



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Tuesday, December 21, 2021
PERMIT MODIFICATION APPROVAL
New Drill / Modification

EQT CHAP, LLC
625 LIBERTY AVE
SUITE 1700
PITTSBURGH, PA 15222

Re: Permit Modification Approval for LONGWORTH M06H
47-051-01916

UPDATED TRANSFER OF OPERATOR NAME, UPDATE TO SITE SAFETY PLAN

EQT CHAP, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.


James A. Martin
Chief

Operator's Well Number: LONGWORTH M06H
Farm Name: GRAHAM H LONGWORTH JR
U.S. WELL NUMBER: 47-051-01916
New Drill Modification
Date Modification Issued: 12/21/2021

Promoting a healthy environment.

12/24/2021

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: EQT CHAP, LLC 494525804 Marshall Clay Glen Easton
Operator ID County District Quadrangle

2) Operator's Well Number: M06H Well Pad Name: Longworth

3) Farm Name/Surface Owner: Graham H. Longworth, Jr. Public Road Access: Roberts Ridge Road/WV-21

4) Elevation, current ground: 1,270' (built) Elevation, proposed post-construction: 1,270'

5) Well Type (a) Gas X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow X Deep _____

Horizontal X _____

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6,727', 61', 0.64 psi/ft gradient

8) Proposed Total Vertical Depth: 6,727' (Drilled) RECEIVED
Office of Oil and Gas

9) Formation at Total Vertical Depth: Marcellus DEC 01 2021

10) Proposed Total Measured Depth: 17,837' (Drilled) WV Department of
Environmental Protection

11) Proposed Horizontal Leg Length: 10,118' (Drilled)

12) Approximate Fresh Water Strata Depths: 99', 605'

13) Method to Determine Fresh Water Depths: Tophole drilling

14) Approximate Saltwater Depths: 1,576', 1,998', 2,102', 2,139'

15) Approximate Coal Seam Depths: 583', 853' RECEIVED
Office of Oil and Gas

16) Approximate Depth to Possible Void (coal mine, karst, other): N/A DEC 01 2021

17) Does Proposed well location contain coal seams
directly overlying or adjacent to an active mine? Yes _____ No X WV Department of
Environmental Protection

(a) If Yes, provide Mine Info: Name: _____

Depth: _____

Seam: _____

Owner: _____

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	X-52	218	40'	40'	N/A
Fresh Water	13 3/8"	New	J-55	54.5	623'	623'	579
Coal							
Intermediate	9 5/8"	New	L-80	40	2,189'	2,189'	928
Production	5 1/2"	New	P-110	20	17,837'	17,769'	884/2,645
Tubing							
Liners							

Bryan Harris 11/17/21

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"					
Fresh Water	13 3/8"	17 1/2"	0.38	2730	1911	Class A	1.20
Coal							
Intermediate	9 5/8"	12 3/8"	0.395	5750	2768	Class A	1.19
Production	5 1/2"	8 1/2"	0.361	14360	9975	Class H/ Class H	1.14/1.15
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

EQT CHAP is proposing to complete development operations on this well. The well has been drilled horizontally as shown on the attached WR-35.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.1%) of chemicals (including 15% Hydrochloric acid, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10,000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 350,000 gallons of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000-600,000 pounds of proppant per stage

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 38.9

22) Area to be disturbed for well pad only, less access road (acres): 19.3

23) Describe centralizer placement for each casing string:

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

24) Describe all cement additives associated with each cement type:

25) Proposed borehole conditioning procedures:

N/A - The well is already drilled

*Note: Attach additional sheets as needed.

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"

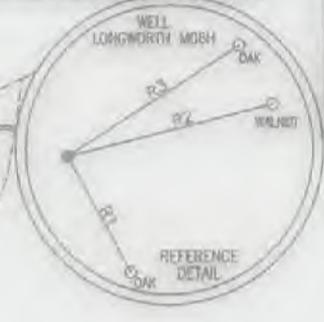
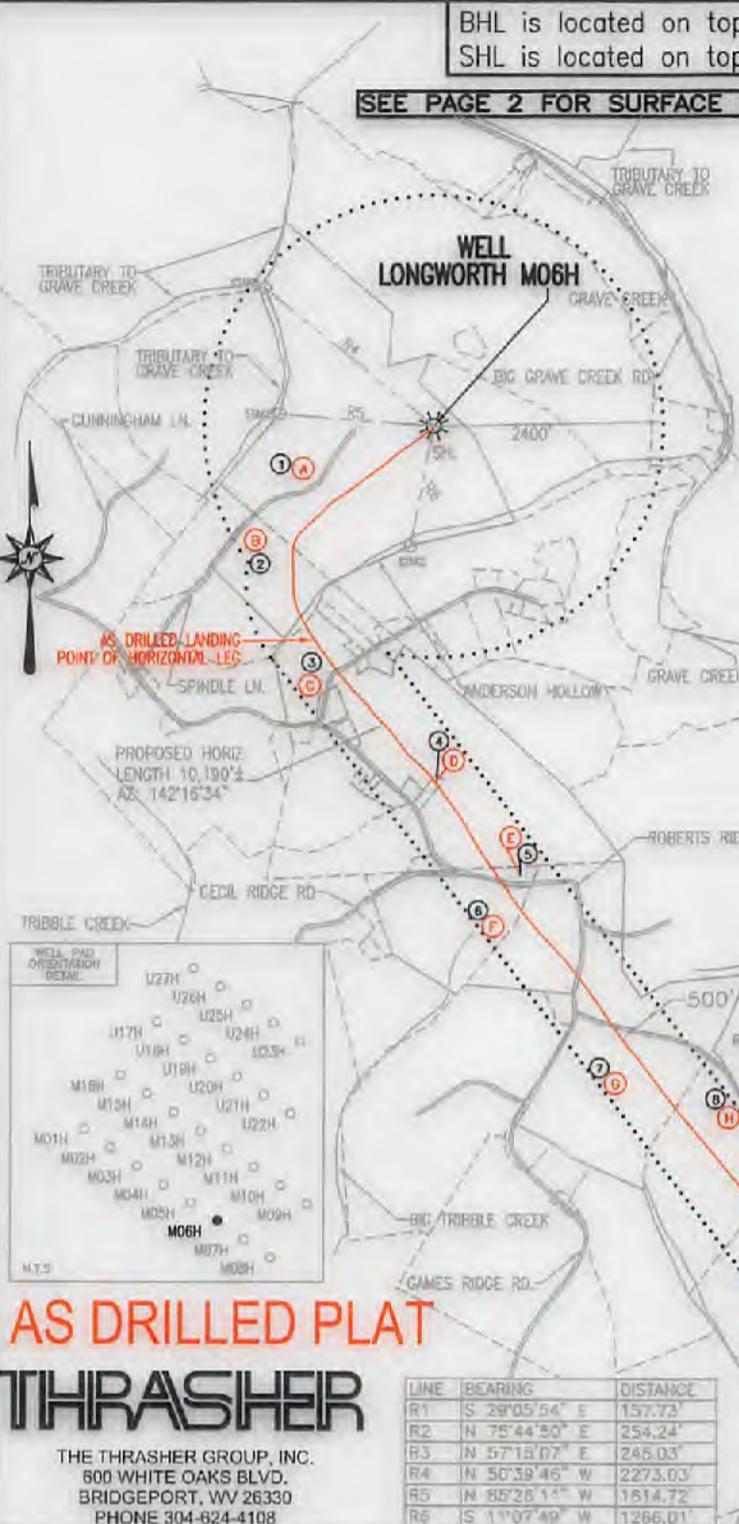
SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS

LEGEND	
	- TOPO MAP POINT
	- WELL
	- ALL ARE FINES 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

AS-DRILLED LOCATIONS UTM 17-MD83(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 intakes 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.



AS DRILLED PLAT
THRASHER

THE THRASHER GROUP, INC.
 600 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°18'07" E	245.03'
R4	N 50°39'46" W	2273.03'
R5	N 85°26'11" W	1814.72'
R6	S 1°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 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 Mod
 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

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"

12/24/2021

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 EISENHAUER	
	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-VAD83(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

12/24/2021

THRASHER

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

FEBRUARY 23, 2021

MOD 1

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
See Attached Form				

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

RECEIVED
Office of Oil and Gas

DEC 01 2021

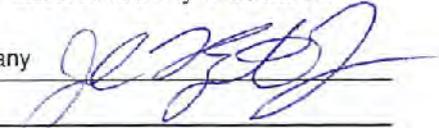
WV Department of
Environmental Protection

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: EQT Production Company

By: John Zavatchan 

Its: Project Specialist - Permitting

WW-6A1 attachment

Operator's Well No.

Longworth M06H

Parcel ID	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
04-11-1.0	Graham H. Longworth Jr., et al. Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 790/129 AB 47/1
04-11-55.0	Holmes-CWC-Legacy, LLC Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 790/120 AB 47/1
04-11-56.0	Clint E. Flowers, et al. Chesapeake Appalachia, LLC Chevron U.S.A. Inc.	Chesapeake Appalachia, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 700/408 AB 30/392 AB 47/1
04-11-56.1	Thomas O. Richmond, et ux. TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 722/515 AB 25/463 AB 26/269 AB 47/1
04-11-58.0	Stephanie L. Gatts TriEnergy Holdings, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 763/213 AB 28/348 AB 47/1
09-1-19.0	Charles R. Kernan, et ux. Central Michigan Exploration LLC Stone Energy Corporation Chevron U.S.A. Inc.	Central Michigan Exploration LLC Stone Energy Corporation Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 668/149 AB 21/288 AB 33/276 AB 47/1

09-1-21.0	Shannon Roger Hubbs, et ux. Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 798/535 AB 47/1
09-1-22.2	Dean B. Colvin TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 726/593 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Margaret Kinney TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 726/598 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Patricia Colvin Grandstaff TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 726/612 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Marilyn Pyles Snyder TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 726/607 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	James E. Pyles TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 726/601 AB 25/463 AB 26/269 AB 47/1

09-1-22.2	Susan Aston TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 727/215 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Carol Hull TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 727/220 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	David George Moore TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 727/223 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Betty Lou Dellget Kerns TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 728/393 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Marilyn South TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 728/398 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Howard Gump, et ux. TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 729/338 AB 25/463 AB 26/269 AB 47/1

09-1-22.2	Judy Reilly Feierstein TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 728/414 AB 25/463 DB 756/307 AB 47/1
09-1-22.2	Richard O'Hara TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 730/615 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Cathy J. Colvin TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 730/613 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Alice Faye Van Dine TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 734/179 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Lora Fornshell TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 735/208 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Keith Pyles TriEnergy Holdings, LLC NPAR, LLC	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	"at least 1/8th per WV Code 22-6-8"	DB 735/211 AB 25/463 DB 756/332

	Chevron U.S.A. Inc.	EQT Aurora LLC		AB 47/1
09-1-22.2	Wanda L. Pyles TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 735/205 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Sherley M. White F/K/A Sherley M. Van Dine TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 735/411 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Verenda Stokes TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 735/414 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Dominae Vescio-Ramirez TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 735/421 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Krista L. Van Dine TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 738/532 AB 25/463 AB 26/201 AB 47/1
09-1-22.2	Robert P. Colvin TriEnergy Holdings, LLC	TriEnergy Holdings, LLC NPAR, LLC	"at least 1/8th per WV Code 22-6-8"	DB 726/595 AB 25/463

	NPAR, LLC Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC		AB 26/269 AB 47/1
09-1-22.2	Ronald Pyles TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 726/604 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Donald Cook POA Carol Hull TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 727/217 AB 25/463 AB 26/269 AB 47/1
09-1-22.2	Kevin O'Hara TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 730/618 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Cathy Ludwig Garrett TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 730/637 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Robert R. D'Eramo, Jr., et al. TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 734/166 AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Debra Fordyce	TriEnergy Holdings, LLC	"at least 1/8th per WV Code 22-6-8"	DB 734/317

	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC		AB 25/463 DB 756/332 AB 47/1
09-1-22.2	Keith Joel Van Dine TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC NPAR, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 738/529 AB 25/463 AB 26/201 AB 47/1
09-1-22.2	Gladys Petrelle by AIF Shirley Buffone TriEnergy Holdings, LLC Chevron U.S.A. Inc.	TriEnergy Holdings, LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 767/610 AB 28/348 AB 47/1
09-1-22.2	Rodney Colvin Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/632 AB 47/1
09-1-22.2	Paula Reilley Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/629 AB 47/1
09-1-22.2	Vickie Eisenhower Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/470 AB 47/1
09-1-22.2	Kim Yoho Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/467 AB 47/1
09-1-22.2	Jason Colvin Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/515 AB 47/1

09-1-22.2	Brenda Willingham Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/512 AB 47/1
09-1-22.2	Donald Colvin Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/509 AB 47/1
09-1-22.2	Michael Colvin Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/506 AB 47/1
09-1-22.2	Stacy Panyko Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/620 AB 47/1
09-1-22.2	Harold E. Van Dine Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/623 AB 47/1
09-1-22.2	John E. Van Dine Chevron U.S.A. Inc.	Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 885/626 AB 47/1
09-4-9.1	Thomas B. Clark, et ux. Fossil Creek Ohio, LLC Fossil Creek Ohio, LLC & Gulfport Energy Corp. American Petroleum Partners Operating LLC Chevron U.S.A. Inc.	Fossil Creek Ohio, LLC Gulfport Energy Corp. American Petroleum Partners Operating LLC Chevron U.S.A. Inc. EQT Aurora LLC	"at least 1/8th per WV Code 22-6-8"	DB 838/521 AB 33/9 AB 36/588 AB 40/267 AB 47/1
09-5-2.0	Thomas B. Clark, et ux. Fossil Creek Ohio, LLC Fossil Creek Ohio, LLC & Gulfport Energy Corp.	Fossil Creek Ohio, LLC Gulfport Energy Corp. American Petroleum Partners Operating LLC	"at least 1/8th per WV Code 22-6-8"	DB 838/521 AB 33/9 AB 36/588

American Petroleum Partners Operating LLC
Chevron U.S.A. Inc.

Chevron U.S.A. Inc.
EQT Aurora LLC

AB 40/267
AB 47/1



EQT PRODUCTION COMPANY
400 Woodcliff Drive | Canonsburg, PA 15317

November 29, 2021

Via Electronic Delivery

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304

RE: EQT CHAP, LLC Relationship to EQT Aurora, LLC

WVDEP Recipient,

This letter serves as notification to WVDEP of the relationship between the two subject entities. EQT CHAP LLC, a Pennsylvania limited liability company (EIN 20-8243540) having an address of 625 Liberty Ave., Suite 1700, Pittsburgh, PA 15222, is a wholly owned subsidiary of EQT CNEU LLC, a Delaware limited liability company (EIN 51-0404430), also having an address of 625 Liberty Ave., Suite 1700, Pittsburgh, PA 15222. EQT CNEU LLC is a wholly owned subsidiary of EQT Aurora LLC, a Pennsylvania limited liability company (EIN 85-3135326) also having an address of 625 Liberty Avenue, Suite 1700, Pittsburgh, PA 15222. All entities fall under the parent of EQT Corporation.

Because of this relationship, EQT CHAP LLC has the right to to develop, extract, produce and market natural resources allowed, including natural gas, from any lease in which EQT Aurora LLC has that same right.

If you require any additional information, feel free to contact me at your earliest convenience.

Best Regards,

A handwritten signature in blue ink, appearing to read 'J. Zavatchan'.

John Zavatchan
Project Specialist – Permitting
jzavatchan@eqt.com
724-746-9073

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WV Department of
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12/24/2021



November 29, 2021

Mr. Taylor Brewer
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: Longworth Mo6H
Clay District, Marshall County, WV

Dear Mr. Brewer,

EQT CHAP, LLC is applying for a well work permit for the well referenced above. Upon information and belief, the Operator's lease and/ or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. Zavatchan'.

John Zavatchan
Project Specialist - Permitting

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**Anticipated Frac Additives
Chemical Names and CAS Numbers**

<u>Material</u>	<u>Ingredient</u>	<u>CAS Number</u>
Sand (Proppant)	Silica Substrate	14808-60-7
Water	Water	7732-18-5
Hydrochloric Acid (HCl)	Hydrogen Chloride	7647-01-0
Friction Reducer	Copolymer of 2-propenamide	Proprietary
	Petroleum Distillate	64742-47-8
	Oleic Acid Diethanolamide	93-83-4
	Alcohols, C12-16, ethoxylated	68551-12-2
	Ammonium chloride ((NH ₄)Cl)	12125-02-9
Biocide	Glutaraldehyde	111-30-8
	Alkyl dimethyl benzyl ammonium chloride	68391-01-5
	Didecyl dimethyl ammonium chloride	7173-51-5
	Non-hazardous substances	Proprietary
Scale Control	Bis(HexaMethylene Triamine Penta(Methylene Phosphonic Acid)(BHMT)	34690-00-1
	Non-hazardous substances	Proprietary
Acid Chelating Agent	Citric Acid	77-92-9
Corrosion Inhibitor	Methanol	67-56-1
	pyridinium, 1-(phenylmethyl)-, ethyl methyl derivs., chlorides	68909-18-2
	Nonoxynol-9	127087-87-0
	2-ethyl-1-hexanol	104-76-7
	4-nonylphenyl, ethoxylated	26027-38-3

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EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: Longworth
County: Marshall

November 22, 2021

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Page 1 of 2

12/24/2021

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Marshall County, WV prior to hydraulic fracturing at the following EQT wells on the Longworth well pad: 5H, 6H, 7H,8H,9H,10H, 11H, 12H, 13H, 14H, 15H and 16H.

Due to the requirements under 35CSR8 5.11, the permittee is required to review the area surrounding the proposed well pad so as to identify and evaluate potential conduits for unintended fracture propagation.

A report is required to be submitted along with a well work permit application.

The plan is being implemented as an additional safety measure to be utilized in conjunction with existing best management practices and emergency action plans for the site. These additional measures include coordination with well operators of the timing and location of the hydraulic fracturing, establishment of measures well operators should implement, and assurance that the OOG is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known wells and well operators within 500 feet of this pad and the lateral sections that are known or could reasonably be expected to be within range of the fracture propagation. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

EQT will notify these operators of the hydraulic fracturing schedule for these wells, and coordinate with them throughout the fracturing process.

EQT will recommend to these operators at a minimum to:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves or other necessary equipment for wellhead integrity capable of a pressure recommended by EQT
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

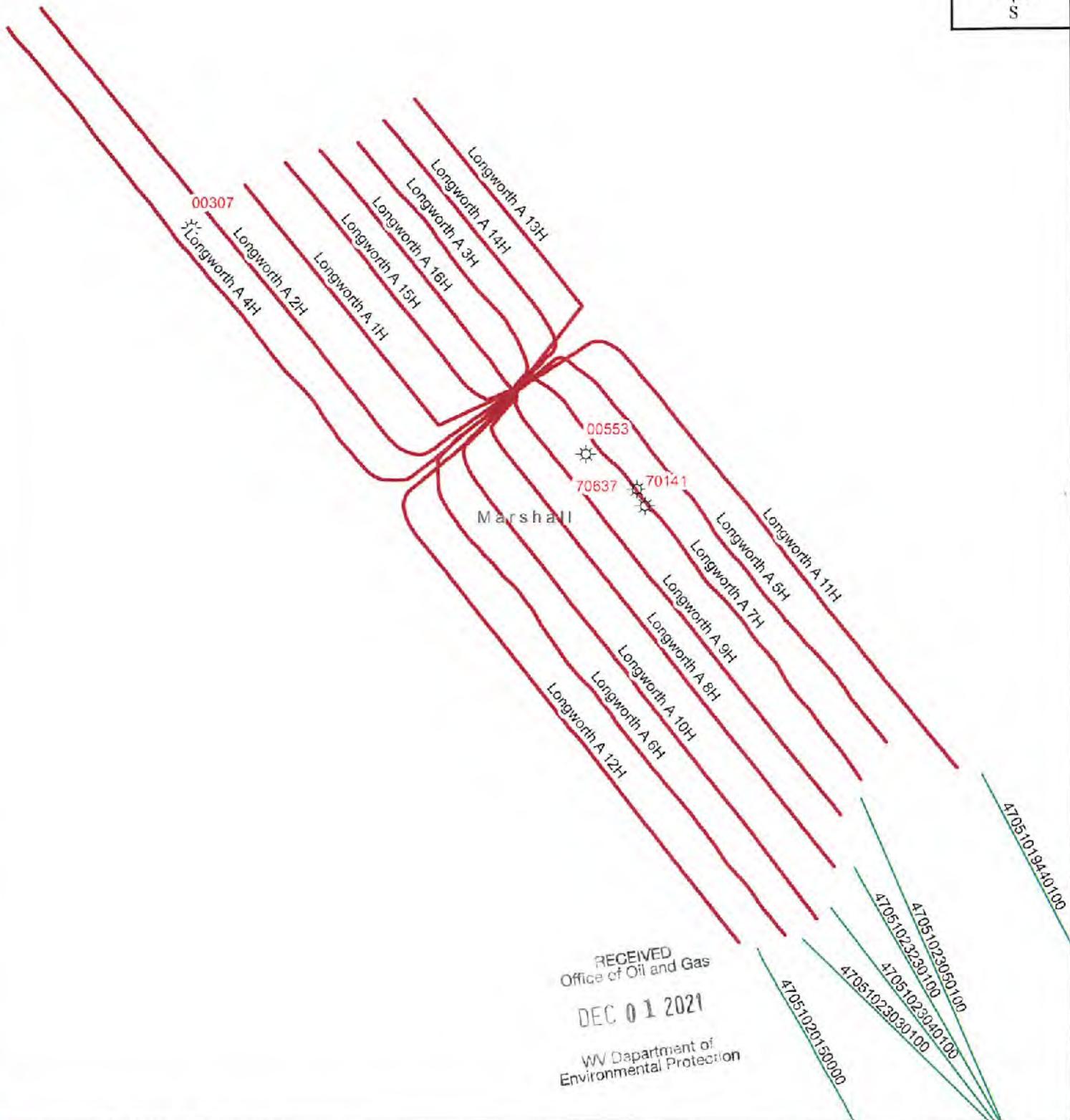
EQT will provide information relating to the hydraulic fracturing schedule, communication with other operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.

UWI	ACT_STATUS	CURR_OPER	FNL_CLASS	FNL_STAT	INIT_CLASS	LATITUDE	LONGITUDE	OPER_NAME	DATUM	ELEVATION	TOT_DEPTH	TVD
00553	Completed Wells/WHCS	KENTUCKY CENTRAL & CO	NEW FIELD WILDCAT-DRY (INCLUDING TEMPORARILY ABANDONED WELL)	D&A	NEW FIELD WILDCAT	39.84403540	-80.72188190	KENTUCKY CENTRAL & CO	NAD27	1184.00	800.00	0.00
00307	Completed Wells	ARROWHEAD EXPLORATION	UNCLASSIFIED	D&A	NEW FIELD WILDCAT	39.85569700	-80.74838000	ARROWHEAD EXPLORATION	NAD27	1235.00	3000.00	0.00
70141	Completed Wells	BURT OIL CO	PSEUDO-ORIGINAL WELL - UNKNOWN CLASS	PSEUDO	PSEUDO-ORIGINAL WELL - UNKNOWN CLASS	39.84132800	-80.71792200	BURT OIL CO	NAD27	0.00	0.00	0.00
70637	Completed Wells	UNKNOWN	UNCLASSIFIED	UNKWN	UNCLASSIFIED	39.84219900	-80.71848600	UNKNOWN	NAD27	0.00	0.00	0.00

Horizontals

UWI	ACT_STATUS	CURR_OPER	FNL_CLASS	FNL_STAT	INIT_CLASS	LATITUDE	LONGITUDE	OPER_NAME	DATUM	ELEVATION	TOT_DEPTH	TVD	WELL_NAME
47051020150000	Completed Wells	TUG HILL OPERATING LLC	NEW FIELD WILDCAT-DISCOVERY	GAS	NEW FIELD WILDCAT	39.80852930	-80.69355660	TUG HILL OPERATING LLC	NAD27	1352.00	15275.00	6760.00	3N-9HM HEAVEN HILL
47051023050100	Permit	TUG HILL OPERATING LLC		PERMIT	NEW FIELD WILDCAT REDRILL	39.80860990	-80.69367060	TUG HILL OPERATING LLC	NAD27	1326.00	0.00	0.00	3N-14HM HEAVEN HILL
47051023280100	Permit	TUG HILL OPERATING LLC		PERMIT	NEW FIELD WILDCAT REDRILL	39.80853730	-80.69360060	TUG HILL OPERATING LLC	NAD27	1326.00	0.00	0.00	3N-13HM HEAVEN HILL
47051019440100	Completed Wells	TUG HILL OPERATING LLC	SUCCESSFUL OUTPOST EXTENSION	GAS-WO	WILDCAT OUTPOST REDRILL	39.80666710	-80.68117720	TUG HILL OPERATING LLC	NAD27	1310.00	15465.00	0.00	3HM TEN HIGH 1N
47051023030100	Permit	TUG HILL OPERATING LLC		PERMIT	NEW FIELD WILDCAT REDRILL	39.80855330	-80.69368760	TUG HILL OPERATING LLC	NAD27	1326.00	0.00	0.00	3N-11HM HEAVEN HILL
47051023040100	Permit	TUG HILL OPERATING LLC		PERMIT	NEW FIELD WILDCAT REDRILL	39.80854530	-80.69364360	TUG HILL OPERATING LLC	NAD27	1326.00	0.00	0.00	3N-12HM HEAVEN HILL

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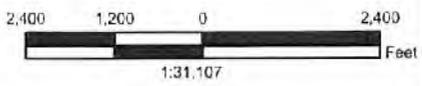
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EQT
EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

Longworth

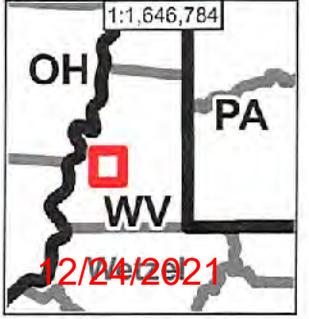
Vertical Offsets and
Foreign Laterals
within 500'

- Legend**
- Foreign Offset Wells
 - Foreign Offset Horizontals
 - Well Lateral_FM Formation**
 - Genesee
 - Marcellus
 - Utica



Disclaimer:

This map is confidential and is to be used only for the express informational purposes for which it was created. Unauthorized use, copying, or dissemination is strictly prohibited. EQT does not warrant the accuracy of the location of any items shown on this map, including, but not limited to, any structures, well or pipeline facilities, property boundaries, topography, roadways, or waterways. The items shown on the map may not have been placed on the map using survey lines or GPS coordinates. The specific location of any of the map items should be determined by a field survey performed by a licensed surveyor upon consultation with EQT.





November 29, 2021

Via FedEx Overnight

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304

RE: Well Work Permit Modification Application
Longworth Mo6H
Permit Number 47-051-01916
Clay District, Marshall County, WV

WVDEP Recipient,

Attached please find the Well Work Permit Modification Application for the well referenced above. You will find the following included with this submittal:

- Check in the amount of \$2,500.00
- Completed WW-6B, approved by the Oil & Gas Inspector
- Well Location Plat
- Completed Form WW-6A1 and supporting documentation
- Road Crossing Letter
- Anticipate Frac Additives List
- Hydraulic Fracturing Monitoring Plan
- DVD containing the Site Specific Safety and Environmental Plan and Water Management Plan for all wells (Longworth Mo5H, Mo6H, Mo7H, Mo8H, MogH, M10H, M11H and M12H)

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This modification is being submitted to reflect EQT CHAP's intent to hydraulically fracture this well, and to provide the information related to those operations. This well was drilled to TMD by Chevron Appalachia, LLC. The WR-35 has been included to show how the well was drilled by Chevron. Pad construction was completed on this site on October 20th, 2017, and no additional earth disturbance is proposed.

EQT CHAP, LLC trusts that if any portion of the submitted documentation is found to be inadequate for processing the permit, notification will be made to our Permitting department at your earliest convenience. It is EQT CHAP's intent to cooperate fully to provide any additional requested documentation and clarification in a timely manner such that permitting proceeds in a predictable and logical manner.

Best Regards,

John Zavatchan
Project Specialist – Permitting
jzavatchan@eqt.com
724-746-9073

CL# 590591
Amt \$2500
Date 11/9/21

12/24/2021



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Modification Horizontal H6A Well Work Permit (API: 47-051-01914)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Wed, Dec 22, 2021 at 2:05 PM

To: John <JZavatchan@eqt.com>, Todd <tklaner@eqt.com>, Erin Spine <espine@eqt.com>, "Shrum, Becky" <bshrum@eqt.com>, Olivia Pishioneri <opishioneri@eqt.com>, Eric Buzzard <ebuzzard@marshallcountywv.org>, "Gayne J. Knitowski" <gayne.j.knitowski@wv.gov>

I have attached a copy of the newly issued well [permit](#) numbers:

47-051-01914 - LONGWORTH M05H

This will serve as your copy.

If you have any questions, then [please](#) contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry**Environmental Resource Specialist 3****West Virginia Department of Environmental Protection****Office of Oil & Gas****601 57th St. SE****Charleston, WV 25304****(304) 926-0499 ext. 41115****(304) 926-0452 fax****Wade.A.Stansberry@wv.gov**

 **47-051-01914 - mod.pdf**
1225K**12/24/2021**



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Re: [EXTERNAL] Modification Horizontal H6A Well Work Permit (API: 47-051-01914, 01916, 01917, 02128, 02129, 02130, 02131, 02132)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>
To: "Zavatchan, John" <JZavatchan@eqt.com>

Wed, Dec 22, 2021 at 2:32 PM

Same to you, Merry Christmas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

On Wed, Dec 22, 2021 at 2:28 PM Zavatchan, John <JZavatchan@eqt.com> wrote:

Got 'em all! Thanks Wade, and have a great Christmas!

JZ

From: Stansberry, Wade A <wade.a.stansberry@wv.gov>

Sent: Wednesday, December 22, 2021 2:25 PM

To: Zavatchan, John <JZavatchan@eqt.com>; Klaner, Todd <TKlaner@eqt.com>; Spine, Erin <ESpine@eqt.com>; Shrum, Becky <BShrum@eqt.com>; Wilson, Olivia <OPishioneri@eqt.com>; Eric Buzzard <ebuzzard@marshallcountywv.org>; Gayne J. Knitowski <gayne.j.knitowski@wv.gov>

Subject: [EXTERNAL] Modification Horizontal H6A Well Work Permit (API: 47-051-01914, 01916, 01917, 02128, 02129, 02130, 02131, 02132)

...This email is from an external source. Please use caution when clicking links or opening attachments...

I have attached a copy of the newly issued well permit numbers:

47-051-01914 - LONGWORTH M05H

47-051-01916 - LONGWORTH M06H

47-051-01917 - LONGWORTH M07H

47-051-02128- LONGWORTH M08H

47-051-02129 - LONGWORTH M09H

47-051-02130 - LONGWORTH M10H

47-051-02131 - LONGWORTH M11H

47-051-02132 - LONGWORTH M12H

12/24/2021

This will serve as your copy.

If you have any questions, then [please](#) contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

To learn about EQT's environmental, social and governance efforts visit: <https://esg.eqt.com>

12/24/2021