

87-04767

HG Energy, LLC
Roane County, West Virginia
J. Long #106
J. Long #106

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

08 July, 2015



10/23/2015

87-04767

HP
Survey Report - Geographic



Company: HG Energy, LLC	Local Co-ordinate Reference: Well J. Long #106
Project: Roane County, West Virginia	TVD Reference: WELL @ 1046.0usft (Decker #9)
Site: J. Long #106	MD Reference: WELL @ 1046.0usft (Decker #9)
Well: J. Long #106	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: Compass

Project Roane County, West Virginia	
Map System: Universal Transverse Mercator	System Datum: Mean Sea Level
Geo Datum: NAD83 West Virginia - HARN	
Map Zone: Zone 17N (84 W to 78 W)	

Site J. Long #106		
Site Position:	Northing: 14,059,316.08 usft	Latitude: 38° 42' 57.300 N
From: Lat/Long	Easting: 1,562,082.56 usft	Longitude: 81° 16' 28.700 W
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: -0.17 °

Well J. Long #106		
Well Position +N/-S 0.0 usft	Northing: 14,059,316.08 usft	Latitude: 38° 42' 57.300 N
+E/-W 0.0 usft	Easting: 1,562,082.56 usft	Longitude: 81° 16' 28.700 W
Position Uncertainty 0.0 usft	Wellhead Elevation: 0.0 usft	Ground Level: 1,038.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/4/2015	-8.00	66.36	51,924

Design Wellbore #1

Audit Notes:		
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	8.85

Survey Program		Date	7/8/2015
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
500.0	2,555.0	MWD #1 (Wellbore #1)	MWD default
			Description
			MWD - Standard

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	14,059,316.08	1,562,082.56	38° 42' 57.300 N	81° 16' 28.700 W
500.0	0.00	0.00	500.0	0.0	0.0	14,059,316.08	1,562,082.56	38° 42' 57.300 N	81° 16' 28.700 W
First MWD Survey @ 500' MD / 500' TVD									
529.0	0.80	153.06	529.0	-0.2	0.1	14,059,315.90	1,562,082.65	38° 42' 57.298 N	81° 16' 28.699 W
559.0	1.10	158.26	559.0	-0.6	0.3	14,059,315.45	1,562,082.85	38° 42' 57.294 N	81° 16' 28.696 W
589.0	1.02	136.36	589.0	-1.1	0.6	14,059,314.99	1,562,083.14	38° 42' 57.289 N	81° 16' 28.694 W
619.0	1.10	81.36	619.0	-1.2	1.1	14,059,314.84	1,562,083.61	38° 42' 57.288 N	81° 16' 28.687 W
649.0	1.68	55.45	649.0	-1.0	1.7	14,059,315.13	1,562,084.26	38° 42' 57.291 N	81° 16' 28.679 W
679.0	2.39	47.08	679.0	-0.3	2.5	14,059,315.80	1,562,085.08	38° 42' 57.297 N	81° 16' 28.668 W
709.0	3.31	41.66	709.0	0.8	3.6	14,059,316.88	1,562,086.11	38° 42' 57.308 N	81° 16' 28.655 W
739.0	4.29	38.18	739.0	2.3	4.8	14,059,318.41	1,562,087.38	38° 42' 57.323 N	81° 16' 28.639 W
769.0	5.30	33.86	769.0	4.4	6.3	14,059,320.44	1,562,088.85	38° 42' 57.343 N	81° 16' 28.621 W

Received
Office of Oil & Gas
AUG 03 2015

87.04767

HP
Survey Report - Geographic



Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well J. Long #106
Project:	Roane County, West Virginia	TVD Reference:	WELL @ 1046.0usft (Decker #9)
Site:	J. Long #106	MD Reference:	WELL @ 1046.0usft (Decker #9)
Well:	J. Long #106	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
799.0	6.32	30.55	798.6	6.9	7.9	14,059,323.01	1,562,090.46	38° 42' 57.369 N	81° 16' 28.601 W
829.0	7.38	25.97	828.4	10.1	9.6	14,059,326.16	1,562,092.14	38° 42' 57.400 N	81° 16' 28.579 W
859.0	8.48	23.28	858.1	13.8	11.3	14,059,329.93	1,562,093.86	38° 42' 57.437 N	81° 16' 28.558 W
889.0	9.28	21.25	887.7	18.1	13.1	14,059,334.22	1,562,095.61	38° 42' 57.480 N	81° 16' 28.536 W
919.0	10.30	18.26	917.3	22.9	14.8	14,059,339.02	1,562,097.33	38° 42' 57.527 N	81° 16' 28.514 W
949.0	11.09	16.19	946.8	28.3	16.4	14,059,344.33	1,562,098.97	38° 42' 57.580 N	81° 16' 28.494 W
979.0	12.02	13.98	976.2	34.1	18.0	14,059,350.14	1,562,100.53	38° 42' 57.637 N	81° 16' 28.474 W
1,009.0	12.68	11.56	1,005.5	40.3	19.4	14,059,356.39	1,562,101.94	38° 42' 57.699 N	81° 16' 28.457 W
1,039.0	13.30	9.75	1,034.7	46.9	20.6	14,059,363.02	1,562,103.19	38° 42' 57.765 N	81° 16' 28.441 W
1,069.0	13.70	8.17	1,063.9	53.9	21.7	14,059,369.94	1,562,104.28	38° 42' 57.833 N	81° 16' 28.428 W
1,099.0	14.72	5.79	1,093.0	61.2	22.6	14,059,377.25	1,562,105.17	38° 42' 57.906 N	81° 16' 28.417 W
1,129.0	15.69	5.26	1,121.9	69.0	23.4	14,059,385.08	1,562,105.92	38° 42' 57.983 N	81° 16' 28.408 W
1,159.0	16.88	4.55	1,150.7	77.4	24.1	14,059,393.46	1,562,106.64	38° 42' 58.066 N	81° 16' 28.399 W
1,189.0	18.21	4.95	1,179.3	86.4	24.8	14,059,402.47	1,562,107.39	38° 42' 58.155 N	81° 16' 28.390 W
1,219.0	19.00	6.36	1,207.7	95.9	25.8	14,059,412.00	1,562,108.34	38° 42' 58.249 N	81° 16' 28.378 W
1,249.0	19.71	7.99	1,236.0	105.8	27.0	14,059,421.86	1,562,109.58	38° 42' 58.347 N	81° 16' 28.363 W
1,279.0	20.59	9.75	1,264.2	116.0	28.6	14,059,432.07	1,562,111.18	38° 42' 58.448 N	81° 16' 28.343 W
1,309.0	21.92	11.96	1,292.2	126.7	30.7	14,059,442.75	1,562,113.23	38° 42' 58.553 N	81° 16' 28.318 W
1,339.0	23.29	12.66	1,319.9	137.9	33.1	14,059,454.01	1,562,115.69	38° 42' 58.665 N	81° 16' 28.287 W
1,369.0	24.48	13.19	1,347.3	149.8	35.9	14,059,465.85	1,562,118.41	38° 42' 58.782 N	81° 16' 28.253 W
1,399.0	25.59	13.59	1,374.5	162.1	38.8	14,059,478.20	1,562,121.35	38° 42' 58.904 N	81° 16' 28.216 W
1,429.0	26.69	13.98	1,401.4	175.0	41.9	14,059,491.04	1,562,124.50	38° 42' 59.031 N	81° 16' 28.177 W
1,459.0	27.88	13.67	1,428.1	188.3	45.2	14,059,504.39	1,562,127.79	38° 42' 59.163 N	81° 16' 28.136 W
1,489.0	29.30	13.19	1,454.4	202.3	48.6	14,059,518.35	1,562,131.12	38° 42' 59.302 N	81° 16' 28.095 W
1,519.0	30.49	13.67	1,480.4	216.8	52.0	14,059,532.90	1,562,134.59	38° 42' 59.445 N	81° 16' 28.051 W
1,549.0	31.51	13.37	1,506.1	231.8	55.6	14,059,547.92	1,562,138.20	38° 42' 59.594 N	81° 16' 28.006 W
1,579.0	32.39	12.57	1,531.6	247.3	59.2	14,059,563.39	1,562,141.77	38° 42' 59.747 N	81° 16' 27.962 W
1,609.0	33.01	11.25	1,556.8	263.2	62.6	14,059,579.25	1,562,145.11	38° 42' 59.904 N	81° 16' 27.920 W
1,639.0	34.20	9.89	1,581.8	279.5	65.6	14,059,595.57	1,562,148.15	38° 43' 0.066 N	81° 16' 27.883 W
1,669.0	35.71	9.66	1,606.4	296.4	68.5	14,059,612.51	1,562,151.07	38° 43' 0.233 N	81° 16' 27.846 W
1,699.0	37.30	9.89	1,630.5	314.0	71.5	14,059,630.09	1,562,154.10	38° 43' 0.407 N	81° 16' 27.809 W
1,729.0	39.59	10.28	1,654.0	332.4	74.8	14,059,648.46	1,562,157.37	38° 43' 0.589 N	81° 16' 27.768 W
1,759.0	41.49	12.26	1,676.8	351.5	78.6	14,059,667.58	1,562,161.18	38° 43' 0.778 N	81° 16' 27.721 W
1,789.0	43.39	11.78	1,698.9	371.3	82.8	14,059,687.38	1,562,165.40	38° 43' 0.974 N	81° 16' 27.668 W
1,819.0	44.32	11.47	1,720.6	391.7	87.0	14,059,707.73	1,562,169.59	38° 43' 1.175 N	81° 16' 27.616 W
1,849.0	44.98	12.18	1,741.9	412.3	91.4	14,059,728.37	1,562,173.91	38° 43' 1.380 N	81° 16' 27.563 W
1,879.0	46.31	10.85	1,762.9	433.3	95.6	14,059,749.39	1,562,178.19	38° 43' 1.588 N	81° 16' 27.509 W
1,909.0	46.80	10.68	1,783.5	454.7	99.7	14,059,770.79	1,562,182.25	38° 43' 1.799 N	81° 16' 27.459 W
1,939.0	46.10	9.66	1,804.2	476.1	103.5	14,059,792.19	1,562,186.09	38° 43' 2.011 N	81° 16' 27.411 W
1,969.0	46.80	8.96	1,824.9	497.6	107.1	14,059,813.64	1,562,189.61	38° 43' 2.223 N	81° 16' 27.368 W
1,999.0	46.80	9.09	1,845.4	519.2	110.5	14,059,835.24	1,562,193.04	38° 43' 2.437 N	81° 16' 27.325 W
2,029.0	46.71	8.17	1,866.0	540.8	113.8	14,059,856.85	1,562,196.32	38° 43' 2.651 N	81° 16' 27.285 W
2,059.0	47.02	8.17	1,886.5	562.4	116.9	14,059,878.52	1,562,199.43	38° 43' 2.865 N	81° 16' 27.246 W
2,089.0	49.01	8.78	1,906.5	584.5	120.2	14,059,900.57	1,562,202.72	38° 43' 3.083 N	81° 16' 27.205 W
2,119.0	49.40	8.47	1,926.1	606.9	123.6	14,059,923.03	1,562,206.13	38° 43' 3.305 N	81° 16' 27.163 W
2,149.0	49.49	8.65	1,945.6	629.5	127.0	14,059,945.56	1,562,209.52	38° 43' 3.528 N	81° 16' 27.121 W
2,179.0	49.18	8.17	1,965.2	652.0	130.3	14,059,968.08	1,562,212.85	38° 43' 3.751 N	81° 16' 27.080 W
2,209.0	48.61	7.77	1,984.9	674.4	133.4	14,059,990.46	1,562,215.98	38° 43' 3.975 N	81° 16' 27.041 W
2,239.0	47.90	7.55	2,004.9	696.6	136.4	14,060,012.65	1,562,218.96	38° 43' 4.192 N	81° 16' 27.005 W
2,269.0	47.11	6.76	2,025.2	718.5	139.2	14,060,034.59	1,562,221.72	38° 43' 4.412 N	81° 16' 26.971 W
2,299.0	46.80	6.67	2,045.6	740.3	141.7	14,060,056.37	1,562,224.28	38° 43' 4.624 N	81° 16' 26.939 W
<u>2,329.0</u>	46.80	6.58	2,066.2	762.0	144.3	<u>14,060,078.09</u>	<u>1,562,226.81</u>	38° 43' 4.838 N	81° 16' 26.908 W
2,389.0	45.69	4.77	2,107.7	805.1	148.5	14,060,121.21	1,562,231.10	38° 43' 5.266 N	81° 16' 26.856 W
2,419.0	44.01	3.98	2,128.9	826.2	150.2	14,060,142.31	1,562,232.72	38° 43' 5.474 N	81° 16' 26.836 W
2,449.0	41.89	3.19	2,150.9	846.6	151.4	14,060,162.71	1,562,234.00	38° 43' 5.676 N	81° 16' 26.821 W

87-04767

HP
Survey Report - Geographic



Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well J. Long #106
Project:	Roane County, West Virginia	TVD Reference:	WELL @ 1046.0usft (Decker #9)
Site:	J. Long #103	MD Reference:	WELL @ 1046.0usft (Decker #9)
Well:	J. Long #103	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,479.0	39.28	2.26	2,173.7	866.1	152.4	14,060,182.20	1,562,234.93	38° 43' 5.869 N	81° 16' 26.810 W
2,555.0	39.28	2.26	2,232.5	914.2	154.3	14,060,230.28	1,562,236.83	38° 43' 6.344 N	81° 16' 26.787 W

TD @ 2555' MD / 2233' TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.0	500.0	0.0	0.0	First MWD Survey @ 500' MD / 500' TVD
2,555.0	2,232.5	914.2	154.3	TD @ 2555' MD / 2233' TVD

Checked By: _____ Approved By: _____ Date: _____

Received
Office of Oil & Gas
AUG 03 2015

87-04767

HG Energy, LLC
Roane County, West Virginia
J. Long #106
J. Long #106
Wellbore #1

Design: Wellbore #1

HG Energy EOW Report

08 July, 2015

Received
Office of Oil & Gas

AUG 03 2015



10/23/2015



87-04167

HP HG Energy EOW Report

Company: HG Energy, LLC
Project: Roane County, West Virginia
Site: J. Long #106
Well: J. Long #106
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well J. Long #106
TVD Reference: WELL @ 1046.0usft (Decker #9)
MD Reference: WELL @ 1046.0usft (Decker #9)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass

Project: Roane County, West Virginia
Map System: Universal Transverse Mercator
Geo Datum: NAD83 West Virginia - HARN
Map Zone: Zone 17N (84 W to 78 W)
System Datum: Mean Sea Level

Site: J. Long #106
Site Position: Northing: 14,059,316.08 usft
 From: Lat/Long Easting: 1,562,082.55 usft
 Position Uncertainty: Slot Radius: 13-3/16 " Longitude: 38° 42' 57.300 N
 -0.17 °
 Grid Convergence:

Well: J. Long #106
Well Position: +N/-S 0.0 usft
 +E/-W 0.0 usft
 Position Uncertainty: Wellhead Elevation: 0.0 usft
 Latitude: 38° 42' 57.300 N
 Longitude: 81° 16' 28.700 W
 Ground Level: 1,038.0 usft

Wellbore: Wellbore #1
Magnetics: Model Name: IGRF2015 Sample Date: 6/4/2015
 Declination (°): -8.00 Dip Angle (°): 66.36 Field Strength (nT): 51,924

Design: Wellbore #1
Audit Notes:
 Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0
Vertical Section: Depth From (TVD) (usft) +N/-S (usft) +E/-W (usft) Direction (°)
 0.0 0.0 0.0 8.85

Survey Program: Date: 7/8/2015
 From (usft) 500.0
 To (usft) 2,555.0 MWD #1 (Wellbore #1)
 Survey (Wellbore) MWD default
 Tool Name: MWD - Standard
 Description: MWD - Standard

Received
 Office of Oil & Gas
 AUG 08 2015

10/23/2015



87-04767

HP HG Energy EOW Report

Company: HG Energy, LLC
Project: Roane County, West Virginia
Site: J. Long #106
Well: J. Long #106
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well J. Long #106
TVD Reference: WELL @ 1046.0usft (Decker #9)
MD Reference: WELL @ 1046.0usft (Decker #9)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.0	0.0	0.00	
First MWD Survey @ 500' MD / 500' TVD										
529.0	0.80	153.06	529.0	-0.2	0.1	-0.2	2.76	0.2	153.06	
559.0	1.10	158.26	559.0	-0.6	0.3	-0.6	1.04	0.7	155.20	
589.0	1.02	136.36	589.0	-1.1	0.6	-1.0	1.37	1.2	151.93	
619.0	1.10	81.36	619.0	-1.2	1.1	-1.1	3.27	1.6	139.78	
649.0	1.68	55.45	649.0	-1.0	1.7	-0.7	2.80	1.9	119.27	
679.0	2.39	47.08	679.0	-0.3	2.5	0.1	2.56	2.5	96.28	
709.0	3.31	41.66	708.9	0.8	3.6	1.3	3.19	3.6	77.38	
739.0	4.29	38.18	738.9	2.3	4.8	3.0	3.35	5.4	64.27	
769.0	5.30	33.86	768.7	4.4	6.3	5.3	3.57	7.7	55.28	
799.0	6.32	30.55	798.6	6.9	7.9	8.1	3.58	10.5	48.74	
829.0	7.38	25.97	828.4	10.1	9.6	11.4	3.97	13.9	43.54	
859.0	8.48	23.28	858.1	13.8	11.3	15.4	3.87	17.9	39.22	
889.0	9.28	21.25	887.7	18.1	13.1	19.9	2.86	22.3	35.74	
919.0	10.30	18.26	917.3	22.9	14.8	24.9	3.80	27.3	32.78	
949.0	11.09	16.19	946.8	28.3	16.4	30.4	2.93	32.7	30.15	
979.0	12.02	13.98	976.2	34.1	18.0	36.4	3.43	38.5	27.82	
1,009.0	12.68	11.56	1,005.5	40.3	19.4	42.8	2.80	44.7	25.68	
1,039.0	13.30	9.75	1,034.7	46.9	20.6	49.6	2.47	51.3	23.73	
1,069.0	13.70	8.17	1,063.9	53.9	21.7	56.6	1.81	58.1	21.96	
1,099.0	14.72	5.79	1,093.0	61.2	22.6	63.9	3.92	65.2	20.29	
1,129.0	15.69	5.26	1,121.9	69.0	23.4	71.8	3.27	72.8	18.71	
1,159.0	16.88	4.55	1,150.7	77.4	24.1	80.2	4.02	81.0	17.29	
1,189.0	18.21	4.95	1,179.3	86.4	24.8	89.2	4.45	89.9	16.04	
1,219.0	19.00	6.36	1,207.7	95.9	25.8	98.7	3.03	99.3	15.04	

Received
Office of Oil & Gas

10/23/2015

10/23/2015



82-04767

HP
HG Energy EOW Report

Company: HG Energy, LLC
 Project: Roane County, West Virginia
 Site: J. Long #106
 Well: J. Long #106
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well J. Long #106
 TVD Reference: WELL @ 1046.0usft (Decker #9)
 MD Reference: WELL @ 1046.0usft (Decker #9)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Compass

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	D Leg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)
	1,248.0	19.71	7.99	1,236.0	105.8	27.0	108.7	2.97	109.2	14.33
	1,279.0	20.59	9.75	1,264.2	116.0	28.6	119.0	3.56	119.5	13.86
	1,308.0	21.92	11.96	1,292.2	126.7	30.7	129.9	5.17	130.3	13.61
	1,339.0	23.29	12.66	1,319.9	137.9	33.1	141.4	4.65	141.9	13.51
	1,369.0	24.48	13.19	1,347.3	149.8	35.9	153.5	4.03	154.0	13.46
	1,399.0	25.59	13.59	1,374.5	162.1	38.8	166.2	3.74	166.7	13.46
	1,429.0	26.69	13.98	1,401.4	175.0	41.9	179.3	3.71	179.9	13.48
	1,459.0	27.88	13.67	1,428.1	188.3	45.2	193.0	3.99	193.7	13.51
	1,489.0	29.30	13.19	1,454.4	202.3	48.6	207.3	4.79	208.0	13.50
	1,519.0	30.49	13.67	1,480.4	216.8	52.0	222.2	4.05	223.0	13.50
	1,549.0	31.51	13.37	1,506.1	231.8	55.6	237.6	3.44	238.4	13.50
	1,579.0	32.39	12.57	1,531.6	247.3	59.2	253.5	3.26	254.3	13.46
	1,609.0	33.01	11.25	1,556.8	263.2	62.6	269.7	3.15	270.5	13.37
	1,639.0	34.20	9.89	1,581.8	279.5	65.6	286.3	4.69	287.1	13.21
	1,669.0	35.71	9.66	1,606.4	296.4	68.5	303.4	5.05	304.2	13.01
	1,699.0	37.30	9.89	1,630.5	314.0	71.5	321.3	5.32	322.1	12.83
	1,729.0	39.59	10.28	1,654.0	332.4	74.8	339.9	7.68	340.7	12.68
	1,759.0	41.49	12.26	1,676.8	351.5	78.6	359.4	7.65	360.2	12.61
	1,789.0	43.39	11.78	1,698.9	371.3	82.8	379.6	6.42	380.4	12.58
	1,819.0	44.32	11.47	1,720.6	391.7	87.0	400.4	3.18	401.2	12.53
	1,849.0	44.98	12.18	1,741.9	412.3	91.4	421.4	2.76	422.3	12.49
	1,879.0	46.31	10.85	1,762.9	433.3	95.6	442.9	5.45	443.7	12.45
	1,909.0	46.80	10.68	1,783.5	454.7	99.7	464.6	1.68	465.5	12.37
	1,939.0	46.10	9.66	1,804.2	476.1	103.5	486.4	3.39	487.2	12.27
	1,969.0	46.80	8.96	1,824.9	497.6	107.1	508.1	2.88	508.9	12.14
	1,999.0	46.80	9.09	1,845.4	519.2	110.5	530.0	0.32	530.8	12.01
	2,029.0	46.71	8.17	1,866.0	540.8	113.8	551.8	2.25	552.6	11.88

Received
Office of Oil & Gas

10/23/2015

7/22/2015 2:51:38PM

82.04767



HP
HG Energy EOW Report

Company: HG Energy, LLC
 Project: Roane County, West Virginia
 Site: J. Long #106
 Well: J. Long #106
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well J. Long #106
 TVD Reference: WELL @ 1046.0usft (Decker #9)
 MD Reference: WELL @ 1046.0usft (Decker #9)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Compass

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)
2,059.0	47.02	8.17	1,886.5	562.4	116.9	573.7	1.03	574.5	11.74
2,089.0	49.01	8.78	1,906.5	584.5	120.2	596.0	6.80	596.7	11.62
2,119.0	49.40	8.47	1,926.1	606.9	123.6	618.7	1.52	619.4	11.51
2,149.0	49.49	8.65	1,945.6	629.5	127.0	641.5	0.55	642.2	11.40
2,179.0	49.18	8.17	1,965.2	652.0	130.3	664.3	1.59	664.9	11.30
2,209.0	48.61	7.77	1,984.9	674.4	133.4	686.9	2.15	687.5	11.19
2,239.0	47.90	7.55	2,004.9	696.6	136.4	709.3	2.43	709.8	11.08
2,269.0	47.11	6.76	2,025.2	718.5	139.2	731.4	3.27	731.9	10.96
2,299.0	46.80	6.67	2,045.6	740.3	141.7	753.3	1.06	753.7	10.84
2,329.0	46.80	6.58	2,066.2	762.0	144.3	775.1	0.22	775.5	10.72
2,389.0	45.69	4.77	2,107.7	805.1	148.5	818.4	2.86	818.7	10.45
2,419.0	44.01	3.98	2,128.9	826.2	150.2	839.5	5.90	839.8	10.30
2,449.0	41.89	3.19	2,150.9	846.6	151.4	859.8	7.29	860.1	10.14
2,479.0	39.28	2.26	2,173.7	866.1	152.4	879.2	8.93	879.4	9.98
2,555.0	39.28	2.26	2,232.5	914.2	154.3	927.0	0.00	927.1	9.58

TD @ 2555' MD / 2233' TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N-S (usft)	Local Coordinates +E-W (usft)	Comment
500.0	500.0	0.0	0.0	0.0 First MWD Survey @ 500' MD / 500' TVD
2,232.5	2,232.5	914.2	154.3	154.3 TD @ 2555' MD / 2233' TVD

Received
 Oil & Gas
 AUG 03 2015

Checked By: _____

Approved By: _____

Date: _____

