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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)

Monday, May 21, 2018  
WELL WORK PERMIT  
Vertical / Re-Work

COLUMBIA GAS TRANSMISSION, LLC  
1700 MACCORKLE AVENUE SE

CHARLESTON, WV 25314

Re: Permit approval for 7459  
47-075-00027-00-00

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

A blue ink signature of James A. Martin, written in a cursive style.

Operator's Well Number: 7459  
Farm Name: U.S.A. DEPT. INT. TR.26  
U.S. WELL NUMBER: 47-075-00027-00-00  
Vertical Re-Work  
Date Issued: 5/21/2018

## 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. 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.

WW - 2B  
(Rev. 8/10)

Ch# 002370 Deep Well  
\$ 90000

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 Greenbank Sinks of Gandy  
Operator ID County District Quadrangle

2) Operator's Well Number: Glady 7459 3) Elevation: 3817.8 ft

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: 6567 MD ft

6) Proposed Total Depth: 6855 MD ft (existing) Feet Formation at Proposed Total Depth: Helderberg

7) Approximate fresh water strata depths: 80 ft (reported by driller in 1965)

8) Approximate salt water depths: none reported by driller in 1965

9) Approximate coal seam depths: none reported by driller in 1965

10) Approximate void depths,(coal, Karst, other): none reported by driller in 1965

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. Pull tubing. Log. Replace wellhead. Clean well to TD with coil tubing using +/- 400 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 casing. Tubing to be removed and left out.

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	13-3/8	H-40	48	32	32	cmt'd to surface
Fresh Water						
Coal						
Intermediate	9-5/8	H-40	32	1494	1494	668 cu ft
Production	7	J-55	23	6564	6564	1484 cu ft
Tubing	2-3/8"	J-55	4.7	0	6852	N/A
Liners						

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

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4707500027W

**Revisions to Operator-Submitted EC Data for Sundry Notice #404757**

	<b>Operator Submitted</b>	<b>BLM Revised (AFMSS)</b>
Sundry Type:	WRK NOI	WRK NOI
Lease:	WVBLMA023190A	WVBLMA022923
Agreement:	WVES39982	WVES39982 (WVES39982)
Operator:	COLUMBIA GAS TRANSMISSION, LLC 1700 MACCORKLE AVE SE CHARLESTON, WV 25325-1273 Ph: 304-357-2000	COLUMBIA GAS TRANSMISSION LLC 1700 MACCORKLE AVE SE CHARLESTON, WV 25325-1273 Ph: 304.373.2412 Fx: 304-373-2438
Admin Contact:	JAMES E AMOS SENIOR WELL SERVICES ENGINEER E-Mail: james_amos@transcanada.com Cell: 304-483-0073 Ph: 304-373-2412 Fx: 304-373-2438	JAMES E AMOS SENIOR ENGINEER E-Mail: jamos@nisource.com Cell: 304-483-0073 Ph: 304-373-2412 Fx: 304-373-2438
Tech Contact:	JAMES E AMOS SENIOR WELL SERVICES ENGINEER E-Mail: james_amos@transcanada.com Cell: 304-483-0073 Ph: 304-373-2412 Fx: 304-373-2438	JAMES E AMOS SENIOR ENGINEER E-Mail: jamos@nisource.com Cell: 304-483-0073 Ph: 304-373-2412 Fx: 304-373-2438
Location:		
State:	WV	WV
County:	POCAHONTAS	POCAHONTAS
Field/Pool:	GLADY STORAGE	GLADY
Well/Facility:	GLADY 7459 7459 38.709100 N Lat, 79.740500 W Lon	7459 Tract US-52 38.709150 N Lat, 79.740870 W Lon

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**MAY 09 2018**

**WV Department of  
Environmental Protection**

**James Amos**

**From:** Arbogast, Chad H -FS <charbogast@fs.fed.us>  
**Sent:** Monday, April 30, 2018 7:41 AM  
**To:** James Amos  
**Subject:** RE: Gladly storage well 7459: USFS ECP

Mr. Amos,

Well work on 7455 and 7459 are approved. I spoke with the Ranger, Jack Tribble, to insure that soil disturbance would be okay. He verified that he was okay to let the work proceed so long as you make sure any soil disturbance is limited to the existing well pad area. Sorry about the delayed response. Please let me know when the crews are going to be moving in. Also, please remind your contractors that no hazardous materials are to be stored on site (includes gasoline and cleaning fluids).

Chad

**From:** James Amos [mailto:james\_amos@transcanada.com]  
**Sent:** Tuesday, April 10, 2018 1:45 PM  
**To:** Arbogast, Chad H -FS <charbogast@fs.fed.us>; Wilson, Will -FS <wwilson@fs.fed.us>  
**Cc:** Steven Simmons <steven\_simmons@transcanada.com>  
**Subject:** Gladly storage well 7459: USFS ECP

Chad/Will, attached is an ECP for 2018 proposed well work at Gladly well 7459. I've also attached a copy of the approved BLM Sundry Notice.

Please review for approval.

Jim Amos  
 Senior Well Services Engineer, Well Engineering and Technology  
 Storage Technical Services - US Gas Technical Services  
 TransCanada  
 48 Columbia Gas Road  
 Sandyville, WV 25275  
 Office: 304.373.2412  
 Cell: 304.483.0073  
[james\\_amos@transcanada.com](mailto:james_amos@transcanada.com)

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We respect your right to choose which electronic messages you receive. To stop receiving this message and similar communications from TransCanada PipeLines Limited please reply to this message with the subject "UNSUBSCRIBE". This electronic message and any attached documents are intended only for the named addressee(s). This communication from TransCanada may contain information that is privileged, confidential or otherwise protected from disclosure and it must not be disclosed, copied, forwarded or distributed without authorization. If you have received this message in error, please notify the sender immediately and delete the original message. Thank you. Nous respectons votre droit de choisir quels messages électroniques vous désirez recevoir. Pour ne plus recevoir ce message et les communications similaires, de la part de TransCanada

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X-77 - 7459

*7/12*

U. S. A. Dept. of Interior  
Atlantic Seaboard Corporation  
Greenbank District, Pocahontas County, W. Va.  
Map Square - 164-83  
Commenced - 8-13-65  
Completed - 10-4-65  
Elevation - 3808.07' Gr.  
3822.07' RKB

Size	CASING: Weight	Point	
13 3/8"	48#	32'	Cemented to surface
9 5/8"	32#	1494'	Cemented to surface
7"	23#	6564'	Cemented to surface
2 3/8"	4.7#	6852'	

CONTRACTOR: C. E. Richner  
DRILLERS: F. D. Roland  
R. G. Bealmear  
C. L. Southerd

Sandstone & Shale	0	5979
Tully Limestone	5979	6000
Marcellus Shale	6000	6293
Metabentonite at		6293
Onondaga Limestone	6293	6347
Chert	6347	6500
Cherty Shale	6500	6528
Needmore Shale	6528	6567
Oriskany Sandstone	6567	6781
Helderberg Limestone	6781	6855
Total Depth	6855'	

Fresh water 80'  
Gas 6592' 28/10 W 2" 223 M  
When drilling complete all gas gauged  
240/10 W 2" 650 M  
Acidized with 20,000 gallons 15% Hcl,  
8,000 gallons water overflush and  
175,000 std. cu. ft. Nitrogen.  
Final test after acidized - 6,730 M

*23*

FINAL OPEN FLOW - 6,730 M - Oriskany  
72 Hr. R.P. 1735#

LOGS RUN:  
Gamma Ray  
Temperature

Permit No. - Poca.-27

*Completion Report sent to  
W.Va. Dept. Mines 12-14-65*

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*11-21-80  
2 3/8" Tbg perf.  
6790-6771 to  
enhance fluid removal  
Bottom of tbg appears to be  
logged / due possibly to shale  
fill-up caused by 7" csg  
annulus by set of too high  
BMV*

4707500027W

WW-2A  
(Rev. 6-14)

1.) Date: 4/10/2018  
2.) Operator's Well Number Gladv 7459  
State County Permit  
3.) API Well No.: 47- 075 - 00027

**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 Forest)  
Address 626 East Wisconsin Ave Suite  
Milwaukee, WI 53202-4617  
(b) Name \_\_\_\_\_  
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 Dannv 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

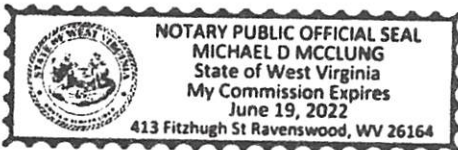
*APPROVAL EMAIL FROM US FOREST SERV*

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: james\_amos@transcanada.com



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Office of Oil and Gas  
MAY 09 2018

Subscribed and sworn before me this 13th day of April  
Michael D. McClung  
My Commission Expires 6/19/2022

Notary Public  
WV Department of  
Environmental Protection

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

4707800027W  
FORM APPROVED  
OMB NO 1010-017  
Expires: January 31, 2012

**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.*

<b>SUBMIT IN TRIPLICATE - Other instructions on page 2</b>		5. Lease Serial No. WVBLMA022923
		6. If Indian, Allottee or Tribe Name
		7. If Unit or CA/Agreement, Name and/or No. WVES39982
1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other: INJECTION	8. Well Name and No. 7459	
2. Name of Operator COLUMBIA GAS TRANSMISSION LLC Contact: JAMES E AMOS E-Mail: jamos@nisource.com	9. API Well No. 47-075-00027-00-S1	
3a. Address 1700 MACCORKLE AVE SE CHARLESTON, WV 25325-1273	3b. Phone No. (include area code) Ph: 304-373-2412 Fx: 304-373-2438	10. Field and Pool or Exploratory Area GLADY
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  Tract US-52 38.709150 N Lat, 79.740870 W Lon		11. County or Parish, State  POCAHONTAS COUNTY, WV

12. CHECK THE 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"/> Hydraulic Fracturing	<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 recomplate 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 must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recomplate in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Estimated start date: 4/1/18  
Estimated completion date: 6/1/18

Scope of Work  
Kill. Pull tubing. Log and set bridge plug. Replace wellhead. Pull bridge plug. Perform coiled tubing cleanout and acid treatment. Place well back in service.

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14. I hereby certify that the foregoing is true and correct. <b>Electronic Submission #404757 verified by the BLM Well Information System</b> <b>For COLUMBIA GAS TRANSMISSION LLC, sent to the Milwaukee</b> <b>Committed to AFMSS for processing by TREY MITCHELL on 02/22/2018 (18TAM0023SE)</b>		MAY 09 2018
Name (Printed/Typed) JAMES E AMOS	Title SENIOR ENGINEER	WV Department of Environmental Protection
Signature (Electronic Submission)	Date 02/16/2018	

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>TREY MITCHELL</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>02/23/2018</u>
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.

(Instructions on page 2)

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***



**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, 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.

MAY 08 2008  
WV Department of  
Environmental Protection

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  
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Snorting Lick Run of West Fork of Greenbrier River Quadrangle Sinks of Gandy, 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 34-119-28776, 34-167-23862 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Appalachian Water Services, Masontown, PA (permit 2608201))

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. N/A - no drilling planned

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

Additives to be used in drilling medium? No drilling planned; fresh water, polymer, starch, LCM, surfactant, HCl acid, iron control (for clean-out and stimulation)

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A - no drilling planned

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

-Landfill or offsite name/permit number? if needed: Rumpke Beech Hollow Landfill - Wellston, 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*

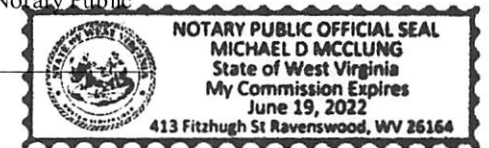
Company Official (Typed Name) James E. Amos

Company Official Title Senior Well Services Engineer

Subscribed and sworn before me this 13th day of April, 2018

*Michael McClung* Notary Public

My commission expires 6/19/2022



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Proposed Revegetation Treatment: Acres Disturbed < 1.0 Prevegetation pH 6

Lime pellets @ 3 Tons/acre or to correct to pH 7

Fertilizer type 10-20-10

Fertilizer amount 500 lbs/acre

Mulch weed free straw @ 1 Tons/acre

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

**Seed Mixtures**

*Seed mixture prescribed by USFS*

*Seeding rate: 60 lbs/acre*

Seed Type	lbs/acre
<u>Timothy @ 7</u>	
<u>Kentucky Bluegrass @ 7</u>	
<u>Winter Wheat (6/15-11/15) or Spring Wheat (2/15-6/15) @ 12</u>	
<u>Mammoth Red Clover (pre-inoculated) @ 5</u>	

Seed Type	lbs/acre
<u>Annual Rye (6/15-11/15) or Oats (2/15-6/15) @ 14</u>	
<u>Alfalfa (pre-inoculated) @ 10</u>	
<u>Durana Clover (pre-inoculated) @ 3</u>	
<u>Chicory @ 2</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: \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Title: OGS Inspector Dan Miller Date: 4-18-18

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): Snorting Lick Run of the West Fork of Greenbrier River Quad: Sinks of Gandy, WV  
Farm Name: US Dept of Interior (managed by BLM and US Forest Service)

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.

No discharges planned. Fox Run is approximately 1150 ft to the N.

The closest Well Head Protection Area is 1 mile (PWSID WV9942049 - USFS Middle Mountain Cabins-HP).

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

N/A

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

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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: *James E. ...*  
Date: 4/13/18

RECEIVED  
Office of Oil and Gas  
MAY 09 2018  
WV Department of  
Environmental Protection

4707500027W



STATE OF WEST VIRGINIA  
DEPARTMENT OF HEALTH AND HUMAN RESOURCES  
Bureau for Public Health

Bill J. Crouch  
Cabinet Secretary

Office of Environmental Health Services

Rahul Gupta, MD, MPH, MBA, FACP  
Commissioner  
State Health Officer

February 16, 2018

William Timmermeyer  
TransCanada -Columbia Pipeline Group  
1700 MacCorkle Ave., SE  
Charleston, WV 25314

Re: WV DEP SWAP Info Request  
Protection Areas for 8 wells  
Randolph/Preston/Marshall Counties,

Dear Mr. Timmermeyer:

This is a response to the informational request dated February 15, 2018 concerning protection areas near eight wells.

Based on the current information, we have found the following:

Well	PA PWSID	PA Type	System Name	County	Note
Glady 7455	WV9942049	ZPC	USFS Middle Mountain Cabins HP	Randolph	Distance 1 mile, does not intersect any PA
Glady 7459	WV9942049	ZPC	USFS Middle Mountain Cabins HP	Randolph	Distance 1 mile, does not intersect any PA
Terra Alta South 7500	WV3303908	ZPC	Kingwood Water Board Primary	Preston	Intersects Protection Area
Victory B 2265	WV9925016	ZPC	Covestro (FKA Bayer Material)	Marshall	Intersects Protection Area
	WV3304803	ZPC	Sistersville Municipal Water	Marshall	Intersects Protection Area
Victory B 2345	WV9925016	ZPC	Covestro (FKA Bayer Material)	Marshall	Intersects Protection Area
	WV3304803	ZPC	Sistersville Municipal Water	Marshall	Intersects Protection Area
Victory B 2589	WV9925016	ZPC	Covestro (FKA Bayer Material)	Marshall	Intersects Protection Area
Victory B 3522	WV9925016	ZPC	Covestro (FKA Bayer Material)	Marshall	Intersects Protection Area
Victory B 4502	WV9925016	ZPC	Covestro (FKA Bayer Material)	Marshall	Distance 250 feet, does not intersect any PA

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.

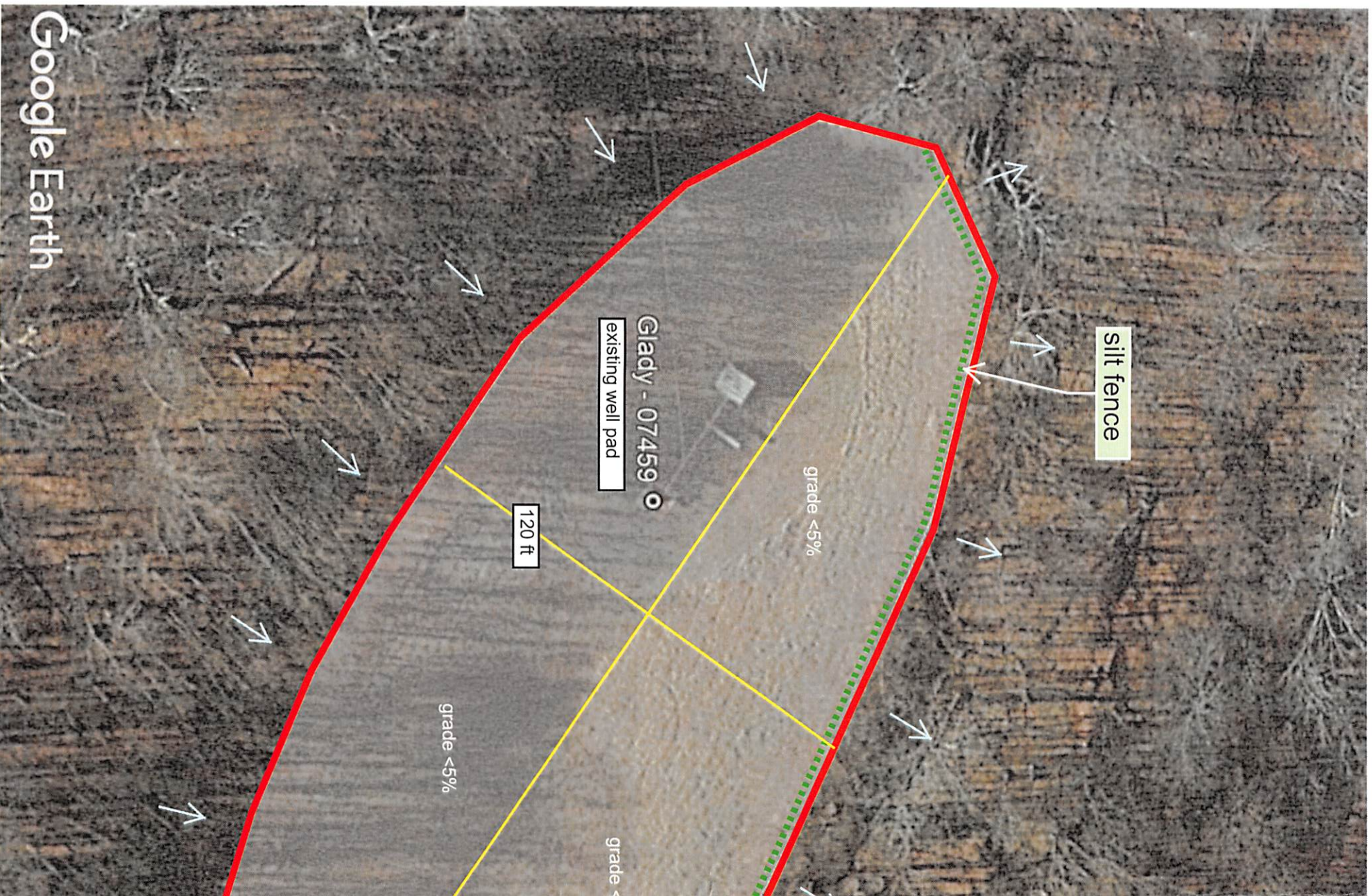
Sincerely,  
*Lisa A. King*  
Lisa A. King, GIS Administrator  
Source Water Assessment and Protection

RECEIVED  
Office of Oil and Gas

MAY 09 2018

WV Department of  
Environmental Protection

CC: William J. Toome



47075 000 27 W

## WV DEP Reclamation Plan - Site Detail

Gladly storage well 7459

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

### Limits of Disturbance

- to be confined to predisturbed area
- minor grading and application of crush limestone to provide stabilization for equipment





47075 000 27 W



(Outdoor Contour Map)

(Outdoor Contour Map)

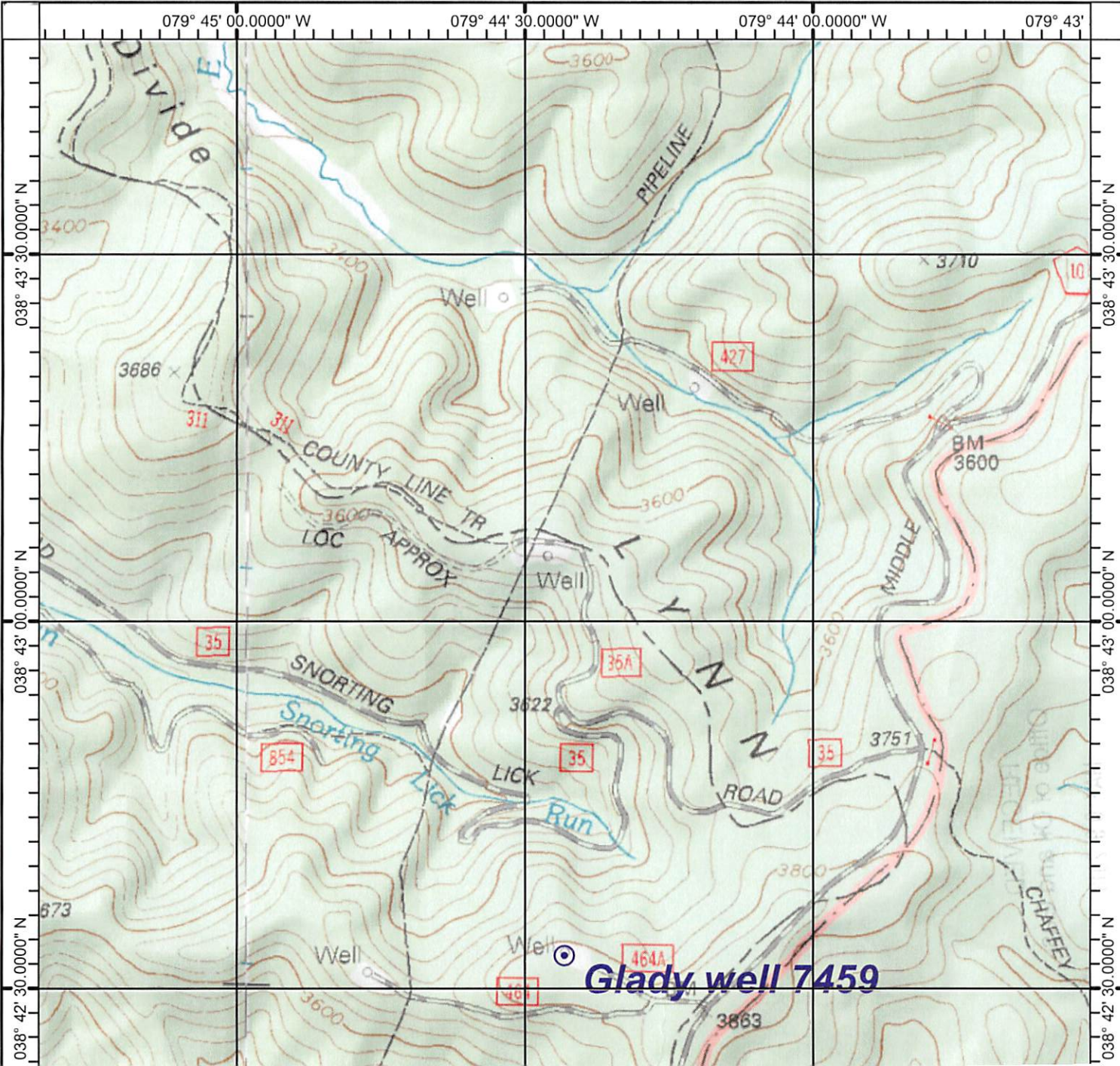
079° 45' 20.5918" W

(Outdoor Contour Map)

079° 43' 30.4672" W

038° 43' 47.5356" N

038° 43' 47.5356" N



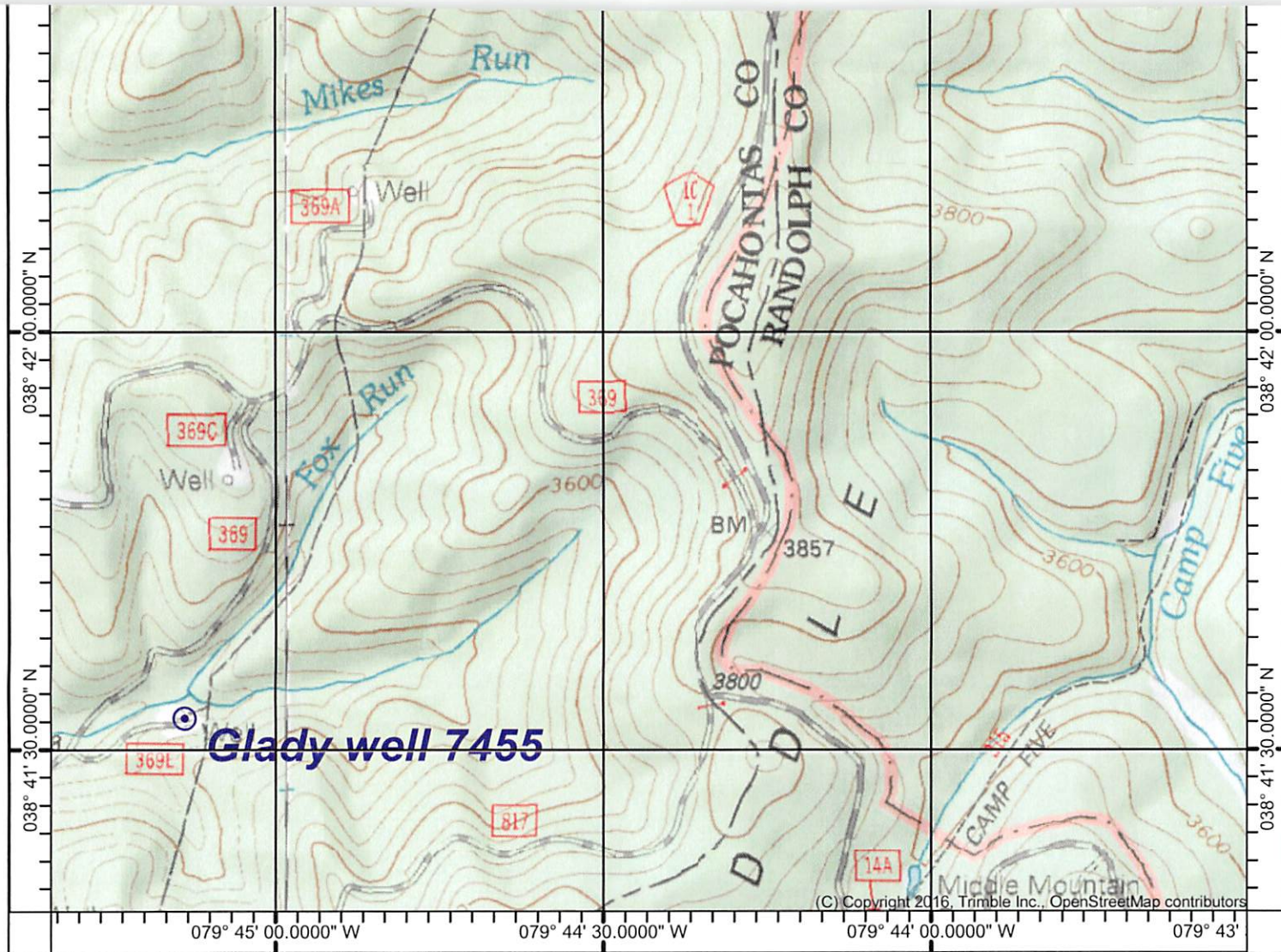
(Outdoor Contour Map)

(Outdoor Contour Map)

47000 000 27 W

to Integrate WV Department of Environmental Protection

Glady well 7459



038° 41' 18.0634" N  
079° 45' 20.5918" W

Printed: Tue Apr 10, 2018

038° 41' 18.0634" N  
079° 43' 30.4672" W

(Outdoor Contour Map)

(Outdoor Contour Map)

Produced by Trimble Terrain Navigator Pro  
Topography based on USGS variable Maps

North American 1983 Datum (NAD83)

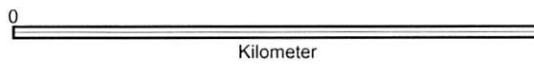
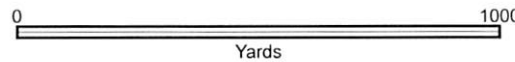
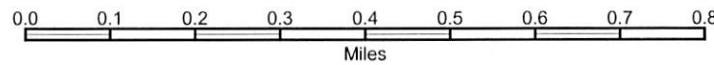
To place on the predicted North American 1927 move the  
projection lines 13M N and 19M E

Declination



GN 0.78° E  
MN 9.11° W

(Outdoor Contour Map)  
SCALE 1:14400



CONTOUR INTERVAL UNKNOWN FT

N/A  
SINKS OF GANDY, WV  
UNKNOWN

## WV DEP Reclamation Plan - Access Road

Gladly storage well 7459

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

### Driving Directions

From Elkins, WV, travel east on US 33  
Approx 13 mi turn right on Gladly Rd (Rt 27)  
Approx 15 miles turn left on Bemis Rd (Rt 22)  
Approx 2 miles continue on Rt 422  
Approx 2.4 miles bear right on Middle Mt Road (Rt 10)  
Approx 4.6 miles continue on Rt 10/1  
Approx 0.6 miles turn right on FR 464  
Approx 0.1 miles turn right on FR 464A  
Follow approx 0.15 miles to well

2M

Google Earth

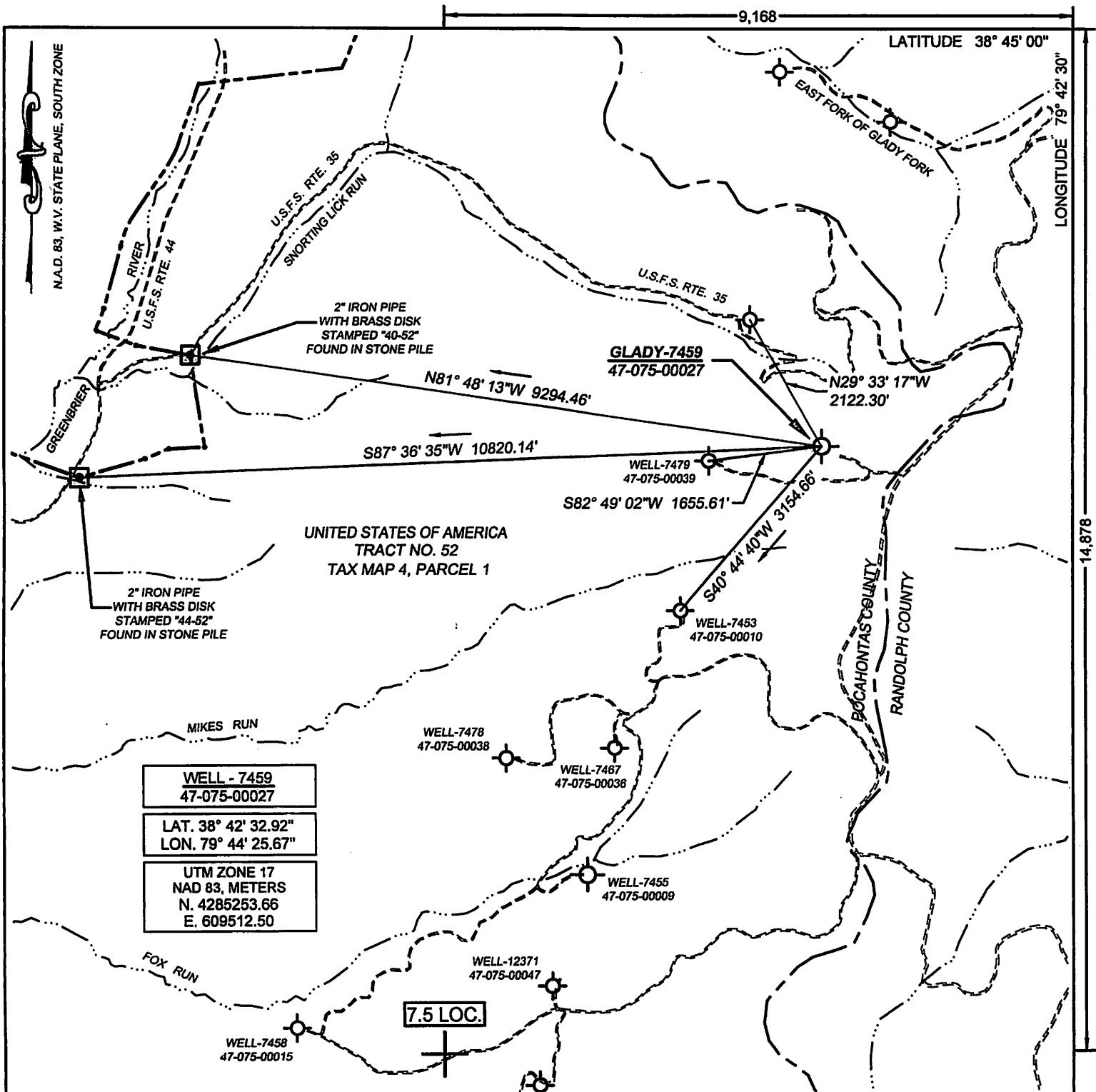
© 2018 Google

Wildell

Gladly - 0745



4707500027W

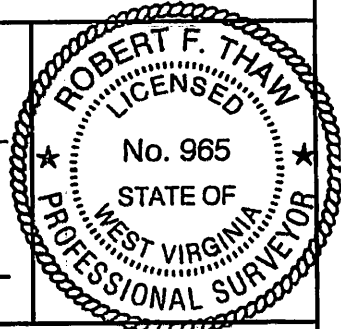


(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No 1701-2345-001-021  
 DRAWING No. GLADY-7459  
 SCALE 1"=2000'  
 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 FEBRUARY 16 2018  
 OPERATOR'S WELL No. 7459  
 API WELL No. 47 075 - 00027w

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

LOCATION: ELEVATION 3817.8 WATER SHED SNORTING LICK RUN OF WEST FORK OF GREENBRIER RIVER  
 DISTRICT GREENBANK COUNTY POCAHONTAS  
 QUADRANGLE SINKS OF GANDY, 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  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) REWORK

PLUG AND ABANDON  CLEAN OUT AND REPLUG

TARGET FORMATION ORISKANY ESTIMATED DEPTH 6855 FT  
 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

FORM IV-6 (8-78)