



west virginia department of environmental protection

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

Earl Ray Tomblin , Governor
Randy C. Huffman , Cabinet Secretary
www.dep.wv.gov

Thursday, September 29, 2016
WELL WORK PERMIT
Vertical / Re-Work

COLUMBIA GAS TRANSMISSION, LLC
P. O. BOX 1273

CHARLESTON, WV 253251273

Re: Permit approval for Gladys Stg 7477
47-075-00034-00-00

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: Gladys Stg 7477
Farm Name: US DEPT INT.
U.S. WELL NUMBER: 47-075-00034-00-00
Vertical / Re-Work
Date Issued: 9/29/2016

Promoting a healthy environment.

09/30/2016

PERMIT CONDITIONS

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

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring 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 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: Columbia Gas Transmission, LLC 307032 Pocahontas Green Bank Wildell, WV
Operator ID County District Quadrangle

2) Operator's Well Number: Glady 7477 3) Elevation: 3505.6

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

5) Proposed Target Formation(s): Oriskany Proposed Target Depth: 5928'

6) Proposed Total Depth: 6149 (existing) Feet Formation at Proposed Total Depth: Helderberg

7) Approximate fresh water strata depths: 495 ft (per driller in 1966)

8) Approximate salt water depths: none reported by driller in 1966

9) Approximate coal seam depths: none reported by driller in 1966

10) Approximate void depths,(coal, Karst, other): none reported by driller in 1966

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)

Clean well to TD with coil tubing using +/- 300 bbls fresh water. Perform acid stimulation using approximately 8000 gals HCl acid and 200 bbls fresh water.

* Casing listed below are existing. No plans to remove, alter, or install new casing/tubing.

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	13.375	H-40	48	39	39	20 sxD
Fresh Water	9.625	H-40	32	1332	1332	490
Coal						
Intermediate						
Production	7.0	J-55/N-80	23.0	5937	5937	267
Tubing						
Liners						

Packers: Kind: _____
Sizes: _____
Depths Set _____

X77-7477

DM
7500034W

U. S. Dept. of Interior Tract #34
Atlantic Seaboard Corporation
Green Bank District, Pocahontas County, W. Va.
Map Square - 162-81
Commenced - 5-2-66
Completed - 5-17-66
Elevation - 3489.19'

Size	Cr. WT NG: Weight	Point	
13 3/8"	48#	35'	Cemented with 20 sacks
9 5/8"	32#	1332'	Cemented with 390 cu. ft. Litepoz & 100 cu.ft. neat cement
7"	23#	5937'	Cemented with 200 cu.ft. Litepoz & 500 gal. cealment
2 3/8"	4.7#	6139'	

CONTRACTOR: Lohman & Johnson

Surface	0	29
Sand & Sandy Shale	29	935
Sandy Shale & Shells	935	1130
Shale & Sand	1130	1334
Sand & Shale	1334	5150
Shale - black	5150	5310
Lime	5310	5325
Shale	5325	5405
Lime (Tully)	5405	5415
Marcellus Shale	5415	5730
Onondaga Lime	5730	5780
Chert	5780	5870
Needmore Shale	5870	5928
Oriskany Sand	5928	6140
Helderberg Lime	6140	
Total Depth		6149'

Fresh water 495'

Gas 5937' estimated 300 Mcf

Gas 6084'

Gas 6099'

Test 6137' 10# spring gauge thru 4" 8,690 Mcf

Test after running tubing 11# spring gauge thru 4" opening 9,120 M

Test before acidized 11# spring gauge thru 4" 9,120 M

Acidized 5-21-66 with 20,000 gallons 15% HCL acid, 2,000 gallons water overflush with 225,232 standard cu. ft. nitrogen at rate of 250 standard cu. ft. nitrogen per bbl.

Test after acidized - 26# spring gauge thru 4" opening 14,600 Mcf

FINAL OPEN FLOW - 14,600 M - Oriskany
R.P. 1295#

Shut in 5-29-66 in 2 3/8" tubing.

Permit No. - Poc. - 34

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SEP 02 2016

WV Department of
Environmental Protection

09/30/2016

WW-2A1
(Rev. 1/11)

Operator's Well Number Glady 7477

**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
US Dept of Interior	Columbia Gas Transmission, LLC	Storage Lease 1090700-000	not recorded

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

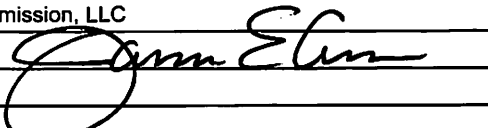
The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- 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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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: Columbia Gas Transmission, LLC
 By: Its: James E. Amos
 Senior Engineer 

09/30/2016

WW-2B1
(5-12)

Well No. Glady 7477

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 _____
Sampling Contractor _____

Well Operator Not applicable - existing underground natural gas storage well.

Address _____

Telephone _____

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.

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WV Department of
Environmental Protection

WW-2A
(Rev. 6-14)

1.) Date: 8/12/16
2.) Operator's Well Number Gladv 7477
State 47- County 075 Permit 00034
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**

4) Surface Owner(s) to be served: (a) Name US Dept of Interior (US Forests) Address 626 East Wisconsin Ave Suite Milwaukee, WI 53202-4617
(b) Name Sundry Notice Address _____
(c) Name _____ Address _____
5) (a) Coal Operator Name _____ Address _____
(b) Coal Owner(s) with Declaration Name _____ Address _____
(c) Coal Lessee with Declaration Name _____ Address _____
6) Inspector Danny Mullins Address 220 Jack Acres Rd Buckhannon, WV 26201 Telephone 304-932-6844

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)
- X Publication (Notice of Publication attached) via approved BLM Sundry Notice

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.

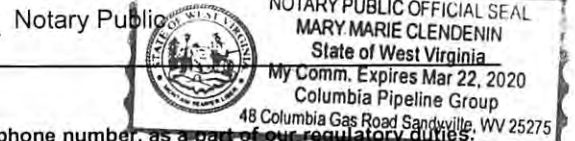
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, 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
Its: Senior Engineer
Address: 48 Columbia Gas Rd Sandville, WV 25275
Telephone: 304-373-2412
Email: jamos@cpa.com

Subscribed and sworn before me this 17th day of August, 2016

Mary Marie Clendenin
My Commission Expires 3/22/2020



7500034W

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No. WVBLMA022926
6. If Indian, Allottee or Tribe Name
7. If Unit or CA/Agreement, Name and/or No. WVES39982
8. Well Name and No. 7477
9. API Well No. 47-075-00034-00-S1
10. Field and Pool, or Exploratory GLADY
11. County or Parish, and State POCAHONTAS COUNTY, WV

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other: INJECTION
2. Name of Operator COLUMBIA GAS TRANSMISSION LLC Contact: JAMES E AMOS Mail: jamos@nisource.com
3a. Address 1700 MACCORKLE AVE SE CHARLESTON, WV 25325-1273
3b. Phone No. (include area code) Ph: 304-373-2412 Fx: 304-373-2438
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Tract US-34 38.667980 N Lat, 79.761930 W Lon

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other Workover Operations
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Glady 7477
* existing natural gas storage well

Est start date: 6/1/16
Est completion date: 8/1/16

Procedure
Prepare road and well location. Snub tubing out of well. Obtain pipe inspection log. Install retrievable bridge plug and load with fluid. Install new API wellhead. Pull bridge plug. Flow well to recover fluids. Reclaim road and well location.

14. I hereby certify that the foregoing is true and correct. Electronic Submission #332934 verified by the BLM Well Information System For COLUMBIA GAS TRANSMISSION LLC, sent to the Milwaukee Committed to AFSS for processing by TREY MITCHELL on 03/14/2016 (16TAM0032SE)	
Name (Printed/Typed) JAMES E AMOS	Title SENIOR ENGINEER
Signature (Electronic Submission)	Date 03/07/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By TREY MITCHELL	Title PETROLEUM ENGINEER	Date 05/02/2016
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office Milwaukee

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

09/30/2016

7500034W



Well 7477

tmitchell to: jamos

Cc: jwood, wwilson

05/02/2016 03:09 PM

2 attachments



WVES 39982 7474 workover 050216.docx



EC332934.pdf

The sundry for Workover Operations you submitted has been approved by the BLM. Your original Electronic Commerce (EC) transmission was assigned ID 332934. Please be sure to open and save all attachments to this message, since they contain important information.



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09/30/2016

WW-9
(5/16)

API Number 47 - 075 - 00034
Operator's Well No. Gladly 7477

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

DM

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Elklick Run of the Greenbrier River Quadrangle Wildell, WV

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: _____

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

Proposed Disposal Method For Treated Pit Wastes:

- _____ Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number 34-009-23821, 34-009-23823, 34-009-23824, 34-119-28776)
- _____ 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: yes - steel piping connecting wellhead and tank(s) _____

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

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

Additives to be used in drilling medium? NaCl, biocide, polymer, starch, calcium carbonate, surfactant (CTCO), HCl acid (stimulation) _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A _____

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? if needed: Pinegrove Landfill - Amanda, OH _____

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.

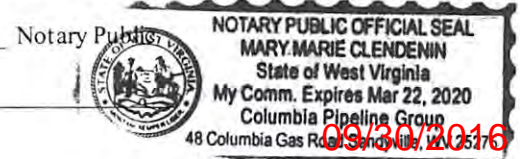
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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 James E Amos
Company Official (Typed Name) James E. Amos
Company Official Title Senior Well Services Engineer

Subscribed and sworn before me this 17th day of August, 2016

Mary Marie Clendennin
My commission expires 3/22/2020



Proposed Revegetation Treatment: Acres Disturbed < 0.5 Prevegetation pH 6

Lime pellets @ 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-10

Fertilizer amount 500 lbs/acre

Mulch weed free straw @ 2 Tons/acre

** Note that fertilizer, lime, mulch, seed mix, and application rates determined by US Forestry Service.*

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Winter Wheat (6/15 - 11/15)	40	Durana Clover (pre-inoculated)	2
Spring Wheat (2/15 - 6/15)	40	Mammoth Red Clover (pre-inoculated)	5
Alfalfa (pre-inoculated)	10	Chicory	3

* total seeding will be @ 60 lb/acre

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: _____

Comments: _____

Title: OOG Inspector Danny Mullins

Date: 8-19-16

Field Reviewed? () Yes () No

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

Operator Name: Columbia Gas Transmission, LLC
Watershed (HUC 10): Elklick Run of the Greenbrier River Quad: Wildell, WV
Farm Name: US Dept of Interior (managed by BLM and US Forest Service)

DM

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

No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment.

Spills from construction equipment and well treatment fluids is the only source of contaminate to groundwater.

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

All construction and well servicing equipment will be monitored and inspected daily for leaks. Fluid pumping well service equipment will have secondary containment under all leak paths. Spill kits will be on site.

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

Branch of Elklick Run is approximately 1800 ft to the NE.

The closest Well Head Protection Area is 2 miles (USFS Middle Mountain Cabin). Refer to enclosed assessment letter dated 8/16/16 from Department of Health and Human Resources, Source Water Assessment and Protection department.

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

N/A

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SEP 02 2016
WV Department of Environmental Protection

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

N/A

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.

During routine tailgate meetings groundwater protection will be a topic of discussion.

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

No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment. Construction and well servicing equipment will be monitored and inspected daily for leaks or spill.

Signature: _____

Date: _____

August 16, 2016

William Timmermeyer
 CESSWI
 Natural Resource Permitting Principal
 TransCanada | Columbia Pipeline Group
 1700 MacCorkle Ave., SE
 Charleston, WV 25314

Re: SWAP Information Request
Glady Well 7477 at 38.667969,-79.761653
 Pocahontas County, West Virginia

Dear Mr. Timmermeyer:

In response to the informational request dated August 15, 2016 concerning the closest Protection Areas to the indicated well, we have found the following:

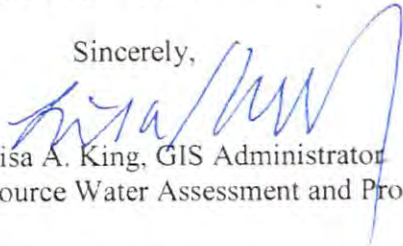
Wellhead Protection Area	WV9942049	USFS Middle Mountain Cabin	2.0 miles
Zone of Critical Concern	WV3304202	Town of Beverly	7.3 miles
Zone of Peripheral Concern	WV3304204	Town of Beverly	7.5 miles

Your location is 80.65 river miles upstream from the Denmark Correctional Center Intake on the Greenbrier River.

We do not have information regarding private drinking wells in the area. I suggest you contact the county health department for this information.

I hope the information provided helps you with the completion of your project. If you have any questions, please do not hesitate to contact me at (304) 356-4309.

Sincerely,


 Lisa A. King, GIS Administrator
 Source Water Assessment and Protection

CC: William J. Toomey

09/30/2016

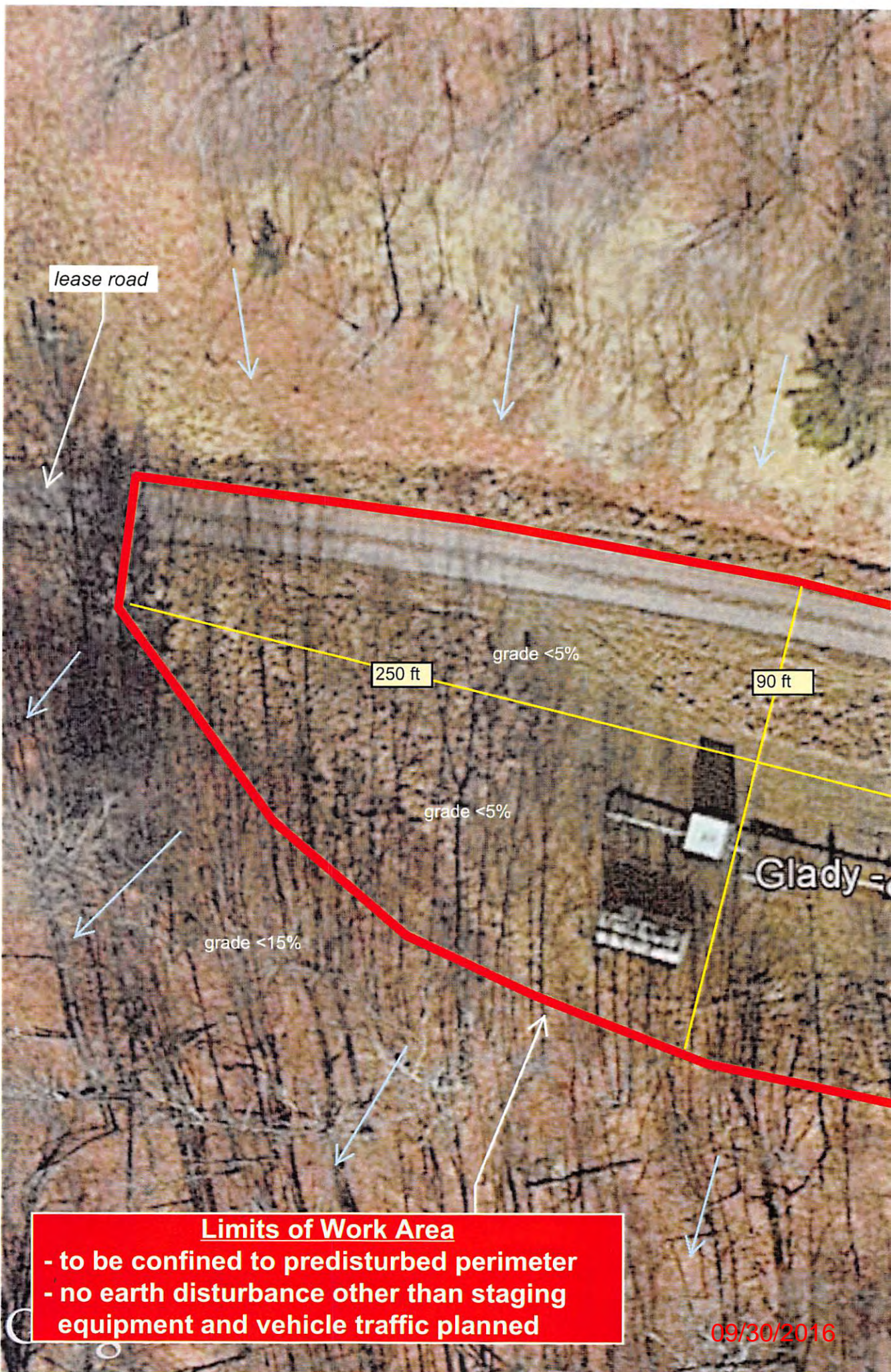
WV DEP Reclamation Plan - Site Detail

Glady 7477 Stimulation

- Existing road surface and culverts to be maintained
- BMPs to be utilized per WV DEP guidelines
- Requirements by US Forest Service to be implemented



DM



lease road

250 ft

90 ft

grade <5%

grade <5%

grade <15%

Glady =

Limits of Work Area
- to be confined to predisturbed perimeter
- no earth disturbance other than staging equipment and vehicle traffic planned

09/30/2016

Glady

Beulah Rd (Rt 22/2)

Glady

(Rt 22/2)

Driving Directions

From Elkins, WV, travel east on US 33
 Approx 13 mi turn right on Glady Rd (Rt 27)
 Approx 15 miles turn left on Bemis Rd (Rt 22)
 Approx 0.2 miles turn right on Beulah Rd (Rt 22/2)
 Approx 11 miles turn left on Elk Lick Run (179)
 Approx 2 miles turn right on FS 178A
 Approx 1.9 miles to well on right

RECEIVED
 Office of Oil and Gas
 SEP 02 2016

Department of Environmental Protection



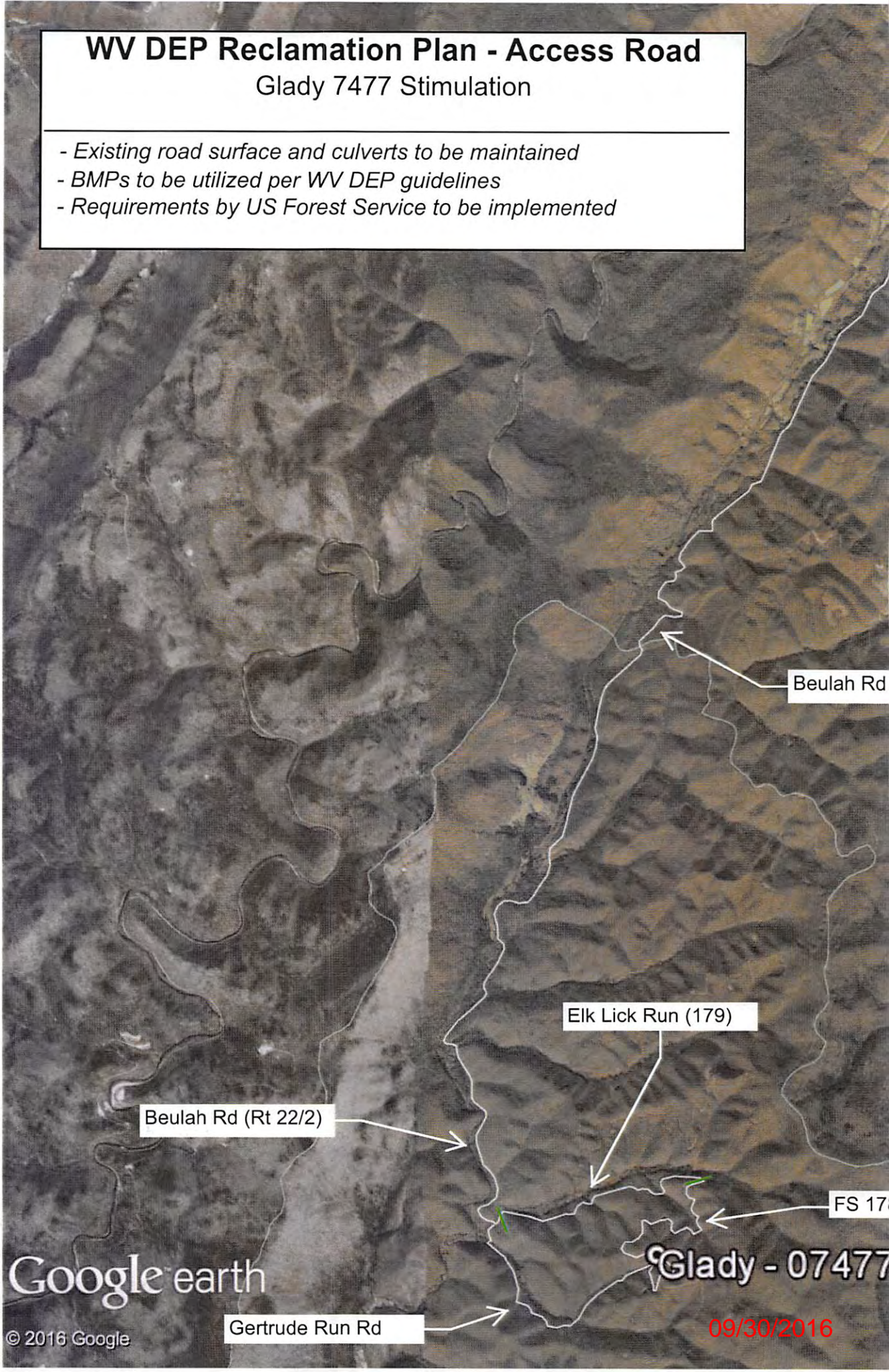
4 mi

DM

WV DEP Reclamation Plan - Access Road

Glady 7477 Stimulation

- Existing road surface and culverts to be maintained
- BMPs to be utilized per WV DEP guidelines
- Requirements by US Forest Service to be implemented



Google earth

© 2016 Google

09/30/2016

75 000 34W

(BEVERLY WEST)



WILDELL QUADRANGLE
WEST VIRGINIA
TOPOGRAPHIC SERIES



079° 47' 13.35" W

(BEVERLY EAST)

079° 44' 09.91" W

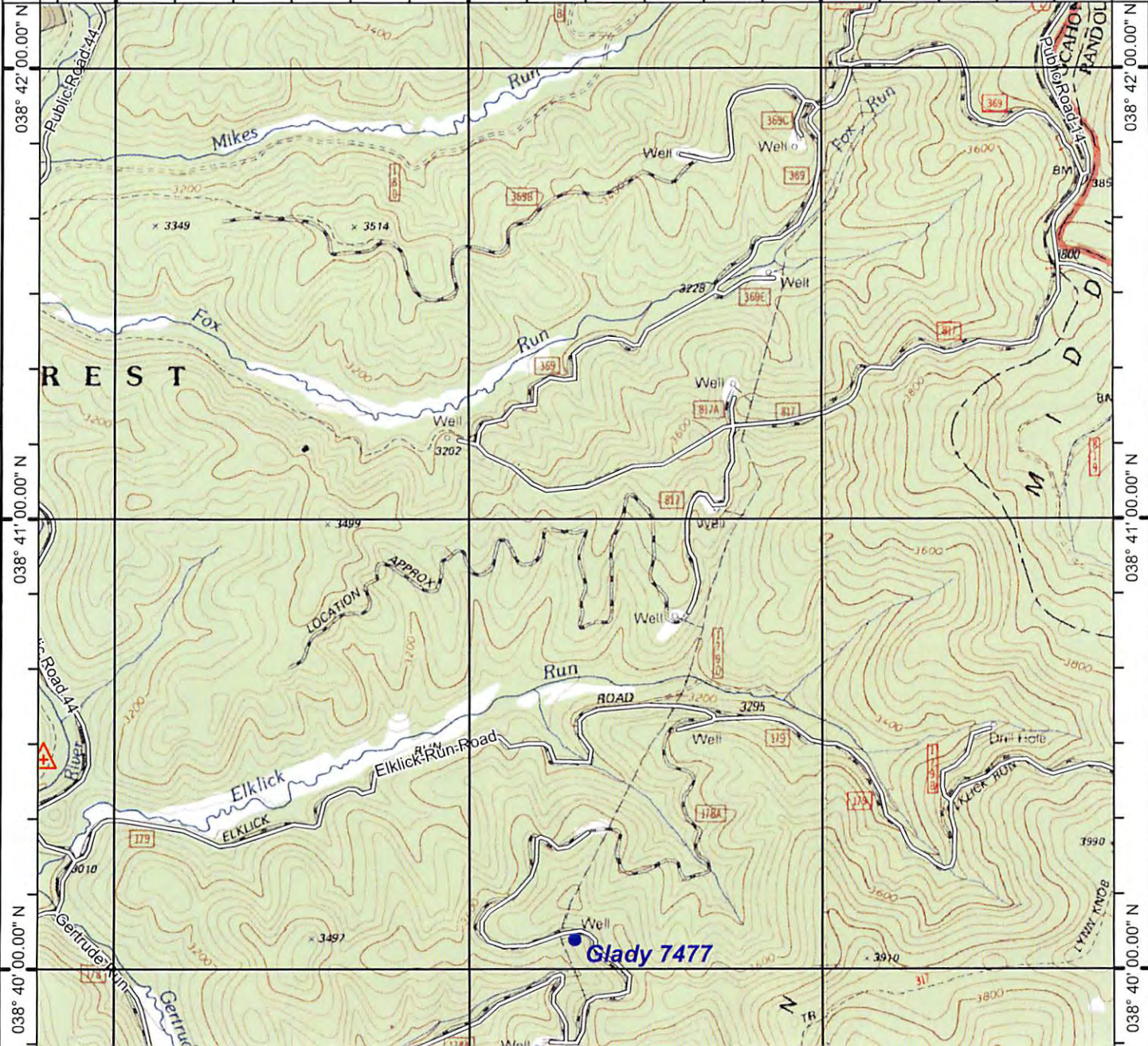
038° 42' 09.04" N

079° 47' 00.00" W

079° 46' 00.00" W

079° 45' 00.00" W

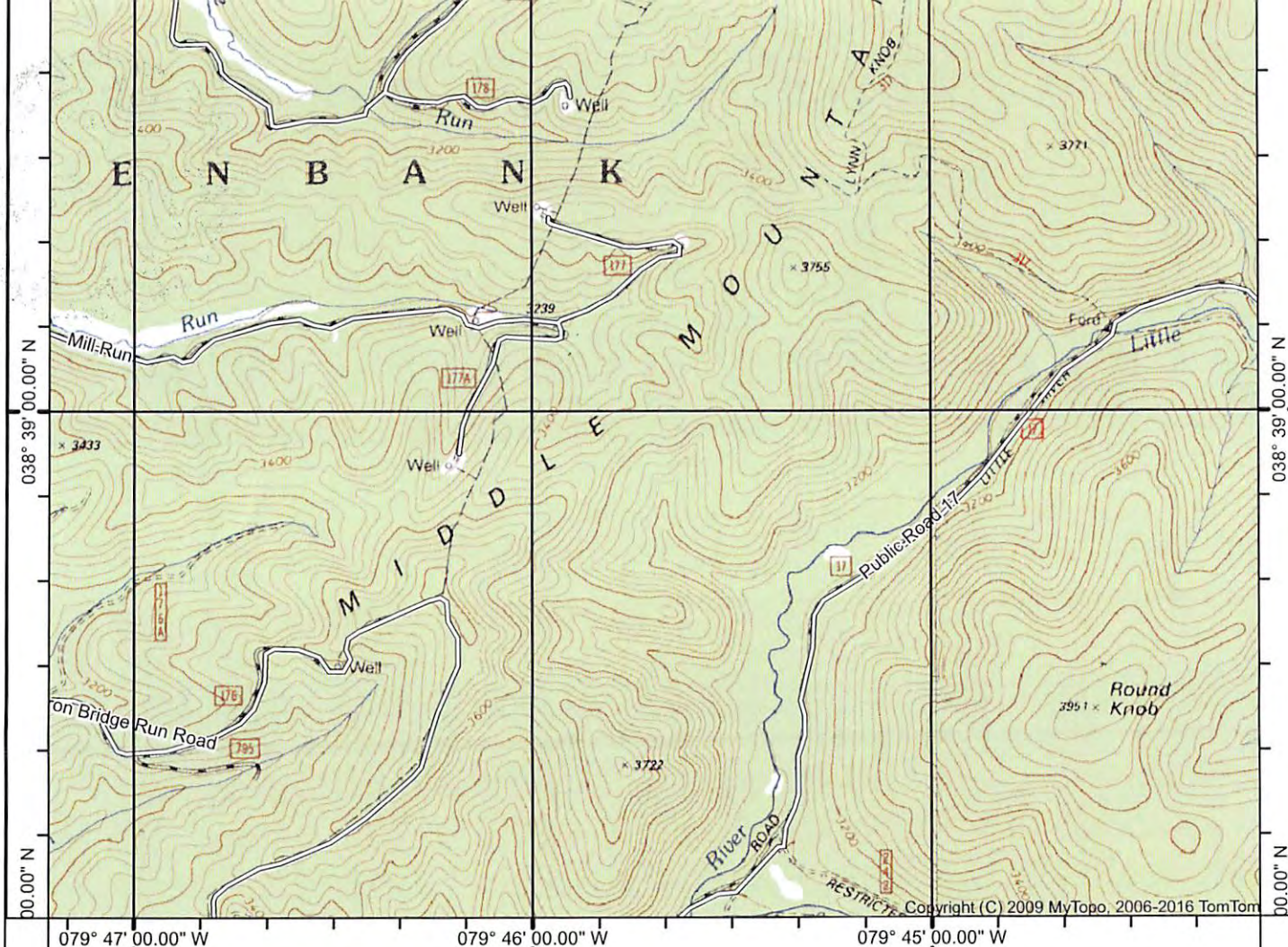
038° 42' 09.04" N



(MILL CREEK)

(SINKS OF GANDY)

Glady 7477



038° 37' 59.92" N 079° 47' 00.00" W 079° 46' 00.00" W 079° 45' 00.00" W 079° 44' 09.91" W 038° 37' 59.92" N

(SNYDER KNOB)

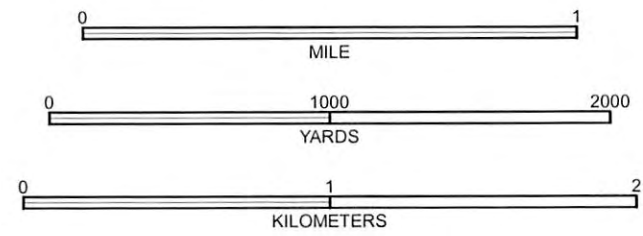
(THORNWOOD)

Produced by MyTopo Terrain Navigator
 Topography based on USGS 1:24,000 Maps
 North American 1983 Datum (NAD83)
 Lambert Conformal Conic Projection
 To place on the predicted North American 1927, move the
 projection lines 13M N and 19M E

RECEIVED
 Office of Oil and Gas
 WV Department of Environmental Protection
 SEP 29 2016



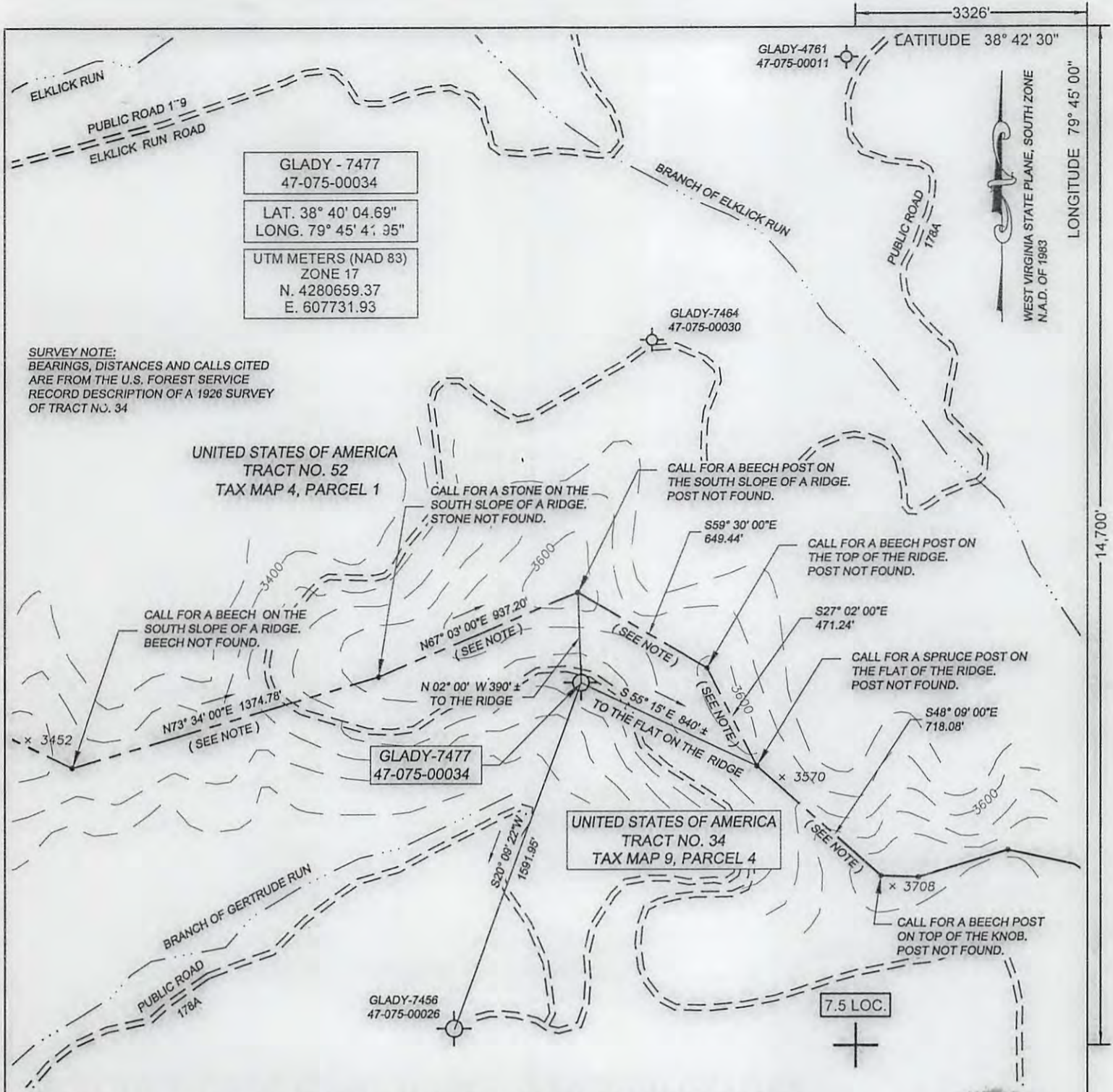
(DURBIN)
 SCALE 1:24000



CONTOUR INTERVAL 40 FEET
 NATIONAL GEODETIC VERTICAL DATUM 1929

WILDELL, WV
 1998

Copyright (C) 2009 MyTopo, 2006-2016 TomTom



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

FILE No 1601-2345-002
DRAWING No. GLADY-7477
SCALE 1"=600'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION TRIMBLE R8-3 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) *R. Thaw*
ROBERT F. THAW PS #965



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

DATE AUGUST 8 2016
OPERATOR'S WELL No. 7477
API WELL No. 47 075 - 00034

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

LOCATION: ELEVATION 3505.6' WATER SHED ELKCLICK RUN OF THE GREENBRIER RIVER
DISTRICT GREENBANK COUNTY POCAHONTAS

SURFACE OWNER UNITED STATE DEPARTMENT OF THE INTERIOR ACREAGE 6595
OIL & GAS ROYALTY OWNER U. S. DEPT. OF THE INTERIOR LEASE ACREAGE 1852
LEASE No. 90700

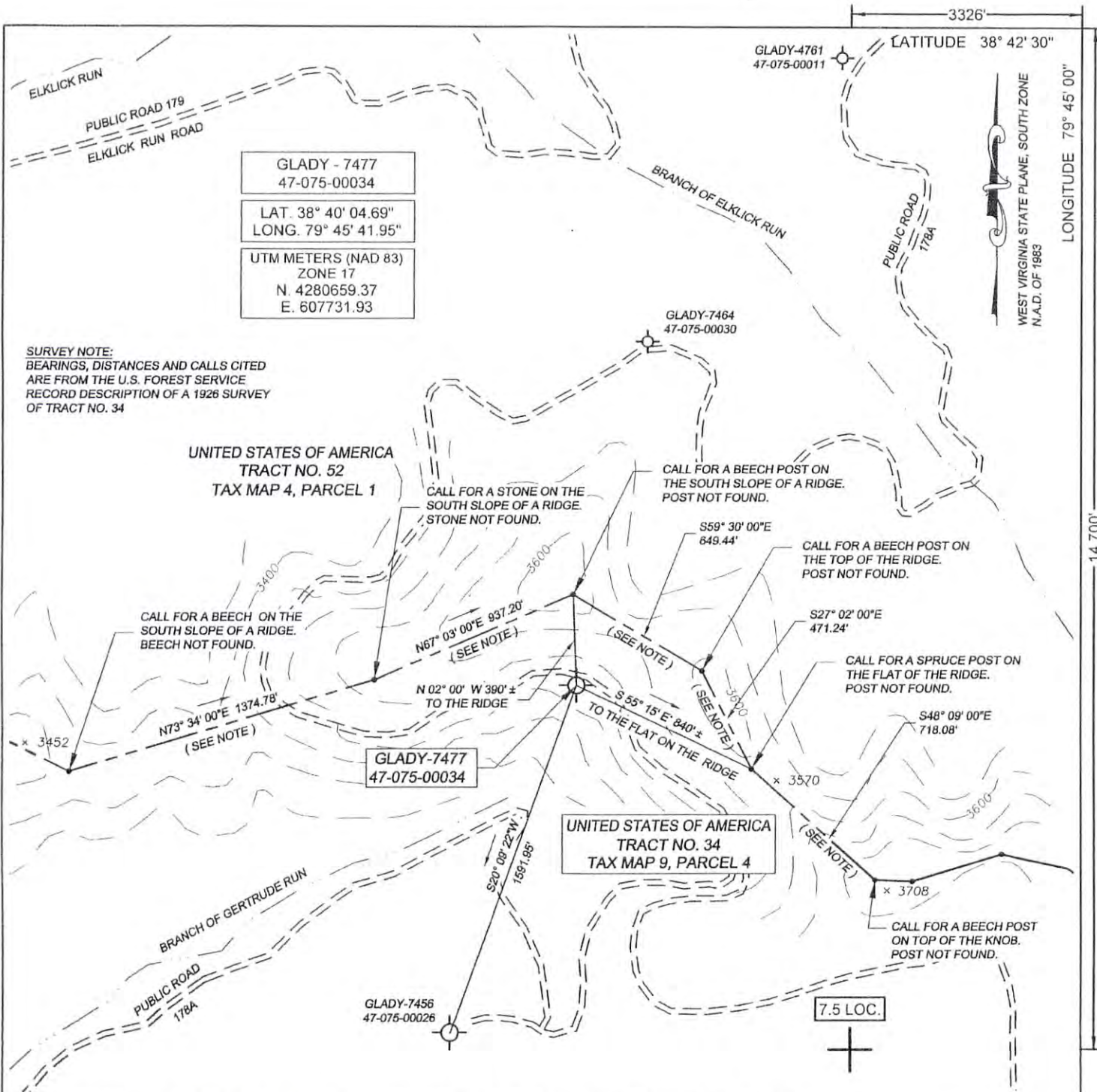
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION ORISKANY ESTIMATED DEPTH 5928'-6140'
WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT PAUL AMICK
ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273 ADDRESS P.O. BOX 1273, CHARLESTON W.V. 25325-1273

09/30/2016

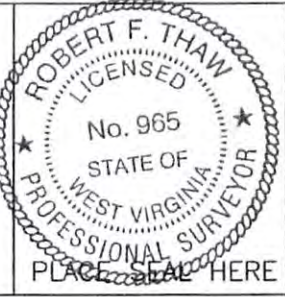
FORM IV-6 (8-78)



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

FILE No 1601-2345-002
 DRAWING No. GLADY-7477
 SCALE 1"=600'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION TRIMBLE R8-3
 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) [Signature]
 ROBERT F. THAW PS #965



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

DATE AUGUST 8 2016
 OPERATOR'S WELL No. 7477
 API WELL No. 47 075 - 00034W

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL STATE COUNTY PERMIT
 (IF "GAS") PRODUCTION STORAGE X DEEP X SHALLOW

LOCATION: ELEVATION 3505.6' WATER SHED ELKLICK RUN OF THE GREENBRIER RIVER
 DISTRICT GREENBANK COUNTY POCAHONTAS
 QUADRANGLE WILDELL, WV

SURFACE OWNER UNITED STATE DEPARTMENT OF THE INTERIOR ACREAGE 6595
 OIL & GAS ROYALTY OWNER U. S. DEPT. OF THE INTERIOR LEASE ACREAGE 1852
 LEASE No. 90700

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR
 STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW
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 TARGET FORMATION ORISKANY ESTIMATED DEPTH 5928'-6140'
 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

09/30/2016

FORM IV-6 (8-78)