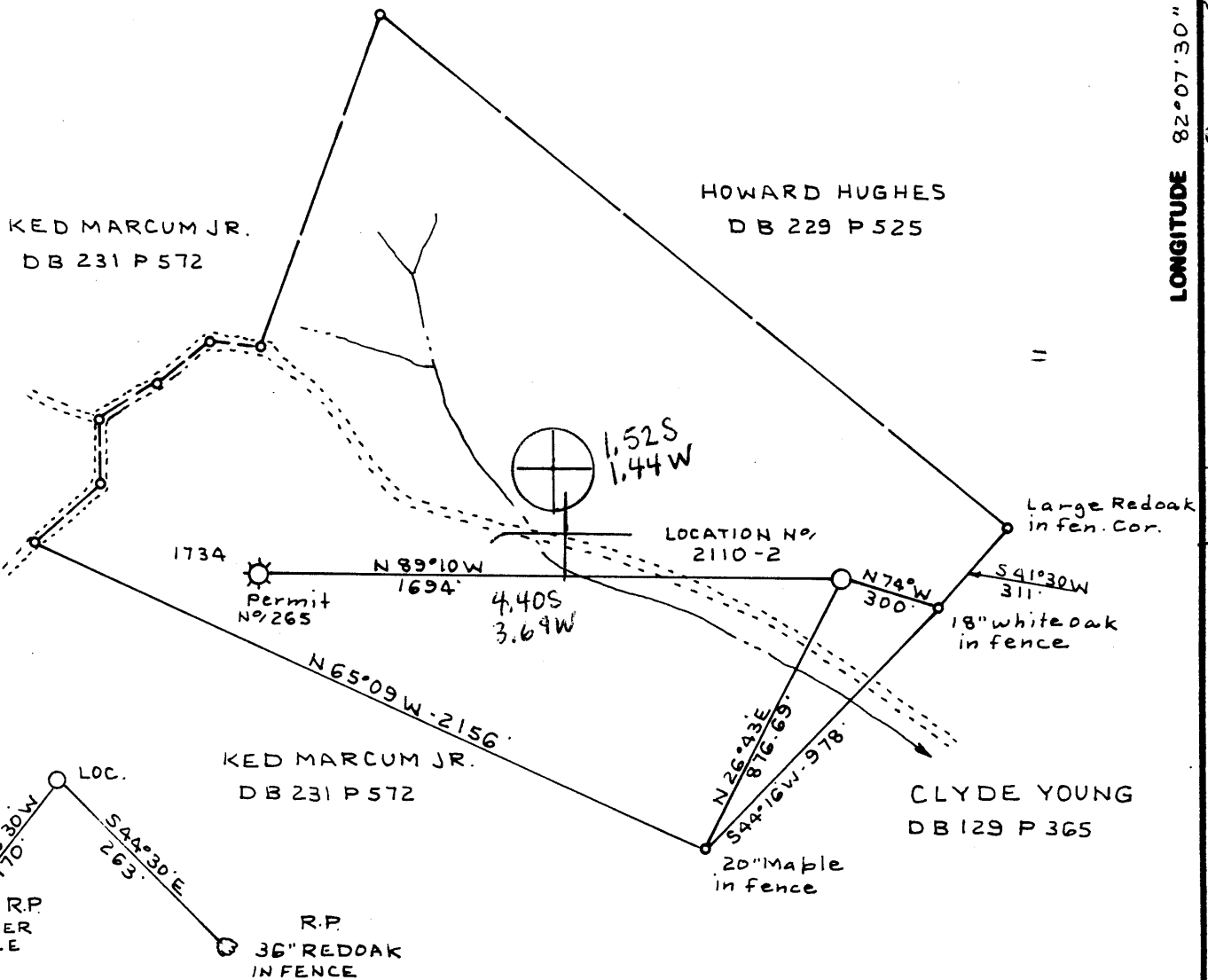


NORTH



FILE NO. BK 87 P 91  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1-200'  
 PROVEN SOURCE OF ELEVATION USGS BM V-118 on RR bridge 18 mile crk E1 551.49'

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) C. S. Volley Jr.  
 R.P.E. \_\_\_\_\_ U.S. 92

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 FORM IV-6 (8-78)



DATE SEPT 14, 1984  
 OPERATOR'S WELL NO. 2110-2  
 API WELL NO. \_\_\_\_\_  
47-053-0362  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 671.43 WATER SHED ROCKY FORK EIGHTEENMILE CREEK  
 DISTRICT HANNAN 6 COUNTY MASON  
 QUADRANGLE GLENWOOD 373 GLENWOOD 051 C5  
 SURFACE OWNER UNION DRILLING INC. ACREAGE 71  
 OIL & GAS ROYALTY OWNER UNION DRILLING INC LEASE ACREAGE 71  
 LEASE NO. C-2-409  
 PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 3500'  
 WELL OPERATOR UNION DRILLING INC DESIGNATED AGENT JOSEPH VANZANT  
 ADDRESS P.O. DRAWER 40 893 ADDRESS P.O. DRAWER 40  
BUCKHANNON WV 26201 BUCKHANNON WV 26201

SEP 22 1984

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IV-35  
(Rev 8-81)

DEC 10 1984

OIL & GAS DIVISION  
DEPT. OF MINES



State of West Virginia

Department of Mines  
Oil and Gas Division

Date December 6, 1984  
Operator's  
Well No. 2 - 2110  
Farm UDI-Jeffers #2  
API No. 47 - 053 - 0362

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 \_\_\_ / Underground Storage \_\_\_ / Deep \_\_\_ / Shallow x /)

LOCATION: Elevation: 671' Watershed Rocky Fork Eighteenmile Creek  
District: Hannan County Mason Quadrangle Glenwood

COMPANY UNION DRILLING, INC.

ADDRESS P.O. Drawer 40, Buckhannon, WV 26201

DESIGNATED AGENT Joseph C. Vanzant, Jr.

ADDRESS P.O. Drawer 40, Buckhannon, WV 26201

SURFACE OWNER Union Drilling, Inc.

ADDRESS P.O. Drawer 40, Buckhannon, WV 26201

MINERAL RIGHTS OWNER same

ADDRESS \_\_\_\_\_

OIL AND GAS INSPECTOR FOR THIS WORK \_\_\_\_\_

Jerry Tephacock ADDRESS Rt1, Box 101A, Ripley, WV 25271

PERMIT ISSUED 10/10/84

DRILLING COMMENCED 11/14/84

DRILLING COMPLETED 11/19/84

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 | Corent fill up Cu. ft. |
|------------------|------------------|--------------|------------------------|
| Size 20-16 Cord. |                  |              |                        |
| 13-10"           |                  |              |                        |
| 9 5/8            | 515.75'          | 515.75'      | 190 cf                 |
| 8 5/8            |                  |              |                        |
| 7                | 2180.60'         | 742.40'      | 59 cf                  |
| 5 1/2            |                  |              |                        |
| 4 1/2            |                  | 3321.05'     | 159 cf                 |
| 3                |                  |              |                        |
| 2                |                  |              |                        |
| Liners used      |                  |              |                        |

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 3500' feet

Depth of completed well 3415' feet Rotary xx / Cable Tools \_\_\_\_\_

Water strata depth: Fresh \_\_\_\_\_ feet; Salt 800', 1295' feet 1375'

Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Lower Huron Pay zone depth 3244' feet

Gas: Initial open flow show Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d

Final open flow 158 Mcf/d Final open flow \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests 3 days ~~hours~~

Static rock pressure 740# psig (surface measurement) after 3 days ~~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 \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

DEC 26 1984

(Continue on reverse side)

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

2976/3244 - Lower Huron - 60,000# sand, 190 Bbls water and 1,500,000 scf nitrogen  
Nowco - 1 stage Foam Frac - 12/1/84

WELL LOG

| FORMATION             | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET  | REMARKS<br>Including indication of all fresh and salt water, coal, oil and gas |
|-----------------------|-------|--------------|----------|--------------|--|
| Sand & Shale          |       |              | 0        | 1300         | 1 1/4" stream salt water @800'   |
| Big Lime              |       |              | 1300     | 1375         | 1" stream salt water @1295'  |
| Injun                 |       |              | 1420     | 1505         | 1" stream salt water @1375'  |
| Berea                 |       |              | 2038     | 2081         |  |
| Top of Devonian Shale |       |              | 2081     |              |  |
| Upper Huron           |       |              | 2918     | 2925         |  |
| Lower Huron           |       |              | 2972     | 3252         |  |
| <u>Angola Shale</u>   |       |              | 3252     | <u>3415'</u> | T.D. gas show  |

from GR log  
K... ..

828' Op. log

(Attach separate sheets as necessary)

UNION DRILLING, INC.

Well Operator

By: Joseph C. Pettey

Date: Joseph C. Pettey, Vice President of Production  
12/6/84

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 ..., encountered in the drilling of a well."

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1) Date: September 20, 1984  
 2) Operator's Well No. 2110  
 3) API Well No. 47 - 053 - 0362  
 State County Permit

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES, OIL AND GAS DIVISION  
 OIL & GAS DIVISION  
 DEPT. OF MINES  
 APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil \_\_\_\_\_ / Gas X /  
 B (If "Gas", Production X / Underground storage \_\_\_\_\_ / Deep \_\_\_\_\_ / Shallow X /)
- 5) LOCATION: Elevation: 671.43 Watershed: Rocky Fork Eighteenmile Creek  
 District: Hannan County: Mason Quadrangle: Glenwood
- 6) WELL OPERATOR Union Drilling, Inc.  
 Address Post Office Drawer 40  
Buckhannon, WV 26201
- 7) DESIGNATED AGENT Joseph C. Vanzant, Jr.  
 Address Post Office Drawer 40  
Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED  
 Name Jerry Tephabock  
 Address Route 1, Box 101-A  
Ripley, WV 25271
- 9) DRILLING CONTRACTOR:  
 Name Union Drilling, Inc.  
 Address Post Office Drawer 40  
Buckhannon, WV 26201
- 10) PROPOSED WELL WORK: Drill X / Drill deeper \_\_\_\_\_ / Redrill \_\_\_\_\_ / Stimulate X /  
 Plug off old formation \_\_\_\_\_ / Perforate new formation \_\_\_\_\_ /  
 Other physical change in well (specify) \_\_\_\_\_
- 11) GEOLOGICAL TARGET FORMATION, Devonian Shale  
 12) Estimated depth of completed well, 3500 feet  
 13) Approximate trata depths: Fresh, ? feet; salt, ? feet.  
 14) Approximate coal seam depths: ? Is coal being mined in the area? Yes \_\_\_\_\_ / No XX /

15) 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             | 13-3/8         | H-40  | 48             | X   |      | 30'               | 30'          | to surface                           | Kinds               |
| Fresh water           | 9-5/8          | K-55  | 30             | X   |      | 600'              | 600'         | as required                          | by rule 15.05       |
| Coal                  |                |       |                |     |      |                   |              |                                      | Sizes               |
| Intermediate          | 7              | K-55  | 23             | X   |      | 1800'             | 800'         | <del>100</del> 50 sacks              |                     |
| Production            | 4-1/2          | J     | 10 1/2         | X   |      | 3500'             | 3500'        | 90 sacks                             | Depths set          |
| Tubing                |                |       |                |     |      |                   |              | on as required by                    | rule                |
| Liners                |                |       |                |     |      |                   |              |                                      | Preparations: 15.01 |
|                       |                |       |                |     |      |                   |              |                                      | Top Bottom          |

OFFICE USE ONLY  
 DRILLING PERMIT  
 Permit number 47-053-0362 Date October 10, 1984

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 reclamation plan, subject to any modifications and conditions specified on the reverse hereof.  
 Permit expires October 10, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

|                  |                  |                 |                   |                               |
|------------------|------------------|-----------------|-------------------|-------------------------------|
| Bond: <u>162</u> | Agent: <u>MH</u> | Plat: <u>MH</u> | Casing: <u>MH</u> | Fee: <u>032</u><br><u>602</u> |
|------------------|------------------|-----------------|-------------------|-------------------------------|

Margaret J. Wasse  
 Administrator, Office of Oil and Gas