



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

July 14, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-4301722, issued to HG ENERGY, LLC, 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: 2
Farm Name: NUNN, S. W.
API Well Number: 47-4301722
Permit Type: Plugging
Date Issued: 07/14/2016

Promoting a healthy environment.

07/15/2016

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

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.

WW-4B
Rev. 2/01

- 1) Date February 11, 2016
- 2) Operator's
Well No. SW Nunn 8
- 3) API Well No. 47-043 - 1722

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 X / Gas X / Liquid injection _____ / Waste disposal _____ /
(If "Gas, Production _____ or Underground storage _____) Deep _____ / Shallow X

5) Location: Elevation 1037' Watershed Hayzlett Fork
District Duval County Lincoln Quadrangle Garrett's Bend 7.5'

6) Well Operator HG Energy, LLC 7) Designated Agent Diane White
Address 5260 Dupont Road Address 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101

8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Jeremy James Name To Be Determined Upon Approval of Permit
Address PO Box 36 Address _____
Clendenin, WV 25045

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

** See Attached Sheet **

RECEIVED
Office of Oil and Gas

JUN 30 2016

WV Department of
Environmental Protection

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

Work order approved by inspector Jeffrey Smith Date 6-13-16

07/15/2016

4301722A

WW-4B - Conti
Rev. 2/01

1) Date: February 11, 2016
2) Operator's Well Number S W Nunn 2
3) API Well No: 47 - 043 - 1722
State County Permit

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 x Gas x Liquid Injection Waste Disposal
(If "Gas", Production Underground Storage) Deep Shallow x

5) LOCATION: Elevation: 1037' Watershed: Hayzlett Fork
District: Duval County: Lincoln Quadrangle Garrett's Bend 7.5'

6) WELL OPERATOR: HG Energy, LLC 494497948 7) DESIGNATED AGENT Diane White
Address 5260 Dupont Road Address 5260 Dupont Road
 Parkersburg, WV 26101 Parkersburg, WV 26101

8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) PLUGGING CONTRACTOR
Name Jeremy James Name To Be Determined Upon Approval of Permit
Address P. O. Box 36 Address
 Clendenin, WV 25045

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

TD- 2,586' PBTO 2554'

Manners of plugging; SPOT GEL.

Plug #1 - 2450' - 2350'

Located above the highest perforation

Check for free-point at top of Big Lime (1842'), If pipe is free, part and pull. If pipe is not free, perforate for placement of plug #2.

Plug # 2 - Approx. 1900' - 1800'

Located at top of Big Lime - 4 1/2" casing stub

Plug #3 - 1100' - 1000'

Located at elevation, if pipe was not free at 1842', part and pull at elevation (1037')

If pipe isn't free at elevation, perforate for placement of plug #3, find first available free-point above elevation top, part and pull

pipe. Set additional plug at 4 1/2" casing stub.

Plug #4 - 450' - 350'

Located at 8 5/8" casing shoe, below fresh water

Plug #5 - 100' - 0'

Surface

 JS

Recover all possible casing. If casing can not be recovered, perforate for plug placement.

Monument -

6" minimum diameter metal pipe

30" above surface

10' in well below surface

Sealed with cement

API identification (1/2") height numbering

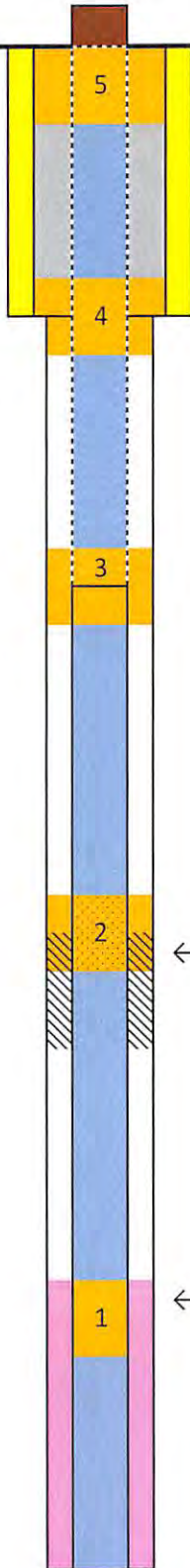
6% Gel between all plugs

07/15/2016

Well: S.W. Nunn #2
 API: 47-43-1722
 Elevation: 1037'

Monument to extend 30" above surface. 10' into well. 6" min metal pipe, sealed with cement. API i.D.

Casing Information		
Size	Depth	Weight
8 5/8"	406'	20#/ft.
4 1/2"	2584'	10.5#/ft.



← 275 sacks cement to surface

Freepoint Cut and Pull Casing	
Size	Approx. Depth
4 1/2"	1842' or 1037'

Cement Plugs		
NO.	Bottom	Top
1	2450	2350
2	1900	1800
3	1100	1000
4	450	350
5	100	0

Hole Size 6.75" →

← Big Lime 1842' - 2020'

← 50 Sacks Cement T.O.C. 2308' 2016

← WV Department of Environmental Protection
 Highest Perforation 2529'

Bottom Hole Cement Level Calculations

Sacks Used Cement Depth
 50 2308.167

Hole Size Casing Size Depth
 6.75 4.5 2529

diameter delta Conv. Factor bbls / ft.
 25.3125 1029.4 0.02459

cubic ft. per vertical ft. depth
 0.138058122

Sacks per vertical ft. depth
 0.226415321

Yield options

50/50 posmix 6% gel = 1.64
 Neat w/ salt flakes = 1.19
 50/50 w/ 2% gel = 1.27

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 Office of Oil and Gas

WV Department of Environmental Protection

4301722A

PENNZOIL COMPANY
Well Completion Report

Lease: S. W. NUNN Well No. 2 New Well X Old Well

District: Duval County: Lincoln State: West Virginia

Pool Name: Griffithsville Northeast Pool No. 57 Elevation 1045.74' KB: GL

Producing Formation: Berea Depth: From 2521' to 2542'

Date Drilled In: October 20, 1976 Pays: Oil: From 2521' to 2542'

Original Total Depth: 2583' From to

Plug Back Depth: 2554' Gas: From 2521' to 2542'

Production Initial Present After Fracture

Oil

Gas

Surface Csg. set @ 8-5/8" 411' KB: GL Gr. H-40 New:Used Wt. 20# Collars ST&C

Cement Reg. Neat Amount 275 Sacks Plug Down @ 11:45 AM Date 10/15/76

Production Csg. set @ 4-1/2" 2575' KB: GL Gr. ERW New:Used Wt. 10.50# Collars ST&C

Cement 50/50 Posmix Amount 50 Sacks Plug Down @ 1:00 AM Date 10/21/76

Logged by: Basin Surveys Date: October 20, 1976

Logs Used: Gamma Ray-Comp. Density-Caliper

Perforated by: McCullough Date: November 17, 1976

Perforations: 2529'-2534' - 4 holes/ft. - 20 holes

Treatment Data

Type	Fluid	Sand	Acid	Solvent	Gel	Breaking Agent	Fluid Loss	F.R. Agent	N.E. Agent
Lease Crude		20/40	15% HCl	Parathin					15-N
Amount	550	27,000	500	55					2

Breakdown Pressure: 1500 Treating Pressure: Max. 2400 Min. 2300 Avg. 2400

Avg. Inj. Rate 29.0 BPM ISIP 1500 @ 3:25 AM 5 min. SIP 900

10 min. SIP 850 15 min. SIP 800 Other 1-1/4 hr. SIP 300#

EQUIPMENT USED

Service Company: Halliburton HHP 1706

By: Jeffrey M. Beardmore Date Fractured: 11/17/76

RECEIVED
Office of Oil and Gas
JUN 8 1976

Department of
Environmental Protection

07/15/2016

WW-4A
Revised 6-07

1) Date: February 11, 2016
2) Operator's Well Number
S. W. Nunn 2

3) API Well No.: 47 - 043 - 1722

STATE OF WEST VIRGINIA
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:	5) (a) Coal Operator
(a) Name <u>Orville Nunn</u>	Name <u>NA</u>
Address <u>2340 Garrett's Bend Road</u>	Address _____
<u>Sod, WV 25564</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>NA</u>
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Jeremy James</u>	(c) Coal Lessee with Declaration
Address <u>P. O. Box 36</u>	Name <u>NA</u>
<u>Clendenin, WV 25045</u>	Address _____
Telephone <u>304-951-2596</u>	_____

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 this 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 this 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	<u>HG Energy, LLC</u>
	By:	<u>Diane White</u> <i>Diane White</i>
	Its:	<u>Agent</u>
	Address	<u>5260 Dupont Road</u> <u>Parkersburg, WV 26101</u>
	Telephone	<u>304-420-1119</u>

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Office of Oil and Gas
JUN 20 2016

Subscribed and sworn before me this 11th day of February, 2016
Tyler Ritchie Notary Public
My Commission Expires June 23, 2020

Oil and Gas Privacy Notice
The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a 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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

4301722P

WW-9
(5/16)

API Number 47 - 043 - 1722
Operator's Well No. S W Nunn 2

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name HG Energy, LLC OP Code 494497948
Watershed (HUC 10) Hazlett Fork Quadrangle Garrett's Bend 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 Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Any fluids will be hauled for off site disposal at an authorized site to be determined at the time the well is plugged _____)

Will closed loop system be used? If so, describe: NA

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. NA

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

Additives to be used in drilling medium? NA

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

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

-Landfill or offsite name/permit number? _____

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 April 1, 2016, 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 Diane White
Company Official (Typed Name) Diane White
Company Official Title Agent

Office of Oil and Gas
UN 3 A 2015

OFFICIAL SEAL
Notary Public, State of West Virginia
EPYLER RITCHIE
499 Dale Drive
Mineral Wells, WV 26150
My Commission Expires June 23, 2020

Subscribed and sworn before me this 11st day of February, 2016

Spencer Ritchie Notary Public

My commission expires June 23, 2020

07/15/2016

HG Energy, LLC

Proposed Revegetation Treatment: Acres Disturbed 1.0 acres Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch Straw 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

**** Sediment Control Will Be In Place At All Times ****

Plan Approved by: Jeffrey Smith

Comments: _____

RECEIVED
Office of Oil and Gas

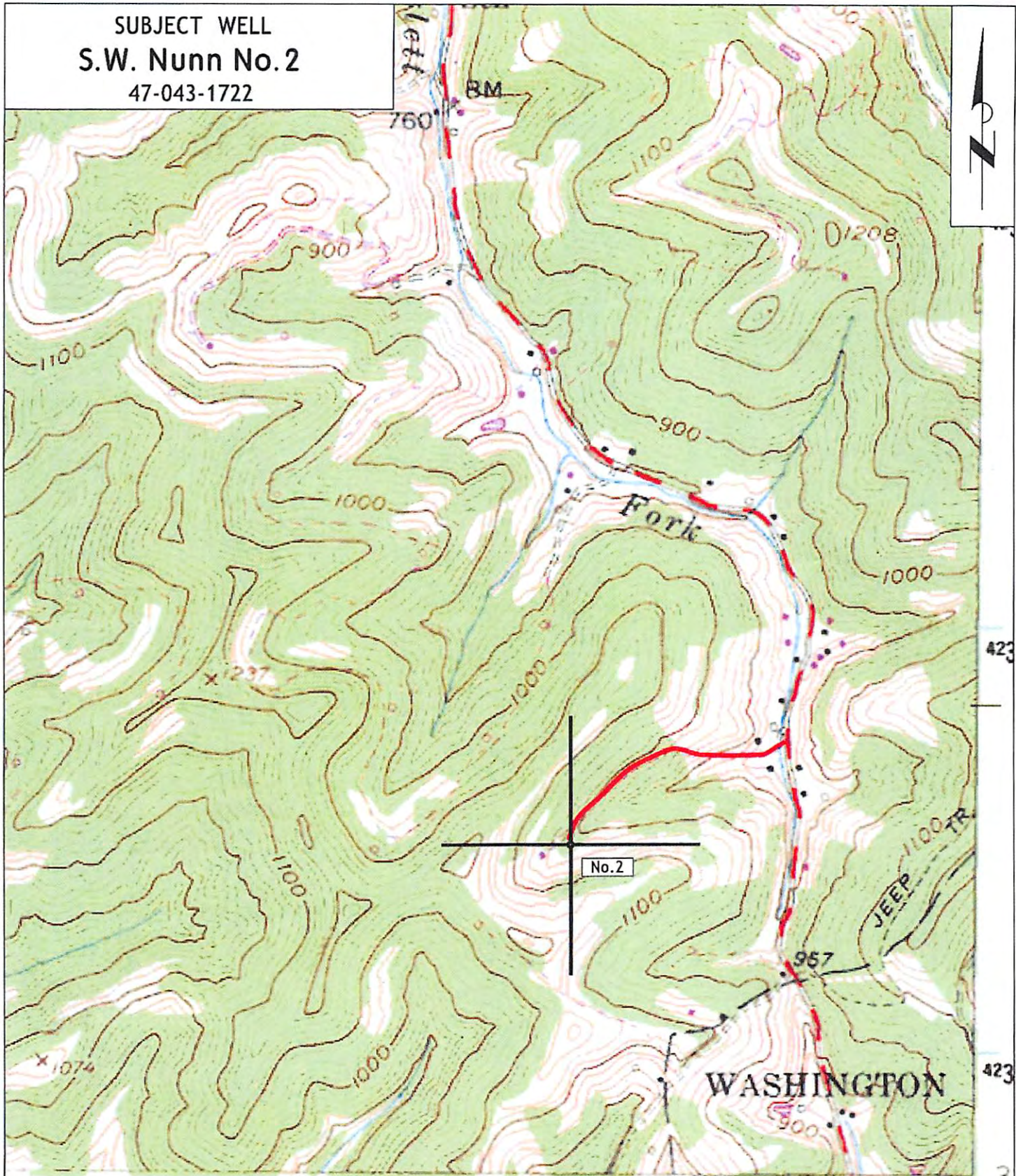
JUN 30 2016

WV Department of
Environmental Protection

Title: Oil & Gas Inspector Date: 6-13-16

Field Reviewed? Yes No

SUBJECT WELL
S.W. Nunn No. 2
47-043-1722



● INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1978
422000m. E.

ROAD CLASSIF

Section of
Garrett's Bend 7.5' Quadrangle
SCALE 1"=1000'

07/15/2016

WW-7
5-02

West Virginia Department of Environmental Protection
Office of Oil & Gas
WELL LOCATION FORM: GPS

API: 47- 043 - 1722 WELL NO: 2

FARM NAME: S.W. Nunn No.2

RESPONSIBLE PARTY NAME: H.G. Energy, LLC

COUNTY: Lincoln DISTRICT: Duval

QUADRANGLE: Garrett's Bend 7.5'

SURFACE OWNER: Orville Nunn

ROYALTY OWNER: HG Energy, LLC, et al.

UTM GPS NORTHING: 4,234,714 (NAD 83)

UTM GPS EASTING: 422,510 (NAD 83) GPS ELEVATION: 316 m. -1037ft

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit on the above well. The Office of Oil & Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone:17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) - meters.
2. Accuracy to Datum - 3.05 meters
3. Data Collection Method:

Survey Grade GPS	<input type="checkbox"/>	Post Processed Differential	<input type="checkbox"/>
		Real-Time Differential	<input type="checkbox"/>
Mapping Grade GPS	<input checked="" type="checkbox"/>	Post Processed Differential	<input checked="" type="checkbox"/>
		Real-Time Differential	<input type="checkbox"/>

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

Diane C. White Diane C. White
Signature

Designated Agent
Title

June 30, 2016
Date