



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

June 13, 2013

WELL WORK PERMIT
Secondary Recovery Well

This permit, API Well Number: 47-4303464, 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: EPHRAIM GRIFFITH NO. 117
Farm Name: BENDER, JASON ,. ET UX
API Well Number: 47-4303464
Permit Type: Secondary Recovery Well
Date Issued: 06/13/2013

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

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 20 mil thickness synthetic liner.
5. No land application of pit fluids.

WW-3B
10/07



1) Date April 24, 2013
 2) Operator's Well No. Ephraim Griffith No. 117
 3) API Well No. 47 - 043 -
 State County Permit
 4) UIC Permit No. UIC2R04301AP

**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 785' Watershed Porter Fork
 District Duval County Lincoln Quadrangle Griffithsville 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 Ralph Triplett
 Address 5539 McClellan Hwy
Branchland, WV 25506
- 10) DRILLING CONTRACTOR: Name _____
 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 Berea Depth 2,255 Ft. (Top) to 2,276 Ft. (Bottom)
- 13) Estimated depth of completed well (or actual depth of existing well) 2376' Ft.
- 14) Approximate water strata depths: Fresh 150 Ft. Salt 855 Ft.
- 15) Approximate coal seam depths: 215 Ft.
- 16) Is coal being mined in the area? Yes No
- 17) Virgin reservoir pressure in target formation: 1,250 psig. Source Estimated
- 18) Estimated reservoir fracture pressure: 2,650 psig.
- 19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 25 BBL Bottom Hole Pressure 2,400 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" | L.S. | 17# | X | | 315' | 315' | Cement to Surface | Tension |
| Coal | | | | | | | | | Sizes |
| Intermediate | | | | | | | | | <u>2.375" x 4.5"</u> |
| Production | 4 1/2" | J-55 | 10.5# | X | | 2376' | 2376' | 150 sacks | Depths Set |
| Tubing | 2 3/8" | J-55 | 4.6 # | X | | 2075' | 2075' | | 1975' |
| Liners | | | | | | | | | Perforations |
| | | | | | | | | | Top Bottom |

RDT
05/02/13

Received

MAY 10 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

24) APPLICANTS OPERATING RIGHTS were acquired from Ephraim & Nance Griffith
 by Deed _____ Lease Other Contract _____ Dated June 18, 1904 of record in the
Lincoln County Clerk's Office in _____ Book 36 at Page 81

WW-2B1

Well No. Ephraim Griffith No. 117

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.

Received

Special Note:

Water sampling was completed through out the Griffithsville area for the UIC permit review late in 2012. Per Jamie Peterson, WVDEP, the timing of that large UIC sampling was sufficient for this Griffithsville project.

43034645

Operator's Well No. Ephraim Griffith No. 117

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 Porter Fork Quadrangle Griffithsville 7.5' 385
Elevation 785' County Lincoln 43 District Duval 02

Description of anticipated Pit Waste: Fluids encountered in drilling shallow well.

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? Yes If so, what mil.? 10 Mil. 20 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. Air, Fresh Water
- If oilbased, what type? Synthetic, petroleum, etc. NA

Additives to be used? Water, Soap, KCI

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 Native soil, cement, lime
- 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.

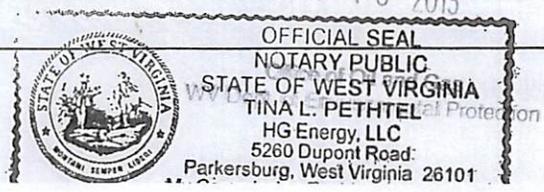
Company Official Signature Diane C White
Company Official (Typed Name) Diane C. White
Company Official Title Accountant

Subscribed and sworn before me this 24 day of Sept 5 2013 **Received**

Tina L. Pethel

Notary Public
MAY 10 2013

My commission expires Nov 12, 2018



WWG, Bark

Legend

| | | | |
|-------------------|--|---------------------------------------|--|
| Property Boundary | | Diversion | |
| Road | | Spring | |
| Existing Fence | | Wet Spot | |
| Planned Fence | | Drain Pipe | |
| Stream | | Waterway | |
| Open Ditch | | Cross Drain | |
| Rock | | Filter Strip | |
| North | | Pit: Cut Walls | |
| Buildings | | Pit: Compacted Fill Walls | |
| Water Wells | | Area of Land Application of Pit Waste | |
| Drill Site | | | |

Proposed Revegetation Treatment: Acres Disturbed Area I Approx. 1.0 Ac. Prevegetation pH _____

Area II Approx. 1.0 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

MAY 10 2013

Plan approved by: Raepl D. Turpell

Office of Oil and Gas
 WV Dept. of Environmental Protection

Comments: _____

Title: District Inspector

Date: May 2, 2013

Field Reviewed? Yes

No

Reclamation Plan For: Ephraim Griffith No. 117

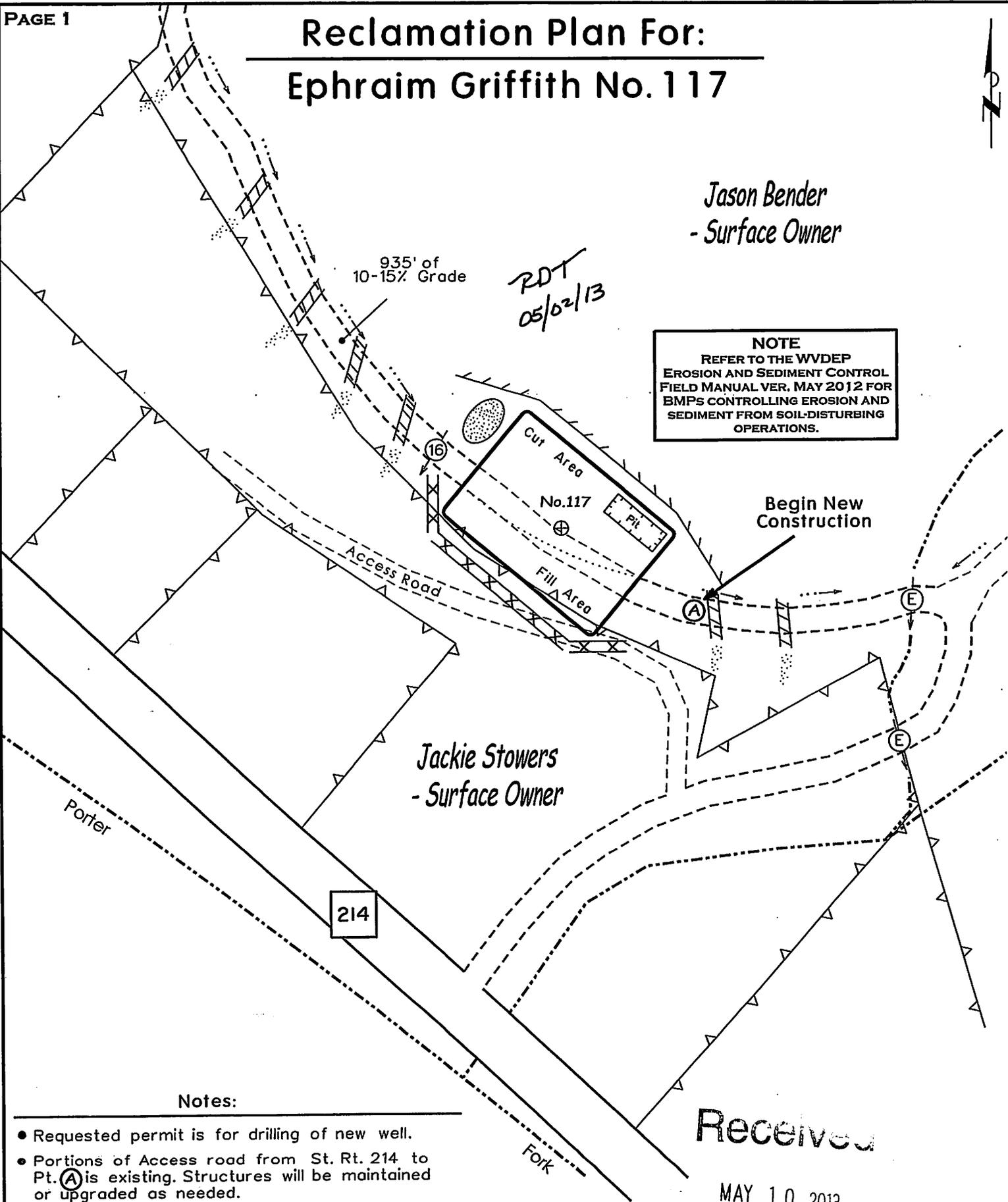


Jason Bender
- Surface Owner

RDT
05/02/13

935' of
10-15% Grade

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



Jackie Stowers
- Surface Owner

Notes:

- Requested permit is for drilling of new well.
- Portions of Access road from St. Rt. 214 to Pt. (A) is existing. Structures will be maintained or upgraded as needed.
- 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 drill pit may be changed based on as-built considerations.

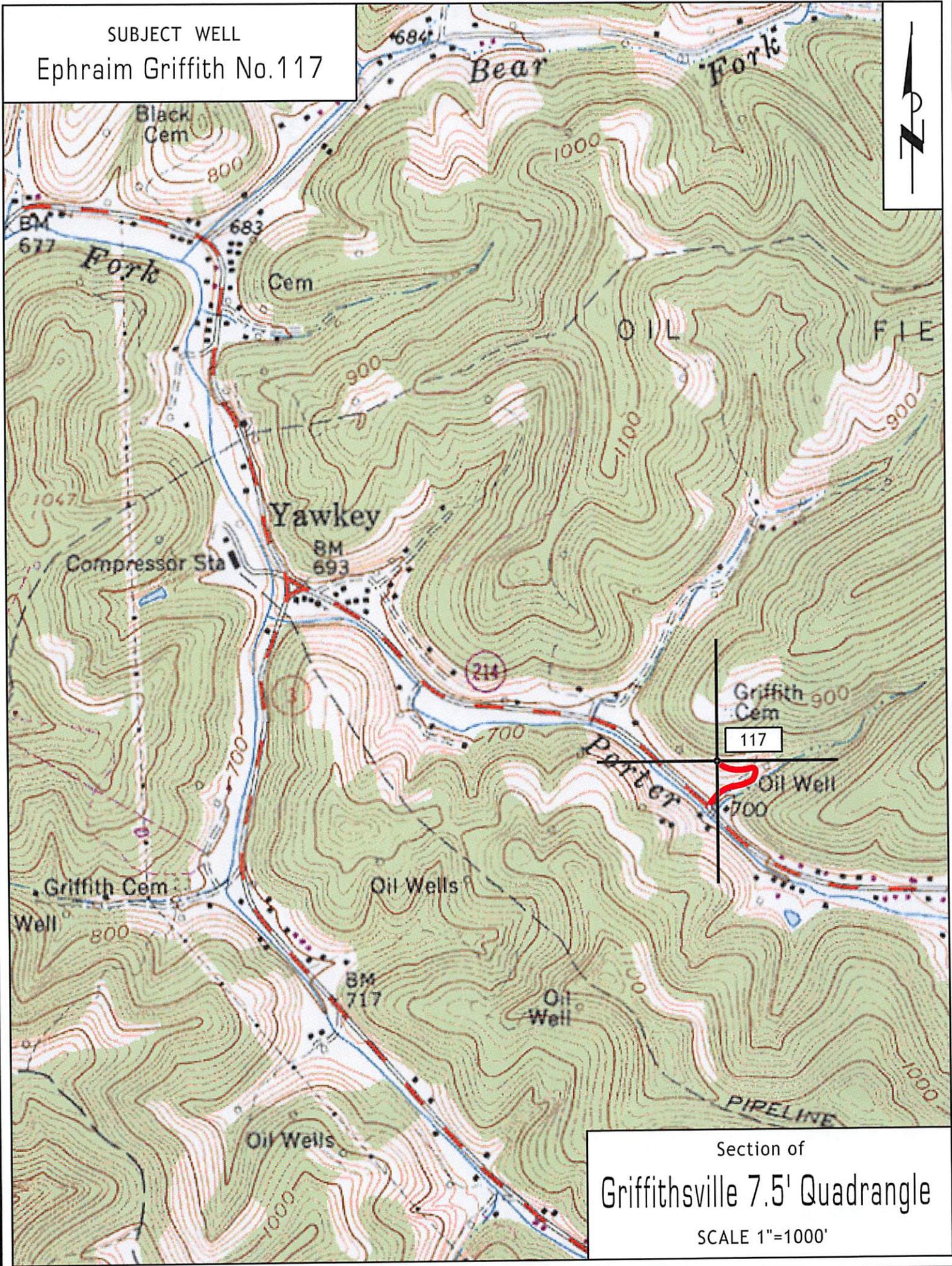
Received

MAY 10 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

Note: Drawing not to Scale

SUBJECT WELL
Ephraim Griffith No.117



Section of
Griffithville 7.5' Quadrangle
SCALE 1"=1000'

Longitude = 81° 57' 10.8"

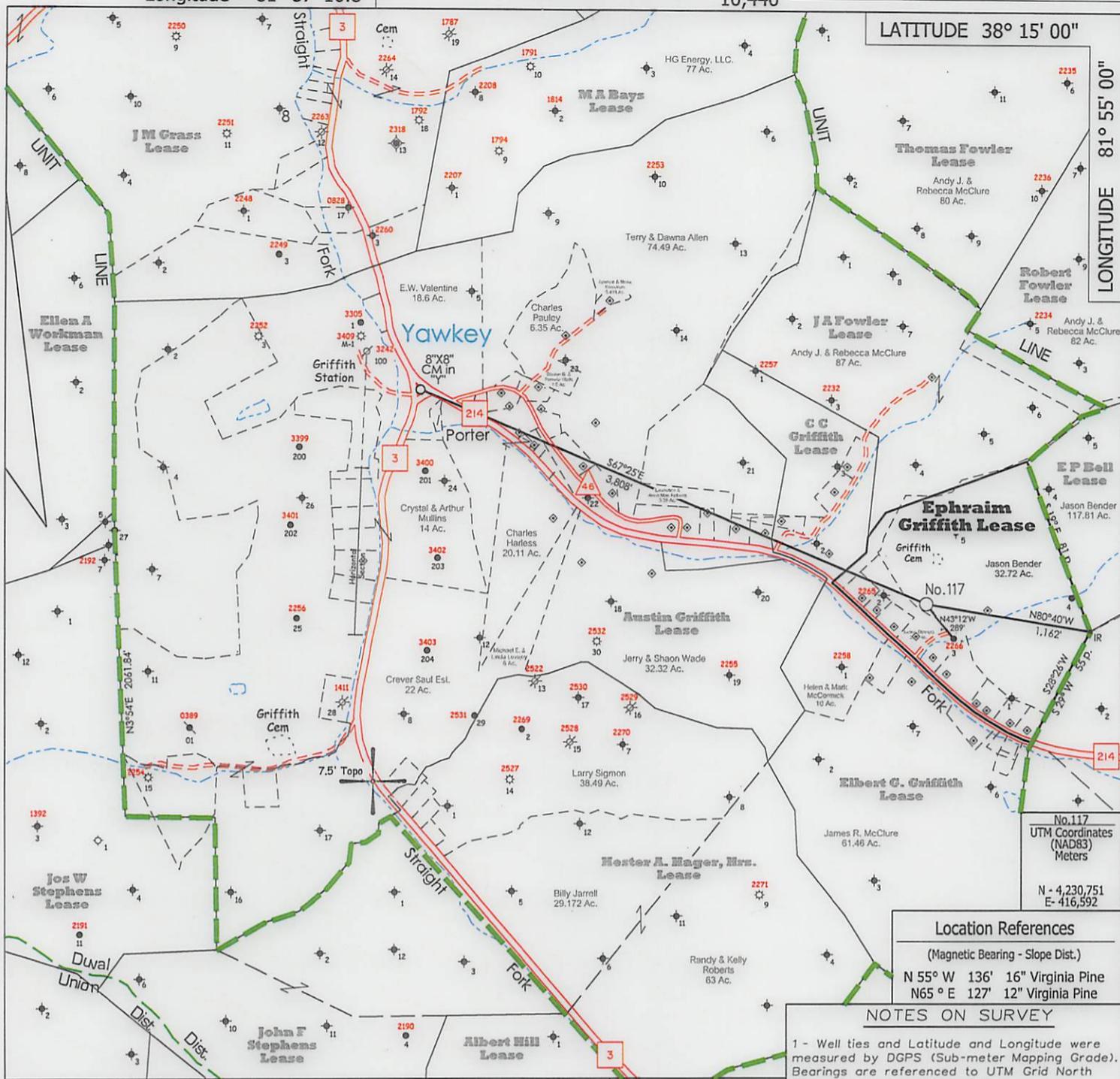
10,440'

LATITUDE 38° 15' 00"

LONGITUDE 81° 55' 00"

10,640'

Latitude = 38° 13' 14.8"



No.117
UTM Coordinates
(NAD83)
Meters
N - 4,230,751
E - 416,592

Location References
(Magnetic Bearing - Slope Dist.)
N 55° W 136' 16" Virginia Pine
N 65° E 127' 12" Virginia Pine

NOTES ON SURVEY

- 1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).
- 2 - Surface owner information obtained from the Lincoln County Assessor's tax records.

- ◆ - DENOTES A POSSIBLE WATER SUPPLY SOURCE LOCATED FROM CIRCA 2003 AERIAL PHOTOGRAPHY - NOT BY SURVEY. OTHER SOURCES MAY BE PRESENT.
- ⊕ - DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

FILE NO. 1046-48
 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) [Signature]
 TIMOTHY P. ROUSH PS 793



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



DATE February 12, 2013
 FARM Ephraim Griffith No.117
 API WELL NO. 47-043-03464 S

WELL TYPE: OIL ___ GAS ___ LIQUID INJECTION X WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW ___
 LOCATION: ELEVATION 785' WATERSHED Porter Fork
 DISTRICT Duval COUNTY Lincoln
 QUADRANGLE Griffithsville 7.5'
 SURFACE OWNER Jason Bender, et ux ACREAGE 32.72 Ac.
 OIL & GAS ROYALTY OWNER HG Energy, LLC., et al LEASE ACREAGE 42 Ac.
 LEASE NO. 71091-50
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR
 STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW
 FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) ___
 PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Berea ESTIMATED DEPTH 2,376'
 WELL OPERATOR HG Energy LLC. DESIGNATED AGENT Mike Kirsch
 ADDRESS 5260 DuPont Road ADDRESS 5260 DuPont Road
Parkersburg, WV 26101 Parkersburg, WV 26101

FORM IV-6