



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

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Friday, March 03, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

CHEVRON APPALACHIA, LLC (A)
POST OFFICE BOX 611

MOON TOWNSHIP, PA 15108

Re: Permit approval for M04H
47-051-01904-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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: M04H
Farm Name: LONGWORTH, GRAHAM H. JR.
U.S. WELL NUMBER: 47-051-01904-00-00
Horizontal 6A / New Drill
Date Issued: 3/3/2017

Promoting a healthy environment.

03/03/2017

PERMIT CONDITIONS 4705101004

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

4705101904

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.



west virginia department of environmental protection

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

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

**ORDER
ISSUED UNDER
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: Chevron Appalachia, LLC
P.O. Box 611
Moon Township, PA 15108

DATE: March 2, 2017
ORDER NO.: 2017-W-6

INTRODUCTION

This Order (hereinafter “Order”) is issued by the Office of Oil and Gas (hereinafter “OOG”), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to Chevron Appalachia, LLC (hereinafter “Operator”), collectively the “Parties.”

FINDINGS OF THE CHIEF

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. Chevron Appalachia, LLC is a “person” as defined by W. Va. Code §22-6-1(n), with a corporate address as P.O. Box 611, Moon Township, Pennsylvania.
3. On December 1, 2016, Chevron Appalachia, LLC submitted well work permit applications identified as API#s 47-051-01903 and 47-051-01904. Then on January 24, 2017, Chevron Appalachia, LLC also submitted well work permit applications identified as API#s 47-051-01914, 47-051-01916 and 47-051-01917. The five proposed wells are to be located on the Longworth Pad in Clay District of Marshall County, West Virginia.
4. On December 1, 2016 and January 24, 2017, Chevron Appalachia, LLC requested a waiver for Wetlands 2A, 2B, 3, 4B and 4D outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47-051-01903, 47-051-01904, 47-051-01914, 47-051-01916 and 47-051-01917. Wetland 2A and 4D will be excluded from this waiver. Wetland 2A will be covered under the 404-permit due to its impact. Wetland 4D is outside the area of the pad LOD.

CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “[i]n addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “[n]o well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the Office of Oil and Gas shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The Office of Oil and Gas may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.”

ORDER

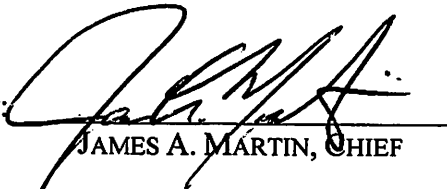
West Virginia Code §22-6A-12(b) requires, in part, that “[n]o well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetlands 2B, 3 and 4B from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47-051-01903, 47-051-01904, 47-051-01914, 47-051-01916 and 47-051-01917. The Office of Oil and Gas hereby **ORDERS** that Chevron Appalachia, LLC shall meet the following site construction and operational requirements for the Longworth Well Pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetland 2B, 3 and 4B shall have both a compost filter sock trap and a thirty-two (32”) compost filter sock to prevent sediment from reaching the wetlands.
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

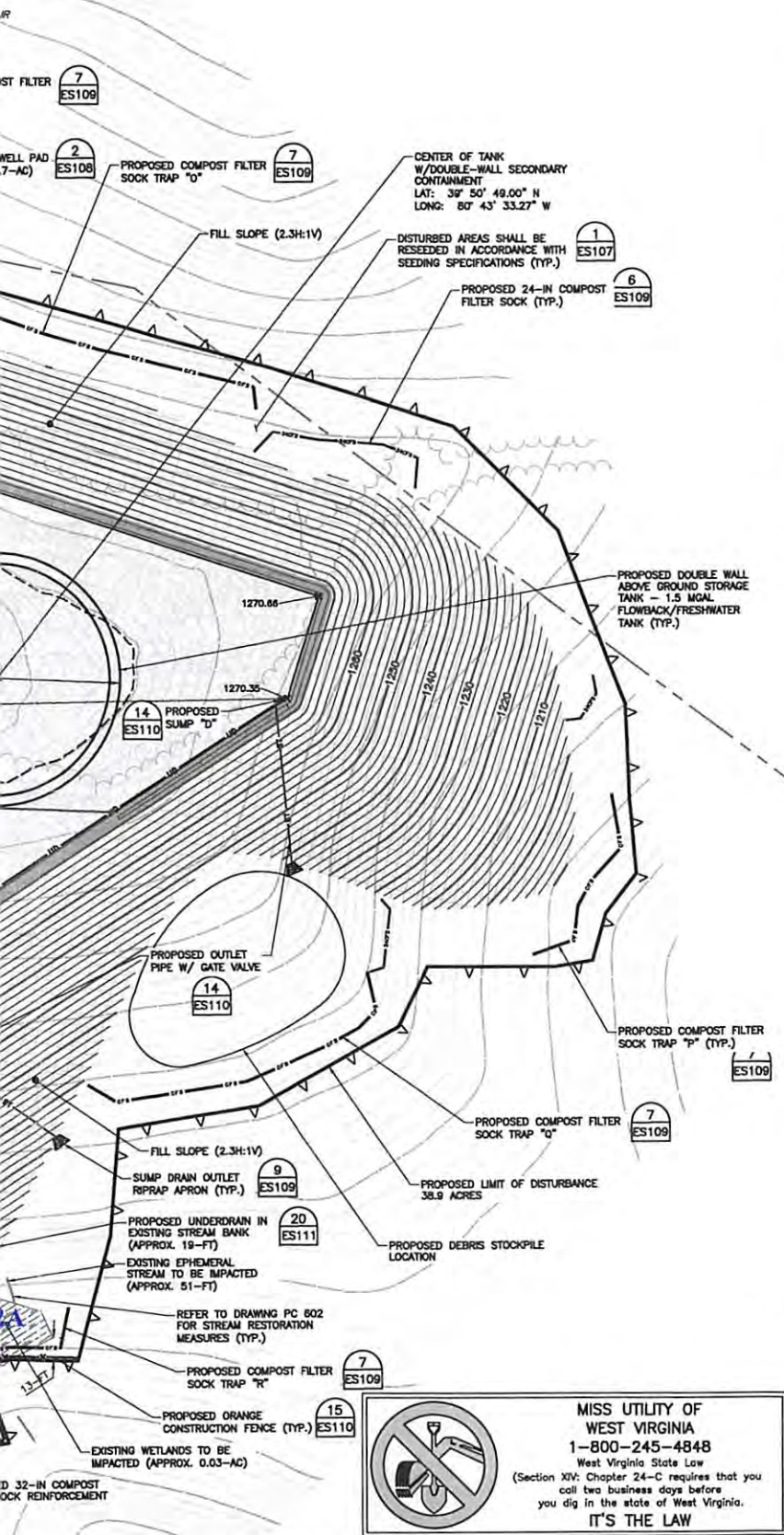
Thus ORDERED, the 27th day of February, 2017.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

OFFICE OF OIL AND GAS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF WEST VIRGINIA

By: 
JAMES A. MARTIN, CHIEF

FOR CONSTRUCTION PURPOSES ONLY

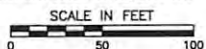


LEGEND

- EXISTING PROPERTY LINE
- 1200- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING PAVED ROADWAY
- EXISTING UNPAVED ROADWAY
- G- EXISTING GAS LINE
- W- EXISTING WATERLINE
- FO- EXISTING FIBER OPTIC LINE
- OH-E- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING STREAM
- EXISTING WETLAND
- EXISTING TREELINE
- EXISTING STRUCTURE
- EXISTING UTILITY POLE
- EXISTING WATER METER
- EXISTING WATER MAN-HOLE
- PROPOSED EDGE OF ACCESS ROAD
- PROPOSED LIMIT OF DISTURBANCE
- G- PROPOSED RELOCATED GAS LINE
- OH-E- PROPOSED RELOCATED OVERHEAD ELECTRIC LINE
- M3H PROPOSED WELL HEAD
- PROPOSED PERMETER BERM
- PROPOSED UTILITY RIGHT-OF-WAY
- PROPOSED GRAVEL
- PROPOSED ASPHALT PAVEMENT
- PROPOSED WOOD CHIP GROUND COVER
- 1200- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- x1200.00- PROPOSED WELL PAD CUT/FILL LINE
- x1200.00 PROPOSED SPOT ELEVATION
- PROPOSED COMPOST FILTER SOCK TRAP
- PROPOSED 18-IN COMPOST FILTER SOCK
- PROPOSED 24-IN COMPOST FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED INLET PROTECTION
- PROPOSED CHANNEL
- ST --- PROPOSED STORMWATER CULVERT
- PROPOSED INLET
- PROPOSED RIPRAP APRON
- UD --- PROPOSED UNDERDRAIN
- PROPOSED EROSION CONTROL BLANKET
- 1 --- DETAIL NUMBER
- ES107 --- DRAWING DESIGNATION

REFERENCES

1. TOPOGRAPHY DEVELOPED FROM AN UNMANNED AERIAL VEHICLE (UAV) FLIGHT CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 05/19/2016.
2. PROPERTY BOUNDARIES WERE PROVIDED BY CHEVRON.
3. STREAMS AND WETLANDS DELINEATED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/22/2016.
4. UNDERGROUND UTILITIES LOCATED BY A GEOPHYSICAL SURVEY CONDUCTED BY THG GEOPHYSICS LTD. DATED 04/18/2016 TO 04/22/2016.
5. MARKED UTILITY FEATURES SURVEYED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/26/2016 AND 06/16/2016.



MISS UTILITY OF WEST VIRGINIA
 1-800-245-4848
 West Virginia State Law
 (Section XIV, Chapter 24-C requires that you call two business days before you dig in the state of West Virginia.)
IT'S THE LAW

C&E
Civil & Environmental Consultants, Inc.
 4000 Triangle Lane, Suite 200 - Export, PA 15632
 724-327-5200 - 800-899-3610
 www.cenric.com



| REVISION RECORD | |
|-----------------|------------|
| No | Date |
| 01 | 12/15/2016 |
| 02 | 01/09/2017 |
| 03 | 02/23/2017 |
| 04 | |
| 05 | |
| 06 | |
| 07 | |
| 08 | |

LONGWORTH WELL SITE
 CLAY DISTRICT
 MARSHALL COUNTY, WEST VIRGINIA
 PREPARED FOR:
CHEVRON APPALACHIA, LLC
 800 MOUNTAIN VIEW DRIVE
 SMITHFIELD, PA 15478

EROSION AND SEDIMENT CONTROL PLAN (5 OF 5)

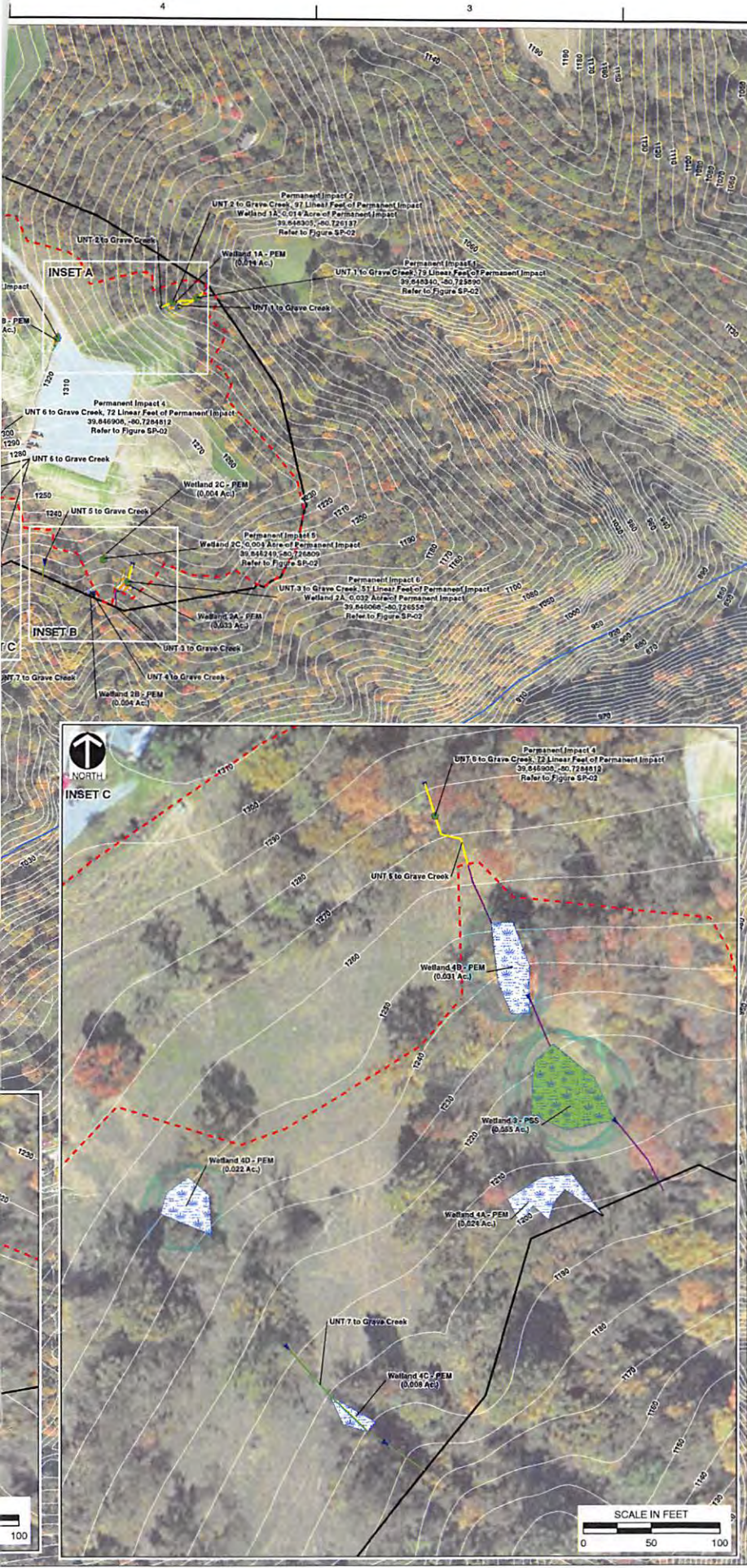
Project Number: 161-415.004C
 Drawing Scale: 1" = 100'
 Date Issued: 10/25/2016
 Index Number:
 Drawn By: JAM
 Checked By: TCB
 Project Manager: MJS

ES 105

05/03/2017



03/03/2017



| REVISION RECORD | | |
|-----------------|------|-------------|
| NO | DATE | DESCRIPTION |
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| SUBMITTAL RECORD | | |
|------------------|------|-------------|
| NO | DATE | DESCRIPTION |
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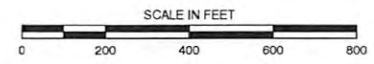
LEGEND


- PERMANENT IMPACT
- STREAM IMPACT
- NHD STREAM
- EPHEMERAL STREAM
- INTERMITTENT STREAM
- WETLAND IMPACT
- WETLAND - PEM
- WETLAND - PSS
- DELINEATION BOUNDARY
- PROPOSED LIMIT OF DISTURBANCE

- REFERENCES**
- NATIONAL HYDROGRAPHY DATASET, US GEOLOGICAL SURVEY, 2011.
 - WGIS CLEARING HOUSE, 10' CONTOURS GLEN EASTON, WV QUAD, 2003.
 - ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/ WORLD_IMAGERY ACCESSED 9/28/2016, IMAGERY DATE: 2011.

NOTES

- THE WETLAND AND STREAM DELINEATION WAS CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON 4/22/2016.
- CIVIL & ENVIRONMENTAL CONSULTANTS, INC. CONDUCTED THE WETLAND DELINEATION IN A MANNER CONSISTENT WITH THE CRITERIA CONTAINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987 MANUAL) AND THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND MANUAL: EASTERN MOUNTAINS AND PIEDMONT REGION, VERSION 2.0 (2012 REGIONAL SUPPLEMENT), AND WITH THE LEVEL OF CARE AND SKILL ORDINARILY EXERCISED BY MEMBERS OF THE ENVIRONMENTAL CONSULTING PROFESSION PRACTICING CONTEMPORANEOUSLY UNDER SIMILAR CONDITIONS IN THE LOCALITY OF THE PROJECT. IT MUST BE RECOGNIZED THE WETLAND DELINEATION WAS BASED ON FIELD OBSERVATIONS AND CIVIL & ENVIRONMENTAL CONSULTANTS' PROFESSIONAL INTERPRETATION OF THE CRITERIA IN THE 1987 MANUAL AND THE 2012 REGIONAL SUPPLEMENT. WETLAND DETERMINATIONS MAY CHANGE SUBSEQUENT TO CIVIL & ENVIRONMENTAL CONSULTANTS' DELINEATION BASED ON CHANGES TO REGULATORY CRITERIA, CHANGES TO DRAINAGE, AND OTHER HUMAN ACTIVITIES AND/OR LAND DISTURBANCES.





Civil & Environmental Consultants, Inc.
 4000 Triangle Lane, Suite 200 - Export, PA 15632
 Ph: 724-327-5200 - 800-899-3610
 www.cecinc.com

**LONGWORTH WELL PAD
 CHEVRON APPALACHIA, LLC
 CLAY DISTRICT,
 MARSHALL COUNTY, WEST VIRGINIA**

| | | | |
|-------------|------------|-------------|--------------|
| DRAWN BY | KMC | CHECKED BY | MAC |
| DATE | 09/28/2016 | SCALE | 1" = 200' |
| APPROVED BY | PAK* | PROJECT NO. | 161-415.0003 |
| FIGURE NO. | | | 2 |

AQUATIC IMPACTS MAP

Hand signature on file

03/03/2017

P:\2016\161-415-003\Map\NWP\161415_FIG_2_WWP_AQUATIC_IMPACTS.mxd 9/28/2016 10:53 AM (hshahz)

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

1) Well Operator: Chevron Appalachia, LLC

| | | | |
|-----------------|-----------------|-------------|------------------------|
| <u>49449935</u> | <u>Marshall</u> | <u>Clay</u> | <u>Glen Easton, WV</u> |
|-----------------|-----------------|-------------|------------------------|

Operator ID County District Quadrangle

2) Operator's Well Number: M04H 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: 1295' Elevation, proposed post-construction: 1270'

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

6) Existing Pad: Yes or No Yes *JW 2/13/17*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6531, 61' thick, 0.64 psi/ft gradient

8) Proposed Total Vertical Depth: 6535

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19215

11) Proposed Horizontal Leg Length: 11015

12) Approximate Fresh Water Strata Depths: 568'

13) Method to Determine Fresh Water Depths: 1' mile radius search around pad location

14) Approximate Saltwater Depths: 1279', 1883', 2281'

15) Approximate Coal Seam Depths: 520', 836'

16) Approximate Depth to Possible Void (coal mine, karst, other): None

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No

(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 | | | 60 | 60 | CTS |
| Fresh Water | 13.375 | New | J-55 | 54.5 | 618 | 618 | CTS |
| Coal | | | | | | | |
| Intermediate | 9.625 | New | L-80 | 40 | 2206 | 2206 | CTS |
| Production | 5.50 | New | P110 | 20 | 19215 | 19215 | 2,706 |
| Tubing | | | | | | | |
| Liners | | | | | | | |

JW 2/13/17

| 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 | 26" | | | | | |
| Fresh Water | 13.375 | 17.5 | 0.38 | 2730 | 1911 | Class A | 1.2 |
| Coal | | | | | | | |
| Intermediate | 9.625 | 12.375 & 12.25 | 0.395 | 5750 | 2768 | Class A | 1.19 |
| Production | 5.5 | 8.75 & 8.5 | 0.361 | 14360 | 9975 | Class A, G, or H | 1.25 |
| Tubing | | | | | | | |
| Liners | | | | | | | |

PACKERS

| | | | | |
|-------------|--|--|--|--|
| Kind: | | | | |
| Sizes: | | | | |
| Depths Set: | | | | |

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

Drill vertical depth to the Marcellus at an estimated total vertical depth of approximately 6,535 feet. Drill horizontal leg.

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

18,762 bbl fluid - 1,000,000 lbm sand/stage - 9,400 anticipated max psi - 100 bpm anticipated max rate

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: bow spring - (1) on shoe track w/ stop collar & (1) per jt over coupling to surface; Intermediate: bow spring - (1) on shoe track w/ stop collar & (1) per 3 jts over coupling; Vertical Production: bow spring - (1) per every other jt over coupling; Curve and Lateral: solid composite (1) per jt of csg to KOP.

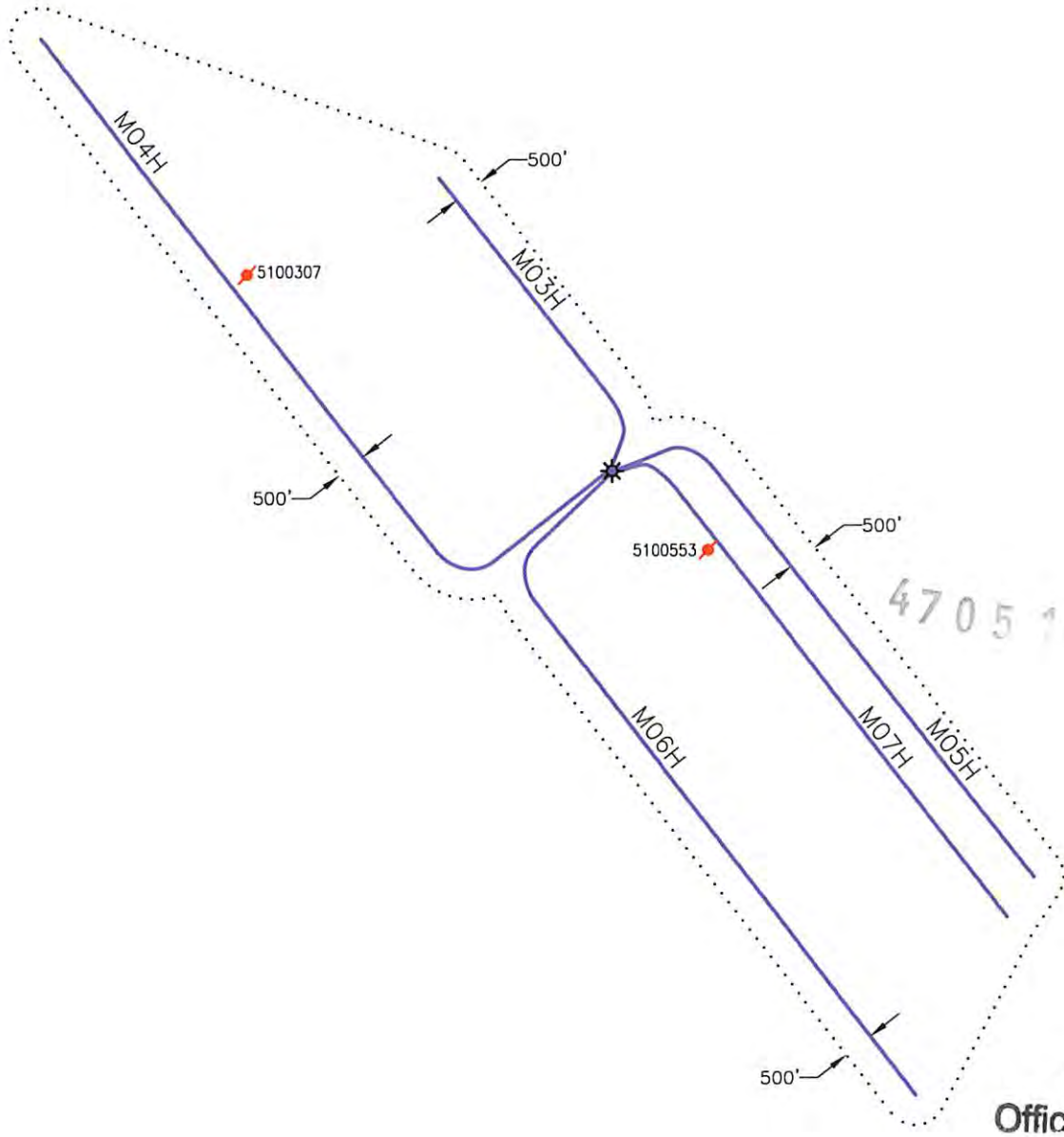
24) Describe all cement additives associated with each cement type:

For the Water String the blend will contain class A cement, 3% CaCl₂, and flake. The intermediate will contain class A cement, 3% CaCl₂, and flake. The Production cement will have a lead and tail cement. The lead will contain class A, G, or H cement, KCl, dispersant, suspension agent, and retarder. The tail will contain class A, G, or H cement, Calcium Carbonate, KCl, dispersant, de-foamer, suspension agent, and friction reducer.

25) Proposed borehole conditioning procedures:

Air sections ensured to be clean via air circulation once TD is reached. Fluid sections will be circulated a minimum of 2 bottoms up once casing point has been reached and until uniform mud properties are achieved.

*Note: Attach additional sheets as needed.



Received
Office of Oil & Gas
DEC 01 2016



PREPARED FOR:
CHEVRON APPALACHIA, LLC
800 MOUNTAIN VIEW DRIVE
SMITHFIELD, PA 15478

LEGEND
 - WELL LOCATION
 - PLUGGED WELL

LONGWORTH
AREA OF REVIEW MAP
MARSHALL COUNTY
CLAY DISTRICT
WEST VIRGINIA

TOPO QUAD: GLEN EASTON, WV
SCALE: 1" = 3000'
DATE: OCTOBER 18, 2016

| Well ID | Prior Operator On Record | Operator - DEP | Status | Latitude | Longitude | Vertical TD | Producing Formation | Producing Zones NOT Perforated |
|--------------|---------------------------|------------------|---------|-----------|------------|-------------|---------------------|--------------------------------|
| 47-051-00307 | Arrowhead Exploration Co. | Operator Unknown | Plugged | 39.855780 | -80.748193 | 3,000 | Fourth | None |
| 47-051-00553 | Kentucky Central & Co. | Operator Unknown | Plugged | 39.843735 | -80.720930 | 1,168 | Salt Sands | None |
| | | | | | | | | |

4705101904

4705101904

received
Office of Oil & Gas
DEC 01 2016

Cement Additives

The Water String the blend will contain class A cement, 3% CaCl₂, and flake.

The intermediate will contain class A cement, 3% CaCl₂, and flake.

The Production cement will have a lead and tail cement.

The lead will contain class A, G, or H cement, KCl, dispersant, suspension agent, and retarder.

The tail will contain class A, G, or H cement, Calcium Carbonate, KCl, dispersant, de-foamer, suspension agent, and friction reducer.

| Chevron | | Longworth M04H | | | | Ground Level Elev. (ft above SL): | | 1270 | |
|---------------------------------|---|-------------------------|---------|-----------------|-----|-----------------------------------|----------------|--|--|
| Clay Twp, Marshall Co, WV | | DEPTH | | WELLHEAD DESIGN | | CASING SPECS | | CEMENT PROGRAM | |
| DRILLING FLUID / BIT TYPE / TFA | CENTRALIZER PROGRAM | CASING SIZE / FORMATION | MD (FT) | TVD (FT) | INC | AZM | HOLE SIZE (IN) | | |
| Core Barrel / Auger | 2 Bowspring per jt | 20" Conductor | 60 | 60 | | | 26 | Conductor 20" 78.67# X-52 Minimum 40 ft from GL or at least 10 ft into bedrock | Grout to Surface |
| | Bow Spring: (1) on shoe track w/ stop collar & (1) per jt over coupling to surface | 13-3/8" Casing | 618 | 618 | | | 17.5 | Surface Casing 13-3/8" 54.5# J-55 BTC 0.38" Wall Coupling OD (in) 14.375 ID (in) 12.615 Drift ID (in) 12.459 Burst (psi) 2730 Collapse (psi) 1,130 Yield (Jt Strength 1,000 lbs) 853 | Surface Blend (Class A) Cement to Surface |
| | Bow Spring: (1) on shoe track w/ stop collar & (1) per 3 jts over coupling | 9-5/8" Casing | 2,206 | 2,206 | | | 12.375 - 12.25 | Intermediate Casing 9-5/8" 40# J-55 BTC 0.395" Wall Coupling OD (in) 10.625 ID (in) 8.835 Drift ID (in) 8.678 Burst (psi) 3,950 Collapse (psi) 2,570 Yield (Jt Strength 1,000 lbs) 630 | Intermediate II Blend (Class A) Cement to Surface |
| | Vertical Bow Spring: (1) per every other jt over coupling Curve and lateral Solid Composite (1) per jt of csg to KOP | | | | | | | Production Casing 5-1/2" 20# P-110 EC, 0.361" Wall Coupling OD (in) 6.300 ID (in) 4.778 Drift ID (in) 4.653 Burst (psi) 14360 Collapse (psi) 12090 Yield (Jt Strength 1,000 lbs) 729 | Production Lead Slurry Cement to Surface |
| | | Middlesex | | 6,293 | | | | | |
| | | Burkett Shale | | 6,369 | | | | | |
| | | Tully Limestone | | 6,389 | | | | | |
| | | Hamilton shale | | 6,423 | | | | | |
| | | Upper Marcellus | | 6,491 | | | | | |
| | | Lower Marcellus | | 6,522 | | | | | |
| | | Basal Marcellus | | 6,547 | | | | | Production Tail Slurry TOC minimum 200' above Marcellus |
| Non-Conservation | Float Equip. (2) jts of Csg | 5-1/2" Casing | 19,215 | 6,535 | | | 8.5 - 8.75 | | |

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WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. M04H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Chevron Appalachia, LLC OP Code 49449935

Watershed (HUC 10) Middle Grave Creek - Grave Creek Quadrangle Glen Easton, WV 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes No If so, what ml.? _____

Proposed Disposal Method For Treated Wastes:

- Land Application
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number next anticipated well)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes, we will be utilizing multiple open/closed top tanks

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air to KOP, SBM from KOP to TMD

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium? barite, fluid loss, emulsifiers, rheological control

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. removed offsite

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? Arden Landfill #100172; South Hills Landfill #100592; Short Creek Landfill #WW0109517

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature *Jenny Hayes*

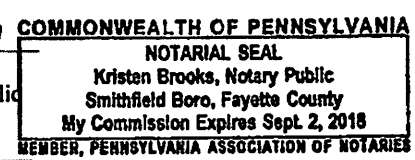
Company Official (Typed Name) Jenny Hayes

Company Official Title Permitting Team Lead

Subscribed and sworn before me this 31st day of October, 2016

Kristen Brooks Notary Public

My commission expires Sept 2, 2018



Chevron Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 14.2 Prevegetation pH Per soil testing report

Lime Per soil testing report Tons/acre or to correct to pH per soil testing report

Fertilizer type see table C attached

Fertilizer amount 1,000 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre

Seed Type lbs/acre

See Table A attached

See Table B attached

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

Jim [Signature]

Comments:

Title: Oil + Gas Inspector

Date: 11/14/16

Field Reviewed?

Yes

No

| TABLE A - TEMPORARY SEEDING MIXTURES (FROM WV DOT DOH STANDARD SPECIFICATIONS) | | | |
|--|---------------------------------------|--|---|
| VARIETY OF SEED | SPRING MAR 1 - MAY 15 LBS/ ACRE | SUMMER MAY 16 - AUG 15 LBS/ ACRE | FALL AND WINTER AUG 16 - APR 30 LBS/ ACRE |
| ANNUAL RYEGRASS | 10 | | 10 |
| BARLEY OF OATS (LOCAL SEEDS) | 50 | | |
| MILLET (HUNGARIAN, GERMAN OR JAPANESE) | | 50 | |
| CEREAL RYE OR CEREAL WHEAT | | | 50 |
| TOTAL | 60 | 50 | 60 |

| TABLE B - SEED MIXTURES (FROM WV DOT DOH STANDARD SPECIFICATIONS) | | |
|--|---|--|
| VARIETY OF SEED | TYPE D* (CUT AND FILL SLOPES) LBS/ ACRE | TYPE L (ALL OTHER AREAS) LBS/ ACRE |
| KENTUCKY 31 FESCUE | 20 | |
| RED FESCUE (PENNLAWN) | 20 | 41 |
| CROWNVEICH | 20 | |
| HARD FESCUE MIXTURE ** | | 63 |
| ANNUAL RYEGRASS AUG 1 TO MAY 15 OR WEEPING LOVEGRASS MAY 15 TO AUGUST 1 | 7 | 12 5 |

*30 LB OF CEREAL RYE OR WHEAT SHALL BE ADDED TO TYPE D MIXTURE WHEN WOOD CELLULOSE FIBER IS USED AS A MULCH
 ** A COMBINATION OF APPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL HARD FESCUE

| TABLE C - FERTILIZER | | |
|---------------------------|------------------------------------|------------------|
| TYPE | FORMULA | RATE (LBS/ ACRE) |
| MIXED GRASSES AND LEGUMES | 10-10-20 | 1,000 |
| LEGUME STANDS ONLY | 5-20-10 (PREFERRED) OR 10-20-10 | 1,000 |
| GRASS STANDS ONLY | 10-10-20 | 1,000 |



Chevron

Appalachian LLC
WV Well Site Safety Plan
Pad: Longworth Pad A

4705101904

Well # M04H

5962 Roberts Ridge Rd
Moundsville, WV 26041
Washington District
Marshall County, WV

ju
11/16/16

Access Point – [39.839575°N, 80.737044°W]

Well Site – [39.847350°N, 80.726939°W]

Marshall County, West Virginia

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Office of Oil & Gas

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| LINE | BEARING | DISTANCE |
|------|---------------|----------|
| R1 | S 33°15'20" E | 185.04' |
| R2 | N 80°26'23" E | 275.01' |
| R3 | N 63°23'43" E | 258.19' |
| R4 | N 50°35'57" W | 2243.21' |
| R5 | N 85°58'34" W | 1588.88' |
| R6 | S 41°03'46" E | 1335.61' |

BHL is located on topo map 3,250 feet south of Latitude: 39° 52' 30"
 SHL is located on topo map 10,141 feet south of Latitude: 39° 52' 30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS

NOTES:

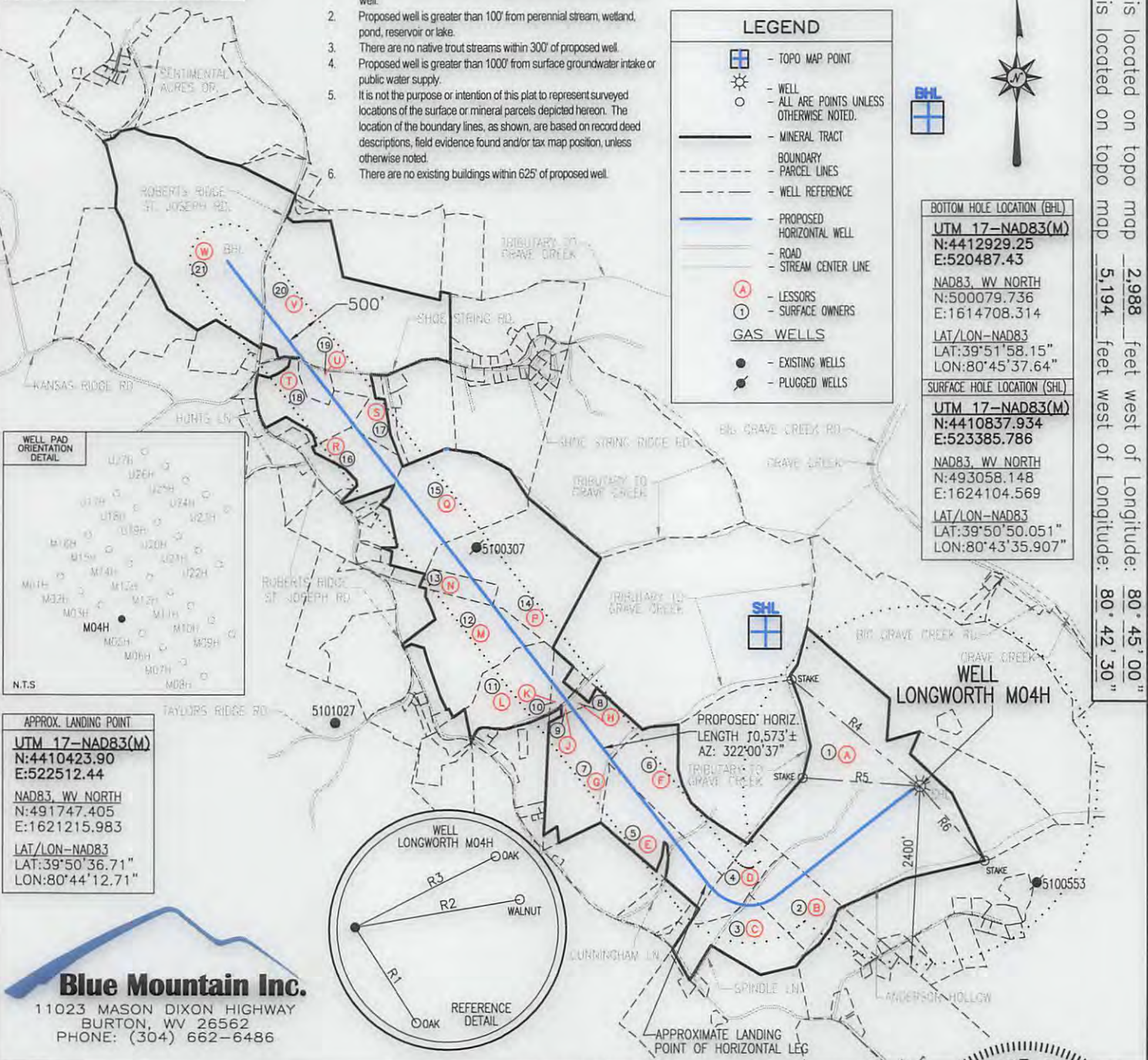
- There are no water wells or developed springs within 250' of proposed well.
- Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
- There are no native trout streams within 300' of proposed well.
- Proposed well is greater than 1000' from surface groundwater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

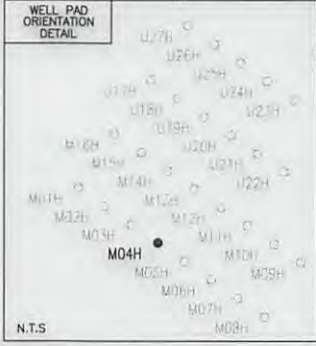
- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT
- BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- LESSORS
- SURFACE OWNERS
- GAS WELLS**
- EXISTING WELLS
- PLUGGED WELLS

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4412929.25
 E:520487.43
 NAD83, WV NORTH
 N:500079.736
 E:1614708.314
 LAT/LON-NAD83
 LAT:39°51'58.15"
 LON:80°45'37.64"

SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4410837.934
 E:523385.786
 NAD83, WV NORTH
 N:493058.148
 E:1624104.569
 LAT/LON-NAD83
 LAT:39°50'50.051"
 LON:80°43'35.907"

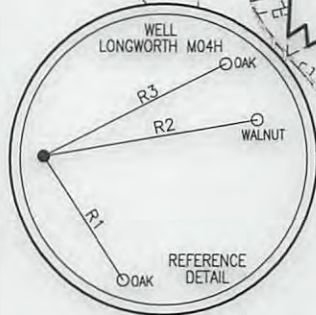


BHL is located on topo map 2,988 feet west of Longitude: 80° 45' 00"
 SHL is located on topo map 5,194 feet west of Longitude: 80° 42' 30"



APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4410423.90
 E:522512.44
 NAD83, WV NORTH
 N:491747.405
 E:1621215.983
 LAT/LON-NAD83
 LAT:39°50'36.71"
 LON:80°44'12.71"

Blue Mountain Inc.
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486



FILE #: LONGWORTH M04H
 DRAWING #: LONGWORTH M04H
 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: [Signature]
 R.P.E.: _____ L.L.S.: P.S. No. 2000



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



DATE: OCTOBER 4, 2016
 OPERATOR'S WELL #: LONGWORTH M04H
 API WELL #: 47 51 01904 HGA
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1294.18'

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: 667.256±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE

(SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,600'± TMD: 19,215.3'±

WELL OPERATOR CHEVRON APPALACHIA, LLC DESIGNATED AGENT KENNETH E. TAWNEY
 Address 800 MOUNTAIN VIEW DRIVE Address 500 LEE STREET, EAST SUITE 1600
 City SMITHFIELD State PA Zip Code 15478 City CHARLESTON State WV Zip Code 25301-3202

03/03/2017

LONGWORTH

M04H

PAGE 2 OF 2

| | LESSOR | DIST-TM/PAR |
|---|-------------------------------------|-------------|
| A | GRAHAM H. LONGWORTH, JR. ET AL | 4-11/1 |
| B | HOLMES CWC LEGACY LLC | 4-11/55 |
| C | MARY W. HOLMES ET AL | 4-13/39 |
| D | JEFFREY S. HOLMES ET UX | 4-13/39.1 |
| E | LOREN HARTLEY ET UX | 4-13/35 |
| F | DALE CUNNINGHAM ET UX | 4-13/34 |
| G | DEBRA GUMP ET AL TIMOTHY HUGGINS | 4-13/32 |
| H | WILLIAM F. BRITTON | 4-13/32.6 |
| J | JOHN R. WOOD ESTATE | 4-13/32.2 |
| K | KEITH A. HILL ET UX | 4-13/32.3 |
| L | ROBERT L. JONES, JR. ET UX | 4-13/29 |
| M | PAUL TRADER ET UX | 4-13/25 |
| N | ROBERT L. JONES, JR. ET UX | 4-12/24 |
| P | RALPH E. WOOD | 4-12/21 |
| Q | RALPH E. WOOD | 4-12/22 |
| R | LEMONT MASON ET UX | 4-13/15.1 |
| S | LIONEL SCHWING ET UX | 4-13/13.1 |
| T | LEMONT MASON ET UX | 4-13/12 |
| U | DUSTIN E. CRAWFORD | 4-13/12.2 |
| V | BYRON C. FREELAND ET UX | 4-7/28 |
| W | JOSEPH L. FREELAND ET UX | 4-7/21 |

| | SURFACE OWNER | DIST-TM/PAR |
|----|------------------------------|-------------|
| 1 | GRAHAM H. LONGWORTH, JR. | 4-11/1 |
| 2 | HOLMES-CWC-LEGACY LLC | 4-11/55 |
| 3 | MARY HOLMES-LIFE | 4-13/39 |
| 4 | JEFFREY SCOTT HOLMES, ET AL. | 4-13/39.1 |
| 5 | PATRICIA A. HARTLEY | 4-13/35 |
| 6 | DALE & MARY CUNNINGHAM | 4-13/34 |
| 7 | DEBRA GUMP | 4-13/32 |
| 8 | WILLIAM F. BRITTON | 4-13/32.6 |
| 9 | HARLEY WOOD EST | 4-13/32.2 |
| 10 | KEVIN L. HOLMES, JR. | 4-13/32.3 |
| 11 | ROBERT L. JONES, JR. | 4-13/29 |
| 12 | PAUL TRADER | 4-13/25 |
| 13 | ROBERT L. JONES, JR., ET UX. | 4-12/24 |
| 14 | RALPH E. WOOD | 4-12/21 |
| 15 | RALPH E. WOOD | 4-12/22 |
| 16 | LEMONT MASON, ET UX. | 4-13/15.1 |
| 17 | LIONEL D. SCHWING, ET UX. | 4-13/13.1 |
| 18 | LEMONT & RHONDA L. MASON | 4-13/12 |
| 19 | DUSTIN E. CRAWFORD | 4-13/12.2 |
| 20 | BYRON FREELAND | 4-7/28 |
| 21 | JOSEPH L. FREELAND, ET UX. | 4-7/21 |

| SURFACE HOLE LOCATION (SHL) |
|---|
| UTM 17-NAD83(M) N:4410837.934 E:523385.786 |
| NAD83, WV NORTH N:493058.148 E:1624104.569 |
| LAT/LON-NAD83 LAT:39°50'50.051" LON:80°43'35.907" |

| APPROX. LANDING POINT |
|---|
| UTM 17-NAD83(M) N:4410423.90 E:522512.44 |
| NAD83, WV NORTH N:491747.405 E:1621215.983 |
| LAT/LON-NAD83 LAT:39°50'36.71" LON:80°44'12.71" |

| BOTTOM HOLE LOCATION (BHL) |
|---|
| UTM 17-NAD83(M) N:4412929.25 E:520487.43 |
| NAD83, WV NORTH N:500079.736 E:1614708.314 |
| LAT/LON-NAD83 LAT:39°51'58.15" LON:80°45'37.64" |

03/03/2017

**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

4705101204

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

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

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DEC 01 2016**

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: Chevron Appalachia, LLC
 By: *Jenny Hays*
 Its: Permitting Team Lead

Longworth M04H

| Plat ID | Lessor | Lessee | Royalty | Book/Page | Assignment #1 | Assignment #2 |
|-----------|-----------------------------|----------------------------|---------|-----------------|---|---|
| 4-11-1.0 | LONGWORTH GRAHAM H JR ET AL | Chevron U.S.A. Inc. | 0.14 | BK 790 - PG 129 | n/a | n/a |
| 4-11-55.0 | HOLMES CWC LEGACY LLC | Chevron U.S.A. Inc. | 0.14 | BK 790 - PG 120 | n/a | n/a |
| 4-13-39.0 | HOLMES MARY W ET AL | Chevron U.S.A. Inc. | 0.14 | BK 791 - PG 234 | n/a | n/a |
| 4-13-39.1 | HOLMES JEFFREY S ET UX | Chesapeake Appalachia, LLC | 0.15 | BK 681 - PG 520 | BK 30 - PG 392 Chesapeake Appalachia, LLC to Chevron U.S.A. Inc. BK 24 - PG 430 | n/a BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc. |
| 4-13-35.0 | HARTLEY LOREN ET UX | TriEnergy Holdings, LLC | 0.17 | BK 717 - PG 129 | TriEnergy Holdings, LLC to NPAR, LLC BK 30 - PG 392 | n/a |
| 4-13-34.0 | CUNNINGHAM DALE ET UX | Chesapeake Appalachia, LLC | 0.15 | BK 681 - PG 502 | Chesapeake Appalachia, LLC to Chevron U.S.A. Inc. BK 756 - PG 397 | n/a |
| 4-13-32.0 | GUMP DEBRA ET AL | AB Resources LLC | 0.125 | BK 691 - PG 142 | AB Resources LLC to Chevron U.S.A. Inc. BK 756 - PG 397 | n/a |
| | HUGGINS TIMOTHY | AB Resources LLC | 0.125 | BK 700 - PG 149 | AB Resources LLC to Chevron U.S.A. Inc. BK 24 - PG 430 | n/a BK 756 - PG 332 |
| 4-13-32.6 | BRITTON WILLIAM F | TriEnergy Holdings, LLC | 0.16 | BK 711 - PG 361 | TriEnergy Holdings, LLC to NPAR, LLC BK 25 - 463 | NPAR, LLC to Chevron U.S.A. Inc. BK 026 - PG 269 |
| 4-13-32.2 | WOOD JOHN R ESTATE | TriEnergy Holdings, LLC | 0.16 | BK 718 - PG 426 | TriEnergy Holdings, LLC to NPAR, LLC BK 024 - PG 180 | NPAR, LLC to Chevron U.S.A. Inc. BK 756 - PG 332 |
| 4-13-32.3 | HILL KEITH A ET UX | TriEnergy Holdings, LLC | 0.16 | BK 704 - PG 609 | TriEnergy Holdings, LLC to NPAR, LLC BK 756 - PG 397 | NPAR, LLC to Chevron U.S.A. Inc. |
| 4-13-29.0 | JONES ROBERT L JR ET UX | AB Resources LLC | 0.125 | BK 689 - PG 087 | AB Resources LLC to Chevron U.S.A. Inc. BK 756 - PG 397 | n/a |
| 4-13-25.0 | TRADER PAUL ET UX | AB Resources LLC | 0.18 | BK 692 - PG 457 | AB Resources LLC to Chevron U.S.A. Inc. | n/a |

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| Plat ID | Lessor | Lessee | Royalty | Book/Page | Assignment #1 | Assignment #2 |
|-----------|-------------------------|-------------------------|---------|-----------------|---|--|
| 4-12-24.0 | JONES ROBERT L JR ET UX | AB Resources LLC | 0.125 | BK 689 - PG 087 | BK 756 - PG 397 AB Resources LLC to Chevron U.S.A. Inc. | n/a |
| 4-12-21.0 | WOOD RALPH E | Chevron U.S.A. Inc. | 0.18 | BK 835 - PG 028 | n/a | n/a |
| 4-12-22.0 | WOOD RALPH E | Chevron U.S.A. Inc. | 0.18 | BK 835 - PG 028 | n/a | n/a |
| 4-13-15.1 | MASON LEMONT ET UX | TH Exploration, LLC | 0.18 | BK 860 - PG 385 | BK 36 - PG 168 TH Exploration, LLC to Chevron U.S.A. Inc. | n/a |
| 4-13-13.1 | SCHWING LIONEL ET UX | Chevron U.S.A. Inc. | 0.16 | BK 831 - PG 381 | n/a | n/a |
| 4-13-12.0 | MASON LEMONT ET UX | TH Exploration, LLC | 0.18 | BK 860 - PG 385 | BK 36 - PG 168 TH Exploration, LLC to Chevron U.S.A. Inc. | n/a |
| 4-13-12.2 | CRAWFORD DUSTIN E | TriEnergy Holdings, LLC | 0.16 | BK 706 - PG 303 | BK 024 - PG 180 TriEnergy Holdings, LLC to NPAR, LLC | BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc. |
| 4-7-28.0 | FREELAND BYRON C ET UX | Chevron U.S.A. Inc. | 0.14 | BK 786 - PG 217 | n/a | n/a |
| 4-7-21.0 | FREELAND JOSEPH L ET UX | Chevron U.S.A. Inc. | 0.14 | BK 786 - PG 208 | n/a | n/a |

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Office of Oil & Gas**

DEC 01 2016

4705101004



Branden Weimer
Permitting Team Lead

Chevron Appalachia, LLC
800 Mountain View Drive
Smithfield, PA 15478
Tel 724 564 3745
Fax 724 564 3894
bwkb@chevron.com

January 6, 2015

West Virginia D.E.P.
Office of Oil & Gas
601 57th Street SE
Charleston, WV 25304-2345

4705 101904

To Whom It May Concern:

Please be advised that Chevron Appalachia, LLC and Chevron U.S.A. Inc. are affiliated entities. Unless and until revoked, and as evidenced by the signatures of authorized representatives of each entity below, Chevron Appalachia, LLC is authorized to operate assets owned by Chevron U.S.A. Inc. which are located in West Virginia, including oil and gas leases. More particularly, Chevron Appalachia, LLC is authorized to obtain well work permits for assets owned by Chevron U.S.A. Inc. I trust that this will alleviate any concerns the Department may have about Chevron Appalachia, LLC applying for well work permit applications on properties either leased or owned by Chevron U.S.A. Inc. If you have any further questions or concerns, please do not hesitate to contact me.

Branden Weimer
Attorney-In-Fact for Chevron Appalachia, LLC

Marc Tate
Attorney-In-Fact for Chevron U.S.A. Inc.

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Office of Oil & Gas
DEC 01 2016

03/03/2017



Irvin Gutierrez, RPL
Land Representative
Appalachian/Mountain Business Unit
Chevron North America Exploration and
Production Company
700 Cherrington Parkway
Coraopolis, PA 15108
Office 412-865-1403

West Virginia D.E.P.
Office of Oil & Gas
601 57th Street SE
Charleston, WV 25304-2345

November 1, 2016

4705 101904

RE: Longworth Unit #3H, #4H, #5H, #6H & #7H

To whom it may concern,

This letter serves to notify the West Virginia D.E.P. that Chevron U.S.A. Inc. has earned the right to access minerals under any road along the above referenced laterals. If you should have questions or need additional documentation, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Irvin R Gutierrez".

Irvin R Gutierrez
Land Representative

Received
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DEC 01 2016

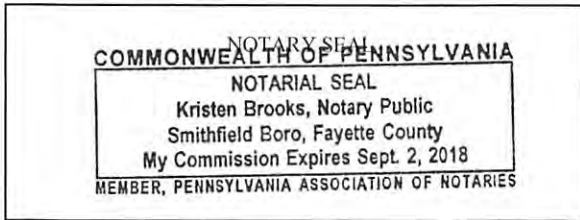
03/03/2017

Certification of Notice is hereby given:

THEREFORE, I Jenny Hayes, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: Chevron Appalachia, LLC
By: *Jenny Hayes*
Its: Permitting Team Lead
Telephone: 724-564-3700

Address: 800 Mountain View Drive
Smithfield, PA 15478
Facsimile: 724-564-3894
Email: _____



Subscribed and sworn before me this 15th day of Nov., 2016.
Kristen Brooks Notary Public
My Commission Expires Sept. 2, 2018

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION**

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 11/4/2016 **Date Permit Application Filed:** 12/1/16

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

SURFACE OWNER(s)
Name: Graham H. Longworth
Address: 2527 Fork Ridge Road
Moundsville, WV 26041
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Consolidated Coal Company
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

COAL OPERATOR
Name: Murray Energy Corporation
Address: 46226 National Road
St. Clairsville, OH 43950

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Mary Holmes
Address: 197 Spindle Lane
Moundsville, WV 26041
Name: The Estate of Barbara J. Derrow
Address: 6247 Roberts Ridge Road
Moundsville, WV 26041

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: Daniel C. Longworth
Address: 812 Spindle Lane
Moundsville, WV 26041

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

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*Please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the ⁴⁷WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 401 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2015, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

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Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A
(8-13)

API NO. 47- _____
OPERATOR WELL NO. M04H _____
Well Pad Name: Longworth _____

Jenny Hayes

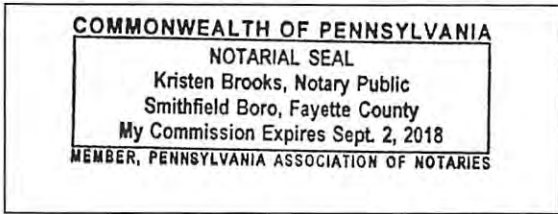
Notice is hereby given by:

Well Operator: Chevron Appalachia, LLC
Telephone: 724-564-3700
Email: _____

Address: 800 Mountain View Drive
Smithfield, PA 15478
Facsimile: 724-564-3894

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wy.gov.



Subscribed and sworn before me this 2nd day of NOV, 2016.

Kristen Brooks Notary Public

My Commission Expires Sept 2, 2018

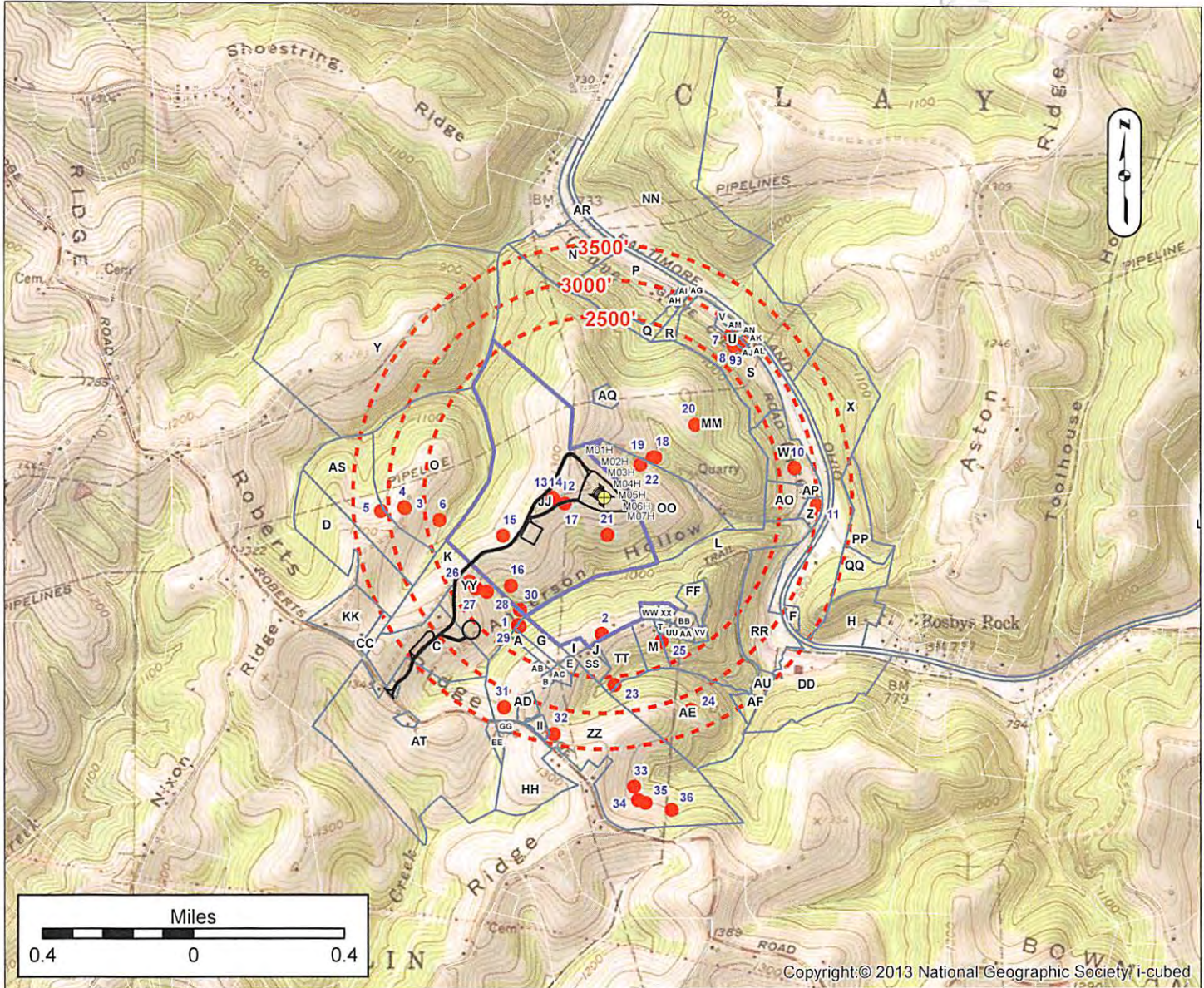
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WATER SUPPLY EXHIBIT LONGWORTH UNIT



LOT OWNERS

| Label | OWNER | TM | Label | OWNER | TM | Label | OWNER | TM | Label | OWNER | TM |
|-------|------------------------------|------------------------|-------|-----------------------------|------------------------|-------|-------------------------------|------------------------|-------|------------------------------|------------------------|
| A | MIDCAP RAYMOND L & DOROTHY J | 25-04 11005600100000 | J | JOBES SHERRY M | 25-04 1200120000200000 | FF | CLARNEY KAREN M & ABRAHAM S | 25-05 30013000100000 | ET | LIGHTNER JOHN D ET UX | 25-04 1100540004000000 |
| B | WHITLATCH KENNETH E ET UX | 25-04 1100560004000000 | K | JOBES KATHY | 25-04 1200120000200000 | FF | YONHO JAMES E & LEAH A | 25-04 11005400120000 | UU | MIDCAP RAYMOND L ET UX | 25-04 1100540006000000 |
| C | HOLMES MARY | 25-04 1300190000000000 | L | JOBES KATHY | 25-04 1200130000000000 | GG | HUGGINS RICHARD M & CRYSTAL M | 25-05 3003600000000000 | VV | STUCKEY JAMES A ET UX | 25-04 1100540007000000 |
| D | HARTLEY LOREN E & PATRICIA A | 25-04 1300135000000000 | M | MORRISON JAMES W ET UX | 25-04 1200140000000000 | HH | CLARK GILBERT E JR & ANITA L | 25-05 3004100000000000 | WW | WILLIAMS EDWARD ET UX | 25-04 1100540001000000 |
| E | MIDCAP RAYMOND L ET UX | 25-04 1100560010000000 | N | MIDCAP BRADY L EST ET UX | 25-04 1100540005000000 | II | FLOWERS CLINT E & BRENT B | 25-04 1100560006000000 | XX | WHITE JOHN S ET UX | 25-04 1200140000700000 |
| F | ROUSH DEAN ET UX | 25-04 1100003000100000 | O | STEVEY HERBERT R ET UX | 25-04 1200140000100000 | JJ | LONGWORTH GRAHAM H JR | 25-04 1100010000000000 | YY | HOLMES MARY | 25-04 1100551000000000 |
| G | MIDCAP RAYMOND L & DOROTHY J | 25-04 1100560005000000 | P | WHITE JOHN STANLEY ET UX | 25-04 1200140000300000 | KK | KENEKES RONALD A ET UX | 25-04 1300380000000000 | ZZ | FLOWERS CLINT E & BRENT B | 25-04 1100560000000000 |
| H | CONNER GLEN W ET UX | 25-04 1100510000000000 | Q | SHAFER ROBERT L SR ET UX | 25-04 1200115000100000 | LL | CONSOLIDATION COAL COMPANY | 25-04 1100519000000000 | AA | MIDCAP RAYMOND L & DOROTHY J | 25-04 1100560007000000 |
| I | LIGHTNER JOHN D ET UX | 25-04 1100540003000000 | R | ROUSH HARRY F ET UX | 25-04 1100013000000000 | MM | LONGWORTH DANIEL C | 25-04 1100016000000000 | AC | MIDCAP RAYMOND L & DOROTHY J | 25-04 1100560012000000 |
| J | MIDCAP RAYMOND LLOYD JR | 25-04 1100540008000000 | S | JARRETT CODY M | 25-04 1200119000000000 | NN | MOUNDSVILLE CITY OF | 25-04 1000010000000000 | AD | FLOWERS CLINT E & BRENT L | 25-04 1100560013000000 |
| K | HOLMES JEFFREY SCOTT ET AL | 25-04 1300135000100000 | T | WINLAND KELLY BRUCE | 25-04 1200115000700000 | OO | LONGWORTH GRAHAM H JR | 25-04 1100020000000000 | AE | LIGHTNER JOHN D ET UX | 25-04 1100570000000000 |
| L | FOX DELORES | 25-04 1100540000000000 | U | STUCKEY JAMES A ET UX | 25-04 1100540002000000 | PP | ROUSH HARRY F | 25-04 1100040000000000 | AF | TECH PARK NON-PROFIT | 25-04 1100570001000000 |
| M | MIDCAP BRADY L ET UX | 25-04 1100513000000000 | V | THATNER JAMES C & MELISSA S | 25-04 1100540000900000 | QQ | ROUSH HARRY F ET UX | 25-04 1100510000000000 | AG | JOBES SHERRY M | 25-04 1200120000000000 |
| N | HAUGHTY THOMAS L & CLARA J | 25-04 1200100007000000 | W | CECIL KELLY J ET UX | 25-04 1100380001000000 | RR | TECH PARK NON-PROFIT | 25-04 1100570000000000 | AH | JOBES KATHY | 25-04 1200120001000000 |
| O | CUNNINGHAM DALE & MARY | 25-04 1300130000000000 | X | TECH PARK NON-PROFIT | 25-09 1000210000000000 | SS | MIDCAP RAYMOND L | 25-04 1100540001000000 | AI | JOBES KATHY | 25-04 1200130000000000 |

Surface Owner: GRAHAM H LONGWORTH, JR.
 Oil/Gas Owner: GRAHAM H LONGWORTH, JR.
 Well Operator: CHEVRON APPALACHIA, LLC
 Address: 800 MOUNTAIN VIEW DRIVE
SMITHFIELD, PA. 15478
 Phone: 724-564-3700

County: MARSHALL
 Township: MOUNDSVILLE, WV
 Surveyor: GROUNDWATER & ENVIRONMENTAL SERVICES, INC.
 Address: 301 COMMERCE PARK DR
CRANBERRY TOWNSHIP, PA 16066
 Phone: 800-267-2549

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NOTICE: THE INTENT OF THIS EXHIBIT IS TO IDENTIFY EXISTING WATER SUPPLIES IN THE VICINITY OF A PROPOSED GAS WELL, AND IS NOT A COMPLETE BOUNDARY SURVEY. PROPERTY LINES AND OWNER INFORMATION WERE OBTAINED FROM DEEDS, TAX RECORDS, AERIAL PHOTOGRAPHY, GIS, AND FIELD SURVEYED EVIDENCE.

WW-6AW
(1-12)

API NO. _____
OPERATOR WELL NO. Longworth 4H
Well Pad Name: Longworth

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, Alex O'Neill, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

| | | | | |
|-------------|----------------------|---------------------------|---------------------|-------------------------|
| State: | <u>West Virginia</u> | West Virginia | East: | <u>1,655,541.327 ft</u> |
| County: | <u>Marshall</u> | North State Plane | North: | <u>493,021.640 ft</u> |
| District: | <u>Clay</u> | NAD 27 | Public Road Access: | _____ |
| Quadrangle: | _____ | Generally used farm name: | <u>LONGWORTH</u> | _____ |
| Watershed: | _____ | | | _____ |

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials, **provided that Chevron U.S.A. Inc. drills the well on West Virginia North State Plane NAD 27 coordinates of North 493,021.640 ft, East 1,655,541.327 ft in accordance with the Agreement between Consolidation Coal Company, Murray American Energy and Chevron U.S.A. Inc. dated 8/29/16.**

*Please check the box that applies

- SURFACE OWNER
- SURFACE OWNER (Road and/or Other Disturbance)
- SURFACE OWNER (Impoundments/Pits)
- COAL OWNER OR LESSEE
- COAL OPERATOR
- WATER PURVEYOR
- OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Received
Office of Oil & Gas
DEC 01 2016

FOR EXECUTION BY A NATURAL PERSON

Signature: _____
Print Name: _____
Date: _____

FOR EXECUTION BY A CORPORATION, ETC.

Company: Consolidation Coal Company
By: Alex O'Neill
Its: Coal, Oil & Gas Relations Manager
Signature: _____
Date: 9/1/2016

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to carry out regulatory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

03/03/2017

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

Date of Notice: 11/04/2016 **Date Permit Application Filed:** 12/1/16

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

HAND DELIVERY **CERTIFIED MAIL RETURN RECEIPT REQUESTED**

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Graham H Longworth Jr.
Address: 2527 Fork Ridge Road
Moundsville, WV 26041

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

| | |
|--|---|
| State: <u>West Virginia</u> | UTM NAD 83 Easting: <u>520487.430</u> |
| County: <u>Marshall</u> | UTM NAD 83 Northing: <u>4412929.250</u> |
| District: <u>Clay</u> | Public Road Access: <u>Roberts Ridge Road/WV-21</u> |
| Quadrangle: <u>Glen Easton, WV</u> | Generally used farm name: <u>Longworth</u> |
| Watershed: <u>Middle Grave Creek - Grave Creek</u> | |

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Chevron Appalachia, LLC
Address: 800 Mountain View Drive
Smithfield, PA 15478
Telephone: 724-564-3700
Email: _____
Facsimile: 724-564-3894

Authorized Representative: _____
Address: _____
Telephone: _____
Email: _____
Facsimile: _____

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Received
Office of Oil & Gas

DEC 01 2016

03/03/2017

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL**

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Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

Date of Notice: 11/04/2016 **Date Permit Application Filed:** 12/1/16

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

- HAND DELIVERY
- CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Mary Holmes
Address: 197 Spindle Lane
Moundsville, WV 26041

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

| | |
|--|---|
| State: <u>West Virginia</u> | UTM NAD 83 Easting: <u>520487.430</u> |
| County: <u>Marshall</u> | Northing: <u>4412929.250</u> |
| District: <u>Clay</u> | Public Road Access: <u>Roberts Ridge Road/WW-21</u> |
| Quadrangle: <u>Glen Easton, WV</u> | Generally used farm name: <u>Longworth</u> |
| Watershed: <u>Middle Grave Creek - Grave Creek</u> | |

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Chevron Appalachia, LLC
Address: 800 Mountain View Drive
Smithfield, PA 15478
Telephone: 724-564-3700
Email: _____
Facsimile: 724-564-3894

Authorized Representative: _____
Address: _____
Telephone: _____
Email: _____
Facsimile: _____

Received
Office of Oil & Gas

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DEC 01 2016

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
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Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

Date of Notice: 11/04/2016 **Date Permit Application Filed:** 12/11/16

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

- HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: The Estate of Barbara J. Derrow
Address: 6247 Roberts Ridge Road
Moundsville, WV 26041

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

| | |
|--|---|
| State: <u>West Virginia</u> | UTM NAD 83 Easting: <u>520487.430</u> |
| County: <u>Marshall</u> | UTM NAD 83 Northing: <u>4412929.250</u> |
| District: <u>Clay</u> | Public Road Access: <u>Roberts Ridge Road/WV-21</u> |
| Quadrangle: <u>Glen Easton, WV</u> | Generally used farm name: <u>Longworth</u> |
| Watershed: <u>Middle Grave Creek - Grave Creek</u> | |

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Chevron Appalachia, LLC
Address: 800 Mountain View Drive
Smithfield, PA 15478
Telephone: 724-564-3700
Email: _____
Facsimile: 724-564-3894

Authorized Representative: _____
Address: _____
Telephone: _____
Email: _____
Facsimile: _____

Received
Office of Oil & Gas
DEC 01 2016

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 11/04/2016 **Date Permit Application Filed:** 12/1/16

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL **HAND**
RETURN RECEIPT REQUESTED **DELIVERY**

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Graham H Longworth Jr.
Address: 2527 Fork Ridge Road
Moundsville, WV 26041

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

| | | |
|---|--|-------------------------------------|
| State: <u>West Virginia</u> | UTM NAD 83 | Easting: <u>520487.430</u> |
| County: <u>Marshall</u> | | Northing: <u>4412929.250</u> |
| District: <u>Clay</u> | Public Road Access: <u>Roberts Ridge Road/WV-21</u> | |
| Quadrangle: <u>Glen Easton, WV</u> | Generally used farm name: <u>Longworth</u> | |
| Watershed: <u>Middle Grave Creek - Grave Creek</u> | | |

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Chevron Appalachia, LLC
Telephone: 724-564-3700
Email: _____

Address: 800 Mountain View Drive
Smithfield, PA 15478
Facsimile: 724-564-3894

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Received
Office of Oil & Gas
DEC 0-1 2016

03/03/2017

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 11/04/2016 **Date Permit Application Filed:** 12/1/16

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

- CERTIFIED MAIL** **HAND**
RETURN RECEIPT REQUESTED **DELIVERY**

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Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

| | |
|----------------------------------|----------------|
| Name: <u>Mary Holmes</u> | Name: _____ |
| Address: <u>197 Spindle Lane</u> | Address: _____ |
| <u>Moundsville, WV 26041</u> | _____ |

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

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| | |
|---|---|
| Well Operator: <u>Chevron Appalachia, LLC</u> | Address: <u>800 Mountain View Drive</u> |
| Telephone: <u>724-564-3700</u> | <u>Smithfield, PA 15478</u> |
| Email: _____ | Facsimile: <u>724-564-3894</u> |

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Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: The Estate of Barbara J. Derraw
Address: 6247 Roberts Ridge Road
Moundsville, WV 26041

Name: _____
Address: _____

Notice is hereby given:

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| District: <u>Clay</u> | Public Road Access: <u>Roberts Ridge Road/WV-21</u> |
| Quadrangle: <u>Glen Easton, WV</u> | Generally used farm name: <u>Longworth</u> |
| Watershed: <u>Middle Grave Creek - Grave Creek</u> | |

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Well Operator: Chevron Appalachia, LLC
Telephone: 724-564-3700
Email: _____

Address: 800 Mountain View Drive
Smithfield, PA 15478
Facsimile: 724-564-3894

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Received
Office of Oil & Gas
DEC 01 2016



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

October 17, 2016

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Longworth A Well Pad, Marshall County

Longworth M3H
Longworth M5H
Longworth M7H

Longworth M4H
Longworth M6H

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #06-2016-0411 for the subject site to Chevron Appalachia, LLC for access to the State Road for the well site located off of Marshall County Route 21 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office Oil & Gas Coordinator

Cc: Mandy Fordyce
Chevron Appalachia, LLC
CH, OM, D-6
File

Received
Office of Oil & Gas

DEC 01 2016

03/03/2017

Section VI - Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|----------------------------|-------------|
| Fracture Date: | |
| State: | WV |
| County: | Marshall |
| API Number: | 047-51-XXXX |
| Operator Name: | Chevron |
| Well Pad Name: | Longworth |
| Longitude: | -80.726597 |
| Latitude: | 39.847258 |
| Long/Lat Projection: | NAD 83 |
| Production Type: | |
| True Vertical Depth (TVD): | |
| Total Water Volume (gal)*: | 72,505,000 |

470510:004

Hydraulic Fracturing Fluid Additives:

| Trade Name | Supplier | Purpose | Ingredients | Chemical Abstract Service Number (CAS #) | Comments |
|--------------------------|--------------|---------------------|--|--|----------|
| Corrosion Inhibitor A264 | Schlumberger | Corrosion Inhibitor | Methanol/Aliphatic Acids/Prop-2-yn-1-ol/Aliphatic Alcohols, ethoxylated #1 | Mixture | |
| 28% HCl Acid | Schlumberger | Used to open perms | Hydrochloric Acid | 7647-01-0 | |
| Breaker J134 | Schlumberger | Gel Breaker | Hemicellulase Enzyme | 9012-54-8 | |
| Water Gelling Agent J580 | Schlumberger | Water Viscosifier | Carbohydrate Polymer | Proprietary | |
| Friction Reducer J609 | Schlumberger | Friction Reducer | Ammonium Sulfate | 7783-20-2 | |
| Iron Stabilizer L58 | Schlumberger | Iron Stabilizer | Sodium Erythorbate | 6381-77-7 | |
| EC6116A | Nalco | Biocide | Dibromoacetonitrile/2,2-Dibromo-3-nitripropionamide/Polyethylene Glycol | Mixture | |
| EC6486A Scale Inhibitor | Nalco | Scale Inhibitor | Amine Triphosphate/Ethylene Glycol | Mixture | |
| NALCO EC6673W | Nalco | Iron Control | Ethylene Glycol | 107-21-1 | |
| S012-3050 | Schlumberger | Proppant | Crystalline Silica | 14808-60-7 | |
| S012-4070 | Schlumberger | Proppant | Crystalline Silica | 14808-60-7 | |
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* Total Water Volume sources may include fresh water, produced water, and/or recycled water

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

Received
Office of Oil & Gas
DEC 01 2016

03/03/2017

LONGWORTH WELL SITE EROSION AND SEDIMENT CONTROL PLAN

ROBERTS RIDGE SAINT JOSEPH ROAD (C.R. 21)
CLAY DISTRICT, MARSHALL COUNTY, WEST VIRGINIA

PREPARED FOR:

CHEVRON APPALACHIA, LLC

800 MOUNTAIN VIEW DRIVE
SMITHFIELD, PA 15478



CONSULTANTS

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
4000 TRIANGLE LANE, SUITE 200
EXFORD, PA 15632
PHONE: 724-327-5200

CIVIL/SITE ENGINEER CONTACT: TODD C. BALDWIN, P.E.
EMAIL ADDRESS: tbalwin@cecinc.com

GEO-TECHNICAL ENGINEER CONTACT: MICHAEL J. SHELEHEDA, P.E.
EMAIL ADDRESS: mshelehedo@cecinc.com

SITE COORDINATES AND WATERSHED

START OF ACCESS ROAD
LATITUDE: 39° 50' 22.42" N, LONGITUDE: 80° 44' 13.39" W

END OF ACCESS ROAD
LATITUDE: 39° 50' 53.12" N, LONGITUDE: 80° 43' 38.11" W

WELL HEAD MOSH
LATITUDE: 39° 50' 50.13" N, LONGITUDE: 80° 43' 36.07" W

APPROXIMATE CENTER OF WELL PAD
LATITUDE: 39° 50' 50.04" N, LONGITUDE: 80° 43' 35.75" W

*BASED ON NAD 83, WEST VIRGINIA NORTH ZONE

WATERSHED NAME: UPPER OHIO SOUTH
RECEIVING STREAM: UNNAMED TRIBUTARIES TO GRAVE CREEK

| ENTIRE SITE LIMITS OF DISTURBANCE (AC) | |
|--|------|
| WELL PAD | 14.3 |
| ACCESS ROAD | 19.6 |
| STOCKPILES | 5.0 |
| TOTAL AREA | 38.9 |
| WOODED AREA DISTURBED | 7.8 |
| IMPACTS TO GRAHAM H. LONGWORTH, JR. (AC) | |
| WELL PAD | 14.3 |
| ACCESS ROAD | 12.7 |
| STOCKPILES | 4.4 |
| TOTAL AREA | 31.9 |
| WOODED AREA DISTURBED | 7.7 |
| IMPACTS TO MARY HOLMES (AC) | |
| ACCESS ROAD | 5.1 |
| STOCKPILES | 0.5 |
| TOTAL AREA | 5.8 |
| WOODED AREA DISTURBED | 0.1 |
| IMPACTS TO JEFFREY SCOTT HOLMES (AC) | |
| ACCESS ROAD | 0.1 |
| TOTAL AREA | 0.1 |
| IMPACTS TO BARBARA J. DERROW (AC) | |
| ACCESS ROAD | 2.0 |
| STOCKPILES | 0.1 |
| TOTAL AREA | 2.1 |



REFERENCE
U.S.G.S. 7.5' TOPOGRAPHIC MAP, OLDEN EASTON
QUADRANGLE, WV, DATED, 2014.

| DWG NO. | SHEET TITLE | INCLUDED | LAST REVISED |
|---------|---|----------|--------------|
| CS 000 | COVER SHEET | X | 02/23/2017 |
| ES 000 | EXISTING TOPOGRAPHIC PLAN (1 OF 2) | X | 01/09/2017 |
| ES 051 | EXISTING TOPOGRAPHIC PLAN (2 OF 2) | X | 07/23/2017 |
| ES 100 | OVERALL EROSION AND SEDIMENT CONTROL PLAN | X | 02/24/2017 |
| ES 101 | EROSION AND SEDIMENT CONTROL PLAN (1 OF 5) | X | 07/23/2017 |
| ES 102 | EROSION AND SEDIMENT CONTROL PLAN (2 OF 5) | X | 02/23/2017 |
| ES 103 | EROSION AND SEDIMENT CONTROL PLAN (3 OF 5) | X | 07/23/2017 |
| ES 104 | EROSION AND SEDIMENT CONTROL PLAN (4 OF 5) | X | 01/09/2017 |
| ES 105 | EROSION AND SEDIMENT CONTROL PLAN (5 OF 5) | X | 02/24/2017 |
| ES 106 | EROSION AND SEDIMENT CONTROL DETAILS (1 OF 6) | X | 10/25/2016 |
| ES 107 | EROSION AND SEDIMENT CONTROL DETAILS (2 OF 6) | X | 10/25/2016 |
| ES 108 | EROSION AND SEDIMENT CONTROL DETAILS (3 OF 6) | X | 01/09/2017 |
| ES 109 | EROSION AND SEDIMENT CONTROL DETAILS (4 OF 6) | X | 02/23/2017 |
| ES 110 | EROSION AND SEDIMENT CONTROL DETAILS (5 OF 6) | X | 01/08/2017 |
| ES 111 | EROSION AND SEDIMENT CONTROL DETAILS (6 OF 6) | X | 01/09/2017 |
| ES 112 | WELL PAD PLAN VIEW | X | 01/09/2017 |
| ES 113 | WELL PAD CROSS SECTIONS | X | 01/09/2017 |
| ES 114 | ACCESS ROAD PLAN AND PROFILE VIEW (1 OF 4) | X | 01/09/2017 |
| ES 115 | ACCESS ROAD PLAN AND PROFILE VIEW (2 OF 4) | X | 01/09/2017 |
| ES 116 | ACCESS ROAD PLAN AND PROFILE VIEW (3 OF 4) | X | 02/23/2017 |
| ES 117 | ACCESS ROAD PLAN AND PROFILE VIEW (4 OF 4) | X | 01/09/2017 |
| ES 118 | ACCESS ROAD CROSS SECTIONS (1 OF 3) | X | 01/09/2017 |
| ES 119 | ACCESS ROAD CROSS SECTIONS (2 OF 3) | X | 01/09/2017 |
| ES 120 | ACCESS ROAD CROSS SECTIONS (3 OF 3) | X | 01/09/2017 |
| ES 121 | TOPSOIL STOCKPILE CROSS-SECTIONS | X | 01/09/2017 |
| GE 500 | GEOTECHNICAL SUBSURFACE SUMMARY (1 OF 2) | X | 01/09/2017 |
| GE 501 | GEOTECHNICAL SUBSURFACE SUMMARY (2 OF 2) | X | 02/23/2017 |
| GE 502 | CROSS SECTIONS | X | 11/02/2016 |
| GE 504 | GEOTECHNICAL TABLES AND NOTES | X | 11/02/2016 |
| GE 505 | GEOTECHNICAL DETAILS | X | 11/02/2016 |
| PC 600 | SITE PLAN WITH AERIAL | X | 11/02/2016 |
| PC 601 | POST CONSTRUCTION RECLAMATION PLAN (1 OF 2) | X | 02/09/2017 |
| PC 602 | POST CONSTRUCTION RECLAMATION PLAN (2 OF 2) | X | 02/23/2017 |
| PC 603 | POST CONSTRUCTION RECLAMATION DETAILS | X | 10/25/2016 |

| LEGEND | |
|--------|---|
| --- | EXISTING PROPERTY LINE |
| --- | EXISTING INDEX CONTOUR |
| --- | EXISTING INTERMEDIATE CONTOUR |
| --- | EXISTING PAVED ROADWAY |
| --- | EXISTING UNPAVED ROADWAY |
| --- | EXISTING GAS LINE |
| --- | EXISTING WATERLINE |
| --- | EXISTING FIBER OPTIC LINE |
| --- | EXISTING OVERHEAD ELECTRIC LINE |
| --- | EXISTING FENCE |
| --- | EXISTING STREAM |
| --- | EXISTING WETLAND |
| --- | EXISTING TREETRUNK |
| --- | EXISTING STRUCTURE |
| --- | EXISTING UTILITY POLE |
| --- | EXISTING WATER METER |
| --- | EXISTING WATER MARKER |
| --- | PROPOSED EDGE OF ACCESS ROAD |
| --- | PROPOSED LIMIT OF DISTURBANCE |
| --- | PROPOSED RELOCATED GAS LINE |
| --- | PROPOSED RELOCATED OVERHEAD ELECTRIC LINE |
| --- | PROPOSED PERIMETER BERM |
| --- | PROPOSED UTILITY RIGHT-OF-WAY |
| --- | PROPOSED GRAVEL |
| --- | PROPOSED ASPHALT PAVEMENT |
| --- | PROPOSED WOOD CHIP GROUND COVER |
| --- | PROPOSED INDEX CONTOUR |
| --- | PROPOSED INTERMEDIATE CONTOUR |
| --- | PROPOSED WELL PAD SLOPE/FILL LINE |
| --- | PROPOSED 1200.00 |
| --- | PROPOSED SPOT ELEVATION |
| --- | PROPOSED COMPOST FILTER SOCK TRAP |
| --- | PROPOSED 18-IN COMPOST FILTER SOCK |
| --- | PROPOSED 24-IN COMPOST FILTER SOCK |
| --- | PROPOSED ORANGE CONSTRUCTION FENCE |
| --- | PROPOSED ROCK CONSTRUCTION ENTRANCE |
| --- | PROPOSED INLET PROTECTION |
| --- | PROPOSED EROSION CONTROL BLANKET |
| --- | PROPOSED CHANNEL |
| --- | PROPOSED STORMWATER CULVERT |
| --- | PROPOSED INLET |
| --- | PROPOSED RIPRAP APRON |
| --- | PROPOSED UNDERDRAIN |

- ### REFERENCES
- BACKGROUND AERIAL BASE AND TOPOGRAPHY DEVELOPED FROM AN UNMANNED AERIAL VEHICLE (UAV) FLIGHT CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 05/19/2016.
 - PROPERTY BOUNDARIES WERE PROVIDED BY CHEVRON.
 - STREAMS AND WETLANDS DELINEATED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/22/2016.
 - UNDERGROUND UTILITIES LOCATED BY A GEOPHYSICAL SURVEY CONDUCTED BY TNS GEOPHYSICS LTD. DATED 04/18/2016 TO 04/22/2016.
 - MARKED UTILITY FEATURES SURVEYED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/26/2016 AND 04/16/2016.



| Date | By | Reason |
|------------|--------|-----------------------------|
| 02/23/2017 | T.C.B. | REVISED PER WASHED COMMENTS |
| 02/23/2017 | T.C.B. | REVISED PER WASHED COMMENTS |

LONGWORTH WELL SITE
CLAY DISTRICT
MARSHALL COUNTY, WEST VIRGINIA
PREPARED FOR:
CHEVRON APPALACHIA, LLC
800 MOUNTAIN VIEW DRIVE
SMITHFIELD, PA 15478

| |
|------------------------------|
| Project Number: 161-411-026C |
| Drawing Scale: 1"=20.00' |
| Date Issued: 10/25/2016 |
| Issue Number: |
| Drawn By: JAM |
| Checked By: TCB |
| Project Manager: JAC |
| CS 000 |

FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY

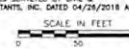
LEGEND

| | |
|-----|---|
| --- | EXISTING PROPERTY LINE |
| --- | EXISTING INDEX CONTOUR |
| --- | EXISTING INTERMEDIATE CONTOUR |
| --- | EXISTING PAVED ROADWAY |
| --- | EXISTING UNPAVED ROADWAY |
| --- | EXISTING GAS LINE |
| --- | EXISTING WATERLINE |
| --- | EXISTING FIBER OPTIC LINE |
| --- | EXISTING OVERHEAD ELECTRIC LINE |
| --- | EXISTING FENCE |
| --- | EXISTING STREAM |
| --- | EXISTING WETLAND |
| --- | EXISTING TREE LINE |
| --- | EXISTING STRUCTURE |
| --- | EXISTING UTILITY POLE |
| --- | EXISTING WATER METER |
| --- | EXISTING WATER MANHOLE |
| --- | PROPOSED EDGE OF ACCESS ROAD |
| --- | PROPOSED LIMIT OF DISTURBANCE |
| --- | PROPOSED RELOCATED GAS LINE |
| --- | PROPOSED RELOCATED OVERHEAD ELECTRIC LINE |
| --- | PROPOSED WELL HEAD |
| --- | PROPOSED PERIMETER BERM |
| --- | PROPOSED UTILITY RIGHT-OF-WAY |
| --- | PROPOSED SHOULDER |
| --- | PROPOSED ASPHALT PAVEMENT |
| --- | PROPOSED WOOD CHIP GROUND COVER |
| --- | PROPOSED INDEX CONTOUR |
| --- | PROPOSED INTERMEDIATE CONTOUR |
| --- | PROPOSED WELL PAD CUT/FILL LINE |
| --- | PROPOSED SPOT ELEVATION |
| --- | PROPOSED COMPOST FILTER SOCK TRAP |
| --- | PROPOSED 18-IN COMPOST FILTER SOCK |
| --- | PROPOSED 24-IN COMPOST FILTER SOCK |
| --- | PROPOSED ORANGE CONSTRUCTION FENCE |
| --- | PROPOSED SOCK CONSTRUCTION ENTRANCE |
| --- | PROPOSED INLET PROTECTION |
| --- | PROPOSED CHANNEL |
| --- | PROPOSED STORMWATER CULVERT |
| --- | PROPOSED INLET |
| --- | PROPOSED RIPRAP APRON |
| --- | PROPOSED UNDERDRAIN |
| --- | PROPOSED EROSION CONTROL BLANKET |
| --- | DETAIL NUMBER |
| --- | DRAWING DESIGNATION |

APPROVED WVDEP OOG
 3/2/2017

- REFERENCES**
- TOPOGRAPHY DEVELOPED FROM AN UNMANNED AERIAL VEHICLE (UAV) FLIGHT CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/18/2016.
 - PROPERTY BOUNDARIES WERE PROVIDED BY CHEVRON.
 - STREAMS AND WETLANDS DELINEATED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/22/2016.
 - UNDERGROUND UTILITIES LOCATED BY A GEOPHYSICAL SURVEY CONDUCTED BY THE GEOPHYSICS LTD. DATED 04/18/2016 TO 04/22/2016.
 - MARKED UTILITY FEATURES SURVEYED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/28/2016 AND 06/16/2016.

MISS UTILITY OF WEST VIRGINIA
 1-800-245-4848
 West Virginia State Law
 (Section XV, Chapter 24-0, requires that you call two business days before you dig in the state of West Virginia.)
IT'S THE LAW



Civil & Environmental Consultants, Inc.
 4000 Triangle Lane, Suite 500 - Export, PA 15632
 724.237.2300 100.919.8415
 www.civilandenv.com



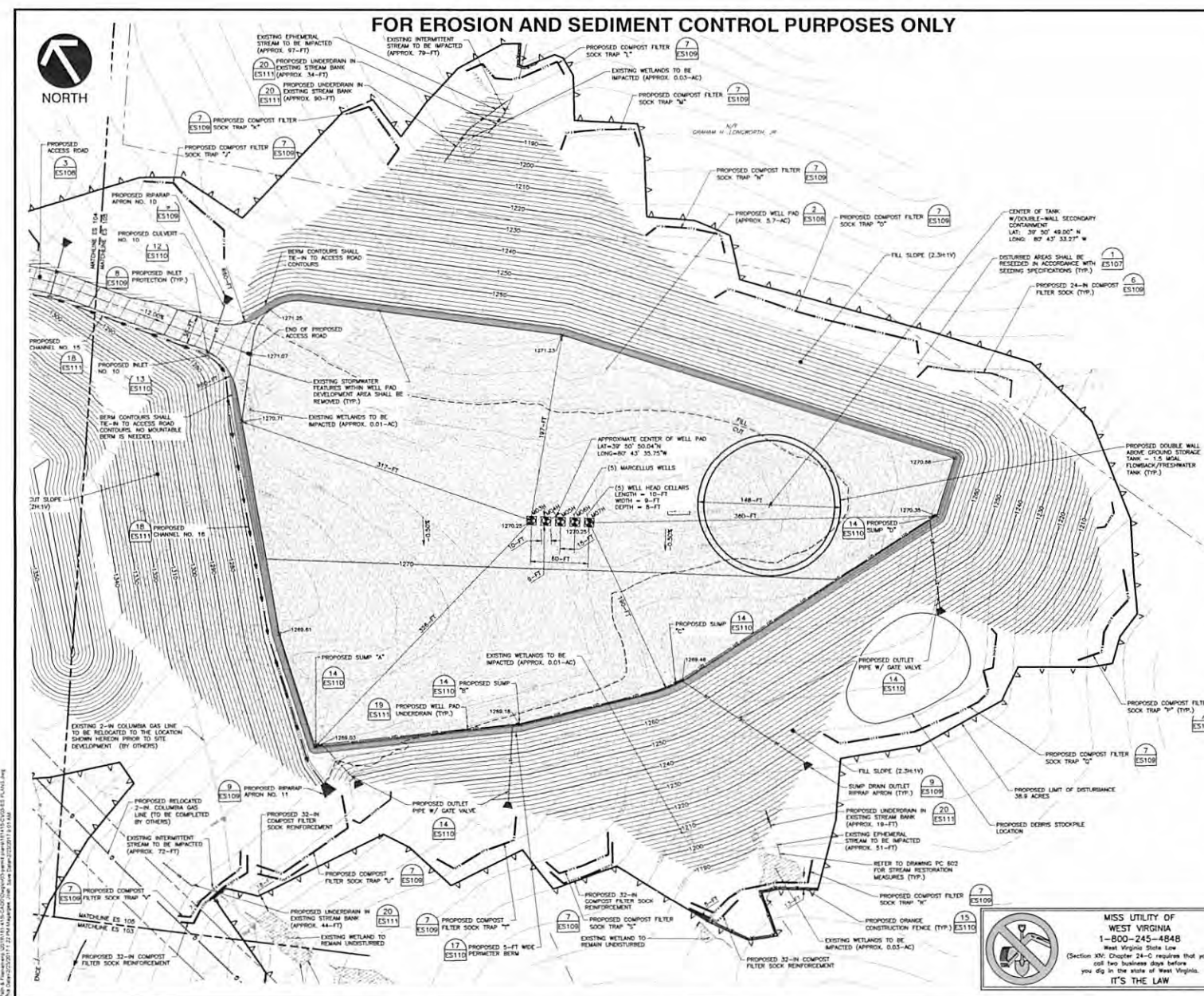
REVISION RECORD

| No. | Date | Description |
|-----|------------|--------------------------|
| 1 | 03/02/2017 | ISSUED FOR PERMITS |
| 2 | 03/02/2017 | REVISED PER OOG COMMENTS |
| 3 | 03/02/2017 | REVISED PER OOG COMMENTS |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |

LONGWORTH WELL SITE
 CLAY DISTRICT
 MARSHALL COUNTY, WEST VIRGINIA
 PREPARED FOR
CHEVRON APPALACHIA, LLC
 800 MOUNTAIN VIEW DRIVE
 SMITHFIELD, PA 15478

EROSION AND SEDIMENT CONTROL PLAN (5 OF 5)
 Project Number: 161-413-0206
 Drawing Scale: 1"=50'
 Date Issued: 12/22/2016
 Issue Number:
 Drawn By: JAM
 Checked By: TCB
 Project Manager: JCB

ES 105



Date: 4/28/2017 10:10:10 AM
 User: JAM
 Title: 161-413-0206-ES 105
 Project: 161-413-0206
 Drawing: 161-413-0206-ES 105
 Scale: 1"=50'
 Date Issued: 12/22/2016
 Issue Number:

LONGWORTH EROSION AND SEDIMENTATION

ROBERTS RIDGE SALEM
CLAY DISTRICT, MARSHALL COUNTY

PREPARED FOR
CHEVRON APPALACHIAN
800 MOUNTAIN VIEW DRIVE
SMITHFIELD, WEST VIRGINIA

CONSULTANTS

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
4000 TRIANGLE LANE, SUITE 200
EXPORT, PA 15632
PHONE: 724-327-5200

CIVIL/SITE ENGINEER CONTACT: TODD C. BALDWIN, P.E.
EMAIL ADDRESS: tbaldwin@cecinc.com

GEOTECHNICAL ENGINEER CONTACT: MICHAEL J. SHELEHEDA, P.E.
EMAIL ADDRESS: msheleheda@cecinc.com

SITE COORDINATES AND WATERSHED

START OF ACCESS ROAD
LATITUDE: 39° 50' 22.42" N, LONGITUDE: 80° 44' 13.39" W

END OF ACCESS ROAD
LATITUDE: 39° 50' 53.12" N, LONGITUDE: 80° 43' 38.11" W

WELL HEAD M03H
LATITUDE: 39° 50' 50.13" N, LONGITUDE: 80° 43' 36.07" W

APPROXIMATE CENTER OF WELL PAD
LATITUDE: 39° 50' 50.04" N, LONGITUDE: 80° 43' 35.75" W

*BASED ON NAD 83, WEST VIRGINIA NORTH ZONE

WATERSHED NAME: UPPER OHIO SOUTH
RECEIVING STREAM: UNNAMED TRIBUTARIES TO GRAVE CREEK

| ENTIRE SITE LIMITS OF DISTURBANCE (AC) | |
|--|------|
| WELL PAD | 14.3 |
| ACCESS ROAD | 19.6 |
| STOCKPILES | 5.0 |
| TOTAL AREA | 38.9 |
| WOODED AREA DISTURBED | 7.8 |
| IMPACTS TO GRAHAM H. LONGWORTH, JR. (AC) | |
| WELL PAD | 14.3 |
| ACCESS ROAD | 12.2 |
| STOCKPILES | 4.4 |
| TOTAL AREA | 30.9 |
| WOODED AREA DISTURBED | 7.7 |
| IMPACTS TO MARY HOLMES (AC) | |
| ACCESS ROAD | 5.3 |
| STOCKPILES | 0.5 |
| TOTAL AREA | 5.8 |
| WOODED AREA DISTURBED | 0.1 |
| IMPACTS TO JEFFREY SCOTT HOLMES (AC) | |
| ACCESS ROAD | 0.1 |
| TOTAL AREA | 0.1 |
| IMPACTS TO BARBARA J. DERROW (AC) | |
| ACCESS ROAD | 2.0 |
| STOCKPILES | 0.1 |
| TOTAL AREA | 2.1 |



SITE LOCATION

SCALE IN FEET
0 2000

REFERENCE

U.S.G.S. 7.5' TOPOGRAPHIC MAP, QUADRANGLE, WV DATED: 2014

REFERENCES

- BACKGROUND AERIAL IMAGE AND TOPOGRAPHY DEVELOPED FROM AN UNMANNED AERIAL VEHICLE (UAV) FLIGHT CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 05/19/2016.
- PROPERTY BOUNDARIES WERE PROVIDED BY CHEVRON.
- STREAMS AND WETLANDS DELINEATED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/22/2016.
- UNDERGROUND UTILITIES LOCATED BY A GEOPHYSICAL SURVEY CONDUCTED BY THG GEOPHYSICS LTD. DATED 04/18/2016 TO 04/22/2016.
- MARKED UTILITY FEATURES SURVEYED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/26/2016 AND 06/16/2016.

LEGEND

| | | | | | |
|--|---------------------------------|--|---|--|--------|
| | EXISTING PROPERTY LINE | | PROPOSED EDGE OF ACCESS ROAD | | 1200 |
| | EXISTING INDEX CONTOUR | | PROPOSED LIMIT OF DISTURBANCE | | 1200.0 |
| | EXISTING INTERMEDIATE CONTOUR | | PROPOSED RELOCATED GAS LINE | | |
| | EXISTING PAVED ROADWAY | | PROPOSED RELOCATED OVERHEAD ELECTRIC LINE | | |
| | EXISTING UNPAVED ROADWAY | | PROPOSED WELL HEAD | | |
| | EXISTING GAS LINE | | PROPOSED PERIMETER BERM | | |
| | EXISTING WATERLINE | | PROPOSED UTILITY RIGHT-OF-WAY | | |
| | EXISTING FIBER OPTIC LINE | | PROPOSED GRAVEL | | |
| | EXISTING OVERHEAD ELECTRIC LINE | | PROPOSED ASPHALT PAVEMENT | | |
| | EXISTING FENCE | | PROPOSED WOOD CHIP GROUND COVER | | |
| | EXISTING STREAM | | | | |
| | EXISTING WETLAND | | | | |
| | EXISTING TREELINE | | | | |
| | EXISTING STRUCTURE | | | | |
| | EXISTING UTILITY POLE | | | | |
| | EXISTING WATER METER | | | | |
| | EXISTING WATER MANHOLE | | | | |

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Plot Date: 10/27/2016 12:34 PM
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03/03/2017

WELL SITE EROSION AND SEDIMENT CONTROL PLAN

1000 JOSEPH ROAD
CLAY DISTRICT, WEST VIRGINIA

PREPARED FOR:
CHEVRON APPALACHIA, LLC
800 MOUNTAIN VIEW DRIVE
SMITHFIELD, VA 24157

OK 11/14/16



MAP
4000
EASTON

| DWG NO. | SHEET TITLE | INCLUDED |
|---------|---|----------|
| CS 000 | COVER SHEET | X |
| ES 050 | EXISTING TOPOGRAPHIC PLAN (1 OF 2) | X |
| ES 051 | EXISTING TOPOGRAPHIC PLAN (2 OF 2) | X |
| ES 100 | OVERALL EROSION AND SEDIMENT CONTROL PLAN | X |
| ES 101 | EROSION AND SEDIMENT CONTROL PLAN (1 OF 5) | X |
| ES 102 | EROSION AND SEDIMENT CONTROL PLAN (2 OF 5) | X |
| ES 103 | EROSION AND SEDIMENT CONTROL PLAN (3 OF 5) | X |
| ES 104 | EROSION AND SEDIMENT CONTROL PLAN (4 OF 5) | X |
| ES 105 | EROSION AND SEDIMENT CONTROL PLAN (5 OF 5) | X |
| ES 106 | EROSION AND SEDIMENT CONTROL DETAILS (1 OF 6) | X |
| ES 107 | EROSION AND SEDIMENT CONTROL DETAILS (2 OF 6) | X |
| ES 108 | EROSION AND SEDIMENT CONTROL DETAILS (3 OF 6) | X |
| ES 109 | EROSION AND SEDIMENT CONTROL DETAILS (4 OF 6) | X |
| ES 110 | EROSION AND SEDIMENT CONTROL DETAILS (5 OF 6) | X |
| ES 111 | EROSION AND SEDIMENT CONTROL DETAILS (6 OF 6) | X |
| ES 112 | WELL PAD PLAN VIEW | X |
| ES 113 | WELL PAD CROSS-SECTIONS | X |
| ES 114 | ACCESS ROAD PLAN AND PROFILE VIEW (1 OF 4) | X |
| ES 115 | ACCESS ROAD PLAN AND PROFILE VIEW (2 OF 4) | X |
| ES 116 | ACCESS ROAD PLAN AND PROFILE VIEW (3 OF 4) | X |
| ES 117 | ACCESS ROAD PLAN AND PROFILE VIEW (4 OF 4) | X |
| ES 118 | ACCESS ROAD CROSS-SECTIONS (1 OF 3) | X |
| ES 119 | ACCESS ROAD CROSS-SECTIONS (2 OF 3) | X |
| ES 120 | ACCESS ROAD CROSS-SECTIONS (3 OF 3) | X |
| GE 500 | GEO TECHNICAL SUBSURFACE SUMMARY (1 OF 2) | X |
| GE 501 | GEO TECHNICAL SUBSURFACE SUMMARY (2 OF 2) | X |
| GE 502 | CROSS-SECTIONS (1 OF 2) | X |
| GE 503 | CROSS-SECTIONS (2 OF 2) | X |
| GE 504 | GEO TECHNICAL TABLES AND NOTES | X |
| GE 505 | GEO TECHNICAL DETAILS | X |
| PC 600 | SITE PLAN WITH AERIAL | X |
| PC 601 | POST CONSTRUCTION RECLAMATION PLAN (1 OF 2) | X |
| PC 602 | POST-CONSTRUCTION RECLAMATION PLAN (2 OF 2) | X |
| PC 603 | POST CONSTRUCTION RECLAMATION DETAILS | X |

- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED WELL PAD CUT/FILL LINE
- PROPOSED SPOT ELEVATION
- PROPOSED COMPOST FILTER SOCK TRAP
- PROPOSED 18-IN COMPOST FILTER SOCK
- PROPOSED 24-IN COMPOST FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED INLET PROTECTION
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED CHANNEL
- PROPOSED STORMWATER CULVERT
- PROPOSED INLET
- PROPOSED RIPRAP APRON
- PROPOSED UNDERDRAIN

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| REVISION RECORD | |
|-----------------|------|
| No. | Date |
| 01 | |
| 02 | |
| 03 | |
| 04 | |
| 05 | |
| 06 | |
| 07 | |
| 08 | |

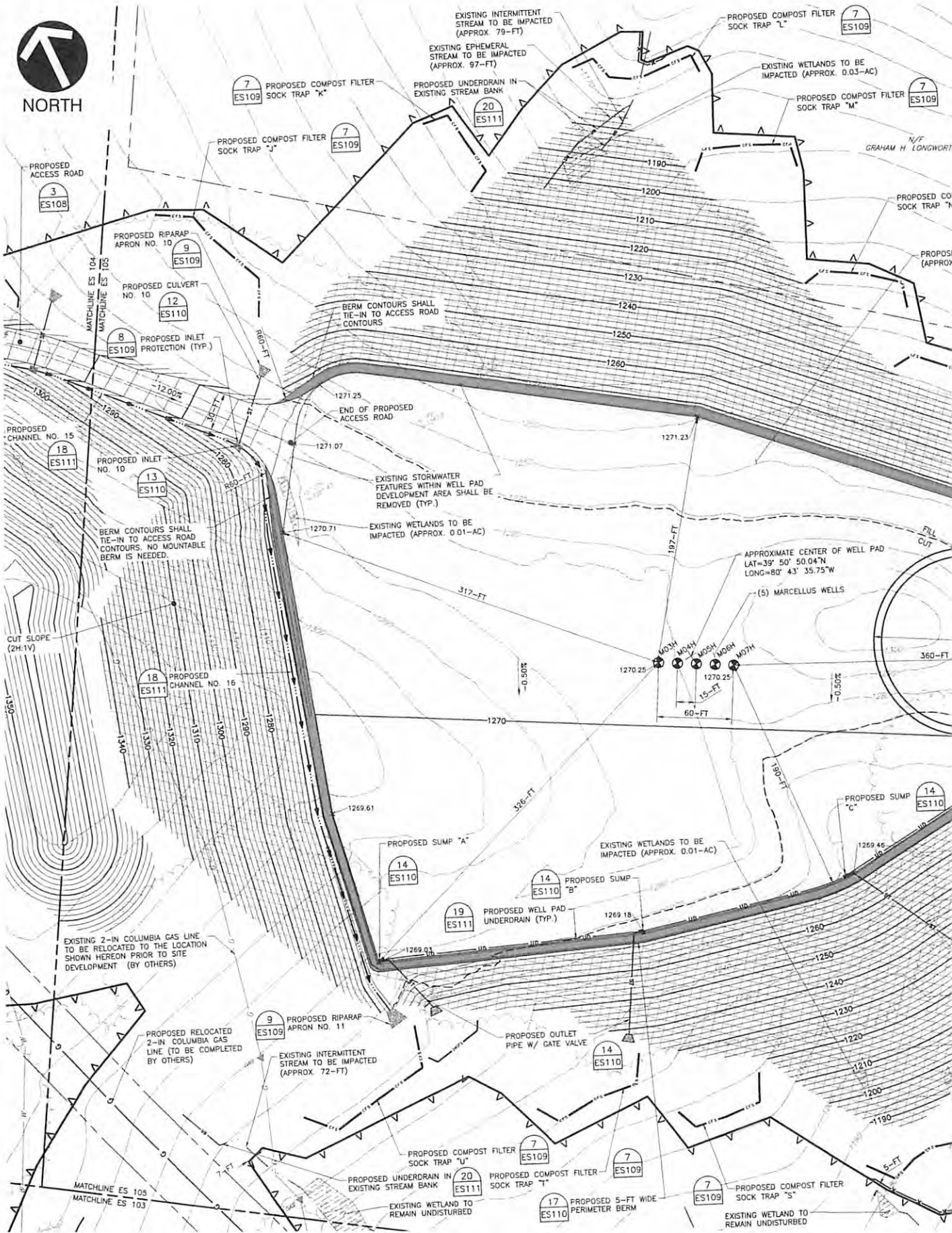
LONGWORTH WELL SITE
CLAY DISTRICT
MARSHALL COUNTY, WEST VIRGINIA
PREPARED FOR:
CHEVRON APPALACHIA, LLC
800 MOUNTAIN VIEW DRIVE
SMITHFIELD, VA 24157

COVER SHEET
Project Number 161-415-004C
Drawing Scale 1"=2,000'
Date Issued 10/25/2016
Index Number
Drawn By JAM
Checked By TCB
Project Manager MJS



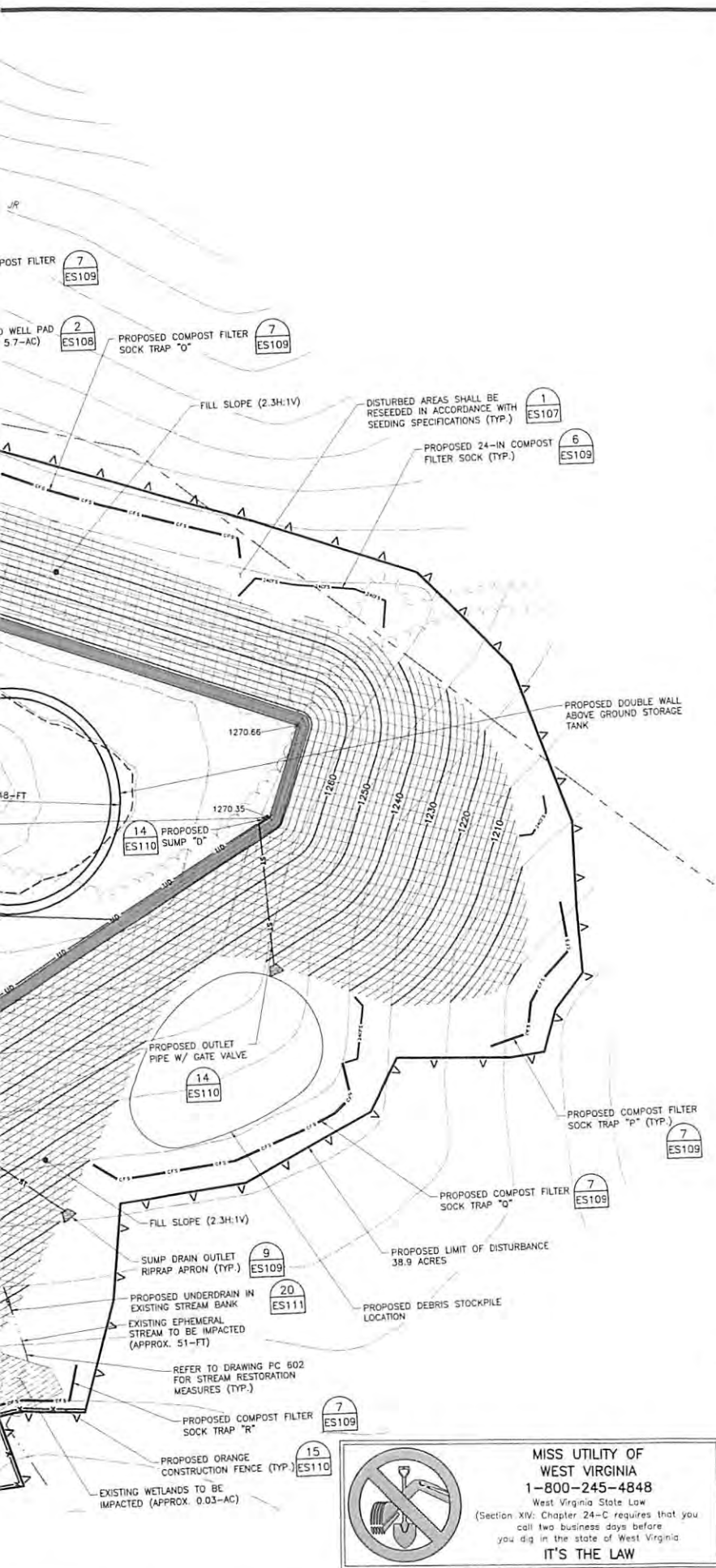
MISS UTILITY OF
WEST VIRGINIA
1-800-245-4848
West Virginia State Law
(Section XIV Chapter 24-C requires that you
call two business days before
you dig in the state of West Virginia.)
IT'S THE LAW

09/09/2017



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Plot Date: 10/25/2017 1:04 PM
Plotter: J:\Users\johndavis\OneDrive\10/25/2017 9:46 AM

03/03/2017



LEGEND

| | |
|--|---|
| | EXISTING PROPERTY LINE |
| | EXISTING INDEX CONTOUR |
| | EXISTING INTERMEDIATE CONTOUR |
| | EXISTING PAVED ROADWAY |
| | EXISTING UNPAVED ROADWAY |
| | EXISTING GAS LINE |
| | EXISTING WATERLINE |
| | EXISTING FIBER OPTIC LINE |
| | EXISTING OVERHEAD ELECTRIC LINE |
| | EXISTING FENCE |
| | EXISTING STREAM |
| | EXISTING WETLAND |
| | EXISTING TREELINE |
| | EXISTING STRUCTURE |
| | EXISTING UTILITY POLE |
| | EXISTING WATER METER |
| | EXISTING WATER MANHOLE |
| | PROPOSED EDGE OF ACCESS ROAD |
| | PROPOSED LIMIT OF DISTURBANCE |
| | PROPOSED RELOCATED GAS LINE |
| | PROPOSED RELOCATED OVERHEAD ELECTRIC LINE |
| | PROPOSED WELL HEAD |
| | PROPOSED PERIMETER BERM |
| | PROPOSED UTILITY RIGHT-OF-WAY |
| | PROPOSED GRAVEL |
| | PROPOSED ASPHALT PAVEMENT |
| | PROPOSED WOOD CHIP GROUND COVER |
| | PROPOSED INDEX CONTOUR |
| | PROPOSED INTERMEDIATE CONTOUR |
| | PROPOSED WELL PAD CUT/FILL LINE |
| | PROPOSED SPOT ELEVATION |
| | PROPOSED 18-IN COMPOST FILTER SOCK TRAP |
| | PROPOSED 24-IN COMPOST FILTER SOCK |
| | PROPOSED ORANGE CONSTRUCTION FENCE |
| | PROPOSED ROCK CONSTRUCTION ENTRANCE |
| | PROPOSED INLET PROTECTION |
| | PROPOSED CHANNEL |
| | PROPOSED STORMWATER CULVERT |
| | PROPOSED INLET |
| | PROPOSED RIPRAP APRON |
| | PROPOSED UNDERDRAIN |
| | PROPOSED EROSION CONTROL BLANKET |
| | DETAIL NUMBER |
| | DRAWING DESIGNATION |

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REVISION RECORD

| No. | Date | Description |
|-----|------|-------------|
| 01 | | |
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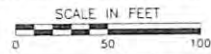
LONGWORTH WELL SITE
 CLAY DISTRICT
 MARSHALL COUNTY, WEST VIRGINIA

PREPARED FOR:
CHEVRON APPALACHIA, LLC
 800 MOUNTAIN VIEW DRIVE
 SMITHFIELD, PA 15478

- REFERENCES**
- TOPOGRAPHY DEVELOPED FROM AN UNMANNED AERIAL VEHICLE (UAV) FLIGHT CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 05/19/2016.
 - PROPERTY BOUNDARIES WERE PROVIDED BY CHEVRON.
 - STREAMS AND WETLANDS DELINEATED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/22/2016.
 - UNDERGROUND UTILITIES LOCATED BY A GEOPHYSICAL SURVEY CONDUCTED BY THG GEOPHYSICS LTD. DATED 04/18/2016 TO 04/22/2016.
 - MARKED UTILITY FEATURES SURVEYED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/26/2016 AND 05/16/2016.

MISS UTILITY OF WEST VIRGINIA
 1-800-245-4848
 West Virginia State Law
 (Section XIV, Chapter 24-C requires that you call two business days before you dig in the state of West Virginia)

IT'S THE LAW



EROSION AND SEDIMENT CONTROL PLAN (5 OF 5)

Project Number 161-415 004C
 Drawing Scale 1" = 100'
 Date Issued 10/25/2016
 Index Number
 Drawn By JAM
 Checked By TCB
 Project Manager MJS

05/03/2017