



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

August 13, 2015

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-2101035, issued to EQT PRODUCTION COMPANY, 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin

Chief

Operator's Well No: 1681

Farm Name: KEITH, J. W.

API Well Number: 47-2101035

Permit Type: Plugging

Date Issued: 08/13/2015

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.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. 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.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. This well is under a consent order and must be plugged under the terms of that agreement.

Form WW-4 (B)
Permit Copy
(Rev 2/01)

Date: July 21, 2015
Operator's Well
Well No. 656531 (Ketih #1681)
API Well No.: 47 021 - 01035

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil _____ Gas X Liquid Injection _____ Waste Disposal:
If Gas, Production _____ X _____ Or Underground storage _____ Deep _____ Shallow X

5) Elevation: 1044 ft. Watershed: Duck Creek
Location: Glenville County: Gilmer Quadrangle: Glenville
District: _____

6) Well Operator EQT Production Company 7) Designated Agent: Rex C. Ray
Address: 120 Professional Place Address: 120 Professional Place
Bridgeport, WV 26330 Bridgeport, WV 26330

8) Oil & Gas Danny Mullins 9) Plugging Contractor:
Name: 124 Big Trace Fork Road 220 Jack Acres Name: HydroCarbon Well Service
Address: Harts, WV 25624 Buckhannon WV Address: PO BOX 995
Buckhannon, WV 26201

10) Work Order: The work order for the manner of plugging this well is as follows:
See Attachment for details and procedures.

OFFICE USE ONLY

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector

Danny Mullins

Date 8-4-15

PLUGGING PROGNOSIS

Keith, J.W. #1-1681(656531)
 Gilmer. Co. WV
 District, Glenville
 API # 47-021-01035
 BY: R.Green
 DATE: 02/17/15

CURRENT STATUS:

10" @ 238' 8 1/4" @ 961'
 8 1/4" @ 961'
 6 5/8" @ 1954' (on packer set @ 1790')
 TD @ 2150'
 Elevation @ 983'

★ 6 5/8" PERFORATED FROM 1810' TO 1798'.

Fresh Water @ 95'
 Salt Water @ None reported
 Coal @ None reported
 Gas Shows @ 1621', 1799', 2081'
 Oil Shows @ none reported

1. Notify State Inspector, **Danny Mullins, 304-932-6844**, 24 hrs. Prior to commencing operations.
2. TIH to 2081', set 200' C1A cement plug 2081' to 1881' (Big Injun gas @ 2081', 6 5/8" casing seat).
3. TOOH tbg to 1881', gel hole 1881' to 1781' TOOH tbg.
4. Free point 6 5/8" casing, cut casing @ free point, (est @ 1790') TOOH casing.
5. Set 100' C1A cement plug 50' in/out of cut, perforate all salt water, fresh water, coal, oil and gas shows below cut. Do not omit any plugs.
6. TOOH tbg 1740, gel hole 1740' to 1621'.
7. TOOH tbg to 1621', set 100' C1A cement plug 1621' to 1521' (gas show @ 1621').
8. TOOH tbg to 1521', gel hole 1521' to 1033'.
9. TOOH tbg to 1033', set 100' C1A cement plug 1033' to 933', (8 1/4" casing seat, elevation). TOOH tbg.
10. Free point 8 1/4" casing, cut casing @ free point, (est @ 850'), TOOH casing.
11. Set 100' C1A cement plug 50' in/ out of casing cut, perforate all fresh water, salt water, coal, oil and gas shows below cut,. Do not omit any plugs.
12. TOOH tbg to 800' gel hole 800' to 500'.
13. TOOH tbg to 500', set 100' C1A cement plug 500' to 400'. (safety plug)
14. TOOH tbg to 400', gel hole 400' to 300'.
15. TOOH tbg to 300', set 300' C1A cement plug 300' to surface. (10" casing seat, fresh water)
16. Erect monument with API#.
17. Reclaim location, road to WV-DEP specifications.

★ SPOT GEL BEFORE SETTING FIRST CEMENT PLUG.

★ COVER PERFORATIONS WITH C1A CEMENT PLUG. ("1810' - 1710')

Office of Oil and Gas

JUL 24 2015

WV Department of
 Environmental Protection

08/14/2015

J. Keith #1681

47-021-01035

2101035P

Geol. Dept.
M. S. Foster
Date
12/20/56



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 2

656531

RECEIVED
JUL 24 1955
UNITED CARBON CO.
GEOLOGICAL DEPT.

73 Glenville

WELL RECORD

Permit No. GI-1035

Oil or Gas Well Gas
(KIND)

Company CARNEGIE NATURAL GAS COMPANY
Address 1015 Frick Bldg., Pittsburgh 19, Pa.
Farm James W. Keith et al Acres 120
Location (waters) Duck Creek
Well No. 1 - 1681 Elev. 983'
District Glenville County Gilmer
The surface of tract is owned in fee by Dor Langford
Rt. #1, Box #46 Address Glenville, W. Va.
Mineral rights are owned by James W. Keith et al
& A.J. Keith Address Sand Fork, W. Va.
Drilling commenced August 9th 1955
Drilling completed October 6th 1955
Date Shot 9-26-55 From 2031 To 2032
With Hydro-fracture
Open Flow /10ths Water in _____ Inch
/10ths Merc. in _____ Inch
Volume 189,000 Cu. Ft.
Rock Pressure 595 lbs. 48 hrs.
Oil _____ bbls. per 24 hrs.
Fresh water 95 feet _____ feet
Salt water _____ feet _____ feet

| Casing and Tubing | Used in Drilling | Left in Well | Packers |
|-------------------|------------------|--------------|---------------------|
| Size | | | |
| 16 | | | Kind of Packer |
| 13 | | | Anchor |
| 10 | 238 | 238 | Size of 7" x 8-5/8" |
| 8 1/2 | 961 | 961 | Depth set 1790 |
| 6 1/2 | 1954 | 1954 | Perf. top 1798 |
| 5 3/16 | | | Perf. bottom 1810 |
| 8 | | | Perf. top |
| 2 | | | Perf. bottom |
| Liners Used | | | |

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
_____ FEET _____ INCHES FEET _____ INCHES
_____ FEET _____ INCHES FEET _____ INCHES

| Formation | Color | Hard or Soft | Top | Bottom | Oil, Gas or Water | Depth Found | Remarks |
|-----------|-------|--------------|------|--------|-------------------|-------------|---------|
| Clay | Red | Soft | 0 | 20 | | | |
| Lime | Gray | Hard | 20 | 35 | | | |
| Clay | Red | Soft | 35 | 47 | | | |
| Sand | | Hard | 47 | 85 | | | |
| Slate | White | Soft | 85 | 98 | Fresh water | 95 | |
| Lime | White | Hard | 98 | 108 | | | |
| Slate | | Soft | 108 | 115 | | | |
| Red Rock | Red | Soft | 115 | 120 | | | |
| Slate | White | Soft | 120 | 132 | | | |
| Red Rock | Red | Soft | 132 | 145 | | | |
| Slate | Gray | Hard | 145 | 241 | | | |
| Slate | Dark | Soft | 241 | 260 | | | |
| Shells | | | 260 | 349 | | | |
| Red Rock | | | 349 | 395 | | | |
| Lime | | Hard | 395 | 410 | | | |
| Red Rock | | Soft | 410 | 425 | | | |
| Slate | White | | 425 | 445 | | | |
| Red Rock | | Soft | 445 | 502 | | | |
| Slate | | | 502 | 522 | | | |
| Red Rock | | | 522 | 545 | | | |
| Slate | White | | 545 | 598 | | | |
| Lime | | Hard | 598 | 610 | | | |
| Shells | | | 610 | 645 | | | |
| Red Rock | | | 645 | 652 | | | |
| Slate | | | 652 | 720 | | | |
| Pink Rock | | | 720 | 730 | | | |
| Slate | | | 730 | 775 | | | |
| Sand | White | Soft | 775 | 794 | | | |
| Shells | | | 794 | 830 | | | |
| Lime | | Hard | 830 | 871 | | | |
| Sand | White | Hard | 871 | 932 | | | |
| Slate | | | 932 | 945 | | | |
| Sand | White | Hard | 945 | 974 | | | |
| Slate | | Shelly | 974 | 990 | | | |
| Sand | | | 990 | 1011 | | | |
| Slate | | | 1011 | 1027 | | | |
| Sand | White | Soft | 1027 | 1105 | | | |
| Slate | Black | | 1105 | 1114 | | | |
| Sand | Dark | Soft | 1114 | 1188 | | | |



Little Dunkard
Big Dunkard
RECEIVED
Office of Oil and Gas
Gas Sand
JUL 24 1955
1st Salt Sand

| Formation | Color | Hard or Soft | Top 2 | Bottom | Oil, Gas or Water | Depth Found | Remarks | |
|-------------|-------|--------------|-------------|--------|-------------------|----------------|---------------|---------------|
| Slate | Black | Soft | 1188 | 1210 | | | | |
| Lime | | | 1210 | 1225 | | | | |
| Sand | | | 1225 | 1254 | | | | |
| Slate Shls. | | | 1254 | 1434 | | | 2nd Salt Sand | |
| Sand | | | 1434 | 1460 | | | | |
| Slate Shls. | | | 1460 | 1618 | | | 3rd Salt Sand | |
| Sand | | | 1618 | 1702 | | | | |
| Slate Shls. | | | 1702 | 1781 | | Gas show | 1621-26' | 4th Salt Sand |
| Sand | | | 1781 | 1812 | | Gas | 1799-1810' | Maxon Sand |
| Lime | | | Broken | 1812 | 1845 | | | |
| Sand | | | | 1845 | 1850 | | | |
| Red Rock | | | | 1850 | 1858 | | | |
| Slate | | | | 1858 | 1877 | | | |
| Lime | | | | 1877 | 1898 | | | |
| Sand | 1898 | 1928 | | | | Little Lime | | |
| Slate | Soft | 1928 | | 1930 | | Break at 1903' | Blue Monday | |
| Lime | | 1930 | | 1985 | | | | |
| Sand | | 1985 | | 1992 | | | Big Lime | |
| Lime | | Hard | | 1992 | 2000 | | | |
| Sand | 2000 | | 2110 | | Gas show | 2081-92' | Big Lime | |
| Slate | 2110 | | | | | Big Injun | | |
| | | | Total Depth | 2150 | | | | |

RECEIVED
Office of Oil and Gas

Date November 23, 1955

APPROVED CARNEGIE NATURAL GAS COMPANY, Owner

WV Department of Environmental Protection
JUL 24 1955
08/14/2015

1) Date: July 21, 2015
2) Operator's Well Number
656531 (Ketih #1681)
3) API Well No.: 47 021 - 01035
State County Permit

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
NOTICE AND APPLICATION TO PLUG AND ABANDON WELL

4) Surface Owner(s) to be served:
(a) Name Parker E. and Wilma Tallhamer
Address 3568 Spruce Run Road
Glennville, WV 26351

(b) Name _____
Address _____

(c) Name _____
Address _____

6) Inspector Danny Mullins
Address 124 Big Trace Fork Road
Harts, WV 25524
Telephone (304) 932-6844

5) (a) Coal Operator:
Name None
Address _____

(b) Coal Owner(s) with Declaration
Name J. W. Keith Estate
C/O Jacky Persinger, Trustee
Address P. O. Box 129
Sand Fork, WV 26430-0129
Name _____
Address See Attachment.

(c) Coal Lessee with Declaration
Name None
Address _____

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

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
 - (2) The plat (surveyor's map) showing the well location on Form WW-6.
- The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any 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 permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Division of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat 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 mailing or delivery to the Chief.

Well Operator: EQT Production Company
By: Victoria J. Roark
Its: Permitting Supervisor
Address: PO Box 280
Bridgeport, WV 26330
Telephone: (304) 848-0076

Subscribed and sworn before me this 21st day of July, 2015
Misty S. Christie Notary Public
My Commission Expires: 2/20/18

The Office of Oil & Gas processes your personal information, such as name, address and phone number, as 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 depprivacyoffice@wv.gov



JUL 24 2015

08/14/2015
WV Department of Environmental Protection

WW2-A

Additional Coal Owners

Wilma Tallhamer
3568 Spruce Run Road
Glennville, WV 26351-8197

Susan Acord
3774 Sanford Drive
Brunswick, OH 44212-2603

Sheryl Kathleen Angel
4950 Walther Road
Kettering, OH 45429-1944

Nedra K. Downs
1682 Lexington Drive
Lancaster, OH 43130-1215

Janet L. Madru
138 Scioto Street
Chillicothe, OH 45601-2633

Raetta Willodene Lawson
981 Ulmer Road Lot 121
Frostproof, FL 33843-3551

ET Bluegrass Appolo Divison
P. O. Box 2347
Charleston, WV 25328

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JUL 24 2015

WV Department of
Environmental Protection 08/14/2015

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE**

Operator Name: EQT PRODUCTION COMPANY OP ID: _____

Watershed: Duck Creek Quadrangle: Glenville

Elevation: 1044 ft. County: Gilmer District: Glenville

Description of anticipated Pit Waste: Formation Fluids

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes___ NoX

Will synthetic liner be used in the pit? Yes Is so, what ml.? 10 ml

Proposed Disposal Method for Treated Pit Wastes:

- Land Application
- Underground Injection - UIC Permit Number _____
- Reuse (at API Number) _____
- Offsite Disposal Permit #. _____
- Other: Explain _____

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. _____

If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used? _____

Will closed loop system be used? _____

Drill Cuttings disposal method? Leave in pit, landfill, remove offsite, etc. _____

If left in pit and plan to solidify what medium will be used? Cement, Lime, sawdust _____

Landfill or offsite name/permit number? _____

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Division of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any terms 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 *Victoria Roark*

Company Official (Typed or Printed) Victoria Roark

Company Official Title Permitting Supervisor-WV

Subscribed and sworn before me this 21st day of July, 2015

Misty S. Christie Notary Public
2/20/12

My Commission Expires _____

RECEIVED
Office of Oil and Gas

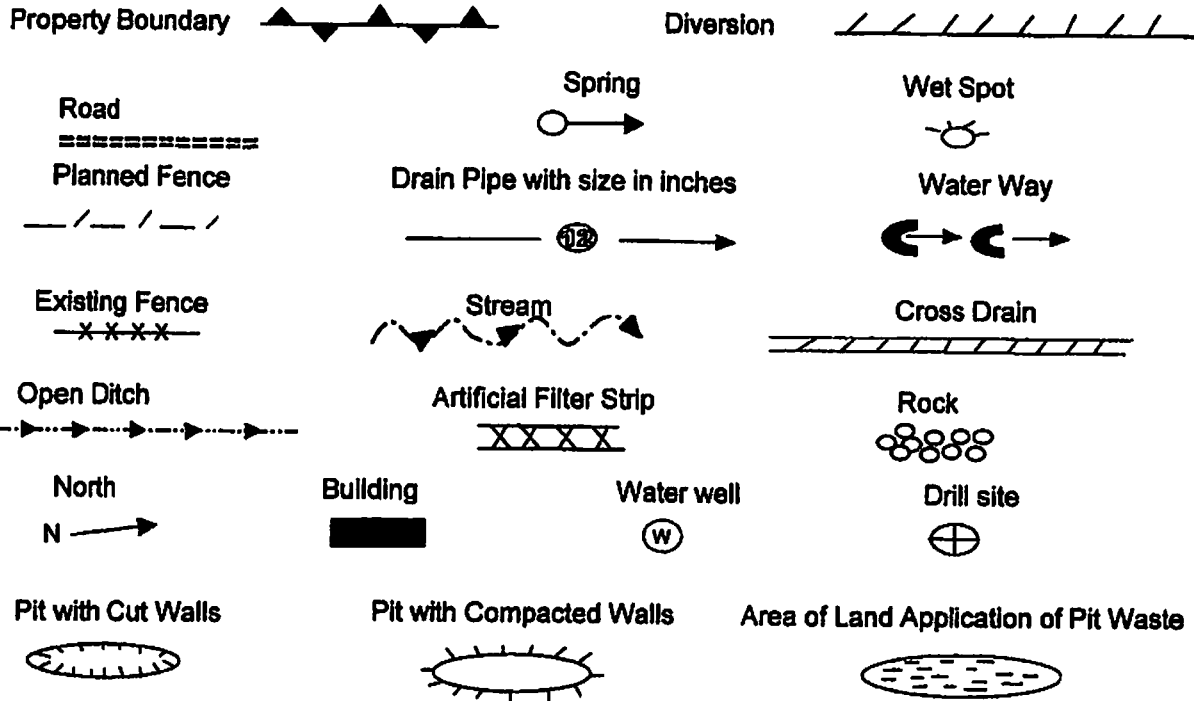
JUL 24 2015



WV Department of
Environmental Protection
08/14/2015

OPERATOR'S WELL NO.:
658531 (Kath #1681)

LEGEND



Proposed Revegetation Treatment: Acres Disturbed: 1± Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20) or equivalent 1/3 ton lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre or hydroseed.

SEED MIXTURES

| Area I | | Area II | |
|---------------|----------|---------------|----------|
| Seed Type | lbs/acre | Seed Type | lbs/acre |
| Red Fescue | 40 | Red Fescue | 15 |
| Alsike Clover | 5 | Alsike Clover | 5 |
| Annual Rye | 15 | | |
| | | | |

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

Plan approved by: _____

Comments: _____

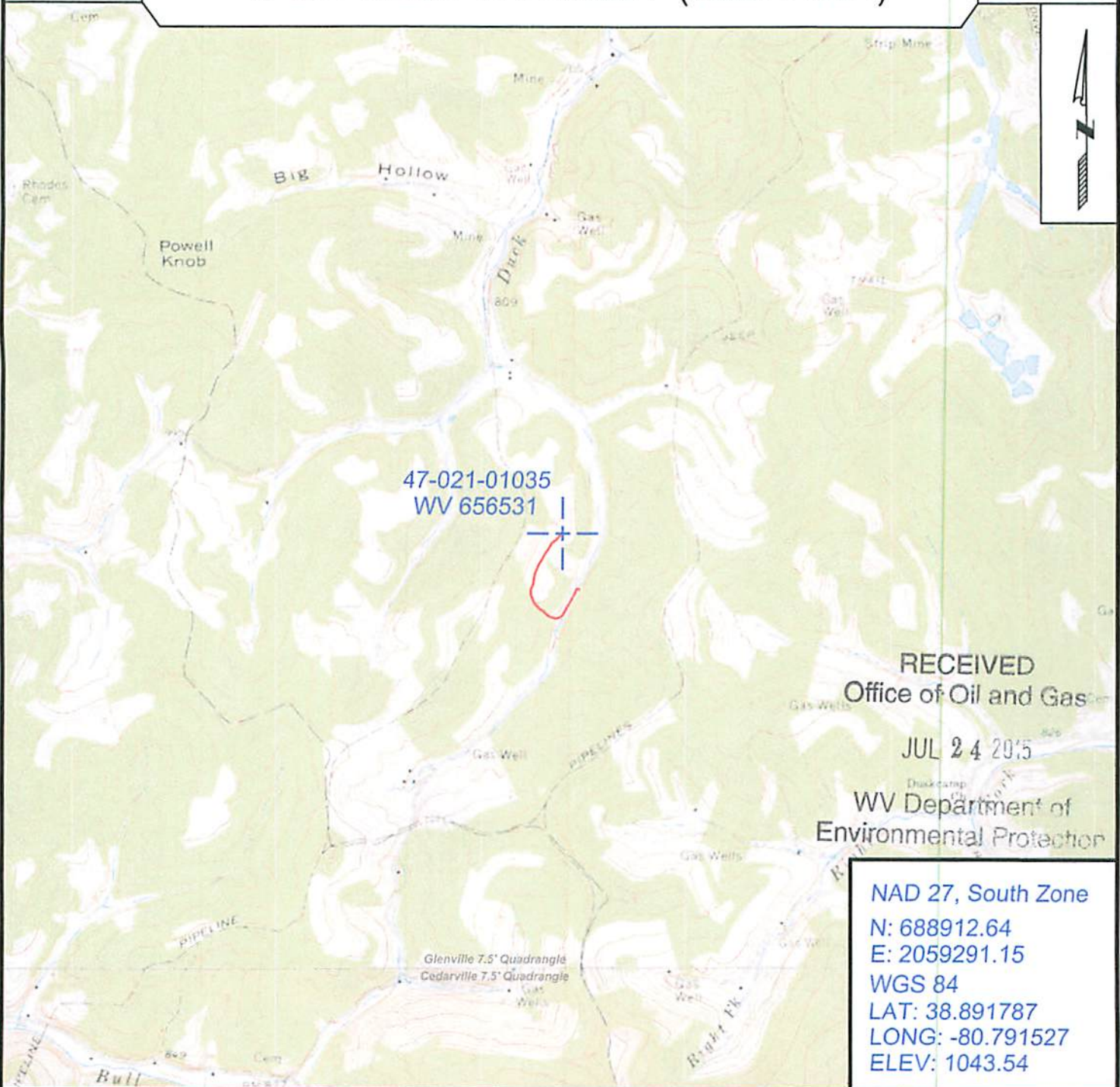
Title: _____ Date: _____

Field Reviewed? Yes No

Topo Quad: Glenville 7.5' Scale: 1" = 2000'
 County: Gilmer Date: July 6, 2015
 District: Glenville Project No: 25-19-00-07

47-021-01035 WV 656531 (Keith #1681)

Topo



47-021-01035
WV 656531

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Office of Oil and Gas

JUL 24 2015

WV Department of
Environmental Protection

NAD 27, South Zone
 N: 688912.64
 E: 2059291.15
 WGS 84
 LAT: 38.891787
 LONG: -80.791527
 ELEV: 1043.54



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.

1-800-482-8606
 237 Birch River Road
 Birch River, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR:

EQT Production Company

P.O. Box 280
 Bridgeport, WV 26330

08//14/2015

2101035P

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-021-01035 WELL NO.: WV 656531 (Keith #1681)

FARM NAME: James W. Keith, et al.

RESPONSIBLE PARTY NAME: EQT Production Company

COUNTY: Gilmer DISTRICT: Glenville

QUADRANGLE: Glenville 7.5'

SURFACE OWNER: Parker and Wilma Tallhamer

ROYALTY OWNER: J. W. Keith Estate, et al.

UTM GPS NORTHING: 4304789

UTM GPS EASTING: 518080 GPS ELEVATION: 318 m (1044 ft)

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

- Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
- Accuracy to Datum – 3.05 meters
- Data Collection Method:
Survey grade GPS ; Post Processed Differential
Real-Time Differential
Mapping Grade GPS ; Post Processed Differential
Real-Time Differential
- Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

Signature

PS # 2180
Title

7/8/15
Date

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Office of Oil and Gas
JUL 24 2015
08/14/2015
WV Department of
Environmental Protection

2101035P

Topo Quad: Glenville 7.5' Scale: 1" = 2000'

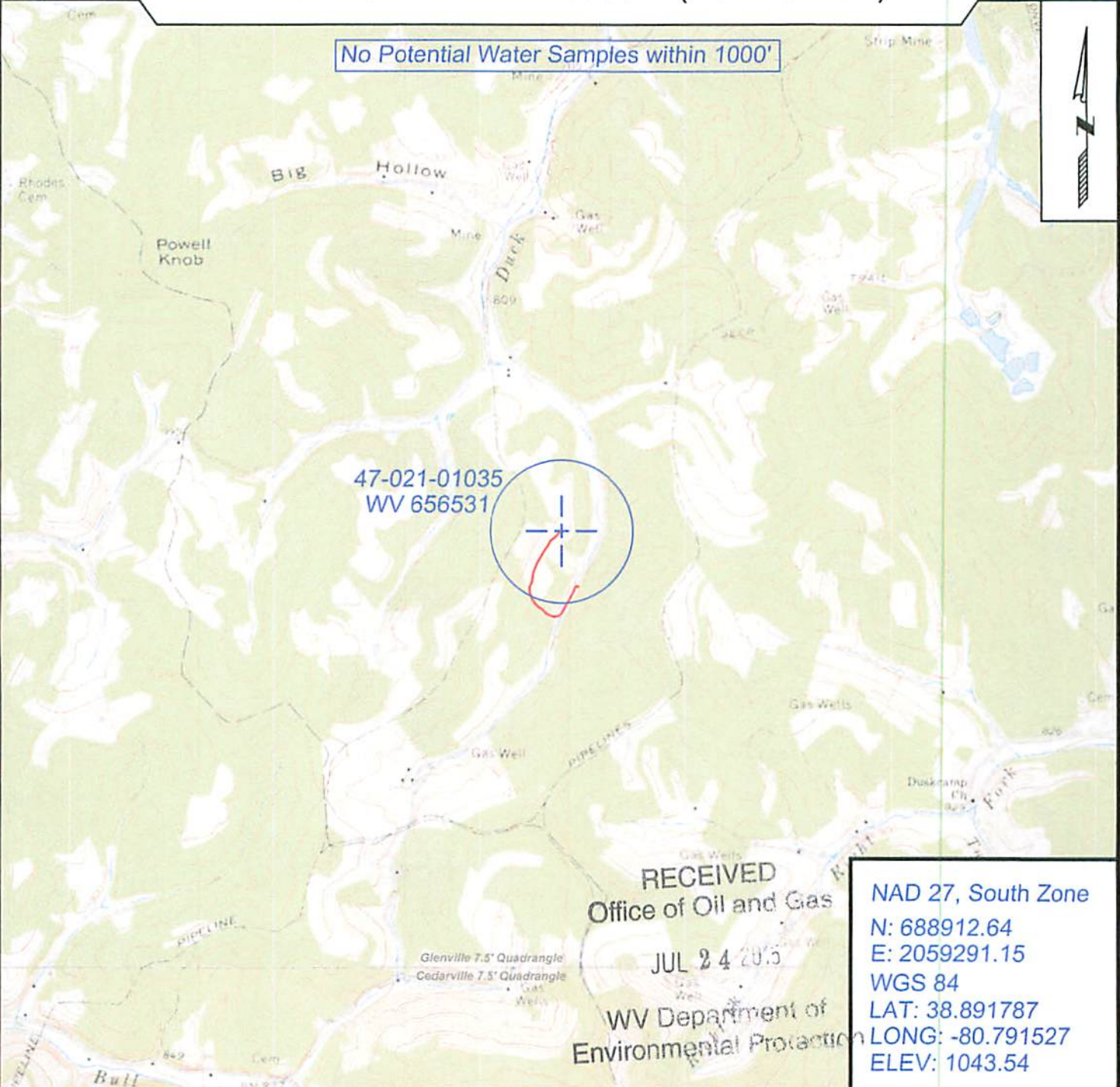
County: Gilmer Date: July 6, 2015

District: Glenville Project No: 25-19-00-07

Water

47-021-01035 WV 656531 (Keith #1681)

No Potential Water Samples within 1000'



47-021-01035
WV 656531

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Office of Oil and Gas

JUL 24 2015

WV Department of
Environmental Protection

NAD 27, South Zone
N: 688912.64
E: 2059291.15
WGS 84
LAT: 38.891787
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PH: (304) 649-8606
FAX: (304) 649-8608

PREPARED FOR:

EQT Production Company

P.O. Box 280
Bridgeport, WV 26330

08/14/2015



POTENTIAL WATER SAMPLE DATA SHEET

CLIENT: EQT PRODUCTION COMPANY
LEASE NAME AND WELL No. Keith #1681 - WV 656531 - API No. 47-021-01035

POTENTIAL SAMPLE LOCATIONS

There appears to be no known water samples within the required 1000' of the existing well WV 656531.

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Office of Oil and Gas

JUL 24 2015

WV Department of
Environmental Protection

BIRCH RIVER OFFICE
237 Birch River Road
Birch River, WV 26610
phone: 304-649-8606
fax: 304-649-8608

BRIDGEPORT OFFICE
172 Thompson Drive
Bridgeport, WV 26330
phone: 304-848-5035
fax: 304-848-5037

ALUM CREEK OFFICE
P.O. Box 108 • 1413 Childress Rd
Alum Creek, WV 25003
phone: 304-756-2949
fax: 304-756-2948

RANSON OFFICE
401 South Fairfax Blvd, Suite 3
Ranson, WV 25438
phone: 304-724-5008
fax: 304-724-5010