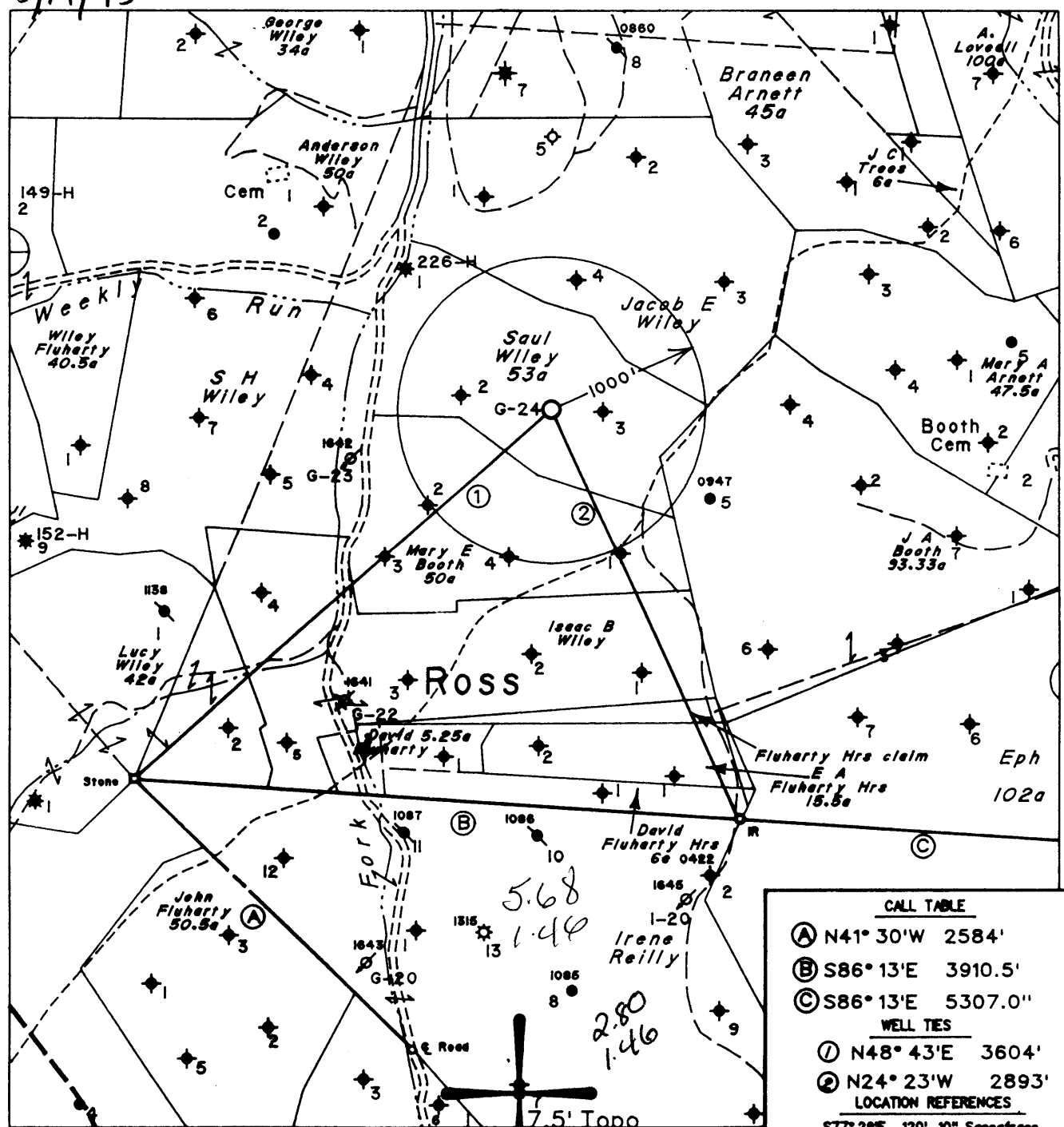


GS 3/14/95



Note: No Known Water Supply Sources Are Located Within 1000' Of Proposed Well

Denotes a Water Supply Source

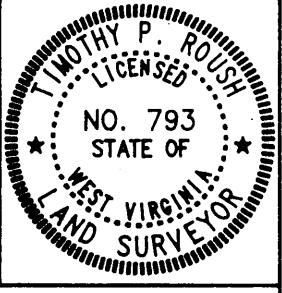
(H) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

CALL TABLE	
(A)	N41° 30' W 2584'
(B)	S86° 13' E 3910.5'
(C)	S86° 13' E 5307.0'
WELL TIES	
(1)	N48° 43' E 3604'
(2)	N24° 23' W 2893'
LOCATION REFERENCES	
S77° 29' E	120' 10" Sassafras
S18° 4' E	108' 6" Maple
N78° 46' W	155' 10" Maple

FILE NO. 1094  
 MAP NO. N57 N 4 S E W 4  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION USGS BM - 902

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 MINES.

(SIGNED) *Timothy P. Roush*  
 TIMOTHY P. ROUSH PS 793



STATE OF WEST VIRGINIA  
 DIVISION OF ENERGY  
 OIL AND GAS SECTION



DATE February 23, 19 95  
 FARM S.H. Wiley NO. G-24  
 API WELL NO. 47-103-1678-S

WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION  WASTE DISPOSAL \_\_\_  
 (IF "GAS") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_  
 LOCATION: ELEVATION 1249' WATERSHED Fluharty Fork  
 DISTRICT Green COUNTY Wetzell  
 QUADRANGLE Pine Grove *Littleton SW*  
 SURFACE OWNER Opal Cole et al ACREAGE 22 Ac.  
 OIL & GAS ROYALTY OWNER Pennzoil Products Co. et al. LEASE ACREAGE 132 Ac.  
 LEASE NO. RG 2832-00  
 PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_

MAY 5 1995

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION Gordon ESTIMATED DEPTH 3250'  
 WELL OPERATOR Pennzoil Products Company DESIGNATED AGENT James A. Crews  
 ADDRESS P. O. Box 5519 ADDRESS P. O. Box 5519  
 Vienna, W.Va. 26105 Vienna, W.Va. 26105

8-0 95

APR 10 1996

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

Permitting  
 Office of Oil & Gas

Well Operator's Report of Well Work

Farm name: COLE, OPAL

Operator Well No.: S.H. WILEY G-24

LOCATION: Elevation: 1,249  
 District: GREEN  
 Latitude: 14,600 Feet south of  
 Longitude: 7,800 Feet west of

Quadrangle: PINEGROVE  
 County: WETZEL  
 39 Deg 30 Min 0 Sec.  
 80 Deg 40 Min 0 Sec.

Company: PENNZOIL PRODUCTS COMPANY  
 P.O. BOX 5519  
 VIENNA, WV 26105-5519

Agent: PHILIP S. ONDRUSEK

Inspector: RANDAL MICK

Permit Issued: 5/3/95

Well work Commenced: 7/6/95

Well work Completed: 10/27/95

Verbal plugging permission granted on: \_\_\_\_\_

Rotary X Cable \_\_\_\_\_ Rig \_\_\_\_\_

Total Depth (feet) 3,235'

Fresh water depths (ft) NA

Salt water depths (ft) NA

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

Coal Depths (ft): NA

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
8-5/8	500'	500'	250 SKS
4 1/2"	3195'	3195'	170 SKS

OPEN FLOW DATA

\*Waterflood Injection Well

Producing formation GORDON Pay zone depth (ft) 3068-3132  
 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 \_\_\_\_\_ 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: PENNZOIL PRODUCTS COMPANY

By: \_\_\_\_\_

Date: 4/8/96

**Treatment:**

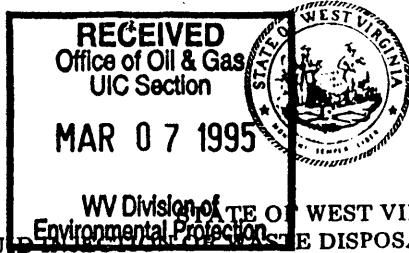
Perforated Gordon 3097-3103 & 3110-3114 (40 Holes) Treated via 4 1/2" CSG  
300 gal 15% HCl Acid, 273 BBL gelled water & 15,600 LB 20/40 Sand.

**Well Log:**

Sand & Shale	0	-	1462'
Sand	1462'	-	1486'
Shale	1486'	-	1550'
Sand	1550'	-	1588'
Sand & Shale	1588'	-	2209'
Sand	2209'	-	2242'
Shale	2242'	-	2250'
Sand	2250'	-	2322'
Sand	2322'	-	2425'
Shale	2425'	-	3068'
Gordon	3068'	-	3132'
T.D	3235'		

10/91

20613



- 1) Date: March 3, 19 95
- 2) Operator's Well No. S. H. WILEY #G-24
- 3) SIC Code \_\_\_\_\_
- 4 API Well NO. 47 - 103 - 1678-LI  
State County Permit
- 5. UIC Permit No. \_\_\_\_\_

*Issued 05/03/95*

*Express 05/03/97*

NOTICE OF LIQUID DISPOSAL WELL WORK PERMIT APPLICATION  
for the  
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

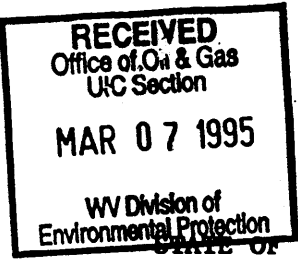
- 6) WELL TYPE: Liquid injection  / Gas injection (not storage) \_\_\_\_\_ / Waste disposal \_\_\_\_\_
- 7) LOCATION: Elevation: 1249' / District: Green / Watershed: Fluharty Fork / County: Wetzel / Quadrangle: Pine Grove / 548
- 8) WELL OPERATOR Pennzoil Products Co. 37450 / Address: P. O. Box 5519 / Vienna, WV 26105 / 4670
- 9) DESIGNATED AGENT James A. Crews / Address: P. O. Box 5519 / Vienna, WV 26105
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED  
Name Mike Underwood / Address: Route 2, Box 135 / Salem, WV 26426
- 11) DRILLING CONTRACTOR:  
Name \_\_\_\_\_ / Address \_\_\_\_\_
- 12) PROPOSED WELL WORK: Drill  / Drill deeper \_\_\_\_\_ / Redrill \_\_\_\_\_ / Stimulate  / Plug off old formation \_\_\_\_\_ / Perforate new formation \_\_\_\_\_ / Convert \_\_\_\_\_ / Other physical change in well (specify) \_\_\_\_\_
- 13) GEOLOGICAL TARGET FORMATION, Gordon #19 / Depth 3129 feet (top) to 3144 feet (bottom)
- 14) Estimated depth of completed well, (or actual depth of existing well) 3250 ft.
- 15) Approximate water strata depths; Fresh, 429 feet; salt, 1456 feet.
- 16) Approximate coal seam depths: 1061
- 17) Is coal being mined in the area? Yes \_\_\_\_\_ / No
- 18) Virgin reservoir pressure in target formation 1400 psig. Source Estimated
- 19) Estimated reservoir fracture pressure 3500 psig (BHFP)
- 20) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour: 25 / Bottom hole pressure 2332
- 21) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES: Fresh water, produced water, bactericides and other chemicals as needed to maintain water quality & improve oil recovery.
- 22) FILTERS (IF ANY): Cartridge and/or coalbed filters
- 23) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL: \_\_\_\_\_

24) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water	8-5/8	L.S.	20	X		499	499	Cement to surface	Sizes
Coal									
Intermediate									
Production	4-1/2	J-55	10.5	X		3250	3250	Cement over salt sand	Depths set
Tubing									Perforations:
Liners									Top Bottom

- 25) APPLICANT'S OPERATING RIGHTS were acquired from Richard Wiley et al by deed \_\_\_\_\_ / lease  / other contract \_\_\_\_\_ / dated December 28, 19 53, of record in the Wetzel County Clerk's office in Lease Book 49 at page 134

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.



- 1) Date March 3, 1995  
Operator's \_\_\_\_\_
- 2) Well No. S. H. WILEY #G-24
- 3) SIC Code \_\_\_\_\_
- 4) API Well No. 47 - 103 - 1678  
State County Permit

STATE OF WEST VIRGINIA  
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION  
for the

DIVISION OF OIL AND GAS, DEPARTMENT OF ENERGY

- 6) SURFACE OWNER(S) OF RECORD TO BE SERVED
  - (i) Name Opal Cole  
Address 18675 U.S. 19 North  
401 Bay Arist.
  - (ii) Name Clearwater, FL 34624  
Address \_\_\_\_\_
  - (iii) Name \_\_\_\_\_  
Address \_\_\_\_\_
- 7 (i) COAL OPERATOR N/A  
Address \_\_\_\_\_
- 7 (ii) COAL OWNER(S) WITH DECLARATION ON RECORD:  
Name \_\_\_\_\_  
Address \_\_\_\_\_
- 7 (iii) COAL LESSEE WITH DECLARATION ON RECORD:  
Name \_\_\_\_\_  
Address \_\_\_\_\_

TO THE PERSON(S) NAMED ABOVE: You should have received this Form and the following documents:

- (1) The Application for a Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work, and
- (2) The plat (surveyor's map) showing the well location on Form WW-6; and
- (3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is \_\_\_\_\_, 19\_\_\_\_.

THE REASON YOU RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION (FORM WW-3(B)) DESIGNATED FOR YOU. HOWEVER, YOU ARE NOT REQUIRED TO TAKE ANY ACTION AT ALL.

Take notice that under Chapter 22B of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a Well Work Permit with the Director of the Division of Oil and Gas, West Virginia Department of Energy, with respect to a well at the location described on the attached Application and depicted on attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Director.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document 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.

Pennzoil Products Company  
Well Operator  
By Timothy P. Roush Timothy P. Roush  
Its Supervisor, Surveying/Mapping  
Telephone (304) 422-6565

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-103-1678-LI

May 3 19 95  
Date

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector, (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and (if required) construction and reclamation plan, subject to any modifications and conditions specified below.

Permit expires 5-3-97 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <i>AS</i>	Casing: <i>MS</i>	Fee: <i>CRB 21467</i>
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*Michael W. Lewis*  
CHIEF, OFFICE OF OIL AND GAS

NOTE: Keep one copy of this permit posted at the drilling location.

PERMIT MODIFICATIONS AND CONDITIONS (IF ANY) TO THE PROPOSED WELL WORK

OFFICE USE ONLY

This part of Form IV-3(b) is to record the dates of certain occurrences and any follow-up inspections.

	Date	Follow-up inspection(s)	Date(s)
Application received			
Well work started		" "	
Total depth reached		" "	
Well Record received		" "	
Reclamation completed		" "	

OTHER INSPECTIONS

Reason: \_\_\_\_\_

Reason: \_\_\_\_\_