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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**

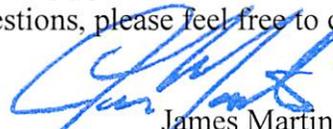
**Rework-Secondary Recovery**

This permit, API Well Number: 47-10301658, 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 G-15  
Farm Name: WV PUBLIC LANDS CO.

**API Well Number: 47-10301658**

**Permit Type: Rework-Secondary Recovery**

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.

10301658RS

WW-3B  
10/07



1) Date July 25, 2013  
2) Operator's Well No. C. C. Pennick No. G-15  
3) API Well No. 47 - 103 - 1658  
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  Gas Injection (not storage) \_\_\_\_\_ Waste Disposal \_\_\_\_\_
- 6) LOCATION: Elevation 1295' Watershed Fluharty Fork  
District Green County Wetzel Quadrangle Centerpoint 7.5'
- 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 3,142 Ft. (Top) to 3,206 Ft. (Bottom)
- 13) Estimated depth of completed well (or actual depth of existing well) 3371' Ft.
- 14) Approximate water strata depths: Fresh 600 Ft. Salt 1,626 Ft.
- 15) Approximate coal seam depths: 1115 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 \_\_\_\_\_

DMH  
8-12-13

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	8 5/8"	LS	20#	X		528'	528'	Use Existing Casing	Tension
Coal									Sizes
Intermediate	4 1/2"	J-55	10.5#	X		3276'	3276'	Use Existing Casing	
Production	2 7/8"	J-55	6.4#	X		3343.80'	3343.80'	Use Existing Casing	Depths Set
Tubing									
Liners									Perforations
									Top Bottom

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

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

Well Operator's Report of Well Work

*Copy*

Farm name: WV PUBLIC LANDS CORP.

Operator Well No.: C C PENNICK G-15

LOCATION: Elevation: 1,295.00

Quadrangle: CENTERPOINT 7.5'

District: GREEN

County: WETZEL

Latitude: 7,625 Feet south of

39 Deg 30 Min 0 Sec.

Longitude: 7,900 Feet west of

80 Deg 40 Min 30 Sec.

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

Agent: MICHAEL MCCOWN

Inspector: MIKE UNDERWOOD

Permit Issued: 07/08/03

Well work Commenced: 10/03/03

Well work Completed: 11/07/03

Verbal plugging permission granted on:

Rotary X Cable \_\_\_\_\_ Rig \_\_\_\_\_

Total Depth (feet) 3371

Fresh water depths (ft) NA

Salt water depths (ft) NA

Is coal being mined in area (Y/N) N

Coal Depths (ft): NA

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
7"	528.00	528.00	existing
4 1/2"	3276.00'	3276.00'	existing
2 7/8"	3343.80'	3343.80'	50 sks

OPEN FLOW DATA

Waterflood injector directionally drilled to new bottom hole location

Producing formation Gordon Pay zone depth (ft) 3257-3274

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 DETAIL OF GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

SEP 26 2013

For: EAST RESOURCES, INC.

By: [Signature]  
Date: 11/7/03

Office of Oil and Gas  
Environmental Protection

**Treatment :**

Treated perforations 3262'-3273' w/ 250 gals 15% HCL, 294 bbls cross linked gel and 19,800 # 20/40 sand

This well was partially plugged, a whipstock set at 2330', and directionally drilled to a new bottom hole location 433' S 78.6° W of surface location.

**Well Log :**

See original well record	0'	2330'	TVD
Big Lime	2330'	2420'	MD
Big Injun	2420'	2538'	MD
Shale	2538'	3220'	MD
Gordon Stray	3220'	3246'	MD
Shale	3246'	3254'	MD
Gordon	3254'	3274'	MD
Shale	3274'	3371'	MD
TD	3371'		MD



WW-2B1

Well No. C. C. Pennick No. G-15

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

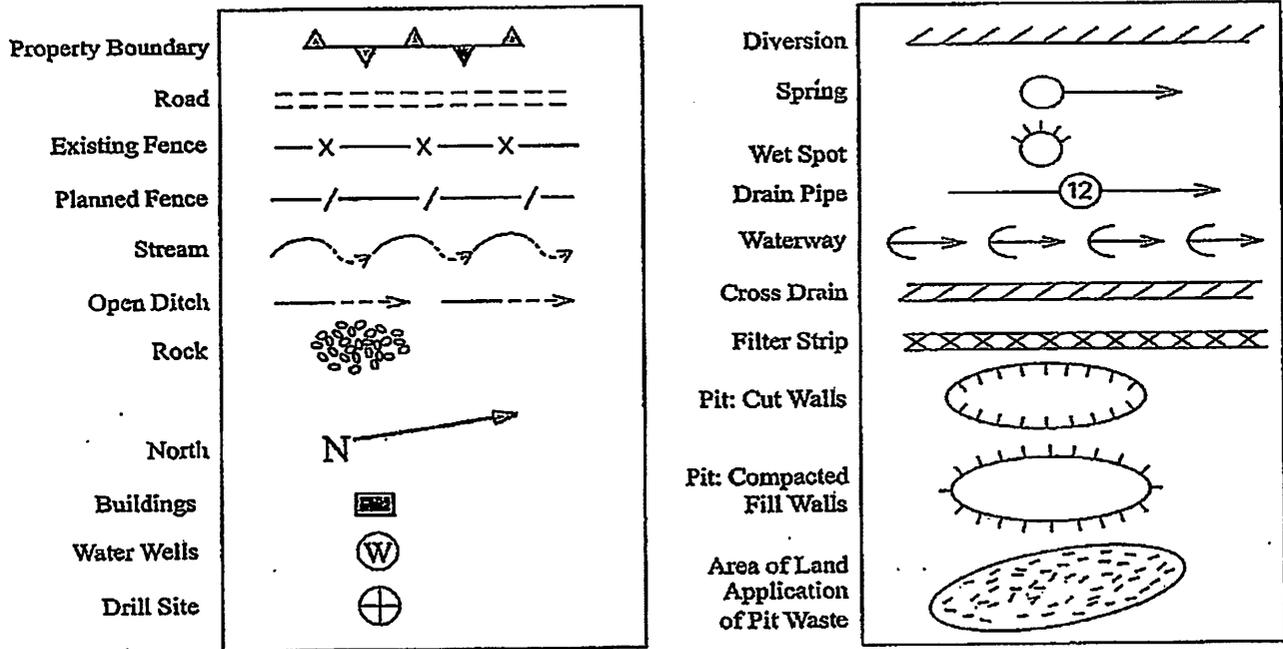
Well Operator HG Energy, LLC  
Address 5260 Dupont Road  
Parkersburg, WV 26101  
  
Telephone 304-420-1119

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.**



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>		<u>Area II (Road)</u>	
Seed Type	Lbs./Ac.	Seed Type	Lbs./Ac.
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  
 Photocopied section of involved 7.5' topographic sheet.

**Received**  
 SEP 26 2013  
 Office of Oil and Gas  
 WVD Dept. of Environmental Protection

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

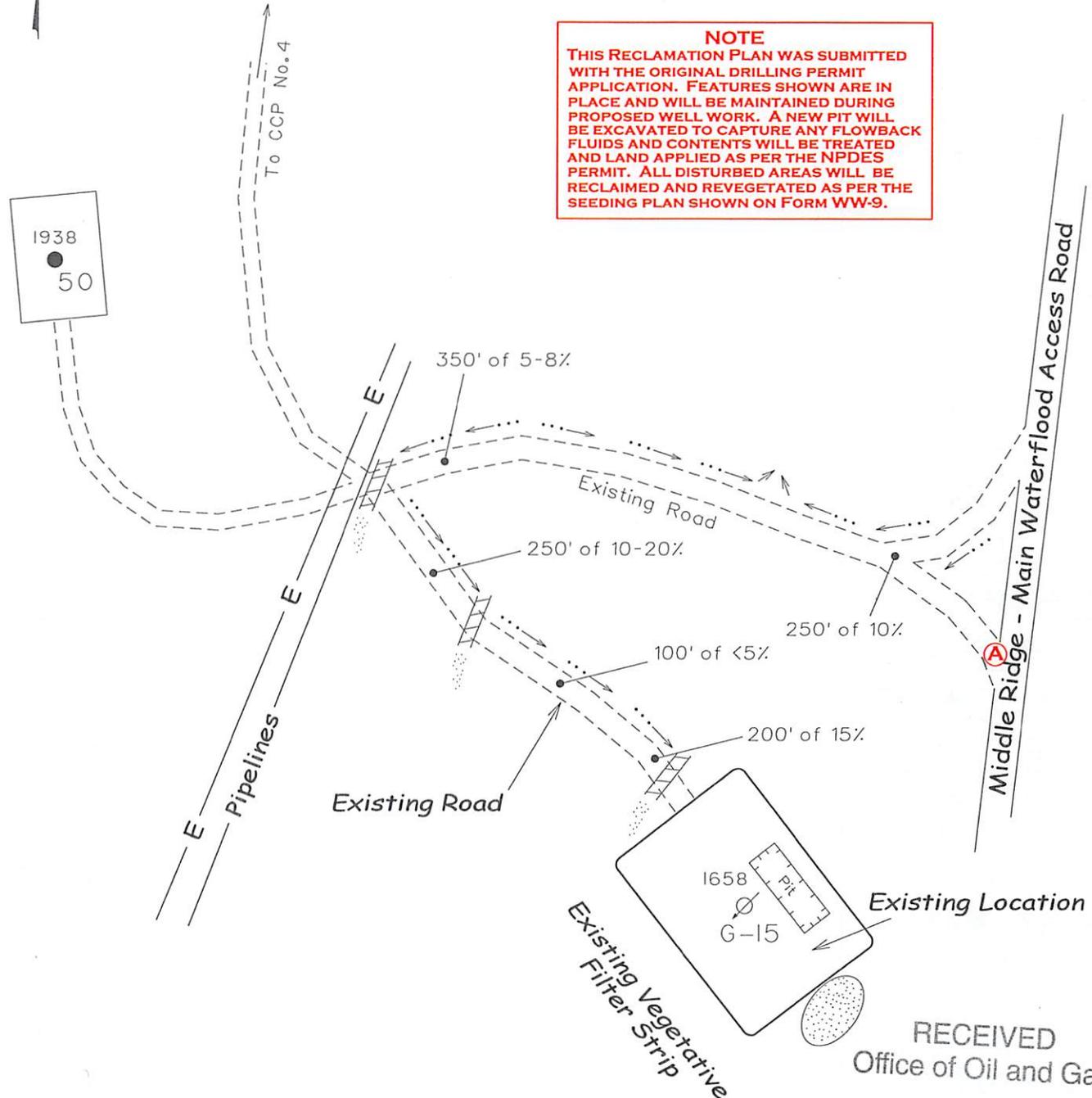
Title: Oil & Gas Inspector Date: 8-12-17

Field Reviewed? (  ) Yes (  ) No

# Reclamation Plan For: C.C. Pennick G-15

47-103-1658

**NOTE**  
THIS RECLAMATION PLAN WAS SUBMITTED WITH THE ORIGINAL DRILLING PERMIT APPLICATION. FEATURES SHOWN ARE IN PLACE AND WILL BE MAINTAINED DURING PROPOSED WELL WORK. A NEW PIT WILL BE EXCAVATED TO CAPTURE ANY FLOWBACK FLUIDS AND CONTENTS WILL BE TREATED AND LAND APPLIED AS PER THE NPDES PERMIT. ALL DISTURBED AREAS WILL BE RECLAIMED AND REVEGETATED AS PER THE SEEDING PLAN SHOWN ON FORM WW-9.



**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.
- Location of work-over pit may be changed based on as-built considerations.

DmH  
8-12-13

RECEIVED  
Office of Oil and Gas  
SEP 26 2013

WV Department of Environmental Protection  
REFER TO THE WVDEP  
EROSION AND SEDIMENT CONTROL  
FIELD MANUAL VER. MAY 2012 FOR  
BMPs CONTROLLING EROSION AND  
SEDIMENT FROM SOIL-DISTURBING  
OPERATIONS.

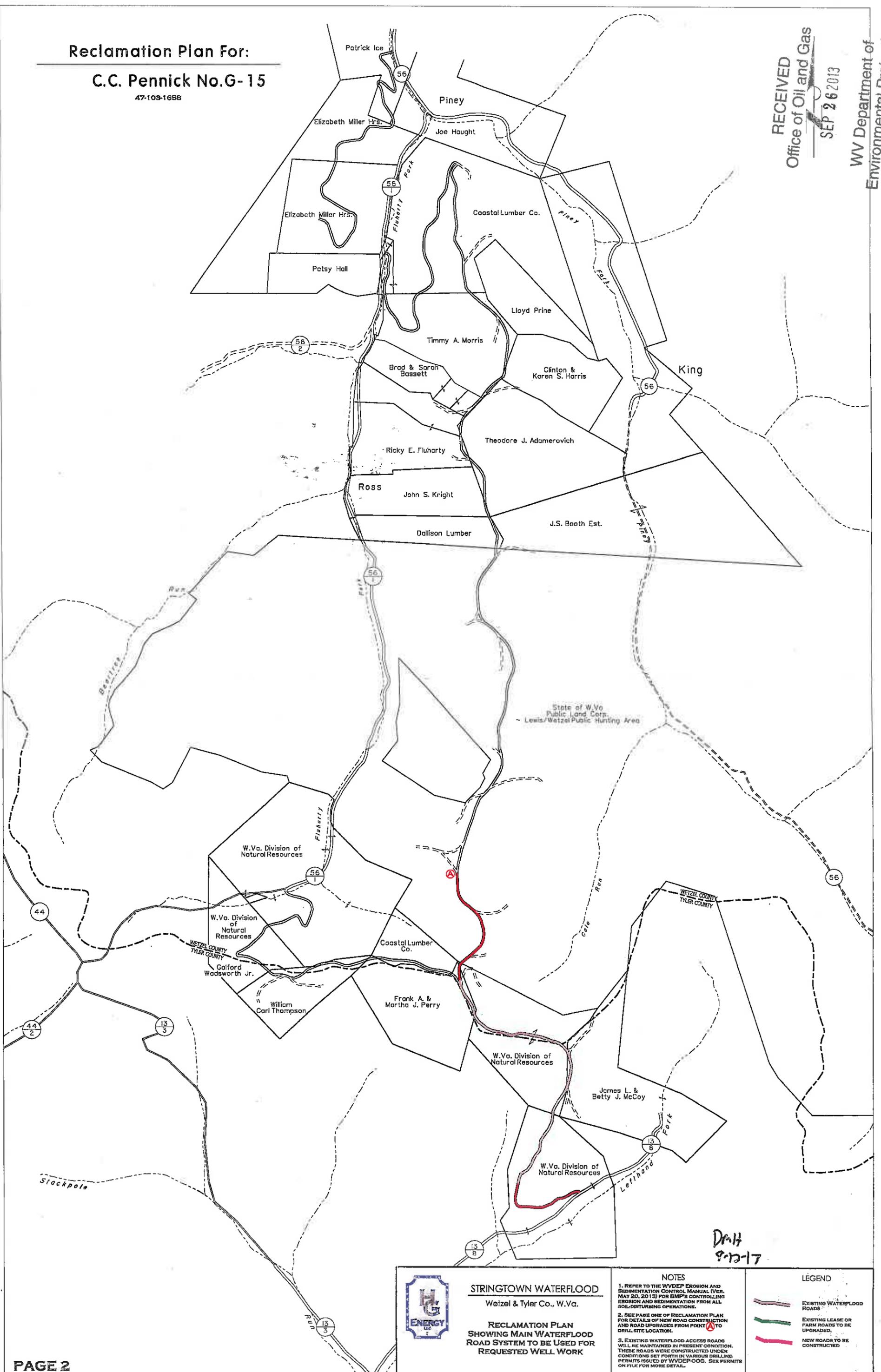
Note: Drawing not to Scale

Reclamation Plan For:  
**C.C. Pennick No.G-15**  
 47-103-1658

RECEIVED  
 Office of Oil and Gas

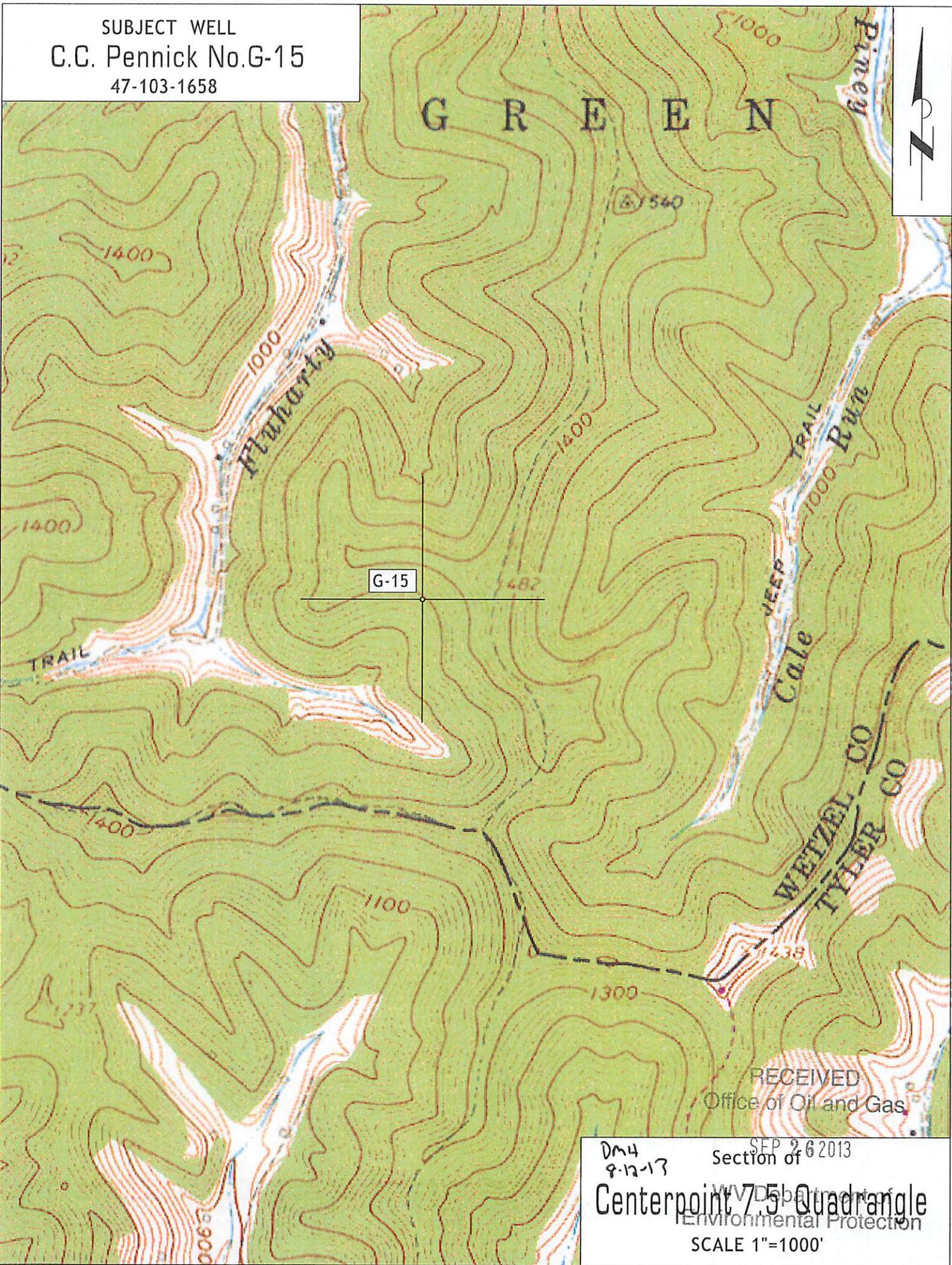
SEP 26 2013

WV Department of  
 Environmental Protection



 <b>ENERGY</b> LLC	<b>STRINGTOWN WATERFLOOD</b> Wetzel & Tyler Co., W.Va.  <b>RECLAMATION PLAN</b> <b>SHOWING MAIN WATERFLOOD</b> <b>ROAD SYSTEM TO BE USED FOR</b> <b>REQUESTED WELL WORK</b>	<b>NOTES</b> 1. REFER TO THE WVDEP EROSION AND SEDIMENTATION CONTROL MANUAL (VER. MAY 20, 2013) FOR EROSION AND SEDIMENTATION CONTROL FROM ALL SOIL-DISTURBING OPERATIONS. 2. SEE PAGE ONE OF RECLAMATION PLAN FOR DETAILS OF NEW ROAD CONSTRUCTION AND ROAD UPGRADES FROM POINT A TO DRILL SITE LOCATION. 3. EXISTING WATERFLOOD ACCESS ROADS WILL BE MAINTAINED IN PRESENT CONDITION. THESE ROADS WERE CONSTRUCTED UNDER CONDITIONS SET FORTH IN VARIOUS DRILLING PERMITS ISSUED BY WVDEP-OGG. SEE PERMITS ON FILE FOR MORE DETAIL.	<b>LEGEND</b>  EXISTING WATERFLOOD ROADS  EXISTING LEASE OR FARM ROADS TO BE UPGRADED  NEW ROADS TO BE CONSTRUCTED
	Draft 9-12-17		10301658R2

SUBJECT WELL  
C.C. Pennick No.G-15  
47-103-1658



DM4  
8-12-13

Section of  
SEP 26 2013  
WVD Department of  
Environmental Protection  
SCALE 1"=1000'

NOTES ON SURVEY

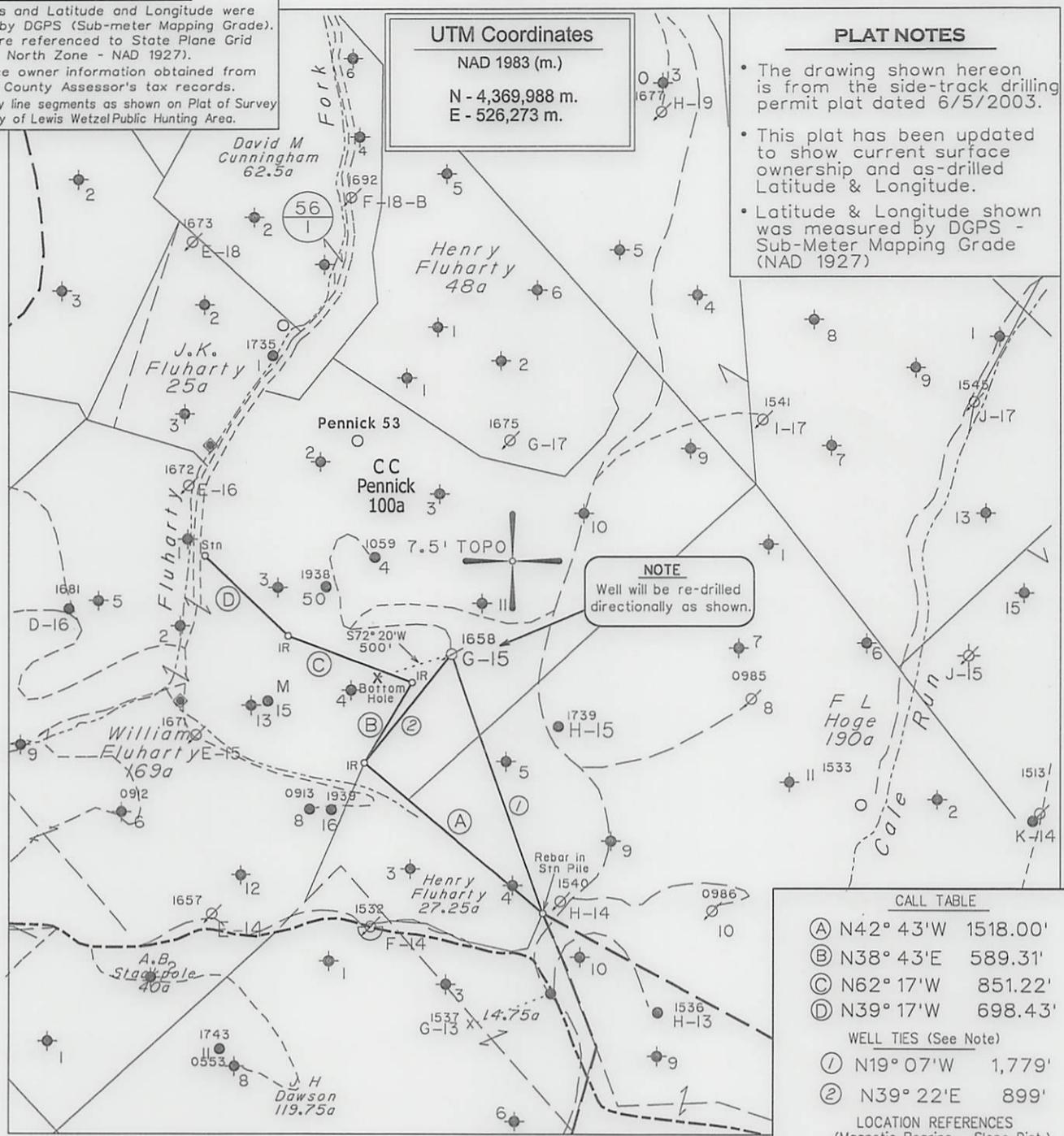
- 1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to State Plane Grid North (WV North Zone - NAD 1927).
- 2 - Surface owner information obtained from the Wetzel County Assessor's tax records.
- 3 - Property line segments as shown on Plat of Survey by W.P. Foley of Lewis Wetzel Public Hunting Area.

UTM Coordinates

NAD 1983 (m.)  
 N - 4,369,988 m.  
 E - 526,273 m.

PLAT NOTES

- The drawing shown hereon is from the side-track drilling permit plat dated 6/5/2003.
- 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)



**NOTE**  
 Well will be re-drilled directionally as shown.

CALL TABLE

(A)	N42° 43'W	1518.00'
(B)	N38° 43'E	589.31'
(C)	N62° 17'W	851.22'
(D)	N39° 17'W	698.43'

WELL TIES (See Note)

(1)	N19° 07'W	1,779'
(2)	N39° 22'E	899'

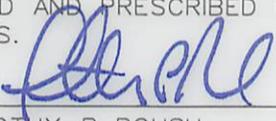
LOCATION REFERENCES  
 (Magnetic Bearing - Slope Dist.)

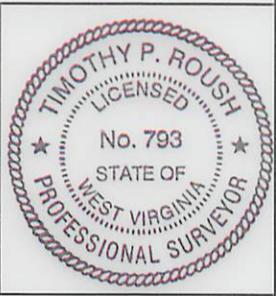
EXISTING WELL

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

FILE NO. \_\_\_\_\_  
 MAP NO. \_\_\_\_\_ N \_\_\_\_\_ S \_\_\_\_\_ E \_\_\_\_\_ W \_\_\_\_\_  
 SCALE \_\_\_\_\_ 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY \_\_\_\_\_  
 PROVEN SOURCE OF ELEVATION \_\_\_\_\_ WVDEP Records

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 25304

July 19, 2013  
 FARM C.C. Pennick NO. G-15  
 API WELL NO. 47-103-01658 RS



WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION  WASTE DISPOSAL \_\_\_  
 (IF "GAS") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_  
 LOCATION: ELEVATION 1,295' WATERSHED Fluharty Fork  
 DISTRICT Green COUNTY Wetzel  
 QUADRANGLE Centerpoint 7.5'  
 SURFACE OWNER W.Va. Public Lands Corp. ACREAGE 100 Ac.  
 OIL & GAS ROYALTY OWNER East Resources, 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) \_\_\_\_\_  
 PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_ 3371  
 TARGET FORMATION Gordon ESTIMATED DEPTH 3,297' MD  
 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

10301658RS

CK#2317 \$650<sup>00</sup>

July 25, 2013

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

RE: C. C. Pennick No. G-15 (47-103-1658)  
Green District, Wetzel County  
West Virginia

Dear Mr. McLaughlin:

Enclosed are Forms WW-3A, WW-3B, WW-9, Mylar of plat, reclamation plan, topo map and copies of the certified mailing receipts for a permit to stimulate the above-captioned liquid injection well. Also enclosed is our check in the amount of \$650.00 to cover the associated permit fees.

Very truly yours,

*Diane C White*

Diane C. White

Enclosures

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

RECEIVED  
Office of Oil and Gas

SEP 26 2013

WV Department of  
Environmental Protection