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

March 01, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-4301484, 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 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: E. T. SPURLOCK 7
Farm Name: BROYLES, SANDRA ROGERS
API Well Number: 47-4301484
Permit Type: Plugging
Date Issued: 03/01/2016

Promoting a healthy environment.

4301484P

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.

4301484P

WW-4B
Rev. 2/01

1) Date January 20, 2016
2) Operator's Well No. E T Spurlock 7
3) API Well No. 47- 043 - 1484

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 X or Underground storage ____) Deep ____ / Shallow X

5) Location: Elevation 885' Watershed Hayzlett Fork
District Duval County Lincoln Quadrangle Garrett's Bend 7.5'

6) Well Operator HG Energy, LLC
Address 5260 Dupont Road
Parkersburg, WV 26101

7) Designated Agent Diane White
Address 5260 Dupont Road
Parkersburg, WV 26101

8) Oil and Gas Inspector to be notified
Name Jeremy James
Address P. O. Box 36
Clendenin, WV 25045

9) Plugging Contractor
Name To Be Determined Upon Approval of Permit
Address

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.

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of Environmental Protection

Work order approved by inspector _____ Date 1-26-16

4301484P

WW-4B - Conti
Rev. 2/01

1) Date: January 20, 2016
2) Operator's Well Number
E T Spurlock 7
3) API Well No: 47 - 043 - 1484
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: 885' Watershed: Hayzlett Fork
District: Duval County: Lincoln Quadrangle Garretts Bend 7.5'

6) WELL OPERATOR: HG Energy, LLC 494497948
Address 5260 Dupont Road
Parkersburg, WV 26101

7) DESIGNATED AGENT Diane White
Address 5260 Dupont Road
Parkersburg, WV 26101

8) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Jeremy James
Address P. O. Box 36
Clendenin, WV 25045

9) PLUGGING CONTRACTOR
Name To Be Determined Upon Approval of Permit
Address

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

TD- 2,438'

Manners of plugging:
Plug #1 - ~~2200' - 2100'~~ 2350-2250 tag & reset if below 2250
Located above the highest perforation
Free point, part and pull 4 1/2" casing at approx 1800' if unable to pull, set 100ft cement plug ovr cut & cut again + pull below sea level.
Plug # 2 - Approx. 1850' - 1750'
Located at 4 1/2" casing stub
Plug #3 - 950' - 850'
Located at elevation
Plug #4 - 330' - 230'
Located at 8 5/8" casing shoe/fresh water
Plug #5 - 100' - 0'
Surface

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

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of
Environmental Protection

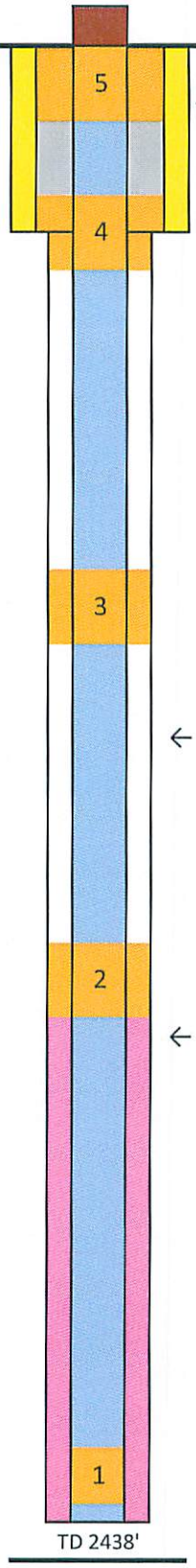
4301484P

Well: E.T. Spurlock 7

Elevation: 894'

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"	279'	9.5#/ft.
4 1/2"	2428'	20#/ft.



175 sacks cement to surface

Freepoint Cut and Pull Casing	
Size	Approx. Depth
4 1/2	1800

Cement Plugs		
NO.	Bottom	Top
1	~~2200~~ 2350	~~2100~~ 2250
2	1850	1750
3	950	850
4	330	230
5	100	0

6.75" Hole Size

50 Sks Cement T.O.C. 2131'

Highest Perforation 2391'

Bottom Hole Cement Level Calculations

# Sacks Used		Cement Depth
50		2131.079
Hole Size	**Casing Size**	**Depth**
6.75	4.5	2438
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

FORM No. 969 1M 9/68 M'G, 1917

Preliminary Report

PENNZOIL COMPANY

43014847

NEW WELL REPORT

LEASE No. 79582-50 240 ACRES

WORKING DISTRICT Southern Area

Map 114 W

E. T. Spurlock FARM

WELL No. 7 N. S. 78 E. W. 73

Duval DISTRICT OR TOWNSHIP Lincoln COUNTY St. Albans QUAD.

LOCATION MADE October 12, 19 73

DRILLING COMMENCED November 17, 19 73

DRILLING EQUIPMENT USED ☐ SPUDDER ☒ ROTARY ☐

DRILLING COMPLETED November 21, 19 73

DRILLING EQUIPMENT FURNISHED BY FWA Drilling Company

TOTAL DEPTH 2438 SAND Berea

ELEVATION: FLOOR 901.64

DRILLING CONTRACTOR FWA Drilling Company

ELEVATION: GROUND 893.64

WORK ORDER No. 70-23487-1,

FORMATION RECORD

KIND	TOP	BOTTOM	STEEL LINE MEAS.	TEST	KIND	TOP	BOTTOM	STEEL LINE MEAS.	TEST
Sub Structure	0	8							
Shale & Rock	8	188							
Shale	188	1100							
Salt Sand	1100	1666							
Little Lime	1666	1698							
Pencil Cave	1698	1703							
Big Lime	1703	1882							
Pocona	1882	1905							
Big Injun	1905	1954							
Shale	1954	2033							
Weir	2033	2102							
Shale	2102	2357							
Coffee Shale	2357	2378							
Berea	2378	2404							
Shale	24 04	2438							
T. D.		2438							
Logged by Basin to		2437							

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of
Environmental Protection

(OVER)

4301484P

NEW WELL REPORT — CONTINUED

INITIAL TORPEDO RECORD	
Date of Shot	
Name of Torpedo Co.	
No. of Quarts	
Length of Shell	
Diameter of Shell	
Length of Anchor	
Top of Shot	
Bottom of Shot	
Feet of Fluid in Hole When Shot	
Results:	

CASING AND TUBING RECORD						
SIZE	PUT IN WELL			PULLED OUT		
	TRANSFER NO.	FEET	INCH	TRANSFER NO.	FEET	INCH
8-5/8"		278	13			
4-1/2"		2426	10			

INITIAL PRODUCTION FIRST 24 HOURS
Open Flow /10ths Water in ____ Inch
____ /10ths Merc. in ____ Inch
Volume ____ Cu. Ft.
Rock Pressure ____ lbs. ____ hrs.
Oil ____ bbls., First 24 hrs.

PACKER RECORD			
KIND	SIZE	DEPTH SET	DATE SET
Steel Shoe	8-5/8"	278.80	11-18-73
Hall. Guide Shoe	4-1/2"	2428.00	11-21-73

ACIDIZATION OR FRACTURING RECORD

DATE WELL ACIDIZED ____

DATE WELL FRACTURED ____

NAME OF COMPANY ____

(List below materials used in Acidizing or Fracturing, i.e., Sand, Crude Oil, Gasoline, Water, Kerosene, Mothballs, Acid, etc., giving gallons, barrels and pounds.)

BREAKDOWN PRESSURE ____

PUMPING PRESSURE ____

AVERAGE PUMPING RATE/MINUTE ____

PUMPING TIME ____

RESULT AFTER TREATMENT } GAS ____ CU. FT.
OIL ____ BBLS.

ROCK PRESSURE AFTER TREATMENT ____ LBS.

CASING CEMENTED

8-5/8" SIZE 278.80 FT. 11-18-73 DATE

BAGS USED 175 sks Neat Cement 3% CC

4-1/2" SIZE 2428.00 FT. 11-21-73 DATE

BAGS USED 50 sks 50/50 Pozmix A 2% CC

SIZE ____ FT. ____ DATE

BAGS USED ____

SIZE ____ FT. ____ DATE

BAGS USED ____

TOP DEPTH OF CEMENT SHOWN BY TEMPERATURE LOG

REMARKS:

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of
Environmental Protection

APPROVED

B. H. Valentine

SUPERINTENDENT

4301484P

WW-4A
Revised 6-07

1) Date: January 20, 2016
2) Operator's Well Number
E. T. Spurlock 7

3) API Well No.: 47 - 043 - 1484

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: Sarah R. Broyles ✓
Address: 1909 Garrett's Bend Road
Sod, WV 25564
(b) Name: Vernon & Kathy Adams ✓
Address: 16 Brooks Road
Sod, WV 25564
(c) Name
Address

5) (a) Coal Operator
Name: NA
Address
(b) Coal Owner(s) with Declaration
Name: NA
Address
Name
Address
(c) Coal Lessee with Declaration
Name: NA
Address

6) Inspector
Address
Telephone

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.

OFFICIAL SEAL
NOTARY PUBLIC, STATE OF WEST VIRGINIA
MARK J SCHALL
HG Energy LLC
PO Box 5519, Vienna, WV 26105
My Commission Expires November 2, 2021

Well Operator: HG Energy, LLC
By: Diane White Diane White
Its: Agent
Address: 5260 Dupont Road
Parkersburg, WV 26101
Telephone: 304-420-1119

Subscribed and sworn before me this 20th day of January, 2016
Notary Public
My Commission Expires NOVEMBER 2, 2021

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of
Environmental Protection

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.

4301484P

WW-9
(2/15)

API Number 47 - 043 - 1484
Operator's Well No. E T Spurlock 7

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) Hayzlett 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

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of
Environmental Protection

Subscribed and sworn before me this 20th day of January, 2016, 20 16

Notary Public

OFFICIAL SEAL
NOTARY PUBLIC, STATE OF WEST VIRGINIA
MARK J SCHALL
HG Energy LLC
PO Box 5519, Vienna, WV 26105
My Commission Expires November 2, 2021

My commission expires NOVEMBER 2, 2021

4301.04P

Form WW-9

Operator's Well No. E T Spurlock 7

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: _____

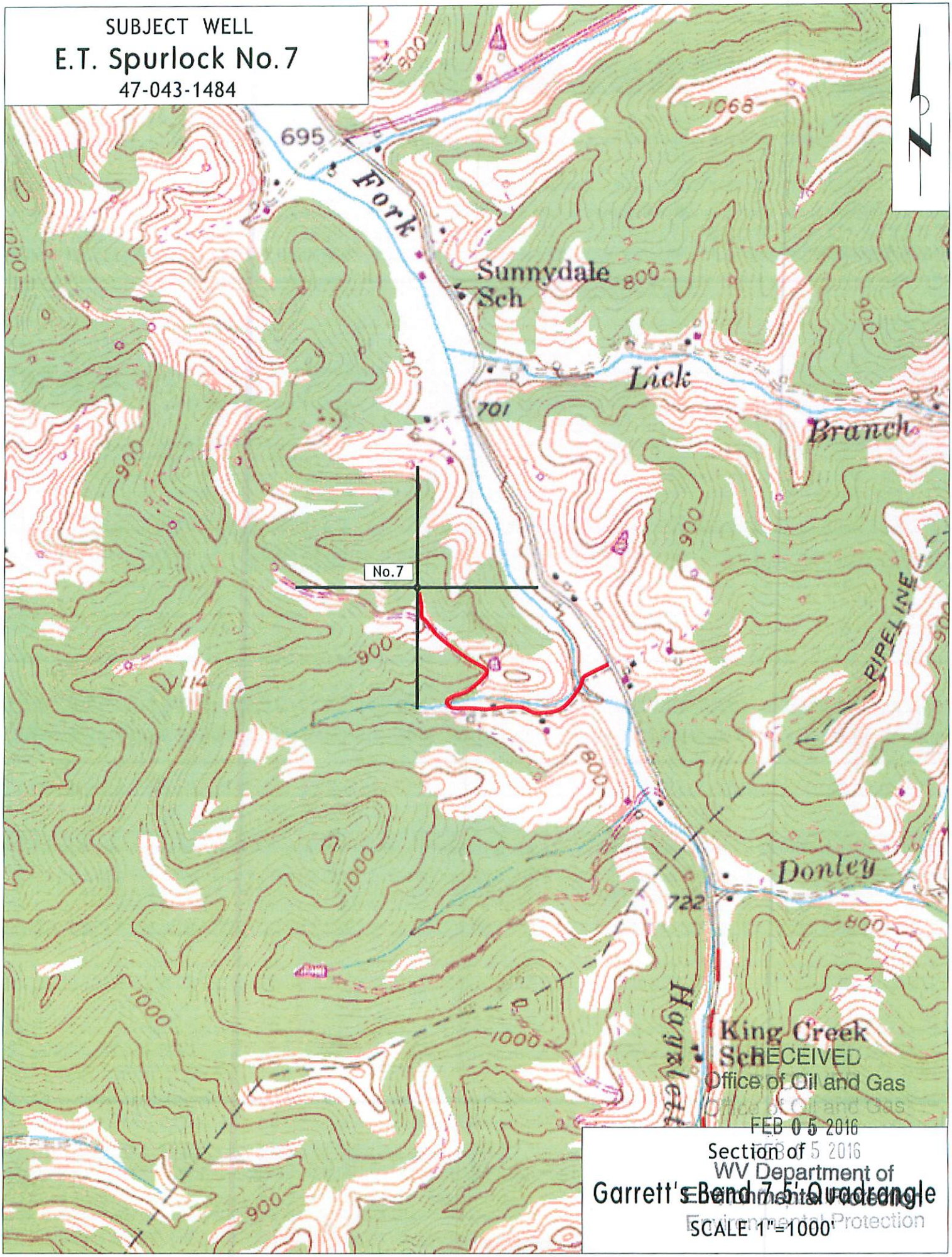
Comments: _____

Title: inspector OOG Date: 1-26-16

Field Reviewed? (_____) Yes (_____) No

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of
Environmental Protection

4301484P



RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of
Environmental Protection

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

4301484P

WW-7
5-02

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

API: 47- 043 - 1484 **WELL NO:** 7

FARM NAME: E.T. Spurlock No.7

RESPONSIBLE PARTY NAME: H.G. Energy, LLC

COUNTY: Lincoln **DISTRICT:** Duval

QUADRANGLE: Garrett's Bend 7.5'

SURFACE OWNER: Sarah R. Broyles

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

UTM GPS NORTHING: 4,237,884 (NAD 83)

885.8ft

UTM GPS EASTING: 421,488 (NAD 83) **GPS ELEVATION:** 270 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	___	Post Processed Differential	___
		Real-Time Differential	___
Mapping Grade GPS	X	Post Processed Differential	X
		Real-Time Differential	___

RECEIVED
Office of Oil and Gas
FEB 05 2016
WV Department of Environmental Protection

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 White — Diane C. White — Designated Agent
Signature — Title

November 24, 2015
Date