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**west virginia** department of environmental protection

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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](http://www.dep.wv.gov)

November 05, 2013

**WELL WORK PERMIT**

**Rework-Secondary Recovery**

This permit, API Well Number: 47-10302175, 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: MARY B. LONG NO. 251  
Farm Name: LONG, STEVEN & TIMOTHY  
**API Well Number: 47- 10302175**  
**Permit Type: Rework-Secondary Recovery**  
Date Issued: 11/05/2013

**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.

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## CONDITIONS

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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.

WW-3B  
10/07



1) Date September 16, 2013  
 2) Operator's Well No. Mary B. Long No. 251  
 3) API Well No. 47 - 103 - 2175  
 State                      County                      Permit                       
 4) UIC Permit No. UIC2R10304AP

**STATE OF WEST VIRGINIA**  
**NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION**  
**FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**

- 5) WELL TYPE: Liquid Injection  Gas Injection (not storage) \_\_\_\_\_ Waste Disposal \_\_\_\_\_
- 6) LOCATION: Elevation 733' Watershed North Fork of Fishing Creek  
 District Grant 04 County Wetzel 103 Quadrangle Pine Grove 7.5' 548
- 7) WELL OPERATOR: HG Energy, LLC 494497948  
5260 Dupont Road  
Parkersburg, WV 26101
- 8) DESIGNATED AGENT: Mike Kirsch  
5260 Dupont Road  
Parkersburg, WV 26101
- 9) OIL & GAS INSPECTOR TO BE NOTIFIED: Name Derek Haught  
 Address PO Box 85  
Smithville, WV 26178
- 10) DRILLING CONTRACTOR: Name To Be Determined Upon Permit Approval  
 Address \_\_\_\_\_
- 11) PROPOSED WELL WORK: Drill \_\_\_\_\_ Drill Deeper \_\_\_\_\_ Redrill \_\_\_\_\_ Stimulate \_\_\_\_\_  
 Plug Off Old Formation \_\_\_\_\_ Perforate New Formation \_\_\_\_\_ Convert   
 Other Physical Change in Well (specify) \_\_\_\_\_
- 12) Geological target formation Gordon Depth 2,554 Ft. (Top) to 2,564 Ft. (Bottom)
- 13) Estimated depth of completed well (or actual depth of existing well) 2840' Ft.
- 14) Approximate water strata depths: Fresh 50 Ft. Salt 1,430 Ft.
- 15) Approximate coal seam depths: 520 Ft.
- 16) Is coal being mined in the area?  Yes  No
- 17) Virgin reservoir pressure in target formation: 60 psig. Source Estimated
- 18) Estimated reservoir fracture pressure: 1200 psig.
- 19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 25 bbl/hr Bottom Hole Pressure 2400 psi
- 20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES and other chemicals as needed to maintain water quality and improve oil recovery. Fresh water, produced water, bactericides
- 21) FILTERS (IF ANY) Cartridge filters and/or coal bed filters
- 22) SPECIFICATION FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL \_\_\_\_\_
- 23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILLUP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight	New	Used	For Drilling	Left in Well		
Conductor									Kinds
Fresh Water	7"	LS	17#	X		611'	611'	Use Existing Casing	Tension
Coal									Sizes
Intermediate									2.375" X 4.5"
Production	4 1/2"	J-55	10.5#	X		2759'	2759'	Use Existing Casing	Depths Set
Tubing	2 3/8"	J-55	4.6#	X		2450'	2450'		2350'
Liners									Perforations
									Top Bottom

24) APPLICANTS OPERATING RIGHTS were acquired from Irene Reilly, et al  
 by Deed \_\_\_\_\_ Lease  Other Contract \_\_\_\_\_ Dated January 17, 1889  
Wetzel County Clerk's Office in Lease Book 47 at Page 193



State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

Well Operator's Report of Well Work

**COPY**

Farm name: LONG, HELEN L.  
LOCATION: Elevation: 733'  
District: GRANT  
Latitude: 3,150 Feet south of  
Longitude: 10,950 Feet west of

Operator Well No.: MARY LONG 251  
Quadrangle: PINE GROVE 7.5'  
County: WETZEL  
39 Deg 35 Min 0 Sec.  
80 Deg 37 Min 30 Sec.

Company: EAST RESOURCES, INC.  
P.O. BOX 5519  
VIENNA, WV 26105-5519

Agent: PHILIP S. ONDRUSEK  
Inspector: MIKE UNDERWOOD  
Permit Issued: 06/02/06  
Well work Commenced: 06/18/06  
Well work Completed: 09/08/06  
Verbal plugging permission granted on:  
Rotary X Cable \_\_\_\_\_ Rig \_\_\_\_\_  
Total Depth (feet) 2840'  
Fresh water depths (ft) 50'  
Salt water depths (ft) \_\_\_\_\_

Casing/ tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
7"	611'	611'	150 sks
4 1/2"	2759'	2759'	150 sks

Is coal being mined in area (Y/N) N  
Coal Depths (ft): NA

OPEN FLOW DATA \* WATERFLOOD PRODUCER

Producing formation Gordon Pay zone depth (ft) 2554'-2564'  
Gas: Initial open flow \* MCF/d Oil: Initial open flow \* Bbl/d  
Final open flow \* MCF/d Final open flow \* Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

Second producing formation Big Injun/Big Lime Pay zone depth(ft) 1714'-1722', 1834'-1840'  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

NOTE: ON BACK OF THIS FORM, PUT THE FOLLOWING: 1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2) THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: EAST RESOURCES, INC.  
By: *Philip Ondrusek*  
Date: 2/7/08

RECEIVED  
Division of Oil and Gas  
06/07/2013

Treatment :

Treated Gordon perforations 2554'-2564' w/ 250 gals. 15% HCl acid, 271 bbls cross linked gel, and 13,000 # 30/50 sand.

Treated Big Injun/Big Lime perforations 1714'-1722', 1834'-1840' w/ 1500 gals. 15% HCl acid, 186 bbls cross linked gel and 7,000 # 30/50 sand.

Well Log :

0	254	Sand and Shale
254	278	Sand
278	310	Shale
310	367	Sand
367	388	Shale
388	399	Sand
399	452	Shale
452	466	Sand
466	560	Shale
560	579	Sand
579	954	Shale
954	992	Sand
992	1340	Shale
1340	1398	Sand
1398	1430	Shale
1430	1464	Sand
1464	1470	Shale
1470	1480	Sand
1480	1620	Shale
1620	1633	Sand
1633	1660	Shale
1660	1710	Big Lime
1710	1956	Big Injun
1956	2520	Shale
2520	2543	Gordon Stray
2543	2552	Shale
2552	2565	Gordon
2565	2840	Shale
2840		TD

Form WW-9  
Rev. 10/94

Page 3 of 3  
API Number 47- 103 - 2175

Operator's Well No. Mary B. Long No. 251

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 HG Energy, LLC OP Code 494497948  
Watershed North Fork of Fishing Creek Quadrangle Pine Grove 7.5'  
Elevation 733' County Wetzel District Grant

Description of anticipated Pit Waste: A pit will not be used

Do you anticipate more than 5,000 bbls of water to complete the proposed well work Yes          No X

Will a synthetic liner be used in pit? NA If so, what 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                          )

DMA  
10-7-13

Drilling medium anticipated for this well? Air, fresh water, oil based, etc. NA

- If oilbased, what type? Synthetic, petroleum, etc.                         

Additives to be used? NA

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

- If left in pit and plan to solidify, what medium will be used? Cement, lime, sawdust NA

- Landfill or offsite name/permit number?                         

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 C White

Company Official (Typed Name) Diane C. White

Company Official Title Accountant

RECEIVED

Subscribed and sworn before me this 17 day of September 2013

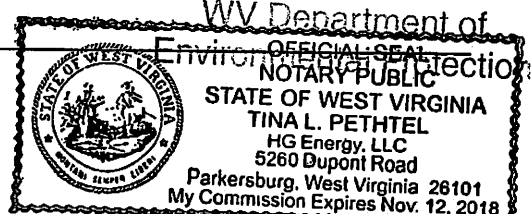
Office of Oil and Gas

Tina Pethel

OCT 07 2013  
Notary Public

My commission expires NOV. 12, 2018

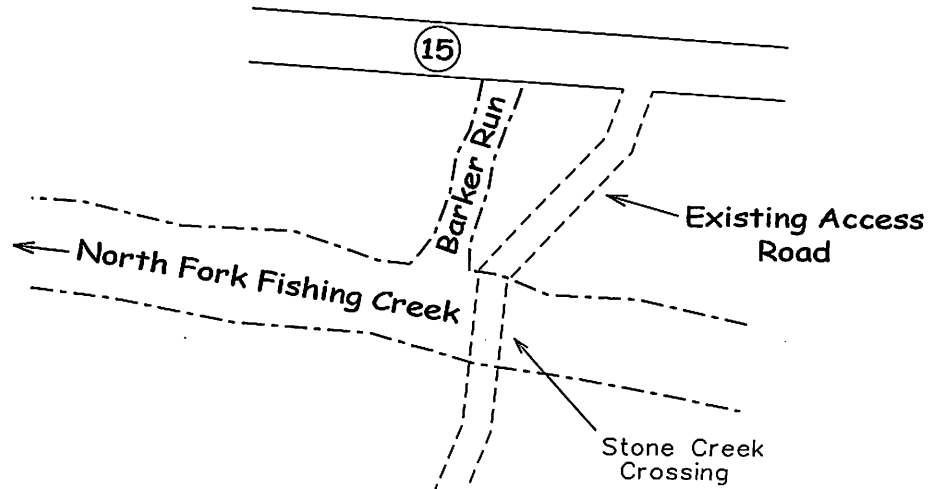
Form WW-9



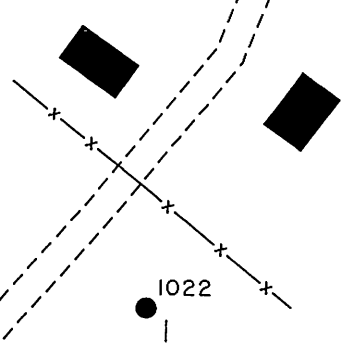




# Reclamation Plan For: Mary B. Long No.217



Access road follows existing farm road in meadow.  
(Grade < 5%)



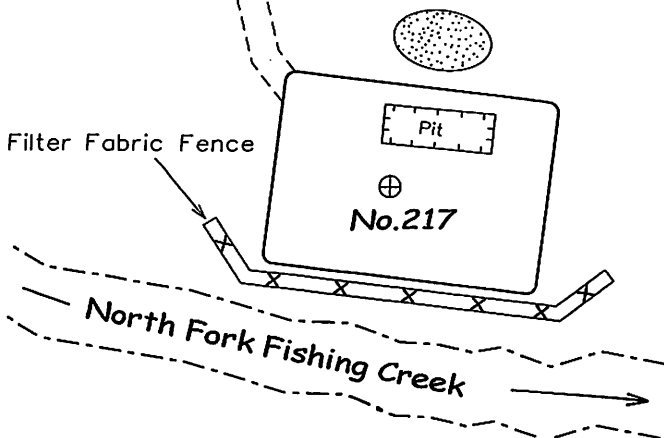
Helen L. Long  
- Surface

*DMA*  
10-3-17

RECEIVED  
Office of Oil and Gas

Notes:

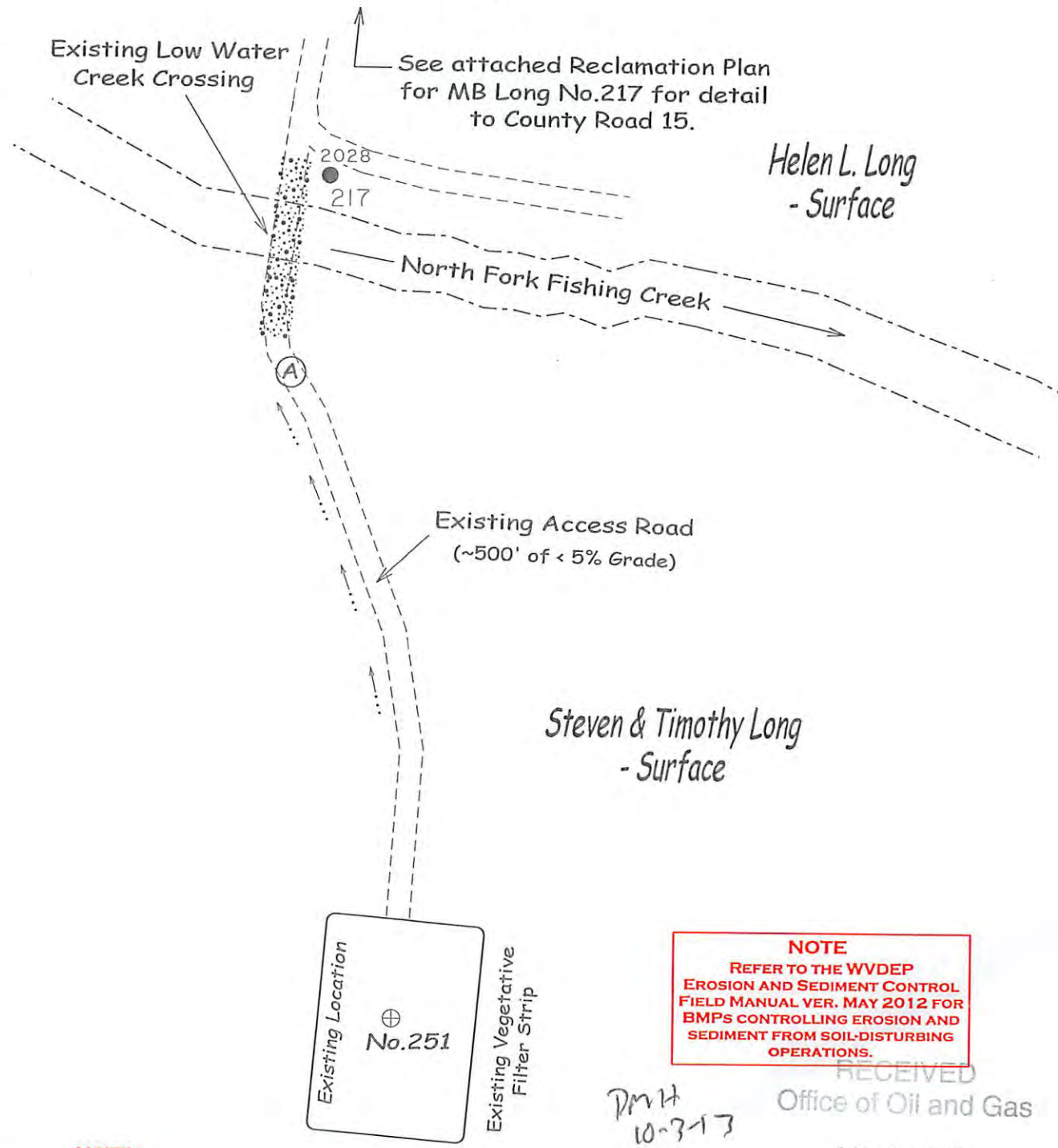
- Requested permit is for drilling of new well.
- Access road from Co. Rd. 15 to proposed location is existing. (Maintain road and drainage structures)
- Scalp topsoil and stockpile for re-dressing location during reclamation.
- All disturbed areas will be re-vegetated as outlined on Form WW-9.
- All road grades <5% except as noted.
- Location of drill pit may be changed based on as-built considerations.



Note: Drawing not to Scale

# Revised Reclamation Plan For: Mary B. Long No.251

47-103-2175



**NOTE**  
REFER TO THE WVDEP  
EROSION AND SEDIMENT CONTROL  
FIELD MANUAL VER. MAY 2012 FOR  
BMPs CONTROLLING EROSION AND  
SEDIMENT FROM SOIL-DISTURBING  
OPERATIONS.

RECEIVED  
Office of Oil and Gas  
OCT 07 2013

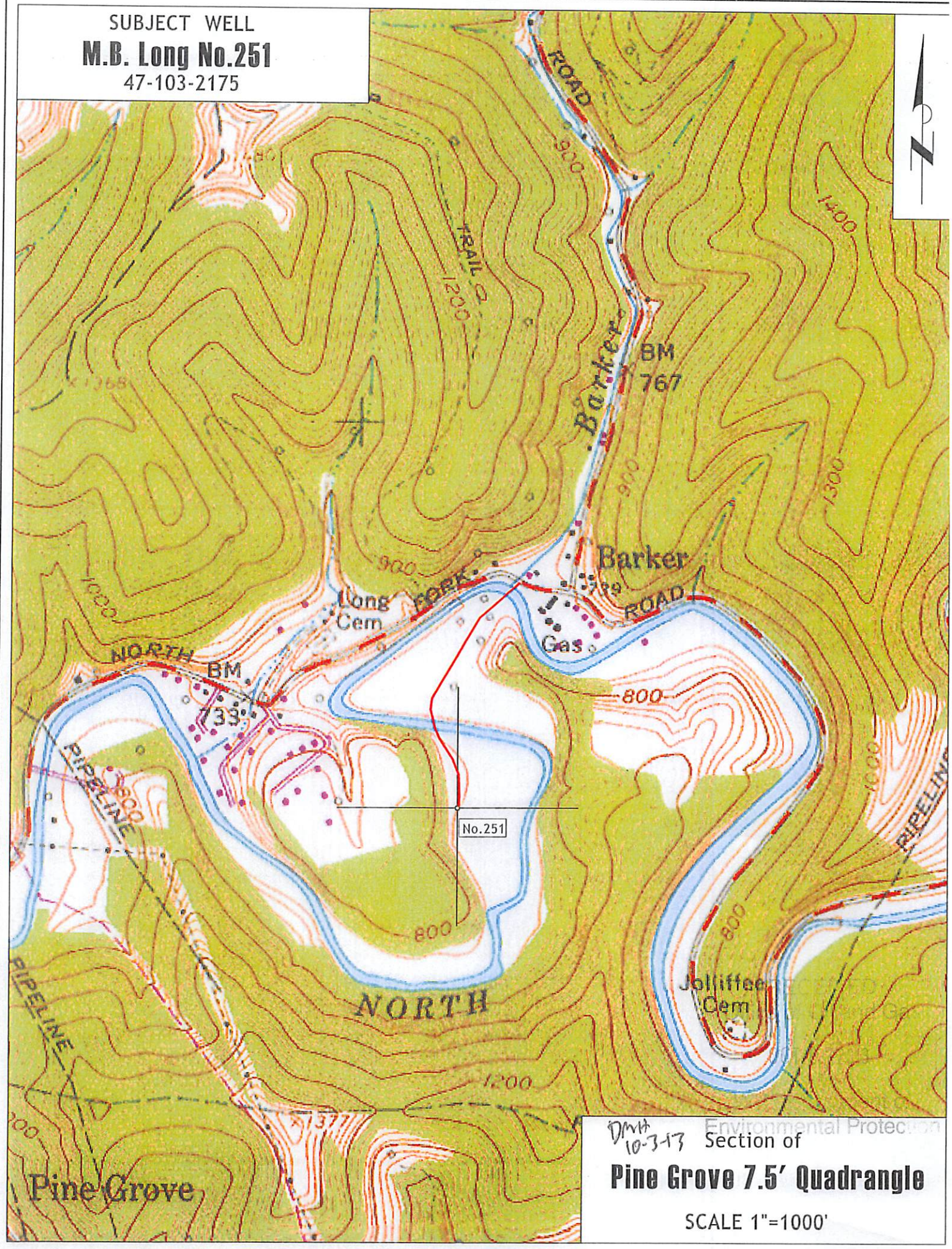
Permit  
10-3-13

**NOTE:**  
WELL LOCATION WAS BUILT AND RECLAIMED UNDER  
DRILLING PERMIT No.47-103-2175. ONLY MINIMAL  
EARTHWORK WILL BE REQUIRED FOR PROPOSED WELL  
WORK. ALL DISTURBED AREAS WILL BE RE-VEGETATED  
AS PER THE SEEDING PLAN ON FORM WW-9. NO WORK-  
OVER PIT WILL BE REQUIRED FOR PROPOSED WELL WORK.

- Notes: WV Department of  
Environmental Protection
- Requested permit is for conversion of existing well.
  - Access from County Road to well location is existing. Structures will be maintained.
  - All disturbed areas will be re-vegetated as outlined on Form WW-9.
  - Maintain sediment barriers and drainage structures.
  - All road grades <5% except as noted.

Note: Drawing not to Scale

SUBJECT WELL  
**M.B. Long No.251**  
47-103-2175



DMH  
10-3-13 Environmental Protection  
Section of  
**Pine Grove 7.5' Quadrangle**  
SCALE 1"=1000'

Longitude - 80° 39' 49.9"

10,950'

LATITUDE 39° 35' 00"

LONGITUDE 80° 37' 30"

Latitude - 39° 34' 28.5"



**UTM Coordinates**  
 NAD 1983 (m.)  
 N - 4,380,604 m.  
 E - 528,885 m.

**PLAT NOTES**

- The drawing shown hereon is from the original drilling permit plat dated 4-15-2006.
- This plat has been updated to show current surface ownership and as-drilled Latitude & Longitude.
- Latitude & Longitude shown were measured by DGPS - Sub-Meter Mapping Grade (NAD 1927)

**NOTES ON SURVEY**

- 1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Zone 17 North (NAD 1927).
- 2 - Property line calls established by field surveys conducted in 1996 and are referenced to Astronomic North.
- 3 - Surface owners and adjoiners information obtained from the Wetzel County Assessor's tax records.

(H) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. 1041-29  
 MAP NO. N68 N 11 S E W 2  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY \_\_\_\_\_  
 PROVEN SOURCE OF ELEVATION DGPS Survey

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT 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 DEPARTMENT OF MINES.

(SIGNED) *Timothy P. Roush*  
 TIMOTHY P. ROUSH PS 793



WEST VIRGINIA  
 Division of Environmental Protection  
 Office of Oil and Gas  
 601 57th Street  
 Charleston, West Virginia 25304



DATE September 4, 2013  
 FARM Mary B. Long No.251  
 API WELL NO. 47-103-02175 RS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 733' WATERSHED North Fork of Fishing Creek  
 DISTRICT Grant COUNTY Wetzel  
 QUADRANGLE Pine Grove 7.5'  
 SURFACE OWNER Steven & Timothy Long ACREAGE 97.26 Ac.  
 OIL & GAS ROYALTY OWNER Helen L. Long et al. LEASE ACREAGE 200 Ac.  
 LEASE NO. 24891-50  
 PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Convert to Liquid Injection  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG   
 TARGET FORMATION Gordon ESTIMATED DEPTH 2,840'  
 WELL OPERATOR HG Energy, LLC DESIGNATED AGENT Mike Kirsch  
 ADDRESS 5260 Dupont Road Parkersburg, WV 26101 ADDRESS 5260 Dupont Road Parkersburg, WV 26101

FORM IV-6



**HG Energy, LLC**  
5260 Dupont Road  
Parkersburg, WV 26101  
(304) 420-1100 - Office  
(304) 863-3172 - Fax

September 16, 2013

Mr. Jeff McLaughlin  
WVDEP  
Division of Oil & Gas  
601 57<sup>th</sup> Street  
Charleston, West Virginia 25304

RE: Mary B. Long No. 251 (API 47-103-2175)  
Grant District, Wetzel County  
West Virginia

Dear Mr. McLaughlin:

Enclosed are the Forms WW-3A, WW-3B, WW-9, WW-2(B1), mylar of plat, reclamation plan, topo map and copy of the certified mailing receipt for a permit to convert the above-captioned shallow, producing well to an injection well. Our check in the amount of \$650 is attached.

If you have any questions regarding this application, please call me at 304-420-1119 or email at [dwhite@hgenergyllc.com](mailto:dwhite@hgenergyllc.com).

Very truly yours,

*Diane C White*

Diane C. White

Enclosures

cc: Steve & Timothy Long – Certified  
Derek Haught - Inspector

#240  
65000  
#2386 - missing  
9/17/13 \$650.00