80°48'23.178"W	7229.86	119.435	0.00	0.00	0.00

51-01610





# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Goudy 1H LP Rev-2		6431.00	-840.98	282.64	1688827.73	14430023.76	39°44'03.417"N	80°49'40.082"W	point
Goudy 1H PBHL Rev-2		6465.37	-3539.41	6260.60	1694803.30	14427326.40	39°43'36.629"N	80°48'23.638"W	point

WELLPATH COMPOSITION - Ref Wellbore: Goudy 1H (AWB)    Ref Wellpath: MWD Surveys (5716')(5762'-13460')Proj:13486				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
13.00	2619.00	Generic gyro - northseeking (Standard)	VES / Continuous Gyro <100' - 2616'>	Goudy 1H (AWB)
2619.00	5716.00	NaviTrak (Standard)	BHI / EMTrak <2671 - 5713>	Goudy 1H (AWB)
5716.00	13460.00	NaviTrak (AT Curve Short Spaced)	BHI / AutoTrak Curve <5762'-13460'>	Goudy 1H (AWB)
13460.00	13486.00	Blind Drilling (std)	Projection to bit	Goudy 1H (AWB)

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# Actual Wellpath Report

MWD Surveys (5716')(5762'-13460')Proj:13486  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	GASTAR EXPLORATION USA, INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Goudy 1H
Field	Marshall	Wellbore	Goudy 1H (AWB)
Facility	Goudy		

## COMMENTS

### Wellpath general comments

API: 47-051-01610-0000  
BHI Job #: 5286303  
Rig: Precision 823  
Duration: 3/30/2013-4/5/2013  
VES / Continuous Gyro (100'-2616')  
BHI / EMTrak (2616')(2671'-5713')  
BHI / AT Curve (5716')(5762'-13460')  
Projected MD at TD: 13486'

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