

HG Energy, LLC

Roane County, West Virginia

CB Ferrell #105

CB Ferrell #105

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

26 February, 2015

Received
Office of Oil & Gas
APR 09 2015



06/12/2015

Survey Report - Geographic



Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well CB Ferrell #105
Project:	Roane County, West Virginia	TVD Reference:	well @ 1118.0usft (Decker 9)
Site:	CB Ferrell #105	MD Reference:	well @ 1118.0usft (Decker 9)
Well:	CB Ferrell #105	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 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	CB Ferrell #105				
Site Position:		Northing:	14,059,796.30 usft	Latitude:	38° 43' 2.000 N
From:	Lat/Long	Easting:	1,560,459.80 usft	Longitude:	81° 16' 49.200 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.18 °

Well	CB Ferrell #105					
Well Position	+N/-S	0.0 usft	Northing:	14,059,796.30 usft	Latitude:	38° 43' 2.000 N
	+E/-W	0.0 usft	Easting:	1,560,459.80 usft	Longitude:	81° 16' 49.200 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	1,110.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/23/2015	-8.03	66.36	51,980

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		59.83

Survey Program	Date	2/26/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
500.0	2,509.0	MWD SURVEY (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	14,059,796.30	1,560,459.80	38° 43' 2.000 N	81° 16' 49.200 W
500.0	0.00	0.00	500.0	0.0	0.0	14,059,796.30	1,560,459.80	38° 43' 2.000 N	81° 16' 49.200 W
FIRST SURVEY @ 500' MD / 500' TVD									
591.0	1.60	136.60	591.0	-0.9	0.9	14,059,795.38	1,560,460.68	38° 43' 1.991 N	81° 16' 49.189 W
621.0	1.50	139.20	621.0	-1.5	1.4	14,059,794.78	1,560,461.22	38° 43' 1.985 N	81° 16' 49.182 W
651.0	2.10	113.30	651.0	-2.0	2.2	14,059,794.26	1,560,461.98	38° 43' 1.980 N	81° 16' 49.172 W
681.0	3.60	96.50	680.9	-2.4	3.6	14,059,793.94	1,560,463.42	38° 43' 1.977 N	81° 16' 49.154 W
711.0	5.90	88.30	710.8	-2.4	6.1	14,059,793.88	1,560,465.90	38° 43' 1.976 N	81° 16' 49.123 W
741.0	7.70	85.00	740.6	-2.2	9.6	14,059,794.10	1,560,469.45	38° 43' 1.979 N	81° 16' 49.078 W
771.0	9.00	82.80	770.3	-1.7	14.0	14,059,794.57	1,560,473.78	38° 43' 1.983 N	81° 16' 49.024 W
801.0	10.40	79.00	799.9	-0.9	19.0	14,059,795.38	1,560,478.76	38° 43' 1.991 N	81° 16' 48.961 W
831.0	10.80	77.60	829.3	0.2	24.4	14,059,796.50	1,560,484.17	38° 43' 2.003 N	81° 16' 48.893 W

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Well:	CB Ferrell #105	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
861.0	12.10	74.10	858.8	1.7	30.1	14,059,797.96	1,560,489.93	38° 43' 2.017 N	81° 16' 48.820 W	
891.0	12.50	72.40	888.1	3.5	36.2	14,059,799.81	1,560,496.05	38° 43' 2.036 N	81° 16' 48.743 W	
921.0	12.30	71.20	917.4	5.5	42.4	14,059,801.82	1,560,502.17	38° 43' 2.056 N	81° 16' 48.665 W	
951.0	12.10	72.00	946.7	7.5	48.4	14,059,803.82	1,560,508.19	38° 43' 2.076 N	81° 16' 48.590 W	
981.0	12.00	71.60	976.0	9.5	54.3	14,059,805.78	1,560,514.14	38° 43' 2.095 N	81° 16' 48.515 W	
1,011.0	12.60	69.30	1,005.3	11.6	60.4	14,059,807.92	1,560,520.16	38° 43' 2.117 N	81° 16' 48.439 W	
1,041.0	13.80	64.70	1,034.5	14.3	66.6	14,059,810.60	1,560,526.45	38° 43' 2.143 N	81° 16' 48.359 W	
1,071.0	14.60	61.10	1,063.6	17.7	73.2	14,059,813.96	1,560,533.00	38° 43' 2.177 N	81° 16' 48.277 W	
1,101.0	15.60	57.90	1,092.6	21.6	79.9	14,059,817.93	1,560,539.73	38° 43' 2.216 N	81° 16' 48.192 W	
1,131.0	16.20	55.20	1,121.4	26.2	86.8	14,059,822.46	1,560,546.58	38° 43' 2.261 N	81° 16' 48.106 W	
1,161.0	16.80	54.50	1,150.2	31.1	93.7	14,059,827.37	1,560,553.55	38° 43' 2.310 N	81° 16' 48.018 W	
1,191.0	16.90	54.20	1,178.9	36.1	100.8	14,059,832.44	1,560,560.61	38° 43' 2.360 N	81° 16' 47.929 W	
1,221.0	17.30	55.60	1,207.6	41.2	108.0	14,059,837.51	1,560,567.83	38° 43' 2.411 N	81° 16' 47.838 W	
1,251.0	18.30	56.80	1,236.2	46.3	115.6	14,059,842.61	1,560,575.45	38° 43' 2.461 N	81° 16' 47.742 W	
1,281.0	19.90	59.70	1,264.5	51.5	124.0	14,059,847.76	1,560,583.80	38° 43' 2.513 N	81° 16' 47.637 W	
1,311.0	21.70	60.90	1,292.5	56.7	133.3	14,059,853.04	1,560,593.06	38° 43' 2.565 N	81° 16' 47.520 W	
1,341.0	21.90	62.10	1,320.4	62.0	143.0	14,059,858.35	1,560,602.85	38° 43' 2.618 N	81° 16' 47.397 W	
1,371.0	21.50	61.20	1,348.3	67.3	152.8	14,059,863.62	1,560,612.61	38° 43' 2.670 N	81° 16' 47.274 W	
1,401.0	21.20	60.50	1,376.2	72.6	162.3	14,059,868.94	1,560,622.15	38° 43' 2.723 N	81° 16' 47.154 W	
1,431.0	22.30	60.10	1,404.1	78.1	172.0	14,059,874.45	1,560,631.80	38° 43' 2.778 N	81° 16' 47.032 W	
1,461.0	23.70	60.40	1,431.7	84.0	182.2	14,059,880.26	1,560,641.98	38° 43' 2.836 N	81° 16' 46.904 W	
1,491.0	25.10	61.10	1,459.0	90.0	193.0	14,059,886.32	1,560,652.80	38° 43' 2.896 N	81° 16' 46.768 W	
1,521.0	26.60	61.60	1,486.0	96.3	204.5	14,059,892.59	1,560,664.27	38° 43' 2.958 N	81° 16' 46.623 W	
1,551.0	28.40	60.90	1,512.6	102.9	216.6	14,059,899.25	1,560,676.42	38° 43' 3.025 N	81° 16' 46.470 W	
1,581.0	28.60	60.10	1,539.0	110.0	229.1	14,059,906.30	1,560,688.88	38° 43' 3.095 N	81° 16' 46.313 W	
1,611.0	28.30	59.00	1,565.4	117.2	241.4	14,059,913.54	1,560,701.20	38° 43' 3.167 N	81° 16' 46.158 W	
1,641.0	27.40	58.50	1,591.9	124.5	253.4	14,059,920.81	1,560,713.18	38° 43' 3.239 N	81° 16' 46.007 W	
1,671.0	27.20	56.30	1,618.6	131.9	265.0	14,059,928.22	1,560,724.77	38° 43' 3.312 N	81° 16' 45.861 W	
1,701.0	27.80	55.20	1,645.2	139.7	276.4	14,059,936.02	1,560,736.22	38° 43' 3.390 N	81° 16' 45.717 W	
1,731.0	29.00	55.60	1,671.5	147.8	288.2	14,059,944.12	1,560,747.96	38° 43' 3.470 N	81° 16' 45.569 W	
1,761.0	30.70	57.50	1,697.6	156.0	300.6	14,059,952.34	1,560,760.42	38° 43' 3.552 N	81° 16' 45.412 W	
1,791.0	31.70	58.20	1,723.2	164.3	313.8	14,059,960.61	1,560,773.58	38° 43' 3.634 N	81° 16' 45.246 W	
1,821.0	31.80	56.40	1,748.7	172.8	327.1	14,059,969.14	1,560,786.86	38° 43' 3.719 N	81° 16' 45.079 W	
1,851.0	32.30	55.20	1,774.2	181.8	340.2	14,059,978.09	1,560,800.03	38° 43' 3.808 N	81° 16' 44.913 W	
1,881.0	33.00	54.90	1,799.4	191.1	353.5	14,059,987.36	1,560,813.30	38° 43' 3.900 N	81° 16' 44.746 W	
1,911.0	32.20	53.80	1,824.7	200.5	366.6	14,059,996.78	1,560,826.43	38° 43' 3.993 N	81° 16' 44.580 W	
1,941.0	30.50	52.70	1,850.3	209.8	379.1	14,060,006.12	1,560,838.94	38° 43' 4.086 N	81° 16' 44.423 W	
1,971.0	30.30	51.90	1,876.2	219.1	391.1	14,060,015.40	1,560,850.95	38° 43' 4.178 N	81° 16' 44.272 W	
2,001.0	29.90	52.60	1,902.2	228.3	403.0	14,060,024.61	1,560,862.84	38° 43' 4.270 N	81° 16' 44.122 W	
2,031.0	29.70	55.00	1,928.2	237.1	415.1	14,060,033.41	1,560,874.87	38° 43' 4.357 N	81° 16' 43.970 W	
2,061.0	29.60	55.70	1,954.3	245.6	427.3	14,060,041.85	1,560,887.08	38° 43' 4.441 N	81° 16' 43.816 W	
2,091.0	30.00	55.90	1,980.3	253.9	439.6	14,060,050.23	1,560,899.41	38° 43' 4.524 N	81° 16' 43.661 W	
2,121.0	30.30	56.10	2,006.2	262.4	452.1	14,060,058.66	1,560,911.90	38° 43' 4.608 N	81° 16' 43.504 W	
2,151.0	30.50	55.90	2,032.1	270.8	464.7	14,060,067.15	1,560,924.49	38° 43' 4.692 N	81° 16' 43.345 W	
2,181.0	30.70	55.60	2,057.9	279.4	477.3	14,060,075.74	1,560,937.11	38° 43' 4.778 N	81° 16' 43.186 W	
2,211.0	30.90	55.40	2,083.7	288.1	490.0	14,060,084.44	1,560,949.77	38° 43' 4.864 N	81° 16' 43.027 W	
2,241.0	31.20	54.90	2,109.4	297.0	502.7	14,060,093.29	1,560,962.47	38° 43' 4.952 N	81° 16' 42.867 W	
2,301.0	31.40	54.50	2,160.7	315.0	528.1	14,060,111.30	1,560,987.91	38° 43' 5.131 N	81° 16' 42.547 W	
2,331.0	29.60	53.70	2,186.5	323.9	540.4	14,060,120.22	1,561,000.24	38° 43' 5.219 N	81° 16' 42.391 W	
2,361.0	28.30	52.30	2,212.8	332.7	552.0	14,060,128.96	1,561,011.84	38° 43' 5.306 N	81° 16' 42.245 W	
2,421.0	26.70	51.20	2,266.0	349.8	573.8	14,060,146.10	1,561,033.60	38° 43' 5.476 N	81° 16' 41.971 W	
2,451.0	22.80	48.60	2,293.2	357.9	583.4	14,060,154.17	1,561,043.22	38° 43' 5.556 N	81° 16' 41.850 W	
2,509.0	22.80	48.60	2,346.7	372.7	600.3	14,060,169.04	1,561,060.08	38° 43' 5.704 N	81° 16' 41.638 W	

TD @ 2509' MD / 2347' TVD

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Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well CB Ferrell #105
Project:	Roane County, West Virginia	TVD Reference:	well @ 1118.0usft (Decker 9)
Site:	CB Ferrell #105	MD Reference:	well @ 1118.0usft (Decker 9)
Well:	CB Ferrell #105	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM Compass

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 SURVEY @ 500' MD / 500' TVD
2,509.0	2,346.7	372.7	600.3	TD @ 2509' MD / 2347' TVD

Checked By: _____ Approved By: _____ Date: _____

HG Energy, LLC
Roane County, West Virginia
CB Ferrell #105
CB Ferrell #105
Wellbore #1

Design: Wellbore #1

HG Energy EOW Report

26 February, 2015





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Well: CB Ferrell #105
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference:
TVD Reference: Well CB Ferrell #105
MD Reference: well @ 1118.0usft (Decker 9)
North Reference: well @ 1118.0usft (Decker 9)
Survey Calculation Method: Grid
Database: Minimum Curvature
 EDM Compass

Survey	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	0.00	0.0	0.0	0.0	0.0	0.00	0.00
	500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.0	0.00	0.00
FIRST SURVEY @ 500' MD / 500' TVD										
	591.0	1.60	136.60	591.0	-0.9	0.9	0.3	1.76	1.3	136.60
	621.0	1.50	139.20	621.0	-1.5	1.4	0.5	0.41	2.1	137.09
	651.0	2.10	113.30	651.0	-2.0	2.2	0.9	3.32	3.0	133.11
	681.0	3.60	96.50	680.9	-2.4	3.6	1.9	5.67	4.3	123.14
	711.0	5.90	88.30	710.8	-2.4	6.1	4.1	7.97	6.6	111.68
	741.0	7.70	85.00	740.6	-2.2	9.6	7.2	6.14	9.9	102.87
	771.0	9.00	82.80	770.3	-1.7	14.0	11.2	4.46	14.1	97.08
	801.0	10.40	79.00	799.9	-0.9	19.0	15.9	5.13	19.0	92.79
	831.0	10.80	77.60	829.3	0.2	24.4	21.2	1.59	24.4	89.54
	861.0	12.10	74.10	858.8	1.7	30.1	26.9	4.91	30.2	86.84
	891.0	12.50	72.40	888.1	3.5	36.2	33.1	1.80	36.4	84.48
	921.0	12.30	71.20	917.4	5.5	42.4	39.4	1.09	42.7	82.58
	951.0	12.10	72.00	946.7	7.5	48.4	45.6	0.87	49.0	81.17
	981.0	12.00	71.60	976.0	9.5	54.3	51.7	0.43	55.2	80.11
	1,011.0	12.60	69.30	1,005.3	11.6	60.4	58.0	2.58	61.5	79.11
	1,041.0	13.80	64.70	1,034.5	14.3	66.6	64.8	5.31	68.2	77.89
	1,071.0	14.60	61.10	1,063.6	17.7	73.2	72.2	3.97	75.3	76.44
	1,101.0	15.60	57.90	1,092.6	21.6	79.9	80.0	4.34	82.8	74.86
	1,131.0	16.20	55.20	1,121.4	26.2	86.8	88.2	3.17	90.6	73.22
	1,161.0	16.80	54.50	1,150.2	31.1	93.7	96.7	2.11	98.8	71.66
	1,191.0	16.90	54.20	1,178.9	36.1	100.8	105.3	0.44	107.1	70.28
	1,221.0	17.30	55.60	1,207.6	41.2	108.0	114.1	1.91	115.6	69.12
	1,251.0	18.30	56.80	1,236.2	46.3	115.6	123.3	3.55	124.6	68.18
	1,281.0	19.90	59.70	1,264.5	51.5	124.0	133.1	6.20	134.3	67.46

06/12/2015



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North Reference: Grid
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Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)
	1,311.0	21.70	60.90	1,292.5	56.7	133.3	143.7	6.17	144.8	66.94
	1,341.0	21.90	62.10	1,320.4	62.0	143.0	154.9	1.63	155.9	66.55
	1,371.0	21.50	61.20	1,348.3	67.3	152.8	165.9	1.73	167.0	66.22
	1,401.0	21.20	60.50	1,376.2	72.6	162.3	176.9	1.31	177.9	65.90
	1,431.0	22.30	60.10	1,404.1	78.1	172.0	188.0	3.70	188.9	65.57
	1,461.0	23.70	60.40	1,431.7	84.0	182.2	199.7	4.68	200.6	65.26
	1,491.0	25.10	61.10	1,459.0	90.0	193.0	212.1	4.77	212.9	65.00
	1,521.0	26.60	61.60	1,486.0	96.3	204.5	225.2	5.05	226.0	64.78
	1,551.0	28.40	60.90	1,512.6	102.9	216.6	239.0	6.10	239.8	64.58
	1,581.0	28.60	60.10	1,539.0	110.0	229.1	253.3	1.44	254.1	64.35
	1,611.0	28.30	59.00	1,565.4	117.2	241.4	267.6	2.01	268.4	64.10
	1,641.0	27.40	58.50	1,591.9	124.5	253.4	281.6	3.10	282.3	63.83
	1,671.0	27.20	56.30	1,618.6	131.9	265.0	295.4	3.43	296.0	63.53
	1,701.0	27.80	55.20	1,645.2	139.7	276.4	309.2	2.62	309.7	63.18
	1,731.0	29.00	55.60	1,671.5	147.8	288.2	323.4	4.05	323.9	62.84
	1,761.0	30.70	57.50	1,697.6	156.0	300.6	338.3	6.48	338.7	62.57
	1,791.0	31.70	58.20	1,723.2	164.3	313.8	353.8	3.55	354.2	62.36
	1,821.0	31.80	56.40	1,748.7	172.8	327.1	369.6	3.17	369.9	62.15
	1,851.0	32.30	55.20	1,774.2	181.8	340.2	385.5	2.70	385.7	61.88
	1,881.0	33.00	54.90	1,799.4	191.1	353.5	401.6	2.39	401.8	61.61
	1,911.0	32.20	53.80	1,824.7	200.5	366.6	417.7	3.32	417.9	61.33
	1,941.0	30.50	52.70	1,850.3	209.8	379.1	433.2	5.98	433.3	61.04
	1,971.0	30.30	51.90	1,876.2	219.1	391.1	448.3	1.51	448.3	60.74
	2,001.0	29.90	52.60	1,902.2	228.3	403.0	463.2	1.77	463.2	60.47
	2,031.0	29.70	55.00	1,928.2	237.1	415.1	478.0	4.03	478.0	60.26
	2,061.0	29.60	55.70	1,954.3	245.6	427.3	492.8	1.20	492.8	60.11
	2,091.0	30.00	55.90	1,980.3	253.9	439.6	507.7	1.37	507.7	59.99

06/12/2015



HG Energy EOW Report

Company: HG Energy, LLC
 Project: Roane County, West Virginia
 Site: CB Ferrell #105
 Well: CB Ferrell #105
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference:
 TVD Reference: Well CB Ferrell #105
 MD Reference: well @ 1118.0usft (Decker 9)
 North Reference: well @ 1118.0usft (Decker 9)
 Survey Calculation Method: Grid
 Database: Minimum Curvature
 EDM Compass

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)
2,121.0	30.30	56.10	2,006.2	262.4	452.1	522.7	1.05	522.7	59.87
2,151.0	30.50	55.90	2,032.1	270.8	464.7	537.9	0.75	537.9	59.76
2,181.0	30.70	55.60	2,057.9	279.4	477.3	553.1	0.84	553.1	59.65
2,211.0	30.90	55.40	2,083.7	288.1	490.0	568.4	0.75	568.4	59.54
2,241.0	31.20	54.90	2,109.4	297.0	502.7	583.8	1.32	583.8	59.42
2,301.0	31.40	54.50	2,160.7	315.0	528.1	614.9	0.48	614.9	59.19
2,331.0	29.60	53.70	2,186.5	323.9	540.4	630.0	6.15	630.1	59.06
2,361.0	28.30	52.30	2,212.8	332.7	552.0	644.4	4.89	644.5	58.93
2,421.0	26.70	51.20	2,266.0	349.8	573.8	671.9	2.80	672.0	58.63
2,451.0	22.80	48.60	2,293.2	357.9	583.4	684.2	13.49	684.4	58.47
2,509.0	22.80	48.60	2,346.7	372.7	600.3	706.3	0.00	706.6	58.16

TD @ 2509' MD / 2347' 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	FIRST SURVEY @ 500' MD / 500' TVD
	2,509.0	2,346.7	372.7	600.3	TD @ 2509' MD / 2347' TVD

Checked By: _____ Approved By: _____ Date: _____

Company Name: HG Energy, LLC
 CB Ferrell #105
 Roane County, West Virginia
 Rigi-Decker 9
 Created By: Jerry Arsenault
 Date: 2/26/2015

CB Ferrell #105
 Roane County, West Virginia
 Q150161 & AM-150144
 Design #1

DESIGN TARGET DETAILS

Name	TVD	+E/W	Northing	Eastng	Latitude	Longitude
PH16-C1	2161.0	301.5	518.7140809784	1550978.52	38° 45' 4.997 N	81° 15' 42.564 W
- plain hill target center						

ANNOTATIONS

MD	Inc	Adj	TVD	+E/W	Vsect	Departure	Annotation
2500.0	22.80	48.80	2346.7	372.7	693.3	714.0	TD @ 2500' MD / 2347' TVD
							FIRST SURVEY @ 500' MD / 500' TVD

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

WELL DETAILS: CB Ferrell #105
 11x5.0
 Ground Level: Northing Easting
 1405978.30 1550459.80
 38° 45' 2.00 N 81° 15' 42.20 W

Azimuths to Grid North
 True North: 0.17°
 Magnetic North: -7.86°

Magnetic Field
 Strength: 51980.4snT
 Dip Angle: 66.36°
 Date: 1/23/2015
 Model: IGRF2010



HG Energy

