

Frac - 8/23/89

New Location

Drill Deeper

Abandonment

Minimum Error of Closure 1 - 200

Source of Elevation B.M. 932 RT. 87

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company *Quinoco Petroleum* 1039

Address *1207 Quinier Street Box 1439 Char. W. 25325*

Farm CHARLES BOWLES

Tract _____ Acres 72 Lease No. 4419

Well (Farm) No. 1 Serial No. 866

Elevation (Spirit Level) 881'

Quadrangle 15' RAVENSWOOD, 7.5' COTTAGEVILLE

County JACKSON District RIPLEY 3

Surveyor *Jama D. Deftor*

Surveyor's Registration No. 149

File No. _____ Drawing No. _____

Date APRIL 18, 1978 Scale 1" = 500'

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

WELL LOCATION MAP
FILE NO. JAC-1431-PP-Frac

307
110
9

TEMPORARY

plug back of frac well for analysis

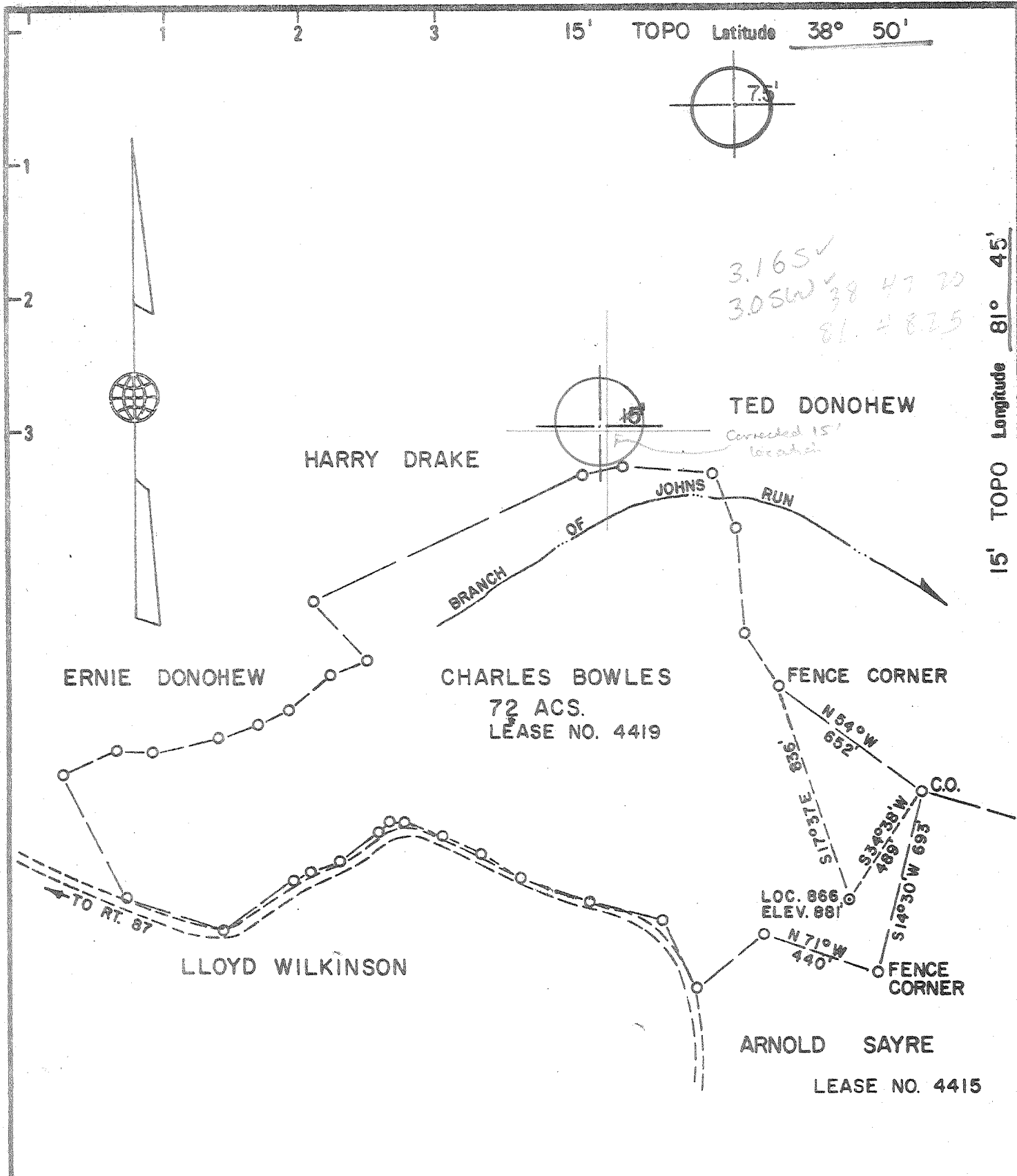
+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500 latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

AUG 25 1989

47-035

DEEP WELL 950' ORIGINALLY O.W.D. 6-D Providence (359)



3.165 ✓
 3056W 38 47 20
 81.4825

15' TOPO Longitude 81° 45'
 7.5' TOPO 81° 47' 30"

New Location
 Drill Deeper
 Abandonment

Minimum Error of Closure 1 - 200
 Source of Elevation B.M. 932 RT. 87

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company DEVON CORP.
 Address PO. BOX 1433 CHARLESTON W.V.
 Farm CHARLES BOWLES
 Tract _____ Acres 72 Lease No. 4419
 Well (Farm) No. 1 Serial No. 866
 Elevation (Spirit Level) 881' *SE*
 Quadrangle 15' RAVENSWOOD, 7.5' COTTAGEVILLE
 County JACKSON District RIPLEY
 Surveyor James D. DePlois
 Surveyor's Registration No. 149
 File No. _____ Drawing No. _____
 Date APRIL 18, 1978 Scale 1" = 500'

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON
WELL LOCATION MAP
 FILE NO. JAC-1431

+ 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 47-035 APR 28 1978

4950' Crismanic 6-6 Providence (359)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD 15

REGISTRATION

SEP - 4 1979
47-035-1431
OIL & GAS DIVISION
DEPT. OF MINES
Rotary XXX Oil XXX
Cable _____ Gas XXX
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind) _____

Quadrangle Cottageville
Permit No. JAC-1431

Company DEVON CORPORATION
Address PO Box 1433, Charleston, W. Va.
Farm Charles Bowles Acres 72
Location (waters) Johns Run
Well No. 866 Elev. 881
District Ripley County Jackson
The surface of tract is owned in fee by _____
Charles Bowles
Address Rt. 2, Cottageville, W. Va.
Mineral rights are owned by Same as above
Address _____
Drilling Commenced November 9, 1978
Drilling Completed November 17, 1978
Initial open flow 87 MCFD XXXXXX bbls.
Final production 188 MCF Cu. ft. per day _____ bbls.
Well open 4 hrs. before test 1175 RP.

| Casing and Tubing | Used in Drilling | Left in Well | Cement fill up Cu. ft. (Sks.) |
|-------------------|------------------|--------------|-------------------------------|
| Size | | | |
| 20-16 | | | |
| Cond. | | | |
| 13-10" | | | |
| 9 5/8 | | | 100 sax=to surface |
| 8 5/8 | | | |
| 7 | 2590 | 2590 | 75 sax=625' |
| 5 1/2 | | | |
| 4 1/2 | 4931 | 4931 | 200 sax=2400' |
| 3 | | | |
| 2 | | | |
| Liners Used | | | |

Well treatment details: Attach copy of cementing record.
Perforated 4 1/2" casing at 4822 to 4824 with 16 shots and at 4832' with 8 shots in Oriskany Sand.

188 MCF

Fractured Oriskany Sand with 45,000# sand and 909 BBLS water.

Coal was encountered at None reported Feet _____ Inches _____
Fresh water _____ Feet _____ Salt Water _____ Feet _____
Producing Sand Oriskany Sand Depth 4822-4832

| Formation | Color | Hard or Soft | Top Feet | Bottom Feet | Oil, Gas or Water | * Remarks |
|------------|-------|--------------|----------|-------------|-------------------|-----------|
| Surface | | | 0 | 07 | | |
| Shale | | | 07 | 100 | | |
| Sand | | | 100 | 115 | | |
| Shale | | | 115 | 140 | | |
| Sand | | | 140 | 225 | | |
| Shale | | | 225 | 515 | | |
| Sand | | | 515 | 557 | | |
| Shale | | | 557 | 675 | | |
| Sand | | | 675 | 705 | | |
| Shale | | | 705 | 970 | | |
| Sand | | | 970 | 1040 | | |
| Shale | | | 1040 | 1190 | | |
| Sand | | | 1190 | 1298 | | |
| Shale | | | 1298 | 1360 | | |
| Sand | | | 1360 | 1403 | | |
| Shale | | | 1403 | 1412 | | |
| Sand | | | 1412 | 1440 | | |
| Shale | | | 1440 | 1495 | | |
| Sand | | | 1495 | 1520 | | |
| Shale | | | 1520 | 1545 | | |
| Sand | | | 1545 | 1563 | | |
| Sand | | | 1563 | 1767 | | |
| Maxon Sand | | | 1767 | 1862 | | |
| Big Lime | | | 1862 | 2019 | | |

(over)

* Indicates Electric Log tops in the remarks section.

47-035-1431

| Formation | Color | Hard or Soft | Top Feet /S | Bottom Feet | Oil, Gas or Water | Remarks |
|------------------|-------|--------------|-------------|-------------|-------------------|---------|
| Shale | | | 2019 | 2044 | | |
| Injun Sand | | | 2044 | 2140 | | |
| Shale | | | 2140 | 2496 | | |
| Coffee Shale | | | 2496 | 2518 | | |
| Berea Sand | | | 2518 | 2532 | | |
| Shale | | | 2532 | 3698 | | |
| Brown Shale | | | 3698 | 4167 | | |
| Shale | | | 4167 | 4558 | | |
| Marcellus Shale | | | 4558 | 4727 | | |
| Onondaga L. S. | | | 4727 | 4804 | | |
| Oriskany Sand | | | 4804 | 4842 | | |
| Helderberg L. S. | | | 4842 | 4949 | | |
| Log Total Depth | | | | 4949' | | |

Date January 9, 19 79

APPROVED A. C. Youse (Owner)
 By A. C. Youse
 Dist. Geologist
 (Title)

RECEIVED
 Division of Energy
APR 30 90
 Permitting
 Oil and Gas Section

WR-35



Date April 25, 1990
 Operator's _____
 Well No. 866
 Farm Bowles
 API No. 47 - 035 - 1431

State of West Virginia
 DEPARTMENT OF ENERGY
 Oil and Gas Division

WELL OPERATOR'S REPORT
 OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas X / Liquid Injection ___ / Waste Disposal ___ /
 (If "Gas," Production X / Underground Storage ___ / Deep ___ / Shallow ___ /)

LOCATION: Elevation: 881 Watershed Johns Run
 District: Ripley County Jackson Quadrangle Cottageville

COMPANY Quinoco Petroleum, Inc.

ADDRESS 1207 Quarrier St., Charleston, WV 25301

DESIGNATED AGENT Bill W. Backus

ADDRESS Same as Above

SURFACE OWNER Charles Bowles

ADDRESS 127 Flagrock Ridge, Evans, WV 25245

MINERAL RIGHTS OWNER Same

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK Jerry

Tephabock ADDRESS Rt. 1, Box 101-A, Ripley, WV

PERMIT ISSUED 7-27-89

DRILLING COMMENCED 8-30-89

DRILLING COMPLETED 2-04-90

IF APPLICABLE: PLUGGING OF DRY HOLE ON
 CONTINUOUS PROGRESSION FROM DRILLING OR
 REWORKING. VERBAL PERMISSION OBTAINED
 ON _____

| Casing Tubing | Used in Drilling | Left in Well | Cement fill up Cu. ft. |
|------------------------|---------------------|-----------------|------------------------------|
| Size 20-16 Cond. | | | |
| 13-10" | | | |
| 9 5/8 | | | 100 sxs to surface |
| 8 5/8 | | | |
| 7 | 2590 | 2590 | 75 sxs 625' |
| 5 1/2 | | | |
| 4 1/2 | | 4931 | TDC 2100' By Log |
| 3 | | | |
| 2 | | | |
| Liners used | | | |

GEOLOGICAL TARGET FORMATION Brown Shale/Berea Depth 4166 feet

Depth of completed well 4270 feet Rotary X / Cable Tools _____

Water strata depth: Fresh - feet; Salt - feet

Coal seam depths: - Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Brown Shale Pay zone depth 3701-4166 feet

Gas: Initial open flow - Mcf/d Oil: Initial open flow - Bbl/d

Final open flow 15.0 Mcf/d Final open flow - Bbl/d

Time of open flow between initial and final tests 24 hours

Static rock pressure 640 psig (surface measurement) after 24 hours shut in
 (If applicable due to multiple completion--)

Second producing formation _____ Pay zone depth _____ feet

Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ Mcf/d Oil: Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ hours

Static rock pressure _____

MAY 04 1990

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

1. Set drillable bridge plug at 4270' - Oriskany temporarily abandoned.
2. Perforated 4 1/2" casing and squeezed 50 sacks neat cement. Top of cement behind 4 1/2" - 2100' by CBL/VOL.
3. Perforated 3701-4166 w/27 shots. Foam frac'd Brown Shale with 291 bbls. water, 550 mScf N₂, 650 sacks 20/40 and 63 sacks 10/20 sand.
4. Perforated 2519-2523. Attempted to frac Berea-formation would not break down.

WELL LOG

| FORMATION | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS Including indication of all fresh and salt water, coal, oil and gas |
|--------------|-------|--------------|----------|-------------|--|
| See Original | | | | | |

(Attach separate sheets as necessary)

QUINOCO PETROLEUM, INC.

Well Operator

By:

Bill W. Backus

Date: April 25, 1990

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

MAY 04 1990

035-1431-F
 Issued 8/23/89 Expires 8/23/91
 Page 4 of 4

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

- Well Operator: Quinoco Petroleum, Inc. ¹⁰³⁹ 40475 (3) 307
- Operator's Well Number: 866 - Bowles (47-035-1431) 3) Elevation: 881
- Well type: (a) Oil or Gas /
 (b) If Gas: Production / Underground Storage /
 Deep / Shallow /
- Proposed Target Formation(s): Brown Shale/Berea
- Proposed Total Depth: ± 4200 feet
- Approximate fresh water strata depths: none reported
- Approximate salt water depths: none reported
- Approximate coal seam depths: none reported
- Does land contain coal seams tributary to active mine? Yes / No /
- Proposed Well Work: Set bridge plug above Oriskany sand, re-cement the 4-1/2" casing, perforate and fracture Brown Shale and Berea.

CASING AND TUBING PROGRAM

| TYPE | SPECIFICATIONS | | | FOOTAGE INTERVALS | | CEMENT |
|--------------|----------------|-------|----------------|-------------------|--------------|--|
| | Size | Grade | Weight per ft. | For drilling | Left in well | Fill-up (cu. ft.) |
| Conductor | 9-5/8" | | | 250 | 250 | To surface |
| Fresh Water | | | | | | |
| Coal | | | | | | |
| Intermediate | 7" | | | 2590 | 2590 | 75 sxs To 1965' |
| Production | 4-1/2" | | | | 4931 | 200 sxs 2814-logged 38CS/12-11-1 |
| Tubing | | | | | | |
| Liners | | | | | | |

RECEIVED
 AUG 07 1989

PACKERS : Kind _____
 Sizes _____
 Depths set _____

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

For Division of Oil and Gas Use Only

Fee(s) paid: _____ Well Work Permit _____ Reclamation Fund _____ WPCP _____ Agent _____

RECEIVED
AUG 07 1989

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

- 1) Date: July 25, 1989
- 2) Operator's well number
866 - Bowles
- 3) API Well No: 47 - 035 - 1431 -FRAC
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 Charles & Kitty Bowles
Address 127 Flagrock Road
Evans, WV 25241
 - (b) Name _____
Address _____
 - (c) Name _____
Address _____
- 5) (a) Coal Operator:
 - Name N/A
Address _____
 - (b) Coal Owner(s) with Declaration
 - Name N/A
Address _____
 - (c) Coal Lessee with Declaration
 - Name N/A
Address _____
- 6) Inspector Jerry Tephabock
Address Route 1, Box 101-A
Ripley, WV 25271
Telephone (304)-372-6805

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 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 4 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 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 Quinoco Petroleum, Inc.
 By: [Signature]
 Its: District Manager/District Agent
 Address 1207 Quarrier Street, P. O. Box 1433
Charleston, WV 25325
 Telephone (304) 342-6193

Subscribed and sworn before me this 25th day of July, 1989

Jilan Dale Coleman Notary Public
My commission expires December 9, 1997



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED
APR 19 1978

OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

DATE April 7, 1978

Surface Owner Charles Bowles
Address Rt. 2, Cottageville, W. Va.

Company DEVON CORPORATION
Address PO Box 1433, Charleston, W. Va. 25325

Mineral Owner Charles Bowles, et al
Address Rt. 2, Cottageville, W. Va. 25239

Farm Charles Bowles Acres 72 ac
Location (waters) Branch of Johns Run

Coal Owner _____
Address _____

Well No. 866 Elevation 881

Coal Operator Not Operated
Address _____

District Ripley County Jackson
Quadrangle Cottageville

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22,
of the W. Va. Code, the location is hereby approved
for drilling. This permit shall expire if
operations ~~have not~~ commenced by 8-20-78

INSPECTOR
TO BE NOTIFIED Richard Morris

ADDRESS Grantsville, W. Va.

PHONE 354-7259

Robert T. Bell
Deputy Director - Oil & Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated June 2 1977 by Charles Bowles, et ux made to Devon and Eason and recorded on the 18th day of June 1977, in Jackson County, Book 144 Page 501
XXX
NEW WELL DRILL DEEPER REDRILL FRACTURE OR STIMULATE
OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days. *

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address _____ day _____ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO:

Very truly yours,
(Sign Name) A. C. Youse
A. C. Youse, District Geologist
Box 1433
Street
Charleston,
City or Town
W. Va. 25325
State

Address
of
all Operator

W. VA. OIL & GAS CONSERVATION COMMISSION
1613 WASHINGTON STREET, EAST
CHARLESTON, WEST VIRGINIA 25311

*SECTION 3 If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

JAC-1431 PERMIT NUMBER

THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

Learning

PROPOSED WORK ORDER TO XXX DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) RESPONSIBLE AGENT:
 NAME FWA Drilling Company NAME Bill W. Backus
 ADDRESS Box 448, Elkview, W. Va. ADDRESS Box 1433, Charleston, W. Va.
 TELEPHONE 965-3379 TELEPHONE 342-3171
 ESTIMATED DEPTH OF COMPLETED WELL: 4950 ROTARY XXX CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Oriskany
 TYPE OF WELL: OIL _____ GAS XXX COMB. _____ STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

| CASING AND TUBING SIZE | USED FOR DRILLING | LEFT IN WELL | CEMENT FILL UP OR SACKS - CUBIC FT. |
|------------------------|-------------------|--------------|-------------------------------------|
| 20 - 16 | | | |
| 13 - 10 | | | |
| 9 - 5/8 | 250 | 250 | 100 sax = to surface |
| 8 - 5/8 | | | |
| 7 | 2600 | 2600 | 75 sax = 700' |
| 5 1/2 | | | |
| 4 1/2 | | 4950 | 150 sax = 1800' |
| 3 | | | Perf. Top |
| 2 | | | Perf. Bottom |
| Liners | | | Perf. Top |
| | | | Perf. Bottom |

APPROXIMATE FRESH WATER DEPTHS _____ FEET SALT WATER _____ FEET
 APPROXIMATE COAL DEPTHS None Anticipated
 IS COAL BEING MINED IN THE AREA? No BY WHOM? _____

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND. ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:

OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.

Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for _____ Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.

We the _____ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

For Coal Company

Official Title