

# HG Energy, LLC

Harrison County, West Virginia

A Stonestreet #124

A. Stonestreet #124

Wellbore #1

Survey: MWD

## DDC Survey Report

11 December, 2013



02/28/2014



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I **Larry Wright**, certify that I am employed by **The Appalachian Directional Drilling Company (ADC)**. That I did on the day(s) of **12/2/13** thru **12/4/13** conduct or supervise the taking of a **MWD Survey** from a depth of **900** feet to a depth of **3200** feet, that the data is true, correct, complete and within the limitations of the tool as set forth by **The Appalachian Directional Drilling Company (ADC)**.; that I am authorized and qualified to make this report; that this survey was conducted at the request of **HG Energy** for the **A. Stonestreet #124** API No. **47-033-05778** in **Harrison, County WV**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **The Appalachian Directional Drilling Company (ADC)**.

Larry Wright

Digitally signed by Larry Wright  
DN: cn=Larry Wright, o=The  
Directional Drilling Company,  
ou=GM of Guidance Services,  
email=larryw@directionaldrillers.c  
om, c=US  
Date: 2013.12.17 16:27:34 -06'00'

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• 1200 Heavy Haul Road • Morgan Town, WV 26501 •  
• PH 304-777-2310 • FAX 304-777-2317 •

02/28/2014

DDC  
Survey Report



<b>Company:</b>	HG Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well A. Stonestreet #124
<b>Project:</b>	Harrison County, West Virginia	<b>TVD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Site:</b>	A Stonestreet #124	<b>MD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Well:</b>	A. Stonestreet #124	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

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

<b>Site</b>	A Stonestreet #124				
<b>Site Position:</b>		<b>Northing:</b>	14,264,406.92 usft	<b>Latitude:</b>	39° 16' 42.400 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,784,373.36 usft	<b>Longitude:</b>	80° 29' 28.600 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.32 °

<b>Well</b>	A. Stonestreet #124					
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b>	14,264,406.92 usft	<b>Latitude:</b>	39° 16' 42.400 N
	+E/-W	0.0 usft	<b>Easting:</b>	1,784,373.36 usft	<b>Longitude:</b>	80° 29' 28.600 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,228.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/11/2013	-8.65	66.81	52,317

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	183.02	

<b>Survey Program</b>	<b>Date</b>	12/11/2013			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
900.0	3,200.0	MWD (Wellbore #1)			

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
<b>Tie In @ 900' MD / 900' TVD</b>										
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
930.0	1.40	93.50	930.0	0.0	0.4	0.0	4.67	4.67	0.00	
960.0	1.70	135.00	960.0	-0.4	1.0	0.3	3.78	1.00	138.33	
990.0	2.90	164.00	990.0	-1.4	1.6	1.3	5.45	4.00	96.67	
1,020.0	4.40	172.80	1,019.9	-3.3	1.9	3.2	5.32	5.00	29.33	
1,050.0	5.70	176.60	1,049.8	-5.9	2.2	5.8	4.47	4.33	12.67	
1,080.0	6.80	177.90	1,079.6	-9.2	2.3	9.0	3.70	3.67	4.33	
1,110.0	7.50	178.20	1,109.4	-12.9	2.4	12.8	2.34	2.33	1.00	
1,140.0	8.20	179.40	1,139.1	-17.0	2.5	16.8	2.40	2.33	4.00	

DDC  
Survey Report



<b>Company:</b>	HG Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well A. Stonestreet #124
<b>Project:</b>	Harrison County, West Virginia	<b>TVD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Site:</b>	A Stonestreet #124	<b>MD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Well:</b>	A. Stonestreet #124	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,170.0	8.30	183.30	1,168.8	-21.3	2.4	21.1	1.89	0.33	13.00	
1,200.0	8.20	185.10	1,198.5	-25.6	2.1	25.4	0.92	-0.33	6.00	
1,230.0	8.70	185.90	1,228.1	-30.0	1.7	29.8	1.71	1.67	2.67	
1,260.0	9.30	187.20	1,257.8	-34.6	1.1	34.5	2.11	2.00	4.33	
1,290.0	10.10	188.30	1,287.3	-39.6	0.5	39.6	2.74	2.67	3.67	
1,320.0	9.90	188.20	1,316.9	-44.8	-0.3	44.8	0.67	-0.67	-0.33	
1,350.0	9.40	186.70	1,346.5	-49.8	-0.9	49.8	1.87	-1.67	-5.00	
1,380.0	9.70	186.10	1,376.1	-54.7	-1.5	54.7	1.05	1.00	-2.00	
1,410.0	10.70	185.20	1,405.6	-60.0	-2.0	60.0	3.38	3.33	-3.00	
1,440.0	11.80	185.70	1,435.0	-65.8	-2.6	65.9	3.68	3.67	1.67	
1,470.0	12.60	185.30	1,464.3	-72.2	-3.2	72.2	2.68	2.67	-1.33	
1,500.0	13.50	184.00	1,493.5	-78.9	-3.7	79.0	3.16	3.00	-4.33	
1,530.0	13.80	182.20	1,522.7	-86.0	-4.1	86.1	1.73	1.00	-6.00	
1,560.0	13.80	179.40	1,551.8	-93.1	-4.2	93.2	2.23	0.00	-9.33	
1,590.0	14.10	177.00	1,580.9	-100.4	-4.0	100.4	2.17	1.00	-8.00	
1,620.0	15.00	174.40	1,610.0	-107.9	-3.4	107.9	3.71	3.00	-8.67	
1,650.0	15.80	176.50	1,638.9	-115.8	-2.8	115.8	3.25	2.67	7.00	
1,680.0	16.60	179.80	1,667.7	-124.2	-2.5	124.1	4.06	2.67	11.00	
1,710.0	17.50	184.00	1,696.4	-133.0	-2.8	132.9	5.08	3.00	14.00	
1,740.0	18.10	188.00	1,725.0	-142.1	-3.8	142.1	4.54	2.00	13.33	
1,770.0	19.70	190.30	1,753.3	-151.7	-5.3	151.7	5.88	5.33	7.67	
1,800.0	21.50	189.50	1,781.4	-162.1	-7.1	162.2	6.07	6.00	-2.67	
1,830.0	22.70	187.70	1,809.2	-173.2	-8.8	173.4	4.59	4.00	-6.00	
1,860.0	24.10	186.90	1,836.8	-185.0	-10.3	185.3	4.79	4.67	-2.67	
1,890.0	24.80	187.40	1,864.1	-197.4	-11.9	197.7	2.43	2.33	1.67	
1,920.0	26.20	186.60	1,891.1	-210.2	-13.5	210.6	4.81	4.67	-2.67	
1,950.0	27.20	187.00	1,917.9	-223.6	-15.1	224.0	3.39	3.33	1.33	
1,980.0	28.50	187.30	1,944.5	-237.5	-16.8	238.0	4.36	4.33	1.00	
2,010.0	29.40	186.30	1,970.7	-251.9	-18.5	252.5	3.41	3.00	-3.33	
2,040.0	29.50	184.40	1,996.8	-266.6	-19.9	267.2	3.13	0.33	-6.33	
2,070.0	29.60	182.50	2,022.9	-281.3	-20.8	282.0	3.14	0.33	-6.33	
2,100.0	29.90	181.30	2,049.0	-296.2	-21.3	296.9	2.22	1.00	-4.00	
2,130.0	30.60	181.80	2,074.9	-311.3	-21.7	312.0	2.48	2.33	1.67	
2,160.0	31.40	182.90	2,100.6	-326.8	-22.3	327.5	3.27	2.67	3.67	
2,190.0	31.60	184.70	2,126.2	-342.4	-23.4	343.2	3.20	0.67	6.00	
2,220.0	31.40	185.00	2,151.8	-358.0	-24.7	358.8	0.85	-0.67	1.00	
2,250.0	31.20	184.80	2,177.4	-373.5	-26.0	374.4	0.75	-0.67	-0.67	
2,280.0	30.80	185.00	2,203.1	-388.9	-27.3	389.8	1.38	-1.33	0.67	
2,310.0	30.40	185.40	2,228.9	-404.1	-28.7	405.1	1.50	-1.33	1.33	
2,340.0	30.60	185.80	2,254.8	-419.3	-30.2	420.3	0.95	0.67	1.33	
2,370.0	31.40	186.40	2,280.5	-434.7	-31.8	435.7	2.86	2.67	2.00	
2,400.0	32.30	186.70	2,306.0	-450.4	-33.7	451.5	3.05	3.00	1.00	
2,430.0	33.10	185.90	2,331.2	-466.5	-35.4	467.7	3.03	2.67	-2.67	
2,460.0	33.10	184.90	2,356.4	-482.8	-37.0	484.1	1.82	0.00	-3.33	

DDC  
Survey Report



<b>Company:</b>	HG Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well A. Stonestreet #124
<b>Project:</b>	Harrison County, West Virginia	<b>TVD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Site:</b>	A Stonestreet #124	<b>MD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Well:</b>	A. Stonestreet #124	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,490.0	33.00	184.40	2,381.5	-499.1	-38.3	500.4	0.97	-0.33	-1.67	
2,520.0	33.20	184.10	2,406.6	-515.5	-39.5	516.8	0.86	0.67	-1.00	
2,550.0	32.60	182.20	2,431.8	-531.7	-40.4	533.1	3.98	-2.00	-6.33	
2,580.0	31.80	179.90	2,457.2	-547.7	-40.7	549.1	4.88	-2.67	-7.67	
2,610.0	31.70	180.60	2,482.7	-563.5	-40.8	564.9	1.27	-0.33	2.33	
2,640.0	32.20	182.70	2,508.2	-579.4	-41.2	580.7	4.06	1.67	7.00	
2,670.0	32.70	183.70	2,533.5	-595.4	-42.1	596.8	2.44	1.67	3.33	
2,700.0	33.00	185.10	2,558.7	-611.7	-43.4	613.1	2.72	1.00	4.67	
2,730.0	33.00	184.80	2,583.9	-627.9	-44.8	629.4	0.54	0.00	-1.00	
2,760.0	33.00	184.00	2,609.0	-644.2	-46.0	645.8	1.45	0.00	-2.67	
2,790.0	32.90	182.90	2,634.2	-660.5	-47.0	662.1	2.02	-0.33	-3.67	
2,820.0	32.30	181.40	2,659.5	-676.7	-47.6	678.2	3.35	-2.00	-5.00	
2,850.0	31.60	180.40	2,684.9	-692.5	-47.9	694.1	2.92	-2.33	-3.33	
2,880.0	30.80	178.70	2,710.6	-708.1	-47.8	709.6	3.97	-2.67	-5.67	
2,910.0	29.70	176.80	2,736.5	-723.2	-47.2	724.7	4.86	-3.67	-6.33	
2,940.0	29.30	176.90	2,762.6	-737.9	-46.4	739.3	1.34	-1.33	0.33	
2,970.0	28.90	176.90	2,788.8	-752.5	-45.6	753.8	1.33	-1.33	0.00	
2,980.0	28.90	177.70	2,797.6	-757.3	-45.4	758.7	3.87	0.00	8.00	
3,000.0	28.60	178.50	2,815.1	-766.9	-45.0	768.2	2.44	-1.50	4.00	
3,030.0	28.50	179.70	2,841.5	-781.3	-44.8	782.5	1.94	-0.33	4.00	
3,060.0	28.70	180.60	2,867.8	-795.6	-44.8	796.9	1.58	0.67	3.00	
3,090.0	28.90	181.00	2,894.1	-810.1	-45.0	811.3	0.93	0.67	1.33	
3,120.0	29.20	180.60	2,920.3	-824.6	-45.2	825.9	1.19	1.00	-1.33	
3,150.0	29.40	180.50	2,946.5	-839.3	-45.4	840.6	0.69	0.67	-0.33	
<b>TD @ 3200' MD / 2990' TVD</b>										
3,200.0	29.40	180.50	2,990.1	-863.9	-45.6	865.1	0.00	0.00	0.00	

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
900.0	900.0	0.0	0.0	Tie In @ 900' MD / 900' TVD	
3,200.0	2,990.1	-863.9	-45.6	TD @ 3200' MD / 2990' TVD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# **HG Energy, LLC**

Harrison County, West Virginia

A Stonestreet #124

A. Stonestreet #124

Wellbore #1

Design: Wellbore #1

## **Survey Report - Geographic**

07 January, 2014



02/28/2014

DDC  
Survey Report - Geographic



<b>Company:</b>	HG Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well A. Stonestreet #124
<b>Project:</b>	Harrison County, West Virginia	<b>TVD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Site:</b>	A Stonestreet #124	<b>MD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Well:</b>	A. Stonestreet #124	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

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

<b>Site</b>	A Stonestreet #124				
<b>Site Position:</b>		<b>Northing:</b>	14,264,406.92 usft	<b>Latitude:</b>	39° 16' 42.400 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,784,373.36 usft	<b>Longitude:</b>	80° 29' 28.600 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.32 °

<b>Well</b>	A. Stonestreet #124					
<b>Well Position</b>	+N/-S	0.0 usft	<b>Northing:</b>	14,264,406.92 usft	<b>Latitude:</b>	39° 16' 42.400 N
	+E/-W	0.0 usft	<b>Easting:</b>	1,784,373.36 usft	<b>Longitude:</b>	80° 29' 28.600 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,228.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/11/2013	-8.65	66.81	52,317

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>		<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
		0.0	0.0	0.0	183.02

<b>Survey Program</b>	<b>Date</b>	12/11/2013			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
900.0	3,200.0	MWD (Wellbore #1)			

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>	
0.0	0.00	0.00	0.0	0.0	0.0	14,264,406.92	1,784,373.36	39° 16' 42.400 N	80° 29' 28.600 W	
900.0	0.00	0.00	900.0	0.0	0.0	14,264,406.92	1,784,373.36	39° 16' 42.400 N	80° 29' 28.600 W	
<b>Tie In @ 900' MD / 900' TVD</b>										
930.0	1.40	93.50	930.0	0.0	0.4	14,264,406.90	1,784,373.73	39° 16' 42.400 N	80° 29' 28.595 W	
960.0	1.70	135.00	960.0	-0.4	1.0	14,264,406.56	1,784,374.41	39° 16' 42.396 N	80° 29' 28.587 W	
990.0	2.90	164.00	990.0	-1.4	1.6	14,264,405.52	1,784,374.93	39° 16' 42.386 N	80° 29' 28.580 W	
1,020.0	4.40	172.80	1,019.9	-3.3	1.9	14,264,403.65	1,784,375.29	39° 16' 42.368 N	80° 29' 28.576 W	
1,050.0	5.70	176.60	1,049.8	-5.9	2.2	14,264,401.02	1,784,375.52	39° 16' 42.342 N	80° 29' 28.573 W	
1,080.0	6.80	177.90	1,079.6	-9.2	2.3	14,264,397.76	1,784,375.67	39° 16' 42.309 N	80° 29' 28.571 W	
1,110.0	7.50	178.20	1,109.4	-12.9	2.4	14,264,394.03	1,784,375.80	39° 16' 42.272 N	80° 29' 28.570 W	
1,140.0	8.20	179.40	1,139.1	-17.0	2.5	14,264,389.93	1,784,375.88	39° 16' 42.232 N	80° 29' 28.569 W	
1,170.0	8.30	183.30	1,168.8	-21.3	2.4	14,264,385.63	1,784,375.78	39° 16' 42.189 N	80° 29' 28.571 W	

**DDC**  
Survey Report - Geographic



<b>Company:</b>	HG Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well A. Stonestreet #124
<b>Project:</b>	Harrison County, West Virginia	<b>TVD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Site:</b>	A Stonestreet #124	<b>MD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Well:</b>	A. Stonestreet #124	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,200.0	8.20	185.10	1,198.5	-25.6	2.1	14,264,381.34	1,784,375.47	39° 16' 42.147 N	80° 29' 28.575 W	
1,230.0	8.70	185.90	1,228.1	-30.0	1.7	14,264,376.95	1,784,375.04	39° 16' 42.104 N	80° 29' 28.581 W	
1,260.0	9.30	187.20	1,257.8	-34.6	1.1	14,264,372.29	1,784,374.51	39° 16' 42.057 N	80° 29' 28.588 W	
1,290.0	10.10	188.30	1,287.3	-39.6	0.5	14,264,367.28	1,784,373.82	39° 16' 42.008 N	80° 29' 28.597 W	
1,320.0	9.90	188.20	1,316.9	-44.8	-0.3	14,264,362.12	1,784,373.07	39° 16' 41.957 N	80° 29' 28.607 W	
1,350.0	9.40	186.70	1,346.5	-49.8	-0.9	14,264,357.14	1,784,372.42	39° 16' 41.908 N	80° 29' 28.616 W	
1,380.0	9.70	186.10	1,376.1	-54.7	-1.5	14,264,352.19	1,784,371.87	39° 16' 41.859 N	80° 29' 28.623 W	
1,410.0	10.70	185.20	1,405.6	-60.0	-2.0	14,264,346.90	1,784,371.35	39° 16' 41.807 N	80° 29' 28.630 W	
1,440.0	11.80	185.70	1,435.0	-65.8	-2.6	14,264,341.08	1,784,370.79	39° 16' 41.749 N	80° 29' 28.637 W	
1,470.0	12.60	185.30	1,464.3	-72.2	-3.2	14,264,334.77	1,784,370.18	39° 16' 41.687 N	80° 29' 28.646 W	
1,500.0	13.50	184.00	1,493.5	-78.9	-3.7	14,264,328.02	1,784,369.63	39° 16' 41.620 N	80° 29' 28.653 W	
1,530.0	13.80	182.20	1,522.7	-86.0	-4.1	14,264,320.95	1,784,369.25	39° 16' 41.550 N	80° 29' 28.658 W	
1,560.0	13.80	179.40	1,551.8	-93.1	-4.2	14,264,313.79	1,784,369.15	39° 16' 41.479 N	80° 29' 28.660 W	
1,590.0	14.10	177.00	1,580.9	-100.4	-4.0	14,264,306.57	1,784,369.38	39° 16' 41.408 N	80° 29' 28.658 W	
1,620.0	15.00	174.40	1,610.0	-107.9	-3.4	14,264,299.05	1,784,369.95	39° 16' 41.334 N	80° 29' 28.651 W	
1,650.0	15.80	176.50	1,638.9	-115.8	-2.8	14,264,291.11	1,784,370.58	39° 16' 41.255 N	80° 29' 28.644 W	
1,680.0	16.60	179.80	1,667.7	-124.2	-2.5	14,264,282.75	1,784,370.84	39° 16' 41.172 N	80° 29' 28.641 W	
1,710.0	17.50	184.00	1,696.4	-133.0	-2.8	14,264,273.97	1,784,370.54	39° 16' 41.086 N	80° 29' 28.645 W	
1,740.0	18.10	188.00	1,725.0	-142.1	-3.8	14,264,264.85	1,784,369.58	39° 16' 40.996 N	80° 29' 28.658 W	
1,770.0	19.70	190.30	1,753.3	-151.7	-5.3	14,264,255.26	1,784,368.03	39° 16' 40.901 N	80° 29' 28.679 W	
1,800.0	21.50	189.50	1,781.4	-162.1	-7.1	14,264,244.86	1,784,366.22	39° 16' 40.798 N	80° 29' 28.702 W	
1,830.0	22.70	187.70	1,809.2	-173.2	-8.8	14,264,233.70	1,784,364.53	39° 16' 40.688 N	80° 29' 28.725 W	
1,860.0	24.10	186.90	1,836.8	-185.0	-10.3	14,264,221.89	1,784,363.02	39° 16' 40.571 N	80° 29' 28.745 W	
1,890.0	24.80	187.40	1,864.1	-197.4	-11.9	14,264,209.57	1,784,361.48	39° 16' 40.449 N	80° 29' 28.765 W	
1,920.0	26.20	186.60	1,891.1	-210.2	-13.5	14,264,196.75	1,784,359.90	39° 16' 40.323 N	80° 29' 28.786 W	
1,950.0	27.20	187.00	1,917.9	-223.6	-15.1	14,264,183.36	1,784,358.31	39° 16' 40.190 N	80° 29' 28.808 W	
1,980.0	28.50	187.30	1,944.5	-237.5	-16.8	14,264,169.46	1,784,356.56	39° 16' 40.053 N	80° 29' 28.831 W	
2,010.0	29.40	186.30	1,970.7	-251.9	-18.5	14,264,155.04	1,784,354.85	39° 16' 39.911 N	80° 29' 28.854 W	
2,040.0	29.50	184.40	1,996.8	-266.6	-19.9	14,264,140.35	1,784,353.47	39° 16' 39.765 N	80° 29' 28.872 W	
2,070.0	29.60	182.50	2,022.9	-281.3	-20.8	14,264,125.59	1,784,352.58	39° 16' 39.620 N	80° 29' 28.884 W	
2,100.0	29.90	181.30	2,049.0	-296.2	-21.3	14,264,110.71	1,784,352.09	39° 16' 39.472 N	80° 29' 28.892 W	
2,130.0	30.60	181.80	2,074.9	-311.3	-21.7	14,264,095.60	1,784,351.68	39° 16' 39.323 N	80° 29' 28.898 W	
2,160.0	31.40	182.90	2,100.6	-326.8	-22.3	14,264,080.16	1,784,351.04	39° 16' 39.171 N	80° 29' 28.907 W	
2,190.0	31.60	184.70	2,126.2	-342.4	-23.4	14,264,064.53	1,784,350.00	39° 16' 39.016 N	80° 29' 28.922 W	
2,220.0	31.40	185.00	2,151.8	-358.0	-24.7	14,264,048.91	1,784,348.68	39° 16' 38.862 N	80° 29' 28.940 W	
2,250.0	31.20	184.80	2,177.4	-373.5	-26.0	14,264,033.38	1,784,347.35	39° 16' 38.708 N	80° 29' 28.958 W	
2,280.0	30.80	185.00	2,203.1	-388.9	-27.3	14,264,017.98	1,784,346.03	39° 16' 38.556 N	80° 29' 28.976 W	
2,310.0	30.40	185.40	2,228.9	-404.1	-28.7	14,264,002.78	1,784,344.64	39° 16' 38.406 N	80° 29' 28.994 W	
2,340.0	30.60	185.80	2,254.8	-419.3	-30.2	14,263,987.62	1,784,343.16	39° 16' 38.256 N	80° 29' 29.014 W	
2,370.0	31.40	186.40	2,280.5	-434.7	-31.8	14,263,972.26	1,784,341.52	39° 16' 38.104 N	80° 29' 29.036 W	
2,400.0	32.30	186.70	2,306.0	-450.4	-33.7	14,263,956.53	1,784,339.71	39° 16' 37.949 N	80° 29' 29.060 W	
2,430.0	33.10	185.90	2,331.2	-466.5	-35.4	14,263,940.42	1,784,337.93	39° 16' 37.790 N	80° 29' 29.084 W	
2,460.0	33.10	184.90	2,356.4	-482.8	-37.0	14,263,924.11	1,784,336.39	39° 16' 37.628 N	80° 29' 29.105 W	
2,490.0	33.00	184.40	2,381.5	-499.1	-38.3	14,263,907.81	1,784,335.06	39° 16' 37.467 N	80° 29' 29.123 W	
2,520.0	33.20	184.10	2,406.6	-515.5	-39.5	14,263,891.47	1,784,333.85	39° 16' 37.306 N	80° 29' 29.140 W	
2,550.0	32.60	182.20	2,431.8	-531.7	-40.4	14,263,875.20	1,784,332.95	39° 16' 37.145 N	80° 29' 29.152 W	
2,580.0	31.80	179.90	2,457.2	-547.7	-40.7	14,263,859.22	1,784,332.66	39° 16' 36.987 N	80° 29' 29.157 W	
2,610.0	31.70	180.60	2,482.7	-563.5	-40.8	14,263,843.43	1,784,332.59	39° 16' 36.831 N	80° 29' 29.159 W	
2,640.0	32.20	182.70	2,508.2	-579.4	-41.2	14,263,827.57	1,784,332.13	39° 16' 36.674 N	80° 29' 29.166 W	
2,670.0	32.70	183.70	2,533.5	-595.4	-42.1	14,263,811.49	1,784,331.23	39° 16' 36.515 N	80° 29' 29.179 W	
2,700.0	33.00	185.10	2,558.7	-611.7	-43.4	14,263,795.27	1,784,329.98	39° 16' 36.355 N	80° 29' 29.196 W	
2,730.0	33.00	184.80	2,583.9	-627.9	-44.8	14,263,778.99	1,784,328.57	39° 16' 36.194 N	80° 29' 29.215 W	
2,760.0	33.00	184.00	2,609.0	-644.2	-46.0	14,263,762.70	1,784,327.32	39° 16' 36.033 N	80° 29' 29.232 W	
2,790.0	32.90	182.90	2,634.2	-660.5	-47.0	14,263,746.41	1,784,326.33	39° 16' 35.872 N	80° 29' 29.245 W	
2,820.0	32.30	181.40	2,659.5	-676.7	-47.6	14,263,730.26	1,784,325.73	39° 16' 35.712 N	80° 29' 29.254 W	



**DDC**  
Survey Report - Geographic



<b>Company:</b>	HG Energy, LLC	<b>Local Co-ordinate Reference:</b>	Well A. Stonestreet #124
<b>Project:</b>	Harrison County, West Virginia	<b>TVD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Site:</b>	A Stonestreet #124	<b>MD Reference:</b>	WELL @ 1236.0usft (Decker #6)
<b>Well:</b>	A. Stonestreet #124	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,850.0	31.60	180.40	2,684.9	-692.5	-47.9	14,263,714.39	1,784,325.47	39° 16' 35.555 N	80° 29' 29.259 W
2,880.0	30.80	178.70	2,710.6	-708.1	-47.8	14,263,698.85	1,784,325.59	39° 16' 35.402 N	80° 29' 29.258 W
2,910.0	29.70	176.80	2,736.5	-723.2	-47.2	14,263,683.75	1,784,326.18	39° 16' 35.253 N	80° 29' 29.252 W
2,940.0	29.30	176.90	2,762.6	-737.9	-46.4	14,263,669.00	1,784,327.00	39° 16' 35.107 N	80° 29' 29.243 W
2,970.0	28.90	176.90	2,788.8	-752.5	-45.6	14,263,654.43	1,784,327.78	39° 16' 34.963 N	80° 29' 29.234 W
2,980.0	28.90	177.70	2,797.6	-757.3	-45.4	14,263,649.61	1,784,328.01	39° 16' 34.915 N	80° 29' 29.231 W
3,000.0	28.60	178.50	2,815.1	-766.9	-45.0	14,263,639.99	1,784,328.33	39° 16' 34.820 N	80° 29' 29.228 W
3,030.0	28.50	179.70	2,841.5	-781.3	-44.8	14,263,625.66	1,784,328.56	39° 16' 34.678 N	80° 29' 29.226 W
3,060.0	28.70	180.60	2,867.8	-795.6	-44.8	14,263,611.30	1,784,328.52	39° 16' 34.536 N	80° 29' 29.227 W
3,090.0	28.90	181.00	2,894.1	-810.1	-45.0	14,263,596.84	1,784,328.32	39° 16' 34.393 N	80° 29' 29.231 W
3,120.0	29.20	180.60	2,920.3	-824.6	-45.2	14,263,582.28	1,784,328.11	39° 16' 34.249 N	80° 29' 29.235 W
3,150.0	29.40	180.50	2,946.5	-839.3	-45.4	14,263,567.60	1,784,327.97	39° 16' 34.104 N	80° 29' 29.237 W
3,200.0	29.40	180.50	2,990.1	-863.9	-45.6	14,263,543.05	1,784,327.76	39° 16' 33.861 N	80° 29' 29.242 W

TD @ 3200' MD / 2990' TVD

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
900.0	900.0	0.0	0.0	Tie In @ 900' MD / 900' TVD
3,200.0	2,990.1	-863.9	-45.6	TD @ 3200' MD / 2990' TVD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

A. Stonestreet #124  
 Harrison County, West Virginia  
 Q130983 & AM-13923  
 Design #1

Company Name: HG Energy, LLC  
 A. Stonestreet #124  
 Harrison County, West Virginia  
 Rig: Decker #6  
 Created By: James Dawson  
 Date: 12/11/2013

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



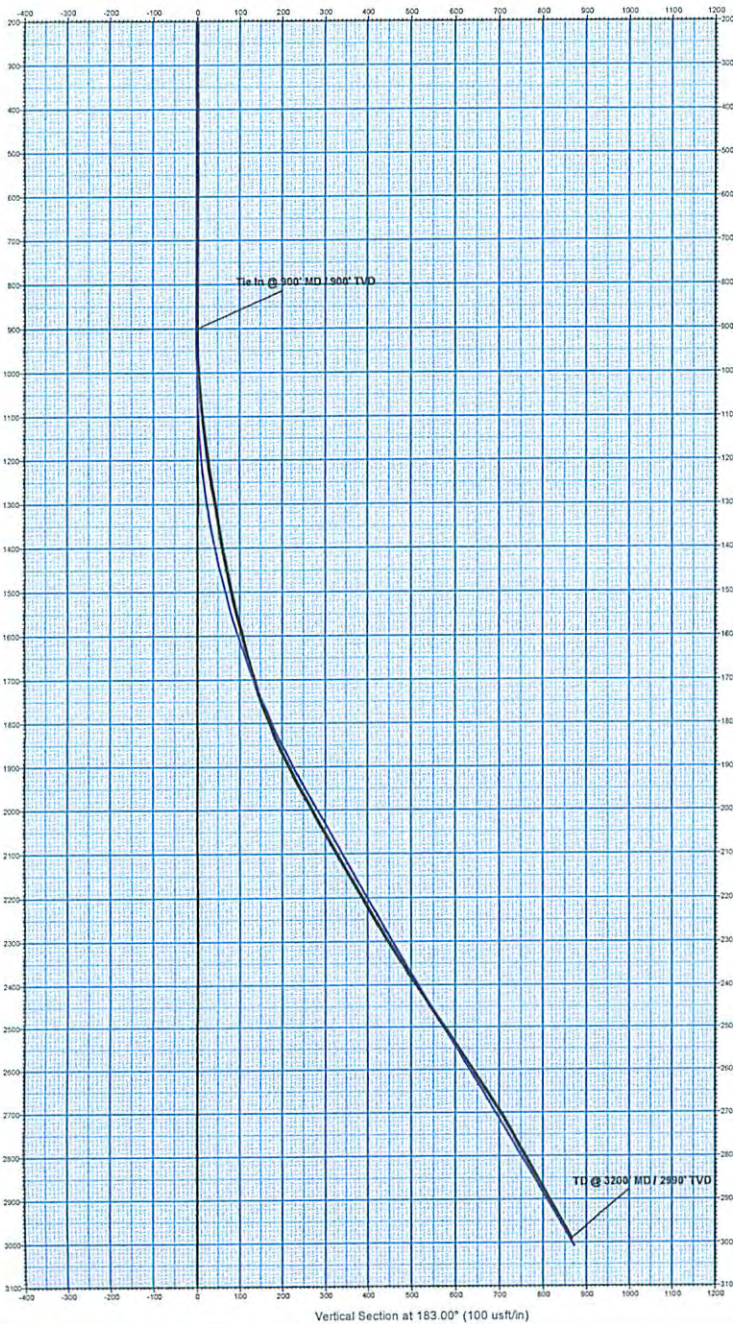
# HG Energy

WELL DETAILS: A. Stonestreet #124

		Ground Level: 1228.0			
+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14264405.92	1784373.58	$39^\circ 16' 42.400'' N$	$80^\circ 29' 29.600'' W$

ANNOTATIONS

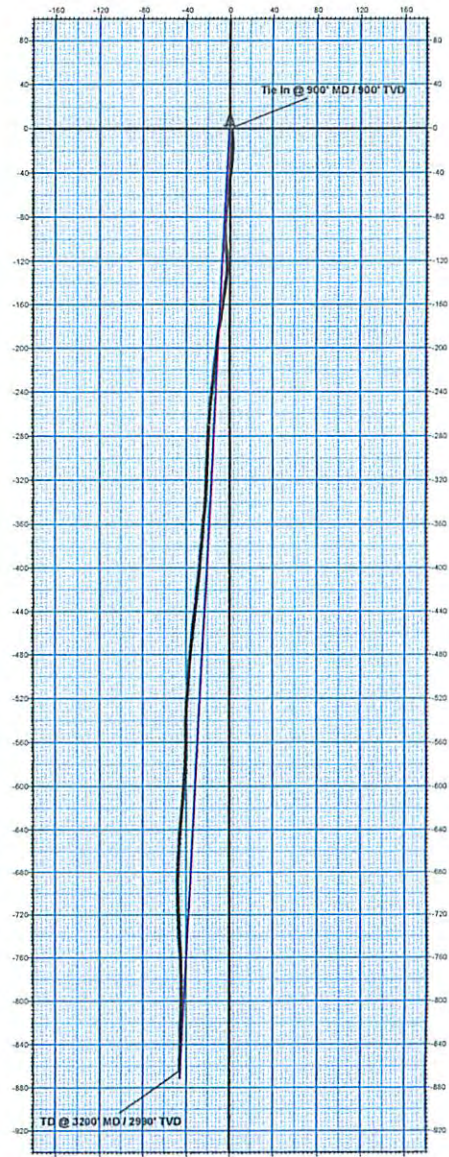
MD	Inc	Azi	TVD	+N-S	+E-W	Vsect	Departure	Annotation
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.0	Tie In @ 900' MD / 900' TVD
3200.0	29.40	180.00	2930.1	-83.9	-15.6	866.1	867.7	TD @ 3200' MD / 2990' TVD



DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
Target A. Stonestreet	2798.0	-749.0	-39.3	14263657.52	1784334.06	$39^\circ 16' 34.997'' N$	$80^\circ 29' 29.193'' W$

- plan hits target center



02/28/2014