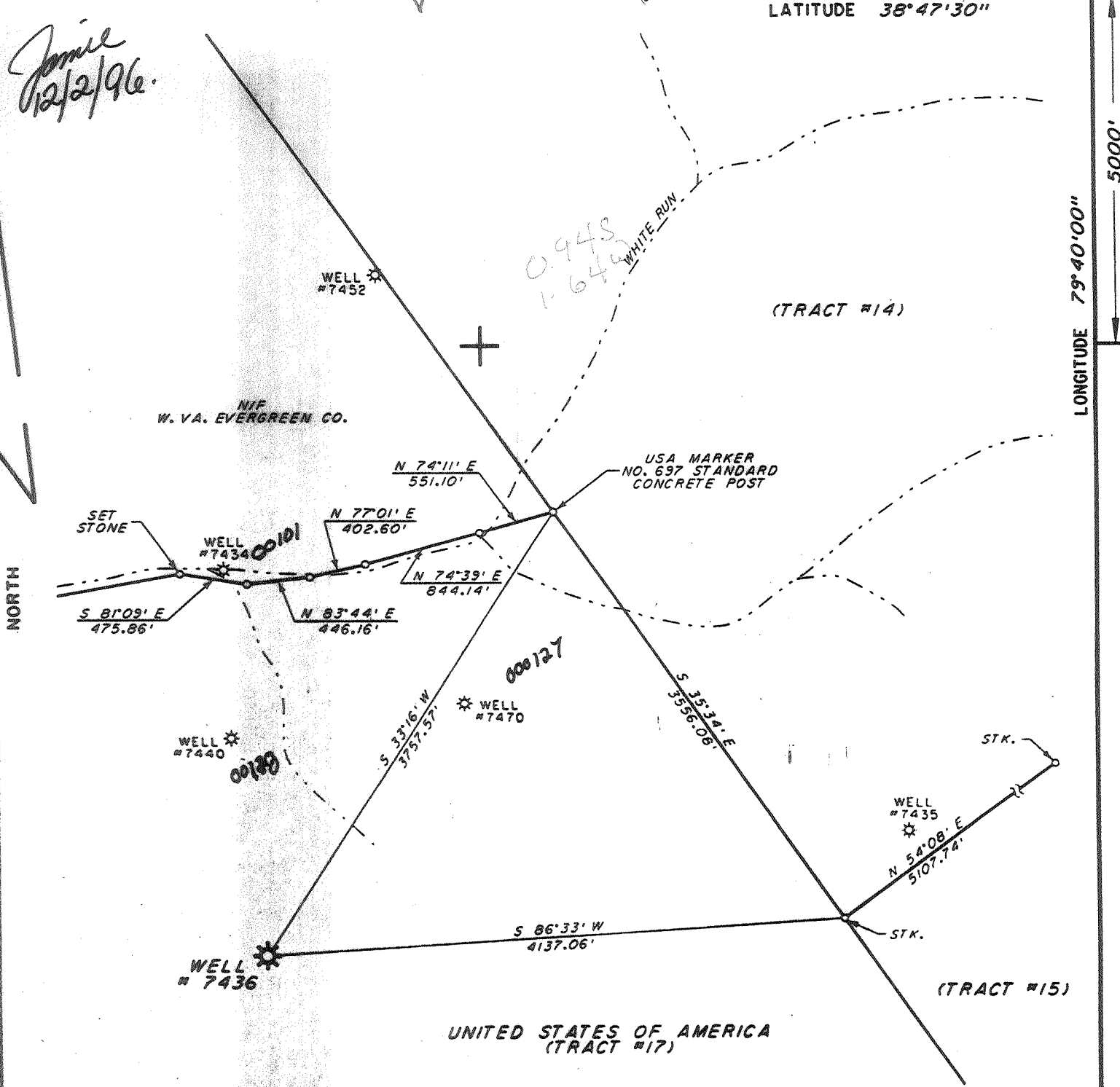


*Jamil  
12/2/96.*



8800'

LATITUDE 38°47'30"

LONGITUDE 79°40'00"

5000'

NORTH

NIP  
W. VA. EVERGREEN CO.

USA MARKER  
NO. 697 STANDARD  
CONCRETE POST

(TRACT #14)

(TRACT #15)

UNITED STATES OF AMERICA  
(TRACT #17)

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

FILE NO. \_\_\_\_\_  
DRAWING NO. \_\_\_\_\_  
SCALE 1" = 1000'  
MINIMUM DEGREE OF  
ACCURACY 1/200  
PROVEN SOURCE OF  
ELEVATION Elev. 2923.00'  
USGS BM on const. foundation  
of culvert over Gladly Creek at water's edge and  
at the mouth of Loup Run. Stamped 98 JEA

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 REGU-  
LATIONS ISSUED AND PRESCRIBED BY THE DEPART-  
MENT OF ENERGY.  
(SIGNED) Edward Nichols  
R.P.E. 9936 L.L.S. 798

PLACE SEAL HERE

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
OIL AND GAS DIVISION



DATE OCTOBER 25, 19 96  
OPERATOR'S WELL NO. 7436  
API WELL NO.

47 083 00116 W

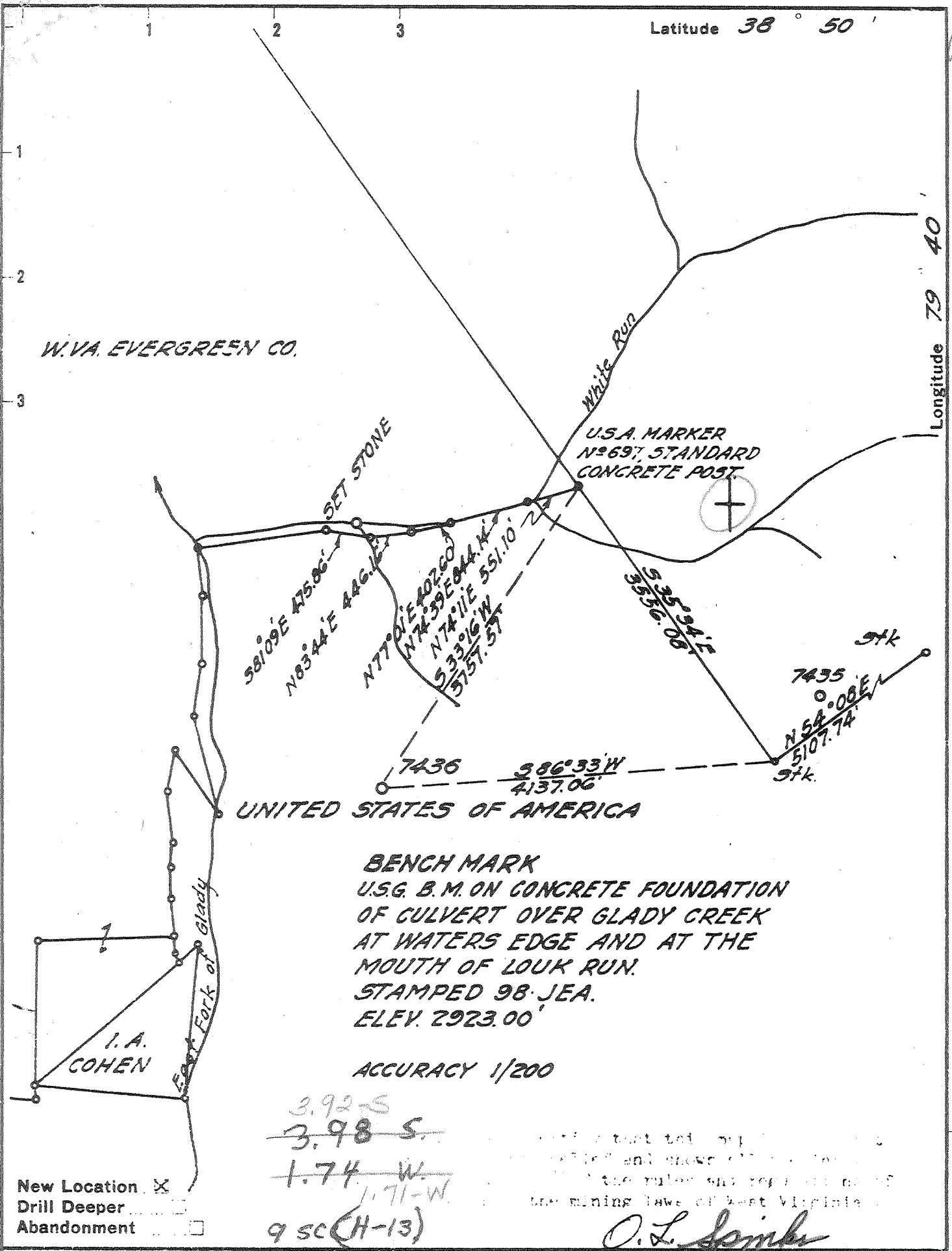
WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ STATE COUNTY PERMIT  
(IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_  
LOCATION: ELEVATION 3290' WATER SHED EAST FORK OF GLADLY CREEK  
DISTRICT DRY FORK COUNTY RANDOLPH  
QUADRANGLE GLADLY COORDINATES LAT. 38°46'27" LONG. 79°41'28"  
SURFACE OWNER UNITED STATES OF AMERICA DEPT. OF INTERIOR ACREAGE 1730.92  
OIL & GAS ROYALTY OWNER USA DEPT OF INTERIOR LEASE ACREAGE 48212.33  
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  
Well was drilled by Atlantic Seaboard in 1964 TO-5176  
Drill deeper  
PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
TARGET FORMATION Chart-Overton ESTIMATED DEPTH 5236'  
WELL OPERATOR COLUMBIA GAS TRANS. CORP. DESIGNATED AGENT RICHARD L. COTY  
ADDRESS P.O. BOX 1273, CHARLESTON, WV ADDRESS P.O. BOX 1273, CHARLESTON, WV  
25325-1273 25325-1273

RANDOLPH  
COUNTY NAME  
PERMIT  
0016

FORM WV-6

DEEP WELL



Company ATLANTIC SEABOARD CORP.  
 Address CHARLESTON, W.VA.  
 Farm U.S.A. DEPT. OF INTERIOR  
 Tract A032820 Acres 1730.90 Lease No. A5-700  
 Well (Farm) No. \_\_\_\_\_ Serial No. 7436  
 Elevation (Spirit Level) 3290.97'  
 Quadrangle HORTON - SW  
 County RANDOLPH District DRY FORK  
 Engineer O. L. Smith  
 Engineer's Registration No. 2712  
 File No. 166-87 Drawing No. \_\_\_\_\_  
 Date JUNE 9, 1964 Scale 1"=1320'

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

**WELL LOCATION MAP**  
 FILE NO. RAY-116

+ 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.



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION 16

Quadrangle Horton  
Permit No. Ran. 116

WELL RECORD

Storage Gas  
Oil or Gas Well Gas  
(KIND)

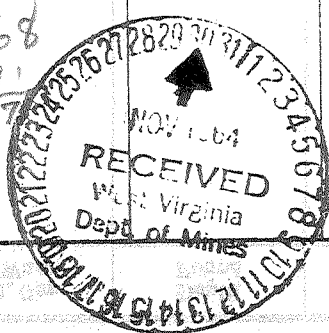
Company Atlantic Seaboard Corporation  
Address Box 1067 - Elkins, West Virginia  
Farm U.S.A. Dept. Interior Acres 1730.90  
Location (waters) Glady Creek  
Well No. X-77 - 7436 Elev. 3290.97  
District Dry Fork County Randolph  
The surface of tract is owned in fee by U.S.A. Dept. of Interior Address \_\_\_\_\_  
Mineral rights are owned by \_\_\_\_\_ Address \_\_\_\_\_  
Drilling commenced 10-9-64  
Drilling completed 10-7-64  
Date Shot \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
With \_\_\_\_\_  
Open Flow /10ths Water in \_\_\_\_\_ Inch  
/10ths Merc. in \_\_\_\_\_ Inch  
Volume 7.200M Cu. Ft.  
Rock Pressure \_\_\_\_\_ lbs. \_\_\_\_\_ hrs.  
Oil \_\_\_\_\_ bbls., 1st 24 hrs.  
WELL ACIDIZED See back  
WELL FRACTURED \_\_\_\_\_

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer _____
16			
13-3/8	60'	60'	
<del>9-5/8"</del>	1004'	1004'	Size of _____
8 1/4			
<del>7"</del>	4855	4855	Depth set _____
5 3/16			
3			Perf. top _____
2	5162'	5162'	Perf. bottom _____
Liners Used			Perf. top _____
			Perf. bottom _____

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

RESULT AFTER TREATMENT  
ROCK PRESSURE AFTER TREATMENT \_\_\_\_\_  
Fresh Water \_\_\_\_\_ Feet Salt Water \_\_\_\_\_ Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Sand & Shale			1100	4496	Fresh water	298'	
Tully Lime			4496	4520		750'	
Marcellus Shale			4520	4805		1004' - 300 bbl/day	
Metabentonite at			4805	Top Onondaga			
Onondaga Lime			4805	4845			
Chert			4855	4900	Chert cored from 4855 - 4875		
Cherty Shale			4900	4940			
Needmore Shale			4940	4984			
Oriskany Sand			4984	5168	Show gas	5106'	
Helderberg Lime			5168	5176	Oriskany cored from 5131 - 5176'		
Total Depth			5176				
			4805	4984	5168		
			3291	3291	3291		
			1514	1693	1877		



Formation	Color	Hard or Soft	Top 16	Bottom	Oil, Gas or Water	Depth Found	Remarks
LOGGING:		Schlumberger Corp. 11-7-64					
	Gamma Ray		0	5176			
	Density		4848	5176			
	Sonic-Sonic Amplitude		4848	5176			
CASING:							
13-3/8	H-48# set	at 60' R.K.B. - Cemented to surface					
9-5/8	H-32# set	at 1004' R.K.B. - Cemented to surface with 470 Cu. Ft. Litepoz with 1/4# Clinton Flake/sk. and 100 sks. Neat Cement with 1/2# Clinton flake/sk. and 3% Ca. Cl.					
7"	J-55 - 23# set	at 4855 R.K.B. - Cemented to surface with 1041 Cu. Ft. Litepoz and 350 Gal. Cealment.					
2"	E.U.E. 4.7	at 5162' - Used as siphon					
STIMULATION:		Acidized 11-11-64 with 2000 gal. mud acid					
	Test before Acid	- show					
	Test after acid	- 3.217M					
	Acidized 11-13-64 with 20,000 Gal. 15% HCl and 180M St. Cu. Ft. Nitrogen						
	Test before acid	- 3.217M					
	Test after acid	- 7.272M					
	Rock Pressure - 1010#						

Date Nov 25, 1964

APPROVED Atlantic Seaboard Corp. Owner

By Alfred J. (Sept)

(Title)

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

Issued 12/04/96  
Expires 12/04/98  
1045 ② 369

22928

- 1) Well Operator: 195 COLUMBIA GAS TRANSMISSION CORPORATION
- 2) Operator's Well Number: Glady Stg # 7436 (API 47-083-00116) 3) Elevation: 3,290.97 feet
- 4) Well type : (a) Oil / or Gas X /  
(b) If Gas : Production / Underground Storage X /  
Deep X / Shallow /
- 5) Proposed Target Formation (s) : Chert- 475  
Oriskany
- 6) Proposed Total Depth : 5,236 (drill deeper 60 feet) feet
- 7) Approximate fresh water strata depths : 298', 750', 1004'
- 8) Approximate salt water strata depths : 1200' (approx.)
- 9) Approximate coal seam depths : NONE
- 10) Does land contain coal seams tributary to active mine ? Yes / No X /

**RECEIVED**  
NOV 18 1996  
Permitting  
Office of Oil & Gas  
Environmental Protection  
Division of

11) Proposed Well Work : Proposed Well Work : Columbia proposes to kill the well with a freshwater polymer based mud system. Remove the tubing and reconfigure the wellhead. The well will be drilled an additional 60 feet as needed to facilitate open hole logging and installation of a casing liner. A 4-1/2" liner will be installed across the open hole, into the casing, & cemented in place. The liner is intended to isolate the caving Needmore shale section. The liner will be perforated and acidized across the Oriskany and Chert sections as determined by the well logs. Clean up, flow test & place back in service.

**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#	60'KB	60'	35 sks 470 cu ft litepoz
Fresh Water	9-5/8"	H-40	32#	1004'KB	1004'	100 cu ft neat
Coal	-					
Intermediate						
Production	7"	J-55	23#	4855'KB	4855'	1041 cu ft litepoz 350 gals cealment
Tubing	2-3/8"	(TO BE RETIRED)	4.7#	4850.90'	4850.90'	
Liners	4-1/2"	(TO BE INSTALLED)	11.6#	approx. 5236'-4555'	approx. 5236'-4555'	Approx. 150 cu ft.

*Handwritten signature: E. J. Stearns*  
*Handwritten signature: J. M. Wells*

*Handwritten date: 12/05/96*

PACKERS : Kind None  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

For Division of Oil and Gas Use Only

Fee(s) paid     Well Work Permit     Reclamation Fund     WPCP  
 Plat     WW - 9     WW - 2B     Bond     Agent

RECEIVED  
WV Division of  
Environmental Protection  
NOV 18 1996

1) Date: 10/24/96  
2) Operator's well number  
GLADY WELL 7436  
3) API Well No: 47 - 083 - 00116 *ll*  
State - County - Permit

Permitting  
Office of Oil & 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  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
(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)

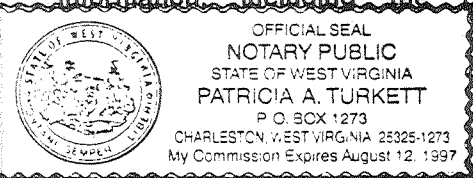
I have read and understand Chapter 22-6 and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

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.

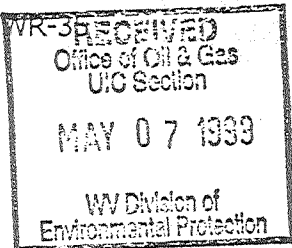
I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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

Telephone 304/636-8129  
Subscribed and sworn before me this 4th day of November, 19 96



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



03-Dec-96  
API # 47- 083-00116-W

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

Reviewed RB

Well Operator's Report of Well Work

Farm name: U. S. FOREST SERVICE Operator Well No.: GLADY 7436

LOCATION: Elevation: 3,290.00 Quadrangle: GLADY

District: DRY FORK County: RANDOLPH  
Latitude: 5000 Feet South of 38 Deg. 47 Min. 30 Sec.  
Longitude: 880 Feet West of 79 Deg. 40 Min. 0 Sec.

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

Agent: RICHARD L. COTY  
Inspector: PHILLIP TRACY  
Permit Issued: 12/04/96  
Well work Commenced: 07-22-97  
Well work Completed: 08-30-97  
Verbal Plugging  
Permission granted on: \_\_\_\_\_  
Rotary \_\_\_\_\_ Cable \_\_\_\_\_ Rig \_\_\_\_\_  
Total Depth (feet) DRILLED DEEPER TO 5,199' GL  
Fresh water depths (ft) See Original Records  
Salt water depths (ft) See Previous

Casing & Up Tubing Size	Used in Drilling	Left in Well	Cement Fill Cu. Ft.
PULLED & RETIRED 4,850.90 FEET OF 2-3/8" 4.7 #/FT EUE TUBING			
DRILLED DEEPER -NEW TOTAL DEPTH OF 5,199' GL.			
RAN NEW 4-1/2": 4-1/2"	5,188' GL	5,188' GL	151 cu ft
STIMULATION; SEE BACK FOR DETAILS			

OPEN FLOW DATA

Producing formation ORISKANY Pay zone depth (ft) 4984' - 5168'  
Gas : Initial open flow 3200 MCF/d Oil : Initial open flow \_\_\_\_\_ Bbl/c  
Final open flow 8657 MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests 250 Days Hours  
Static rock Pressure 1995 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. Frazier

Date : May 5/1999

MAY 17 1999

RAN 0116 W

WR-35

03-Dec-96

API # 47- 083-00116-W

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

Well Operator's Report of Well Work

**PERFORATIONS**

6 shots /foot @ 5,106' - 5,116'; 5,094' - 5,108'; 5,069' - 5,084'; 5,044' - 5,064'; 5,035' - 5,044'; 5,011' - 5,031'; 5,003' - 5,011'; 4,980' - 5,000'; 4,968' - 4,980'.

**STIMULATION**

- Acidized on 08-26-97
- Halliburton Selective Injection Packer - 5 ft intervals. Thirty sets injecting @:  
5,136'-5,131'    5,131'-5,126'    5,126'-5,121'    5,121'-5,116'    5,116'-5,111'  
5,111'-5,106'    5,102'-5,097'    5,097'-5,094'    5,084'-5,079'    5,079'-5,074'  
5,074'-5,069'    5,064'-5,059'    5,059'-5,054'    5,054'-5,049'    5,049'-5,044'  
5,044'-5,039'    5,039'-5,035'    5,031'-5,026'    5,026'-5,021'    5,021'-5,016'  
5,016'-5,011'    5,011'-5,006'    5,006'-5,003'    5,000'-4,995'    4,995'-4,990'  
4,990'-4,985'    4,985'-4,980'    4,980'-4,975'    4,975'-4,970'    4,970'-4,968'
- Additives In Acid: 23 gals-HAI-81; 8 gals-SCA-130; 2 gals-FE5A; 8 gals-Penn-88; 8 gals-HC2; 12 lbs-BA-2.
- Total acid 15,397 gallons 15% Halliburton FE acid.
- Total nitrogen 20,000 scf.