



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

February 22, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-4301769, 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: 6
Farm Name: HORSE CREEK TRACT C
API Well Number: 47-4301769
Permit Type: Plugging
Date Issued: 02/22/2016

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 - Conti
Rev. 2/01

- 1) Date: January 22, 2016
- 2) Operator's Well Number
Horse Creek Tract "c" 6
- 3) API Well No: 47 - 043 - 1769
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 Gas Liquid Injection Waste Disposal
(If "Gas", Production Underground Storage) Deep Shallow

5) LOCATION: Elevation: 930' Watershed: Laurel 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 Address _____

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

TD- 2,476'

Manners of plugging:

- Plug #1 - ~~2300~~ - 2200' *2400 - 2300*
- Located above the highest perforation
- Free point, part and pull 4 1/2" casing at approx 1850'
- Plug # 2 - Approx. 1900' - 1800'
- Located at 4 1/2" casing stub
- Plug #3 - 975' - 875'
- Located at elevation
- Plug #4 - 325' - 0'
- Located at 8 5/8" casing stub, fresh water to surface

Tag plug + reset if below 2300
if unable to pull, set 100# cement plug over
cut & cut again & pull below sea level
JEP

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

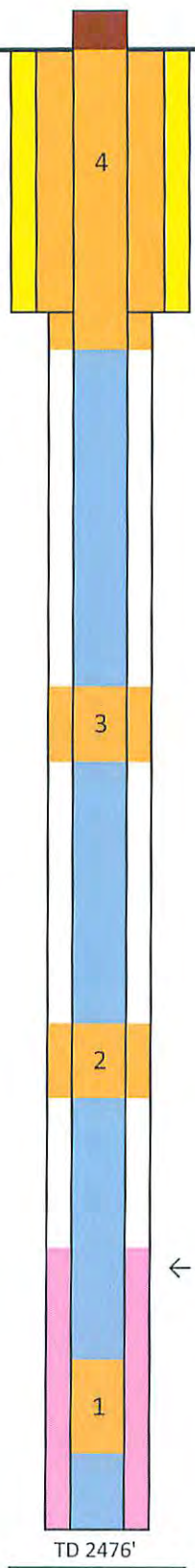
6% Gel between all plugs

Well: Horse Creek Tract C #6

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

Elevation: 913'

Casing Information		
Size	Depth	Weight
8 5/8"	282'	20#/ft.
4 1/2"	2470'	10.5#/ft.



← 175 sacks cement to surface

Freepoint Cut and Pull Casing	
Size	Approx. Depth
4 1/2"	1850'

Hole Size 6.75" →

Cement Plugs		
NO.	Bottom	Top
1	2300 2400	2200 2300
2	1900	1800
3	975	875
4	325	0
5		

Bottom Hole Cement Level Calculations

Sacks Used Cement Depth
75 2015.619

Hole Size Casing Size Depth
6.75 4.5 2476

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
0.162908584

Yield options

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

← 75 Sacks Cement T.O.C. 2015'

Highest Perforation 2420'

TD 2476'

Received
FEB 10 2016

Office of Oil and Gas
WV Dept. of Environmental Protection

Received

FEB 10 2016

Office of Oil and Gas
WV Dept. of Environmental ProtectionPENNZOIL COMPANY
Well Completion ReportLease: HORSE CREEK TRACT "C" Well No. 6 New Well X Old Well District: Duval County: Lincoln State: West VirginiaPool Name: Griffithsville Northeast Pool No. 57 Elevation 921.22' KB: GLProducing Formation: Berea Depth: From 2413' to 2433'Date Drilled In: April 15, 1977 Pays: Oil: From 2413' to 2433'
From to Original Total Depth: 2476'Plug Back Depth: 2456'Gas: From 2413' to 2433'
From to

Production Initial Present After Fracture

Oil

Gas

Surface Csg. set @ 8-5/8" 288' KB: GL Gr. H-40 New:Used Wt. 20# Collars Cement Req. Heat Amount 175 Sacks Plug Down @ 9:00 AM: PM Date 4/11/77Production Csg. set @ 4-1/2" 2476.41' KB: GL Gr. ERW New:Used Wt. 10.50# Collars Cement 50/50 Posmix Amount 75 Sacks Plug Down @ 6:00 AM: PM Date 4/15/77Logged by: Basin Surveys Date: April 15, 1977Logs Used: Gamma Ray-Comp. Density-CaliperPerforated by: McCullough Date: April 21, 1977Perforations: 2420'-2425' - 4 holes/ft. - 20 holes

Treatment Data

	Fluid	Sand	Acid	Solvent	Gel	Breaking Agent	Fluid Loss	F.R. Agent	N.E. Agent
Type	Lease Crude	20/40	15% HCl	Parathin					15-N
Amount	558	26,000	500	1 drum					2

Breakdown Pressure: 2000 Treating Pressure: Max. 2700 Min. 2500 Avg. 2600Avg. Inj. Rate 30.0 BPM ISIP 1550 @ 12:40 AM: PM 5 min. SIP 130010 min. SIP 1200 15 min. SIP 1150 Other

EQUIPMENT USED

Service Company: Halliburton HHP 1912By: Michael McCown Date Fractured: 4/21/77

02/26/2016

CONFIRMING COMPLETION TICKET

COMPANY REMARKS

WRS COMPLETION REPORT 38.15.00 81.50.00 PAGE 1
 PI# 47-T-0050 09/01/77 PERMIT 1769

W VA LINCOLN 200 S 22000 W WELL CLASS
 STATE COUNTY FOOTAGE DISTRICT FIELD/POOL/AREA INIT FIN
 PENNZOIL CO 6 HORSE CREEK
 OPERATOR WELL NO/LEASE NAME
 913 GR DUVAL GRIFFITHSVILLE
 OPER. ELEV. DISTRICT
 COMMERCIAL ELEV. LEASE NO. API 47-043- 21769-00
 04/11/1977 04/15/1977 ROTARY OIL
 SPEC. DATE COMP. DATE TYPE TOOL STATUS
 2472 BERA
 FT. DEPTH FREQ. FORM. CONTRACTOR
 DTD 2476 PB 2456 FM/TD MISS
 COLLERS T.O. LOGS T.O. PLUG BACK T.O. HOLD T.O. FORM/T.O.

CASING DATA

CSG 8 5/8 @ 288 W/ 175 4 1/2 @ 2476 W/ 75 01 02

LOCATION DESCRIPTION

TR-C

INITIAL POTENTIAL

IPU 12BOPD 18MCFD
 BERA PERF 004
 SOFR
 ACID
 INT NOT RPTD

TYPE	FORMATION	DEPTH	SUBSEA	FORMATION	DEPTH	SUBSEA
SPL	L LIME	1694	781-	BG LIME	1628	715-
	B INJUN	1935	1022-			
SPL	WEIR	2058	1145-	BEREA	2413	1500-
SPL	BL LIME	1723	810-	BBG LIME	1917	1004-
	BB INJUN	1978	1065-			
SPL	BWEIR	2125	1212-	BBERA	2433	1520-

PRODUCTION TEST DATA

PTU 18BOPD 22MCFD
 BERA PERF 003
 SOFR 558BBL 26000LBS SAND
 ACID 500GALS 20/40 SD 15%
 INT NOT RPTD

MISCELLANEOUS

MAP QUAD ST ALBANS ACRES 416

PI-WHS-RM/F
 Form No. 35B

Petroleum Information
 COMPANY
 15000 15000

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 Prohibited
 Prohibited

Received

FEB 10 2016

WW-4A
Revised 6-07

1) Date: January 22, 2016
2) Operator's Well Number
Horse Creek Tract "C" 6
3) API Well No.: 47 - 043 - 1769

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

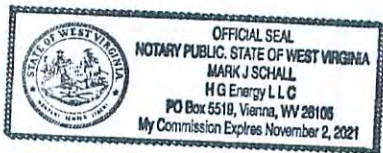
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Larry & Sue Carroll</u>	Name <u>NA</u>
Address <u>P. O. Box 186</u>	Address _____
<u>Sod, WV 25564</u>	_____
(b) Name <u>Mark & Arthur Dunlap</u>	(b) Coal Owner(s) with Declaration
Address <u>110 - A. S. R. 19</u>	Name <u>NA</u>
<u>Hurricane, WV25526</u>	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Jeremy James</u>	(c) Coal Lessee with Declaration
Address <u>PO 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 HG Energy, LLC
 By: Diane White *Diane White*
 Its: Agent
 Address 5260 Dupont Road
Parkersburg, WV 26101
 Telephone 304-420-1119

Received
FEB 10 2016
Office of Oil and Gas
WV Dept. of Environmental Protection

Subscribed and sworn before me this 22th day of January
Mark J Schall Notary Public
My Commission Expires NOVEMBER 2, 2021

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 depprivacyofficer@wv.gov.

WW-9
(2/15)

API Number 47 - 043 - 1769
Operator's Well No. Horse Creek Tract "C" 6

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) Laurel 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: Fluids encountered while plugging subject well

Will a synthetic liner be used in the pit? Yes No If so, what ml.? 30 mil

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 _____)

Will closed loop system be used? If so, describe: No

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) NA

-Landfill or offsite name/permit number? NA

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 Diane White

Company Official (Typed Name) Diane White

Company Official Title Agent

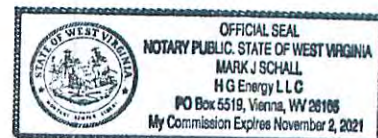
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Subscribed and sworn before me this 22st day of January, 2016

[Signature] Notary Public

My commission expires NOVEMBER 2, 2021

Office of Oil and Gas
WV Dept. of Environmental Protection



02/26/2016

HG Energy, LLC

Proposed Revegetation Treatment: Acres Disturbed 1.1 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

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

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.

Plan Approved by: 
Comments: _____

Received

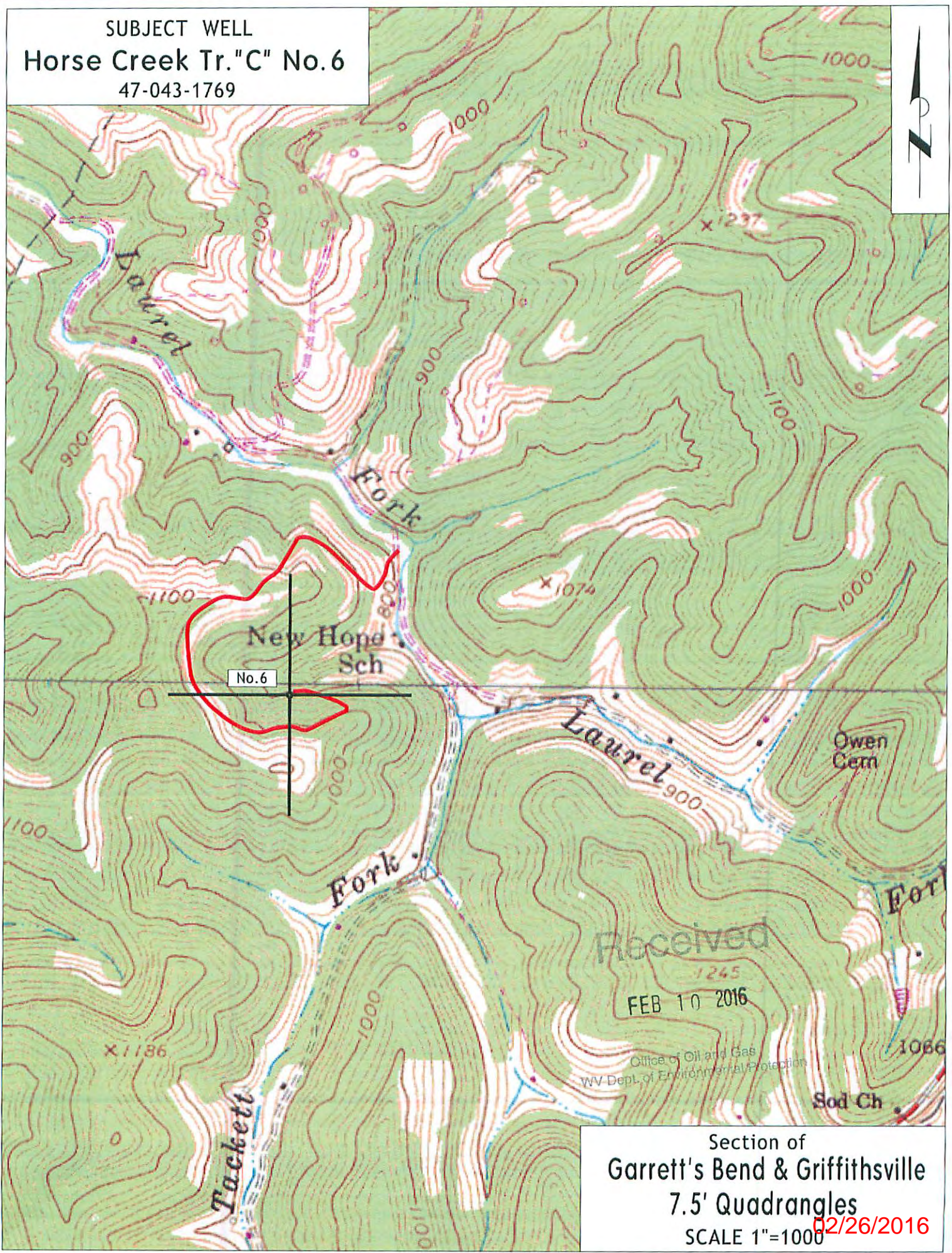
FEB 10 2016

Office of Oil and Gas
WV Dept. of Environmental Protection

Title: inspector OOG Date: 1-26-16

Field Reviewed? () Yes () No

SUBJECT WELL
Horse Creek Tr."C" No.6
47-043-1769



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1245
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Office of Oil and Gas
WV Dept. of Environmental Protection

Section of
Garrett's Bend & Griffithsville
7.5' Quadrangles
SCALE 1"=1000
02/26/2016

WW-7
5-02West Virginia Department of Environmental Protection
Office of Oil & Gas**WELL LOCATION FORM: GPS**

API: 47- 043 - 1769 WELL NO: 6

FARM NAME: Horse Creek Tr."C" No.6

RESPONSIBLE PARTY NAME: H.G. Energy, LLC

COUNTY: Lincoln DISTRICT: Duval

QUADRANGLE: Garrett's Bend 7.5'

SURFACE OWNER: Larry & Sue Carroll

ROYALTY OWNER: H.G. Energy, LLC et al.

UTM GPS NORTHING: 4,233,926 (NAD 83) 928.4ft

UTM GPS EASTING: 420,620 (NAD 83) GPS ELEVATION: 283 m.

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"/>

Received

FEB 10 2016

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.

Office of Oil and Gas
WV Dept. of Environmental Protection

Diane White Diane C. White
Signature

Designated Agent
Title

November 24, 2015
Date

02/26/2016