



Nathaniel Mason No. 141
Lincoln County, WV
Noah Horn 294 Rig

December 17, 2021

RECEIVED
Office of Oil and Gas

MAR 03 2022

Survey Certification Report

WV Department of
Environmental Protection



Survey Certification Letter

December 17, 2021



Operator Name: HG Energy
Well Name: Nathaniel Mason No. 141
County/Parish: Lincoln County,
State: WV
Rig Name: Noah Horn 294
Job Number: LWW3175421

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

<u>Surveyor</u>	<u>Surveyed Depths</u>	<u>Projection to Bit</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
ProDirectional	537' MD – 2,667' MD	2,724' MD	12/13/21 – 12/14/21	MWD

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266
prodirectional.com

HG Energy LLC
 Lincoln County, West Virginia UTM
 Mason/Tackett/Fowler
 Nathaniel Mason #141
 Prelim D - Nathaniel Mason #141



Universal Transverse Mercator
 NAD83 West Virginia - HARN
 GRS 1980
 Zone 17N (84 W to 78 W)
 Mean Sea Level

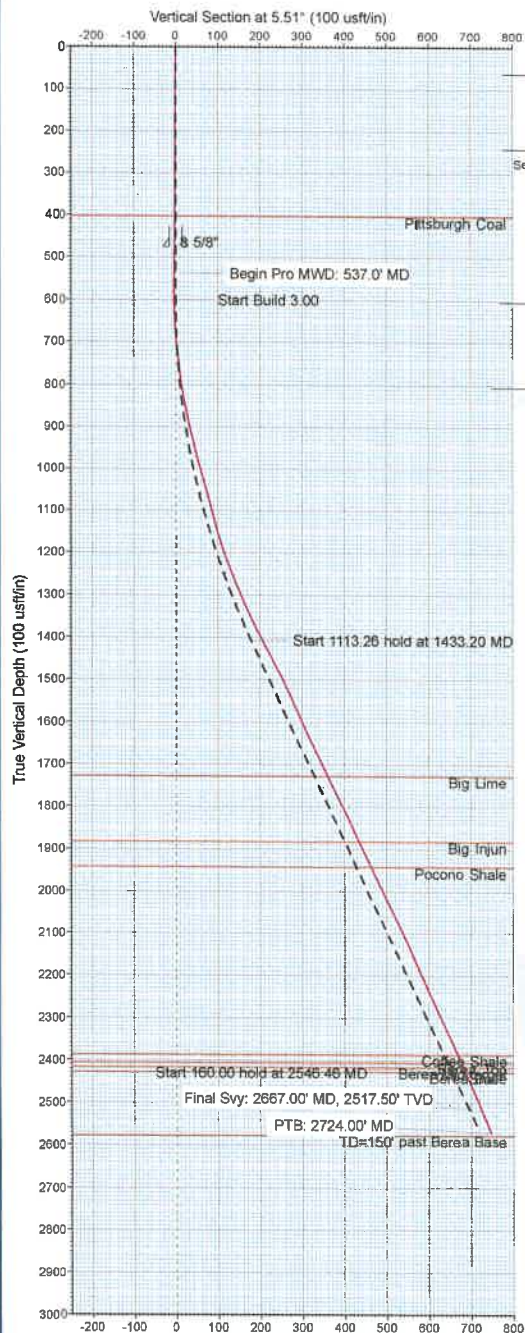


Azimuths to Grid North
 True North: 0.60°
 Magnetic North: -7.95°

Magnetic Field
 Strength: 51209.8nT
 Dip Angle: 65.33°
 Date: 11/25/2021
 Model: HDGM

Azimuth Corrections

Total Magnetic Corr. (M to G): Subtract 7.95°



RKB Elevation: 915+8=KB @ 923.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	13886425.50	1362480.90	38.237332	-81.968010	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00
3	1433.20	25.00	5.51	1407.02	178.06	17.16	3.00	5.51	178.88
4	2546.46	25.00	5.51	2416.01	646.30	62.30	0.00	0.00	649.30
5	2706.46	25.00	5.51	2561.02	713.60	68.78	0.00	0.00	716.90

Targets

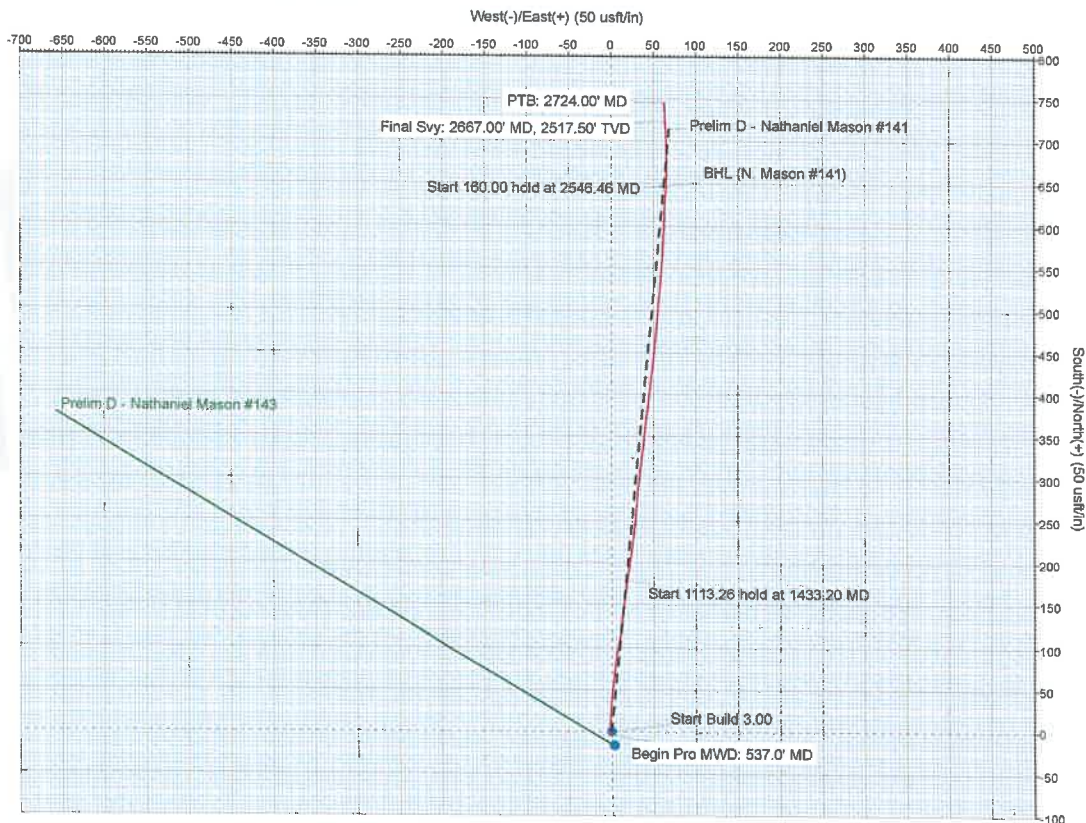
Name	TVD	+N/-S	+E/-W	Northing	Easting
BHL (N. Mason #141)	2577.00	646.30	62.30	13867071.80	1362543.20

Formations

TVDPATH	MDPATH	Formation
402.00	402.00	Pittsburgh Coal
1727.00	1786.25	Big Lime
1882.00	1957.26	Big Injun
1942.00	2023.47	Pocono Shale
2386.00	2513.35	Coffee Shale
2405.00	2534.31	Berea Top
2416.00	2546.45	Berea Mid target
2427.00	2558.59	Berea Base
2427.00	2558.59	Shale

Casing

TVD	MD	Name	Size
475.00	475.00	8 5/8"	8-5/8



36" x 48"

ProDirectional Survey Report

Company: HG Energy LLC	Local Co-ordinate Reference: Well Nathaniel Mason #141
Project: Lincoln County, West Virginia UTM83	TVD Reference: 915+8=KB @ 923.00usft
Site: Mason/Tackett/Fowler	MD Reference: 915+8=KB @ 923.00usft
Well: Nathaniel Mason #141	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Nathaniel Mason #141 Svy	Database: WellPlanner1

Project Lincoln County, West Virginia UTM83			
Map System: Universal Transverse Mercator (US Survey Feet)	System Datum: Mean Sea Level		
Geo Datum: NAD83 West Virginia - HARN			
Map Zone: Zone 17N (84 W to 78 W)			

Site Mason/Tackett/Fowler			
Site Position:	Northing:	13,883,128.40 usft	Latitude: 38.228441
From: Map	Easting:	1,368,294.51 usft	Longitude: -81.947647
Position Uncertainty: 0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: -0.59 °

Well Nathaniel Mason #141			
Well Position	North:	13,886,425.50 usft	Latitude: 38.237332
+N/-S 0.00 usft	Easting:	1,362,480.90 usft	Longitude: -81.968010
+E/-W 0.00 usft	Wellhead Elevation:	usft	Ground Level: 915.00 usft
Position Uncertainty 0.00 usft			

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/25/2021	-8.57	65.32	51,220.40

Design Nathaniel Mason #141 Svy				
Audit Notes:				
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00		
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	5.51

Survey Program Date 12/17/2021				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
537.00	2,724.00	Survey #1 (OH)	MWD	MWD - Standard

ProDirectional Survey Report

Company:	HG Energy LLC	Local Co-ordinate Reference:	Well Nathaniel Mason #141
Project:	Lincoln County, West Virginia UTM83	TVD Reference:	915+8=KB @ 923.00usft
Site:	Mason/Tackett/Fowler	MD Reference:	915+8=KB @ 923.00usft
Well:	Nathaniel Mason #141	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Nathaniel Mason #141 Svy	Database:	WellPlanner1

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13,886,425.50	1,362,480.90
537.00	0.80	193.70	536.98	-3.71	-3.64	-0.89	3.75	193.70	13,886,421.86	1,362,480.01
Begin Pro MWD: 537.0' MD										
567.00	0.96	192.70	566.98	-4.17	-4.09	-0.99	4.21	193.64	13,886,421.41	1,362,479.91
597.00	0.25	301.06	596.98	-4.39	-4.30	-1.10	4.44	194.39	13,886,421.20	1,362,479.80
627.00	1.77	354.65	626.97	-3.91	-3.81	-1.20	3.99	197.54	13,886,421.69	1,362,479.70
657.00	3.69	358.44	656.94	-2.49	-2.38	-1.27	2.70	208.13	13,886,423.12	1,362,479.63
687.00	5.40	356.99	686.84	-0.14	-0.01	-1.37	1.37	269.75	13,886,425.49	1,362,479.53
717.00	6.52	356.43	716.68	2.94	3.10	-1.55	3.47	333.41	13,886,428.60	1,362,479.35
747.00	7.42	359.66	746.46	6.55	6.74	-1.67	6.94	346.08	13,886,432.24	1,362,479.23
777.00	8.56	1.74	776.17	10.70	10.91	-1.61	11.03	351.58	13,886,436.41	1,362,479.29
807.00	9.46	3.81	805.79	15.40	15.60	-1.38	15.66	354.93	13,886,441.10	1,362,479.52
837.00	10.45	3.57	835.34	20.58	20.78	-1.05	20.80	357.11	13,886,446.28	1,362,479.85
867.00	11.23	4.64	864.81	26.22	26.40	-0.64	26.41	358.60	13,886,451.90	1,362,480.26
897.00	12.21	4.14	894.18	32.31	32.48	-0.18	32.48	359.68	13,886,457.98	1,362,480.72
927.00	12.92	4.25	923.46	38.84	38.99	0.30	38.99	0.44	13,886,464.49	1,362,481.20
957.00	14.22	4.00	952.62	45.87	46.01	0.80	46.02	1.00	13,886,471.51	1,362,481.70
987.00	15.64	6.47	981.61	53.60	53.70	1.52	53.73	1.62	13,886,479.20	1,362,482.42
1,017.00	16.19	8.43	1,010.46	61.82	61.86	2.59	61.91	2.39	13,886,487.36	1,362,483.49
1,047.00	16.25	7.36	1,039.27	70.19	70.16	3.74	70.26	3.05	13,886,495.66	1,362,484.64
1,077.00	15.44	6.97	1,068.13	78.38	78.29	4.76	78.43	3.48	13,886,503.79	1,362,485.66
1,107.00	13.96	6.26	1,097.14	85.99	85.85	5.64	86.03	3.76	13,886,511.35	1,362,486.54
1,137.00	13.86	7.54	1,126.27	93.20	93.01	6.50	93.23	4.00	13,886,518.51	1,362,487.40
1,167.00	15.80	10.25	1,155.26	100.86	100.59	7.70	100.88	4.38	13,886,526.09	1,362,488.60
1,197.00	18.47	10.28	1,183.93	109.67	109.29	9.28	109.68	4.85	13,886,534.79	1,362,490.18
1,227.00	20.38	8.76	1,212.22	119.62	119.12	10.92	119.62	5.24	13,886,544.62	1,362,491.82
1,257.00	21.22	6.84	1,240.27	130.27	129.68	12.36	130.27	5.45	13,886,555.18	1,362,493.26

ProDirectional Survey Report

Company: HG Energy LLC	Local Co-ordinate Reference: Well Nathaniel Mason #141
Project: Lincoln County, West Virginia UTM83	TVD Reference: 915+8=KB @ 923.00usft
Site: Mason/Tackett/Fowler	MD Reference: 915+8=KB @ 923.00usft
Well: Nathaniel Mason #141	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Nathaniel Mason #141 Svy	Database: WellPlanner1

Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
1,287.00	22.56	5.87		1,268.10	141.45	140.79	13.60	141.45	5.52	13,886,566.29	1,362,494.50	
1,317.00	23.63	6.46		1,295.70	153.22	152.49	14.86	153.22	5.57	13,886,577.99	1,362,495.76	
1,347.00	24.71	7.80		1,323.07	165.49	164.68	16.39	165.49	5.68	13,886,590.18	1,362,497.29	
1,377.00	25.38	8.30		1,350.25	178.18	177.26	18.17	178.18	5.85	13,886,602.76	1,362,499.07	
1,407.00	26.46	8.50		1,377.23	191.28	190.23	20.09	191.29	6.03	13,886,615.73	1,362,500.99	
1,437.00	27.22	8.95		1,404.00	204.80	203.62	22.14	204.82	6.21	13,886,629.12	1,362,503.04	
1,467.00	27.64	8.70		1,430.62	218.60	217.27	24.26	218.62	6.37	13,886,642.77	1,362,505.16	
1,497.00	27.76	6.90		1,457.19	232.53	231.09	26.15	232.56	6.46	13,886,656.59	1,362,507.05	
1,527.00	26.93	5.90		1,483.83	246.31	244.78	27.69	246.34	6.45	13,886,670.28	1,362,508.59	
1,557.00	25.37	4.99		1,510.76	259.53	257.94	28.95	259.56	6.40	13,886,683.44	1,362,509.85	
1,617.00	24.25	5.73		1,565.22	284.70	283.01	31.30	284.73	6.31	13,886,708.51	1,362,512.20	
1,647.00	24.75	6.44		1,592.52	297.14	295.38	32.62	297.17	6.30	13,886,720.88	1,362,513.52	
1,677.00	24.79	6.97		1,619.76	309.71	307.86	34.08	309.74	6.32	13,886,733.36	1,362,514.98	
1,707.00	25.16	7.27		1,646.96	322.37	320.43	35.65	322.41	6.35	13,886,745.93	1,362,516.55	
1,737.00	25.52	6.53		1,674.07	335.21	333.18	37.20	335.25	6.37	13,886,758.68	1,362,518.10	
1,767.00	25.50	6.37		1,701.15	348.13	346.01	38.65	348.17	6.37	13,886,771.51	1,362,519.55	
1,797.00	25.73	6.39		1,728.20	361.09	358.90	40.09	361.14	6.37	13,886,784.40	1,362,520.99	
1,827.00	25.98	6.80		1,755.20	374.18	371.90	41.59	374.22	6.38	13,886,797.40	1,362,522.49	
1,857.00	26.37	7.37		1,782.12	387.40	385.03	43.22	387.45	6.41	13,886,810.53	1,362,524.12	
1,887.00	25.95	6.98		1,809.05	400.62	398.16	44.88	400.68	6.43	13,886,823.66	1,362,525.78	
1,917.00	25.15	6.20		1,836.11	413.56	411.01	46.36	413.61	6.44	13,886,836.51	1,362,527.26	
1,947.00	25.31	6.17		1,863.25	426.35	423.72	47.74	426.40	6.43	13,886,849.22	1,362,528.64	
1,977.00	25.51	6.10		1,890.35	439.22	436.52	49.12	439.27	6.42	13,886,862.02	1,362,530.02	
2,007.00	25.37	5.98		1,917.44	452.11	449.34	50.47	452.16	6.41	13,886,874.84	1,362,531.37	
2,037.00	25.46	5.81		1,944.54	464.98	462.14	51.80	465.04	6.39	13,886,887.64	1,362,532.70	
2,067.00	25.87	5.65		1,971.58	477.97	475.07	53.09	478.03	6.38	13,886,900.57	1,362,533.99	
2,097.00	25.61	5.66		1,998.60	491.00	488.04	54.38	491.06	6.36	13,886,913.54	1,362,535.28	

ProDirectional Survey Report

Company: HG Energy LLC	Local Co-ordinate Reference: Well Nathaniel Mason #141
Project: Lincoln County, West Virginia UTM83	TVD Reference: 915+8=KB @ 923.00usft
Site: Mason/Tackett/Fowler	MD Reference: 915+8=KB @ 923.00usft
Well: Nathaniel Mason #141	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Nathaniel Mason #141 Svy	Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
2,127.00	25.08	5.34	2,025.71	503.84	500.82	55.61	503.90	6.34	13,886,926.32	1,362,536.51	
2,157.00	24.74	5.01	2,052.92	516.48	513.40	56.75	516.53	6.31	13,886,938.90	1,362,537.65	
2,187.00	25.14	4.99	2,080.12	529.13	526.01	57.85	529.18	6.28	13,886,951.51	1,362,538.75	
2,217.00	24.81	4.63	2,107.32	541.79	538.63	58.91	541.84	6.24	13,886,964.13	1,362,539.81	
2,247.00	24.58	4.37	2,134.57	554.33	551.12	59.90	554.37	6.20	13,886,976.62	1,362,540.80	
2,277.00	23.95	3.77	2,161.92	566.65	563.42	60.77	566.69	6.16	13,886,988.92	1,362,541.67	
2,307.00	23.96	2.73	2,189.34	578.82	575.58	61.46	578.85	6.10	13,887,001.08	1,362,542.36	
2,337.00	24.16	2.23	2,216.73	591.04	587.80	61.99	591.06	6.02	13,887,013.30	1,362,542.89	
2,367.00	24.40	2.22	2,244.08	603.35	600.13	62.47	603.37	5.94	13,887,025.63	1,362,543.37	
2,397.00	24.18	2.39	2,271.42	615.67	612.46	62.97	615.68	5.87	13,887,037.96	1,362,543.87	
2,427.00	24.47	3.33	2,298.76	628.02	624.80	63.58	628.03	5.81	13,887,050.30	1,362,544.48	
2,457.00	25.19	4.20	2,325.99	640.61	637.37	64.41	640.61	5.77	13,887,062.87	1,362,545.31	
2,487.00	25.09	3.27	2,353.15	653.35	650.09	65.24	653.35	5.73	13,887,075.59	1,362,546.14	
2,517.00	24.26	0.83	2,380.41	665.85	662.60	65.69	665.85	5.66	13,887,088.10	1,362,546.59	
2,547.00	24.18	359.34	2,407.77	678.10	674.91	65.71	678.10	5.56	13,887,100.41	1,362,546.61	
2,577.00	24.39	358.96	2,435.11	690.36	687.24	65.53	690.36	5.45	13,887,112.74	1,362,546.43	
2,607.00	24.14	358.40	2,462.46	702.60	699.57	65.25	702.60	5.33	13,887,125.07	1,362,546.15	
2,637.00	23.55	357.72	2,489.90	714.63	711.69	64.84	714.64	5.21	13,887,137.19	1,362,545.74	
2,667.00	22.61	356.53	2,517.50	726.26	723.43	64.25	726.28	5.08	13,887,148.93	1,362,545.15	
Final Svy: 2667.00' MD, 2517.50' TVD											
2,724.00	22.61	356.53	2,570.12	747.91	745.31	62.92	747.96	4.83	13,887,170.81	1,362,543.82	
PTB: 2724.00' MD											

ProDirectional Survey Report

Company: HG Energy LLC	Local Co-ordinate Reference: Well Nathaniel Mason #141
Project: Lincoln County, West Virginia UTM83	TVD Reference: 915+8=KB @ 923.00usft
Site: Mason/Tackett/Fowler	MD Reference: 915+8=KB @ 923.00usft
Well: Nathaniel Mason #141	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Nathaniel Mason #141 Svy	Database: WellPlanner1

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
537.00	536.98	-3.64	-0.89	Begin Pro MWD: 537.0' MD	
2,667.00	2,517.50	723.43	64.25	Final Svy: 2667.00' MD, 2517.50' TVD	
2,724.00	2,570.12	745.31	62.92	PTB: 2724.00' MD	

ProDirectional Survey Report

Company: HG Energy LLC	Local Co-ordinate Reference: Well Nathaniel Mason #141
Project: Lincoln County, West Virginia UTM83	TVD Reference: 915+8=KB @ 923.0ft
Site: Mason/Tackett/Fowler	MD Reference: 915+8=KB @ 923.0ft
Well: Nathaniel Mason #141	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Nathaniel Mason #141 Svy	Database: WellPlanner1

Project Lincoln County, West Virginia UTM83			
Map System: Universal Transverse Mercator (US Survey Feet)	System Datum:		Mean Sea Level
Geo Datum: NAD83 West Virginia - HARN			
Map Zone: Zone 17N (84 W to 78 W)			

Site Mason/Tackett/Fowler				
Site Position:	Northing:	4,231,586.00 m	Latitude:	38° 13' 42.388 N
From: Map	Easting:	417,057.00 m	Longitude:	81° 56' 51.529 W
Position Uncertainty: 0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.59 °

Well Nathaniel Mason #141						
Well Position	+N/-S	0.0 ft	Northing:	4,232,590.96 m	Latitude:	38° 14' 14.395 N
	+E/-W	0.0 ft	Easting:	415,285.01 m	Longitude:	81° 58' 4.835 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	915.0 ft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/25/2021	-8.57	65.32	51,220.40000000

Design Nathaniel Mason #141 Svy					
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	5.51	

Survey Program Date 12/17/2021					
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
537.0	2,724.0	Survey #1 (OH)	MWD	MWD - Standard	

ProDirectional Survey Report

Company: HG Energy LLC
Project: Lincoln County, West Virginia UTM83
Site: Mason/Tackett/Fowler
Well: Nathaniel Mason #141
Wellbore: OH
Design: Nathaniel Mason #141 Svy

Local Co-ordinate Reference: Well Nathaniel Mason #141
TVD Reference: 915+8=KB @ 923.0ft
MD Reference: 915+8=KB @ 923.0ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey												
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (m)	Easting (m)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	4,232,590.96	415,285.01		
537.0	0.80	193.70	537.0	-3.7	-3.6	-0.9	3.7	193.70	4,232,589.85	415,284.74		
Begin Pro MWD: 537.0' MD												
567.0	0.96	192.70	567.0	-4.2	-4.1	-1.0	4.2	193.64	4,232,589.71	415,284.71		
597.0	0.25	301.06	597.0	-4.4	-4.3	-1.1	4.4	194.39	4,232,589.65	415,284.67		
627.0	1.77	354.65	627.0	-3.9	-3.8	-1.2	4.0	197.54	4,232,589.80	415,284.64		
657.0	3.69	358.44	656.9	-2.5	-2.4	-1.3	2.7	208.13	4,232,590.23	415,284.62		
687.0	5.40	356.99	686.8	-0.1	0.0	-1.4	1.4	269.75	4,232,590.96	415,284.59		
717.0	6.52	356.43	716.7	2.9	3.1	-1.6	3.5	333.41	4,232,591.90	415,284.54		
747.0	7.42	359.66	746.5	6.5	6.7	-1.7	6.9	346.08	4,232,593.01	415,284.50		
777.0	8.56	1.74	776.2	10.7	10.9	-1.6	11.0	351.58	4,232,594.28	415,284.52		
807.0	9.46	3.81	805.8	15.4	15.6	-1.4	15.7	354.93	4,232,595.71	415,284.59		
837.0	10.45	3.57	835.3	20.6	20.8	-1.0	20.8	357.11	4,232,597.29	415,284.69		
867.0	11.23	4.64	864.8	26.2	26.4	-0.6	26.4	358.60	4,232,599.01	415,284.81		
897.0	12.21	4.14	894.2	32.3	32.5	-0.2	32.5	359.68	4,232,600.86	415,284.95		
927.0	12.92	4.25	923.5	38.8	39.0	0.3	39.0	0.44	4,232,602.84	415,285.10		
957.0	14.22	4.00	952.6	45.9	46.0	0.8	46.0	1.00	4,232,604.98	415,285.25		
987.0	15.64	6.47	981.6	53.6	53.7	1.5	53.7	1.62	4,232,607.33	415,285.47		
1,017.0	16.19	8.43	1,010.5	61.8	61.9	2.6	61.9	2.39	4,232,609.81	415,285.80		
1,047.0	16.25	7.36	1,039.3	70.2	70.2	3.7	70.3	3.05	4,232,612.34	415,286.15		
1,077.0	15.44	6.97	1,068.1	78.4	78.3	4.8	78.4	3.48	4,232,614.82	415,286.46		
1,107.0	13.96	6.26	1,097.1	86.0	85.8	5.6	86.0	3.76	4,232,617.12	415,286.73		
1,137.0	13.86	7.54	1,126.3	93.2	93.0	6.5	93.2	4.00	4,232,619.31	415,286.99		
1,167.0	15.80	10.25	1,155.3	100.9	100.6	7.7	100.9	4.38	4,232,621.62	415,287.36		
1,197.0	18.47	10.28	1,183.9	109.7	109.3	9.3	109.7	4.85	4,232,624.27	415,287.84		
1,227.0	20.38	8.76	1,212.2	119.6	119.1	10.9	119.6	5.24	4,232,627.27	415,288.34		
1,257.0	21.22	6.84	1,240.3	130.3	129.7	12.4	130.3	5.45	4,232,630.48	415,288.78		

ProDirectional Survey Report

Company: HG Energy LLC		Local Co-ordinate Reference: Well Nathaniel Mason #141
Project: Lincoln County, West Virginia UTM83		TVD Reference: 915+8=KB @ 923.0ft
Site: Mason/Tackett/Fowler		MD Reference: 915+8=KB @ 923.0ft
Well: Nathaniel Mason #141		North Reference: Grid
Wellbore: OH		Survey Calculation Method: Minimum Curvature
Design: Nathaniel Mason #141 Svy		Database: WellPlanner1

Survey												
MD (ft)	Inc (°)	Azi (azimuth) (°)		TVD (ft)	V. Sec (ft)		N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (m)	Easting (m)
1,287.0	22.56	5.87		1,268.1	141.4		140.8	13.6	141.4	5.52	4,232,633.87	415,289.15
1,317.0	23.63	6.46		1,295.7	153.2		152.5	14.9	153.2	5.57	4,232,637.44	415,289.54
1,347.0	24.71	7.80		1,323.1	165.5		164.7	16.4	165.5	5.68	4,232,641.15	415,290.01
1,377.0	25.38	8.30		1,350.3	178.2		177.3	18.2	178.2	5.85	4,232,644.99	415,290.55
1,407.0	26.46	8.50		1,377.2	191.3		190.2	20.1	191.3	6.03	4,232,648.94	415,291.13
1,437.0	27.22	8.95		1,404.0	204.8		203.6	22.1	204.8	6.21	4,232,653.02	415,291.76
1,467.0	27.64	8.70		1,430.6	218.6		217.3	24.3	218.6	6.37	4,232,657.18	415,292.40
1,497.0	27.76	6.90		1,457.2	232.5		231.1	26.2	232.6	6.46	4,232,661.39	415,292.98
1,527.0	26.93	5.90		1,483.8	246.3		244.8	27.7	246.3	6.45	4,232,665.57	415,293.45
1,557.0	25.37	4.99		1,510.8	259.5		257.9	28.9	259.6	6.40	4,232,669.58	415,293.83
1,617.0	24.25	5.73		1,565.2	284.7		283.0	31.3	284.7	6.31	4,232,677.22	415,294.55
1,647.0	24.75	6.44		1,592.5	297.1		295.4	32.6	297.2	6.30	4,232,680.99	415,294.95
1,677.0	24.79	6.97		1,619.8	309.7		307.9	34.1	309.7	6.32	4,232,684.79	415,295.40
1,707.0	25.16	7.27		1,647.0	322.4		320.4	35.7	322.4	6.35	4,232,688.62	415,295.88
1,737.0	25.52	6.53		1,674.1	335.2		333.2	37.2	335.2	6.37	4,232,692.51	415,296.35
1,767.0	25.50	6.37		1,701.2	348.1		346.0	38.6	348.2	6.37	4,232,696.42	415,296.79
1,797.0	25.73	6.39		1,728.2	361.1		358.9	40.1	361.1	6.37	4,232,700.35	415,297.23
1,827.0	25.98	6.80		1,755.2	374.2		371.9	41.6	374.2	6.38	4,232,704.31	415,297.69
1,857.0	26.37	7.37		1,782.1	387.4		385.0	43.2	387.5	6.41	4,232,708.32	415,298.18
1,887.0	25.95	6.98		1,809.0	400.6		398.2	44.9	400.7	6.43	4,232,712.32	415,298.69
1,917.0	25.15	6.20		1,836.1	413.6		411.0	46.4	413.6	6.44	4,232,716.23	415,299.14
1,947.0	25.31	6.17		1,863.3	426.3		423.7	47.7	426.4	6.43	4,232,720.11	415,299.56
1,977.0	25.51	6.10		1,890.4	439.2		436.5	49.1	439.3	6.42	4,232,724.01	415,299.98
2,007.0	25.37	5.98		1,917.4	452.1		449.3	50.5	452.2	6.41	4,232,727.92	415,300.39
2,037.0	25.46	5.81		1,944.5	465.0		462.1	51.8	465.0	6.39	4,232,731.82	415,300.80
2,067.0	25.87	5.65		1,971.6	478.0		475.1	53.1	478.0	6.38	4,232,735.76	415,301.19
2,097.0	25.61	5.66		1,998.6	491.0		488.0	54.4	491.1	6.36	4,232,739.71	415,301.58

ProDirectional Survey Report

Company: HG Energy LLC
Project: Lincoln County, West Virginia UTM83
Site: Mason/Tackett/Fowler
Well: Nathaniel Mason #141
Wellbore: OH
Design: Nathaniel Mason #141 Svy

Local Co-ordinate Reference: Well Nathaniel Mason #141
TVD Reference: 915+8=KB @ 923.0ft
MD Reference: 915+8=KB @ 923.0ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey												
MD (ft)	Inc (°)	Azi (azimuth) (°)		TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (m)	Easting (m)	
2,127.0	25.08	5.34		2,025.7	503.8	500.8	55.6	503.9	6.34	4,232,743.61	415,301.96	
2,157.0	24.74	5.01		2,052.9	516.5	513.4	56.7	516.5	6.31	4,232,747.44	415,302.31	
2,187.0	25.14	4.99		2,080.1	529.1	526.0	57.8	529.2	6.28	4,232,751.28	415,302.64	
2,217.0	24.81	4.63		2,107.3	541.8	538.6	58.9	541.8	6.24	4,232,755.13	415,302.97	
2,247.0	24.58	4.37		2,134.6	554.3	551.1	59.9	554.4	6.20	4,232,758.94	415,303.27	
2,277.0	23.95	3.77		2,161.9	566.7	563.4	60.8	566.7	6.16	4,232,762.69	415,303.53	
2,307.0	23.96	2.73		2,189.3	578.8	575.6	61.5	578.9	6.10	4,232,766.39	415,303.74	
2,337.0	24.16	2.23		2,216.7	591.0	587.8	62.0	591.1	6.02	4,232,770.12	415,303.90	
2,367.0	24.40	2.22		2,244.1	603.4	600.1	62.5	603.4	5.94	4,232,773.88	415,304.05	
2,397.0	24.18	2.39		2,271.4	615.7	612.5	63.0	615.7	5.87	4,232,777.63	415,304.20	
2,427.0	24.47	3.33		2,298.8	628.0	624.8	63.6	628.0	5.81	4,232,781.40	415,304.39	
2,457.0	25.19	4.20		2,326.0	640.6	637.4	64.4	640.6	5.77	4,232,785.23	415,304.64	
2,487.0	25.09	3.27		2,353.2	653.3	650.1	65.2	653.4	5.73	4,232,789.10	415,304.89	
2,517.0	24.26	0.83		2,380.4	665.8	662.6	65.7	665.8	5.66	4,232,792.92	415,305.03	
2,547.0	24.18	359.34		2,407.8	678.1	674.9	65.7	678.1	5.56	4,232,796.67	415,305.04	
2,577.0	24.39	358.96		2,435.1	690.4	687.2	65.5	690.4	5.45	4,232,800.43	415,304.98	
2,607.0	24.14	358.40		2,462.5	702.6	699.6	65.2	702.6	5.33	4,232,804.19	415,304.90	
2,637.0	23.55	357.72		2,489.9	714.6	711.7	64.8	714.6	5.21	4,232,807.88	415,304.77	
2,667.0	22.61	356.53		2,517.5	726.3	723.4	64.2	726.3	5.08	4,232,811.46	415,304.59	
Final Svy: 2667.00' MD, 2517.50' TVD												
2,724.0	22.61	356.53		2,570.1	747.9	745.3	62.9	748.0	4.83	4,232,818.13	415,304.19	
PTB: 2724.00' MD												

ProDirectional Survey Report

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Site: Mason/Tackett/Fowler	MD Reference: 915+8=KB @ 923.0ft
Well: Nathaniel Mason #141	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: Nathaniel Mason #141 Svy	Database: WellPlanner1

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
537.0	537.0	-3.6	-0.9	Begin Pro MWD: 537.0' MD
2,667.0	2,517.5	723.4	64.2	Final Svy: 2667.00' MD, 2517.50' TVD
2,724.0	2,570.1	745.3	62.9	PTB: 2724.00' MD