west virginia department of environmental protection

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

May 27, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-4301181, 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 penalities 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: 2199
Farm Name: U F G CO MIN
API Well Number: 47-4301181
Permit Type: Plugging
Date Issued: 05/27/2016

Promoting a healthy environment.

4301181 P

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

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.

4301181 P

API Number: **47-043-01181**

Operator's Well Number: **802199**

PLUGGING PROCEDURE

NOTE: Hole is caved at approximately 1840'

1) Prepare road and location, MIRU service rig
2) Run in hole with tools to check top of cavings at approximately 1840'
3) Run W.S. to top of cavings and spot gel
4) Spot 140' cement plug 1840'-1700', pull W.S. to 1600'
5) Spot 100' cement plug 1600'-1700', pull W.S.
6) Run in hole with tools to check TOC. If top of cement is below ~~1550'~~ 1600' then add to top of plug
7) Cut 5 ½" at free-point (approximately 1430') and pull
8) Run W.S. to casing cut at approximately 1430', spot gel
9) Spot 230' cement plug 1430'-1200', pull W.S.
10) Run in hole with tools to check TOC. If top of plug is below ~~1525'~~ 1200' then add to top of plug
11) Cut 6 5/8" at free-point (approximately 580') and pull
12) Run W.S. to 580', spot gel
13) Spot 150' cement plug 580'-430', pull W.S. to 350' SALT SAND
14) Spot 100' cement plug 350'-250', pull W.S. to 130' COAL
15) Spot 100' cement plug 130'-surface CSG
16) Pull W.S. and top off with cement
17) Erect monument and reclaim as prescribed by law

OK GMM

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

1) Date: 4/28/2016
2) Operator's Well No. 802199 P&A
3) API Well No. 47-043-01181

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 737' Watershed Ninemile Creek
District Laurel Hill County Lincoln Quadrangle Branchland, WV 7.5'

6) Well Operator Chesapeake Appalachia, L.L.C.
Address P.O. Box 18496
Oklahoma City, OK 73154-0496

7) Designated Agent Jessica Greathouse
Address P.O. Box 6070
Charleston, WV 25362

8) Oil and Gas Inspector to be notified
Name Jeffrey L. Smith
Address 5369 Big Tyler Road
Cross Lanes, WV 25313

9) Plugging Contractor
Name Chesapeake Appalachia, L.L.C.
Address P.O. Box 18496
Oklahoma City, OK 73154-0496

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

See Attached Sheet

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

Work Order approved by Inspector _____

4301181P
Well 802199
API 47-043-01181

OG-10

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

Quadrangle Midkiff

Permit No. LIN-1181-D

WELL RECORD
DRILL DEEPER

Oil or Gas Well Gas (KIND)

Company United Fuel Gas Company
Address P.O. Box 1273, Charleston 25, W. Va.
Farm U. F. G. Co. Min. Tr. #7 Acres 8,600.56
Location (waters) Br. Nine Mile Creek
Well No. 2199 Elev. 709.33'
District Laurel Hill County Lincoln
The surface of tract is owned in fee by
Address
Mineral rights are owned by United Fuel Gas Co.
Address Charleston, W. Va.
Drilling commenced 11-28-55
Drilling completed 1-4-56
Date Shot 1-5-56 From 2006 To 3248
With 8,466-2/3# Gelatin
Open Flow 5 /10ths Water in 2 Inch
/10ths Merc. in Inch
Volume 94,000 Cu. Ft.
Rock Pressure 293 lbs. 48 hrs.
Oil bbls., 1st 24 hrs.
Fresh water feet feet
Salt water feet feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			Bottom Hole
10			Size of
8¼			5⅛"x7"
6⅝			Depth set
5 ~~xxx~~ ⅛"		1561'	1561'
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED SIZE No. Ft. Date

COAL WAS ENCOUNTERED AT FEET INCHES
FEET INCHES FEET INCHES
FEET INCHES FEET INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Orig. T.D.			1543'				
Shell			1543	1585			
Slate			1585	1655			
Shale			1655	1764			
Slate			1764	1819			
Shell			1819	1822			
Slate			1822	1919			
Shell			1919	1924			
Slate			1924	2005			
Berea Grit			2005	2021			
Brown Shale			2021	2043			
White Slate			2043	2063			
Shell			2063	2078			
Slate			2078	2295			
Gray Shale			2295	2310	Gas 2009-2014', 14/10 W 1" 39 M		
Slate			2310	2350	blew down to 7/10 W 1" 28 M		
Slate			2350	2428			
Shell			2428	2500	Test before shot 7/10 W 1" 30 M		
Slate			2500	2555	Shot 1-5-56 with 8,466-2/3# Gelatin		
Shell			2555	2585	from 2006-3248'		
Gray Shale			2585	2783	Test 20 hrs. after shot 5/10 W 2" 94 M		
Shell			2783	2794			
White Slate			2794	2905	FINAL OPEN FLOW - 94 M - Berea & Br.		
Shell			2905	2916	48 Hr. R.P. 293#		Shale
Brown Shale			2916	3055			
Shell			3055	3105	Shut in 1-11-56 in 5⅛" Casing.		
Brown Shale			3105	3232			
White Slate			3232	3248			
Total depth			3248'				

(Over)

4304817

Well 802199
API 47-043-01181

OG-10

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Quadrangle Midkiff

Permit No. 1181-LIN-D

Oil or Gas Well Gas (KIND)

Company UNITED FUEL GAS CO.
Address P.O. Box 1273, Charleston 25, W. Va.
Farm U. F. G. Min. Tr. #7 Acres 8,600.56
Location (waters) Br. Nine Mile Creek
Well No. 2199 Elev. 709.33'
District Laurel Hill County Lincoln
The surface of tract is owned in fee by
Address
Mineral rights are owned by United Fuel Gas Co.
Address Charleston, W. Va.
Drilling commenced 4-28-14
Drilling completed 5-26-14
Date Shot 5-27-14 From 1463 To 1481'
With 70 qts.
Open Flow /10ths Water in Inch
/10ths Merc. in Inch
Volume 800,000 Cu. Ft.
Rock Pressure lbs. hrs.
Oil bbls., 1st 24 hrs.
Fresh water 90-93 feet feet
Salt water 700' feet feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			
10		21'	Size of
8¼	220'		
6⅝		1263'	Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED SIZE No. Ft. Date

COAL WAS ENCOUNTERED AT 90 FEET 36 INCHES
300 FEET 72 INCHES FEET INCHES
FEET INCHES FEET INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Native Coal			90	93			
Big Dunkard			180	300			
Coal			300	306			
Gas Sand			440	460			
1st Salt Sand			580	985			
Slate			985	1030			
2nd Salt Sand			1030	1050			
Maxon			1120	1200			
Little Lime			1200	1235			
Pencil Cave			1235	1243			
Big lime			1243	1420			
Big Injun			1460	1487			
Slate			1487	1543			
Total depth			1543'				

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(Over)

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WW4-A
Revised
2/01

1) Date: 2/28/2016
2) Operator's Well No. 802199 P&A
3) API Well No. 47-043-01181

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 James Matheny Estate ✓
Address C/O Jamie Matheny
94 Matheny Road
Midkiff, WV 25540

(b) Name
Address

(c) Name
Address

) Inspector Jeffrey L. Smith
Address 5369 Big Tyler Road
Cross Lanes, WV 25313

Telephone 681-313-6743

5) Coal Operator
(a) Name None
Address

Coal Owner(s) with Declaration
(b) Name Chesapeake Appalachia, L.L.C. ✓
Address Attention: David Dani
6100 North Western Avenue
Oklahoma City, OK 73118

Name
Address

Coal Lessee with Declaration
(c) Name None
Address

O 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.

Official Seal Notary Public
State of West Virginia
Phyllis A. Copley
144 Willard Circle Hurricane, WV 25526
My Commission Expires
September 16, 2018

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

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WV Department of
Environmental Protection

bscribed and sworn before me this 28th day of April the year of 2016
Phyllis A. Copley Notary Public
Commission Expires September 16, 2018
m WW-9

4301181 P

Rev. 02/01

API Number 47-043-01181
Operator's Well No. 802199 P&A

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 Ninemile Creek Quadrangle Branchland, WV 7.5'

Elevation 737' County Lincoln District Laurel Hill

Description of anticipated Pit Waste: Plugging Returns/Cement

Will a synthetic liner be used in the pit? Yes

Proposed Disposal Method For Treated Pit Wastes:

- ~~X~~ ~~Land Application~~ No Land Application
- ___ Underground Injection (UIC Permit Number___)
- ___ Reuse (at API Number___)
- ___ Off Site Disposal (Supply form WW-9 for disposal location)
- X Other (Explain Fluid will be hauled to tank batteries TPW)

Proposed Work For Which Pit Will Be Used:

- ___ Drilling
- ___ Workover
- ___ Swabbing
- X 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 [signature]

Company Official (Typed Name) David Gocke

Company Official Title Manager - Operations, Appalachia South

Subscribed and sworn before me this 28th day of April, 2015.

Phyllis A. Copley Notary Public.

My Commission Expires September 16, 2018

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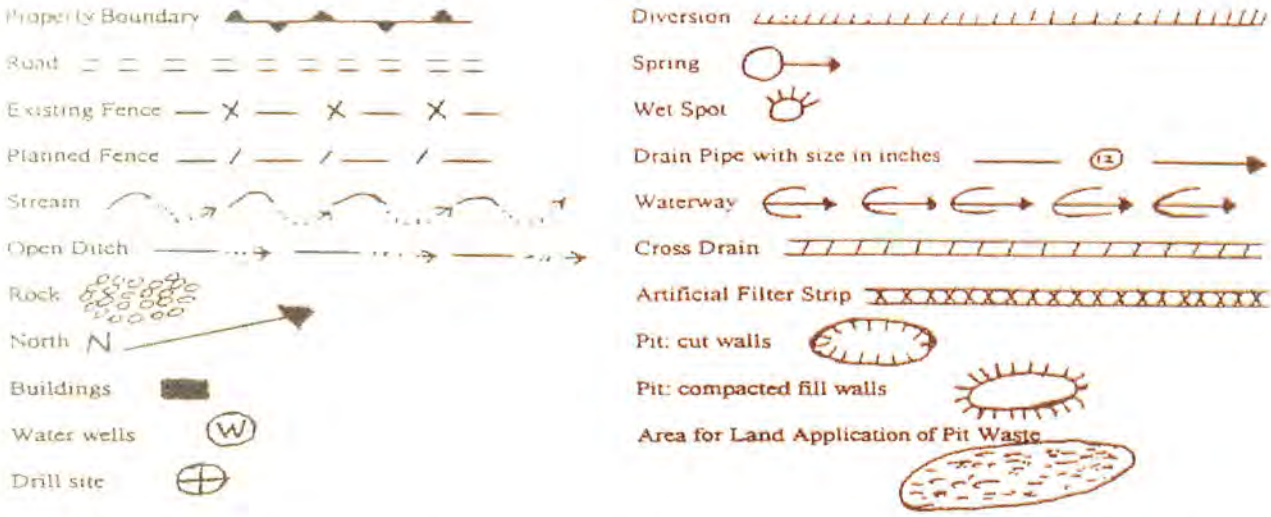
Official Seal Notary Public
State of West Virginia
Phyllis A. Copley
144 Willard Circle Hurricane, WV 25526
My Commission Expires
September 16, 2018

4301181P

Attachment #1

API #: 47-043-01181
Operator's Well No. 802199 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: _____

Title: _____

Date: _____

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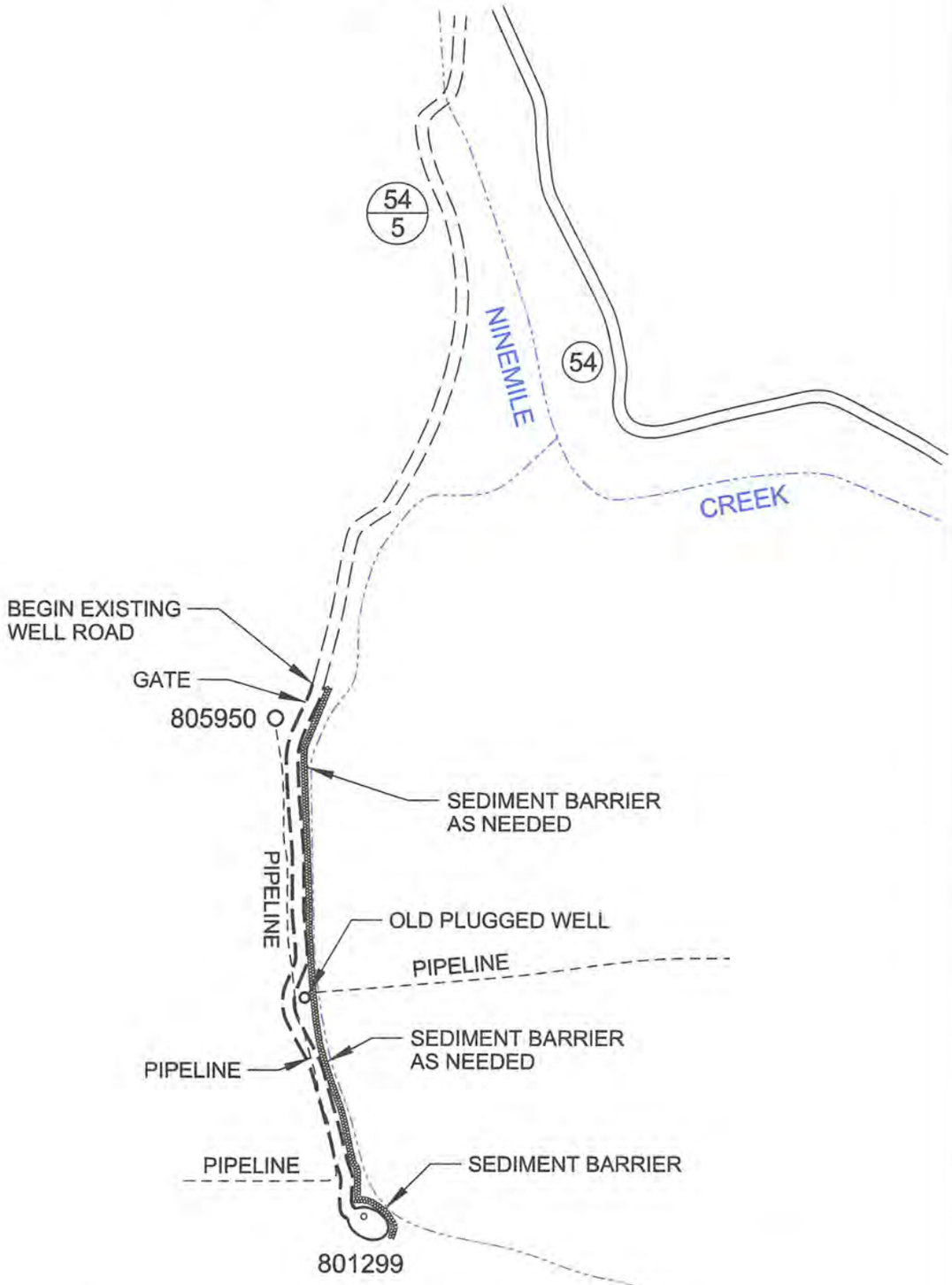
4301181P

CHESAPEAKE APPALACHIA, L.L.C.

RECLAMATION DIAGRAM
WELL LOCATION 802199

API 47-043-01181



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 show in approximate pre-planning configurations.

All culvert pipes will be a minimum of 15 inches in diameter. all culvert pipes installed will be accomanied 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 roacks of 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 contruction phase, where applicable, and in areas that will allow. These structures will be considered permanent and used as such.

Permanent seeding: See Attachment #1.

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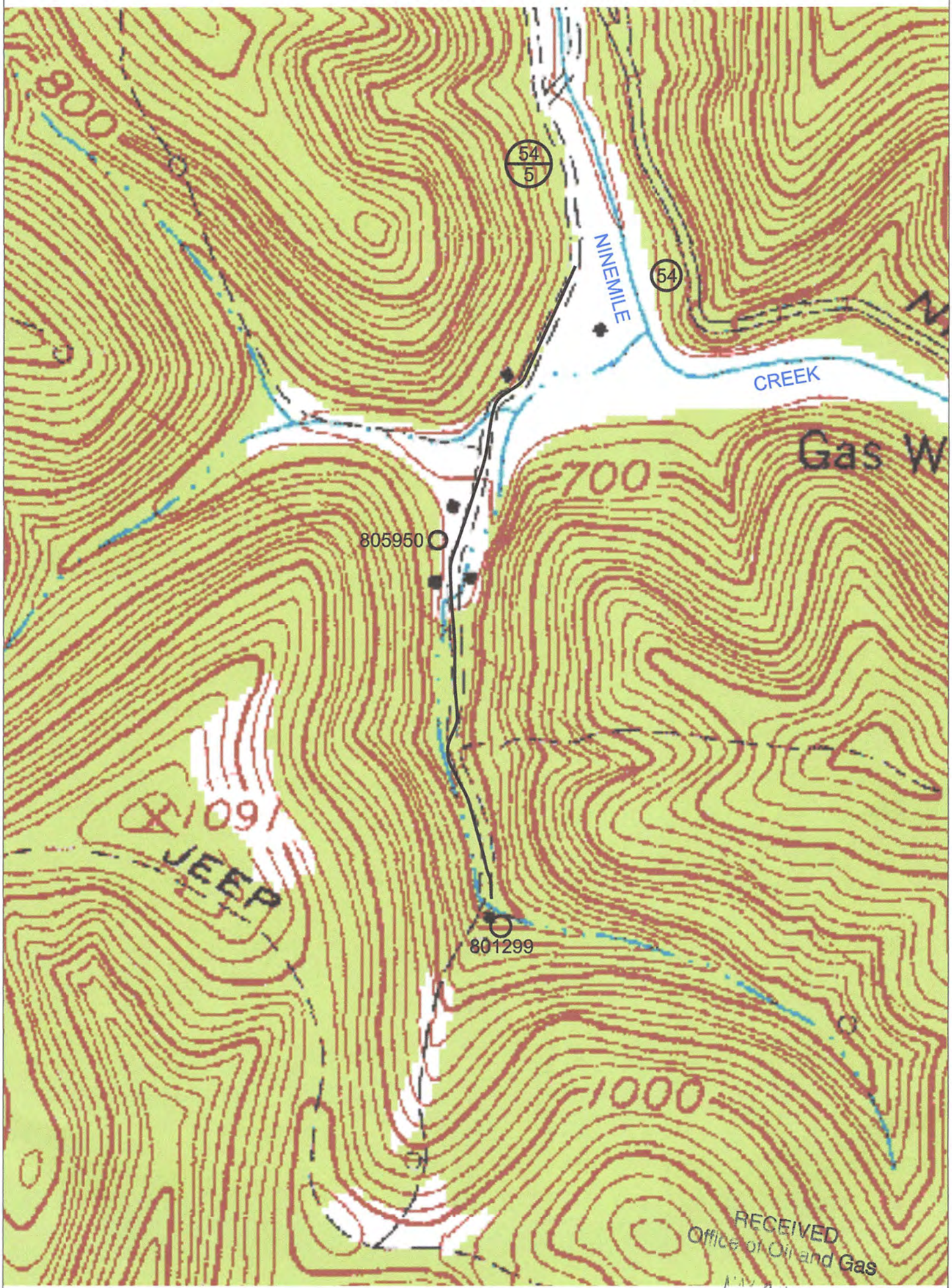
CHESAPEAKE ENERGY CORPORATION - EASTERN DIVISION
P.O. BOX 579 - 8165 COURT AVENUE - HAMLIN, WV 25523
304 824-5141 - FAX 304 824-2247

4301181 P

CHESAPEAKE APPALACHIA, L.L.C.

TOPOGRAPHICAL MAP OF ACCESS AND WELL LOCATION 802199

API 47-043-01181



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CHESAPEAKE ENERGY CORPORATION - EASTERN DIVISION
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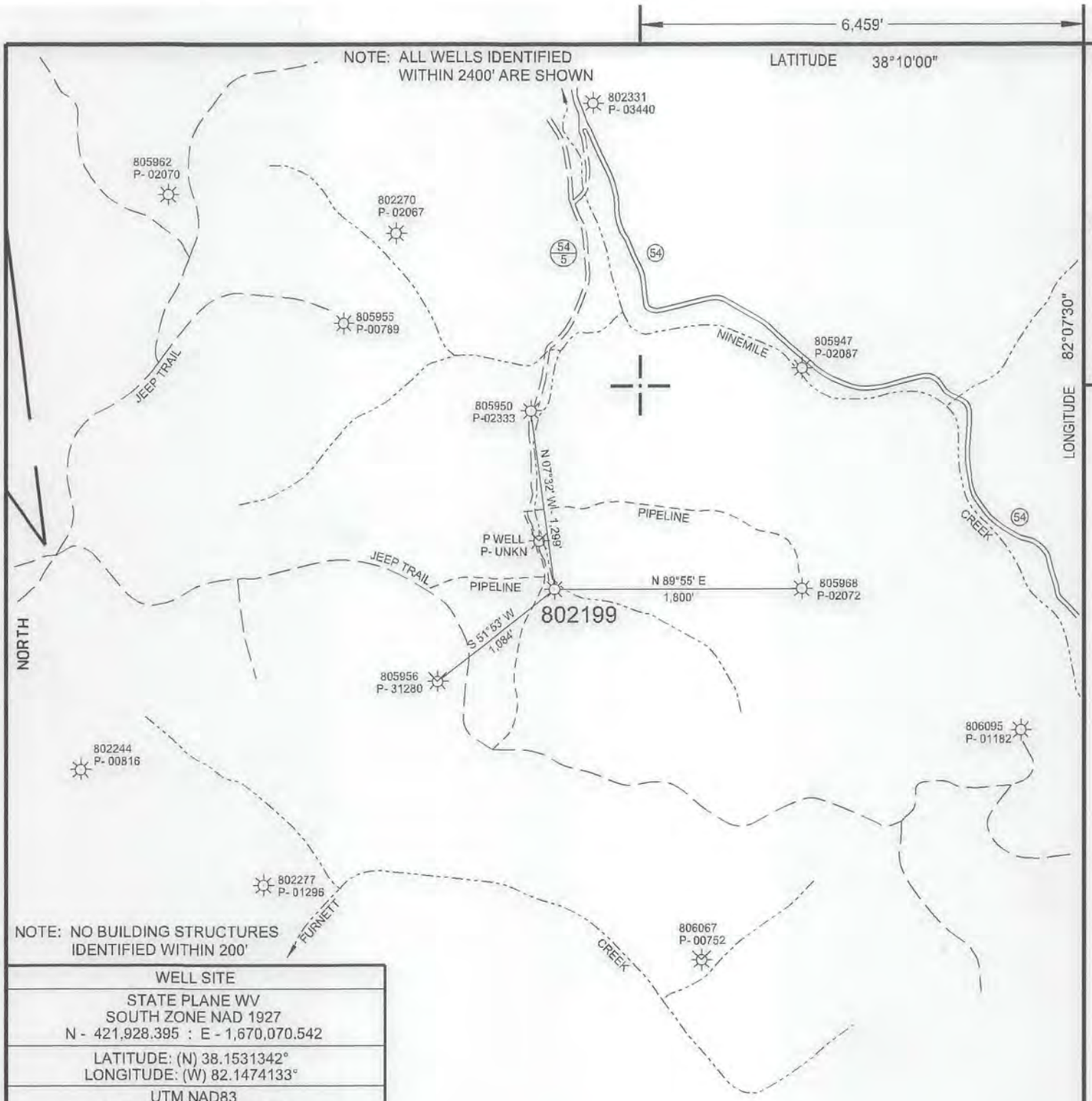
304 824-5141 - FAX 304 824-2247



WELL SITE
STATE PLANE WV SOUTH ZONE NAD 1927 N - 421,928.395 : E - 1,670,070.542
LATITUDE: (N) 38.1531342° LONGITUDE: (W) 82.1474133°
UTM NAD83 17 - 84W TO 78W, METERS N - 4,223,437.876 : E - 399,480.793

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

FILE NO. 802199 P&A.DGN
DRAWING NO. 802199P&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

PAUL E. MILLER LICENSED No. 647 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

PLACE SEAL HERE

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE APRIL 11, 2016
OPERATOR'S WELL NO. 802199
API WELL NO.
47 (STATE) 043 (COUNTY) 001181 P (PERMIT)

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 737' WATER SHED NINEMILE CREEK
DISTRICT LAUREL HILL COUNTY LINCOLN
QUADRANGLE BRANCHLAND, WV 7.5'
SURFACE OWNER JAMES MATHENY HEIRS ACREAGE 150
OIL & GAS ROYALTY OWNER CHESAPEAKE APPALACHIA, L.L.C. LEASE ACREAGE --
LEASE NO. 1-000019-001
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) ___

PLUG AND ABANDON X CLEAN OUT AND REPLUG ___
TARGET FORMATION ___ ESTIMATED DEPTH ___
WELL OPERATOR CHESAPEAKE APPALACHIA, L.L.C. DESIGNATED AGENT JESSICA GREATHOUSE
ADDRESS P.O. BOX 18496, OKLAHOMA CITY, OK 73154-0496 ADDRESS CHESAPEAKE APPALACHIA, L.L.C. PO BOX 6070, CHARLESTON, WV 25362

COUNTY NAME
PERMIT

FORM WW-6