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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

November 04, 2013


**WELL WORK PERMIT**  
**Secondary Recovery Well**

This permit, API Well Number: 47-10301945, 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: C. C. PENNICK 51  
Farm Name: WV PUBLIC LANDS CORP.  
**API Well Number: 47-10301945**  
**Permit Type: Secondary Recovery Well**  
Date Issued: 11/04/2013

**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.

### CONDITIONS

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1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. 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.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. If well work related activities require the use of water obtained by withdrawals from waters of this state in amounts that exceed two hundred ten thousand gallons during any thirty day period, the operator is required to consult, and adhere to, the guidance provided by DEP's Water Withdrawal Guidance Tool prior to any water withdrawals.

103619459

WW-3B  
10/07



1) Date August 1, 2013  
 2) Operator's Well No. C. C. Pennick No. 51  
 3) API Well No. 47 - 103 - 1945  
                                 State      County      Permit  
 4) UIC Permit No. UIC2R09501AP

**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 X      Gas Injection (not storage) \_\_\_\_\_      Waste Disposal \_\_\_\_\_
- 6) LOCATION:      Elevation 1090'      Watershed Piney Fork  
                         District Green      County Wetzel      Quadrangle Centerpoint 7.5'
- 7) WELL OPERATOR: HG Energy, LLC      494497948      8) DESIGNATED AGENT: Mike Kirsch  
                         5260 Dupont Road      5260 Dupont Road  
                         Parkersburg, WV 26101      Parkersburg, WV 26101
- 9) OIL & GAS INSPECTOR TO BE NOTIFIED:      10) DRILLING CONTRACTOR:  
                         Name Derek Haught      Name To Be Determined Upon Permit Approval  
                         Address PO Box 85      Address \_\_\_\_\_  
                         Smithville, WV 26178
- 11) PROPOSED WELL WORK:      Drill \_\_\_\_\_      Drill Deeper \_\_\_\_\_      Redrill \_\_\_\_\_      Stimulate \_\_\_\_\_  
   Plug Off Old Formation \_\_\_\_\_      Perforate New Formation \_\_\_\_\_      Convert X  
   Other Physical Change in Well (specify) \_\_\_\_\_
- 12) Geological target formation Gordon      Depth 2,982 Ft. (Top) to 3,010 Ft. (Bottom)
- 13) Estimated depth of completed well (or actual depth of existing well) 3119' Ft.
- 14) Approximate water strata depths:      Fresh 150' Ft.      Salt 2100' Ft.
- 15) Approximate coal seam depths: 879' Ft.
- 16) Is coal being mined in the area?      Yes \_\_\_\_\_      X \_\_\_\_\_      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

PMH  
8-12-13

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		1198'	1198'	Use Existing Casing	Tension
Coal									Sizes
Intermediate									2.375" x 4.5"
Production	4 1/2"	J-55	10.5#	X		3103'	3103'	Use Existing Casing	Depths Set
Tubing	2 3/8"	J-55	4.6#	X		2880'	2880'		2780'
Liners									Perforations
									Top Bottom

24) APPLICANTS OPERATING RIGHTS were acquired from M.H. & C.C. Pennick  
 by Deed \_\_\_\_\_ Lease X Other Contract \_\_\_\_\_ Dated September 24, 1895  
                         Wetzel County Clerk's Office in Lease Book 47 at Page 214

RECEIVED  
 Office of Oil and Gas

SEP 26 2013



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

Well Operator's Report of Well Work

Farm name: WV PUBLIC LANDS CORP Operator Well No.: PENNICK 51  
LOCATION: Elevation: 1,090.00 Quadrangle: CENTERPOINT 7.5  
District: GREEN County: WETZEL  
Latitude: 5,375 Feet south of 39 Deg 30 Min 30 Sec.  
Longitude: 2,275 Feet west of 80 Deg 40 Min 00 Sec.

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

Agent: PHILIP S. ONDRUSEK

Inspector: MIKE UNDERWOOD

Permit Issued: 04/24/03  
Well work Commenced: 08/02/03  
Well work Completed: 08/22/03

Verbal plugging permission granted on:  
Rotary X Cable \_\_\_\_\_ Rig \_\_\_\_\_  
Total Depth (feet) 3,119  
Fresh water depths (ft) 550

Salt water depths (ft) NA

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

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size			
7"	1198.10'	1198.10'	325 sks
4 1/2"	3103.05'	3103.05'	150. sks

OPEN FLOW DATA WATERFLOOD PRODUCER

Producing formation Gordon Pay zone depth (ft) 2982'-3010'  
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 \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_  
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: [Signature] Office of Oil and Gas  
Date: 12/14/05 SEP 26 2013

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**Treatment :**

treated perforations 2982'-3010' with 250 gals 15% HCL, 281 bbls cross linked gel and 19,900 # 20/40 sand

**Well Log :**

0	110	Sand and Shale
110	142	Sand
142	741	Shale
741	791	sand
791	1016	Shale
1016	1036	sand
1036	1309	Shale
1309	1318	sand
1318	1515	Shale
1515	1564	sand
1564	1578	Shale
1578	1646	sand
1646	1814	Shale
1814	1828	sand
1828	1915	Shale
1915	1950	sand
1950	2121	Shale
2121	2242	Big Lime
2242	2386	Big Injun
2386	2957	Shale
2957	2978	Gordon Stray
2978	3010	Gordon
3010	3119	Shale
3119		TD

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WW-2B1

Well No. C. C. Pennick No. 51

West Virginia Department of Environmental Protection  
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing, The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

If no water well or spring is located within 1000 feet, the Chief may require the operator to sample and analyze water from a water well or spring within 2000 feet of the proposed well site.

Be advised, you have the right to sample and analyze any water supply at your own expense.

The laboratory used by the operator to analyze the samples will be approved by the Chief. The operator named below has decided to use the following laboratory to analyze the water samples:

Contractor Name Sturm Environmental Services  
 Well operator's private laboratory

Well Operator HG Energy, LLC  
Address 5260 Dupont Road  
Parkersburg, WV 26101  
  
Telephone 304-420-1119

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underlining which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site please indicate such.

No known Water Supply Sources are located within 2000' of proposed well. Office of Oil and Gas

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Environmental Protection

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 Piney Fork Quadrangle Centerpoint 7.5'

Elevation 1090' County Wetzel District Green

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? No 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        )

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

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

Additives to be used?       

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       

- 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

Subscribed and sworn before me this 1 day of August 2013

Tina L Pethel Notary Public

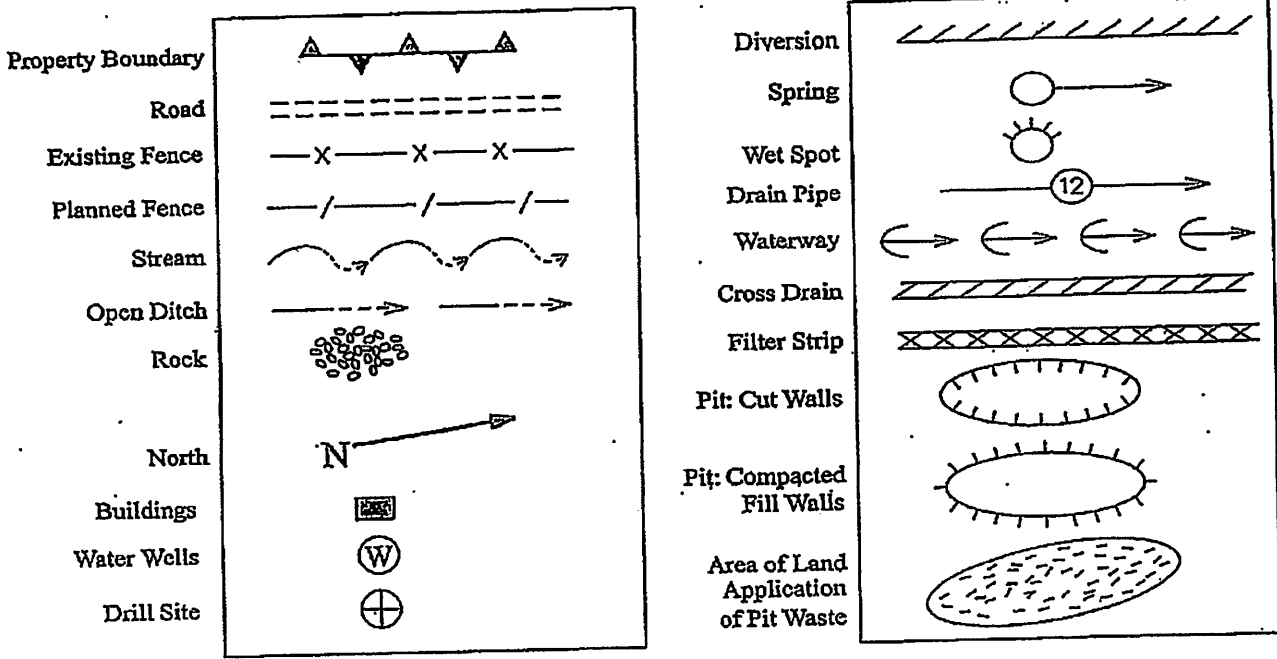
My commission expires Nov 12, 2018



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Department of  
Environmental Protection



Legend



Proposed Revegetation Treatment: Acres Disturbed Area I Approx. 0.3 Ac. Prevegetation pH \_\_\_\_\_

Area II Approx. 0.2 Ac.

Lime 2 Tons/Acre or Correct to pH 6.5  
 Fertilizer (10-20-20 or Equivalent) 500 Lbs./Acre (500 lbs. Minimum)  
 Mulch Straw 2 Tons/Acre

SEED MIXTURES

<u>Area I (Location)</u>	
Seed Type	Lbs./Ac.
Tall Fescue	40
Ladino Clover	5

<u>Area II (Road)</u>	
Seed Type	Lbs./Ac.
Tall Fescue	40
Ladino Clover	5

Attach:  
 Drawing(s) of road, location, pit and proposed area for land application  
 Photocopied section of involved 7.5' topographic sheet.

**Received**

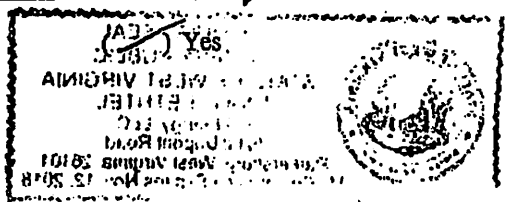
SEP 26 2013

Office of Oil and Gas  
 WV Dept. of Environmental Protection

Plan approved by: [Signature]  
 Comments: \_\_\_\_\_

Title: Oil + Gas Inspector Date: 8-12-17

Field Reviewed?



( ) No

103019455

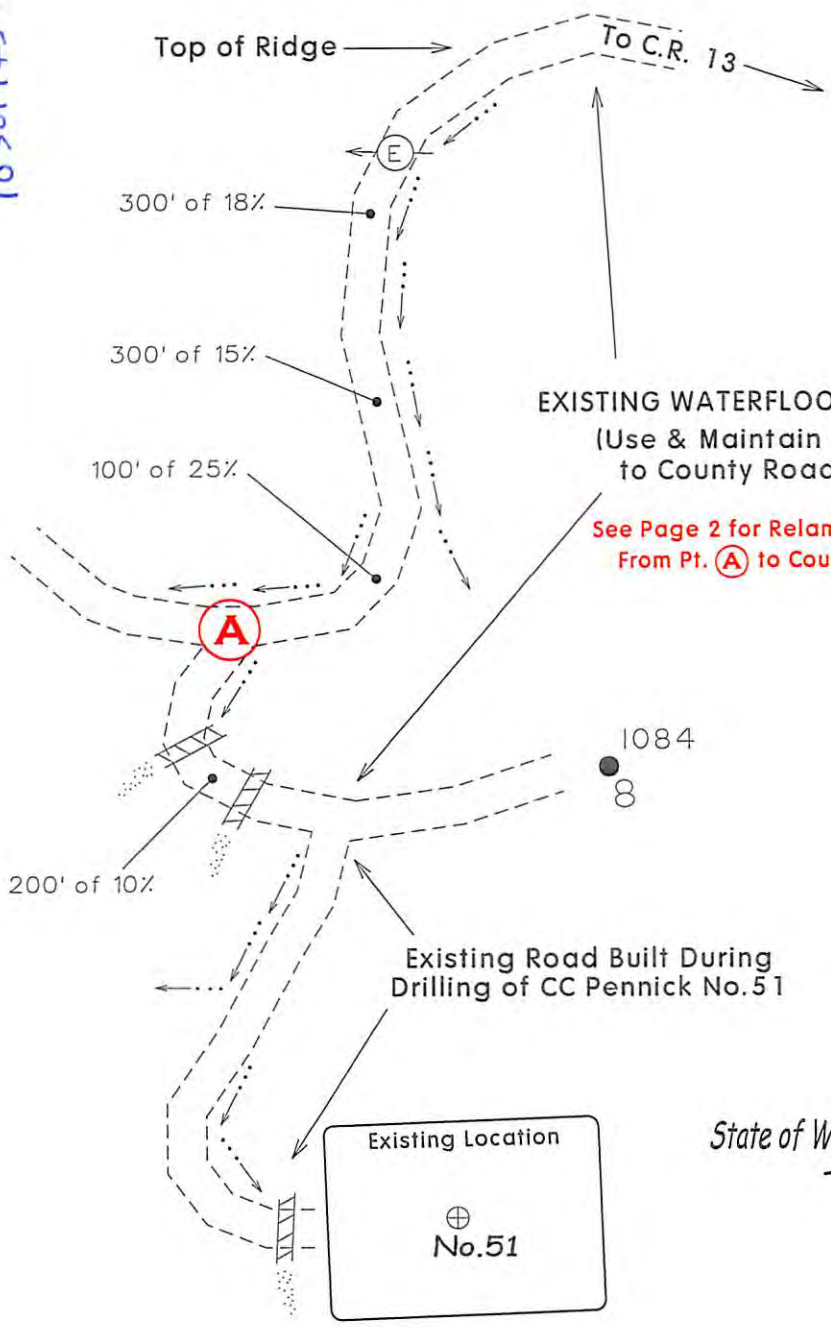
# Reclamation Plan For: C.C. Pennick No.51

47-103-1945

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SEP 26 2013

WV Department of  
Environmental Protection



See Page 2 for Relamation Plan  
From Pt. **A** to County Road

**NOTE:**  
WELL LOCATION WAS BUILT AND RECLAIMED UNDER DRILLING PERMIT No.47-103-1945. 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 PIT WILL BE REQUIRED FOR PROPOSED WELL WORK.

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

State of WV Public Land Corp.  
- Surface

Existing Vegetative  
Filter Strip

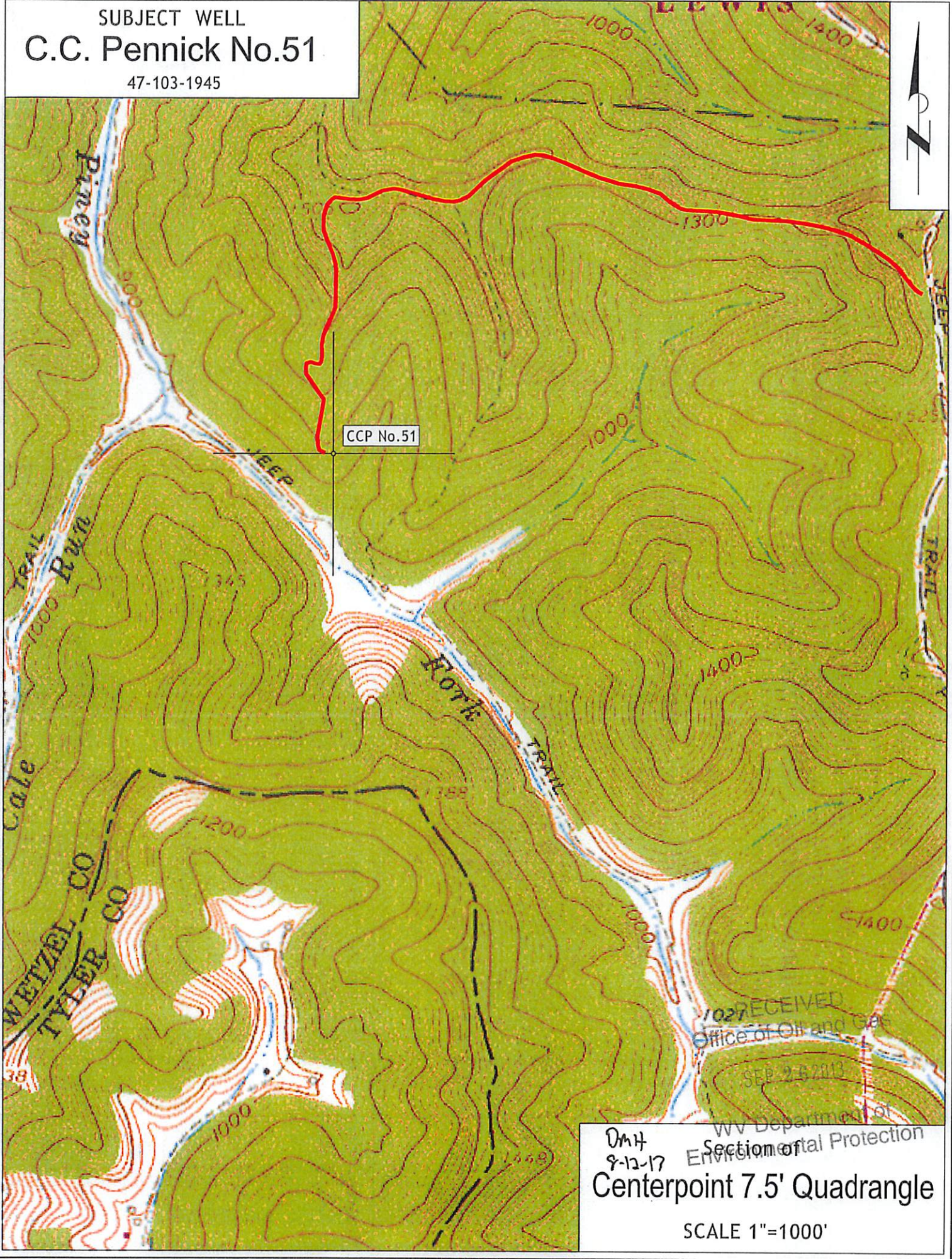
DmH  
8-12-13

Note: Drawing not to Scale

Notes:

- Requested permit is for workover 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.

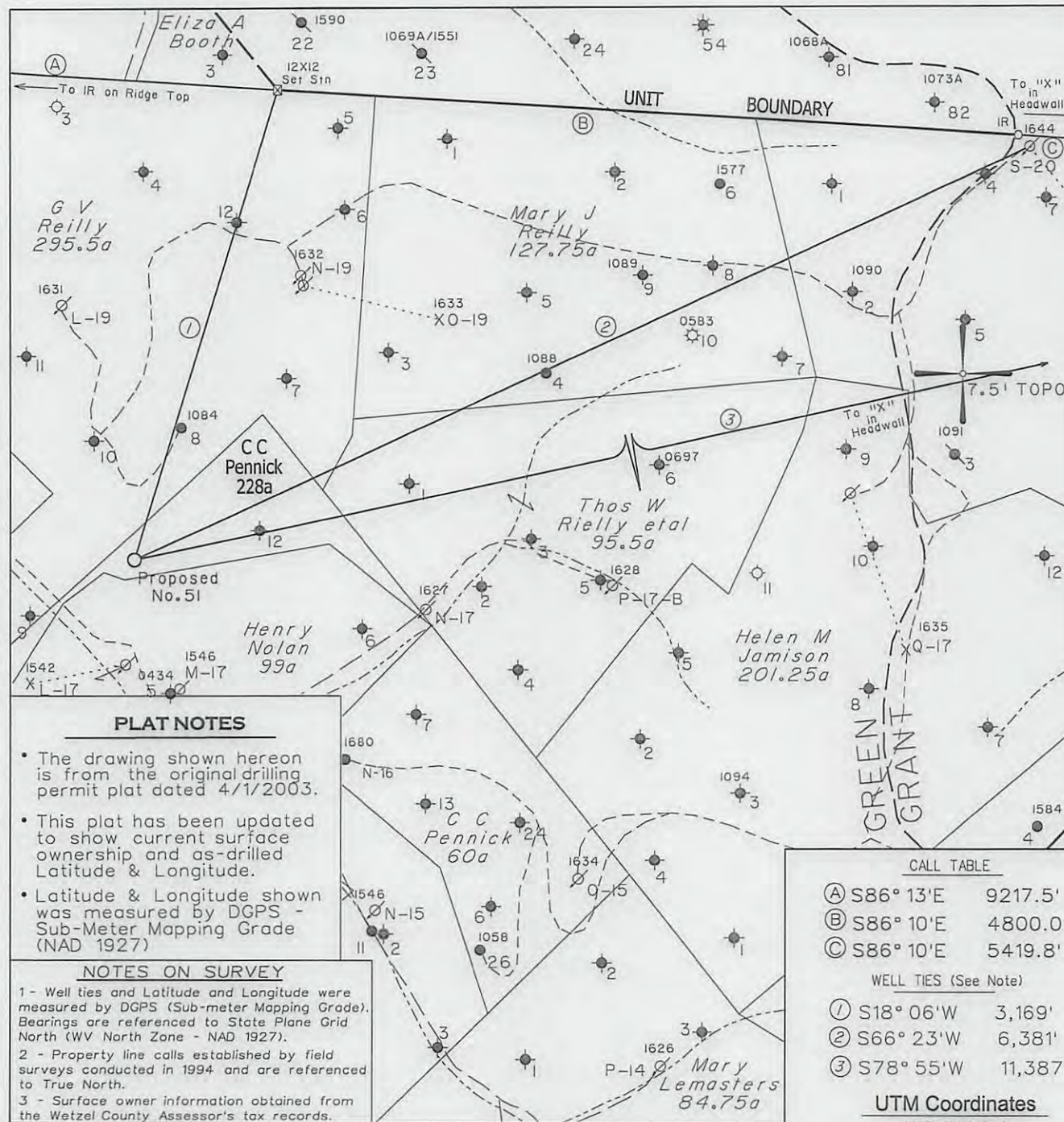
SUBJECT WELL  
**C.C. Pennick No.51**  
47-103-1945



CCP No.51

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SEP 23 2013

DMH  
8-12-17  
WV Department of Environmental Protection  
Centerpoint 7.5' Quadrangle  
SCALE 1"=1000'



**PLAT NOTES**

- The drawing shown hereon is from the original drilling permit plat dated 4/1/2003.
- This plat has been updated to show current surface ownership and as-drilled Latitude & Longitude.
- Latitude & Longitude shown was 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 State Plane Grid North (WV North Zone - NAD 1927).
- 2 - Property line calls established by field surveys conducted in 1994 and are referenced to True North.
- 3 - Surface owner information obtained from the Wetzel County Assessor's tax records.

**CALL TABLE**

- (A) S86° 13'E 9217.5'
- (B) S86° 10'E 4800.0'
- (C) S86° 10'E 5419.8'

**WELL TIES (See Note)**

- (1) S18° 06'W 3,169'
- (2) S66° 23'W 6,381'
- (3) S78° 55'W 11,387'

**UTM Coordinates**

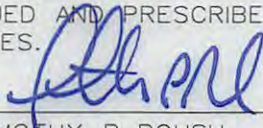
NAD 1983 (m.)  
N - 4,370,680 m.  
E - 527,990 m.

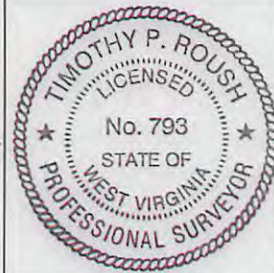
NOTE: No known water supply sources are located within 1000' of proposed well. (H) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

Denotes Water Supply Source.

FILE NO. 1037-74  
MAP NO. \_\_\_\_\_ N \_\_\_\_\_ S \_\_\_\_\_ E \_\_\_\_\_ W \_\_\_\_\_  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY \_\_\_\_\_ Sub-Meter  
PROVEN SOURCE OF ELEVATION \_\_\_\_\_ DGPS Survey (Sub-Meter Mapping Grade)

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 PS 793



**WEST VIRGINIA**

Division of Environmental Protection  
Office of Oil and Gas  
601 57th Street  
Charleston, West Virginia 25301



DATE July 31, 2013  
FARM C.C. Pennick NO. 51  
API WELL NO. 47-103-01945 S

WELL TYPE: OIL \_\_\_\_\_ GAS \_\_\_\_\_ LIQUID INJECTION  WASTE DISPOSAL \_\_\_\_\_  
(IF "GAS") PRODUCTION \_\_\_\_\_ STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW \_\_\_\_\_

LOCATION: ELEVATION 1,090' WATERSHED Piney Fork  
DISTRICT Green COUNTY Wetzel  
QUADRANGLE Centerpoint 7.5'

SURFACE OWNER W.Va. Public Lands Corp. ACREAGE 228 Ac.

OIL & GAS ROYALTY OWNER HG Energy, LLC et al. LEASE ACREAGE \_\_\_\_\_

LEASE NO. \_\_\_\_\_

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 3,119'

WELL OPERATOR HG Energy LLC. DESIGNATED AGENT Mike Kirsch  
ADDRESS 5260 Dupont Road ADDRESS 5260 Dupont Road  
Parkersburg, WV 26101 Parkersburg, WV 26101



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

103019455

CK#2331 \$550<sup>00</sup>

August 1, 2013

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

RE: C. C. Pennick No. 51 (API 47-103-1945)  
Green 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 \$550 is attached.

If you have any questions regarding this application, please call me at 304-420-1119.

Very truly yours,

*Diane C White*

Diane C. White

Enclosures

cc: WV Public Lands Corporation – Certified  
Department of Natural Resources – Certified  
Derek Haught - Inspector

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Office of Oil and Gas

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WV Department of  
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