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**west virginia** department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

March 12, 2014

**WELL WORK PERMIT**

**Re-Work**

This permit, API Well Number: 47-3901198, issued to COLUMBIA GAS TRANSMISSION, 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: LANHAM 7141  
Farm Name: COUNTY COURT OF KANAWHA  
**API Well Number: 47-3901198**  
**Permit Type: Re-Work**  
Date Issued: 03/12/2014

**Promoting a healthy environment.**

# PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

## CONDITIONS

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1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.

WW - 2B  
(Rev. 8/10)

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

39 09 551

1) Well Operator: Columbia Gas Transmission, LLC 307032 Kanawha Union Pocatalico  
Operator ID County District Quadrangle

2) Operator's Well Number: Lanham 7141 (existing well) 3) Elevation: 724

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

5) Proposed Target Formation(s): Big Lime Proposed Target Depth: 1560

6) Proposed Total Depth: 1707 (existing) Feet Formation at Proposed Total Depth: Big Lime

7) Approximate fresh water strata depths: none reported by driller in 1945

8) Approximate salt water depths: none reported by driller in 1945

9) Approximate coal seam depths: none reported by driller in 1945

10) Approximate void depths,(coal, Karst, other): none reported

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)  
Kill well. Pull tubing. Obtain logs. Install new API wellhead. Acid stimulate.

*Handwritten signature and date: 2-18-14*

\* Casing and tubing listed below are existing.

13) **CASING AND TUBING PROGRAM**

| TYPE                           | SPECIFICATIONS |       |               | FOOTAGE      | INTERVALS    | CEMENT             |
|--------------------------------|----------------|-------|---------------|--------------|--------------|--------------------|
|                                | Size           | Grade | Weight per ft | For Drilling | Left in Well | Fill -up (Cu. Ft.) |
| Conductor                      | 16             |       |               | 16           | 16           | none reported      |
| Fresh Water                    | 13.75          |       |               | 80           | 80           | none reported      |
| <del>Coal</del><br>FRESH WATER | 10.75          |       |               | 615          | 615          | none reported      |
| Intermediate                   | 8.625          |       |               | 1580         | 1580         | none reported      |
| Production                     | 5.5            |       | 15.5          | 1700         | 1700         | 275 sx             |
| Tubing                         | 2.325          | J-55  | 4.6           | 1708         | 1708         | none               |
| Liners                         |                |       |               |              |              |                    |

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FEB 24 2014

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

Storage Pool X-2-7141

July 6, 1950

Well CKP-11

Cumberland Gas Corporation  
 Raymond City Coal & Transp. Co. Farm  
 Union District, Kanawha County, W. Va.  
 Drilling Commenced 4-5-45  
 Drilling Completed 5-10-45  
 Acidized 5-13-45 with 1500 Gallons  
 Open Flow 125/10ths Mercury in 3"  
 Volume 3914  
 Rock Pressure - 572# - 48 Hrs.

16" Casing 16'  
 13-3/4" Casing 80'  
 10-3/4" Casing 615'  
 8-5/8" Casing 1607'  
 3-1/2" O.D. Casing(Set at 1720'  
 8-5/8" x10-3/4" B.H. Packer  
 Set at 1580  
 1-3-1/2x8-5/8x16 Comb. W & A  
 Set at 1690'6"

| <u>Formation</u> | <u>Top</u> | <u>Bottom</u> |
|------------------|------------|---------------|
| Clay             | 0          | 10            |
| Sand             | 10         | 20            |
| Red Rock         | 20         | 30            |
| Sand             | 30         | 50            |
| Red Rock         | 50         | 76            |
| Slate            | 76         | 85            |
| Red Rock         | 85         | 100           |
| Slate            | 100        | 120           |
| Red Rock         | 120        | 140           |
| Shale            | 140        | 150           |
| Red Rock         | 150        | 160           |
| Shale            | 160        | 175           |
| Red Rock         | 175        | 210           |
| Slate            | 210        | 225           |
| Red Rock         | 225        | 240           |
| Sand             | 240        | 290           |
| Slate            | 290        | 320           |
| Red Rock         | 320        | 340           |
| Slate            | 340        | 350           |
| Red Rock         | 350        | 360           |
| Sand             | 360        | 460           |
| Slate            | 460        | 470           |
| Sand             | 470        | 560           |
| Slate            | 560        | 570           |
| Sand             | 570        | 600           |
| Slate & Shells   | 600        | 620           |
| Sand             | 620        | 660           |
| Slate            | 660        | 670           |
| Sand             | 670        | 760           |
| Slate & Shells   | 760        | 845           |
| Sand             | 845        | 890           |
| Slate            | 890        | 1055          |
| Salt Sand        | 1055       | 1555          |
| Pencil Cave      | 1555       | 1560          |
| Top Big Lime     | 1560       | 1685          |
| Sand             | 1685       | 1693          |
| Lime             | 1693       | 1707          |
| Total Depth      |            | 1707          |

Remarks

1707  
 3  
 1  
 51

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 FEB 2 2014  
 Office of Oil and Gas  
 WV Dept. of Environmental Protection

Gas 1630-1645 7/10 Water through 2"  
 Exhausted - 2 Hrs. 112 M

Gas 1699-1706 20/10 Mercury 3" - Natural  
 1565.

3901198R

WW-2A  
(Rev. 6-07)

1.) Date: 2/12/14  
2.) Operator's Well Number Lanham 7141  
State 47- County 039 Permit 01198  
3.) API Well No.:

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

Check # 5114029  
\$650.00

4) Surface Owner(s) to be served:  
(a) Name County Court of Kanawha County A  
Address 407 Virginia St, East  
Charleston, WV 25301  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Terry Urban  
Address PO Box 1207  
Clendenin, WV 25045  
Telephone 304-549-5915

5) (a) Coal Operator  
Name not operated  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name not operated  
Address \_\_\_\_\_  
(c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_

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

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

x 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.

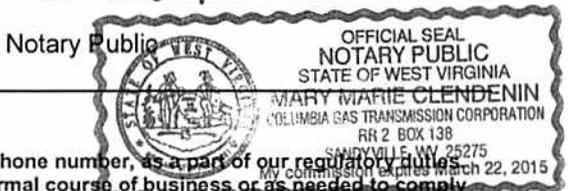
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Columbia Gas Transmission, LLC  
By: James E. Amos *James E. Amos*  
Its: Senior Engineer  
Address 1700 MacCorkle Ave. SE  
Charleston, WV 25325-1273  
Telephone 304-373-2412

Subscribed and sworn before me this 20th day of February, 2014

*Mary Marie Clendenin*  
My Commission Expires 3/22/2015  
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)

Affidavit of Personal Service

State Of West Virginia

County Of Kanawha

The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A)  / WW-3(A)  / WW-4(A)  / WW-5(A)  / WW-6(A)
- (2) Application on Form WW-2(B)  / WW-3(B)  / WW-4(B)  / WW-5(B)  / WW-6(B)
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. 7141 located in Union District, Kanawha County, West Virginia, upon the person or organization named--

County Court of Kanawha County

--by delivering the same in Kanawha County, State of West Virginia on the 24<sup>th</sup> day of February, 2014 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him      / her      / or, because he      / she      / refused to take it when offered it, by leaving it in his      / her      / presence.

Handing it to a member of his or her family above the age of 16 years named      who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to     , a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named     , or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

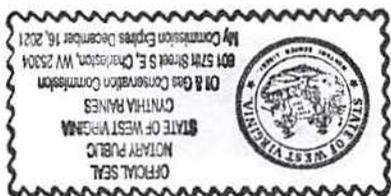
Handing it to the corporation's employee  officer      / director      / attorney in fact      / named Jennifer Elkins

Mitchell McCleary  
(Signature of person executing service)

Taken, subscribed and sworn before me this 24<sup>th</sup> day of February, 2014.  
My commission expires December 14, 2021

Cynthia Raines  
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



Received  
FEB 24 2014  
Office of Oil and Gas  
WV Dept. of Environmental Protection

WW-2A1  
(Rev. 1/11)

Operator's Well Number Lanham 7141

**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  |
|------------------------------------|--------------------------------|-----------------------|------------|
| Raymond City Coal & Transportation | Columbia Gas Transmission, LLC | Storage Lease 1048150 | 1375 / 471 |

RECEIVED  
Office of Oil and Gas

FEB 24 2014

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

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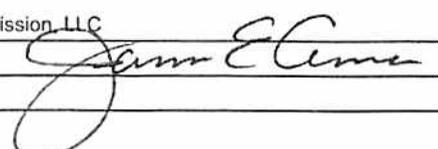
FEB 24 2014

Office of Oil and Gas  
Dept. of Environmental Protection

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:

Columbia Gas Transmission, LLC  
James E. Amos  
Senior Engineer



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 Columbia Gas Transmission, LLC OP Code 307032

Watershed Campbells Branch of Pocatlico River Quadrangle Pocatlico

Elevation 724 County Kanawha District Union

Description of anticipated Pit Waste: no earthen pit to be utilized

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? NA. If so, what mat.?

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 34-105-23619 (Green Hunter SWIW #19 - Meigs Co, OH) )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain treatment facility)

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

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

Additives to be used? polymer viscosifier, NaCl, KCl, starch, biocide, corrosion inhibitor, pH control

Will closed loop system be used? yes

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

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

-Landfill or offsite name/permit number? Waste Management (Northwestern Landfill) or Enviro-Tank Clean (Belpre, OH facility)

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 *James E. Amos*

Company Official (Typed Name) James E. Amos

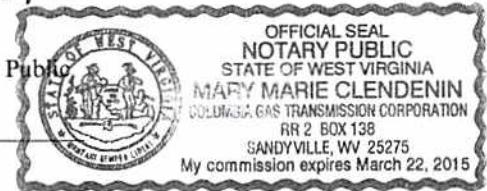
Company Official Title Senior Engineer

Subscribed and sworn before me this 20<sup>th</sup> day of February, 2014

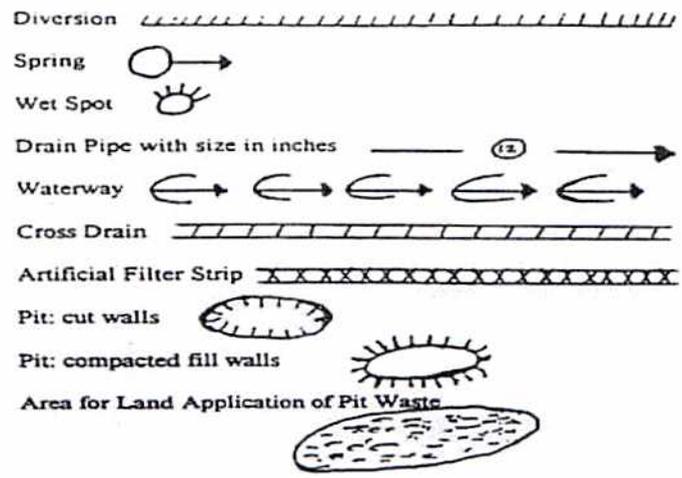
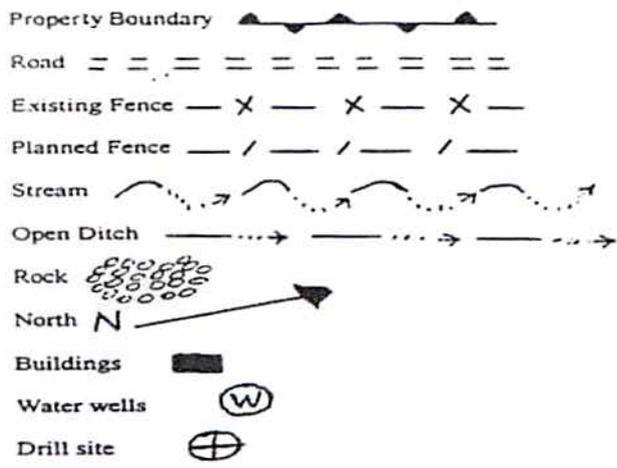
*Mary Marie Clendenin* Notary Public

My commission expires 3/22/2015

Recovered  
FEB 24 2014  
Office of Oil and Gas  
WV Dept. of Environmental Protection



LEGEND



Proposed Revegetation Treatment: Acres Disturbed < 0.5 Prevegetation pH 6

Lime 2 Tons/acre or to correct to pH 6.5

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

Mulch 2 Tons/acre

Seed Mixtures

| Seed Type     | Area I | lbs/acre |
|---------------|--------|----------|
| Orchard Grass |        | 20       |
| Ledino Clover |        | 10       |
| Annual Rye    |        | 20       |

| Seed Type     | Area II | lbs/acre |
|---------------|---------|----------|
| Orchard Grass |         | 20       |
| Ledino Clover |         | 10       |
| Annual Rye    |         | 20       |

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

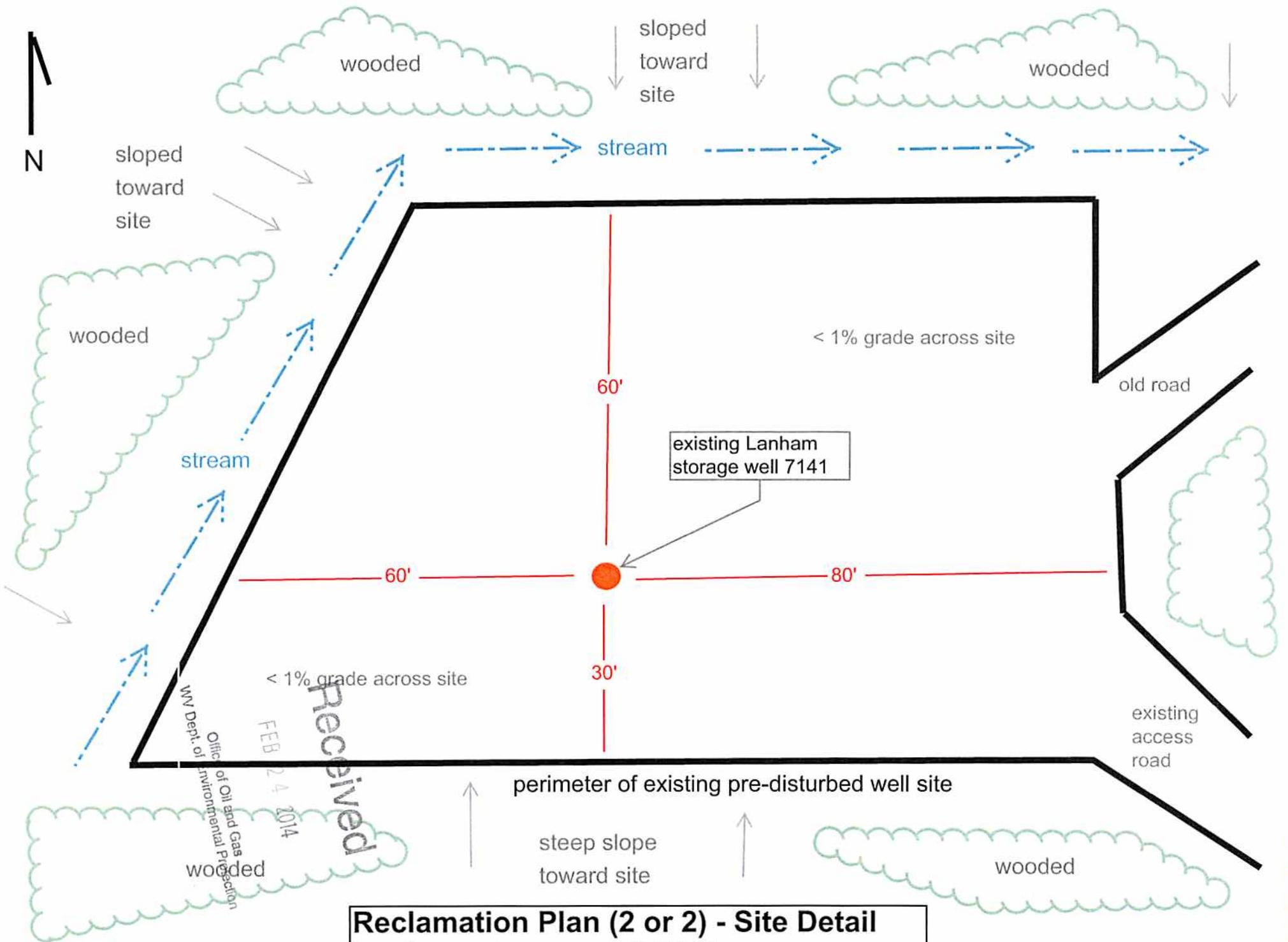
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *[Signature]*  
Comments: \_\_\_\_\_

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FEB 24 2014  
Office of Oil and Gas  
WV Dept. of Environmental Protection

Title: *Inspect Oil & Gas* Date: *2-18-14*

Field Reviewed?  Yes  No

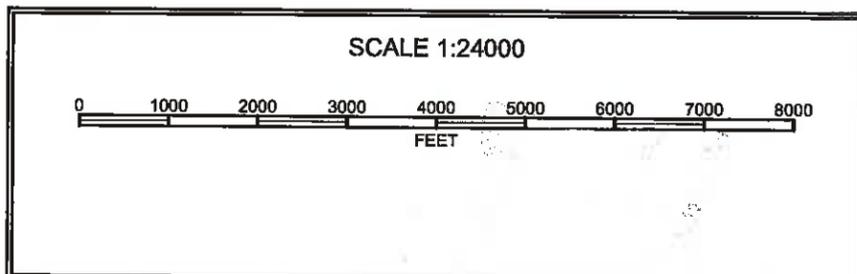
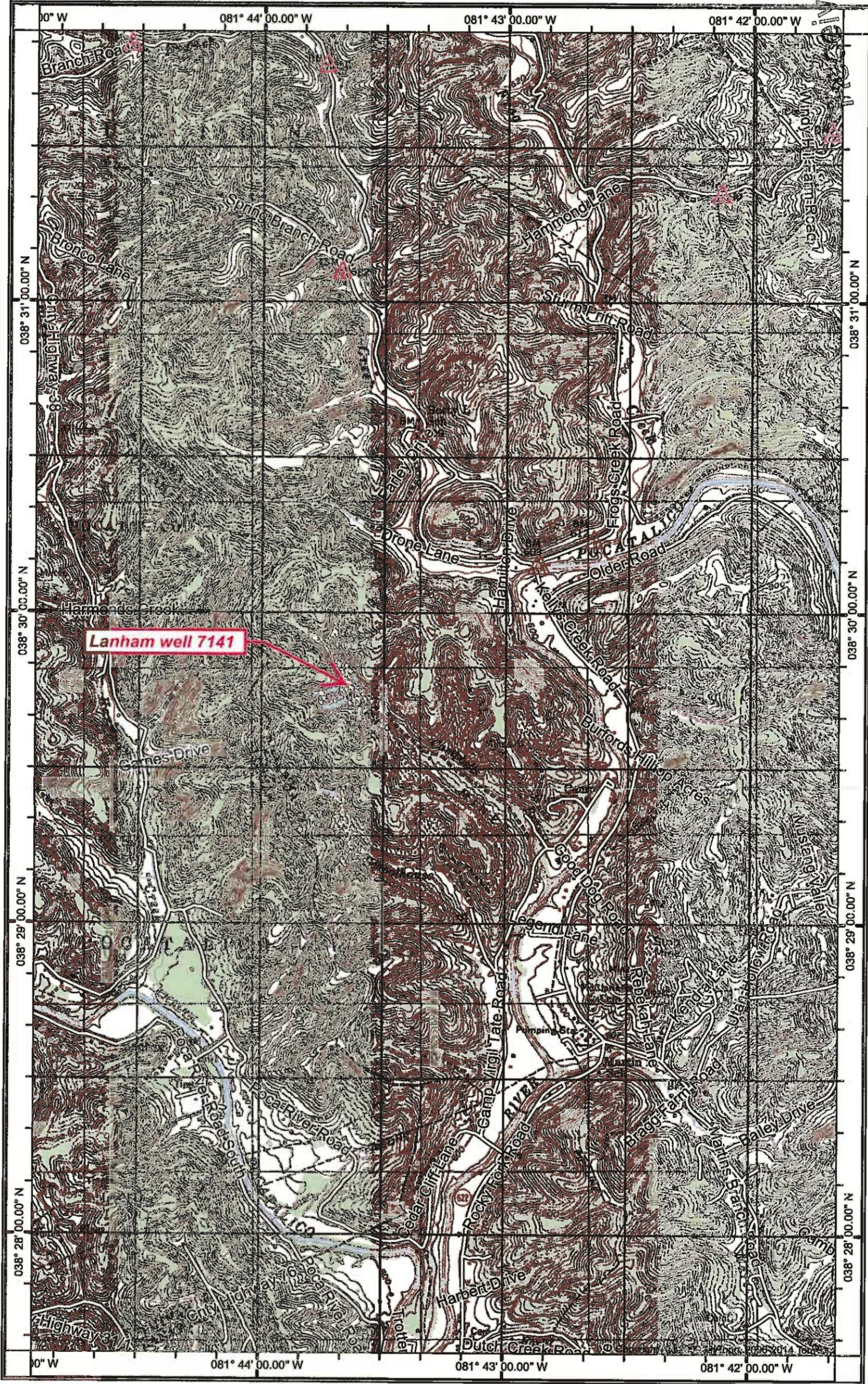


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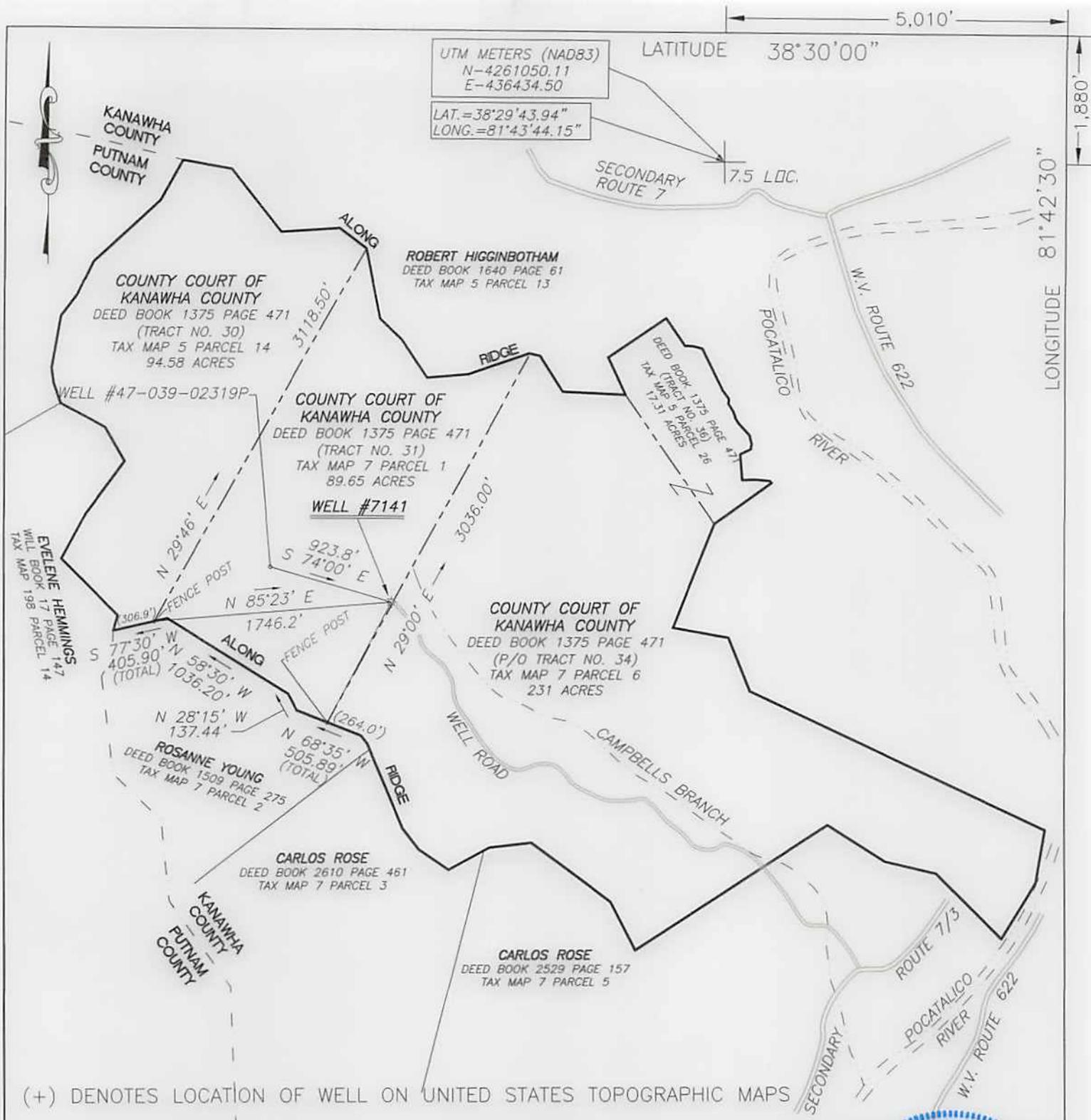
**Reclamation Plan (2 of 2) - Site Detail  
Lanham storage well 7141**

3901198 R

3901198R



FEB 24 2014



FILE No 14-100-002  
DRAWING No. 14-100-002  
SCALE 1"=1000'  
MINIMUM DEGREE OF ACCURACY 1:200  
PROVEN SOURCE OF ELEVATION TRIMBLE PRO XH  
GPS UNIT

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 DIVISION OF ENVIRONMENTAL PROTECTION.

(SIGNED) *Richard J. Prine*  
RICHARD J. PRINE PS #851



STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS  
NITRO, WV



DATE FEBRUARY 11 20 14  
OPERATOR'S WELL No. 7141  
API WELL No.

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  STATE 47 COUNTY 039 PERMIT 01198 R  
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 724 WATER SHED CAMPBELLS BRANCH OF POCATALICO RIVER  
DISTRICT UNION COUNTY KANAWHA  
QUADRANGLE POCATALICO

SURFACE OWNER COUNTY COURT OF KANAWHA COUNTY ACREAGE 89.65  
OIL & GAS ROYALTY OWNER RAYMOND CITY COAL & TRANSPORTATION LEASE ACREAGE 752.8  
LEASE No. 1048150-000

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) REWORK & ACID STIMULATION

PLUG AND ABANDON  CLEAN OUT AND REPLUG   
TARGET FORMATION BIG LIME ESTIMATED DEPTH 1707  
WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT PAUL AMICK  
ADDRESS PO BOX 1273, CHARLESTON, WV ADDRESS P.O. BOX 1273, CHARLESTON W.V.  
25325-1273 25325-1273

FORM IV-6 (8-78)

# LANHAM 7141 EXISTING WELL LOCATION



West of Earth  
Office of Oil and Gas  
Production

FEB 22

PAGE 1

3901198R