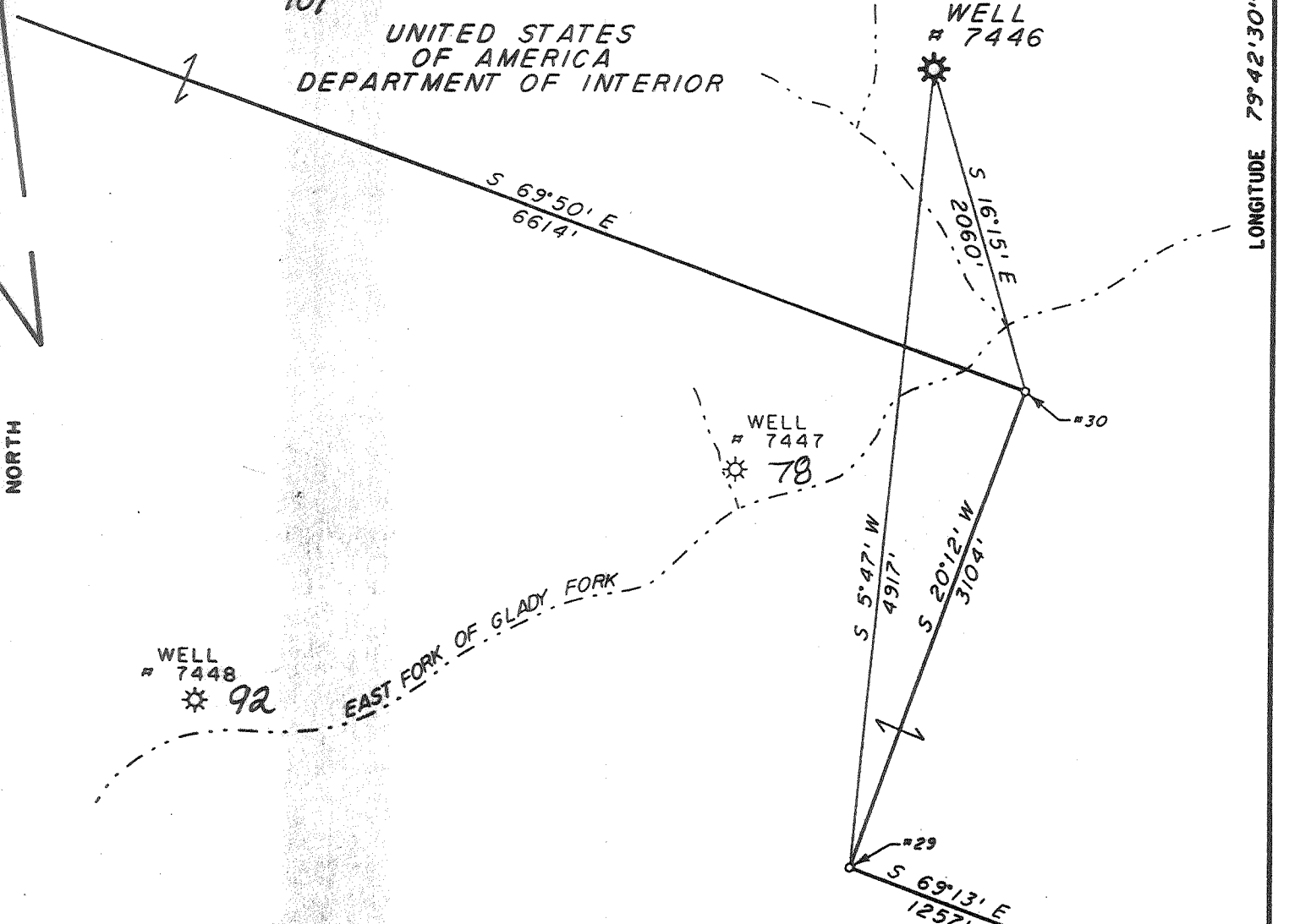


Gamic
1/23/97

4850'
LATITUDE 38° 45' 00"
38° 45' 00"

WELL # 7445
107
UNITED STATES OF AMERICA
DEPARTMENT OF INTERIOR

WELL # 7446
0.355
0.90w



B.M. - US GOV'T DISK ON CONCRETE FOUNDATION OF LARGE CULVERT OVER GLADY CREEK AT MOUTH OF LOUK RUN. STAMPED #98 J.E.A. ELEVATION = 2923.0'

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS (7 1/2")

FILE NO. _____
 DRAWING NO. 7446
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1/200
 PROVEN SOURCE OF ELEVATION SEE NOTE ABOVE

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.
 (SIGNED) [Signature]
 R.P.E. _____ L.L.S. 798

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 OIL AND GAS DIVISION



DATE NOVEMBER 1, 1996
 OPERATOR'S WELL NO. 7446
 API WELL NO. _____

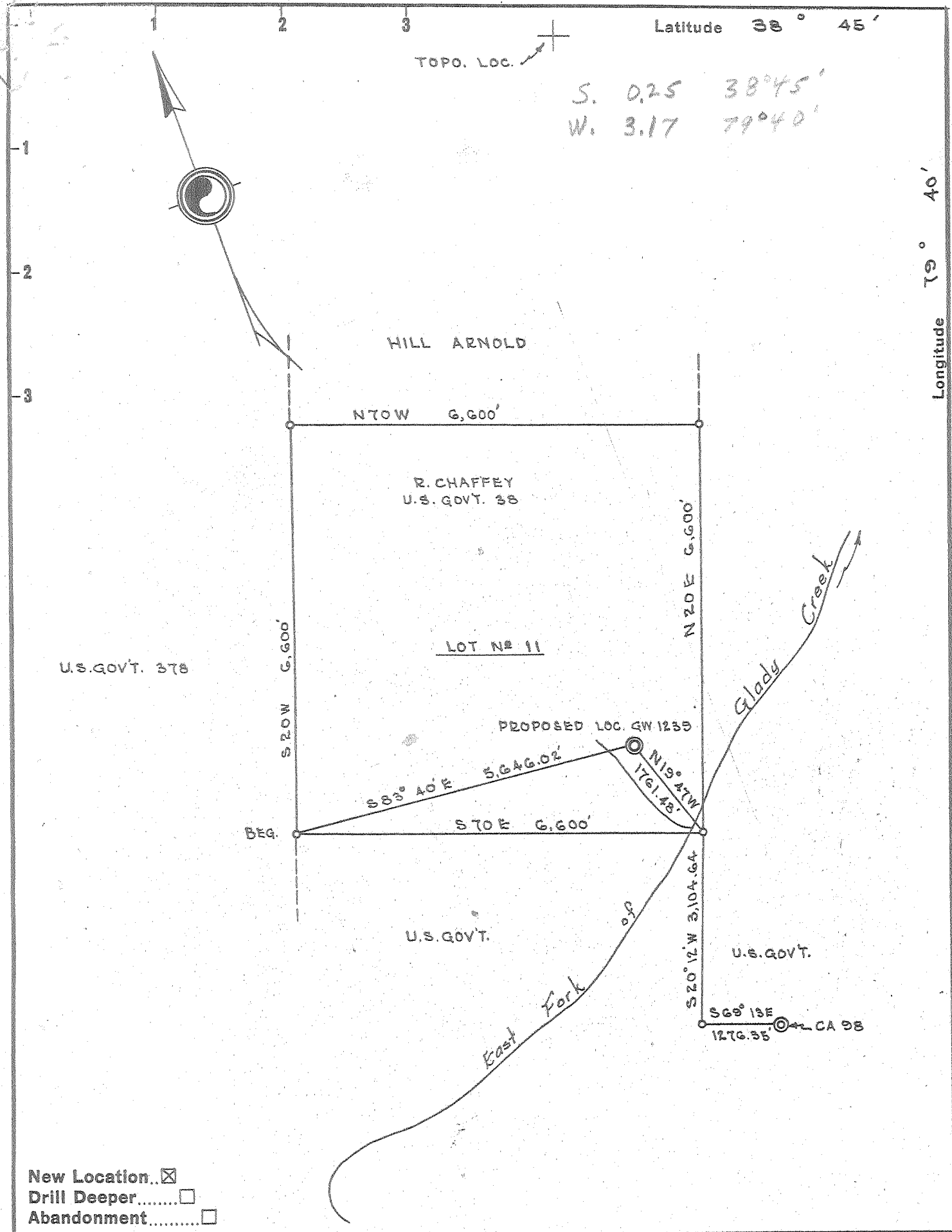
WELL TYPE: OIL _____ GAS _____ LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION _____ STORAGE _____ DEEP _____ SHALLOW _____
 LOCATION: ELEVATION 3410' WATER SHED EAST FORK OF GLADY FORK
 DISTRICT DRY FORK COUNTY GRANDOLPH
 QUADRANGLE SINKS OF GANDY COORDINATES LAT: 38° 41' 12" LONG: 79° 43' 31"
 SURFACE OWNER UNITED STATES OF AMERICA ACREAGE 3870.9
 OIL & GAS ROYALTY OWNER _____ LEASE ACREAGE 48212.3
 COAL OWNER _____ 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) STORAGE RECONDITION
plug existing storage well
 PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____
 TARGET FORMATION Chickany ESTIMATED DEPTH 5522'
 WELL OPERATOR COLUMBIA GAS TRANS. CORP. DESIGNATED AGENT RICHARD L. COTY
 ADDRESS P.O. BOX 1273, CHALESTON, WY ADDRESS P.O. BOX 1273, CHALESTON, WY
25325-1273 25325-1273

GRANDOLPH COUNTY NAME PERMIT 88

DEEP WELL

JAN 24 1997



Company COLUMBIAN CARBON COMPANY
 Address BOX 873 CHARLESTON, W. VA.
 Farm UNITED STATES OF AMERICA
 Tract 32 Acres 1863.6132 Lease No. BLMA-032819
 Well (Farm) No. G-1 Serial No. GW-1239
 Elevation (Spirit Level) 3448.46
 Quadrangle SPRUCE KNOB-3^{NW} S-024 W-318
 County RANDOLPH District DRY FORK
 Engineer R. D. Anderson
 Engineer's Registration No. 2074
 File No. _____ Drawing No. W-12-56
 Date MAY 7, 1956 Scale 1" = 2000'

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

WELL LOCATION MAP
 FILE NO. RAN-88

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.
 - Denotes one inch spaces on border line of original tracing.

6-6 201 Deep Well



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 9

Quadrangle Spruce Knob 3 SW

WELL RECORD

Permit No. Ran-88

Oil or Gas Well gas

(KIND)

Company Columbian Carbon Company, Oper

Address Box 873, Charleston 23, W. Va.

Farm United States of America Acres 1863.6132

Location (waters) East Fork of Glady Creek

Well No. G-1, GW1239 Elev 3448.46'

District Dry Fork County Randolph

The surface of tract is owned in fee by Bureau of Land Mgmt.

Interior Bldg. Address Washington, D.C.

Mineral rights are owned by same

Address _____

Drilling commenced 8-9-56

Drilling completed 1-15-57

Date Shot not shot From _____ To _____

With see fracturing record on reverse side

Open Flow 40 /10ths Water in _____ Inch

7" 23# /10ths Merc. in _____ Inch

Volume 9,962,000 Cu. Ft.

Rock Pressure 2040 lbs. 43 hrs.

Oil _____ bbls., 1st 24 hrs.

Fresh water _____ feet

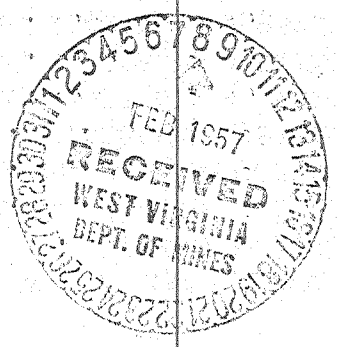
Salt water _____ feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16" 65#	26'	26'	Kind of Packer
13 3/8" 48#	52'9"	52'9"	none
10 3/4" 40#	907'8"	pulled	Size of
8 1/4" 24#	2247'2"	pulled	
7" 23#	5210'11"	5210'11"	Depth set
5 3/16			
3			Perf. top
2 3/8" 4#	5495'3"	5495'3"	Perf. bottom
Liners Used	with cage	1 jt. off	Perf. top
		bottom	Perf. bottom

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
see reverse side

COAL WAS ENCOUNTERED AT none FEET _____ INCHES _____
FEET _____ INCHES FEET _____ INCHES
FEET _____ INCHES FEET _____ INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Clay			0	15			
Shale			15	30			
Sand			30	38			
Slate and Lime			38	66			
Sand			66	75			
Lime			75	82			
Slate and Shells			82	154			
Lime			154	200			
Slate and Shells			200	498			
Hard Lime			498	620			
Slate and Shells	900'DLM-899'SLM		620	1078			
Broken Lime			1078	1137			
Slate and Lime Shells			1137	1275			
Brown Lime			1275	1316			
Slate and Lime			1316	1680			
Sandy Lime			1680	1710			
Broken Lime and Shells			1710	2236			
Slate & Shells	2237'DLM-2227'SLM		2236	2580			
Lime			2580	2712			
Slate and Lime			2712	3235			
Slate and Shells, Dark			3235	3350			
Slate and Shells, Grey			3350	3386			
Lime			3386	3630			
Broken Lime			3630	3980			
Brown Shale			3980	4271			
White Lime			4271	4310			
Slate and Shells			4310	4334			
Black Lime			4334	4400			
Black Hard Lime			4400	4430			
Broken Lime, Grey			4430	4610			
Brown Shale			4610	4680			
Black Shale			4680	5030	Gas	4930'	show



Formation	Color	Hard or Soft	Top η	Bottom	Oil, Gas or Water	Depth Found	Remarks
Maacellus Shale	5178'	DLM-5174' SLM	5030	5132			
Onondaga Lime			5132	5171			
Chert			5171	5256			
Shale break			5256	5300			
Driskany Sand			5300	5498			
Lime			5498	5522			
TOTAL DEPTH				5522'			
					Gas Gauges:		
					5311-13' 7/10 W. 7" 23# 1,130M		
					5313-15' incr. fm. 1,130M to 2,700M		
					5332-37' incr. fm. 2,415M to 2,631M		
					5420-22' incr. fm. 2,415M to 3,572M		
					5430' incr. fm. 3,520M to 3,572M		
					5432' incr. fm. 3,572M to 3,722M		
					5435' incr. fm. 3,722M to 3,912M		
					5442' incr. fm. 3,912M to 3,959M		
					5466-69' incr. fm. 3,866M to 4,676M		
<u>CASING RECORD</u>							
-6-56 - 10-3/4" casing ran with Midget bottom hole packer at 900' DLM-899'SLM. 18 sacks Aquagel. No circulation or returns.							
-28-56 - 8-5/8" casing ran with Midget bottom hole packer at 2227'SLM 28 sacks Aquagel. Circulation and returns.							
1-20-56- 7" casing ran at 5174'SLM - 52 sacks Aquagel. Ran 60 sacks cement.							
<u>FRACTURING RECORD</u>							
-18-57 - Pumped in 750 Gal. MCA. Loaded tubing with kerosene. Broke down. Used 100 bbl. total. Maximum pressure 1875#. Pumped at 1500# rest of time. Gelled 200 bbl. kerosene. Pumped in with 12,500# of sand at 16-1/2 bbl./min. Started gel at 1800# - dropped to 1500# - finished at 1800#. Flushed with 150 bbl. kerosene. Started at 1800#. Built to 2300# - dropped to 1900#. Finished at 1500#. Injection rate of flush 12 bbl./min.							
Before fracturing gas gauged 4,225 M CF. (98/10 w. 7" 23#)							
Final, open flow after fracturing 40/10 M. 7" 23# dx 9,962,000 cu. ft.							
		5132	5300	5132	5300		
		1864	1864	3448	3448		
		<u>3268 - 3436</u>		1684	1852		

Date Feb. 6, 1957

APPROVED Columbian Carbon Co., Oper., Owner

By O. W. Van Petten, V.P.
(Title)

083-0088 Free.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: COLUMBIA GAS TRANSMISSION CORPORATION 10450 369

2) Operator's Well Number: Gladly Stg # 7446 (API 47-083-00088) 3) Elevation: 3,448.46 feet

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

Issued 01/23/97
Expires 01/23/99

RECEIVED
DEC 27 1996
Office of Oil & Gas

Proposed Target Formation (s): Oriskany 47.5

Proposed Total Depth: 5522 feet

Approximate fresh water strata depths: none recorded

Approximate salt water strata depths: none recorded

Approximate coal seam depths: NONE

Does land contain coal seams tributary to active mine? Yes / No X /

Proposed Well Work: Columbia proposes to clean the wellbore out to the original TD. The well will be logged with cased and open hole logs. The well will be hydra-jetted with coiled tubing and acidized across the Oriskany section. The well will then be cleaned up, flow tested and placed back in service

CASING AND TUBING PROGRAM

Table with columns: TYPE, SPECIFICATIONS (Size, Grade), FOOTAGE INTERVALS (Weight per ft., For drilling, Left in well), CEMENT (Fill-up). Rows include conductor, Fresh Water, Coal, Intermediate, Production, Tubing, Liners.

Distances from well records

PACKERS: Kind None
Sizes
Depths set

00171760

For Division of Oil and Gas Use Only
Fee(s) paid, Well Work Permit, Reclamation Fund, WPCP Agent, Bond, (Type)

RECEIVED
Environmental Protection
DEC 27 1996

- 1) Date: 10/24/96
- 2) Operator's well number
GLADY WELL 7446
- 3) API Well No: 47 - 083 - 00088
State - County - Permit

Permitting
Office of Oil and Gas

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
DIVISION 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 United States Forest Service
Address Monongahela National Forest
P. O. Box 1548, Elkins, WV 26241
 - b) Name _____
Address _____
 - c) Name _____
Address _____
- 6) Inspector Phillip Tracy
Address Route 2, Box 37-A
Montrose, WV 26283
Telephone (304) - 636-8798

- 5) (a) Coal Operator:
Name _____
Address _____
- (b) Coal Owner (s) with Declaration
Name United States Dept. Of Interior, Bureau Of Land Mgt.
Address P.O. Box 631
Milwaukee, WI 53201-0631 Attn: Tim Abing
- (c) Coal Lessee with Declaration
Name _____
Address _____

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR
 X Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

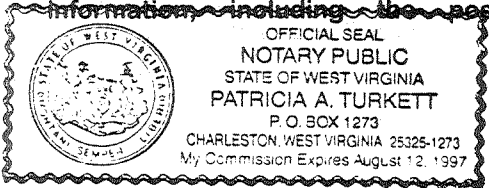
I certify that as required under Chapter 22 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through on the above named parties, by:

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

I have read and understand Chapter 22-6 and 38 CSR 11-18, 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.

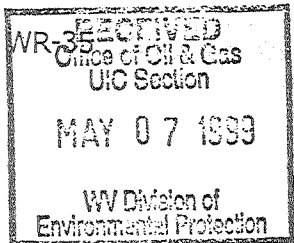
I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Well Operator COLUMBIA GAS TRANSMISSION CORP.
By: W.N. Fraker
Its: Senior Storage Engineer / Well Services
Address Route 3, Box 216
Elkins, WV 26241

Subscribed and sworn before me this 14th day of November, 19 96

Patricia A. Turkett Notary Public
My commission expires August 12, 1997



23-Jan-97
API # 47- 083-00088-W

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Reviewed [Signature]

Well Operator's Report of Well Work

Farm name: U. S. FOREST SERVICE Operator Well No.: GLADY 7446

LOCATION: Elevation: 3,410.00 Quadrangle: GLADY

District: DRY FORK County: RANDOLPH
Latitude: 1850 Feet South of 38 Deg. 42 Min. 30 Sec.
Longitude: 4850 Feet West of 79 Deg. 42 Min. 30 Sec.

Compay: COLUMBIA GAS TRANSMISSION
P.O. BOX 1273
CHARLESTON, WV 25325-1273

Agent: RICHARD L. COTY
Inspector: PHILLIP TRACY

Permit Issued: 01/23/97
Well work Commenced: 06/17/97
Well work Completed: 07/21/97

Verbal Plugging
Permission granted on: _____

Rotary _____ Cable _____ Rig _____
Total Depth (feet) 5,522'

Fresh water depths (ft) See Original Records

Salt water depths (ft) See Previous

Is coal being mined in area (Y/N) ? N
Coal Depths (ft) : See Previous

Casing & Up Tubing Size	Used in Drilling	Left in Well	Cement Fill Cu. Ft.
STIMULATION; SEE BACK FOR DETAILS			

OPEN FLOW DATA

Producing formation ORISKANY Pay zone depth (ft) 5,300' - 5,498'
Gas : Initial open flow 6895 MCF/d Oil : Initial open flow _____ Bbl/d
Final open flow 5541 MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 476 Days Hours
Static rock Pressure 2004 psig (surface pressure) after 4 Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas : Initial open flow _____ MCF/d Oil : Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For : COLUMBIA GAS TRANSMISSION CORP.

By : William H. Foraker
Date : May 7, 1999

MAY 17 1999

RAM 0088 W

WR-35

23-Jan-97

API # 47- 083-00088-W

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Well Operator's Report of Well Work

STIMULATION

- Acidized on 07-07-97
- Halliburton Foamed Acid Job.
- Treated with 5,000 gals equivalent 15% Halliburton 60 Quality FE Foamed Acid followed by 5,000 gals equivalent 10% Halliburton 60 Quality FE Foamed Acid. Flushed with 1,260 gals equivalent 60 quality foam and 3,528 gals H₂O.
- Total acid 1,500 gallons 28% Halliburton FE acid (uncut).
- Total nitrogen 189,000 scf.
- Additives: 15 gals FE-1A; 8 gals-HAI-81; 4 gals-SCA-130; 3 gals-FE5A; 17 gals-HC2; 8 gals PENN-88.