



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 M03H
47-051-01903-00-00

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: M03H
Farm Name: LONGWORTH, GRAHAM H. JR.
U.S. WELL NUMBER: 47-051-01903-00-00
Horizontal 6A / New Drill
Date Issued: 3/3/2017

Promoting a healthy environment.

03/03/2017

PERMIT CONDITIONS 47051010

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 705101003

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.

03/03/2017

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

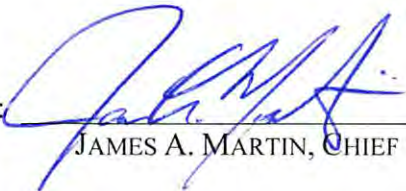
West Virginia Code §22-6A-12(b) requires, in part, that “[n]o well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetlands 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

September 28, 2016

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

Dear Reviewer:

Subject: Wetland and Perennial Stream Waiver Request Form
Chevron Appalachia, LLC
Longworth Well Site Project
Clay District, Marshall County, West Virginia
CEC Project 161-415

1.0 INTRODUCTION

On behalf of Chevron Appalachia, LLC (Chevron), Civil & Environmental Consultants, Inc. (CEC) is submitting a Wetland and Perennial Stream Waiver Request form pursuant to Chapter 22 Article 6A Section 12 of the West Virginia Code. Chevron is requesting a waiver for five (5) wetlands which lie within 100 feet of the limits of disturbance (LOD) of the proposed Longworth Well Site Project located in Clay District, Marshall County, West Virginia.

Chevron is proposing to construct a natural gas well pad and associated access driveway. The total LOD for the project is approximately 38 acres. The waiver request form is included as Attachment A. The following figures are included as Attachment B: Site Location Map, Aquatics Impact Map, and Wetland Waiver Request Figure. The Erosion and Sediment Control (E&S) Plans are included as Attachment C. Existing wetlands and streams were delineated by CEC ecological professionals on April 22, 2016. The following section provides additional information as required by the waiver.

2.0 WETLAND WAIVER REQUEST

Question 1: Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.

The proposed Longworth Well Site Project is located off of Roberts Ridge Saint Joseph Road along Spindle Lane in Clay District, Marshall County, West Virginia near the town of Rosbys Rock, as shown on the Site Location Map included in Attachment B. The project's proposed LOD is located within 100 feet of five (5) wetlands, as shown on the Aquatic Impacts Map also included in Attachment B. The approximate distance of each wetland to the nearest boundary of the LOD is as follows:

- Wetland 2A – 0 linear feet;
- Wetland 2B – 4 linear feet;
- Wetland 3 – 71 linear feet;
- Wetland 4B – 18 linear feet; and
- Wetland 4D – 34 linear feet.

No perennial streams are located within 100 feet of the project LOD. A waiver is not being requested for the wetlands and intermittent/ephemeral streams located within the LOD, including: Wetlands 1A, 1B, 2A, 2C and UNTs 1, 2, 3, and 6 to Grave Creek. Chevron is requesting authorization from the U.S. Army Corps of Engineers (USACE) Pittsburgh District for impacts to these features. The Pre-construction Notification and Authorization request submittal to the USACE for these impacts is included in Attachment D.

Question 2: Justify the proposed activity by describing alternatives to this project that were considered.

- a. Include a No-Action Alternative as to show “the future without the project”.*

The No-Action alternative represents “no alteration” of the existing environment, meaning the site would not be developed and no immediate environmental impacts would occur. Oil and gas extraction would not occur at this site, and Chevron would be required to find an alternative site. This option is highly undesirable and would not fulfill the project’s purpose and need.

- b. Location alternatives must be shown.*

Due to the size of the proposed well pad, the steep topography of the surrounding area, existing residences, and the location of a subsurface coal boundary, the current location of the Longworth Well Pad is the primary location desired by Chevron. Minor adjustments to the dimensions of the proposed well pad were made during the conceptual planning phase of the project; however, the current location of the well pad has remained unchanged due to the limitations listed above. The size of the well pad is optimized for the extraction and production equipment that will be set on the well pad. As such, minimizing the dimensions of the well pad beyond the dimensions provided is not feasible. The location of the well pad and LOD are shown on Figure 3 – Wetland Waiver Request Figure provided in Attachment B.

c. Must demonstrate why a one hundred foot buffer cannot be maintained.

Maintaining a 100-foot buffer from all on-site wetlands is not feasible due to topographic constraints, location of the existing features, and landowner constraints. The five (5) wetlands that are located within 100 feet of the LOD are located on the southern side of the proposed well pad. In order to maintain a 100-foot buffer from the five (5) wetlands, the well pad would need to shift north, which would have greater permanent impacts to existing streams located on the northern side of the well pad. The current site layout permanently impacts the least amount practicable of existing stream and wetlands. In addition, a shift north would create higher fill slopes, larger toe-keys, and more earthwork. As such, shifting the proposed well pad is not feasible.

The other alternative to meet the setback requirements would be a reduction in the project's footprint, and the proposed design represents the minimum footprint required to meet the project's purpose and need. A reduction in the well pad's limits would mean the project could not be developed.

d. Describe how the proposed project is the least environmentally damaging practicable alternative.

The current proposed Longworth Well Site design represents the alternative which reduces permanent impacts to the greatest degree practicable. Shifting the proposed well pad south or north would create higher fill slopes, and more disturbance to existing streams and wetlands.

Question 3: Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.

As part of the well pad permitting process, E&S plans have been prepared for the Longworth Well Site project which stipulates implementations to reduce soil erosion, compaction, and sedimentation of receiving streams and wetlands. The following measures will be implemented as part of the E&S plan to protect the existing wetlands and stream:

- Compost filter sock traps will be positioned downslope of larger drainage areas and upslope of the existing wetlands and/or intermittent/ephemeral streams;
- Compost filter socks will be positioned downslope of smaller drainage areas and upslope of the existing wetlands and/or intermittent/ephemeral streams;

- Orange construction fence will be erected along the edge of the LOD to clearly mark and help protect the wetlands from being impacted during construction operations;
- Erosion control blanket will be placed on slopes greater than 3 Horizontal to 1 Vertical (3H:1V) to limit erosion and promote vegetative growth; and
- Riprap aprons will be constructed at the outfalls of pipes to dissipate runoff.

Question 4: Proved mapping, plans, specifications and design analysis for the preferred alternative to the project.

- a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect wetlands and/or perennial streams for which the waiver is sought.*

Refer to the E&S plans and details in Attachment C for locations of erosion control measures, specifications on installation and maintenance requirements, and the construction sequence.

3.0 CLOSING

We appreciate your review of this Wetland and Perennial Stream Waiver Request Form. Please contact Mallory Owens at 724-327-5200 or mowens@cecinc.com, if you have any questions or require additional information.

Respectfully submitted,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC



McKenzie R. McKeon
Assistant Project Manager



Mallory A. Owens, M.S.
Project Manager

MRM:MAO/jg:hm
Enclosures

cc: Jenny Hayes, Chevron Appalachia, LLC

L-161415.Wetland Waiver.S28/P

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: _____

Well Operator: Chevron Appalachia, LLC

Well Number: _____ Well Pad Name: Longworth Well Site

County, District, Quadrangle of Well Location: Marshall County, Clay District, Glen Easton Quad

Answer the questions below to request a waiver from West Virginia Department of Environmental Protection for any wetlands or perennial streams which lie within one hundred feet of proposed project Limit of Disturbance (LOD), which includes any erosion and sediment control devices to be used.

This waiver shall be requested pursuant to Chapter 22 Article 6A Section 12 of West Virginia Code, which states:

§22-6A-12(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.

§22-6A-12(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 404 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.

03/03/2017

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: _____

Answer in the space provided, or use additional pages as necessary to fully answer the questions below:

- 1. Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.**

Please refer to Section 2.0, Question 1 of the letter.

- 2. Justify the proposed activity by describing alternatives to this project that were considered.**

- a. Include a No-Action Alternative as to show "the future without the project"
- b. Location Alternatives must be shown
- c. Must demonstrate why a one hundred foot buffer cannot be maintained
- d. Describe how the proposed project is the least environmentally damaging practicable alternative

Please refer to Section 2.0, Question 2 of the letter.

03/03/2017

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: _____

3. **Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.**

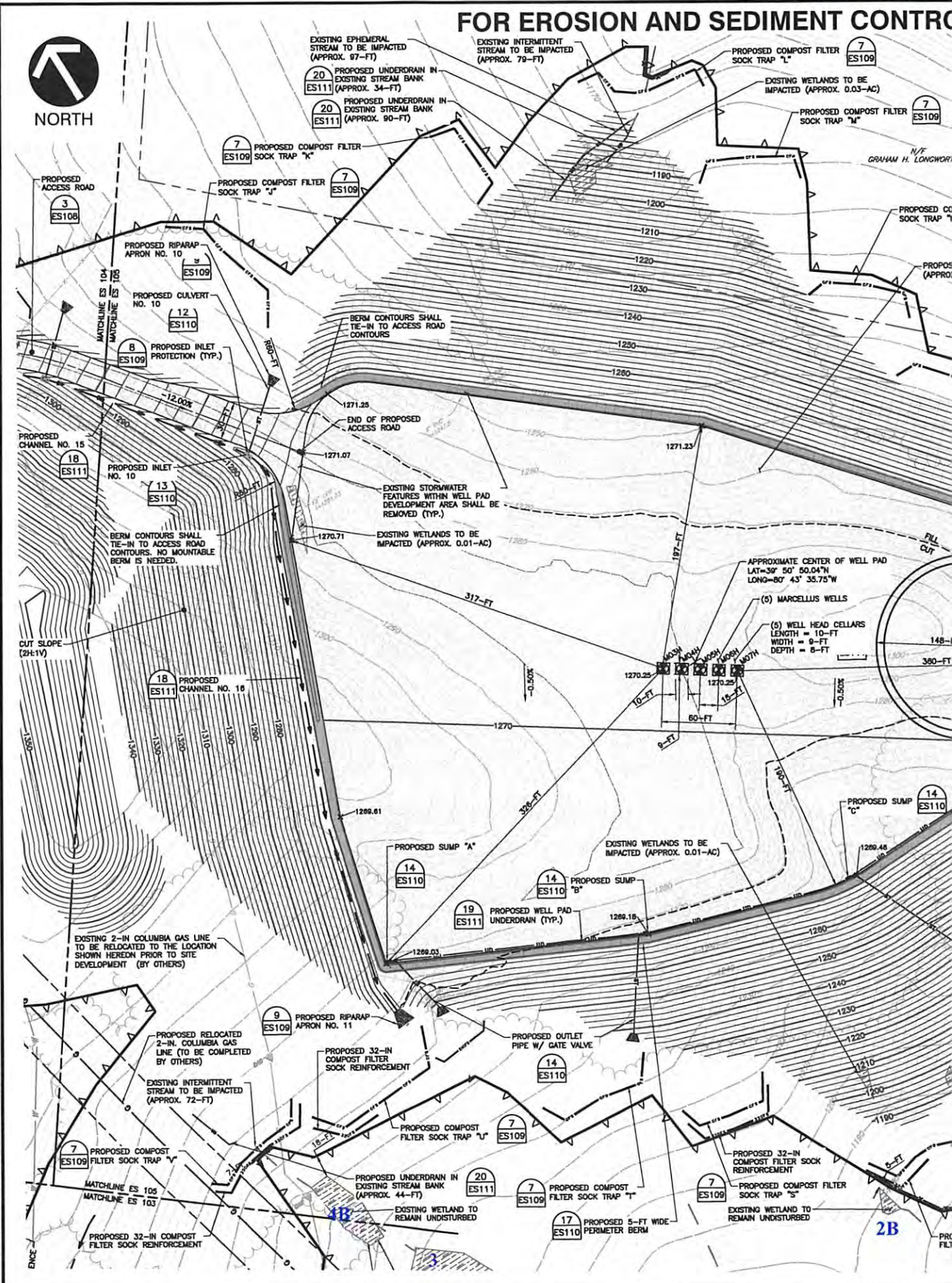
Please refer to Section 2.0, Question 3 of the letter.

4. **Provide mapping, plans, specifications and design analysis for the preferred alternative to the project.**
 - a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect these wetlands and/or perennial streams for which the waiver is sought.

Please refer to Section 2.0, Question 4 of the letter.

03/03/2017

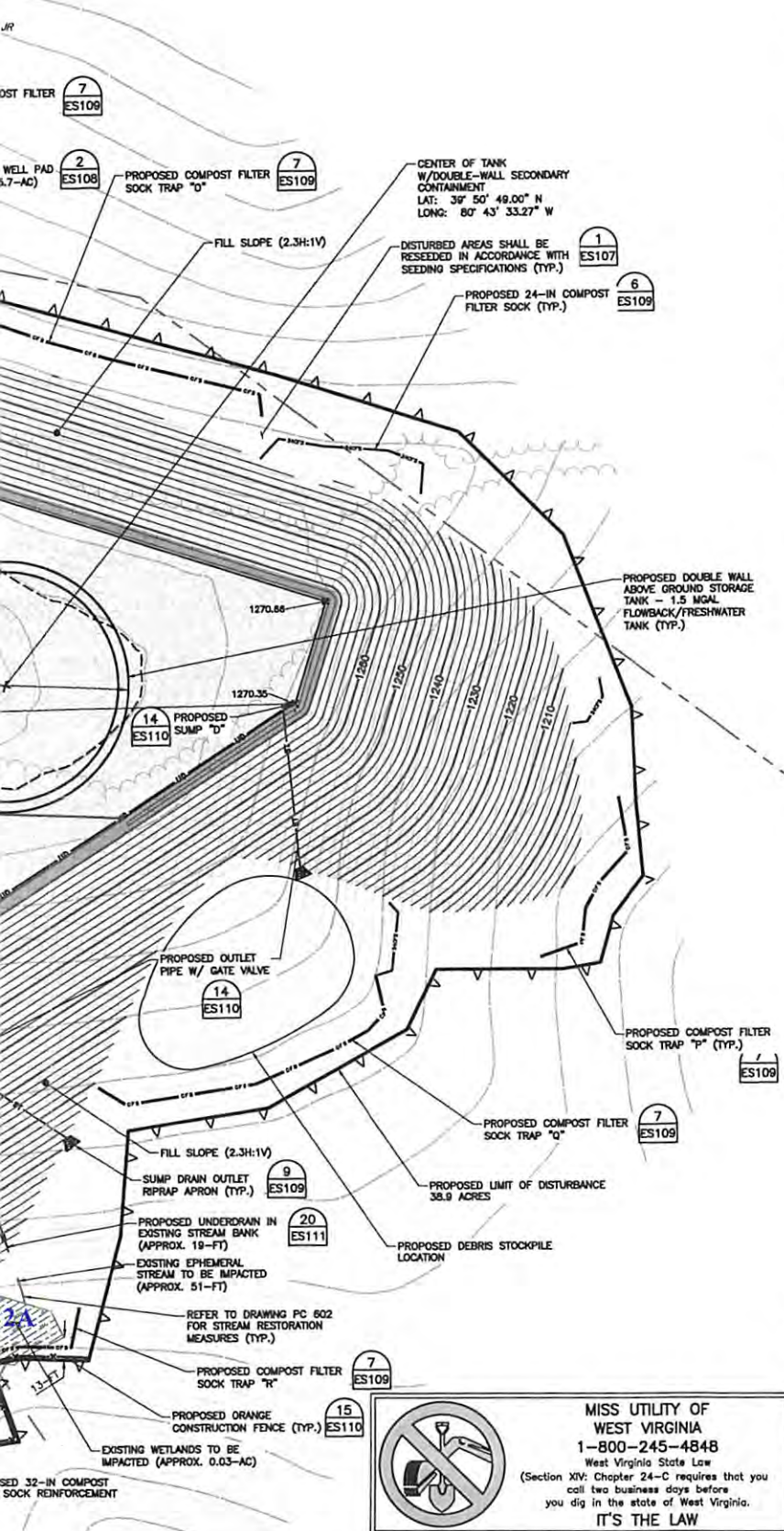
FOR EROSION AND SEDIMENT CONTROL



Smith & Partners 30101611415 CADDDwg 0000 permit plan1014 ES-COCS-ES PLANS.dwg
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03/03/2017

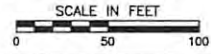
FOR CONSTRUCTION PURPOSES ONLY



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 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 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
	PROPOSED STORMWATER CULVERT
	PROPOSED INLET
	PROPOSED RIPRAP APRON
	PROPOSED UNDERDRAIN
	PROPOSED EROSION CONTROL BLANKET
	DETAIL NUMBER
	DRAWING DESIGNATION

- 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 08/16/2016.



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

Civil & Environmental Consultants, Inc.
 4000 Triangle Lane, Suite 200 - Export, PA 15622
 724-327-5200 - 800-899-3610
 www.cecinc.com

ROBERT C. BLYDEN
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF WEST VIRGINIA
 License No. 20839

REVISION RECORD

No.	Date	REVISION FOR CONSTRUCTION PLAN SET
01	12/15/2016	REVISED FOR CONSTRUCTION PLAN SET
02	01/09/2017	REVISIONS PER WDEP COMMENTS
03	02/23/2017	REV PER WDEP COMMENTS/CONIS PLANS
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)

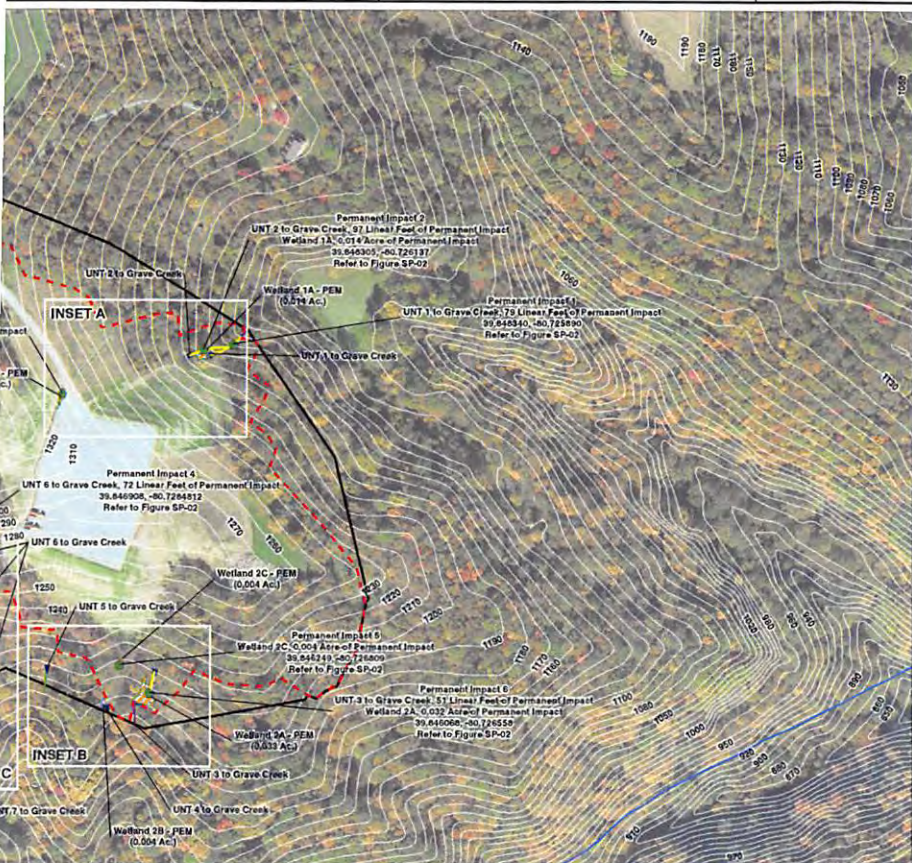
Project Number: 161-415.004C
 Drawing Scale: 1" = 100'
 Date Issued: 10/25/2016
 Index Number:
 Drawn By: JAM
 Checked By: TCB
 Project Manager: MJS

ES 105

03/03/2017



03/03/2017



REVISION RECORD		
NO	DATE	DESCRIPTION

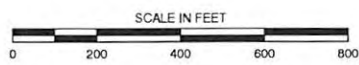
SUBMITTAL RECORD		
NO	DATE	DESCRIPTION

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://GO.TO/ARCGISONLINE.COM/MAPS/WORLD_IMAGERY](http://go.to/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 - 800-898-3610
www.ceclinc.com

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

DRAWN BY: KMC	CHECKED BY: MAO	APPROVED BY: PAK*
DATE: 09/28/2016	SCALE: 1" = 200'	PROJECT NO: 161-415.0003

AQUATIC IMPACTS MAP

FIGURE NO: **2**

2016161-415-GIS-Maps-WP161415_Fig_2_WWY_AQUATIC_IMPACTS.mxd 9/28/2016 10:53 AM (collab)

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

1) Well Operator: Chevron Appalachia, LLC 49449935 Marshall Clay Glen Easton, WV
Operator ID County District Quadrangle

2) Operator's Well Number: M03H 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, 6,531, 61' thick, 0.64 psi/ft gradient

8) Proposed Total Vertical Depth: 6,535

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 11,673

11) Proposed Horizontal Leg Length: 4,775

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): N/A

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	11673	11673	2,706
Tubing							
Liners							

JN 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.

Cement Additives

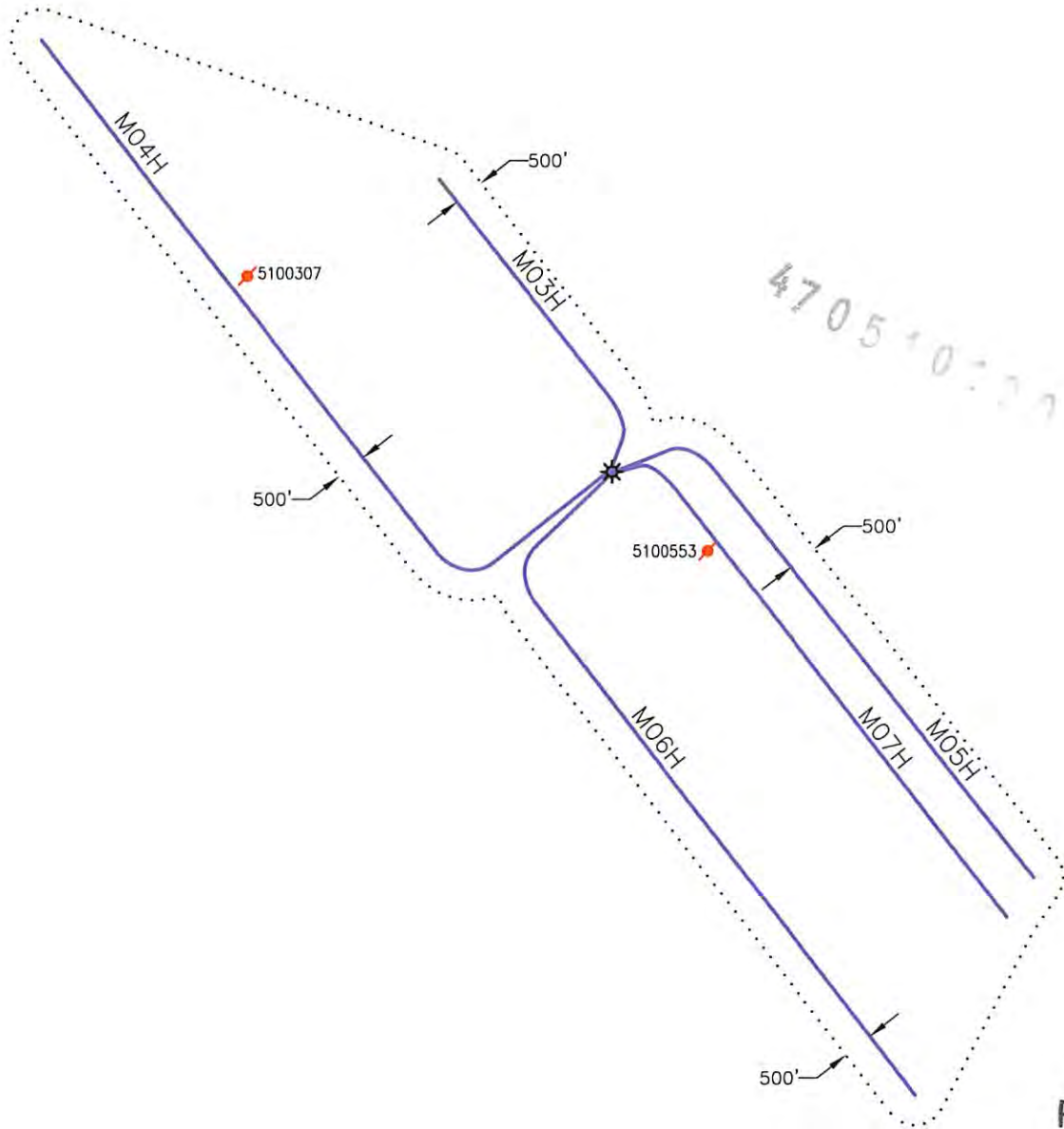
The Water String the blend will contain class A cement, 3% CaCl₂, and flake.

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.



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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

4705101903

4705101903

Office Gas
DEC 01 2016



Longworth M03H

Clay Twp, Marshall Co, WV		Ground Level Elev. (ft above SL):		1270				
DRILLING FLUID / BIT TYPE / TFA	CENTRALIZER PROGRAM	CASING SIZE / FORMATION	DEPTH		WELLHEAD DESIGN	HOLE SIZE (IN)	CASING SPECS	CEMENT PROGRAM
			MD (FT)	TVD (FT)				
Core Barrel / Auger	2 Bowspring per jt	20" Conductor	60	60	INC AZM	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) 8.679 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	Middlesex Burkett Shale Tully Limestone Hamilton shale Upper Marcellus Lower Marcellus Basal Marcellus	6,293	6,369			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
Non-Conservation	Float Equip. (2) Jts of Csg	5-1/2" Casing	11,672	6,535		8.5 - 8.75		Production Tail Slurry Minimum 200' above Marcellus

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 03/03/2017

WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. M03H

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 #WV0109517

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, 20 16 COMMONWEALTH OF PENNSYLVANIA

Kristen Brooks Notary Public

NOTARIAL SEAL
Kristen Brooks, Notary Public
Smithfield Boro, Fayette County
My Commission Expires Sept. 2, 2018
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

My commission expires Sept 2, 2018

03/03/2017

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 Anderson*

Comments: _____

Title: Oil & Gas Inspector

Date: 11/14/16

Field Reviewed? Yes No

TABLE A - TEMPORARY SEEDING MIXTURES (FROM WV DOT DOH STANDARD SPECIFICATIONS)			
	SPRING MAR 1 - MAY 15 LBS/ ACRE	SUMMER MAY 16 - AUG 15 LBS/ ACRE	FALL AND WINTER AUG 16 - APR 30 LBS/ ACRE
VARIETY OF SEED			
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
CROWNVETCH	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
Well # M03H

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

Access Point – [39.839575°N, 80.737044°W]
Well Site – [39.847350°N, 80.726939°W]
Marshall County, West Virginia

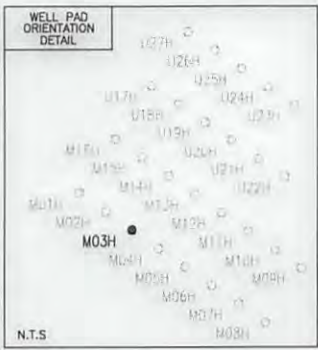
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11/16/16

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BHL is located on topo map 5,401 feet south of Latitude: 39° 52' 30"
 SHL is located on topo map 10,133 feet south of Latitude: 39° 52' 30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS



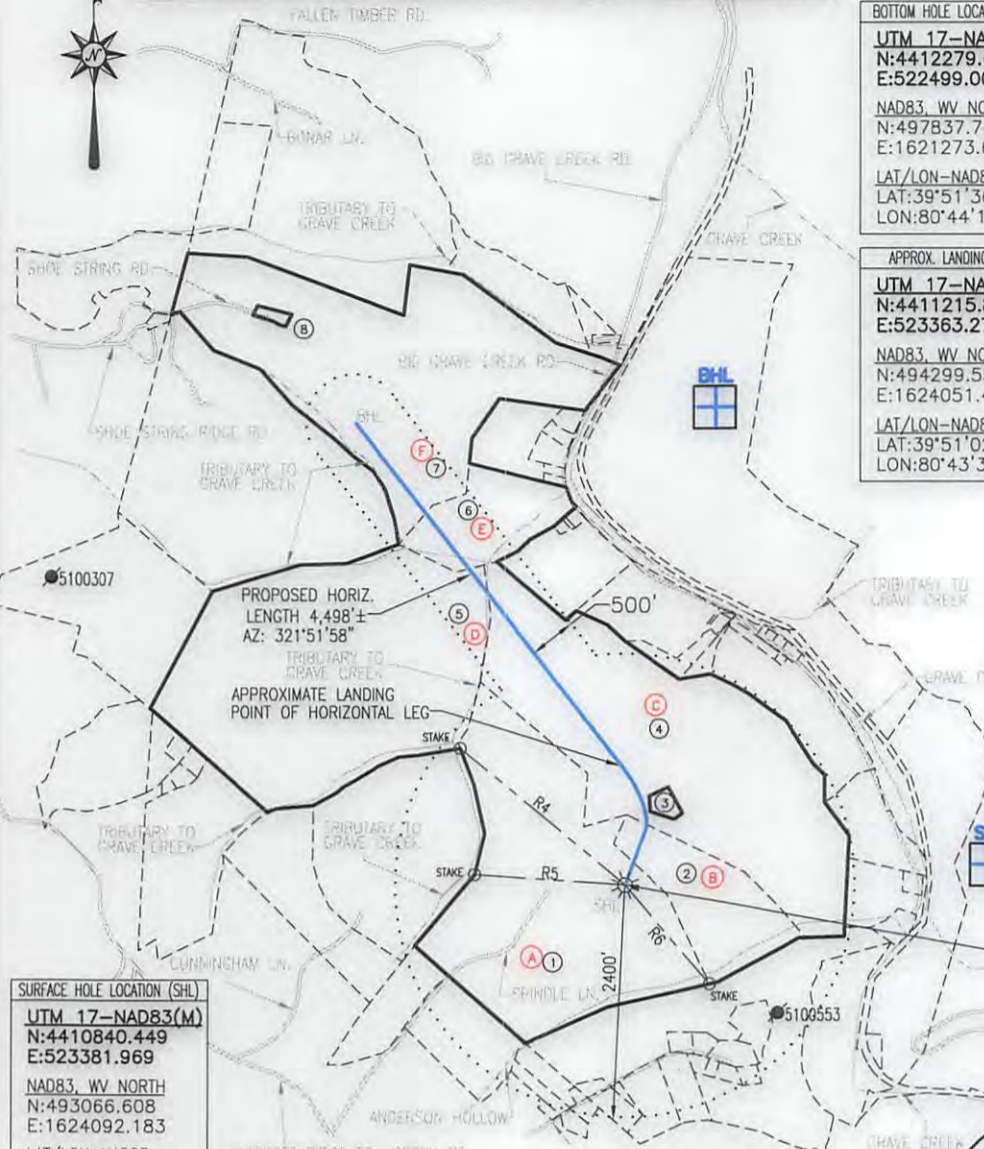
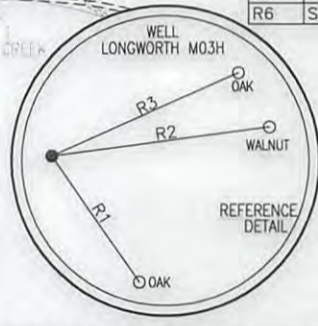
BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4412279.64
 E:522499.00
 NAD83, WV NORTH
 N:497837.746
 E:1621273.658
 LAT/LON-NAD83
 LAT:39°51'36.90"
 LON:80°44'13.05"

APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4411215.86
 E:523363.27
 NAD83, WV NORTH
 N:494299.558
 E:1624051.410
 LAT/LON-NAD83
 LAT:39°51'02.31"
 LON:80°43'36.81"

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

LINE	BEARING	DISTANCE
R1	S 34°54'11" E	199.00'
R2	N 82°31'26" E	286.01'
R3	N 66°13'23" E	265.80'
R4	N 50°33'42" W	2228.20'
R5	N 86°14'55" W	1575.82'
R6	S 41°13'45" E	1350.17'



SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4410840.449
 E:523381.969
 NAD83, WV NORTH
 N:493066.608
 E:1624092.183
 LAT/LON-NAD83
 LAT:39°50'50.133"
 LON:80°43'36.067"

- 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.

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

FILE #: LONGWORTH M03H
 DRAWING #: LONGWORTH M03H
 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: *George D. Six*
 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 M03H
 API WELL #: 47 51 01903 HLA
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1295.65'

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

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

OIL & GAS ROYALTY OWNER: GRAHAM H. LONGWORTH, JR. ACREAGE: 625.06± **03/03/2017**

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: 11,672.31'±

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

BHL is located on topo map 8,089 feet west of Longitude: 80° 42' 30"
 SHL is located on topo map 5,207 feet west of Longitude: 80° 42' 30"

LONGWORTH

M03H

PAGE 2 OF 2

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

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

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M) N:4410840.449 E:523381.969
NAD83, WV NORTH N:493066.608 E:1624092.183
LAT/LON-NAD83 LAT:39°50'50.133" LON:80°43'36.067"

APPROX. LANDING POINT
UTM 17-NAD83(M) N:4411215.86 E:523363.27
NAD83, WV NORTH N:494299.558 E:1624051.410
LAT/LON-NAD83 LAT:39°51'02.31" LON:80°43'36.81"

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M) N:4412279.64 E:522499.00
NAD83, WV NORTH N:497837.746 E:1621273.658
LAT/LON-NAD83 LAT:39°51'36.90" LON:80°44'13.05"

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

470510

**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

**Received
Office of Oil & Gas
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 M03H

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
4-11-2.0	LONGWORTH GRAHAM H JR ET AL	Chevron U.S.A. Inc.	0.14	BK 790 - PG 129	n/a	n/a
	NICEWARNER LISA	TriEnergy Holdings, LLC	0.14	BK 751 - PG 260	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	RODGERS JULIA	TriEnergy Holdings, LLC	0.14	BK 751 - PG 262	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FRIESE KEITH	TriEnergy Holdings, LLC	0.14	BK 751 - PG 264	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FREISE MARK	TriEnergy Holdings, LLC	0.14	Bk 751 - PG 250	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FREISE ANTHONY	TriEnergy Holdings, LLC	0.14	BK 753 - PG 580	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FRIESE JAMES	TriEnergy Holdings, LLC	0.14	BK 751 - PG 254	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FREISE HENRY	TriEnergy Holdings, LLC	0.14	BK 752 - PG 382	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FRIESE STEVEN	TriEnergy Holdings, LLC	0.14	BK 751 - PG 252	TriEnergy Holdings, LLC to Chevron U.S.A. Inc.	n/a
4-12-16.0	LONGWORTH GRAHAM H JR ET AL	Chevron U.S.A. Inc.	0.14	BK 790 - PG 129	n/a	n/a
	EVRAETS SHERI L FAMILY TRUST	TriEnergy Holdings, LLC	0.16	BK 730 - PG 407	TriEnergy Holdings, LLC to NPAR, LLC BK 28 - PG 348	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
	NICEWARNER LISA	TriEnergy Holdings, LLC	0.14	BK 751 - PG 260	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	RODGERS JULIA	TriEnergy Holdings, LLC	0.14	BK 751 - PG 262	TriEnergy Holdings, LLC to Chevron U.S.A. Inc.	n/a

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Office of Oil & Gas
DEC 01 2016

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Plat ID	Lessor	Lessee	Royalty	Book/Page	Assignment #1	Assignment #2
					BK 28 - PG 348	
	FRIESE KEITH	TriEnergy Holdings, LLC	0.14	BK 751 - PG 264	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FREISE MARK	TriEnergy Holdings, LLC	0.14	Bk 751 - PG 250	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FREISE ANTHONY	TriEnergy Holdings, LLC	0.14	BK 753 - PG 580	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	n/a
	FRIESE JAMES	TriEnergy Holdings, LLC	0.14	BK 751 - PG 254	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	
	FREISE HENRY	TriEnergy Holdings, LLC	0.14	BK 752 - PG 382	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 28 - PG 348	
	FRIESE STEVEN	TriEnergy Holdings, LLC	0.14	BK 751 - PG 252	TriEnergy Holdings, LLC to Chevron U.S.A. Inc.	n/a
4-12-19.0	ANDREWS BRETT A ET UX	Chevron U.S.A. Inc.	0.15	BK 773 - PG 43	n/a	n/a
4-12-10.0	BAKER MARY ANN	Chevron U.S.A. Inc.	0.16	BK 808 - PG 518	n/a	n/a
	ULMAN TRUST MARY ANN BAKER TRSTE	Chevron U.S.A. Inc.	0.16	BK 808 - PG 550	n/a	n/a
					BK 26 - PG 123	
	DIOCESE OF WHEELING - CHARLESTON	TriEnergy Holdings, LLC	0.18	BK 738 - PG 509	TriEnergy Holdings, LLC to NPAR, LLC	BK 26 - PG 201 NPAR, LLC to Chevron U.S.A. Inc.
	WUERTHELE ROBERT S	Chevron U.S.A. Inc.	0.18	BK 853 - PG 63	n/a	n/a
	WUERTHELE MARK K	Chevron U.S.A. Inc.	0.18	BK 853 - PG 79	n/a	n/a
	WUERTHELE JEFFREY A	Chevron U.S.A. Inc.	0.18	BK 853 - PG 127	n/a	n/a
	WUERTHELE MICHAEL D ET UX	Chevron U.S.A. Inc.	0.18	BK 853 - PG 103	n/a	n/a
	Chevron U.S.A. Inc.	Chevron U.S.A. Inc.	Fee	BK 886 - PG 595	n/a	n/a
					BK 36 - PG 168	
	ZIDAR SUSAN ET VIR	TH Exploration, LLC	0.18	BK 877 - PG 222	TH Exploration, LLC to Chevron U.S.A. Inc. BK 36 - PG 168	n/a
	LAUREN M TEKELY IRREVOCABLE TRUST	TH Exploration, LLC	0.18	BK 876 - PG 177	TH Exploration, LLC to Chevron U.S.A. Inc.	n/a
4-12-3.0	JMK IREV TRST	Chevron U.S.A. Inc.	0.16	BK 797 - PG 336	n/a	n/a
	PURPLEBURGH VENTURES LLC	Chevron U.S.A. Inc.	0.16	BK 799 - PG 325	n/a	n/a
	MARCELLUS TX MINERAL PRTNRS LTD	Chevron U.S.A. Inc.	0.16	BK 794 - PG 561	n/a	n/a

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DEC 01 2016



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

4705101033

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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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

4705101903

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 "I R Gutierrez", with a long horizontal flourish extending to the right.

Irvin R Gutierrez
Land Representative

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DEC 01 2016

03/03/2017

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

Date of Notice Certification: 11/15/2016

API No. 47- _____ - _____

Operator's Well No. M03H

Well Pad Name: Longworth

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: West Virginia
County: Marshall
District: Clay
Quadrangle: Glen Easton, WV
Watershed: Middle Grave Creek - Grave Creek

UTM NAD 83 Easting: 523381.969
Northing: 4410840.449
Public Road Access: Roberts Ridge Road/WW-21
Generally used farm name: Longworth

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Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:

*PLEASE CHECK ALL THAT APPLY

- 1. NOTICE OF SEISMIC ACTIVITY or NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- 2. NOTICE OF ENTRY FOR PLAT SURVEY or NO PLAT SURVEY WAS CONDUCTED
- 3. NOTICE OF INTENT TO DRILL or NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)
- 4. NOTICE OF PLANNED OPERATION
- 5. PUBLIC NOTICE
- 6. NOTICE OF APPLICATION

OOG OFFICE USE ONLY

- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED
- RECEIVED

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DEC 01 2016

Required Attachments:

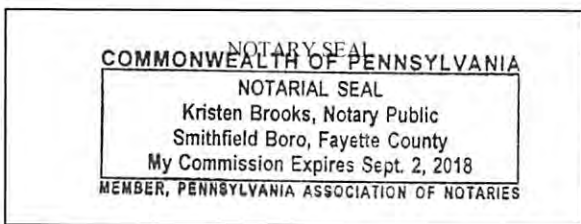
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

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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DEC 01 2016

**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

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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: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

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

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

SURFACE OWNER(s) (Impoundments or Pits)

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 OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: Daniel C. Longworth
Address: 812 Spindle Lane
Moundsville, WV 26041

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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DEC 01 2016

03/03/2017

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.

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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 or 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 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 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. 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 variance, 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 404 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, 2012, 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

Office of the Secretary
DEC 01 2015

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.

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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

Received
Office of Oil & Gas
DEC 01 2016

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.

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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.

Received
Office of Oil & Gas
DEC 01 2016

WW-6A
(8-13)

API NO. 47- _____ - _____
OPERATOR WELL NO. M03H
Well Pad Name: Longworth

Jenny Hayes

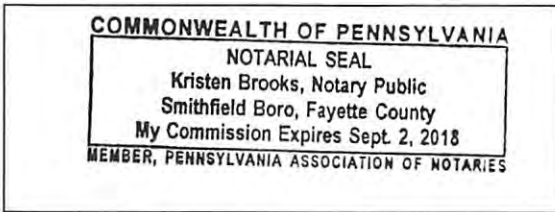
Notice is hereby given by:

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 deprivacyofficer@wv.gov.



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

4705101000

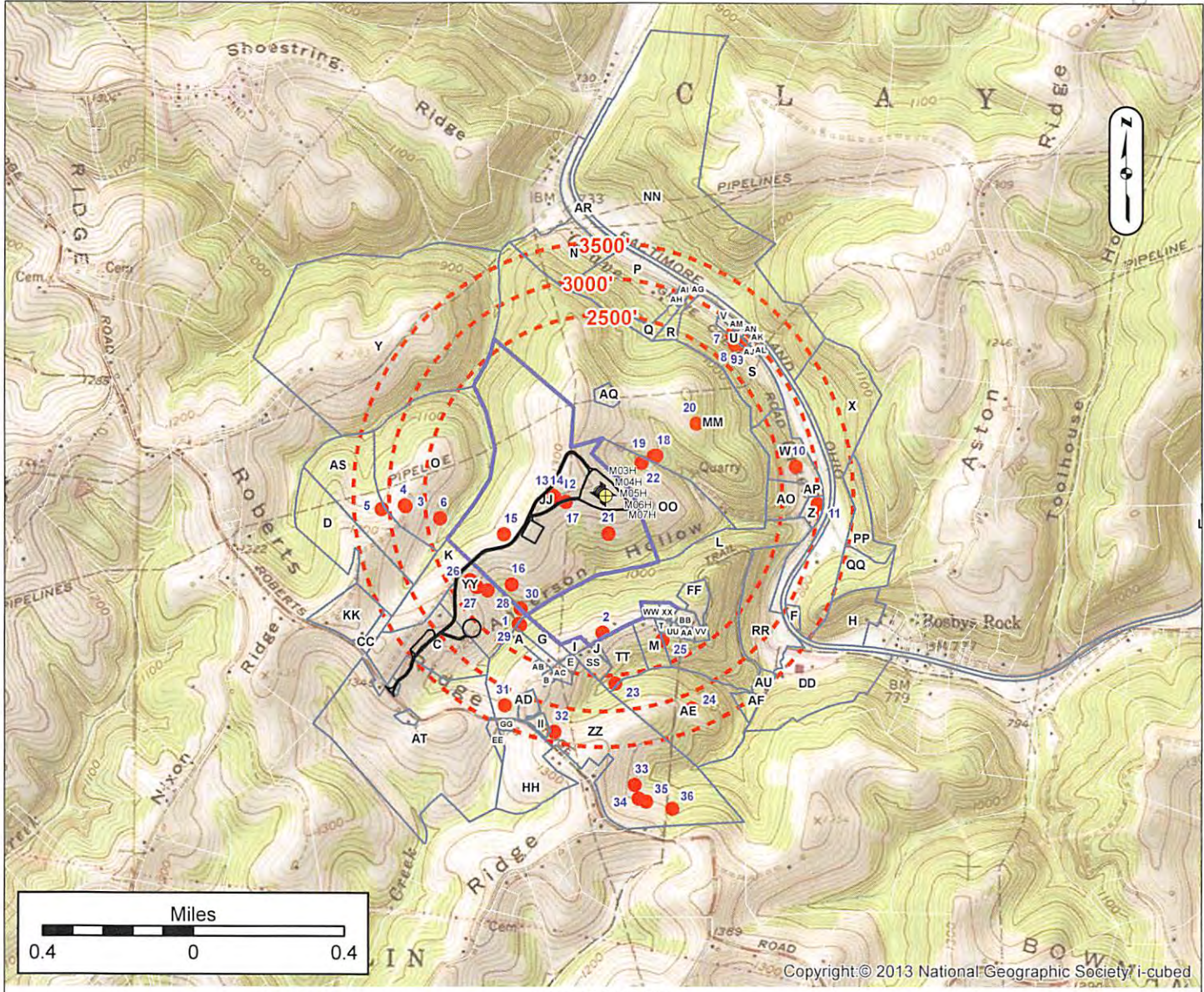
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Office of Oil & Gas
DEC 01 2016

03/03/2017



WATER SUPPLY EXHIBIT LONGWORTH UNIT

470510
1503
GESM



LOT OWNERS

Label	OWNER	TM	Label	OWNER	TM	Label	OWNER	TM	Label	OWNER	TM
A	MIDCAP RAYMOND L & DOROTHY L	25-04 1100560010000	P	JOHES SHERRY M	25-04 1200120000000	EE	CARNEY KAREN M & ABRAHAM S	25-05 3001300010000	TT	LIGHTNER JOHN D ET UX	25-04 1100540004000
B	WHITLATCH KENNETH E ET UX	25-04 1100560004000	Q	JOHES KATHY	25-04 1200120002000	FF	YOHIO JAMES E & LEAH A	25-04 1100540012000	UU	MIDCAP RAYMOND L ET UX	25-04 1100540006000
C	HOLMES MARY	25-04 1300390000000	R	JOHES KATHY	25-04 1200130000000	GG	HUGGINS RICHARD M & CRYSTAL M	25-05 3001600000000	VV	STUCKEY JAMES A ET UX	25-04 1100540007000
D	HARTLEY LORENE & PATRICIA A	25-04 1300350000000	S	MORRISON JAMES W ET UX	25-04 1200140000000	HH	CLARK GILBERT E JR & ANITA L	25-05 3004100000000	WW	WILLIAMS EDWARD ET UX	25-04 1100540010000
E	MIDCAP RAYMOND L ET UX	25-04 1100560010000	T	MIDCAP BRADY L ET UX	25-04 1100540005000	II	FLOWERS CLINT E & BRENT B	25-04 1100560000000	XX	WILLIAMS EDWARD ET UX	25-04 1100540011000
F	ROUSH DEAN ET UX	25-04 1100030001000	U	STEVEY HERBERT R ET UX	25-04 1200140001000	JJ	LONGWORTH GRAHAM H JR	25-04 1100010000000	YY	HOLMES MARY	25-04 1100540008000
G	MIDCAP RAYMOND L & DOROTHY L	25-04 1100560005000	V	WHITE JOHN STANLEY ET UX	25-04 1200140003000	KK	KEREKES RONALD A ET UX	25-04 1300180000000	ZZ	FLOWERS CLINT E & BRENT B	25-04 1100560000000
H	CONNOR GLEN W ET UX	25-04 1100510000000	W	SHAFFER ROBERT L SR ET UX	25-04 1200150003000	LL	CONSOLIDATION COA. COMPANY	25-04 1100590000000	AA	MIDCAP RAYMOND L & DOROTHY L	25-04 1100560001000
I	LIGHTNER JOHN D ET UX	25-04 1100540003000	X	ROUSH HARRY F ET UX	25-04 1100030000000	MM	LONGWORTH DANIEL C	25-04 1200160000000	BB	MIDCAP RAYMOND L & DOROTHY L	25-04 1100560002000
J	MIDCAP RAYMOND LLOYD JR	25-04 1100540008000	Y	JARRETT CODY M	25-04 1200190000000	NN	MOUNDSVILLE CITY OF	25-04 1000010000000	CC	FLOWERS CLINT E & BRENT L	25-04 1100560013000
K	HOLMES JEFFREY SCOTT ET AL	25-04 1300390001000	Z	WILKINS KELLY BRUCE	25-04 1200150002000	OO	LONGWORTH GRAHAM H JR	25-04 1100020000000	DD	LIGHTNER JOHN D ET UX	25-04 1100570000000
L	FOX DELONES	25-04 1100540000000	AA	STUCKEY JAMES A ET UX	25-04 1100540001000	PP	ROUSH HARRY F	25-04 1100040000000	EE	TECH PARK NON-PROFIT	25-04 1100570001000
M	MIDCAP BRADY EST ET UX	25-04 1100530000000	BB	THAYER JAMES C & MELISSA S	25-04 1100540009000	QQ	ROUSH HARRY F ET UX	25-04 1100040000000	FF	JOHES SHERRY M	25-04 1200130000000
N	HAUGHT THOMAS L & CLARA J	25-04 1200100002000	CC	CECIL KELLY J ET UX	25-04 1300180001000	RR	TECH PARK NON-PROFIT	25-04 1100520000000	GG	JOHES KATHY	25-04 1200130000000
O	CUNNINGHAM DALE & MARY	25-04 1300390000000	DD	TECH PARK NON-PROFIT	25-09 1000200000000	SS	MIDCAP RAYMOND L	25-04 1100540000000	HH	JOHES KATHY	25-04 1200130000000

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

03/03/2017

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)

4705103007

API NO. _____
OPERATOR WELL NO. LONGWORTH 3H
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>1,655,528.940 ft</u>
County:	<u>Marshall</u>	North State Plane	North:	<u>493,030.100 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 493,030.100 ft, East 1,655,528.940 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: 9/7/2016

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 comply with regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of 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:** 12/11/16

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

4705200003

- 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>523381.969</u>
County: <u>Marshall</u>	Northing: <u>4410840.449</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 11 2016**

**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: The Estate of Barbara J. Darrow
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>523381.969</u>
County: <u>Marshall</u>	Northing: <u>4410840.449</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: _____

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

Name: _____
Address: _____

4705101007

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>523381.969</u>
County: <u>Marshall</u>	Northing: <u>4410840.449</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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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: The Estate of Barbara J. Derow
Address: 6247 Roberts Ridge Road
Moundsville, WV 26041

Name: _____
Address: _____
4705107203

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>523381.969</u>
County: <u>Marshall</u>	Northing: <u>4410840.449</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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Office of Oil & Gas
DEC 01 2016

03/03/2017



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

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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

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-nitrilopropionamide/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	

* 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

APPROVED
WVDEP OOG

3 / 2 / 2017

PREPARED FOR:

CHEVRON APPALACHIA, LLC

800 MOUNTAIN VIEW DRIVE
SMITHFIELD, PA 15478

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: tbalwin@cecinc.com

GEOTECHNICAL 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

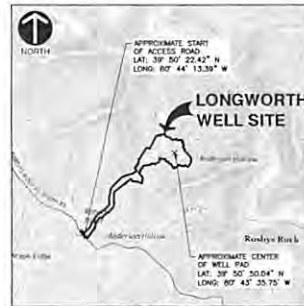
WELL HEAD W03H
LATITUDE: 39° 50' 50.13" N, LONGITUDE: 80° 43' 36.07" W

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

*BASED ON RAD 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	2.3
ACCESS ROAD	19.6
STOCKPILES	5.0
TOTAL AREA	26.9
WOODED AREA DISTURBED	7.9
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 H. HOLMES (AC)	
ACCESS ROAD	3.3
STOCKPILES	0.5
TOTAL AREA	3.8
WOODED AREA DISTURBED	0.3
IMPACTS TO JEFFERY SCOTT HOLMES (AC)	
ACCESS ROAD	0.1
TOTAL AREA	0.1
IMPACTS TO BARBARA J. DERROW (AC)	
ACCESS ROAD	2.3
STOCKPILES	0.3
TOTAL AREA	2.6



REFERENCE
U.S.G.S. 3" TOPOGRAPHIC MAP, GLEN EASTON
QUADRANGLE, WV DATED: 2014

LEGEND

---	EXISTING PROPERTY LINE	---	PROPOSED EDGE OF ACCESS ROAD	---	PROPOSED INDEX CONTOUR	---	PROPOSED COMPOST FILTER SOCK TRAP	---	PROPOSED CHANNEL
---	EXISTING INDEX CONTOUR	---	PROPOSED LIMIT OF DISTURBANCE	---	PROPOSED INTERMEDIATE CONTOUR	---	PROPOSED 18-IN COMPOST FILTER SOCK	---	PROPOSED STORMWATER CULVERT
---	EXISTING INTERMEDIATE CONTOUR	---	PROPOSED RELOCATED GAS LINE	---	PROPOSED WELL PAD OUTFALL LINE	---	PROPOSED 24-IN COMPOST FILTER SOCK	---	PROPOSED INLET
---	EXISTING PAVED ROADWAY	---	PROPOSED RELOCATED OVERHEAD ELECTRIC LINE	---	PROPOSED SPOT ELEVATION	---	PROPOSED ORANGE CONSTRUCTION FENCE	---	PROPOSED RIPRAP APRON
---	EXISTING UNPAVED ROADWAY	---	PROPOSED WELL HEAD	---	---	---	PROPOSED ROCK CONSTRUCTION ENTRANCE	---	PROPOSED UNDERDRAIN
---	EXISTING GAS LINE	---	PROPOSED PERIMETER BERM	---	---	---	PROPOSED INLET PROTECTION	---	---
---	EXISTING WATERLINE	---	PROPOSED UTILITY RIGHT-OF-WAY	---	---	---	PROPOSED EROSION CONTROL BLANKET	---	---
---	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 MOUND	---	---	---	---	---	---	---	---

REFERENCES

- BACKGROUND AERIAL IMAGE AND TOPOGRAPHY DEVELOPED FROM AN UNMANNED AERIAL VEHICLE (UAV) FLIGHT CONDUCTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 05/19/2016.
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- MAILED UTILITY FEATURES SURVEYED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED 04/28/2016 AND 06/18/2016.

DWG. NO.	SHEET TITLE	INCLUDED	LAST REVISED
CS 000	COVER SHEET	X	02/23/2017
ES 050	EXISTING TOPOGRAPHIC PLAN (1 OF 2)	X	01/09/2017
ES 051	EXISTING TOPOGRAPHIC PLAN (2 OF 2)	X	02/23/2017
ES 100	OVERALL EROSION AND SEDIMENT CONTROL PLAN	X	02/23/2017
ES 101	EROSION AND SEDIMENT CONTROL PLAN (1 OF 5)	X	02/23/2017
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	02/23/2017
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	02/23/2017
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	01/09/2017
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 SURFACE SUMMARY (1 OF 2)	X	01/09/2017
GE 501	GEOTECHNICAL SURFACE 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	02/24/2017
PC 602	POST CONSTRUCTION RECLAMATION PLAN (2 OF 2)	X	02/23/2017
PC 603	POST CONSTRUCTION RECLAMATION DETAILS	X	10/25/2016

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724.327.5200 400.899.9310
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DATE	BY	REVISION
02/23/2017	TJB	ISSUED FOR PERMIT COMMENT REVISION PLAN
02/23/2017	TJB	ISSUED FOR PERMIT COMMENT REVISION PLAN

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

COVER SHEET

MISS UTILITY OF
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West Virginia State Law
(Section VM, Chapter 24-C requires that you
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you dig in the state of West Virginia.)
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Project Number: 151-111-0042
Drawing Scale: 1"=2,000'
Date Issued: 10/25/2016
Issue Number:
Drawn By: JAM
Checked By: TJB
Project Manager: JAM

CS 000

FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY

LEGEND

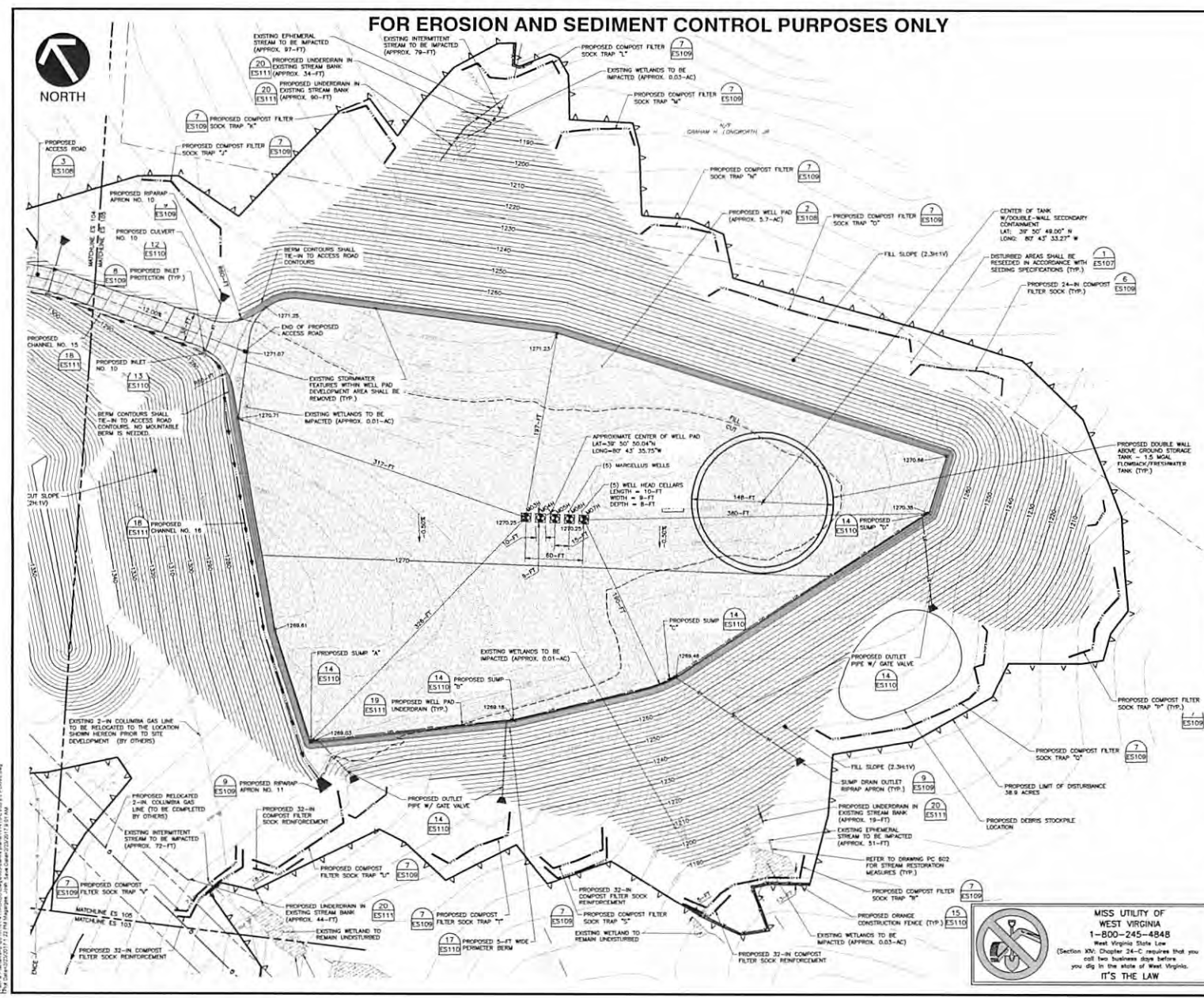
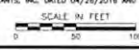
- EXISTING PROPERTY LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING TRAGED ROADWAY
- EXISTING IMPAVED ROADWAY
- EXISTING GAS LINE
- EXISTING WATERLINE
- EXISTING FIBER OPTIC LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING STREAM
- EXISTING WETLAND
- EXISTING TREE/SHRUB
- EXISTING STRUCTURE
- EXISTING UTILITY POLE
- EXISTING WATER METER
- EXISTING WATER WASTEWARE
- 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 DRAIN
- 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 ROCK CONSTRUCTION ENTRANCE
- PROPOSED ALIET PROTECTION
- PROPOSED CHANNEL
- PROPOSED STORMWATER CULVERT
- PROPOSED INLET
- PROPOSED RIPRAP APRON
- PROPOSED UNDERDRAN
- PROPOSED EROSION CONTROL BLANKET
- ① DETAIL NUMBER
- DRAWING DESIGNATION

APPROVED WVDEP OOG

3/2/2017

- ### 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.
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 4000 Triangle Lane, Suite 200 - Export, PA 15622
 724-837-8500 800-839-9415
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NO.	DATE	REVISION RECORD
1	03/02/2017	ISSUED FOR PERMITS
2	03/02/2017	REVISED PER WVEDP COMMENT
3	03/02/2017	REVISED PER WVEDP COMMENT
4	03/02/2017	REVISED PER WVEDP COMMENT
5	03/02/2017	REVISED PER WVEDP COMMENT
6	03/02/2017	REVISED PER WVEDP COMMENT
7	03/02/2017	REVISED PER WVEDP COMMENT
8	03/02/2017	REVISED PER WVEDP COMMENT
9	03/02/2017	REVISED PER WVEDP COMMENT
10	03/02/2017	REVISED PER WVEDP COMMENT
11	03/02/2017	REVISED PER WVEDP COMMENT
12	03/02/2017	REVISED PER WVEDP COMMENT
13	03/02/2017	REVISED PER WVEDP COMMENT
14	03/02/2017	REVISED PER WVEDP COMMENT
15	03/02/2017	REVISED PER WVEDP COMMENT

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: 161-415-0546
 Drawing Scale: 1" = 100'
 Date Issued: 02/29/2016
 Title Number:
 Drawn By: JAM
 Checked By: TCB
 Project Manager: JCB

ES 105

C:\p\161-415-0546\0546.dwg (3/2/2017 10:50:02 AM) PLOT: 15622.DWG
 Plot Date: 03/02/2017 10:50:02 AM Plot Path: C:\p\161-415-0546\15622.DWG

LONGWORTH EROSION AND SEDIMENTATION

ROBERTS RIDGE SAIN
CLAY DISTRICT, MARSHALL C

PREPARED
CHEVRON APPA
800 MOUNTAIN V
SMITHFIELD, F

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

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LEGEND

	EXISTING PROPERTY LINE		PROPOSED EDGE OF ACCESS ROAD		1200
	EXISTING INDEX CONTOUR		PROPOSED LIMIT OF DISTURBANCE		1200.00
	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				

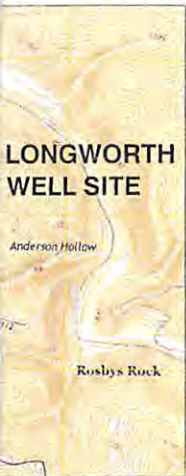
03/03/2017

WELL SITE EROSION AND SEDIMENT CONTROL PLAN

11 JOSEPH ROAD
MORGANTHAU COUNTY, WEST VIRGINIA

FOR:
APPALACHIA, LLC
1100 VIEW DRIVE
MORGANTHAU, PA 15478

DM 11/14/16



MAP
4000
WILEN EASTON

- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED WELL PAD CUT/FILL LINE
- PROPOSED SPOT ELEVATION
- CFT — PROPOSED COMPOST FILTER SOCK TRAP
- 18" — PROPOSED 18-IN COMPOST FILTER SOCK
- 24" — PROPOSED 24-IN COMPOST FILTER SOCK
- X — PROPOSED ORANGE CONSTRUCTION FENCE
- X — PROPOSED ROCK CONSTRUCTION ENTRANCE
- IP — PROPOSED INLET PROTECTION
- EB — PROPOSED EROSION CONTROL BLANKET

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	GEOTECHNICAL SUBSURFACE SUMMARY (1 OF 2)	X
GE 501	GEOTECHNICAL SUBSURFACE SUMMARY (2 OF 2)	X
GE 502	CROSS-SECTIONS (1 OF 2)	X
GE 503	CROSS-SECTIONS (2 OF 2)	X
GE 504	GEOTECHNICAL TABLES AND NOTES	X
GE 505	GEOTECHNICAL 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

- CH — PROPOSED CHANNEL
- ST — PROPOSED STORMWATER CULVERT
- I — PROPOSED INLET
- RA — PROPOSED RIPRAP APRON
- UD — PROPOSED UNDERDRAIN

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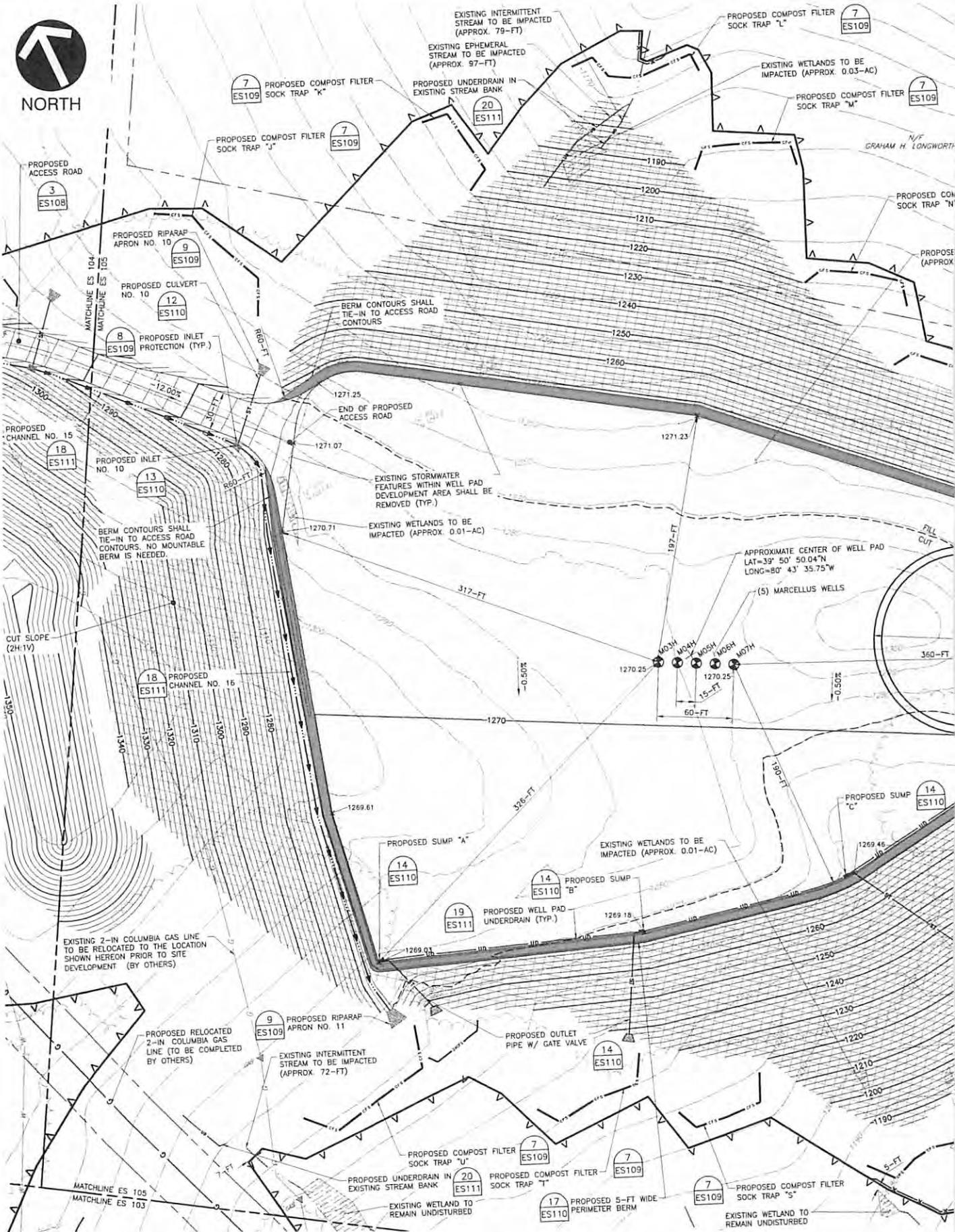
REVISION RECORD	
No.	Date
01	
02	
03	
04	
05	
06	
07	
08	

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

COVER SHEET
Project Number: 161-415-004C
Drawing Scale: 1"=2,000'
Date Issued: 10/25/2019
Index Number:
Drawn By: JAM
Checked By: TCB
Project Manager: MJS

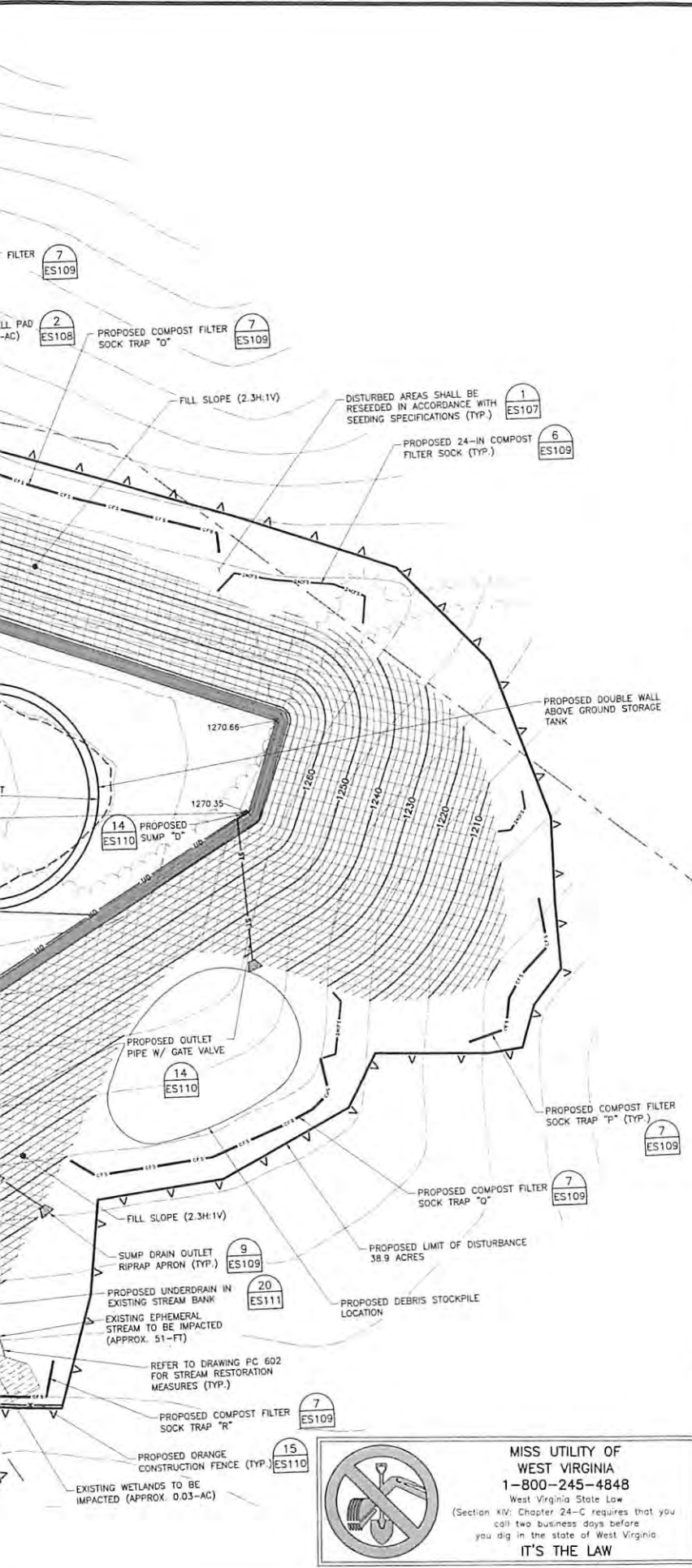
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West Virginia State Law
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IT'S THE LAW

CS 000 03/09/2017



Plan & File name: p. 201610151415-CADD\dwg\03-dwg\permit\plans\181415-CV03-ES-PLAN10.dwg
Plot Date: 10/25/2016 1:04:50 PM
User: J. Maguire
Job Number: 181415-ES-10

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 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
---	PROPOSED STORMWATER CULVERT
---	PROPOSED INLET
---	PROPOSED RIPRAP APRON
---	PROPOSED UNDERDRAIN
---	PROPOSED EROSION CONTROL BLANKET
---	DETAIL NUMBER
---	DRAWING DESIGNATION

Civil & Environmental Consultants, Inc.
 4000 Triangle Lane, Suite 200 - Export, PA 15632
 724-327-5200 - 800-899-3610
 WWW.CECONC.COM



REVISION RECORD

No.	Date	Description
01		
02		
03		
04		
05		
06		
07		
08		

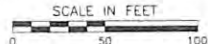
LONGWORTH WELL SITE
 CLAY DISTRICT
 MARSHALL COUNTY, WEST VIRGINIA

PREPARED FOR:
CHEVRON APPALACHIA, LLC
 800 MOUNTAIN VIEW DRIVE
 SMITHFIELD, 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 06/16/2016.

MISS UTILITY OF WEST VIRGINIA
 1-800-245-4848
 West Virginia State Law
 (Section XV, 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

03/05/2017