

43.03479

HG Energy, LLC
Lincoln County, West Virginia
MA Bays #156
MA Bays #156

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

15 September, 2015

Received
Office of Oil & Gas
OCT 08 2015



10/30/2015

43.03479

HP
Survey Report - Geographic



Company: HG Energy, LLC	Local Co-ordinate Reference: Well MA Bays #156
Project: Lincoln County, West Virginia	TVD Reference: WELL @ 953.0usft (Decker #9)
Site: MA Bays #156	MD Reference: WELL @ 953.0usft (Decker #9)
Well: MA Bays #156	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: Compass

Project	Lincoln 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	MA Bays #156				
Site Position:		Northing:	13,885,064.78 usft	Latitude:	38° 14' 1.200 N
From:	Lat/Long	Easting:	1,365,006.16 usft	Longitude:	81° 57' 33.000 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.59 °

Well	MA Bays #156					
Well Position	+N/-S	0.0 usft	Northing:	13,885,064.78 usft	Latitude:	38° 14' 1.200 N
	+E/-W	0.0 usft	Easting:	1,365,006.16 usft	Longitude:	81° 57' 33.000 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	945.0 usft

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/26/2015	-7.49	66.00	51,728

Design	Wellbore #1				
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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	85.02

Survey Program	Date 9/15/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
617.0	2,780.0	MWD (Wellbore #1)	MWD default	MWD - Standard	

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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	13,885,064.78	1,365,006.16	38° 14' 1.200 N	81° 57' 33.000 W
617.0	0.88	112.66	617.0	-1.8	4.4	13,885,062.96	1,365,010.53	38° 14' 1.182 N	81° 57' 32.945 W
First MWD Survey @ 617' MD / 617' TVD									
647.0	0.80	164.40	647.0	-2.1	4.6	13,885,062.67	1,365,010.80	38° 14' 1.180 N	81° 57' 32.942 W
677.0	0.80	154.71	677.0	-2.5	4.8	13,885,062.27	1,365,010.95	38° 14' 1.176 N	81° 57' 32.940 W
707.0	1.68	114.91	707.0	-2.9	5.3	13,885,061.90	1,365,011.44	38° 14' 1.172 N	81° 57' 32.933 W
737.0	2.70	94.29	736.9	-3.1	6.4	13,885,061.66	1,365,012.54	38° 14' 1.170 N	81° 57' 32.920 W
767.0	3.89	92.37	766.9	-3.2	8.1	13,885,061.57	1,365,014.26	38° 14' 1.169 N	81° 57' 32.898 W
797.0	4.60	88.03	796.8	-3.2	10.3	13,885,061.57	1,365,016.48	38° 14' 1.169 N	81° 57' 32.870 W
827.0	5.21	95.61	826.7	-3.3	12.9	13,885,061.47	1,365,019.04	38° 14' 1.169 N	81° 57' 32.838 W
857.0	6.50	92.00	856.5	-3.5	15.9	13,885,061.28	1,365,022.09	38° 14' 1.167 N	81° 57' 32.800 W
887.0	7.51	86.71	886.3	-3.4	19.6	13,885,061.33	1,365,025.75	38° 14' 1.168 N	81° 57' 32.754 W

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Site: MA Bays #156
Well: MA Bays #156
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well MA Bays #156
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
917.0	8.09	81.42	916.0	-3.0	23.6	13,885,061.76	1,365,029.79	38° 14' 1.173 N	81° 57' 32.703 W
947.0	8.79	79.22	945.7	-2.3	28.0	13,885,062.51	1,365,034.13	38° 14' 1.180 N	81° 57' 32.649 W
977.0	9.81	75.60	975.3	-1.2	32.7	13,885,063.57	1,365,038.86	38° 14' 1.191 N	81° 57' 32.590 W
1,007.0	10.69	74.41	1,004.8	0.2	37.9	13,885,064.95	1,365,044.01	38° 14' 1.206 N	81° 57' 32.526 W
1,037.0	11.40	71.02	1,034.3	1.9	43.3	13,885,066.67	1,365,049.50	38° 14' 1.223 N	81° 57' 32.457 W
1,067.0	12.51	69.83	1,063.6	4.0	49.2	13,885,068.75	1,365,055.35	38° 14' 1.244 N	81° 57' 32.384 W
1,097.0	13.21	69.13	1,092.9	6.3	55.4	13,885,071.09	1,365,061.60	38° 14' 1.268 N	81° 57' 32.306 W
1,127.0	14.18	69.39	1,122.0	8.8	62.1	13,885,073.61	1,365,068.24	38° 14' 1.294 N	81° 57' 32.223 W
1,157.0	15.11	70.80	1,151.1	11.4	69.2	13,885,076.19	1,365,075.38	38° 14' 1.320 N	81° 57' 32.134 W
1,187.0	16.22	71.81	1,179.9	14.0	76.9	13,885,078.78	1,365,083.05	38° 14' 1.346 N	81° 57' 32.038 W
1,217.0	17.50	73.49	1,208.7	16.6	85.2	13,885,081.37	1,365,091.36	38° 14' 1.373 N	81° 57' 31.934 W
1,247.0	18.52	74.41	1,237.2	19.2	94.1	13,885,083.93	1,365,100.27	38° 14' 1.399 N	81° 57' 31.823 W
1,277.0	19.31	76.40	1,265.6	21.6	103.5	13,885,086.38	1,365,109.68	38° 14' 1.424 N	81° 57' 31.705 W
1,307.0	20.42	76.00	1,293.8	24.0	113.4	13,885,088.81	1,365,119.58	38° 14' 1.449 N	81° 57' 31.581 W
1,337.0	21.08	76.71	1,321.8	26.5	123.7	13,885,091.32	1,365,129.91	38° 14' 1.475 N	81° 57' 31.452 W
1,367.0	22.32	74.59	1,349.7	29.3	134.5	13,885,094.07	1,365,140.65	38° 14' 1.503 N	81° 57' 31.318 W
1,397.0	23.11	74.41	1,377.4	32.4	145.7	13,885,097.17	1,365,151.81	38° 14' 1.535 N	81° 57' 31.178 W
1,427.0	23.60	76.53	1,404.9	35.4	157.2	13,885,100.15	1,365,163.33	38° 14' 1.566 N	81° 57' 31.034 W
1,457.0	23.99	80.01	1,432.4	37.8	169.0	13,885,102.61	1,365,175.17	38° 14' 1.591 N	81° 57' 30.886 W
1,487.0	24.22	84.42	1,459.8	39.5	181.1	13,885,104.26	1,365,187.30	38° 14' 1.609 N	81° 57' 30.734 W
1,517.0	24.61	87.59	1,487.1	40.3	193.5	13,885,105.12	1,365,199.67	38° 14' 1.619 N	81° 57' 30.579 W
1,547.0	24.61	89.62	1,514.3	40.6	206.0	13,885,105.43	1,365,212.16	38° 14' 1.623 N	81° 57' 30.423 W
1,577.0	23.91	91.91	1,541.7	40.5	218.3	13,885,105.27	1,365,224.48	38° 14' 1.623 N	81° 57' 30.268 W
1,607.0	23.11	93.63	1,569.2	39.9	230.3	13,885,104.69	1,365,236.43	38° 14' 1.618 N	81° 57' 30.118 W
1,637.0	23.29	93.01	1,596.8	39.2	242.1	13,885,104.01	1,365,248.23	38° 14' 1.613 N	81° 57' 29.970 W
1,667.0	23.29	91.69	1,624.3	38.7	253.9	13,885,103.52	1,365,260.08	38° 14' 1.609 N	81° 57' 29.822 W
1,697.0	23.29	87.59	1,651.9	38.8	265.8	13,885,103.60	1,365,271.94	38° 14' 1.611 N	81° 57' 29.673 W
1,727.0	23.60	87.11	1,679.4	39.4	277.7	13,885,104.15	1,365,283.86	38° 14' 1.618 N	81° 57' 29.524 W
1,757.0	23.82	87.41	1,706.9	39.9	289.7	13,885,104.72	1,365,295.91	38° 14' 1.625 N	81° 57' 29.373 W
1,877.0	22.80	89.00	1,817.1	41.4	337.2	13,885,106.22	1,365,343.37	38° 14' 1.644 N	81° 57' 28.778 W
1,937.0	22.80	89.00	1,872.4	41.8	360.5	13,885,106.63	1,365,366.61	38° 14' 1.651 N	81° 57' 28.487 W
1,967.0	22.80	88.82	1,900.1	42.1	372.1	13,885,106.85	1,365,378.24	38° 14' 1.654 N	81° 57' 28.341 W
1,997.0	23.11	89.71	1,927.7	42.2	383.8	13,885,107.00	1,365,389.94	38° 14' 1.657 N	81° 57' 28.194 W
2,027.0	22.18	89.31	1,955.4	42.3	395.3	13,885,107.10	1,365,401.49	38° 14' 1.659 N	81° 57' 28.050 W
2,057.0	22.32	88.60	1,983.1	42.5	406.7	13,885,107.31	1,365,412.84	38° 14' 1.662 N	81° 57' 27.907 W
2,087.0	21.70	87.41	2,011.0	42.9	417.9	13,885,107.70	1,365,424.08	38° 14' 1.667 N	81° 57' 27.767 W
2,117.0	20.02	88.21	2,039.0	43.3	428.6	13,885,108.11	1,365,434.75	38° 14' 1.672 N	81° 57' 27.633 W
2,177.0	18.91	84.51	2,095.6	44.6	448.5	13,885,109.36	1,365,454.70	38° 14' 1.687 N	81° 57' 27.383 W
2,207.0	19.40	84.20	2,123.9	45.5	458.3	13,885,110.33	1,365,464.49	38° 14' 1.697 N	81° 57' 27.260 W
2,237.0	19.89	84.02	2,152.1	46.6	468.4	13,885,111.36	1,365,474.53	38° 14' 1.709 N	81° 57' 27.135 W
2,267.0	19.80	84.20	2,180.4	47.6	478.5	13,885,112.41	1,365,484.66	38° 14' 1.720 N	81° 57' 27.008 W
2,297.0	20.02	82.39	2,208.6	48.8	488.6	13,885,113.60	1,365,494.80	38° 14' 1.733 N	81° 57' 26.881 W
2,327.0	20.28	82.61	2,236.7	50.2	498.9	13,885,114.95	1,365,505.05	38° 14' 1.747 N	81° 57' 26.752 W
2,357.0	20.28	82.83	2,264.9	51.5	509.2	13,885,116.27	1,365,515.36	38° 14' 1.761 N	81° 57' 26.623 W
2,387.0	20.28	82.30	2,293.0	52.8	519.5	13,885,117.61	1,365,525.67	38° 14' 1.776 N	81° 57' 26.494 W
2,417.0	18.52	81.51	2,321.3	54.2	529.4	13,885,119.01	1,365,535.54	38° 14' 1.790 N	81° 57' 26.371 W
2,447.0	16.62	81.51	2,349.9	55.6	538.3	13,885,120.35	1,365,544.49	38° 14' 1.805 N	81° 57' 26.259 W
2,507.0	13.52	78.03	2,407.8	58.3	553.7	13,885,123.07	1,365,559.85	38° 14' 1.833 N	81° 57' 26.067 W
2,627.0	9.66	75.30	2,525.4	63.8	577.2	13,885,128.54	1,365,583.32	38° 14' 1.889 N	81° 57' 25.773 W
2,687.0	7.91	77.19	2,584.7	66.0	586.1	13,885,130.73	1,365,592.21	38° 14' 1.912 N	81° 57' 25.662 W
2,780.0	7.91	77.19	2,676.8	68.8	598.5	13,885,133.57	1,365,604.69	38° 14' 1.941 N	81° 57' 25.506 W

TD @ 2780' MD / 2677' TVD

HP
Survey Report - Geographic



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Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well MA Bays #156
Project:	Lincoln County, West Virginia	TVD Reference:	WELL @ 953.0usft (Decker #9)
Site:	MA Bays #156	MD Reference:	WELL @ 953.0usft (Decker #9)
Well:	MA Bays #156	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
617.0	617.0	-1.8	4.4	First MWD Survey @ 617' MD / 617' TVD
2,780.0	2,676.8	68.8	598.5	TD @ 2780' MD / 2677' TVD

Checked By: _____ Approved By: _____ Date: _____

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Office of Oil & Gas
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Lincoln County, West Virginia
MA Bays #156
MA Bays #156
Wellbore #1

Design: Wellbore #1

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Map Zone: Zone 17N (84 W to 78 W)

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 From: Easting: 1,365,006.16 usft
 Position Uncertainty: Lat/Long 0.0 usft
 Slot Radius: 13-3/16"
 Grid Convergence: -0.59°

Well: MA Bays #156

Well Position: +N/-S 0.0 usft
 +E/-W 0.0 usft
 Position Uncertainty: 0.0 usft

Latitude: 38° 14' 1.200 N
Longitude: 81° 57' 33.000 W
Ground Level: 945.0 usft

Wellbore: Wellbore #1

Magnetics: Model Name IGRF2010 Sample Date 8/26/2015
 Declination (°) -7.49
 Dip Angle (°) 66.00
 Field Strength (nT) 51,728

Design: Wellbore #1

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

Vertical Section: Depth From (TVD) (usft) 0.0
 +N/-S (usft) 0.0
 +E/-W (usft) 0.0
 Direction (°) 85.02

Survey Program: Date 9/15/2015

From (usft): 617.0
To (usft): 2,780.0
Survey (Wellbore): MWD (Wellbore #1)
Tool Name: MWD default
Description: MWD - Standard

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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.00	
617.0	0.88	112.66	617.0	-1.8	4.4	4.2	0.14	4.7	112.66	
First MWD Survey @ 617' MD / 617' TVD										
647.0	0.80	164.40	647.0	-2.1	4.6	4.4	2.46	5.1	114.51	
677.0	0.80	154.71	677.0	-2.5	4.8	4.6	0.45	5.4	117.64	
707.0	1.68	114.91	707.0	-2.9	5.3	5.0	3.94	6.0	118.64	
737.0	2.70	94.29	736.9	-3.1	6.4	6.1	4.24	7.1	116.06	
767.0	3.89	92.37	766.9	-3.2	8.1	7.8	3.98	8.7	111.65	
797.0	4.60	88.03	796.8	-3.2	10.3	10.0	2.60	10.8	107.31	
827.0	5.21	95.61	826.7	-3.3	12.9	12.5	2.96	13.3	104.40	
857.0	6.50	92.00	856.5	-3.5	15.9	15.6	4.47	16.3	102.39	
887.0	7.51	86.71	886.3	-3.4	19.6	19.2	3.99	19.9	99.98	
917.0	8.09	81.42	916.0	-3.0	23.6	23.3	3.07	23.8	97.28	
947.0	8.79	79.22	945.7	-2.3	28.0	27.7	2.57	28.1	94.65	
977.0	9.81	75.60	975.3	-1.2	32.7	32.5	3.92	32.7	92.12	
1,007.0	10.69	74.41	1,004.8	0.2	37.9	37.7	3.02	37.9	89.74	
1,037.0	11.40	71.02	1,034.3	1.9	43.3	43.3	3.21	43.4	87.51	
1,067.0	12.51	69.83	1,063.6	4.0	49.2	49.3	3.79	49.3	85.39	
1,097.0	13.21	69.13	1,092.9	6.3	55.4	55.8	2.39	55.8	83.51	
1,127.0	14.18	69.39	1,122.0	8.8	62.1	62.6	3.24	62.7	81.91	
1,157.0	15.11	70.80	1,151.1	11.4	69.2	69.9	3.32	70.1	80.64	
1,187.0	16.22	71.81	1,179.9	14.0	76.9	77.8	3.81	78.2	79.68	
1,217.0	17.50	73.49	1,208.7	16.6	85.2	86.3	4.56	86.8	78.98	
1,247.0	18.52	74.41	1,237.2	19.2	94.1	95.4	3.53	96.0	78.50	
1,277.0	19.31	76.40	1,265.6	21.6	103.5	105.0	3.40	105.7	78.22	
1,307.0	20.42	76.00	1,293.8	24.0	113.4	115.1	3.73	115.9	78.04	
1,337.0	21.08	76.71	1,321.8	26.5	123.7	125.6	2.35	126.6	77.90	

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Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)
	1,367.0	22.32	74.59	1,349.7	29.3	134.5	136.5	4.89	137.6	77.71
	1,397.0	23.11	74.41	1,377.4	32.4	145.7	147.9	2.64	149.2	77.46
	1,427.0	23.60	76.53	1,404.9	35.4	157.2	159.6	3.24	161.1	77.32
	1,457.0	23.99	80.01	1,432.4	37.8	169.0	171.7	4.86	173.2	77.38
	1,487.0	24.22	84.42	1,459.8	39.5	181.1	183.9	6.05	185.4	77.70
	1,517.0	24.61	87.59	1,487.1	40.3	193.5	196.3	4.56	197.7	78.22
	1,547.0	24.61	89.62	1,514.3	40.6	206.0	208.7	2.82	210.0	78.84
	1,577.0	23.91	91.91	1,541.7	40.5	218.3	221.0	3.91	222.0	79.49
	1,607.0	23.11	93.63	1,569.2	39.9	230.3	232.9	3.51	233.7	80.17
	1,637.0	23.29	93.01	1,596.8	39.2	242.1	244.6	1.01	245.2	80.80
	1,667.0	23.29	91.69	1,624.3	38.7	253.9	256.3	1.74	256.9	81.33
	1,697.0	23.29	87.59	1,651.9	38.8	265.8	268.1	5.40	268.6	81.69
	1,727.0	23.60	87.11	1,679.4	39.4	277.7	280.1	1.21	280.5	81.93
	1,757.0	23.82	87.41	1,706.9	39.9	289.7	292.1	0.84	292.5	82.15
	1,877.0	22.80	89.00	1,817.1	41.4	337.2	339.5	1.00	339.7	82.99
	1,937.0	22.80	89.00	1,872.4	41.8	360.5	362.7	0.00	362.9	83.38
	1,967.0	22.80	88.82	1,900.1	42.1	372.1	374.3	0.23	374.4	83.55
	1,997.0	23.11	89.71	1,927.7	42.2	383.8	386.0	1.55	386.1	83.72
	2,027.0	22.18	89.31	1,955.4	42.3	395.3	397.5	3.14	397.6	83.89
	2,057.0	22.32	88.60	1,983.1	42.5	406.7	408.8	1.01	408.9	84.03
	2,087.0	21.70	87.41	2,011.0	42.9	417.9	420.1	2.55	420.1	84.14
	2,117.0	20.02	88.21	2,039.0	43.3	428.6	430.7	5.68	430.8	84.23
	2,177.0	18.91	84.51	2,095.6	44.6	448.5	450.7	2.76	450.7	84.32
	2,207.0	19.40	84.20	2,123.9	45.5	458.3	460.6	1.67	460.6	84.32
	2,237.0	19.89	84.02	2,152.1	46.6	468.4	470.6	1.65	470.7	84.32
	2,267.0	19.80	84.20	2,180.4	47.6	478.5	480.8	0.36	480.9	84.32
	2,297.0	20.02	82.39	2,208.6	48.8	488.6	491.0	2.18	491.1	84.29

10/30/2015



43.03479

HP HG Energy EOW Report

Company: HG Energy, LLC
 Project: Lincoln County, West Virginia
 Site: MA Bays #156
 Well: MA Bays #156
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well MA Bays #156
 TVD Reference: WELL @ 953.0usft (Decker #9)
 MD Reference: WELL @ 953.0usft (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 (°)
2,327.0	20.28	82.61	2,236.7	50.2	498.9	501.4	0.90	501.4	84.26
2,357.0	20.28	82.83	2,264.9	51.5	509.2	511.7	0.25	511.8	84.23
2,387.0	20.28	82.30	2,293.0	52.8	519.5	522.1	0.61	522.2	84.19
2,417.0	18.52	81.51	2,321.3	54.2	529.4	532.1	5.93	532.1	84.15
2,447.0	16.62	81.51	2,349.9	55.6	538.3	541.1	6.33	541.2	84.11
2,507.0	13.52	78.03	2,407.8	58.3	553.7	556.7	5.38	556.7	83.99
2,627.0	9.66	75.30	2,525.4	63.8	577.2	580.5	3.25	580.7	83.70
2,687.0	7.91	77.19	2,584.7	66.0	586.1	589.6	2.96	589.7	83.58
2,780.0	7.91	77.19	2,676.8	68.8	598.5	602.2	0.00	602.5	83.44

TD @ 2780' MD / 2677' TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N-S (usft)	Local Coordinates +E-W (usft)	Comment
617.0	617.0	-1.8		
2,780.0	2,676.8	68.8		
				4.4 First MWD Survey @ 617' MD / 617' TVD
				598.5 TD @ 2780' MD / 2677' TVD

Checked By: _____

Approved By: _____

Date: _____

Received
Office of Oil & Gas

OCT 08 2015

43.03479

Company Name: HG Energy, LLC
 MA Bays #156
 Lincoln County, West Virginia
 Rig/Decker 9
 Created By: Shane Robbins
 Date: 9/15/2015

MA Bays #156
 Lincoln County, West Virginia
 Q150671 & AM-150579
 Design #1



PROJECT DETAILS: Lincoln County, West Virginia
Geodetic System: Universal Transverse Mercator
 NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: 17N (84 W to 78 W)
System Datum: Mean Sea Level

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Eastings	Latitude	Longitude
Target MA Bays #156	2455.3	84.2	422.8	13885119.23	1565628.53	39° 14' 1.800" N	81° 07' 33.200" W
*Plan hit target center.							

ANNOTATIONS

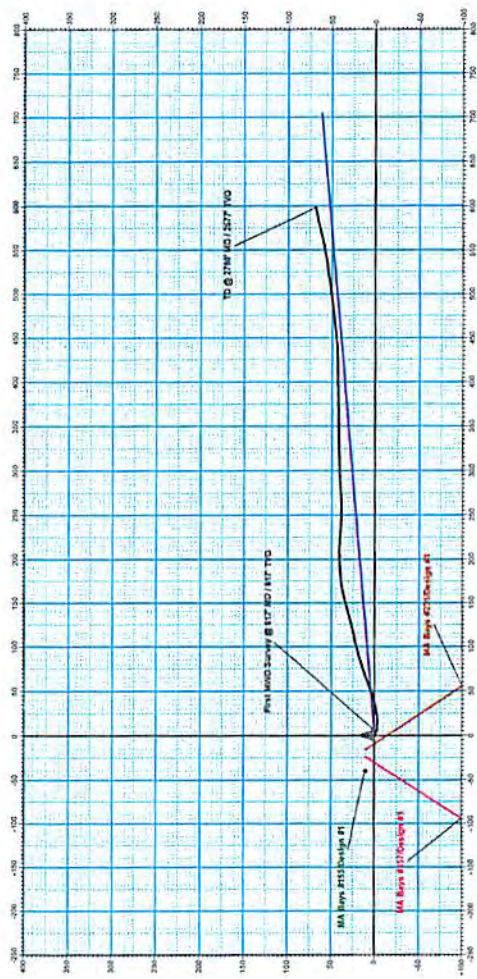
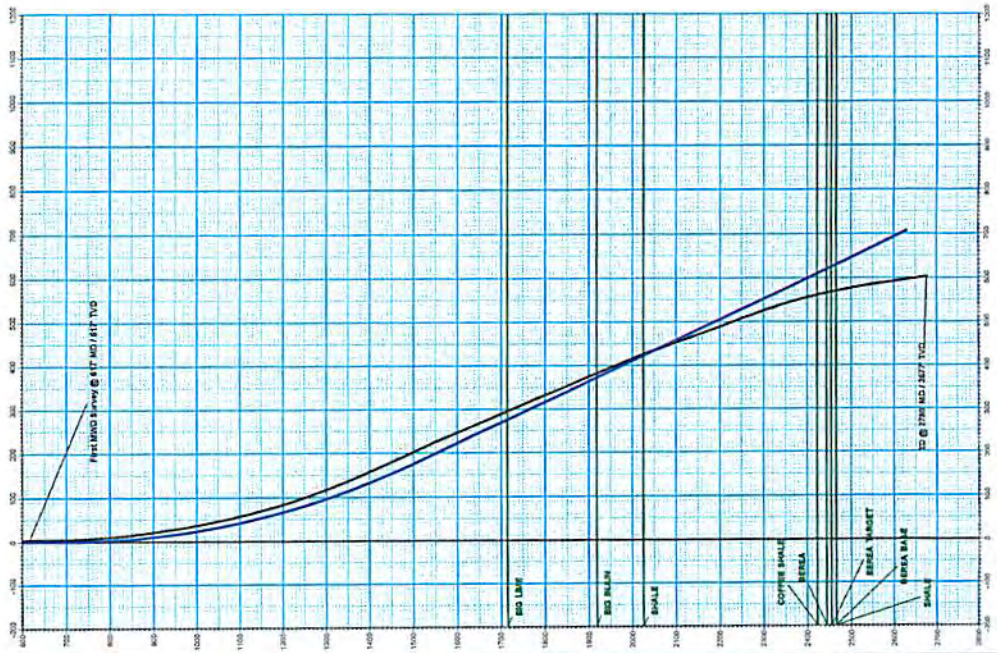
ID	Loc	Alt	TVD	+N/S	+E/W	Vertical Displacement	Annotation
610	11.41	41.1	41.1	84.2	422.8	0.0	MA Bays #156
615	11.41	41.1	41.1	84.2	422.8	0.0	MA Bays #156
270.0	7.31	37.19	2416.9	61.9	538.5	622.2	TD @ 2700' MD / 2677' TVD

WELL DETAILS: MA Bays #156

+N/S	+E/W	Northing	Eastings	Ground Level	Latitude	Longitude
0.0	0.0	12885064.78	1565005.16	846.0	39° 14' 1.300" N	81° 07' 33.000" W

Azimuths to Grid North
 Correction: -6.89°
 Magnetic Field
 Strength: 51728.0snT
 Dip Angle: 66.00°
 Date: 8/26/2015
 Model: IGRF2010

HG Energy



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OCT 08 2015