



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

April 18, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-8700969, 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: W-1
Farm Name: KAUFMAN, WILLIAM
API Well Number: 47-8700969
Permit Type: Plugging
Date Issued: 04/18/2016

Promoting a healthy environment.

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.

87009697

WW-4B - Conti
Rev. 2/01

1) Date: March 22, 2016
2) Operator's Well Number William Kaufman W-1
3) API Well No: 47 - 087 - 0969
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: 929' Watershed: Clover Run
District: Smithfield County: Roane Quadrangle Spencer 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 Joe Taylor Name To Be Determined Upon Approval of Permit
Address 1478 Claylick Road Address _____
Ripley, WV 25271 _____

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

TD- 2,103'

Manners of plugging;

Plug #1 - 1925' - 1825'

Located above the highest perforation

Free-point, part and pull all possible 4 1/2" casing (approx 1600')

Plug # 2 - 1650' - 1550'

Located at 4 1/2" casing stub

Plug #3 - 975' - 875'

Located at elevation

Free point, part and pull all possible 10" casing

Plug #4 - 525' - 425'

Located at 10" casing shoe

Plug #5 - 100' - 0'

If 10" casing is present, rip for plug placement

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

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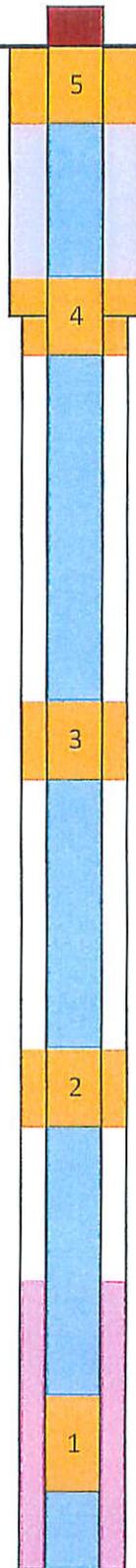
WV Department of
Environmental Protection

Well: Wm. Kaufman W-1

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

Elevation: 929'

Casing Information		
Size	Depth	Weight
10"	482	#/ft.
4 1/2"	1934	10.5#/ft.



← 10" Not Cemented to Surface

Freepoint Cut and Pull Casing	
Size	Approx. Depth
4 1/2"	1600'

Cement Plugs		
NO.	Bottom	Top
1	1925	1825
2	1650	1550
3	975	875
4	525	425
5	100	0

Bottom Hole Cement Level Calculations

Sacks Used Cement Depth
 25 1781.54

Hole Size Casing Size Depth
 6.75 4.5 1935

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

← 25 Sacks Cement T.O.C. 1780'

← Highest Perforation 1973'

TD 2103'

[Handwritten Signature]
 3-23-16

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 Environmental Protection

REPORT OF FRACTURE TREATMENT

New Well X Old Well _____ Elevation 929.5'
 Farm: William Kaufman Well Number: W-1(8) Pool: Clover
 District: Smithfield County: Roane State: W. Va.
 Producing Formation: Big Injun Depth: From 2049' to 2072'
 Date Completed: Sept. 27, 1963 Pays: Oil From 2060' to 2070'
 Original Total Depth: 2103' From _____ to _____
 Present Total Depth: 2071' Gas From None to (1100' Fluid in Hole)
 From _____ to _____

Production	Initial	Present	After Fracture
Oil	<u>Show</u>	<u>--</u>	<u>40 Bbl./Day</u>
Gas	<u>-0-</u>	<u>--</u>	<u>No Test</u>
Rock Pressure	<u>N/A</u>	<u>--</u>	<u>Est. 500#</u>

4 1/2" Casing set @ 2103' Gr. J-55 Wt. 9.6# Cemented 25 Bags Co. Well Service, Inc.

Tubing size 2" Depth 2065' Packer N/A Anchor N/A
4 1/2" X 2" Annulus
 Frac String and 2" Tubing Type Completion Set Through

Logged by: McCullough Date Sept. 27/63 Cost \$ 612.

Logs Used: Gamma Ray, Gamma Gamma Density, Neutron, Caliper

Interpretations: Big Injun 2050' - 2070'
12 to 14% - 100% F_s

Perforated by: McCullough Date Oct. 7/63 Cost \$ 476.04

Perforations: 1 - Triple Frac. Notch Cutter @ 2064 1/2'

Treatment Data	Fluid	Sand	Acid	Plugging Agent	Gel	Date Fractured <u>10-9-63</u>	
						Fluid Loss	Non-Foamer Emulsifier
Type	<u>Water</u>	<u>20-49</u>	<u>BDA</u>	<u>-</u>	<u>J-98</u>	<u>J-84</u>	<u>Deterg. Free Flo</u>
Amount	<u>925 Bbl.</u>	<u>50,000#</u>	<u>300 gal.</u>	<u>250#</u>	<u>400#</u>	<u>30 gal.</u>	<u>40 gal.</u>
Breakdown Pressure:	<u>1,000#</u>	Treating Pressure:	<u>Max. 3,000</u>	Min.	<u>2250#</u>		
Sand Concentration:	<u>1/4#</u>	to	<u>2#</u>	Injection Rate	<u>23.5 Bbl/Min.</u>		

EQUIPMENT USED

Service Company Dowell Cost \$3,281.50 Hydraulic Horsepower 1224
 2 - Allison's
 1 - Blender
 2 - Sand Trucks
 1 - Acid Truck
 Engineering Dept. By: Howard Strickler Date: Oct. 21, 1963

WOLF'S HEAD OIL REFINING COMPANY, INCORPORATED
~~SOUTH PENN. OIL COMPANY~~

87009699

Rec ✓

NEW WELL REPORT

LEASE No. 81219 800 ACRES WORKING DISTRICT Spencer # 4

Wm. Kaufman FARM WELL No. W-1 N. 47 E. 37

Smithfield DISTRICT OR TOWNSHIP Roane COUNTY QUAD.

LOCATION MADE July 29, 19 63 DRILLING COMMENCED August 31, 19 63

RIG COMMENCED August 29, 19 63 DRILLING COMPLETED September 27, 19 63

RIG COMPLETED August 31, 19 63 DEPTH 2103' SAND Big Injun

RIG CONTRACTOR Gerald D. Jones DRILLING CONTRACTOR Gerald D. Jones

ELEVATION: FLOOR _____ GROUND 929.50 WORK ORDER No. 4-3684-C AFE# WH-1-W.Va.

FORMATION RECORD

KIND	TOP	BOTTOM	STEEL LINE MEAS.	TEST	KIND	TOP	BOTTOM	STEEL LINE MEAS.	TEST
Soil	0	3			Slate	1753	1808		
Yellow Sand	3	16			Black Slate	1808	1822		
Conductor		13	13		Slate	1822	1843		
Red Rock	16	35			Sand	1843	1875		
Blue Slate	35	40			Little Lime	1875	1898		
Red Rock	40	115			Slate	1898	1923		
Brown Slate	115	150			Big Lime	1923	2040	1934	
Sand	150	175			Oil		1970		Show Only
Water, Fresh		160	160	1 Bailer/Hr.	Gas	1970	1981		17/10-W-1/4"FM
Red Rock	175	205			Water		1990		Hole Full
Blue Slate	205	220			Keener Sand	2040	2051		
Red Rock	220	250			Big Injun	2051	2072		
Slate	250	338			Oil & Gas	2059	2072		40/10-W-1/4"FM
Red Rock	338	365			Blue Slate	2072	2103		
Slate	365	380			4 1/2" OD Casing		2103	2103	
Sand	380	415			Total Depth		2103	2103	
Water, Fresh	380	415		Show Only					
Slate	415	460							
Sand	460	476							
Slate	476	532	477						
Red Rock	532	560							
Blue Slate	560	580							
Sand	580	600							
Red Rock	600	625							
Slate	625	660							
Red Rock	660	715							
Slate	715	780							
Red Rock	780	815							
Slate	815	835							
Red Rock	835	881							
Slate & Shells	881	925							
Durkard Sand	925	1023	950						
Blue Slate	1023	1113							
Sand	1113	1156							
Slate	1156	1170							
Sand, Broken	1170	1375							
Slate	1375	1407							
Sand	1407	1462							
Slate	1462	1516							
Sand	1516	1560							
Black Slate	1560	1592							
Slate & Shells	1592	1655							
Salt Sand	1655	1733							
Water		1695		Hole Full					

NEW WELL REPORT - CONT'D.

INITIAL TORPEDO RECORD	CASING AND TUBING RECORD						
	SIZE	PUT IN WELL			PULLED OUT		
		TRANSFER NO.	FEET	INCH	TRANSFER NO.	FEET	INCH
Date of Shot	10"	Tally	482	--			
Name of Torpedo Co.	8-5/8"	S.L.M.	950	--	S.L.M.	950 --	
No. of Quarts	6-5/8"	S.L.M.	1994	--	S.L.M.	1994 --	
Length of Shell	4 1/2"	Tally	2126	--			
Diameter of Shell	2" Tbg.	Tally	2103	--			
Length of Anchor							
Top of Shot							
Bottom of Shot							
Feet of Fluid in Hole When Shot							
Results:							

INITIAL PRODUCTION FIRST 24 HOURS	PACKER RECORD			
	KIND	SIZE	DEPTH SET	DATE SET
Open Flow 40/10ths Water in 2/4 Inch	Steel Shoe	10" OD	477'	9-8-63
/10ths Merc. in Inch	Float Chiller	4 1/2" OD	2083'	9-28-63
Volume 2906 Cuft. Thru 600' Water Cu. Ft.	Guide Shoe	4 1/2" OD	2103'	9-28-63
Rock Pressure Water - No Test hrs.				
Oil Show Only - Thru Water bbls., First 24 hrs.				

ACIDIZATION OR FRACTURING RECORD	
DATE WELL ACIDIZED	October 9, 1963
DATE WELL FRACTURED	Dowell
NAME OF COMPANY	Dowell
(List below materials used in Acidizing or Fracturing, i.e., Sand, Crude Oil, Gasoline, Water, Kerosene, Mothballs, Acid, etc., giving gallons, barrels and pounds).	
Used:	920 Bbls. Water
Used:	300 Gals. Dowell X
Used:	300 Gals. Regular Mud Acid
Used:	250# J-98
Used:	400# J-84
Used:	30 Gals. Deterger
Used:	40 Gals. Frefle
Used:	50,000# Sand
BREAKDOWN PRESSURE	1000#
PUMPING PRESSURE	2200 - 3600#
AVERAGE PUMPING RATE/MINUTE	23.5 Bbls.
PUMPING TIME	39 Minutes
RESULT AFTER TREATMENT	GAS 35,000 CU. FT. OIL 40 BBLs.
ROCK PRESSURE AFTER TREATMENT	500# LBS.

CASING CEMENTED			
4 1/2"	SIZE	2103'	9-28-63 DATE
	SIZE	FT.	DATE
	SIZE	FT.	DATE
USED IN CEMENTING 4 1/2" OD CASING:			
5 Gals. - Resignment			
5 Bags - Baroid			
5 Bags - Lime			
25 Bags - Cement			
Cemented by: Well Service, Inc.			
USED IN CEMENTING 10" CASING FROM SURFACE TO 477' on SEPTEMBER 6, 1963:			
7 Bags - MagcoGel			
Gelled by: Gerald D. Jones			

REMARKS: Drilled with Cable Tools

Note: This well was logged by McCullough Tool Company on September 27, 1963.

Note: This well was drilled according to Rule 11, under section 29, of Article 14, Chapter 22, of the Code of the Department of Mines, Oil and Gas Division.

APPROVED

C. C. Cross

SUPERINTENDENT

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Office of Oil and Gas

APR 04 2016

WV Department of Environmental Protection

WW-4A
Revised 6-07

1) Date: March 22, 2016
2) Operator's Well Number
William Kaufman No. W-1

3) API Well No.: 47 - 087 - 0969

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>Verne Marks</u> ✓	Name <u>NA</u>
Address <u>P. O. Box 201</u>	Address _____
<u>Fawn Grove, PA 17321</u> ✓	_____
(b) Name <u>Douglas Haverty</u> ✓	(b) Coal Owner(s) with Declaration
Address <u>62 Millstone Run</u>	Name <u>NA</u>
<u>Spencer, WV 25276</u>	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Joe Taylor</u>	(c) Coal Lessee with Declaration
Address <u>1478 Claylick Road</u>	Name <u>NA</u>
<u>Ripley, WV 25271</u> <i>SOZ</i>	Address _____
Telephone <u>304-380-7469</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



Subscribed and sworn before me this 22nd day of March, 2016

Diane White

Notary Public

My Commission Expires July 11, 2022

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Office of Oil and Gas

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.

APR 04 2016
WV Department of
Environmental Protection

B700969P

WW-9
Rev. 5/08

Page _____ of _____
API Number 47 - 087 - 0969
Operator's Well No. William Kaufman No. W-1

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 HG Energy, LLC OP Code 494497948

Watershed Clover Run Quadrangle Spencer 7.5'

Elevation 929' County Roane District Smithfield

Description of anticipated Pit Waste: Fluids encountered while plugging subject well

Will a synthetic liner be used in the pit? Yes *minimum of 20 ml thickness must be used. SW*

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
- Other (Explain _____)
- Swabbing
- Plugging

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

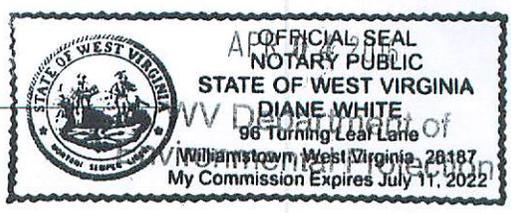
Subscribed and sworn before me this 22 day of March, 2016

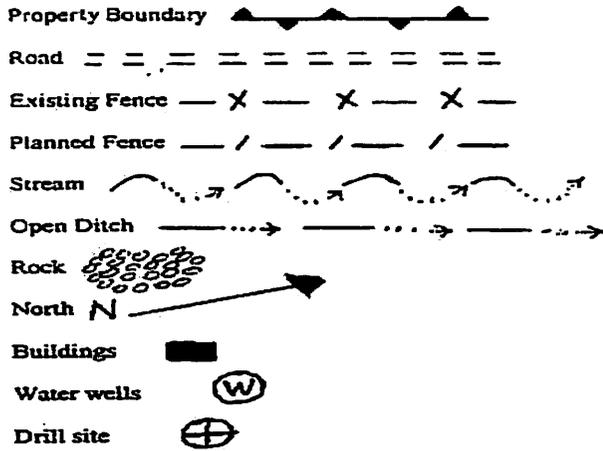
Diane White

Notary Public

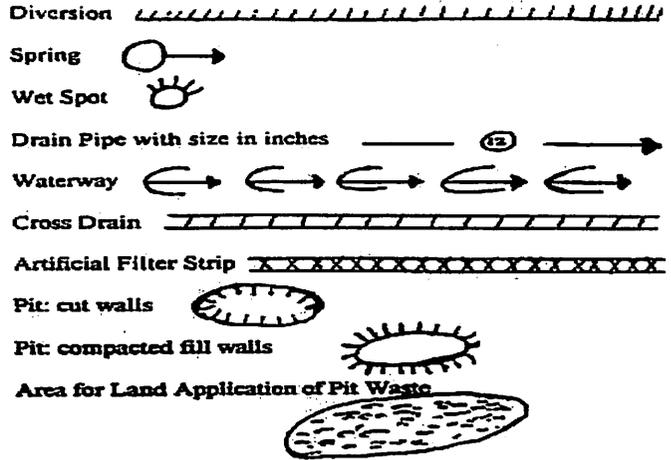
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Office of Oil and Gas

My commission expires July 11, 2022





LEGEND



Proposed Revegetation Treatment: Acres Disturbed 0.7 acres Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Straw 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

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

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]

Comments: _____

Title: 006 Inspect

Date: 3-23-2016 RECEIVED Office of Oil and Gas

Field Reviewed? Yes No

APR 04 2016

SUBJECT WELL
William Kaufman No.W-1
47-087-0969



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Office of Oil and Gas
Section of
Spencer & Looneyville
7.5' Quadrangles
WV Department of
Environmental Protection
SCALE 1"=1000'

WW-7
5-02

West Virginia Department of Environmental Protection
Office of Oil & Gas

WELL LOCATION FORM: GPS

API: 47- 087 - 0969 WELL NO: W-1

FARM NAME: Wm. Kaufman No.W-1

RESPONSIBLE PARTY NAME: H.G. Energy, LLC

COUNTY: Roane DISTRICT: Smithfield

QUADRANGLE: Spencer 7.5'

SURFACE OWNER: Verne Marks

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

UTM GPS NORTHING: 4,289,153 (NAD 83)

UTM GPS EASTING: 477,078 (NAD 83) GPS ELEVATION: 287 m. (929')

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 White Diane C. White
Signature

March 18, 2016
Date

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Office of Oil and Gas
Designated Agent

Title APR 04 2016

WV Department of
Environmental Protection