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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Austin Caperton , Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, February 09, 2018  
WELL WORK PERMIT  
Vertical / New Drill

KEYROCK ENERGY LLC  
106 FERRELL AVENUE, SUITE 5

KINGSPORT, TN 37663

Re: Permit approval for KENNER NO. 10 REV  
47-011-01000-00-00

This well work permit 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 any additional specific 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 of 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.

Per 35 CSR 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- 0450.

James A. Martin  
Chief

Operator's Well Number: KENNER NO. 10 REV  
Farm Name: KENNER Y. MARKINS  
U.S. WELL NUMBER: 47-011-01000-00-00  
Vertical / New Drill  
Date Issued: 2/9/2018

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 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, drilling ceased, completion of any other permitted well work and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov) within 30 days of commencement of drilling.

WW - 2B  
(Rev. 8/10)

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**WELL WORK PERMIT APPLICATION**

1) Well Operator: Keyrock Energy LLC

|           |        |       |             |
|-----------|--------|-------|-------------|
| 494507629 | Cabell | Grant | Milton 7.5' |
|-----------|--------|-------|-------------|

  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Kenner No. 10      3) Elevation: 841'

4) Well Type: (a) Oil \_\_\_\_\_ or Gas X  
(b) If Gas: Production X / Underground Storage \_\_\_\_\_  
Deep \_\_\_\_\_ / Shallow X

5) Proposed Target Formation(s): Lower Huron      Proposed Target Depth: 3,400'

6) Proposed Total Depth: 3,450 Feet      Formation at Proposed Total Depth: Lower Huron

7) Approximate fresh water strata depths: 120' 319' 730' feet

8) Approximate salt water depths: 905' 1295' 1600' 2025' feet

9) Approximate coal seam depths: 629' feet

*CK 13716  
\$ 650.00  
12/12/17*

10) Approximate void depths,(coal, Karst, other): None

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)  
Drill and stimulate using a foam frac for a new well (estimated using 40k lbs. foam frac). Will not produce from the Marcellus formation.

13) **CASING AND TUBING PROGRAM**

| TYPE         | SPECIFICATIONS |       |               | FOOTAGE | INTERVALS | CEMENT                       |
|--------------|----------------|-------|---------------|---------|-----------|------------------------------|
|              | Size           | Grade | Weight per ft |         |           |                              |
| Conductor    | 13 3/8"        |       |               | 30'     | 30'       | 13 Cu. Ft., CTS              |
| Fresh Water  | 9 5/8"         |       |               | 760'    | 760'      | 216.5 Cu. Ft., to surf.      |
| Coal         |                |       |               |         |           |                              |
| Intermediate | 7"             |       |               | 1650'   | 1650'     | 123 Cu. Ft., Fill to 855'    |
| Production   | 4 1/2"         |       |               | 3300'   | 3300'     | 127.5 Cu. Ft., Fill to 1995' |
| Tubing       | 2 3/8"         |       |               | 3250'   | 3250'     | Per WW DEP Rule              |
| Liners       |                |       |               |         |           |                              |

Packers: Kind: \_\_\_\_\_  
              Sizes: \_\_\_\_\_  
              Depths Set \_\_\_\_\_

*AF 1-19-18*



WW-2A  
(Rev. 6-14)

1.) Date: 12/13/17  
2.) Operator's Well Number Kenner No. 10 REV  
State County Permit  
3.) API Well No.: 47- Cabell -

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE AND APPLICATION FOR A WELL WORK PERMIT**

4) Surface Owner(s) to be served:  
(a) Name Kenner Y. Markins  
Address 4156 Cavill Creek Road  
Barboursville, WV 25504  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
5) (a) Coal Operator  
Name N/A  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name None  
Address \_\_\_\_\_  
(c) Coal Lessee with Declaration  
Name None  
Address \_\_\_\_\_

6) Inspector Allen Flowers  
Address 165 Grassy Lick Ln.  
Liberty, WV 25124  
Telephone 304-552-8308

RECEIVED  
Office of Oil and Gas  
DEC 22 2017  
WV Department of  
Environmental Protection

**TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:**

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas  
OR

\_\_\_\_\_ Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_\_\_ on the above named parties by:

- \_\_\_\_\_ Personal Service (Affidavit attached)
- Certified Mail (Postmarked postal receipt attached)
- \_\_\_\_\_ Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

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, 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.

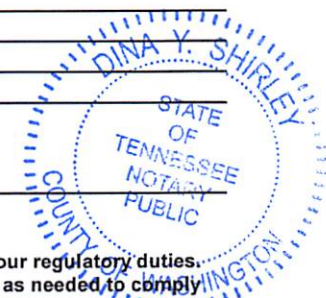
Well Operator Keyrock Energy LLC  
By: Christopher Shea  
Its: Operations Manager  
Address: P.O. Box 2223, 207 E. Main St., Suite 2-D  
Johnson City, TN, 37605  
Telephone: 423-726-2070  
Email: cshea@keyrockenergy.com

Subscribed and sworn before me this 19th day of December, 2017

Dina Y. Shirley Notary Public  
My Commission Expires 7-9-2019

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov)



WW-2A Surface Waiver  
(4/16)

SURFACE OWNER WAIVER

County Cabell

Operator  
Operator well number

Keyrock Energy LLC  
Kenner No. 10

**INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A**

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

**NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

**WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:**

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

**Time Limits and methods for filing comments.** The law requires these materials to be served on or before the date the operator files his Application. You have **FIFTEEN (15) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

**Comments must be in writing.** Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation..."

**If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.**

**List of Water Testing Laboratories.** The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

**VOLUNTARY STATEMENT OF NO OBJECTION**

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application for a Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through \_\_\_ including a work order on Form WW2-B, a survey plat, WW-9, and a soil and erosion plan, all for proposed well work on my surface land as described therein.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

*Kennon Yi Mentias*  
Signature

Date 1-8-18

Company Name N/A

By \_\_\_\_\_  
Its \_\_\_\_\_ Date \_\_\_\_\_

Kennon Yi Mentias

Print Name

Signature

Date

**WW-2A Coal Waiver**

**COAL OPERATOR, OWNER, OR LESSEE WAIVER**

County \_\_\_\_\_  
Operator Keyrock Energy LLC Operator's Well Number Kenner No. 10

**INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE**

To the coal operator, owner, or lessee named on page WW2-A. You are hereby notified that any objection you wish to make or are required to make by WV Code 22-6-15, 16 or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the Office. Mail objections to:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0499 extension 1654

**WAIVER**

The undersigned coal operator \_\_\_\_\_/ owner \_\_\_\_\_/ lessee \_\_\_\_\_/ of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

|           |      |  |                 |      |
|-----------|------|--|-----------------|------|
|           | Date |  | Company<br>Name |      |
| Signature |      |  | By              |      |
|           |      |  | Its             | Date |
|           |      |  |                 |      |
|           |      |  | Signature       | Date |

WW-2A1  
(Rev. 1/11)

Operator's Well Number Kenner No. 10

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6, Section 8(d)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

| Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page |
|-----------------------|-----------------------|---------|-----------|
| Markins, Kenner Y.    | Keyrock Energy LLC    | 1/8     | 391/267   |

RECEIVED  
Office of Oil and Gas

DEC 22 2017

WV Department of  
Environmental Protection

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

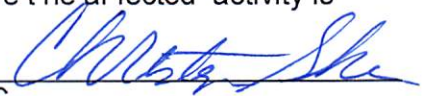
The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:  
By: Its:

Christopher Shea  
Keyrock Energy LLC  
Operations Manager





WW-2B1  
(5-12)

Well No. Kenner No. 10

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.

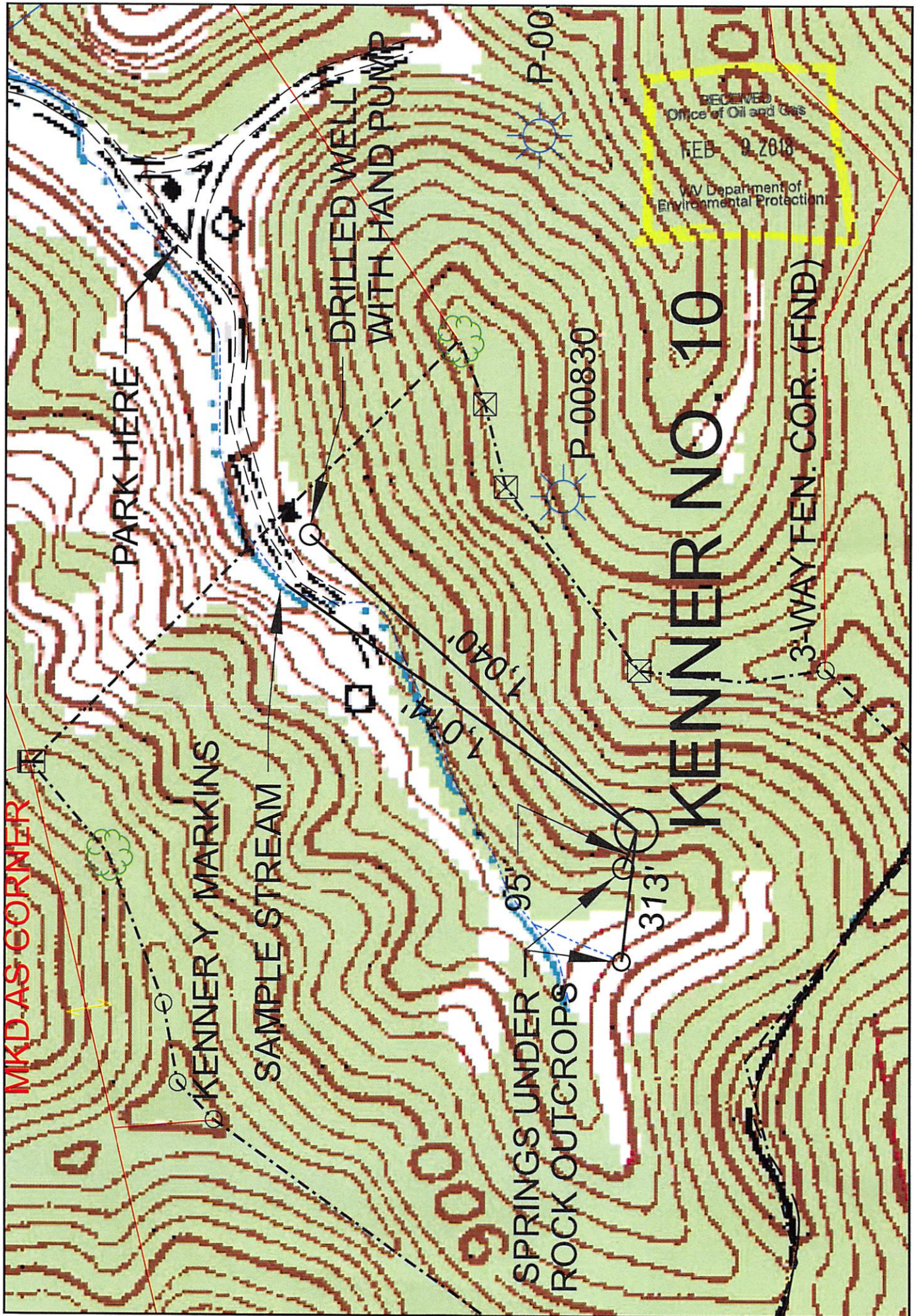
|                           |                               |  |
|---------------------------|-------------------------------|--|
| Certified Laboratory Name | <u>Pace Analytical</u>        | RECEIVED<br>Office of Oil and Gas<br><br>DEC 22 2017 |
| Sampling Contractor       | <u>True Line Surveying</u>    |  |
| Well Operator             | <u>Keyrock Energy</u>         | WV Department of<br>Environmental Protection         |
| Address                   | <u>PO BOX 2223</u>            |  |
|                           | <u>Johnson City, TN 37605</u> |  |
| Telephone                 | <u>423-726-2070</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.

Water sampling is being conducted by our surveyors, True Line Surveying. They have opted to go house to house offering sample collections to all persons within 1,500' of the proposed Kenner No. 10 well location. Additionally, we are sampling a nearby tributary Fudges Creek, and an old water well near location that appears to be out of use.

\* KENNER Y. MARKINS  
4156 CAVILL CREEK ROAD  
BARBOURSVILLE, WV 25504







WW-9  
(5/16)

API Number 47 - \_\_\_\_\_  
Operator's Well No. Kenner No 10

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS  
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Keyrock Energy LLC OP Code 494507629

Watershed (HUC 10) Fudges Creek Quadrangle Milton 7.5"

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

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: Drill water and cement cutting

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? 20 mil

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: No

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Vertical, Air

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? N/A

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) Lime and Sawdust

-Landfill or offsite name/permit number? \_\_\_\_\_

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, 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 *Christopher Shea* AF 1-12-18

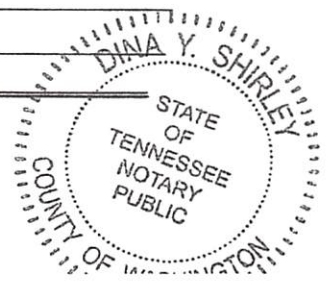
Company Official (Typed Name) Christopher Shea

Company Official Title Operations Manager

Subscribed and sworn before me this 19th day of December, 2017

*Dina Y Shirley* Notary Public

My commission expires 7-9-2019



Form WW-9

Operator's Well No. Kenner No. 10

Proposed Revegetation Treatment: Acres Disturbed \_\_\_\_\_ Prevegetation pH 6.2

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 1/3 ton lbs/acre

Mulch Hay 2 Tons/acre

**Seed Mixtures**

| Temporary            |           | Permanent            |           |
|----------------------|-----------|----------------------|-----------|
| Seed Type            | lbs/acre  | Seed Type            | lbs/acre  |
| <u>KY-31</u>         | <u>40</u> | <u>Orchard Grass</u> | <u>15</u> |
| <u>Alsike Clover</u> | <u>5</u>  | <u>Alsike Clover</u> | <u>5</u>  |
| <u>Annual Rye</u>    | <u>15</u> |                      |           |

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Allen G. Flowers

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

Reseed and mulch all affected areas per LSPC regulations.

Give 24 H notice to inspector before construction begins.

Title: Inspector Date: 1-12-2018

Field Reviewed?  Yes  No



STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS  
GROUNDWATER PROTECTION PLAN

Operator Name: Keyrock Energy LLC  
Watershed (HUC 10): Fudges Creek Quad: Milton 7.5"  
Farm Name: Kenner Markins

- 1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

Pit water will be tested, then aerated with lime being added to bring the ph to 7.0 plus. In the event of excessive chlorides, the pit fluids will be evaluated to either dilute fresh water or hauled to an approved disposal facility. Pit water will sit a minimum of ten days to let the solids drop out.

- 2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

Once the drilling pit fluids are at acceptable levels for discharge then the pumps intake line will be floated approximately 12" below the water level and the discharge line will be set up to disperse the water over the designated discharge area. The water will be sprayed in a back and forth pattern so as not to oversaturate any given area.

- 3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Fudges Creek tributary approx 340' NW of well site; there is a small drain approx 200' W of well site.

- 4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

- 5. Discuss any existing groundwater quality data for your facility or an adjacent property.

No known groundwater quality data. Samples have been offered for non-public water sources within 1,000' of the proposed well.

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

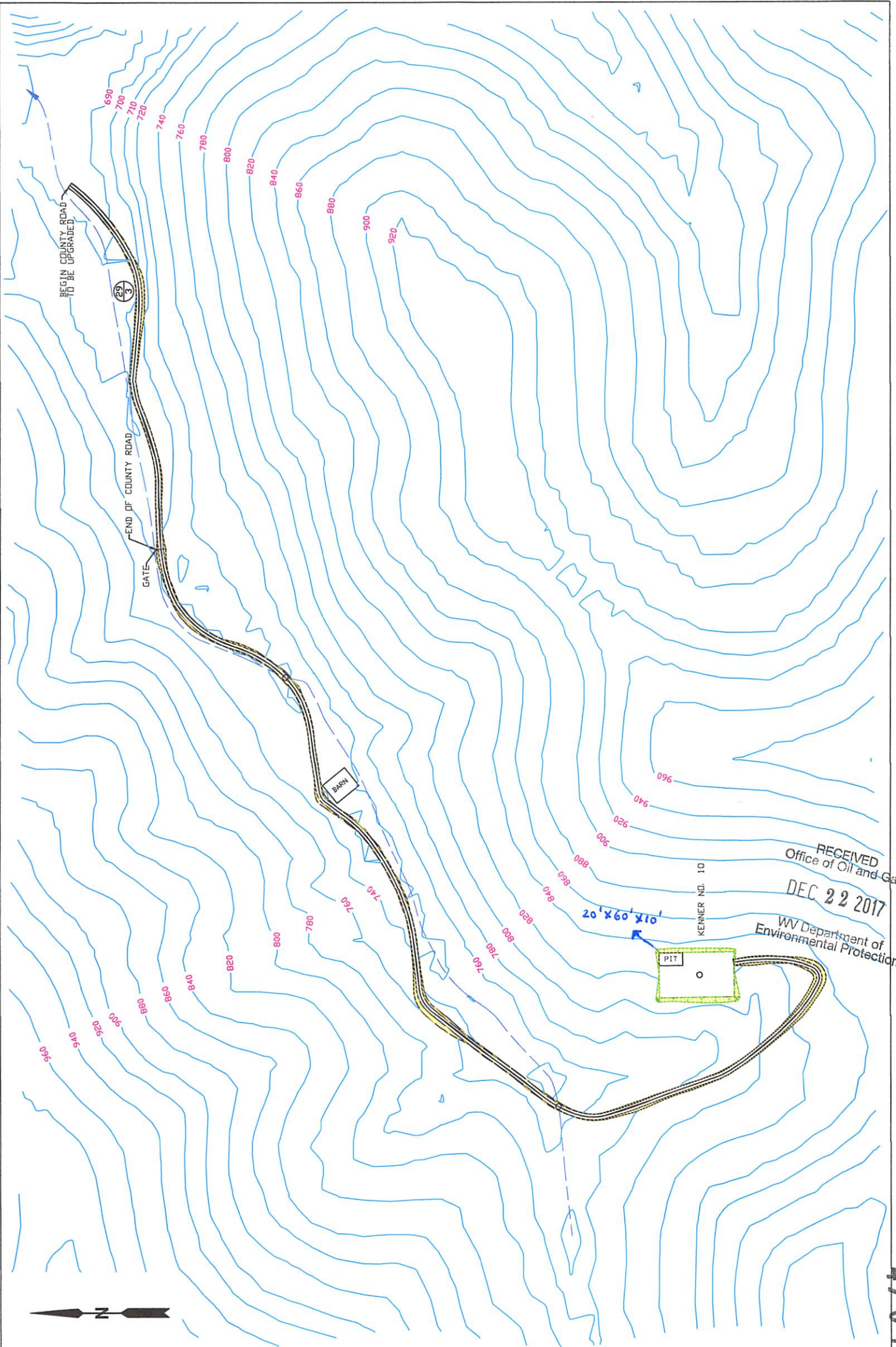
All employees will be familiar with the contents of the groundwater protection plan and how to implement it. Work practices will support the protection of groundwater from contamination per company HSE Policy.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

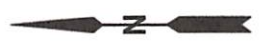
All GPP elements and equipment present will be inspected daily prior to use and in the event of a problem. Work will not commence until any problems are remediated and documented






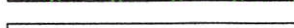
Signature: 

Date: Dec 18, 2017 AF: 1-17-2014



RECEIVED  
Office of Oil and Gas  
DEC 22 2017  
WV Department of  
Environmental Protection



| DISTURBED AREAS              |          | LEGEND  |               | SITE PLAN   |  |
|------------------------------|----------|---|---------------|---|--|
| WELL PAD CONSTRUCTION        | 0.31 AC. |  | STREAM        | KEYROCK ENERGY, LLC<br>PROPOSED WELL KENNER NO. 10  |  |
| NEW ACCESS ROAD CONSTRUCTION | 0.82 AC. |  | PROPERTY LINE | GRANT DISTRICT, CABELL COUNTY<br>MILTON QUAD, WV 7.5'   |  |
|                              |          |  | SLOPE AREA    | DECEMBER 11, 2017   |  |
|                              |          |  | WETLAND       | TRUE LINE SURVEYING, INC.  |  |
|                              |          |  | BUFFER AREA   | 6211 FAIRVIEW DR.<br>HUNTINGTON, WV 25705   |  |
| TOTAL DISTURBED AREA         | 1.12 AC. |   |               | PAGE 1 OF 1   |  |

4701101000

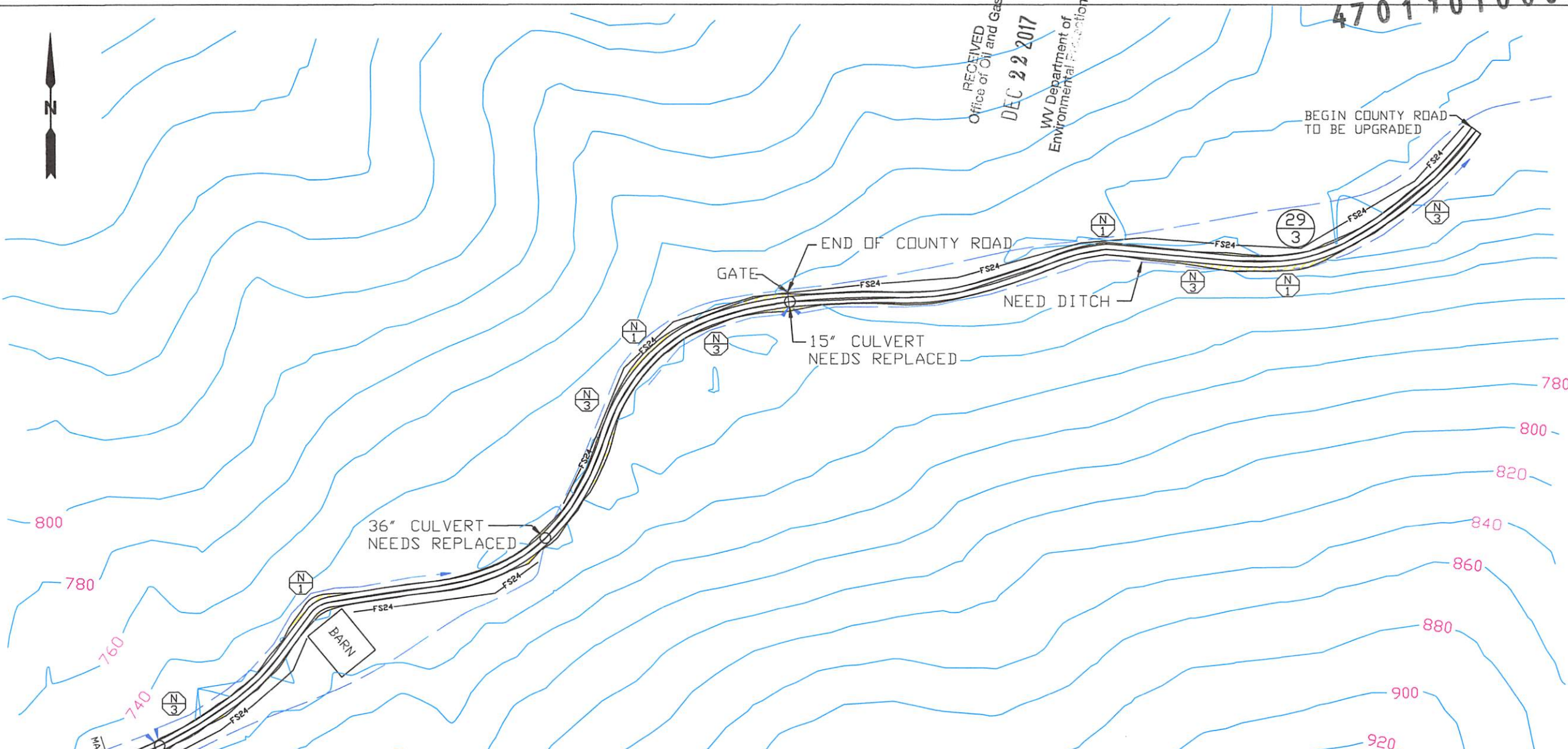


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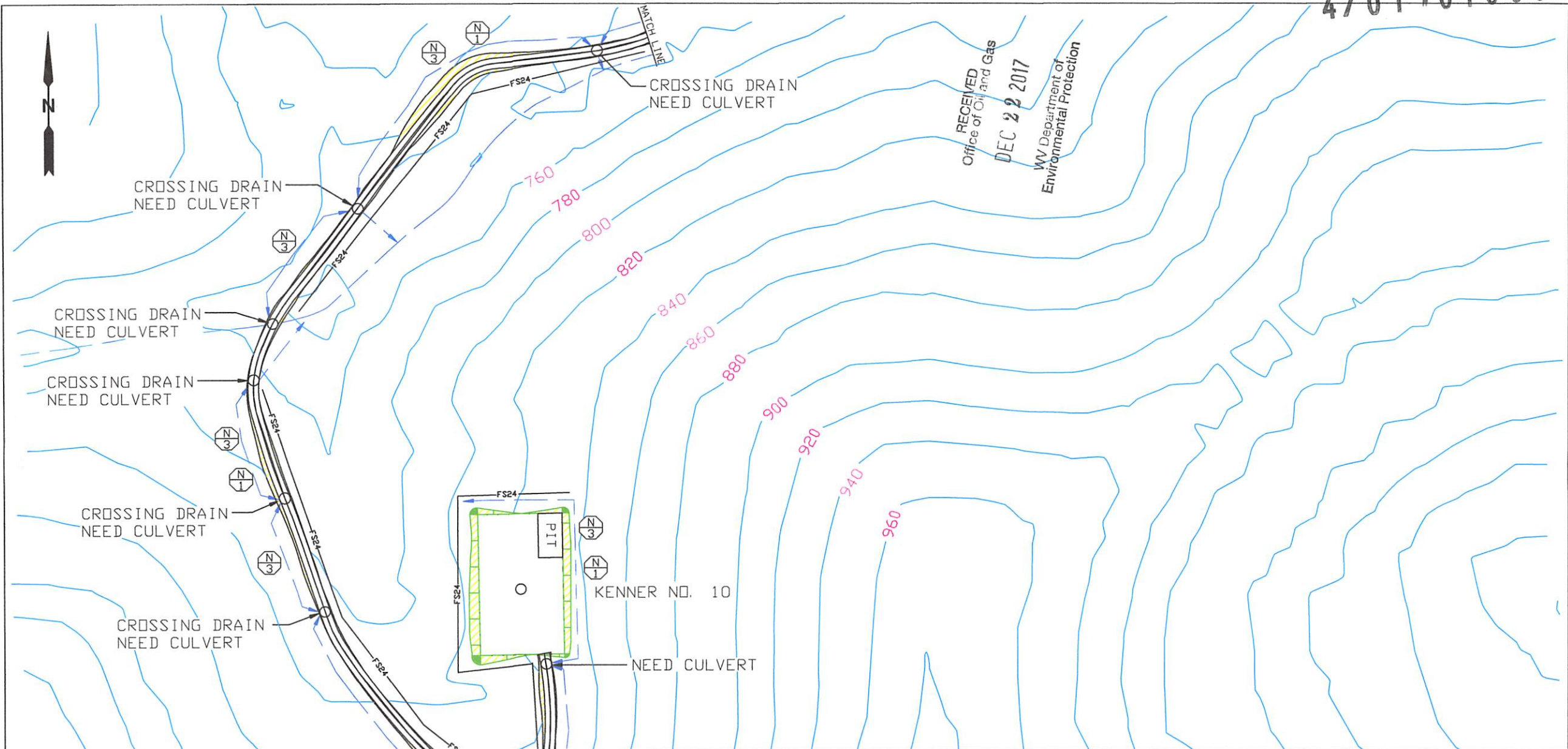


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Office of Oil and Gas  
DEC 22 2017  
WV Department of  
Environmental Protection



| LEGEND |   | EROSION AND SEDIMENT CONTROL PLAN  |                                     |
|--------|---|--|-------------------------------------|
|        | PROVIDE FLEXTERRA HIGH PERFORMANCE FLEXIBLE GROWTH MEDIUM (HP-FLM) ON CUT AND FILL SLOPES |  | STREAM                              |
|        | LEVEL SPREADER  |  | PROPERTY LINE                       |
|        | DIVERSION DITCH   |  | SLOPE AREA                          |
|        | BERM OUTLET   |  | WETLAND                             |
|        |   |  | 24" COMPOST FILTER SOCK AS REQUIRED |
|        |   | KEYROCK ENERGY, LLC<br>PROPOSED WELL: KENNER NO. 10<br>GRANT DISTRICT, CABELL COUNTY<br>MILTON QUAD, WV 7.5'<br>DECEMBER 11, 2017<br>TRUE LINE SURVEYING<br>6211 FAIRVIEW DR.<br>HUNTINGTON, WV 25705<br>PAGE 1 OF 2 |                                     |

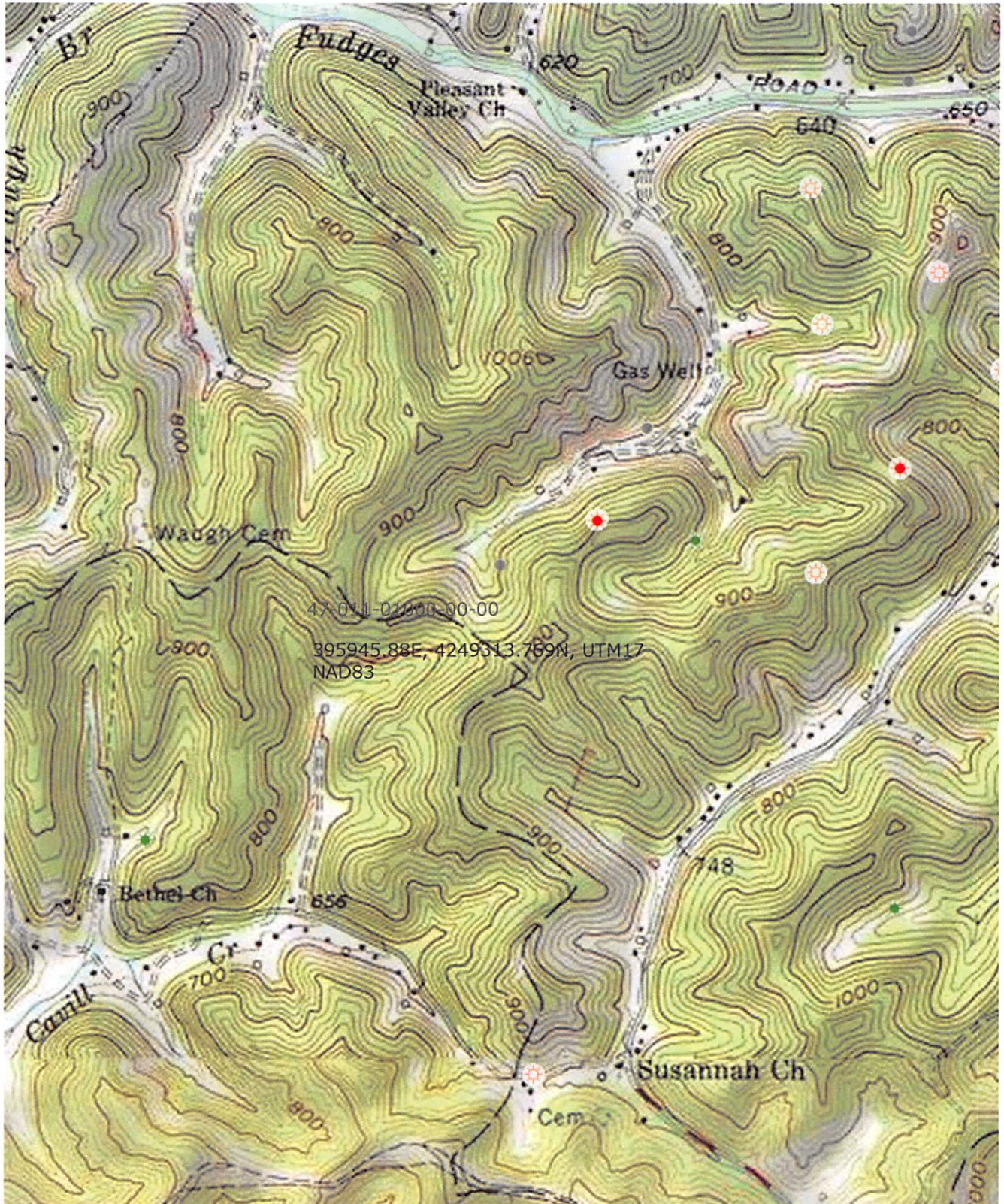




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DEC 22 2017  
WV Department of  
Environmental Protection

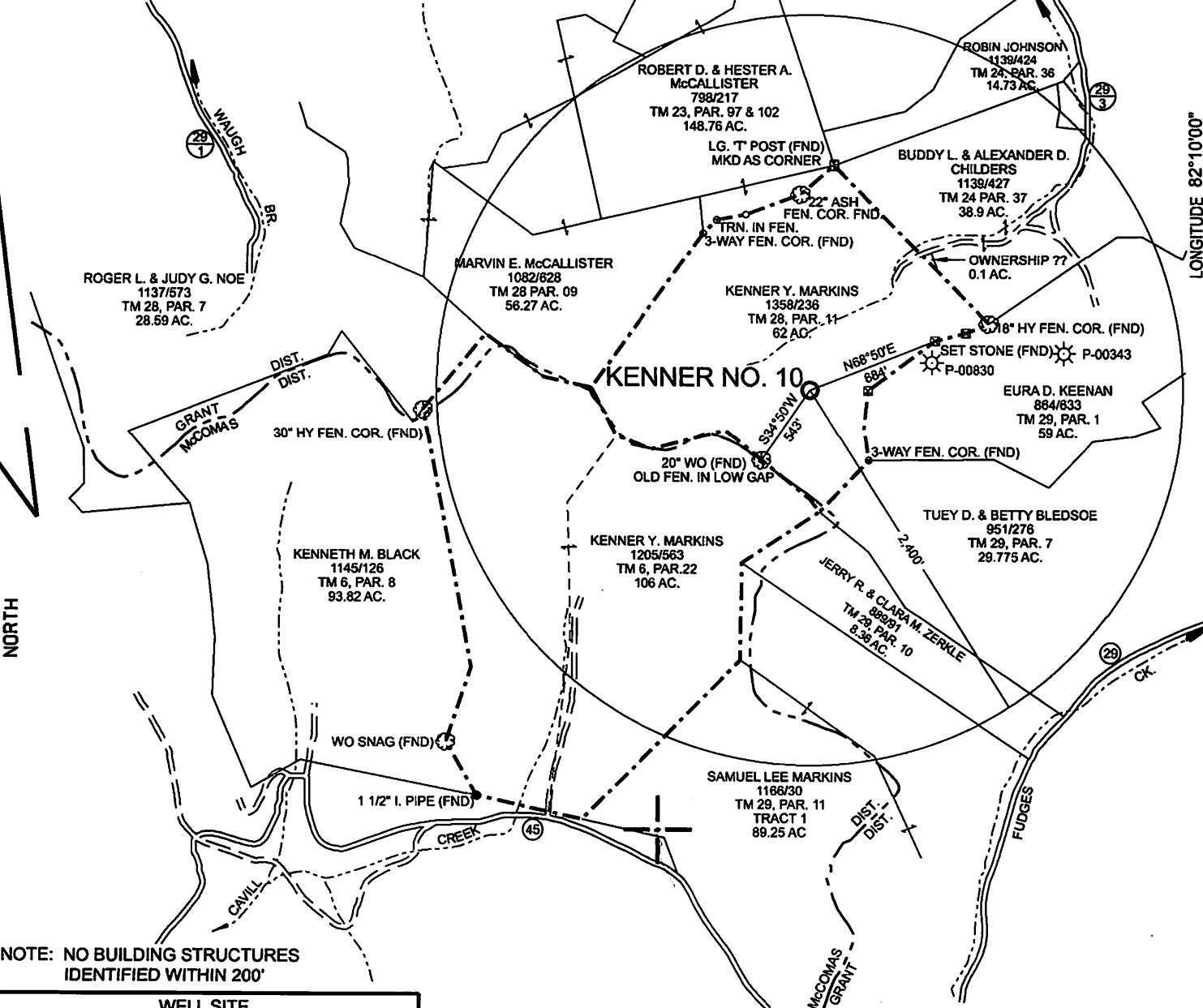
| LEGEND |   | EROSION AND SEDIMENT CONTROL PLAN   |                                     |
|--------|---|---|-------------------------------------|
|        | PROVIDE FLEXTERRA HIGH PERFORMANCE FLEXIBLE GROWTH MEDIUM (HP-FLM) ON CUT AND FILL SLOPES |   | STREAM                              |
|        | LEVEL SPREADER  |   | PROPERTY LINE                       |
|        | DIVERSION DITCH   |   | SLOPE AREA                          |
|        | BERM OUTLET   |   | WETLAND                             |
|        |   |   | 24' COMPOST FILTER SOCK AS REQUIRED |
|        |   | KEYROCK ENERGY, LLC<br>PROPOSED WELL: KENNER NO. 10<br>GRANT DISTRICT, CABELL COUNTY<br>MILTON QUAD, WV 7.5'<br>DECEMBER 11, 2017<br>TRUE LINE SURVEYING<br>6211 FAIRVIEW DR.<br>HUNTINGTON, WV 25705 |                                     |
|        |   | PAGE <u>2</u> OF <u>2</u>   |                                     |





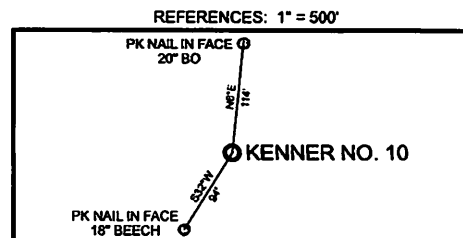


NOTE: ALL WELLS IDENTIFIED WITHIN 2400' ARE SHOWN



NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

|  |  |
|--|--|
| <b>WELL SITE</b>   |  |
| STATE PLANE WV<br>SOUTH ZONE NAD 1927<br>N - 506,839.692 : E - 1,658,469.980 |  |
| LATITUDE: (N) 38.3858945°<br>LONGITUDE: (W) 82.1915490°                      |  |
| UTM NAD83<br>17 - 84W TO 78W, METERS<br>N - 4,249,313.769 : E - 395,945.880  |  |

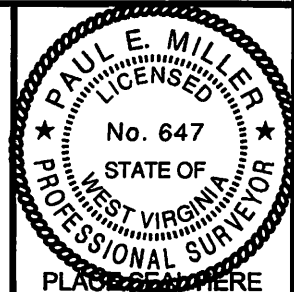


( + ) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

|                            |                          |
|----------------------------|--------------------------|
| FILE NO.                   | <u>KENNER #10.DGN</u>    |
| DRAWING NO.                | <u>KENNER 10</u>         |
| SCALE                      | <u>1" = 1000'</u>        |
| MINIMUM DEGREE OF ACCURACY | <u>1:200</u>             |
| PROVEN SOURCE OF ELEVATION | <u>MAPPING GRADE GPS</u> |

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 ENVIRONMENTAL PROTECTION.

(SIGNED) *Paul E. Miller*  
R.P.E. \_\_\_\_\_ L.L.S. 647



STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OIL AND GAS DIVISION



DATE DECEMBER 15, 20 17  
OPERATOR'S WELL NO. KENNER NO. 10 REV  
API WELL NO.

47 011 01000  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION 841' WATER SHED FUDGES CREEK

DISTRICT GRANT COUNTY CABELL

QUADRANGLE MILTON, WV 7.5'

SURFACE OWNER KENNER Y. MARKINS ACREAGE 62

OIL & GAS ROYALTY OWNER KENNER Y. MARKINS LEASE ACREAGE 168

LEASE NO. KENNER MARKINS

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 \_\_\_\_\_

TARGET FORMATION LOWER HURON ESTIMATED DEPTH 3,400'

WELL OPERATOR KEYROCK ENERGY, LLC DESIGNATED AGENT LINDA SADLER

ADDRESS P.O. BOX 2223, JOHNSON CITY, TN 37605 ADDRESS 209 CAPITOL ST. CHARLESTON, WV 25301

FORM WW-6

COUNTY NAME

PERMIT