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**west virginia** department of environmental protection

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

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.dep.wv.gov

April 12, 2016

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-3903059, issued to CHESAPEAKE APPALACHIA, L.L.C., 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 all 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: 2458  
Farm Name: WARD, DAVID  
**API Well Number: 47-3903059**  
**Permit Type: Plugging**  
Date Issued: 04/12/2016

## PERMIT CONDITIONS

West Virginia Code §22-6-11 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

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. This well is under a consent order and must be plugged under the terms of that agreement.

FORM WW-4 (B)  
Observe  
File Copy  
(Rev. 2/01)

1) Date: 3/10/2016  
2) Operator's Well No. 802458 P&A  
3) API Well No. 47-039-03059

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

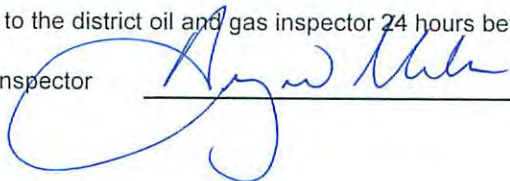
APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil \_\_\_\_\_ Gas X Liquid injection \_\_\_\_\_ Waste disposal \_\_\_\_\_  
(Is Gas, Production X or Underground storage \_\_\_\_\_) Deep \_\_\_\_\_ Shallow X
- 5) Location: Elevation 882' Watershed Mill Hollow of Kellys Creek  
District Cabin Creek County Kanawha Quadrangle Cedar Grove, WV 7.5'
- 6) Well Operator Chesapeake Appalachia, L.L.C. 7) Designated Agent Jessica Greathouse  
Address P.O. Box 18496 Address P.O. Box 6070  
Oklahoma City, OK 73154-0496 Charleston, WV 25362
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Terry Urban 304-544-5415 Name Chesapeake Appalachia, L.L.C.  
Address P.O. Box 1207 Address P.O. Box 18496  
Clendenin, WV 25045 Oklahoma City, OK 73154-0496

10) Work Order: The work order for the manner of plugging this well is as follows:

See Attached Sheet

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work Order approved by Inspector  Date 3-22-16

1st Tank Battery Kelly's Creek

04/15/2016

### PLUGGING PROCEDURE

Elevation  
882

Note: 302' of 8" has been pulled.

- 1) Prepare road and location, MIRU Service Rig
- 2) Pull 1.9" tubing and packer
- 3) Attempt to pull 3" and packer
  - A) If successful
    - a) Run W.S. to 2000', spot gel, pull W.S. to 1860'
    - b) Spot 250' cement plug 1860'-1610', pull W.S.
    - c) RIH with tools to check TOC. If top of plug is below 1640', then add cement to top of plug.
    - d) Proceed to step 4
  - B) If unsuccessful
    - a) Run in hole with tools to check TD approximately at 1985'
    - b) Run W.S. to 1985', spot gel
    - c) Spot 100' cement plug 1985'-1885', pull W.S.
    - d) Cut 3" at free-point (approximately 1661') and pull
    - e) Rip or shoot holes in 6 5/8" approximately at 1650' & 1630'
    - f) Run W.S. to 1661', spot gel
    - g) Spot 100' cement plug 1661'-1561', pull W.S.
    - h) Proceed to step 4
- 4) Cut 6 5/8" at free-point (approximately 1375') and pull
- 5) Run W.S. to 1375', spot gel
- 6) Spot 150' cement plug 1375'-1225', pull W.S.
- 7) Run in hole with tools to check TOC. If top of plug is below 1275', then add cement to top of plug. SPOT GEL
- 8) Rip or shoot holes approximately at 670' & 650'
- 9) Run W.S. to 670', spot gel
- 10) Spot 150' cement plug 670'-520', pull W.S.
- 11) Attempt to pull 10" casing
  - A) If successful
    - a) Run W.S. to 325', spot gel
    - b) Spot 150' cement plug 325'-175'
    - c) Proceed to step 12
  - B) If unsuccessful
    - a) Rip or shoot holes in 10" approximately at 230' & 210'
    - b) Run W.S. to 325', spot gel
    - c) Spot 150' cement plug 325'-175', pull W.S.
    - d) Cut 10" at free-point (approximately 125') and pull
    - e) Proceed to step 12
- 12) Pull or run W.S. to 125'
- 13) Spot 125' cement plug 125'-surface
- 14) Pull W.S. and top off with cement
- 15) Erect monument and reclaim as prescribed by law

Must Set  
Elevation  
Plug @ 882 ft

SET AS ON  
PLUG

04/15/2016

*[Handwritten signature]*

\* 7a.

\* 7a. PULL 8" CASING. SET A CEMENT PLUG FROM 1000' TO 850'. (ELEVATION)  
IF 8" CANNOT BE PULLED, RIP OR PERFORATE @ ELEVATION AND SET  
150' CEMENT PLUG.  
JWM

Well 370257  
802458  
API  
47-039-03059

Serial Well No. 18 Lease No. 039-3059

RECORD OF WELL No. 18 on the		CASING AND CONDUCTOR			GAS WELL	
David Ward	Farm of 1 Acres	SIZE	USED IN DRILLING	LEFT IN WELL	OPEN FLOW	
Cabin Creek	District	Conductor	14"	14"	in. Inch casing	
Kanawha	County	18"			At Centre At 1-7 Diam	
Kanawha	Field, State of W. Va.,	10"	270'	270'	Pounds Quinces Pounds Quinces	
Rig Commenced	10	8 1/2"	1310'	1007'	CLOSED IN	
Rig Completed	10	8"			In Tubing Casing	
Drilling Commenced	August 6th, 1917 10	6 3/4"	1670'	1670'	1 Min.	200 Pounds
Drilling Completed	October 5th, 1917 10	6"			2 Min.	300 Pounds
Drilling to cost	2.50 per foot	5 1/2"			3 Min.	330 Pounds
Contractor is:	J. W. Ramsey	5 1/8"			4 Min.	340 Pounds
Address:	Charleston, W. Va.,	4 1/2"			5 Min.	345 Pounds
Drillers' Names	S. G. Smithson Walter Taylor W. Cooley	3"		2026'	Rock Pressure Pounds	
1st DAY'S PRODUCTION		Shot 10			OIL WELL	
Gas calculated to be	2,700, (XX) cubic feet	Size of Torpedo			Size of Rods	
Oil flowed	barrels, pumped	Size of Tubing 3 inch			Kind of Rods	
		Size of Packing 5/8" x 3"			Wells abandoned and plugged	
		Kind of Packer Anchor				
		Set 318' 3" ft. from bottom				
		1st Perf. 8' 6" set 20' 9" from bottom				
		2nd " " " " " "				

DRILLER'S RECORD

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS	DATE
Surface	0	10'	10		
Gravel	10	13	3		
Sand	13	65	52		
Slate & Shells	65	125	60		
Sand	125	195	70	4 bailers of water at 135'	
Slate	195	207	8		
Coal	207	215	8		
Slate	215	325	110		
Sand	325	380	55		
Slate	380	470	90		
Sand	470	530	60		
Slate	530	590	60		
Lime	590	650	60		
Salt Sand	650	1085	435	Hole full of water at 1000'	
Slate	1085	1095	10		
Sand	1095	1210	115		
Shells	1210	1250	40		
Red Rock	1250	1260	10		
Shells	1260	1285	25		
Red Rock	1285	1305	20		
Lime	1305	1360	55		
Sand	1360	1395	35	1st Gas 1892 to 1895 shows 20/10 water thro' 3"	
Red Rock	1395	1420	25	2nd Gas 1972 to 1982 shows 42/10 water thro' 6 5/8"	
Slate & Shells	1420	1465	45	Decreased to 28/10 water thro' 6 5/8" - 2-6-17	
Red Rock	1465	1480	15		
Maxon Sand	1480	1505	25		
Slate & Shells	1505	1570	65		
Little Lime	1570	1600	30		
Slate	1600	1610	10		
Pencil Cave	1610	1620	10		
Big Lime	1620	1800	180		
Injun	1800	1855	55		
Slate	1855	1862	7		
Weir Sand	1862	2021	159		
Slate	2021	2026	5		
Total Depth		2026			

Big Salt Sand

COIL

39030597

WW4-A  
Revised  
2/01

1) Date: 3/10/2016  
2) Operator's Well No. 802458 P&A  
3) API Well No. 47-039-03059

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:  
(a) Name David Ward Heirs ✓  
Address C/O James F. Brown IV  
Attorney-in-Fact D. Ward Heirs  
P.O. Box 88  
Charleston, WV 25321  
(b) Name Blackhawk Land & Resources, LLC ✓  
Address 3228 Summit Square Place  
Suite 180  
Lexington, KY 40509  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Terry Urban  
Address P.O. Box 1207  
Clendenin, WV 25045  
Telephone ~~304-389-7583~~ 304-544-5915

5) Coal Operator  
(a) Name None  
Address \_\_\_\_\_  
Coal Owner(s) with Declaration ✓  
(b) Name David Ward Heirs ✓  
Address C/O James F. Brown IV  
Attorney-in-Fact D. Ward Heirs  
P.O. Box 88  
Charleston, WV 25321  
Name Blackhawk Land & Resources, LLC ✓  
Address 3228 Summit Square Place, Suite 180  
Lexington, KY 40509  
Coal Lessee with Declaration  
(c) Name Caternary Coal Company ✓  
Address C/O Blackhawk Energy  
100 Technology Drive  
South Charleston, WV 25309

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed the Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of the Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.



Well Operator: Chesapeake Appalachia, L.L.C.  
By: [Signature]  
Its: Manager - Operations, Appalachia South  
Address: P.O. Box 18496  
Oklahoma City, OK 73154-0496  
Telephone: 405-935-4073

Subscribed and sworn before me this 17<sup>th</sup> day of March the year of 2016  
Phyllis A. Copley Notary Public  
My Commission Expires September 16, 2018  
Form WW-9

RECEIVED  
Office of Oil and Gas  
MAR 21 2016  
WV Department of  
Environmental Protection  
04/15/2016

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM  
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name Chesapeake Appalachia, L.L.C. OP Code 494477557  
Watershed Mill Hollow of Kellys Creek Quadrangle Cedar Grove, WV 7.5'  
Elevation 882' County Kanawha District Cabin Creek

Description of anticipated Pit Waste: Plugging Returns/Cement

Will a synthetic liner be used in the pit? Yes TU 3-2216 minimum 20 mil liner must be used

Proposed Disposal Method For Treated Pit Wastes:  
 Land Application  
 Underground Injection ( UIC Permit Number \_\_\_\_\_ )  
 Reuse (at API Number \_\_\_\_\_ )  
 Off Site Disposal (Supply form WW-9 for disposal location)  
 Other (Explain \_\_\_\_\_ )

Proposed Work For Which Pit Will Be Used:  
 Drilling  
 Workover  
 Swabbing  
 Plugging  
 Other (Explain \_\_\_\_\_ )

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on December 31, 1999, 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 *David Gocke*

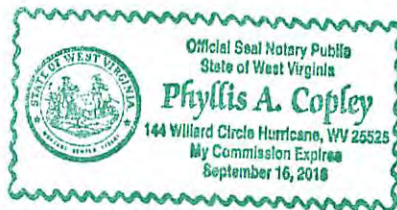
Company Official (Typed Name) David Gocke

Company Official Title Manager - Operations, Appalachia South

Subscribed and sworn before me this 17<sup>th</sup> day of March, 2016.

*Phyllis A. Copley* Notary Public.

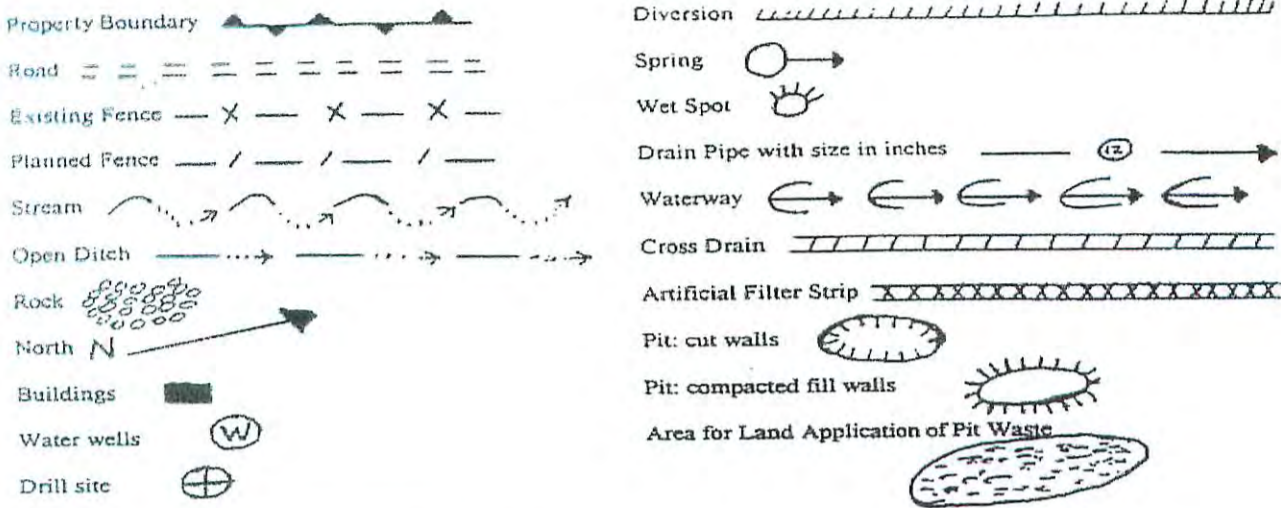
My Commission Expires September 16, 2018



04/15/2016

API #: 47-039-03059  
 Operator's Well No. 802458 P&A

**LEGEND**



Proposed Revegetation Treatment: Acres Disturbed 1.0 Prevegetation pH 6.1  
 Lime 3 Tons/acre or to correct to pH 6.5  
 Fertilizer (10-20-20 or equivalent) 1/3 Tons/acre (500 lbs minimum)  
 Mulch Weed Free Straw 2 Tons/acre

**Seed Mixtures**

**October 1st to April 30th**

**May 1st to September 30th**

Creeping Red Fescue	68.60%	Creeping Red Fescue	68.60%
Wheat	14.76%	Wheat	17.18%
Annual Ryegrass	9.80%	Annual Ryegrass	9.80%
Ladino Clover	3.21%	Ladino Clover	4.97%

Total seeding will be 50 lbs/acre

Attach:  
 Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *[Signature]*

Title: *Field Inspection All Ears*

Date: *3-22-16*

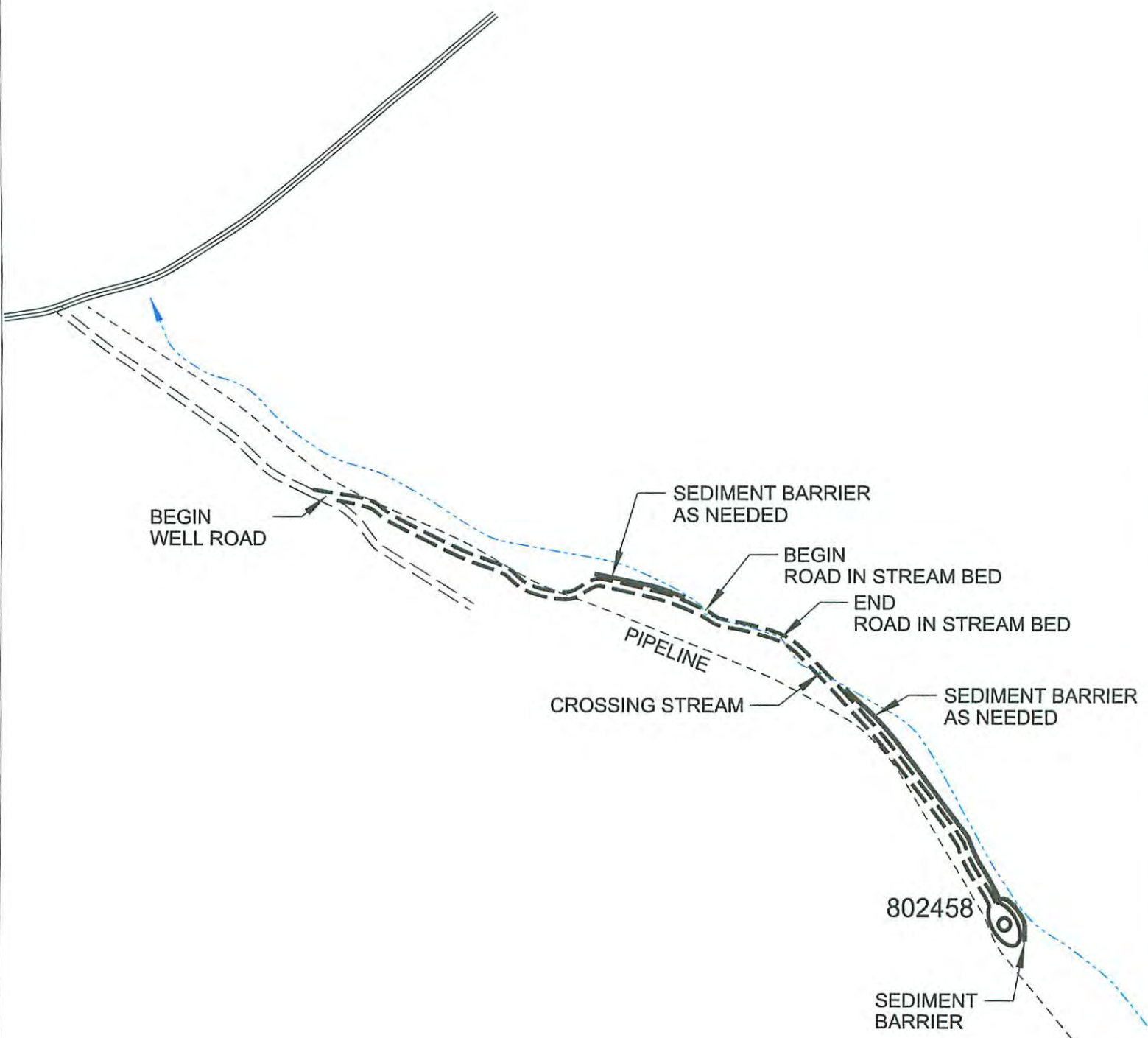
Field Reviewed? () Yes () No



# CHESAPEAKE APPALACHIA, L.L.C.

## RECLAMATION DIAGRAM WELL LOCATION 802458

API 47-039-03059



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Office of Oil and Gas

MAR 24 2016

### GENERAL NOTES

This drawing is a schematic representation of the well site and access road. Proposed structures such as well site, drilling pit, roadways, culverts, sediment barriers, etc. are shown in approximate configurations.

All culvert pipes will be a minimum of 15 inches in diameter. All culvert pipes installed will be accompanied by an entrance sump with dimensions no less than 3 feet (width) x 3 feet (length) x 4 feet (deep). Culverts will be installed at an angle to ensure proper flow. The out fall of culverts will be protected from erosion and sedimentation using large rocks or other sediment controls deemed necessary in the prevention of erosion and sedimentation. Storm water from the ditches to the culverts will be directed to stable natural vegetative areas. Where culverts are not practical, operator will have other sediment control in place to minimize erosion sedimentation.

Cross drains, broad based dips, water bars, and diversion ditches, will be employed during the construction phase. These erosion and sediment control structures will be used to control erosion and sedimentation during the construction phase, where applicable, and in areas that will allow. These structures will be considered permanent and used as such.

Permanent seeding: See Attachment #1.

WV Department of  
Environmental Protection

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04/15/2016

MAR 24 2016

WV Department of  
Environmental Protection

39 03059P

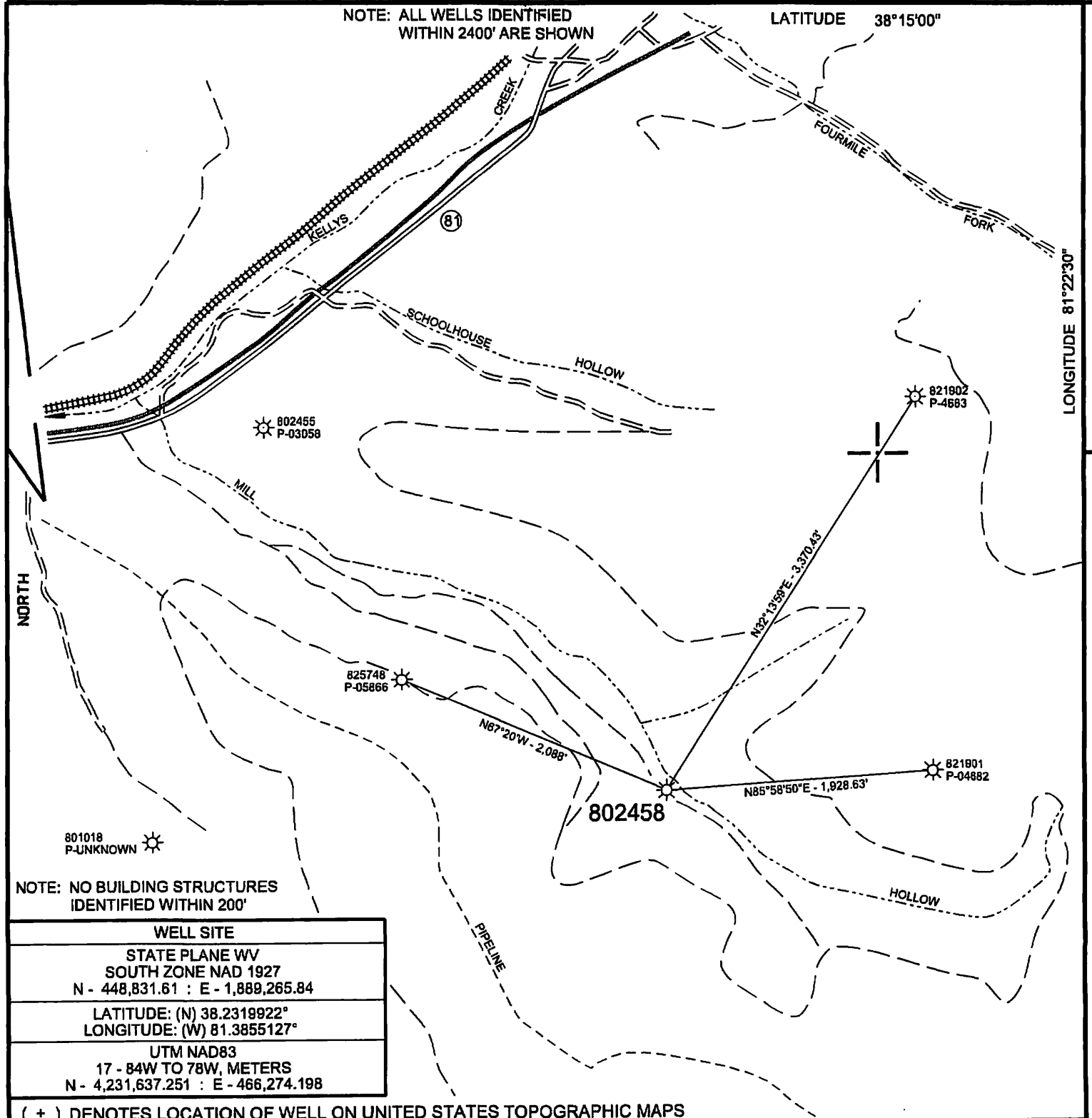
# CHESAPEAKE APPALACHIA, L.L.C.

## TOPOGRAPHICAL MAP OF ACCESS AND WELL LOCATION 802458

API 47-039-03059



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 MAR 2 2016  
 04/15/2016  
 WV Department of  
 Environmental Protection



WELL SITE	
STATE PLANE WV SOUTH ZONE NAD 1927 N - 448,831.61 : E - 1,889,265.84	
LATITUDE: (N) 38.2319922° LONGITUDE: (W) 81.3855127°	
UTM NAD83 17 - 84W TO 78W, METERS N - 4,231,637.251 : E - 466,274.198	

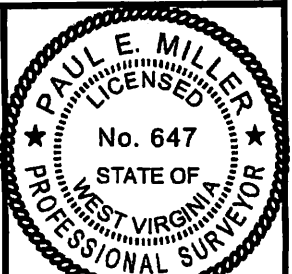
( + ) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO.	802458 P&A.DGN
DRAWING NO.	802458 P&A
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1:200
PROVEN SOURCE OF ELEVATION	MAPPING GRADE GPS

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) *Paul E. Miller*

R.P.E. \_\_\_\_\_ L.L.S. 647



STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION OIL AND GAS DIVISION		DATE <u>MARCH 4</u> , 20 <u>16</u>
WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> (IF "GAS,") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	OPERATOR'S WELL NO. <u>802458</u>	API WELL NO. <u>47 039 03059 P</u>
LOCATION: ELEVATION <u>882'</u> WATER SHED <u>MILL HOLLOW OF KELLYS CREEK</u>	DISTRICT <u>CABIN CREEK</u> COUNTY <u>KANAWHA</u>	STATE COUNTY PERMIT
QUADRANGLE <u>CEDAR GROVE, WV 7.5'</u>	SURFACE OWNER <u>DAVID WARD HEIRS</u>	ACREAGE <u>14814.41</u>
OIL & GAS ROYALTY OWNER <u>DAVID WARD HEIRS</u>	LEASE ACREAGE _____	LEASE NO. <u>1-025660-000</u>
PROPOSED WORK: DRILL <input type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____	Office of Oil <b>04-19-2016</b>	
PLUG AND ABANDON <input checked="" type="checkbox"/> CLEAN OUT AND REPLUG <input type="checkbox"/>	MAR 21 2016	
TARGET FORMATION _____ ESTIMATED DEPTH _____	WV Department of Environmental Protection	
WELL OPERATOR <u>CHESAPEAKE APPALACHIA, L.L.C.</u>	DESIGNATED AGENT <u>JESSICA GREATHOUSE</u>	PERMIT
ADDRESS <u>P.O. BOX 18496, OKLAHOMA CITY, OK 73154-0496</u>	ADDRESS <u>CHESAPEAKE APPALACHIA, L.L.C. PO BOX 6070, CHARLESTON, WV 25382</u>	

FORM WV-6

COUNTY NAME