

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

RECEIVED
Office of Oil and Gas

JUN 14 2022

WV Department of
Environmental Protection

API 47 - 051 - 01903 County Marshall District Clay
Quad Glen Easton Pad Name Longworth Field/Pool Name N/A
Farm name Graham H. Longworth Jr. Well Number Longworth M03H
Operator (as registered with the OOG) EQT CHAP LLC
Address 400 Woodcliff Drive 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 4,410,840.45 Easting 523,381.97
Landing Point of Curve Northing 4,411,243.01 Easting 523,347.91
Bottom Hole Northing 4,412,265.24 Easting 522,493.94

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 03/03/2017 Date drilling commenced 11/05/2017 Date drilling ceased 03/11/2018
Date completion activities began _____ Date completion activities ceased _____
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Reviewed

Reviewed by:
[Signature]
09/09/2022

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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"	630'	NEW	J-55 54.5#	N/A	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	2187'	NEW	L-80 40#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	11,517'	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has a calculated TOC of 2144' 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 ³ /sks)	Volume (ft ³)	Cement Top (GL)	WOC (hrs)
Conductor	CLASS A	17BBLs	N/A	N/A		0	8+
Surface	CLASS A	483	15.6	1.20	579	0	8
Coal							
Intermediate 1	CLASS A	738	15.6	1.19	878	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H/CLASS H	783/1061	14.7/15.2	1.14/1.15	892/1220	2144	8+
Tubing							

Drillers TD (ft) 11,537' Loggers TD (ft) N/A
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure _____

Kick off depth (ft) 5483'

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 _____

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PERFORATION RECORD

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

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)

Please insert additional pages as applicable.

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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 _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

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

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 Derek Ridgway Telephone 412-395-3139
Signature  Title Managing Director of Drilling Date 10/12/2021

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

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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 _____

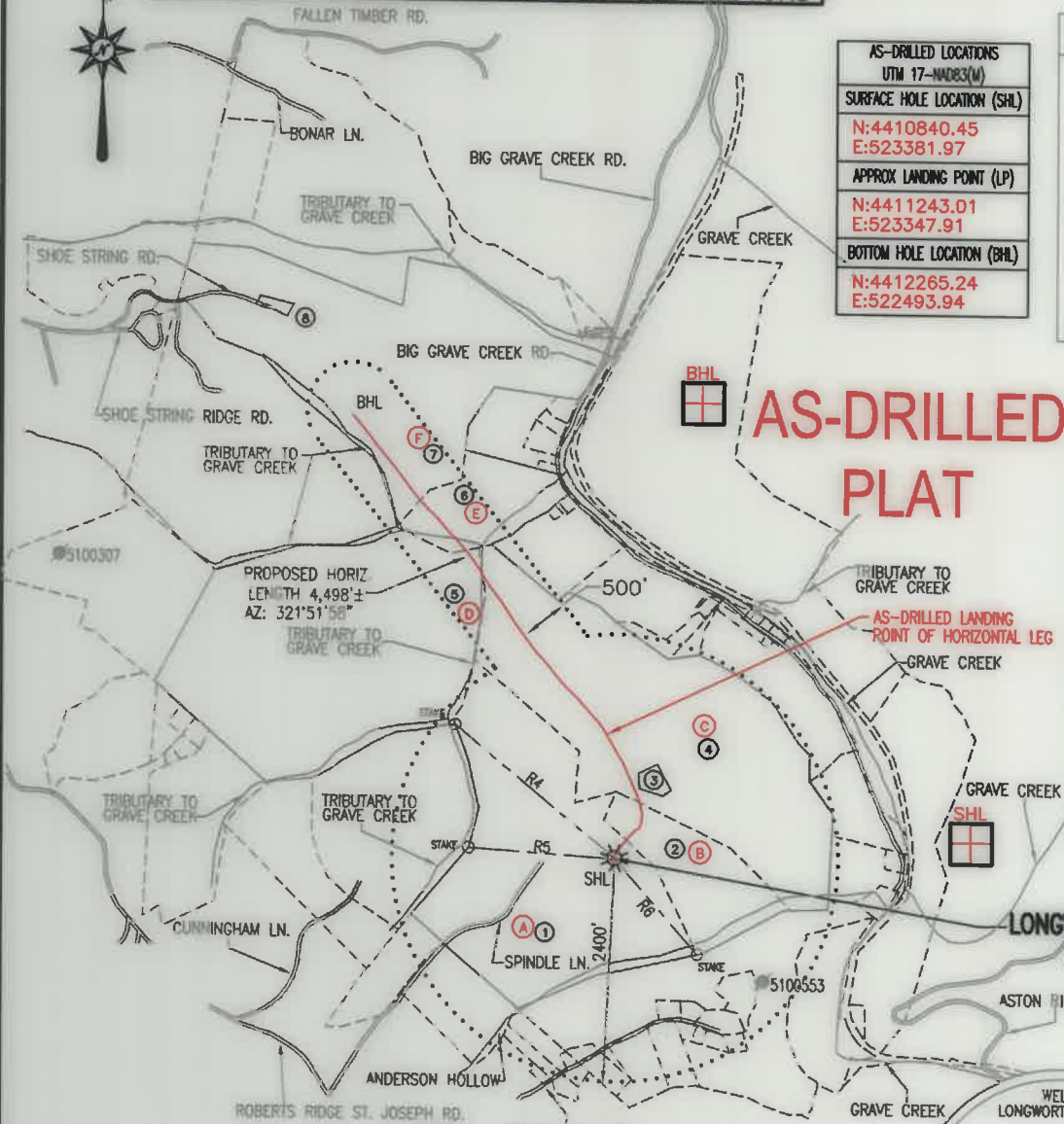
Drilling Contractor _____
Address _____ City _____ State _____ Zip _____

Well # Longworth M03H Final Formations API# 47-051-01903				
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	2,098
Big Injun	2,100	2,098	2,182	2,180
Sand/Shale	2,182	2,180	2,819	2,816
Gantz	2,819	2,816	2,880	2,877
Gordon	2,880	2,877	2,960	2,957
50F	2,960	2,957	3,009	3,006
Sand/Shale	3,009	3,006	3,088	3,085
Bayard	3,088	3,085	3,453	3,448
Sand/Shale	3,453	3,448	5,255	5,213
Alexander	5,255	5,213	5,692	5,642
Elks	5,692	5,642	6,365	6,202
Sonyea	6,365	6,202	6,492	6,284
Middlesex	6,492	6,284	6,532	6,309
Genesee	6,532	6,309	6,612	6,360
Geneseo	6,612	6,360	6,650	6,382
Tully	6,650	6,382	6,737	6,428
Hamilton	6,737	6,428	6,910	6,489
Marcellus	6,910	6,489	11,537	6,519

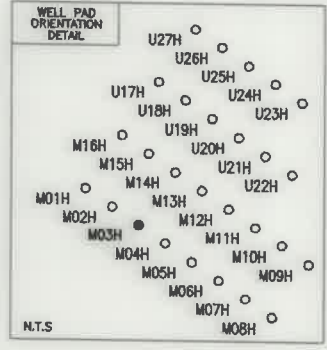
09/09/2022

BHL is located on topo map 5,448 feet south of Latitude: 39° 52' 30"
 SHL is located on topo map 10,133 feet south of Latitude: 39° 52' 30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS



AS-DRILLED LOCATIONS UTM 17-MADE3(M)
SURFACE HOLE LOCATION (SHL) N:4410840.45 E:523381.97
APPROX LANDING POINT (LP) N:4411243.01 E:523347.91
BOTTOM HOLE LOCATION (BHL) N:4412265.24 E:522493.94



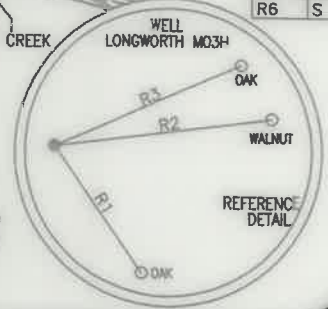
LEGEND

- 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

LINE	BEARING	DISTANCE
R1	S 34°54'11" E	199.00'
R2	N 82°31'25" E	286.01
R3	N 66°13'23" E	265.80
R4	N 50°33'42" W	2228.20
R5	N 86°14'55" W	1575.82
R6	S 41°13'45" E	1350.16'



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

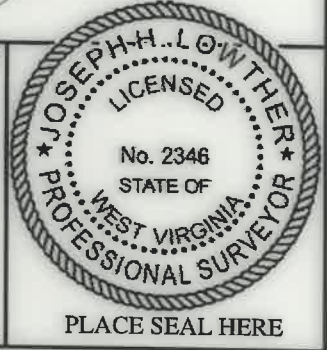
- NOTES:
- There are no water wells or developed springs within 250' of proposed well.
 - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 - There are no native trout streams within 300' of proposed well.
 - Proposed well is greater than 1000' from surface 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.

BHL is located on topo map 8,108 feet west of Longitude: 80° 42' 30"
 SHL is located on topo map 5,207 feet west of Longitude: 80° 42' 30"

FILE #: LONGWORTH M03H - AS-DRILLED
 DRAWING #: LONGWORTH M03H - 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*
 F.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: DECEMBER 28, 2021
 OPERATOR'S WELL #: LONGWORTH M03H - AS-DRILLED
 API WELL #: 47 STATE 51 COUNTY 01903 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: 625.06± 09/09/2022

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: 6,502'± TMD: 11,562'±

WELL OPERATOR: EQT CHAP, LLC DESIGNATED AGENT: JOSEPH C. MALLOW

Address: 400 WOODCLIFF DRIVE Address: 427 MIDSTATE DRIVE

City: CANONSBURG State: PA Zip Code: 15317 City: CLARKSBURG State: WV Zip Code: 26301

LONGWORTH
M03H
PAGE 2 OF 2
AS-DRILLED PLAT

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH, JR. ET AL	4-11/1
B	GRAHAM H. LONGWORTH, JR. ET AL	4-11/2
	LISA NICEWARNER	
	JULIA RODGERS	
	KEITH FRIESE	
	MARK FRIESE	
	ANTHONY FRIESE	
	JAMES FRIESE	
	HENRY FRIESE	
C	GRAHAM H. LONGWORTH, JR. ET AL	4-12/16
	SHERI L. EVRAETS FAMILY TRUST	
	LISA NICEWARNER	
	JULIA RODGERS	
	KEITH FRIESE	
	MARK FRIESE	
	ANTHONY FRIESE	
	JAMES FRIESE	
D	BRETT A. ANDREWS ET UX	4-12/19
	MARY ANN BAKER	4-12/10
E	ULMAN TRUST MARY ANN BAKER TRSTE	
	DIOCESE OF WHEELING - CHARLESTON	
	ROBERT S. WUERTHELE	
	MARK K. WUERTHELE	
	JEFFREY A. WUERTHELE	
	MICHAEL D. WUERTHELE ET UX	
	SISTERS OF ST. FRANCIS PROV OF GOD	
SUSAN ZIDAR ET VIR		
F	VICKIE L. MARKEY IRREVOCABLE TRST	4-12/3
	JMK IREV TRST	
	PURPLEBURGH VENTURES LLC	
	MARCELLUS TX MINERAL PRTRNS LTD	

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH, JR.	4-11/1
2	GRAHAM H. LONGWORTH, JR.	4-11/2
3	DANIEL C., SR. & JEANNETTE L. LONGWORTH	4-12/16.1
4	DANIEL C. LONGWORTH	4-12/16
5	CODY M. JARRETT	4-12/19
6	THOMAS HAUGHT ET AL	4-12/10
7	MERLE CHAPLIN ET UX	4-12/3
8	MERLE R. & JEAN E. CHAPLIN	4-12/3.1

AS-DRILLED LOCATIONS UTM 17-NAD83(M)
SURFACE HOLE LOCATION (SHL)
N:4410840.45 E:523381.97
APPROX LANDING POINT (LP)
N:4411243.01 E:523347.91
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DECEMBER 28, 2021