

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: Longworth M06H

API: 47 - 051 - 01916

Submission:  Initial  Amended

Notes:

RECEIVED  
Office of Oil and Gas

NOV 18 2022

WV Department of  
Environmental Protection

12/16/2022

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-051-01916 County Marshall District Clay  
Quad Glen Easton Pad Name Longworth Field/Pool Name N/A  
Farm name Graham H. Longworth Jr. Well Number Longworth M06H  
Operator (as registered with the OOG) EQT CHAP LLC  
Address 2400 Ansys Drive, Suite 200 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,410,832.91 Easting 523,393.42  
Landing Point of Curve Northing 4,410,152.24 Easting 523,026.66  
Bottom Hole Northing 4,407,754.84 Easting 524,953.84

Elevation (ft) 1270' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)

Synthetic Oil Based Mud 12.5 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phosphates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 01/29/2018 Date drilling commenced 08/30/2017 Date drilling ceased 04/01/2018  
Date completion activities began 06/11/2022 Date completion activities ceased 08/19/2022  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A RECEIVED  
Office of Oil and Gas

NOV 18 2022

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 99,605 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1576,1998,2102,2139 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 583,853 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

WV Department of Environmental Protection  
**APPROVED**  
Reviewed by: Sh  
12/13/2022  
**12/16/2022**

API 47- 051 - 01916 Farm name Graham H. Longworth Jr. Well number Longworth M06H

CASING STRINGS	Hole Size	Casing Size	Depth (GL)	New or Used	Grade wt/ft	Basket Depth(s) (GL)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	20"	40'	NEW	X-52 218#	N/A	Y
Surface	17-1/2"	13-3/8"	623'	NEW	J-55 54.5#	N/A	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	2189'	NEW	L-80 40#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	17,769'	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has a calculated TOC of 1780' GL, which is greater than 500' TVD above the producing formation. No issues during cement job.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (GL)	WOC (hrs)
Conductor	CLASS A	17BBLS	N/A	N/A	N/A	0	8+
Surface	CLASS A	483	15.6	1.20	579	0	8
Coal							
Intermediate 1	CLASS A	780	15.6	1.19	928	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H/CLASS H	776/2300	14.7/15.2	1.14/1.15	884/2645	1780	8+
Tubing							

Drillers TD (ft) 17,812' Loggers TD (ft) N/A  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 2483'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No  Conventional  Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

CONDUCTOR- NONE \_\_\_\_\_  
 SURFACE- ON SHOE TRACK AND EVERY 500' TO SURFACE \_\_\_\_\_  
 INTERMEDIATE: ON SHOE TRACK AND EVERY 500' FEET TO SURFACE \_\_\_\_\_  
 PRODUCTION: ON SHOE TRACK AND EVERY JOINT TO ABOVE TOC \_\_\_\_\_

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

RECEIVED  
Office of Oil and Gas

NOV 18 2022

WV Department of  
Environmental Protection

API 47- 051 - 01916

Farm name Graham H. Longworth Jr.

Well number Longworth M06H

**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

**ATTACHED**

Please insert additional pages as applicable.

**STIMULATION INFORMATION PER STAGE**

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)

**ATTACHED**

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of Environmental Protection

Please insert additional pages as applicable.

API 47- 051 - 01916 Farm name Graham H. Longworth Jr. Well number Longworth M06H

PRODUCING FORMATION(S)	DEPTHS	
	TVD	MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs  
 OPEN FLOW Gas 5280.67 mcfpd Oil 0 bpd NGL 0 bpd Water 42.49 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

Please insert additional pages as applicable.

Drilling Contractor Highlands Drilling LLC  
 Address 900 Virginia Street East City Charleston State WV Zip 25301  
 Logging Company Baker Hughes  
 Address 400 Technology Dr Suite 100 City Canonsburg State PA Zip 15317  
 Cementing Company BJ Services  
 Address 1036 East Main Street City Bridgeport State WV Zip 26330  
 Cementing Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please insert additional pages as applicable.

Completed by Adam Hughey Telephone 724-575-5475  
 Signature \_\_\_\_\_ Title Director of Completions Date 2022-11-12

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

API 47- 051 - 01916 Farm name Graham H. Longworth Jr. Well number Longworth M06H

Drilling Contractor Precision Drilling  
Address 10350 Richmond Ave. Suite 700 City Houston State TX Zip 77042

Logging Company Scientific Drilling International  
Address 124 Vista Drive City Charleroi State PA Zip 15022

Logging Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Stimulation Contractor US Well Services LLC  
Address 770 S Post Oak Ln Ste 405 City Houston State TX Zip 77056

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

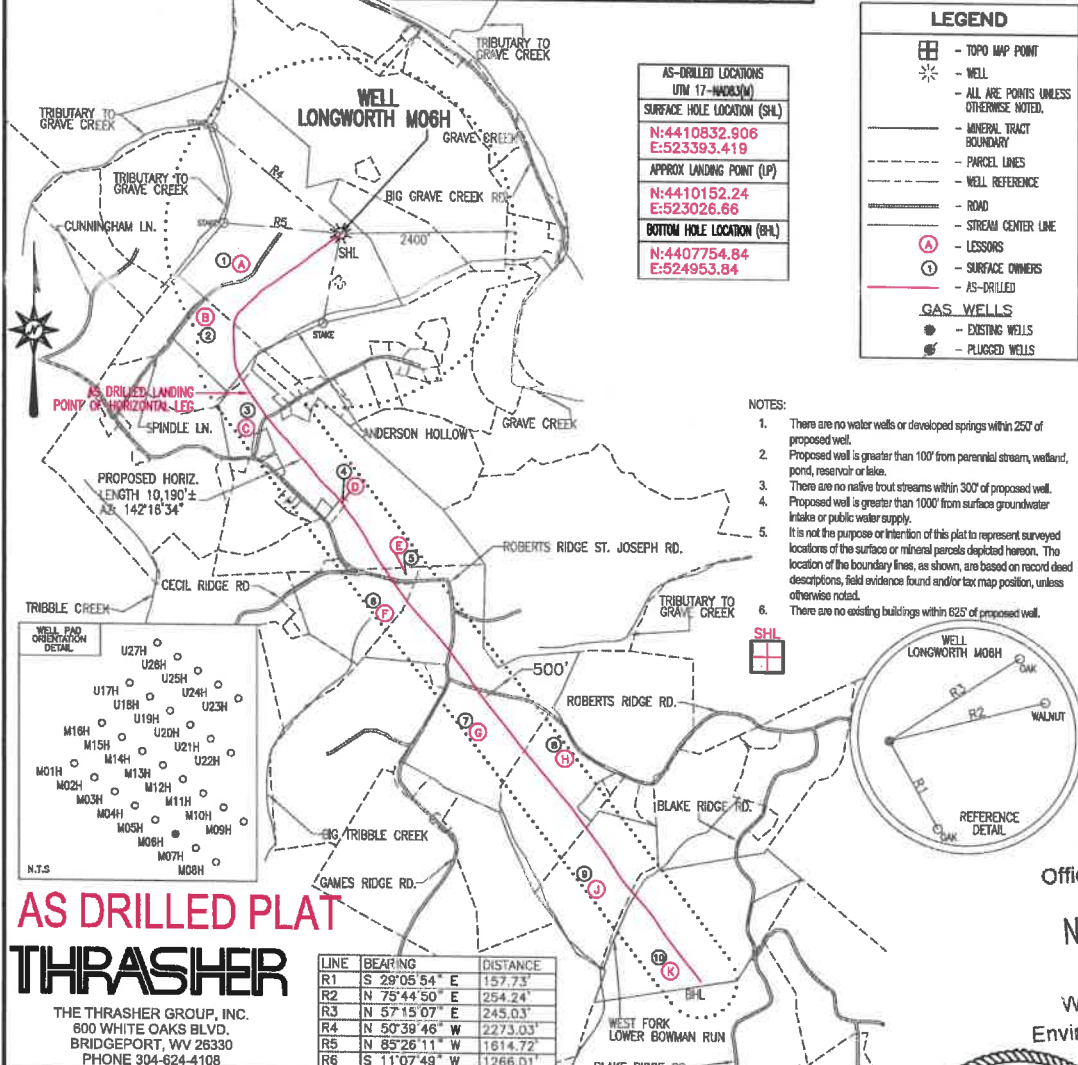
Well # Longworth M06H Final Formations API# 47-051-01916				
Formation Name	Drill Top MD (ftGRD)	Drill Top (TVD) (ftGRD)	Drill Btm MD (ftGRD)	Drill Btm (TVD) (ftGRD)
Sand/Shale	1	1	583	583
Waynesburg Coal	583	583	583	583
Sand/Shale	583	583	853	853
Pittsburgh Coal	853	853	858	858
Sand/Shale	858	858	1,872	1,870
Big Lime	1,872	1,870	2,100	2,097
Big Injun	2,100	2,097	2,182	2,179
Sand/Shale	2,182	2,179	2,819	2,815
Gantz	2,819	2,815	2,880	2,875
Gordon	2,880	2,875	2,960	2,954
50F	2,960	2,954	3,009	3,001
Sand/Shale	3,009	3,001	3,088	3,078
Bayard	3,088	3,078	3,453	3,417
Sand/Shale	3,453	3,417	5,255	4,916
Alexander	5,255	4,916	5,692	5,285
Elks	5,692	5,285	6,860	6,209
Sonyea	6,860	6,209	6,979	6,292
Middlesex	6,979	6,292	7,017	6,318
Genesee	7,017	6,318	7,099	6,369
Geneseo	7,099	6,369	7,139	6,392
Tully	7,139	6,392	7,234	6,441
Hamilton	7,234	6,441	7,407	6,506
Marcellus	7,407	6,506	17,812	6,702

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

12/16/2022

BHL is located on topo map 5,098 feet south of Latitude: 39° 50' 00"  
 SHL is located on topo map 10,158 feet south of Latitude: 39° 52' 30"

**SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS**



# AS DRILLED PLAT THRASHER

THE THRASHER GROUP, INC.  
 800 WHITE OAKS BLVD.  
 BRIDGEPORT, WV 26330  
 PHONE 304-624-4108

LINE	BEARING	DISTANCE
R1	S 29°05'54" E	157.73'
R2	N 75°44'50" E	254.24'
R3	N 57°15'07" E	245.03'
R4	N 50°39'46" W	2273.03'
R5	N 85°26'11" W	1614.72'
R6	S 11°07'49" W	1266.01'

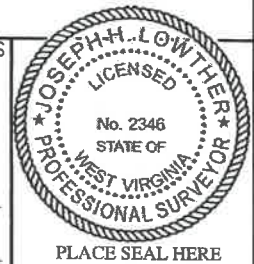
- NOTES:
- There are no water wells or developed springs within 250' of proposed well.
  - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  - There are no native trout streams within 300' of proposed well.
  - Proposed well is greater than 1000' from surface groundwater intake or public water supply.
  - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
  - There are no existing buildings within 625' of proposed well.

**LEGEND**

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- ROAD
- STREAM CENTER LINE
- LESSORS
- SURFACE OWNERS
- AS-DRILLED
- GAS WELLS
  - EXISTING WELLS
  - PLUGGED WELLS

BHL is located on topo map 5,169 feet west of Longitude: 80° 42' 30"  
 SHL is located on topo map 5,169 feet west of Longitude: 80° 42' 30"

RECEIVED  
 Office of Oil and Gas  
 NOV 18 2022  
 WV Department of  
 Environmental Protection



FILE #: LONGWORTH M06H - AS-DRILLED  
 DRAWING #: LONGWORTH M06H - AS-DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *Joseph H. Lowther*  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2346

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

DATE: FEBRUARY 23, 2021

OPERATOR'S WELL #: LONGWORTH M06H - AS-DRILLED

API WELL #: 47 51 01916  
 STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1295'

COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'

SURFACE OWNER: GRAHAM H. LONGWORTH, JR. ACREAGE: 123.589±

OIL & GAS ROYALTY OWNER: GRAHAM H. LONGWORTH, JR. ACREAGE: 541.818±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE

(SPECIFY): AS-DRILLED PLAT

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,727± TMD: 17,837±

WELL OPERATOR EQT CHAP LLC DESIGNATED AGENT JOSEPH C. MALLOW  
 Address 400 WOODCLIFF DRIVE Address 115 PROFESSIONAL PLACE, PO BOX 280  
 City CANONSBURG State PA Zip Code 15317 City BRIDGEPORT State WV Zip Code 26330

12/16/2022



**LONGWORTH**  
**M06H**  
**PAGE 2 OF 2**  
**AS DRILLED**

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH, JR. ET AL	4-11/1
B	HOLMES CWC LEGACY LLC	4-11/55
C	CLINT E. FLOWERS ET AL	4-11/56
D	THOMAS O. RICHMOND ET UX	4-11/56.1
E	STEPHANIE L. GATTS	4-11/58
F	CHARLES R. KERNAN ET UX	9-1/19
G	SHANNON ROGER HUBBS ET UX	9-1/21
H	DEAN B. COLVIN	9-1/22.2
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARLYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE, FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK - POA CAROL HULL	
	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO, JR. ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLA BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	
J	THOMAS B. CLARK ET UX	9-4/9.1
K	THOMAS B. CLARK ET UX	9-5/2

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH, JR.	4-11/1
2	HOLMES-CWC-LEGACY LLC	4-11/55
3	CLINT E. & BRENT B. FLOWERS	4-11/56
4	THOMAS O. RICHMOND, ET UX.	4-11/56.1
5	KENNETH A. MAYHUGH, B & SHELBY E. HARRIS	4-11/58
6	CHAS R. & EDITH V. KERNAN	9-1/19
7	CNX LAND RESOURCES INC.	9-1/21
8	GEORGE CHRIS LAGOS, ET UX.	9-1/22.2
9	THOMAS B. CLARK, ET UX.	9-4/9.1
10	THOMAS B. CLARK, ET UX.	9-5/2

AS-DRILLED LOCATIONS	
UTM 17-WAD83(M)	
SURFACE HOLE LOCATION (SHL)	
N:4410832.906	E:523393.419
APPROX LANDING POINT (LP)	
N:4410152.24	E:523026.66
BOTTOM HOLE LOCATION (BHL)	
N:4407754.84	E:524953.84

RECEIVED  
Office of Oil and Gas  
**NOV 18 2022**  
WV Department of  
Environmental Protection



THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-824-4108

**FEBRUARY 23, 2021**

12/16/2022

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/11/2022
Job End Date:	8/1/2022
State:	West Virginia
County:	Marshall
API Number:	47-051-01916-00-00
Operator Name:	EQT Production
Well Name and Number:	Longworth A 6H
Latitude:	39.84719100
Longitude:	-80.72655180
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,727
Total Base Water Volume (gal):	21,200,214
Total Base Non Water Volume:	0



RECEIVED  
 Office of Oil and Gas  
 NOV 18 2022  
 WV Department of  
 Environmental Protection

## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	EQT	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.74781	None
Sand (Proppant)	EQT	Proppant	Silica Substrate	14808-60-7	100.00000	11.12766	None
Clearal 268	ChemStream	Biocide	Non-hazardous substances	Proprietary	80.00000	0.00899	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor	Non-hazardous substances	Proprietary	90.00000	0.00763	None
StimSTREAM FR 9800	ChemStream	Friction Reducer	Copolymer of 2-propenamide	Proprietary	30.00000	0.00403	None
StimSTREAM FR 9800	ChemStream	Friction Reducer	Petroleum Distillate	64742-47-8	20.00000	0.00179	None
15% HCl	US Well Services	Acid	Hydrogen Chloride	7647-01-0	15.00000	0.00126	None
Clearal 268	ChemStream	Biocide	Glutaraldehyde	111-30-8	20.00000	0.00056	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor					

			Bis(HexaMethylene Triamine Penta(Methylene Phosphonic Acid)(BHMT)	34690-00-1	10.00000	0.00009	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00002	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00002	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Pyridinium, 1-(phenylmethyl)-, ethyl methyl derivs., chlorides	68909-18-2	25.00000	0.00002	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Methanol	67-56-1	25.00000	0.00002	None
Clearal 268	ChemStream	Biocide					
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00001	None
Clearal 268	ChemStream	Biocide					
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00001	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Ethanoic Acid	64-19-7	15.00000	0.00001	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Ethoxylated Alcohols	68439-50-9	15.00000	0.00001	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Ammonium chloride ((NH4)Cl)	12125-02-9	1.00000	0.00000	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Proprietary	Proprietary	10.00000	0.00000	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Proprietary	Proprietary	10.00000	0.00000	None
Clearal 268	ChemStream	Biocide					
			Ethanol	64-17-5	1.50000	0.00000	None
OPTIINHIBIT PLUS	USWS	Corrosion Inhibitor					
			Ethoxylated Nonylphenols	127087-87-0	5.00000	0.00000	None

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

# Perforation Data

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

12/16/2022

Stage No.	Perforation Date	Stage Perforated From TMD Ft.	Stage Perforated To TMD Ft.	# of Perforations/Stage	Formation(s)
2	06/12/2022	17626	17448	40	Marcellus
3	06/12/2022	17429	17250	40	Marcellus
4	06/13/2022	17231	17053	40	Marcellus
5	06/14/2022	17034	16855	40	Marcellus
6	06/17/2022	16836	16658	40	Marcellus
7	06/17/2022	16639	16460	40	Marcellus
8	06/18/2022	16441	16263	40	Marcellus
9	06/18/2022	16244	16065	40	Marcellus
10	06/19/2022	16046	15868	40	Marcellus
11	06/19/2022	15849	15670	40	Marcellus
12	06/20/2022	15651	15473	40	Marcellus
13	06/20/2022	15454	15275	40	Marcellus
14	06/21/2022	15256	15078	40	Marcellus
15	06/21/2022	15059	14880	40	Marcellus
16	06/22/2022	14861	14683	40	Marcellus
17	06/22/2022	14664	14485	40	Marcellus
18	06/23/2022	14466	14288	40	Marcellus
19	06/23/2022	14269	14090	40	Marcellus
20	06/24/2022	14071	13893	40	Marcellus
21	06/25/2022	13874	13695	40	Marcellus
22	06/25/2022	13676	13498	40	Marcellus
23	06/26/2022	13479	13300	40	Marcellus
24	06/26/2022	13281	13103	40	Marcellus
25	06/27/2022	13084	12905	40	Marcellus
26	06/28/2022	12886	12708	40	Marcellus
27	06/28/2022	12689	12510	40	Marcellus
28	06/29/2022	12491	12313	40	Marcellus
29	06/29/2022	12294	12115	40	Marcellus
30	06/29/2022	12096	11918	40	Marcellus
31	06/30/2022	11899	11720	40	Marcellus
32	06/30/2022	11701	11523	40	Marcellus
33	07/01/2022	11504	11325	40	Marcellus
34	07/03/2022	11306	11128	40	Marcellus
35	07/03/2022	11109	10871	40	Marcellus
36	07/04/2022	10851	10668	40	Marcellus
37	07/04/2022	10649	10466	40	Marcellus
38	07/04/2022	10447	10264	40	Marcellus
39	07/05/2022	10245	10062	40	Marcellus
40	07/05/2022	10043	9880	40	Marcellus
41	07/06/2022	9841	9658	40	Marcellus
42	07/07/2022	9639	9456	40	Marcellus

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

12/16/2022

43	07/08/2022	9437	9254	40	Marcellus
44	07/08/2022	9235	9052	40	Marcellus
45	07/08/2022	9033	8850	40	Marcellus
46	07/09/2022	8831	8648	40	Marcellus
47	07/09/2022	8629	8446	40	Marcellus
48	07/09/2022	8427	8244	40	Marcellus
49	07/10/2022	8225	8042	40	Marcellus
50	07/10/2022	8023	7840	40	Marcellus
51	07/11/2022	7821	7638	40	Marcellus
52	07/12/2022	7619	7436	40	Marcellus

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

# Stimulation Data

RECEIVED  
Office of Oil and Gas

NOV 18 2022

WV Department of  
Environmental Protection

12/16/2022

Well_UID	Stage #	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
-015634	1	06/17/2022	66	8856	6030	3313	176180	4219	
-015634	2	06/12/2022	94	9142	5719	2975	440300	10653	
-015634	3	06/14/2022	99	9154	5698	4936	440300	9945	
-015634	4	06/14/2022	94	9135	5893	5220	440100	9914	
-015634	5	06/17/2022	97	9176	5785	5105	440060	9842	
-015634	6	06/17/2022	94	9230	4977	4458	440150	9843	
-015634	7	06/18/2022	99	9169	4601	4784	440120	9833	
-015634	8	06/18/2022	100	9321	3793	4934	440050	9834	
-015634	9	06/19/2022	100	9084	4867	4561	440140	9847	
-015634	10	06/19/2022	100	9395	4762	5201	440100	9855	
-015634	11	06/20/2022	100	9087	4566	4867	440180	9781	
-015634	12	06/20/2022	100	9329	4556	5480	440025	9813	
-015634	13	06/21/2022	99	9160	5020	5208	440100	9810	
-015634	14	06/21/2022	91	8415	5483	5892	440150	9924	
-015634	15	06/22/2022	100	9005	5577	6235	440160	9654	
-015634	16	06/22/2022	99	9286	5724	4773	440090	9660	
-015634	17	06/23/2022	100	8993	5539	5122	440060	9812	
-015634	18	06/23/2022	100	9275	5392	4804	440060	9763	
-015634	19	06/24/2022	100	9128	5521	5528	440040	9714	
-015634	20	06/25/2022	100	9066	5645	4961	440380	9711	
-015634	21	06/25/2022	99	9090	5861	5083	440060	9901	
-015634	22	06/26/2022	100	8977	6219	5131	440180	9712	
-015634	23	06/26/2022	94	9032	6123	5050	440100	9719	
-015634	24	06/27/2022	99	9004	6160	4838	440200	9707	
-015634	25	06/28/2022	95	8730	6205	5107	440250	9735	
-015634	26	06/28/2022	98	9098	5848	4689	440000	9804	
-015634	27	06/29/2022	98	9052	5664	4716	440200	9662	
-015634	28	06/29/2022	96	9121	5568	4713	440040	9673	
-015634	29	06/30/2022	100	8358	5778	5018	440200	9669	
-015634	30	06/30/2022	100	8333	5579	4635	440040	9650	
-015634	31	07/01/2022	95	8965	5696	4981	440250	9643	
-015634	32	07/01/2022	99	8566	5748	5051	440000	9627	
-015634	33	07/03/2022	100	8691	5567	4899	440300	9598	
-015634	34	07/03/2022	99	8534	5527	4973	440000	9618	
-015634	35	07/04/2022	70	8270	8337	5004	440075	12288	
-015634	36	07/04/2022	100	8864	5242	4820	440080	9834	
-015634	37	07/05/2022	100	8642	5521	5086	440200	9829	
-015634	38	07/05/2022	101	8498	5646	4921	440020	9814	
-015634	39	07/05/2022	100	8242	5702	4918	440100	9763	
-015634	40	07/06/2022	100	8115	4721	5077	440100	9757	
-015634	41	07/08/2022	100	8205	5452	4779	0	9740	

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

12/16/2022



---

-015634	42	07/08/2022	100	7971	5301	4830	440020	9739
-015634	43	07/08/2022	100	8212	5609	4650	440060	9728
-015634	44	07/09/2022	100	8346	5657	4778	440100	9717
-015634	45	07/09/2022	100	8230	5641	4629	440060	9709
-015634	46	07/09/2022	100	8330	6499	4744	440140	9696
-015634	47	07/10/2022	98	7884	5647	4833	440120	9699
-015634	48	07/10/2022	100	7786	5372	4753	440120	9683
-015634	49	07/10/2022	100	7644	7373	4425	440140	9670
-015634	50	07/11/2022	100	8020	6068	4449	440020	9679
-015634	51	07/12/2022	100	7759	6039	4626	440300	9657
-015634	52	07/12/2022	101	7939	7239	4590	440400	9620

RECEIVED  
Office of Oil and Gas  
NOV 18 2022  
WV Department of  
Environmental Protection

BHL is located on topo map 5,098 feet south of Latitude: 39° 50' 00"  
 SHL is located on topo map 10,158 feet south of Latitude: 39° 52' 30"

**SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS**

**LEGEND**

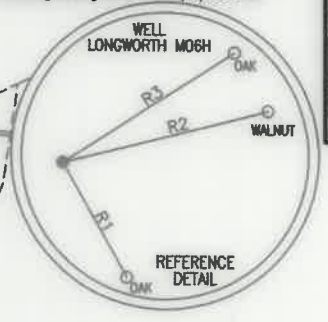
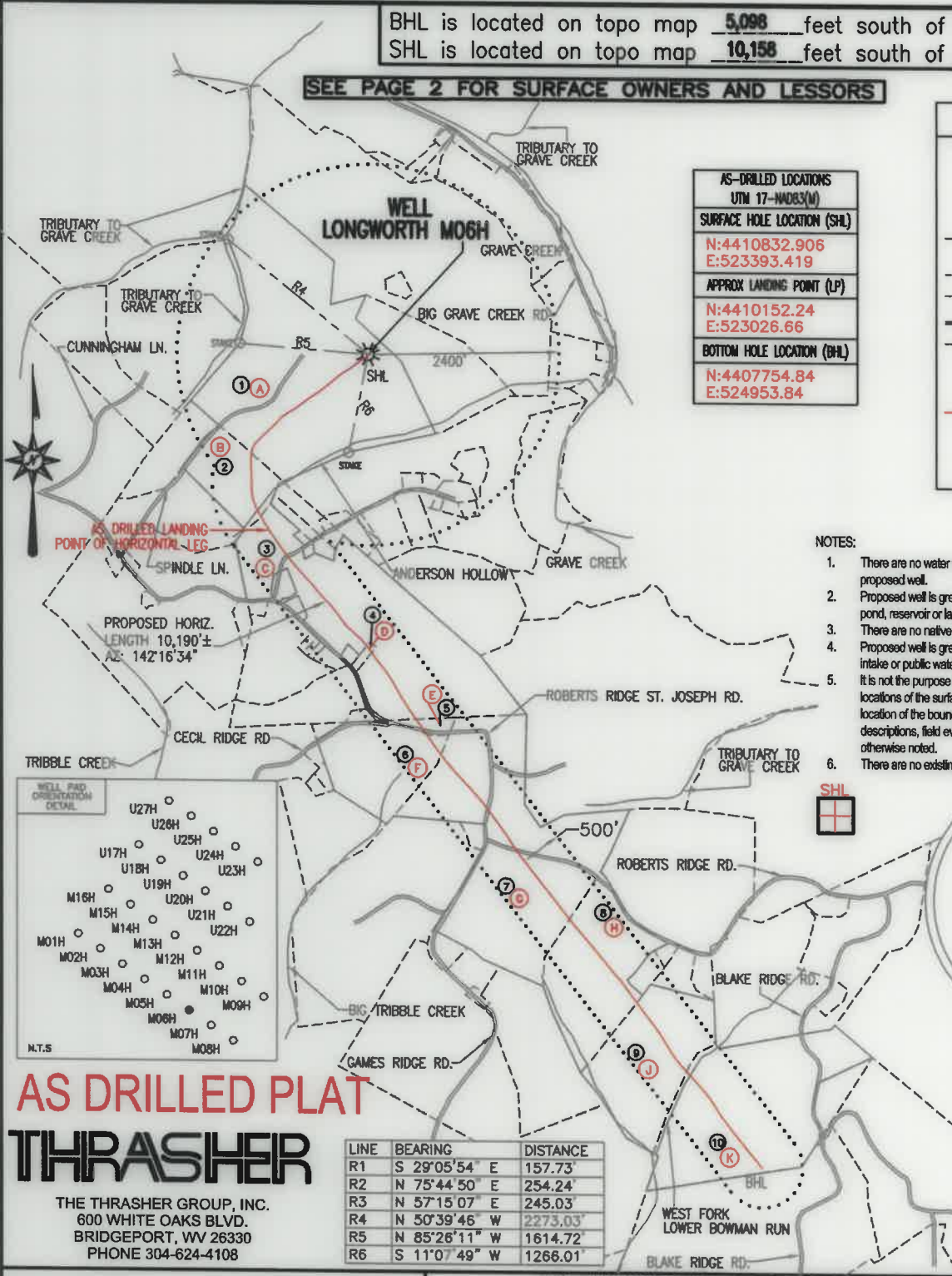
- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- ROAD
- STREAM CENTER LINE
- (A) - LESSORS
- (1) - SURFACE OWNERS
- AS-DRILLED

**GAS WELLS**

- EXISTING WELLS
- PLUGGED WELLS

AS-DRILLED LOCATIONS UTM 17-WAD83(M)
SURFACE HOLE LOCATION (SHL) N:4410832.906 E:523393.419
APPROX LANDING POINT (LP) N:4410152.24 E:523026.66
BOTTOM HOLE LOCATION (BHL) N:4407754.84 E:524953.84

- NOTES:
- There are no water wells or developed springs within 250' of proposed well.
  - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  - There are no native trout streams within 300' of proposed well.
  - Proposed well is greater than 1000' from surface groundwater intake or public water supply.
  - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
  - There are no existing buildings within 625' of proposed well.



WELL PAD ORIENTATION DETAIL

U27H
U26H
U25H
U17H
U18H
U19H
U20H
U21H
U22H
M16H
M15H
M14H
M13H
M12H
M11H
M10H
M02H
M03H
M04H
M05H
M06H
M07H
M08H

N.T.S.

# AS DRILLED PLAT THRASHER

THE THRASHER GROUP, INC.  
 800 WHITE OAKS BLVD.  
 BRIDGEPORT, WV 26330  
 PHONE 304-624-4108

LINE	BEARING	DISTANCE
R1	S 29°05'54" E	157.73'
R2	N 75°44'50" E	254.24'
R3	N 57°15'07" E	245.03'
R4	N 50°39'46" W	2273.03'
R5	N 85°26'11" W	1614.72'
R6	S 11°07'49" W	1266.01'

FILE #: LONGWORTH M06H - AS-DRILLED  
 DRAWING #: LONGWORTH M06H - AS-DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *Joseph C. Mallow*  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2346



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: FEBRUARY 23, 2021  
 OPERATOR'S WELL #: LONGWORTH M06H - AS-DRILLED  
 API WELL #: 47 51 01916  
 STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1295'

COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'

SURFACE OWNER: GRAHAM H. LONGWORTH, JR. ACREAGE: 123.589±

OIL & GAS ROYALTY OWNER: GRAHAM H. LONGWORTH, JR. ACREAGE: 541.818± **12/16/2022**

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE

(SPECIFY): AS-DRILLED PLAT

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,727'± TMD: 17,837'±

WELL OPERATOR: EQT CHAP LLC DESIGNATED AGENT: JOSEPH C. MALLOW  
 Address: 400 WOODCLIFF DRIVE Address: 115 PROFESSIONAL PLACE, PO BOX 280  
 City: CANONSBURG State: PA Zip Code: 15317 City: BRIDGEPORT State: WV Zip Code: 26330

BHL is located on topo map 80 feet west of Longitude: 80° 42' 30"  
 SHL is located on topo map 5,169 feet west of Longitude: 80° 42' 30"

**LONGWORTH**  
**M06H**  
**PAGE 2 OF 2**  
**AS DRILLED**

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH, JR. ET AL	4-11/1
B	HOLMES CWC LEGACY LLC	4-11/55
C	CLINT E. FLOWERS ET AL	4-11/56
D	THOMAS O. RICHMOND ET UX	4-11/56.1
E	STEPHANIE L. GATTS	4-11/58
F	CHARLES R. KERNAN ET UX	9-1/19
G	SHANNON ROGER HUBBS ET UX	9-1/21
H	DEAN B. COLVIN	9-1/22.2
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE, FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK - POA CAROL HULL	
	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO, JR. ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAEUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	
J	THOMAS B. CLARK ET UX	9-4/9.1
K	THOMAS B. CLARK ET UX	9-5/2

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH, JR.	4-11/1
2	HOLMES-CWC-LEGACY LLC	4-11/55
3	CLINT E. & BRENT B. FLOWERS	4-11/56
4	THOMAS O. RICHMOND, ET UX.	4-11/56.1
5	KENNETH A. MAYHUGH, II & SHELBY E. HARRIS	4-11/58
6	CHAS R. & EDITH V. KERNAN	9-1/19
7	CNX LAND RESOURCES INC.	9-1/21
8	GEORGE CHRIS LAGOS, ET UX.	9-1/22.2
9	THOMAS B. CLARK, ET UX.	9-4/9.1
10	THOMAS B. CLARK, ET UX.	9-5/2

AS-DRILLED LOCATIONS UTM 17-MDC83(M)
SURFACE HOLE LOCATION (SHL)
N:4410832.906 E:523393.419
APPROX LANDING POINT (LP)
N:4410152.24 E:523026.66
BOTTOM HOLE LOCATION (BHL)
N:4407754.84 E:524953.84

12/16/2022

**THRASHER**

THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-624-4108

**FEBRUARY 23, 2021**