

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION Existing Gas Well 7469

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) Way H. Smith  
 R.P.E. \_\_\_\_\_ L.L.S. 499



**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION

DATE November 22, 1993  
 OPERATOR'S WELL NO. 7473  
 API WELL NO. \_\_\_\_\_

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

LOCATION: ELEVATION 3242.91 WATER SHED Little River Of West Fork Greenbrier River  
 DISTRICT Green Bank COUNTY Pocahontas  
 QUADRANGLE Wildell COORDINATES LAT 38°37'50" LONG 79°46'48"

SURFACE OWNER United States Of America Dept Of Interior ACREAGE 8886.28  
 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

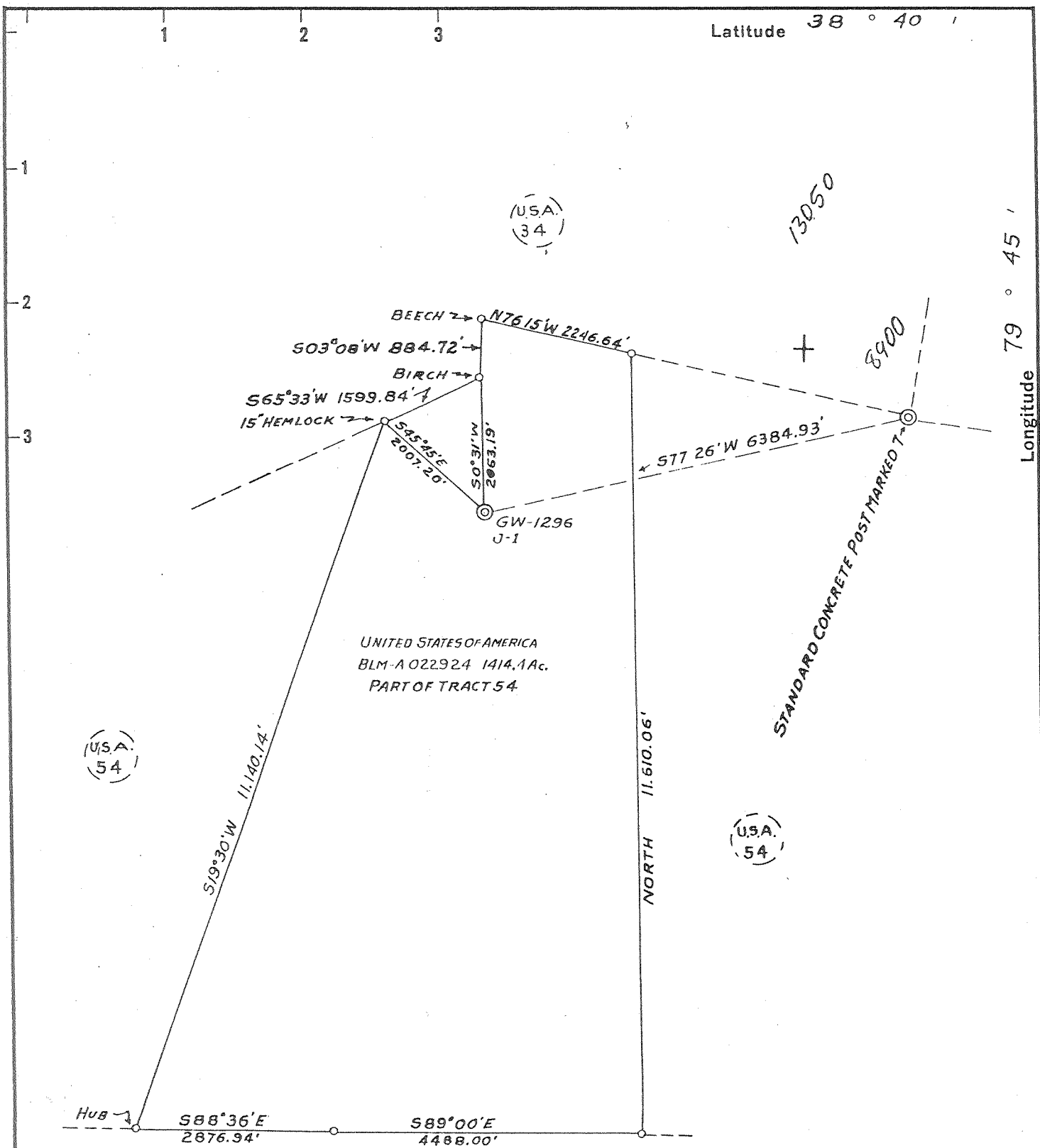
PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_

TARGET FORMATION \_\_\_\_\_ ESTIMATED DEPTH \_\_\_\_\_

WELL OPERATOR COLUMBIA GAS TRANS CORP DESIGNATED AGENT Robert C Weldner  
 ADDRESS PO BOX 1273, CHARLESTON, WV 25325 ADDRESS PO Box 1273, Charleston, WV 25325-1273

JUL 24 1994

Pocahontas  
 COUNTY NAME  
 14  
 PERMIT



U.S.A. POSTED DATE

20

Topo Map \_\_\_\_\_

Tracing \_\_\_\_\_

Map \_\_\_\_\_

Drilling Report \_\_\_\_\_

Index \_\_\_\_\_

Geol. Dept. Map Posting	
Loop	Date
Topographic	3/18/59
Regional	
Farm	
Tracing	

New Location

Drill Deeper

Abandonment

Company COLUMBIAN CARBON COMPANY

Address Box 873 CHARLESTON W.VA.

Farm UNITED STATES OF AMERICA  
"PART OF" "PART OF 2104.40 Ac." BLM-A 022924  
Tract 54 Acres 1414.4 Lease No. C-4224

Well (Farm) No. J-1 Serial No. GW-1296

Elevation (Spirit Level) 3264.22'

Quadrangle DURBIN <sup>with 7.5' grid</sup> S-250 W-169

County POCAHONTAS District GREENBANK

Engineer R. B. Anderson

Engineer's Registration No. 2074

File No. \_\_\_\_\_ Drawing No. W-3-59

Date FEB. 9-1959 Scale 1" = 2000'

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

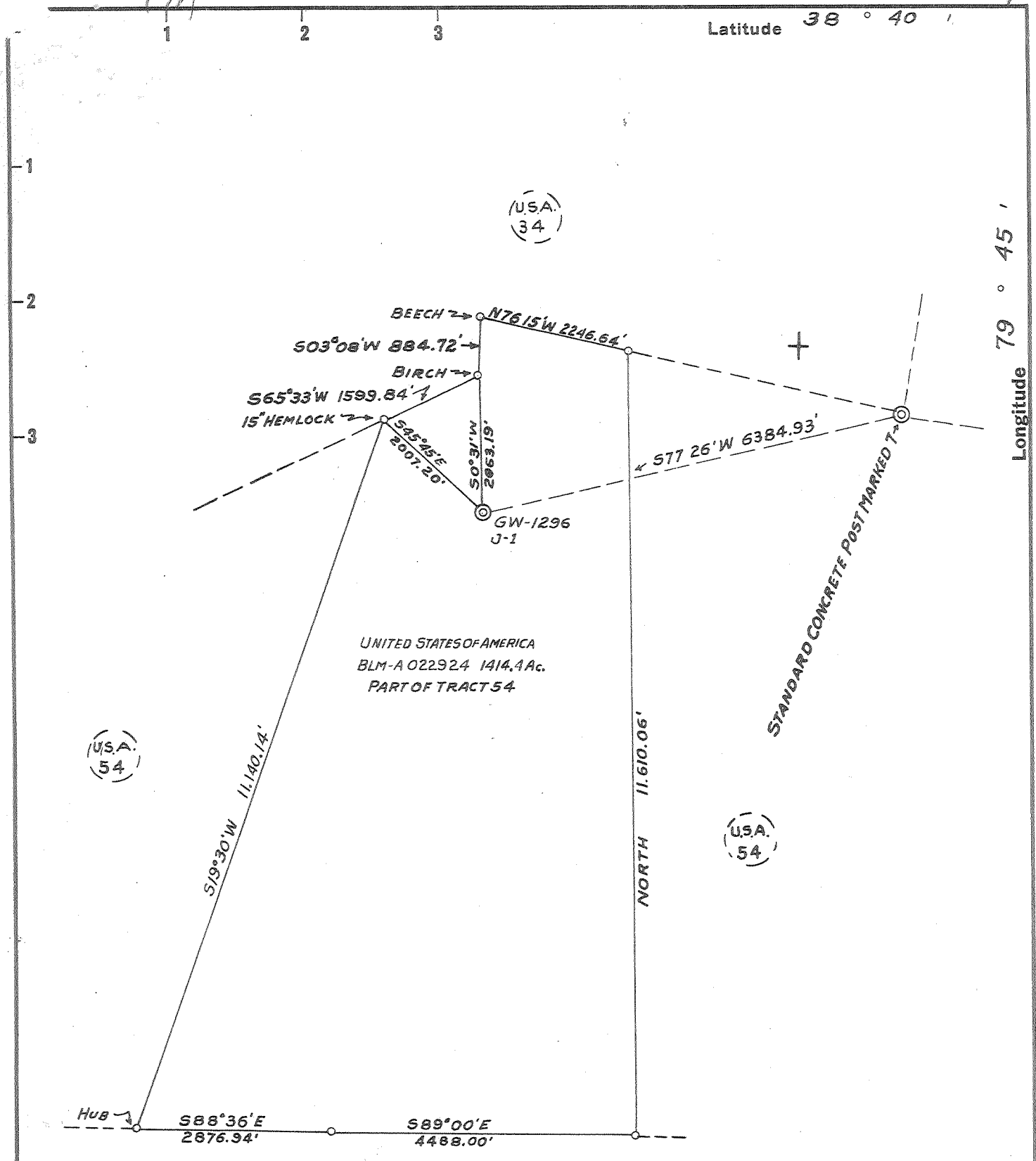
**WELL LOCATION MAP**

FILE NO. Poca-14

+ 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.

Deep well



UNITED STATES OF AMERICA  
BLM-A 022924 1414.4 Ac.  
PART OF TRACT 54

2.49 S.  
1.70 W.  
6 C (I-12)

- New Location
- Drill Deeper
- Abandonment

Company <u>COLUMBIAN CARBON COMPANY</u>
Address <u>BOX 873 CHARLESTON W.VA.</u>
Farm <u>UNITED STATES OF AMERICA</u> "PART OF" "PART OF 2104.40 Ac." BLM-A 022924
Tract <u>54</u> Acres <u>1414.4</u> Lease No. <u>C-4224</u>
Well (Farm) No. <u>J-1</u> Serial No. <u>GW-1296</u>
Elevation (Spirit Level) <u>3264.22'</u>
Quadrangle <u>DURBIN-EC</u> S-250 W-169
County <u>POCAHONTAS</u> District <u>GREENBANK</u>
Engineer <u>R. B. Anderson</u>
Engineer's Registration No. <u>2074</u>
File No. _____ Drawing No. <u>W-3-59</u>
Date <u>FEB. 9-1959</u> Scale <u>1" = 2000'</u>

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

**WELL LOCATION MAP**  
FILE NO. POCA-14

+ 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.

SAMPLES 19-E (303 - 3300' 5600 - 6200') 6-6 261 Deep Well

F59



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION / 0

Quadrangle Durbin SW

Permit No. Poca 14

**WELL RECORD**

Oil or Gas Well Gas  
(KIND)

Company Columbian Carbon Company  
Address Box 873, Charleston 23, W. Va.  
Farm United States of America Acres 2104.40  
Location (waters) Little River Top flange head  
Well No. J-1, GW-1296 Elev. 5226.88  
District Greenbank County Pocahontas  
Bureau of Land Management  
The surface of tract is owned in fee by Washington, D. C.  
Interior Bldg. Address same  
Mineral rights are owned by same  
Address  
Drilling commenced 2-16-59  
Drilling completed 5-3-59  
Date Shot not shot From To  
With  
Open Flow /10ths Water in Inch  
/10ths Merc. in Inch  
Volume Cu. Ft.  
Rock Pressure lbs. hrs.  
Oil bbls., 1st 24 hrs.  
WELL ACIDIZED not acidized

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
16			<u>Gas Anchor</u>
13			Size of <u>3-1/2"</u>
10	<u>3/4" 40#</u>	<u>41'5"</u>	
8 1/2"	<u>24#</u>	<u>1013'2"</u>	
8 1/2"	<u>24#</u>	<u>1013'2"</u>	
5 1/2"	<u>15.5#</u>	<u>6246.2"</u>	Depth set <u>5916'</u>
5 3/16"			
5 1/2"	<u>9#</u>	<u>6229'10"</u>	Perf. top
2	<u>with cage</u>		Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED see reverse side SIZE No. Ft. Date

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

WELL FRACTURED see reverse side

RESULT AFTER TREATMENT Chert Gas 465 MCF - Oriskany 1212 MCF --total gas 1677 MCF

ROCK PRESSURE AFTER TREATMENT 6 days - Chert 1770# - Oriskany 1320#

Fresh Water 82-92' 190' Feet 450-500' Salt Water Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Cellar			0	9			
Slate & Shells			9	57			
Lime			57	92	F. Water	82-92'	1-10"/blr. hr.
Slate & Shells			92	275	F. Water	190'	hole full
Sand			275	394			
Slate & Shells			394	454	F. Water	450-500'	
Sand			454	747			
Slate & Shells			747	800			
Lime			800	1000			
Sandy Lime			1000	1120			
Lime & Shale			1120	2900			
Shale			2900	3100			
Shaley Lime			3100	3910			
Shale			3910	5590			
Shale & Lime			5590	5809	Samples show:		
Chert			5809	5910	Chert	5806-5881	
Shale			5910	5968	Shale	5881-5954'	
Sand			5968	6150	Oriskany	5954-6136'	
Lime			6150	6200	Helderburg	6136-6186'	
TOTAL DEPTH				6200'	Rotary=6186'	Landing Flange	
Cable Tools			0	2070'			
Rotary Tools			2070'	6200'			

(over)

E-109  
5804  
5957-

F 59

Formation	Color	Hard or Soft	Top / /	Bottom	Oil, Gas or Water	Depth Found	Remarks
<u>Casing Record</u>							
3-14-59	Ran 8-5/8"	Casing at 1,000'	DLM	with shoe.	Cemented with 175 bags		no returns.
5-6-59	Ran 5-1/2"	casing with guide shoe on bottom-		differential fill up collar 18' off bottom			and 5 centralizers. Ran at 6186' Landing Flange-cemented with 200 sacks.
<u>Fracturing and Perforating record</u>							
Perforated Chert Section 5816 - 5876'							
5-11-59	Show of gas in Chert. Pumped in 500 gallons MCA. Pumped in 50 barrels plain water with tergitol TMN-14 (1%). Started sand 4/10#/gallon - gradually increased to 1#. Used 11,000# sand and 16,000 gallons of water. Pressure started at 1500#. Maximum 1600# during treatment. Total pumping time 24 minutes-flushed in 11 minutes with 6300 gallons water at 1600# to 1900# maximum. Injection rate 711 gpm - used 275 gallons TMN-14.						
5-13-59	Dried up well - gas gauged 10/10 W. 2" = 133M. Tore down rotary. 24 hour pressure 1425#; 62 hours 1875#; 120 hours 1925#; 144 hours 1960#; 11 day deadweight 1998#-19 das. 2008#.						
6-1-59	Moved in spudder-19 day pressure 2008#-cleaned out to 6168'.						
6-11-59	Ran tubing and set packer between Chert and Oriskany. Chert gas gauged 32/10 W. 2" = 239MCF-Oriskany 52/10 W. 2" = 304M-total gas 543M. Perforated Oriskany Section 6068-70'; 6059-64'; 6052-54'; 6038-42'; 6032-34'; 6008-11'; 5998-6003'; 5956-60' with 110 shots.						
6-13-59	Fractured the Oriskany. Pumped in 500 gallons MCA. Loaded hole with water and Tergitol. Broke down with 85 barrels water. Maximum pressure 4200#- broke to 3700#. Started sand 1/2#/gallon-gradually increased to 1-1/4#/gallon. Used 19,000# 20-40 sand, 26,460 gallons sand and water, 130 gallons TMN-14 and 130 gallons T-08 with 200 perf balls. Flushed with 80 barrels at 3000# pressure.						
6-18-59	Pulled tubing and packer-all gas gauging 10/10 W. 5-1/2" = 823 MCF						
6-26-59	Ran 6229' 10' of 3-1/2" O. D. 9.2# tubing and anchor packer set at 5906'-cage 20' off bottom at 6168'.						
	Braden head gas (chert) gauged 3/10 W. 3"			164 MCF			
	Tubing gas(Oriskany) gauged 36/10 W. 3"			569 MCF			
	Total gas			733 MCF			
	20 hour rock pressure		Tubing	1075#		Braden Head	1270#
	72 hour rock pressure		Tubing	1225#		Braden Head	1530#
	96 Hour rock pressure		Tubing	1250#		Braden head	1590#
	120 hour rock pressure		Tubing	1270#		Braden Head	1625#
7-1-59	Braden head gas gauged 30/10 W. 3"			520 MCF			
	Tubing gas 12/10 M. 3"			1,212 MCF			
	Total gas			1,732 MCF			
7-8-59	7 day rock pressure Tubing 1340#- Braden head 1750#						
	All gas gauging 1869 MCF - Chert 465 M - Oriskany 1404M						
7-14-59	6 day rock pressure Tubing 1320#			Braden Head 1770#			
	Final open flow- Braden Head (Chert) gauged 24/10 W. 3"					465,000 cubic feet	
	Tubing gas(Oriskany) gauged 12/10 M. 3"					1,212,000 cubic feet	
	Total gas					1,677,000 cubic feet	

Date August 4, 1959

APPROVED Columbian Carbon Company, Owner

By W. S. Moore, Manager of Prod.  
(Title)

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

19374

- 1) Well Operator: COLUMBIA GAS TRANSMISSION CORP. 1045<sup>0</sup> (2) 680
- 2) Operator's Well Number: WELL 7473 3) Elevation: 3226.88'
- 4) Well type: (a) Oil   / or Gas X/  
 (b) If Gas: Production   / Underground Storage X/  
 Deep X/ Shallow   /  
 EXISTING
- 5) ~~Proposed~~ Target Formation(s): ORISKANY-CHERT 475
- 6) ~~Proposed~~ Total Depth: 6200 feet
- 7) Approximate fresh water strata depths: 82'-92', 190', 450'-500'
- 8) Approximate salt water depths: 1200' (APP)
- 9) Approximate coal seam depths: NONE
- 10) Does land contain coal seams tributary to active mine? Yes   / No X/  
 KILL WELL; PULL 2-3/8" TUBING; CLEAN WELL OUT TO ORIGINAL
- 11) Proposed Well Work: T.D.; INSTALL NEW FLANGED API-3000 8-5/8"X5-1/2"X2-3/8" WELL-  
 HEAD; RUN NEW 2-3/8" UPSET TUBING; MATRIX ACIDIZE OR FRACTURE
- 12) WELL TO CLEAN UP STORAGE ZONE OR INCREASE DELIVERABILITY.

CASING AND TUBING PROGRAM  
 PERFORATE CHERT-ORISKANY INTERVAL AS REQUIRED.

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	10-3/4"	UNK	40.50#	41'	41'	TO SURF.
Fresh Water	8-5/8"	UNK	24#	1013'	1013'	175 SKS
Coal						
Intermediate						
Production	5-1/2"	UNK	15.5#	6200'	6200'	200 SKS
Tubing	2-3/8"	J-55	4.7#		6150	
Liners						

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  
 (Type)

00382343

RECEIVED  
Division of  
Environmental Protection  
JUN 16 1994  
Drilling  
Oil & Gas

- 1) Date: 06/10/94
- 2) Operator's well number  
WELL #7473
- 3) API Well No: 47 - 075 - 00014-F  
State - County - Permit

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 4) Surface Owner(s) to be served:  
(a) Name U.S. FOREST SERVICE  
Address MONONGAHELA NATIONAL FOREST  
P.O. BOX 1548, ELKINS, WV 26241  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_
- 6) Inspector CRAIG DUCKWORTH  
Address BOX 107 DAVISSON ROUTE  
GASSAWAY, WV 26624  
Telephone (304)- 364-5942

- 5) (a) Coal Operator:  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name U.S. DEPT. OF INTERIOR BUREAU OF LAND  
Address P.O. BOX 631 MGT.  
MILWAUKEE, WI 53201-0631  
Name (SENT TO: BUREAU OF LAND MANAGEMENT  
Address FIELD INSPECTION OFFICE, RT. 1,  
BOX 132, MARIETTA, OH 45750)  
(c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_

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

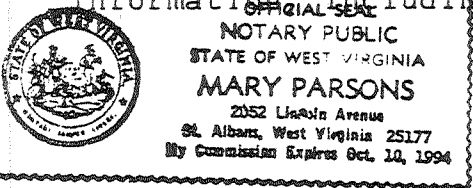
Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR  
 Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_ on the above named parties, by:  
 Personal Service (Affidavit attached)  
 Certified Mail (Postmarked postal receipt attached)  
 Publication (Notice of Publication attached)

I have read and understand Chapter 22B 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: [Signature]  
Its: DIRECTOR, DRILLING & MAINTENANCE  
Address P. O. BOX 1273  
CHARLESTON, WV 25325-1273  
Telephone (304) 357-2459



Subscribed and sworn before me this 10th day of June, 1994

[Signature] Notary Public  
My commission expires October 10, 1994

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

Well Operator's Report of Well Work

Farm name: MONONGAHELA NAT'L FOREST Operator well No.: 7473

LOCATION: Elevation: 3,247.91 Quadrangle: WILDELL

District: GREENBANK County: POCAHONTAS  
Latitude: 13,100 Feet South of 38 Deg. 40 Min. 0 Sec.  
Longitude: 8,700 Feet West of 79 Deg. 47 Min. 30 Sec.

Compay: COLUMBIA GAS TRANSMISSION

P.O. BOX 1273  
CHARLESTON, WV 25325-1273

Agent: ROBERT C. WEIDNER [RICHARD L. COTY]

Inspector: CRAIG DUCKWORTH [PHIL TRACY]

Permit Issued: 06/21/94

Well work Commenced: 5/2/96

Well work Completed: 7/10/96

Verbal Plugging

Permission granted on: \_\_\_\_\_

Rotary WACO Service Rig#19 Cable \_\_\_\_\_ Rig

Total Depth (feet) Cleaned out to 6204 ft.

Fresh water depths (ft) See Previous Records  
82'-92', 190', 450'-500'

Salt water depths (ft) See Previous Records  
1200' (APP)

Is coal being mined in area (Y/N) ? N

Coal Depths (ft) : NONE

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
10-3/4"	41'	41'	To Surface
8-5/8"	1013'	1013'	175 sacks
5-1/2"	6200'	6200'	200 sacks
2-3/8" tubing was pulled (see details on back)			
(SEE ALSO ORIGINAL RECORDS)			

OPEN FLOW DATA

Producing formation Chert Pay zone depth (ft) 5806'-5881'

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

Second producing formation Oriskany Pay zone depth (ft) 5954'-6136'

Gas : Initial open flow (2"CFP) 3100MCF/d Oil : Initial open flow \_\_\_\_\_ Bbl/d

Final open flow (2"CFP) 1700MCF/d Final open flow \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests 2500 Hours

Static rock Pressure 1686 psig (surface pressure) after 24 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: W.H. Facker

Date: 1/30/97

FEB 21 1997



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

Well Operator's Report of Well Work

The well was killed w/ a Baroid Barazan polymer mud system 5/6/96 and 6,190.26 feet of 2-3/8" 4.7#/FT EUE Tubing was pulled and retired 5/9/96. A new API 3000 8-5/8" x 5-1/2" wellhead was installed. Western Atlas Logging Services ran SBT, Vertilog, PDK-100, Mac-GR/Sonic. Ran casing scraper on CTU and pickled casing and existing perforations w/ (500 gals)15% SWIC Acid from 5709-6180 feet. Ran GR-N TD- Surf WALS perforated with Alpha Jet 4" expendable guns 4 shots/ft, 60 degree phasing from 6130'-6120', 6120'-6116', 6102'-6082', 6082'-6072', 6025'-6005', total 255 shots. Halliburton acidized new perforations 6/21/96 w/ SIP Tool on Coiled tubing. New perforations were treated in 5 foot intervals at 2 BPM, 15 bbls 15% FE Acid (approx 131 gals/ft) @ 2000 psig- 2680 psig treating pressure. The old perforations were treated 6/24/96 in 5 foot intervals @ 2 BPM, 8-14 bbls 15% FE Acid @ 1660 psig- 2475 psig treating pressure. \* Total volume used while treating perforations: 15,500 gals 15% FE acid; 20 gals Pen-88; 31 gals HAI-81; 15 gals Cla-Sta XP; 35 gals HC-2; 2 lbs BE-3 (new perforations)./ 4500 gals 15% FE acid; 9 gals HAI-81; 5 gals Cla-Sta XP; 5 gals HC-2; (old perforations). The well was unloaded w/ CT & N2, allowed to clean up. A directional Survey was run and the well was placed back in service. The well was placed back in service 7/10/96. Cleanup was completed 9/5/96.