



**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

July 14, 2015

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

This permit, API Well Number: 47-4303502, 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: NATHANIEL MASON 142  
Farm Name: BRUMFIELD, JOSHUA D.  
**API Well Number: 47-4303502**  
**Permit Type: Secondary Recovery Well**  
Date Issued: 07/14/2015

**Promoting a healthy environment.**

**07/17/2015**

## 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. 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 with 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. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

43035025

FORM WW-3 (B)  
1/12



1) Date: 05/05/2015  
2) Operator's Well No. Nathaniel Mason 142  
3) API Well No.: 47 - Lincoln - s  
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: 795' Watershed: Straight Fork  
District: Duval County Lincoln Quadrangle Griffithsville 7.5'  
7) WELL OPERATOR: HG Energy, LLC 8) DESIGNATED AGENT Diane White  
Address 5260 Dupont Road Address 5260 Dupont Road  
Parkersburg, WV 26101 Parkersburg, WV 26101  
9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR  
Name Ralph Triplett Name To Be Determined Upon Approval of Permit  
Address 5539 McClellan Hwy Address  
Branchland, WV 25506  
11) PROPOSED WELL WORK Drill  / Drill deeper  / Redrill  / Stimulate   
Plug off old formation  / Perforate new formation  / Convert   
Other physical change in well (specify)  
12) GEOLOGIC TARGET FORMATION Berea Depth 2706 Feet (top) to 2723 Feet (bottom)  
13) Estimated Depth of Completed Well, (or actual depth of existing well): 2948 TMD Feet  
14) Approximate water strata depths: Fresh 180 Feet Salt 1030 Feet  
15) Approximate coal seam depths: 230  
16) Is coal being mined in the area? Yes No  
17) Virgin reservoir pressure in target formation 1250 psig Source Estimated  
18) Estimated reservoir fracture pressure 2650 psig (BHFP)  
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 25 BBL Bottom hole pressure 2400 psi  
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES Fresh water, produced  
water, bactericides and other chemicals as needed to maintain water quality and improve oil recovery.  
21) FILTERS (IF ANY) Cartridge filters and/or coal bed filters  
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL -UP OR SACKS (CU. FT.)	PACKERS	
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		Kinds	Sizes
Conductor									Kinds	
Fresh Water	7"	LS	17#	X		330'	330'	CTS		
Coal									Sizes	
Intermediate									2.375" x 4.5"	
Production	4 1/2"	J-55	10.5#	X		2898'	2898'	150 sks	Depths set	
Tubing	2 3/8"	J-55	4.6#	X		2506'	2506'		2400'	
Liners									Perforations	
									Top	Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Nathaniel Mason  
by deed / lease X / other contract / dated 00/00/1998  
Lincoln County Clerk's office in lease Book 39 Page 123

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

MAY 19 2015

RECEIVED 07/17/2015  
Office of Oil and Gas

FORM WW-3 (A)  
1/12



1) Date: May 5, 2015  
2) Operator's Well No. Nathaniel Mason 142  
3) API Well No.: 47 - -  
State County Permit  
4) UIC Permit No. UIC2R04301AP

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

5) Surface Owner(S) To Be Served  
(a) Name Thermon Caudill ✓  
Address 4946 Straight Fork Road  
Yawkey, WV 25573  
(b) Name Joshua Brumfield ✓  
Address 31 Vandalia Drive  
Yawkey, WV 25573  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Ralph Triplett  
Address 5539 McClellan Hwy  
Branchland, WV 25506  
Telephone 304-389-0350  
7) (a) Coal Operator  
Name NA  
Address \_\_\_\_\_  
7) (b) Coal Owner(S) With Declaration Of Record  
Name NA  
Address \_\_\_\_\_  
7) (c) Coal Lessee with Declaration Of Record  
Name NA  
Address \_\_\_\_\_

TO THE PERSONS NAMED ABOVE: You should have received this form and the following documents

- (1) The Application For A Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work;
- (2) The plat (surveyor's map) showing the well location on Form WW-6; and
- (3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is \_\_\_\_\_ 20 15

THE REASON YOU HAVE RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION [(FORM WW-3(B))] DESIGNATED TO YOU. HOWEVER YOU ARE NOT REQUIRED TO TAKE 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 Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan 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 the mailing or delivery to the Chief.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments 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 and imprisonment.

Well Operator HG Energy, LLC  
Address 5260 Dupont Road  
Parkersburg, WV 26101  
By: Diane White  
Its: Agent of WV Department of Environmental Protection  
Signature: Diane White  
MAY 10 2015

Office of Oil and Gas  
RECEIVED  
07/17/2015

WW-2B1  
(5-12)

Well No. Nathaniel Mason 142

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.

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

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name	<u>Sturm Environmental Labs</u>
Sampling Contractor	<u>Sturm Environmental Labs</u>

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

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 underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

- See Attached Sheet -

WV Department of  
Environmental Protection  
MAY 19 2015  
Office of Oil and Gas  
RECEIVED 07/17/2015

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.

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.

**Surface Owners Identified With Water Sources to be Sampled and Tested:**

- |  |  |  |
|--|--|--|
| * Anna Skeens<br>4948 Straight Fork Road<br>Yawkey, WV 25573       | * Ralph Tudor<br>204 Jarvis Ridge<br>Griffithsville, WV 25521          | * Joshua Brumfield<br>31 Vandalia Drive<br>Yawkey, WV 25573              |
| * Nathaniel Cassle<br>19 Bear Fork Road<br>Yawkey, WV 25573        | * Sarah Fletcher<br>1940 Allens Fork Road<br>Charleston, WV 25320      | * David Brumfield<br>5000 Straight Fork Road<br>Griffithsville, WV 25521 |
| * Therman Caudill<br>4946 Straight Fork Road<br>Yawkey, WV 25573   | * Franklin Kilburn<br>4933 Straight Fork Road<br>Yawkey, WV 25573      |  |
| * Ralph Tudor<br>204 Jarvis Ridge Road<br>Griffithsville, WV 25521 | * Timothy Antill<br>4925 Straight Fork Road<br>Yawkey, WV 25573        |  |
| * Jackie Stowers<br>4818 Midway Road<br>Yawkey, WV 25573           | * David Pauley<br>P. O. Box 198<br>Griffithsville, WV 25521            |  |
| * Lorena Dunlap<br>P. O. Box 227<br>Griffithsville, WV 25521       | * Deanna Miller<br>4975 Straight Fork Road<br>Griffithsville, WV 25521 |  |
| * United Methodist Church<br>Griffithsville, WV 25521              | * Elba Bell<br>P. O. Box 257<br>Griffithsville, WV 25521               |  |

RECEIVED  
Office of Oil and Gas  
MAY 19 2015  
WV Department of  
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 Name HG Energy, LLC OP Code 494497948

Watershed Straight Fork Quadrangle Griffithsville 7.5'

Elevation 795' County Lincoln District Duval

Description of anticipated Pit Waste: Fluids accumulated while drilling the subject well

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

Will a synthetic liner be used in the pit? Yes If so, what 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, freshwater, oil based, etc. Air, Fresh Water

-If oil based, what type? Synthetic, petroleum, etc. NA

Additives to be used? Water, Soap, KCl

Will closed loop system be used? No

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

-If left in pit and plan to solidify what medium will be used? Cement, lime, sawdust Native soil, cement and 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.

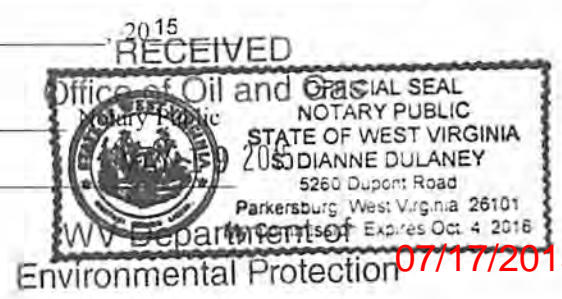
Company Official Signature Diane White

Company Official (Typed Name) Diane White

Company Official Title Agent

Subscribed and sworn before me this 5th day of May

[Signature]  
My commission expires Oct. 4, 2016



07/17/2015

LEGEND

- Property Boundary
- Road
- Existing Fence
- Planned Fence
- Stream
- Open Ditch
- Rock
- North
- Buildings
- Water wells
- Drill site

- Diversion
- Spring
- Wet Spot
- Drain Pipe with size in inches
- Waterway
- Cross Drain
- Artificial Filter Strip
- Pit: cut walls
- Pit: compacted fill walls
- Area for Land Application of Pit Waste

Proposed Revegetation Treatment: Acres Disturbed 1.0 acres Prevegetation pH \_\_\_\_\_

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Straw 1 Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre
Tall Fescue		40
Ladino Clover		5

Seed Type	Area II	lbs/acre
Tall Fescue		40
Ladino Clover		5

**\*\*Sediment Control should be in place at all times\*\***

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Raepl. D. Tripodi

Comments: \_\_\_\_\_

RECEIVED  
Office of Oil and Gas

Title: District Inspector

Date: May 11, 2015

MAY 19 2015

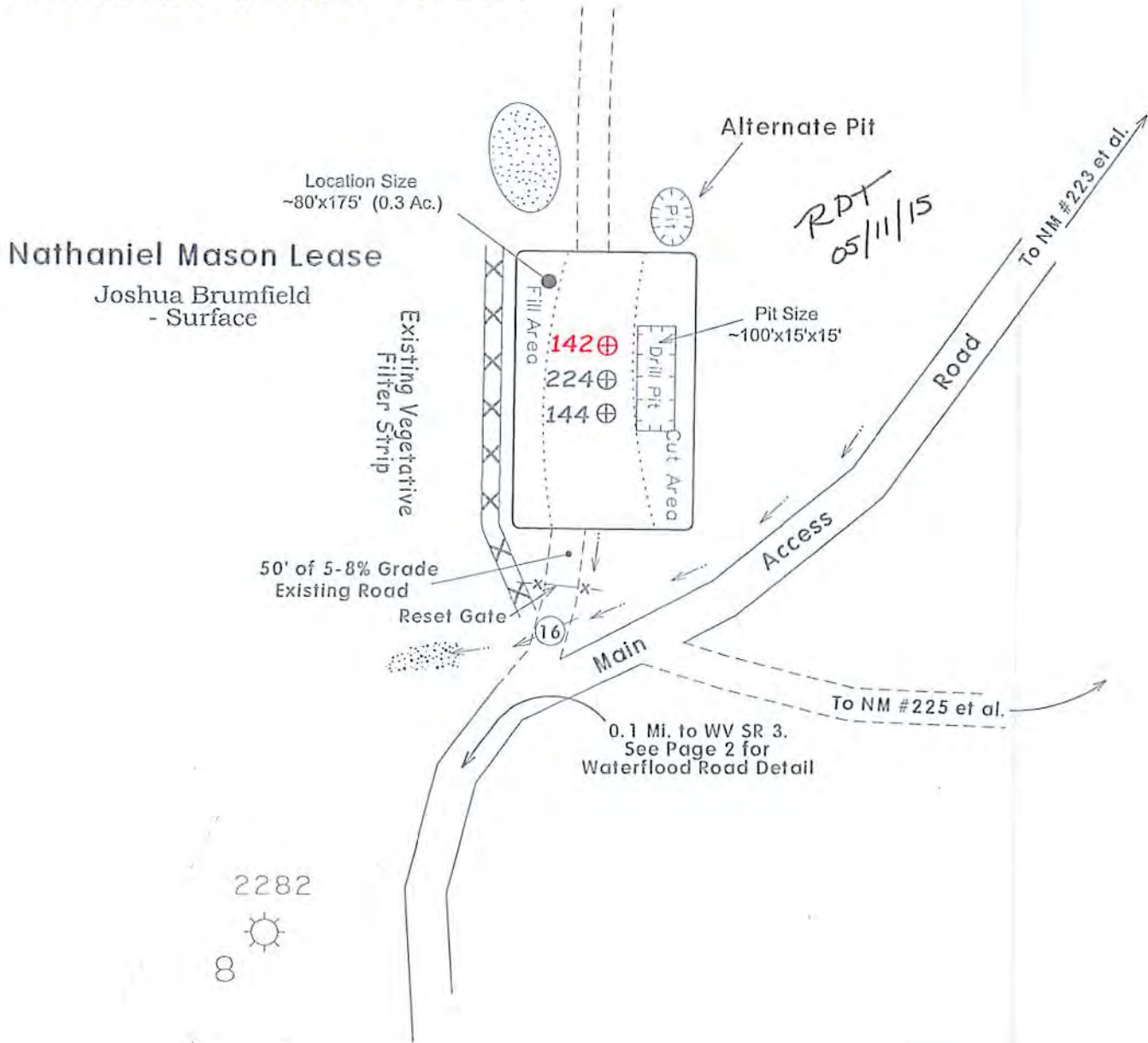
Field Reviewed?  (Lincoln) Yes  No

WV Department of  
Environmental Protection  
07/17/2015



# Reclamation Plan For:

**Nathaniel Mason No. 142**  
 Nathaniel Mason No. 144  
 Nathaniel Mason No. 224



2282  
  
 8

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

**Notes:**

- REQUESTED PERMIT IS FOR DRILLING OF NEW WELL.
- SOME ACCESS ROADS ARE EXISTING AND WILL BE UPGRADED TO WVDEP STANDARDS. NEW STRUCTURES WILL BE INSTALLED AS SHOWN.
- STOCKPILE TOPSOIL FOR RE-DRESSING LOCATION DURING RECLAMATION
- ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
- MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
- ALL ROAD GRADES <5% UNLESS AS NOTED.
- LOCATION OF DRILL PIT MAY BE CHANGED BASED ON AS-BUILT CONSIDERATIONS.
- STACK BRUSH BELOW DISTURBED AREAS FOR EROSION CONTROL
- DRAWING NOT TO SCALE.

RECEIVED  
 Office of Oil and Gas  
 MAY 18 2015  
 WV Department of Environmental Protection  
 07/17/2015

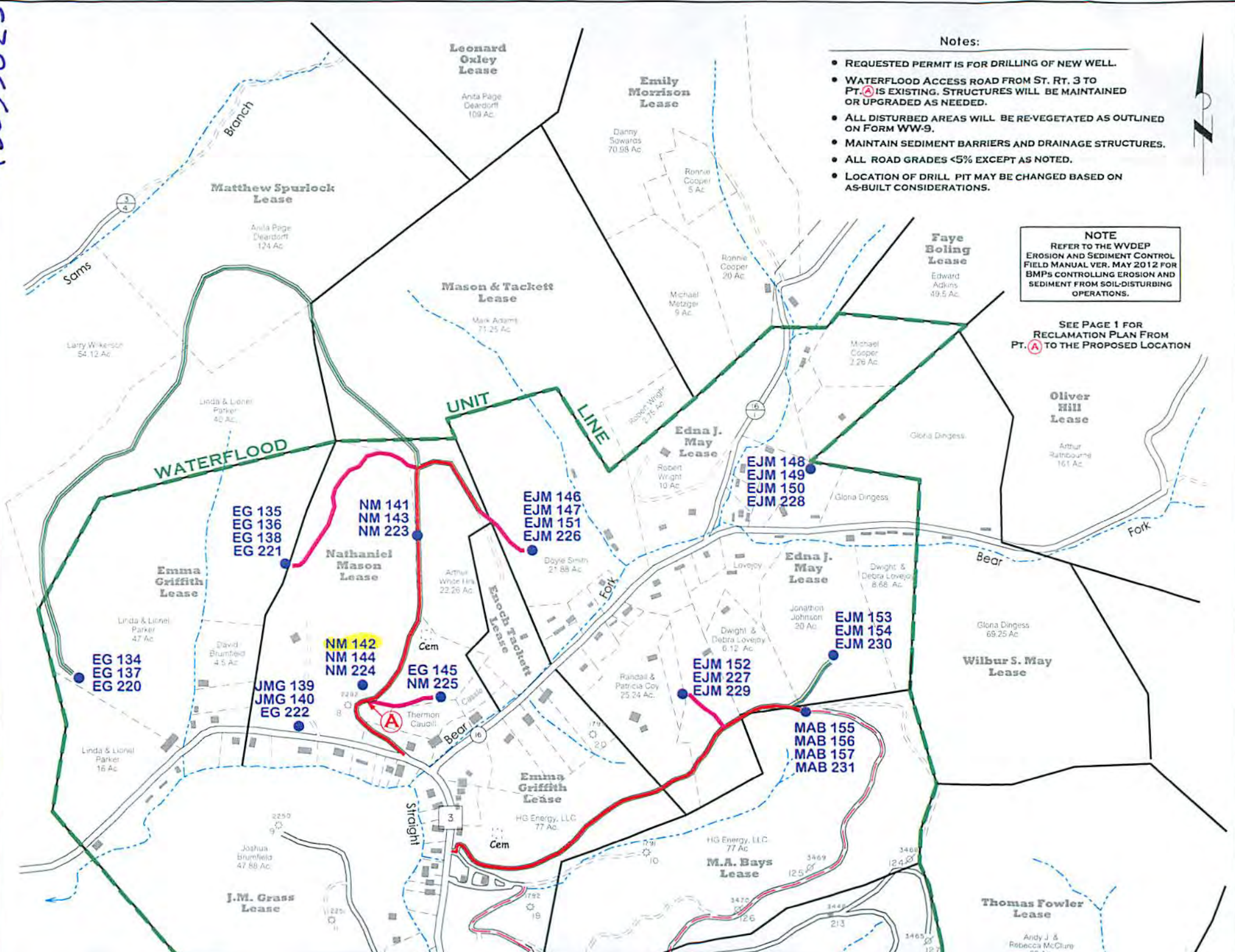
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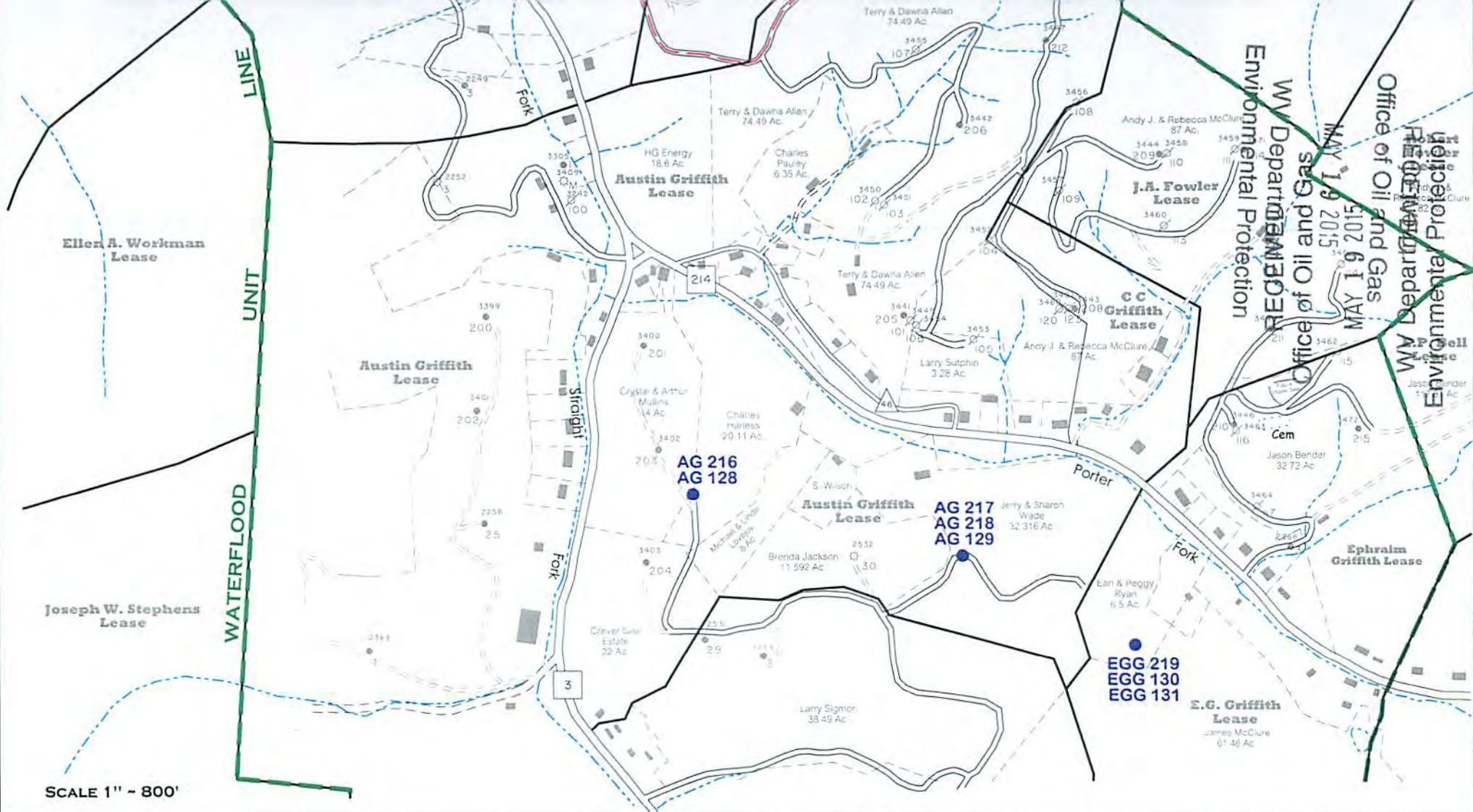
Notes:

- REQUESTED PERMIT IS FOR DRILLING OF NEW WELL.
- WATERFLOOD ACCESS ROAD FROM ST. RT. 3 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.

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

SEE PAGE 1 FOR  
RECLAMATION PLAN FROM  
PT. (A) TO THE PROPOSED LOCATION





WV Department of Environmental Protection  
 Office of Oil and Gas  
 MAY 19 2015  
 MAY 19 2015  
 WV Department of Environmental Protection  
 Office of Oil and Gas

SCALE 1" = 800'



## GRIFFITHSVILLE WATERFLOOD







Lincoln County, W.Va.

### RECLAMATION PLAN SHOWING ROAD SYSTEMS TO BE USED FOR 2015 DRILLING PROGRAM (NORTH)

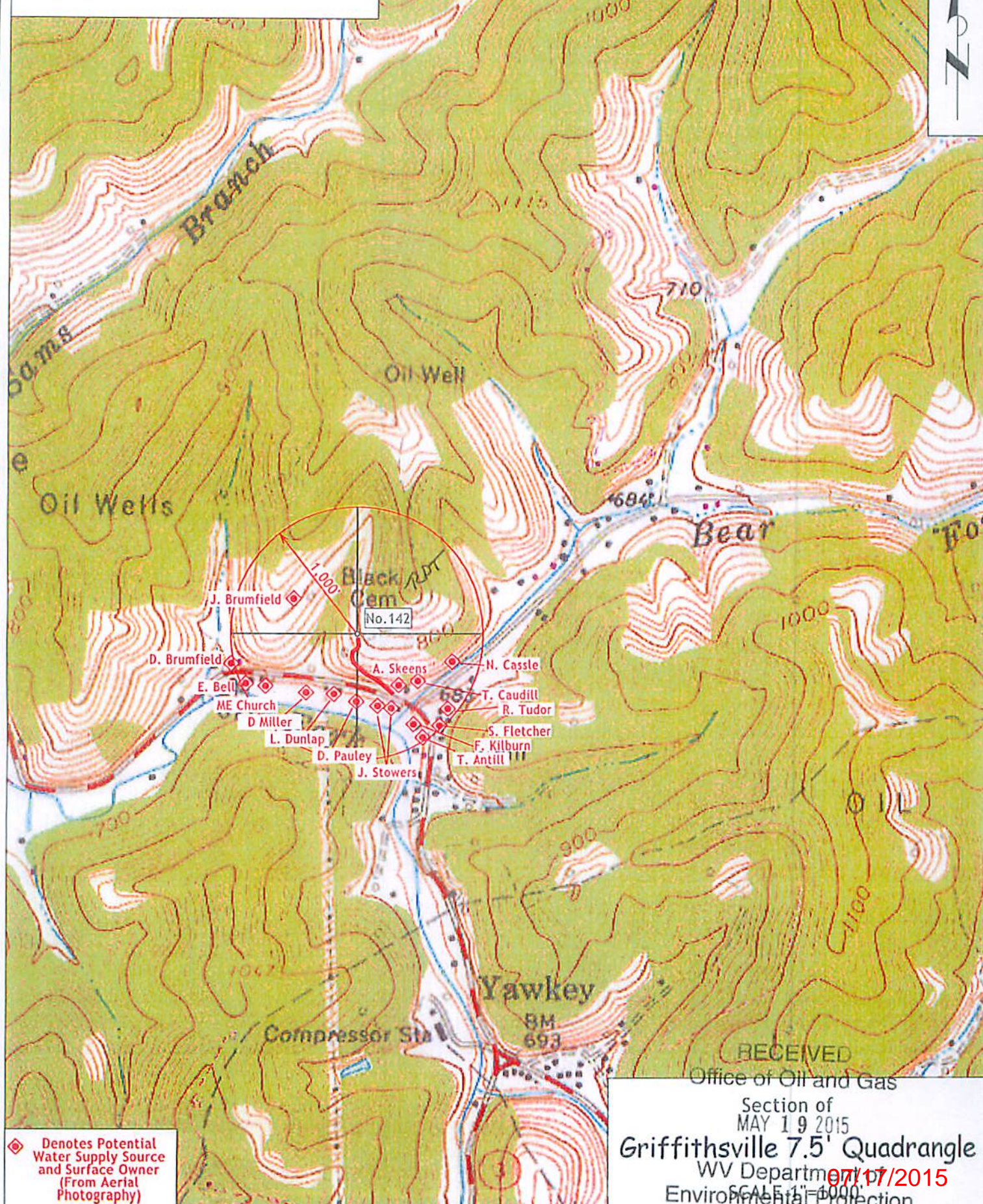
#### NOTES

1. REFER TO THE WVDEP EROSION AND SEDIMENTATION CONTROL MANUAL (VER. MAY 20, 2013) FOR BMP'S CONTROLLING EROSION AND SEDIMENTATION 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-OOG PRIOR TO 2015 (AS SHOWN). SEE PERMITS ON FILE FOR MORE DETAIL.

#### LEGEND

-  EXISTING WATERFLOOD ROADS TO BE USED.
-  OTHER EXISTING MAIN WATERFLOOD ROADS (POSSIBLE ACCESS).
-  EXISTING LEASE OR FARM ROADS TO BE UPGRADED.
-  NEW ROADS TO BE CONSTRUCTED.
-  AG 216
-  POTENTIAL WATER SUPPLY SOURCE TO BE SAMPLED (LOC. APPROX.)

SUBJECT WELL  
Nathaniel Mason No.142



◆ Denotes Potential Water Supply Source and Surface Owner (From Aerial Photography)

RECEIVED  
Office of Oil and Gas  
Section of  
MAY 19 2015  
Griffithsville 7.5' Quadrangle  
WV Department of Environmental Protection  
07/17/2015  
SCALE 1"=1000'

(BOT. HL: LON:-81°58'10.5") LON: -81°58'10.1"

3195'

LAT:38°15'00"

LON:81°57'30"

5790'

LAT:38°14'02.8"

(BOTTOM HOLE: LAT:38°14'07.5")

**SURVEY NOTES**

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).

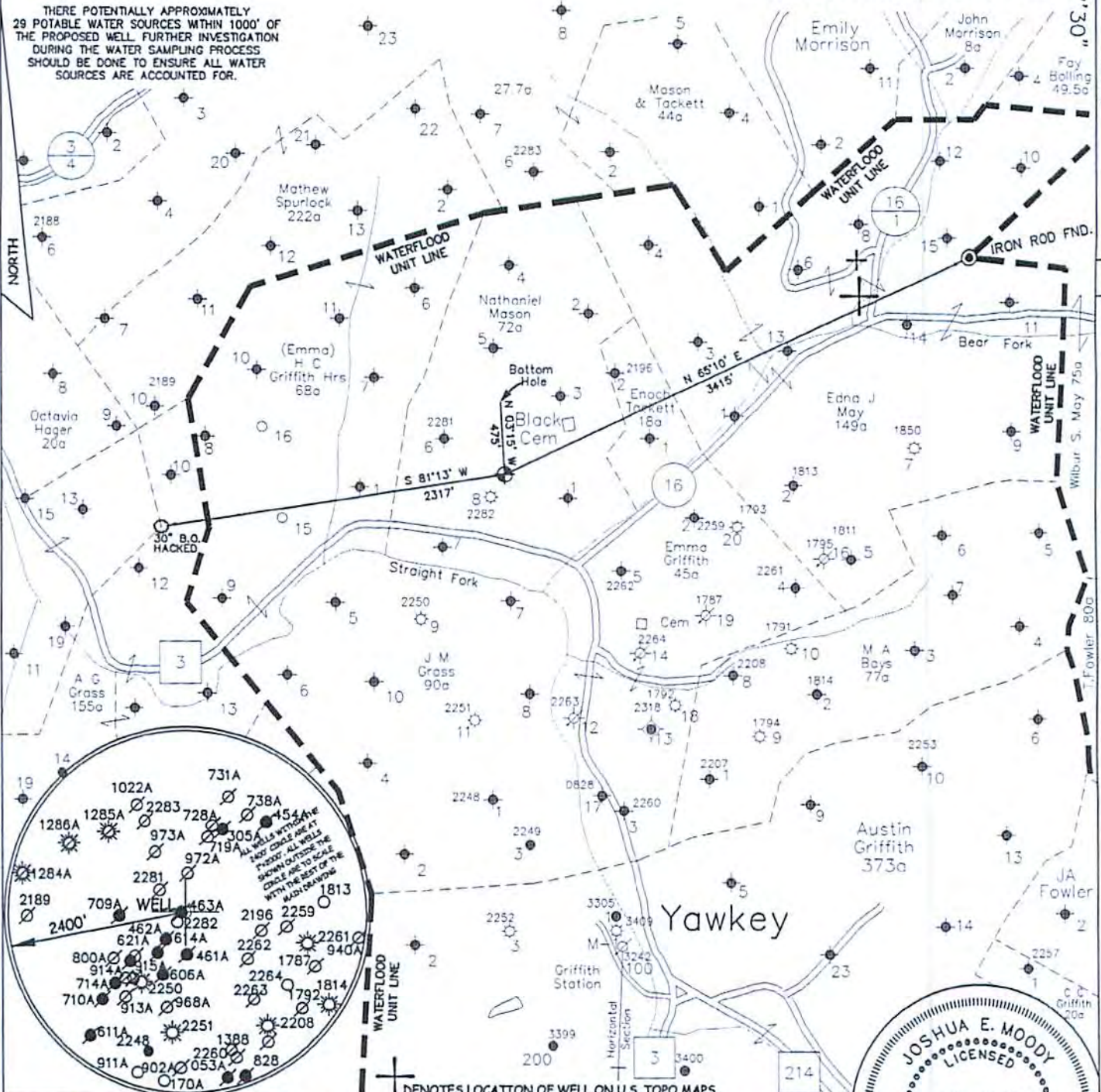
2 - Surface owners and adjoining information obtained from the Lincoln County Assessor's tax records.

3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete Title Opinion.

UTM Coordinates (Zone 17N-NAD 1983)	
Surface	N-4,232,244m. E-415,167m.
Bottom Hole	N-4,232,389m. E-415,159m.

LOCATION REFERENCES	
MAGNETIC BEARING	
N 78° W 88.6'	12° B.O.
N 40° E 85.9'	8° MAPLE

**MAP OF  
H.G. ENERGY, LLC  
-WATERFLOOD UNIT-  
NATHANIEL MASON 142**



JOB # 14-023  
 DRAWING # 15HG LC FOLDER  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1/200  
 PROVEN SOURCE OF ELEV. MAPPING GRADE GPS

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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



**WEST VIRGINIA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION,  
OFFICE OF OIL AND GAS**

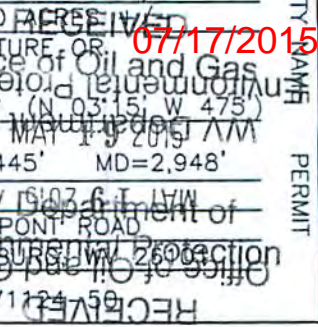
**MOODY LAND SURVEYING, LLC**  
ST. MARYS, WV 26170

JOSHUA E. MOODY, P.S. 2020  
 DATE 3/10/15  
 OPERATOR'S WELL  
 NATHANIEL MASON # 142

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  HORIZONTAL   
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 795' WATERSHED STRAIGHT FORK API WELL # 47-043-03502S  
 DISTRICT DUVAL COUNTY LINCOLN STATE WV COUNTY DUVAL PERMIT 03502S  
 QUADRANGLE GRIFFITHSVILLE 7.5'

SURFACE OWNER JOSHUA D. BRUMFIELD ACREAGE 42.72 ACRES +/-  
 OIL & GAS ROYALTY OWNER HG ENERGY, LLC ET AL LEASE ACREAGE 80 ACRES

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE, OR, 07/17/2015  
 STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  Office of Oil and Gas  
 OTHER PHYSICAL CHANGE IN WELL (SPECIFY) WELL WILL BE DRILLED DIRECTIONALLY (N 03°15' W 475')  
 PLUG & ABANDON  CLEAN OUT & REPLUG   
 TARGET FORMATION BEREA ESTIMATED DEPTH TVD=2,445' MD=2,948'  
 WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT D. WHITE  
 ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD  
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101



(BOT. HL: LON:-81°58'10.5") LON:-81°58'10.1" 3195'

LAT:38°15'00"

LON:81°57'30"

5790'

LAT:38°14'02.8"

(BOTTOM HOLE: LAT:38°14'07.5")

**SURVEY NOTES**

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 1983).

2 - Surface owners and adjoining information obtained from the Lincoln County Assessor's tax records.

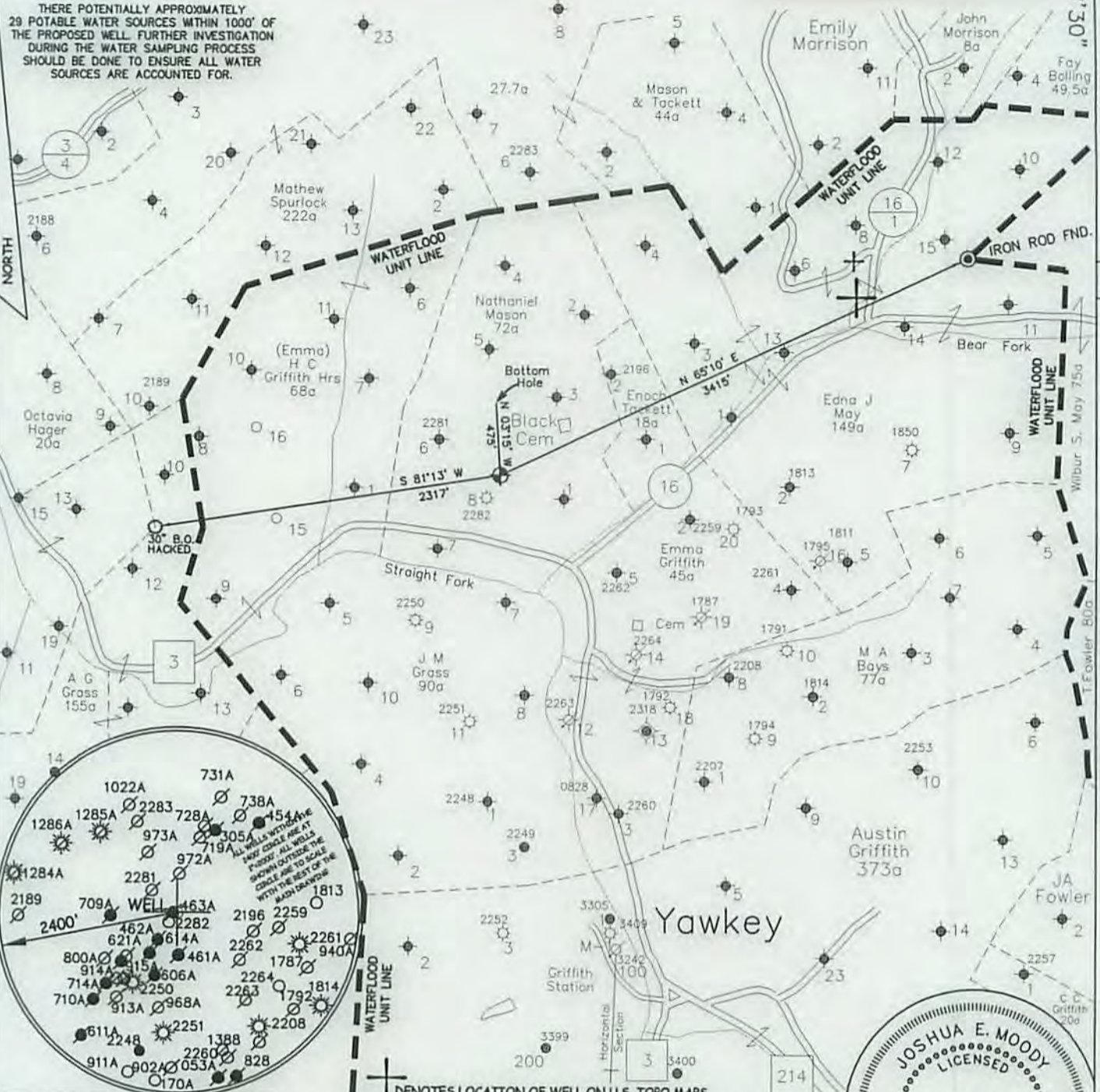
3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete Title Opinion.

	UTM Coordinates (Zone 17N-NAD 1983)
Surface	N-4,232,244m. E-415,167m.
Bottom Hole	N-4,232,389m. E-415,159m.

LOCATION REFERENCES	
MAGNETIC BEARING	
N 78° W 88.6'	12° B.O.
N 40° E 85.9'	8° MAPLE

**MAP OF  
H.G. ENERGY, LLC  
-WATERFLOOD UNIT-  
NATHANIEL MASON 142**

THERE POTENTIALLY APPROXIMATELY 29 POTABLE WATER SOURCES WITHIN 1000' OF THE PROPOSED WELL. FURTHER INVESTIGATION DURING THE WATER SAMPLING PROCESS SHOULD BE DONE TO ENSURE ALL WATER SOURCES ARE ACCOUNTED FOR.



JOB # 14-023  
DRAWING # 15HG LC FOLDER  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY 1/200  
PROVEN SOURCE OF ELEV. MAPPING GRADE GPS

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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



**WEST VIRGINIA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION,  
OFFICE OF OIL AND GAS**

**MOODY LAND SURVEYING, LLC  
ST. MARYS, WV 26170**



JOSHUA E. MOODY, P.S. 2020  
DATE 3/10/15  
OPERATOR'S WELL  
NATHANIEL MASON # 142

WEST VIRGINIA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  HORIZONTAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 795' WATERSHED STRAIGHT FORK API WELL # 47 - 43 - 03502-S  
DISTRICT DUVAL COUNTY LINCOLN STATE COUNTY PERMIT  
QUADRANGLE GRIFFITHSVILLE 7.5'

SURFACE OWNER JOSHUA D. BRUMFIELD ACREAGE 42.72 ACRES +/-  
OIL & GAS ROYALTY OWNER HG ENERGY, LLC ET AL LEASE ACREAGE 80 ACRES +/-  
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION   
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) WELL WILL BE DRILLED DIRECTIONALLY (N 03°15' W 175')  
PLUG & ABANDON  CLEAN OUT & REPLUG   
TARGET FORMATION BEREA ESTIMATED DEPTH TVD=2,445' MD=2,948'  
WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT D. WHITE  
ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD  
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

07/17/2015