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 09, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-4302326, 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: STOWERS HEIRS 6
Farm Name: STOWERS, BARBARA
API Well Number: 47-4302326
Permit Type: Plugging
Date Issued: 05/09/2016

4302326P

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.

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WW-4B
Rev. 2/01

1) Date February 10, 2016
2) Operator's
Well No. Stowers Heirs 6
3) API Well No. 47- 043 - 2328

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 879' Watershed Hayzlett Fork
District Duval - 02 County Lincoln Quadrangle Garrett's Bend 7.5' - 358

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 PO 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.

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Work order approved by inspector _____ Date 3-1-16

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WW-4B - Conti
Rev. 2/01

1) Date: February 10, 2016
2) Operator's Well Number
Stowers Heirs 6
3) API Well No: 47 - 043 - 2326
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: 879' Watershed: Laurel Fork
District: Duval County: Lincoln Quadrangle Garrett's 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- 2,450'

Manners of plugging:
Plug #1 - 2350' - 2250'
Located above the highest perforation
Check for free-point at top of Big Lime (1755'), If pipe is free, part and pull. If pipe is not free, preforate for placement of plug #2.
Plug # 2 - Approx. 1800' - 1700'
Located at top of Big Lime - 4 1/2" casing stub
Plug #3 - 925' - 825'
Located at elevation, if pipe was not free at 1755', part and pull at elevation (879') bobj 879
Plug #4 - 300' - 0'
Located at 8 5/8" casing shoe, fresh water to 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

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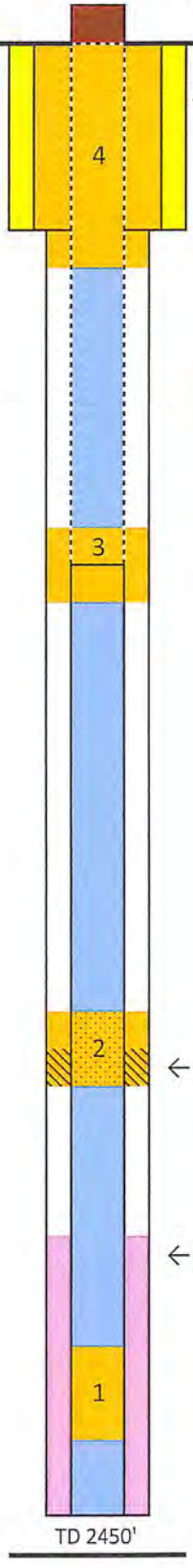
Well: Stowers Heirs #6
API: 47-43-2326
Elevation: 879'

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"	263'	20#/ft.
4 1/2"	2436'	10.5#/ft.



← 160 sacks cement to surface

Freepoint Cut and Pull Casing	
Size	Approx. Depth
4 1/2	1712' or 879'

Hole Size 6.75" →

Cement Plugs		
NO.	Bottom	Top
1	2350	2250
2	1800	1700
3	925	825
4	300	0

← Big Lime 1712' - 1755'

← 50 Sacks Cement T.O.C. 2143

Highest Perforation 2395'

Bottom Hole Cement Level Calculations

# Sacks Used	Cement Depth
50	2143.079

Hole Size	Casing Size	Depth
6.75	4.5	2450

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

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PENNZOIL COMPANY
Well Completion Report

Lease: Stowers Heirs 75-25 Well No. 6 New Well X Old Well ___

District: Duval County: Lincoln State: West Virginia

Pool Name: Griffithsville Northeast Pool No. 57 Elevation 888 KB: ~~X~~

Producing Formation: Berea Depth: From 2363' to 2408'

Date Drilled In: 5-11-79 Pays: Oil: From ___ to ___
From ___ to ___

Original Total Depth: 2450' Gas: From ___ to ___
From ___ to ___

Plug Back Depth: 2426'

Production	Initial	Present	After Fracture
Oil			
Gas			

8-5/8"
Surface Csg. set @ 273 KB: ~~X~~ Gr. H-40 New: ~~Used~~ Wt. 20# Collars ST&C

Cement Reg. Neat Amount 160 Sacks Plug Down @ 8:05 AM: ~~PM~~ Date 5-8-79

4-1/2" w/3% c.c.
Production Csg. set @ 2446' KB: ~~X~~ Gr. K-55 New: ~~Used~~ Wt. 10.5# Collars ST&C

Cement Reg. Neat Amount 50 Sacks Plug Down @ 12:30 AM: ~~PM~~ Date 5-12-79
10% Salt

Logged by: Basin Surveys Date: 5-11-79

Logs Used: Gamma Ray-Compensated Density-Caliper

Perforated by: McCullough Date: 6-21-79

Perforations: 2395' - 2400' 4 holes per ft. - 20 holes

Treatment Data

	Fluid	Sand	Acid	Solvent	Gel	Breaking Agent	Fluid Loss	F.R. Agent	M.E. Agent
Type	Oil	20/40	15% HCl						
Amount	550 Bbls.	23,000#	500 Gal.						

Breakdown Pressure: 1500 Treating Pressure: Max. 2750 Min. 2550 Avg. 2646

Avg. Inj. Rate 27.8 BPM ISIP 1625 @ 1:05 ~~AM~~:PM 5 min. SIP 1325

10 min. SIP 1200 15 min. SIP 1175 Other 3 Hrs. SIP 700

EQUIPMENT USED

Service Company: Halliburton HHP 1803

By: Jeff Beardmore Date Fractured: 6-21-79

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OFFICE COPY
AUG 15 1979

43-02326

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
Sand			840	849		
Shale			849	859		
Sand			859	869		
Shale			869	1004		
Sand			1004	1020		
Shale & Siltstone			1020	1069		
Shale			1069	1073		
Sand			1073	1155		
Shale			1155	1163		
Sand			1163	1235		
Shale			1235	1254		
Sand			1254	1338		
Shale			1338	1340		
Sand			1340	1416		
Shale			1416	1420		
Sand			1420	1615		
Shale			1615	1624		
Salt Sands			1624	1669		
Little Lime			1669	1706		
Pencil Cave			1706	1712		
Big Lime			1712	1755		
Loyal Hanna			1755	1762		
Limestone			1762	1876		
McCrady Shale			1876	1913		
Pocono Sandstone			1913	1950		
Shale			1950	2040		
Weir Sandstone			2040	2108		
Shale			2108	2365		
Coffee Shale			2365	2384		
Berea Sandstone			2384	2409		
Shale			2409	2450		
Total Depth				2450		
PBD				2426		

JUL 06 2012

Date July 30, 1979

APPROVED Pennzoil Company, Owner

By Curtis A. Lusar
Duly Eng. Dept.

4302326P

WW-4A
Revised 6-07

1) Date: February 10, 2016
2) Operator's Well Number
Stowers Heirs 6

3) API Well No.: 47 - 043 - 2326

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: Barbara Stowers
Address: 1735 Garrett's Bend Road
Sod, WV 25564
(b) Name:
Address:
(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: Jeremy James
Address: P. O. Box 36
Clendenin, WV 25045
Telephone: 304-951-2596

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
H G Energy L L C
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 10th day of February, 2016
Notary Public
My Commission Expires NOVEMBER 2, 2021

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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.

4302326P

WW-9
(2/15)

API Number 47 - 043 - 2326
Operator's Well No. Stowers Heirs 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) 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 No 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: 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) NA

-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 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 10th day of February, 2016, 20 16

Notary Public

My commission expires NOVEMBER 2, 2021

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

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Form WW-9

Operator's Well No. Stowers Heirs 6

HG Energy, LLC

Proposed Revegetation Treatment: Acres Disturbed 1.4 acres Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

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: _____

Comments: _____

Title: inspector OOG Date: 3-1-16

Field Reviewed? (_____) Yes (_____) No

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Westbrook, Joshua P

From: Diane White <dwhite@hgenergyllc.com>
Sent: Friday, May 06, 2016 9:49 AM
To: Westbrook, Joshua P
Subject: Pit Fluids

Josh,
As per our discussion, HG does not intend to treat pit fluids for the following new well drill sites and plugging sites. HG will contract hauling the pit fluids to an authorized disposal site.

New Drill Sites:
CB Ferrell 218
Jackson Long 220
Jackson Long 129
Jackson Long 130
AW Edgell 127
IB Butcher 128

Wells to be plugged:
Stowers Heirs 6
Samuel Bowman 2
AA Woodrum 5
Woodrum Daniels 2
SW Nunn 1
SW Nunn 2

Please let me know if I should provide more information.
Thanks,
Diane

Diane C. White

HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
304-420-1119 (O)
304-482-0108 (C)
304-863-3172 (F)
dwhite@hgenergyllc.com

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SUBJECT WELL

Stowers Heirs No. 6

47-043-2326

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Section of

Garrett's Bend 7.5' Quadrangle

SCALE 1"=1000'

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WW-7
5-02

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

API: 47- 043 - 2326 **WELL NO:** 6

FARM NAME: Stowers Heirs No.6

RESPONSIBLE PARTY NAME: H.G. Energy, LLC

COUNTY: Lincoln **DISTRICT:** Duval

QUADRANGLE: Garrett's Bend 7.5'

SURFACE OWNER: Barbara Stowers

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

UTM GPS NORTHING: 4,238,984 (NAD 83)

UTM GPS EASTING: 422,042 (NAD 83) **GPS ELEVATION:** 268 m. (879')

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	___

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

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