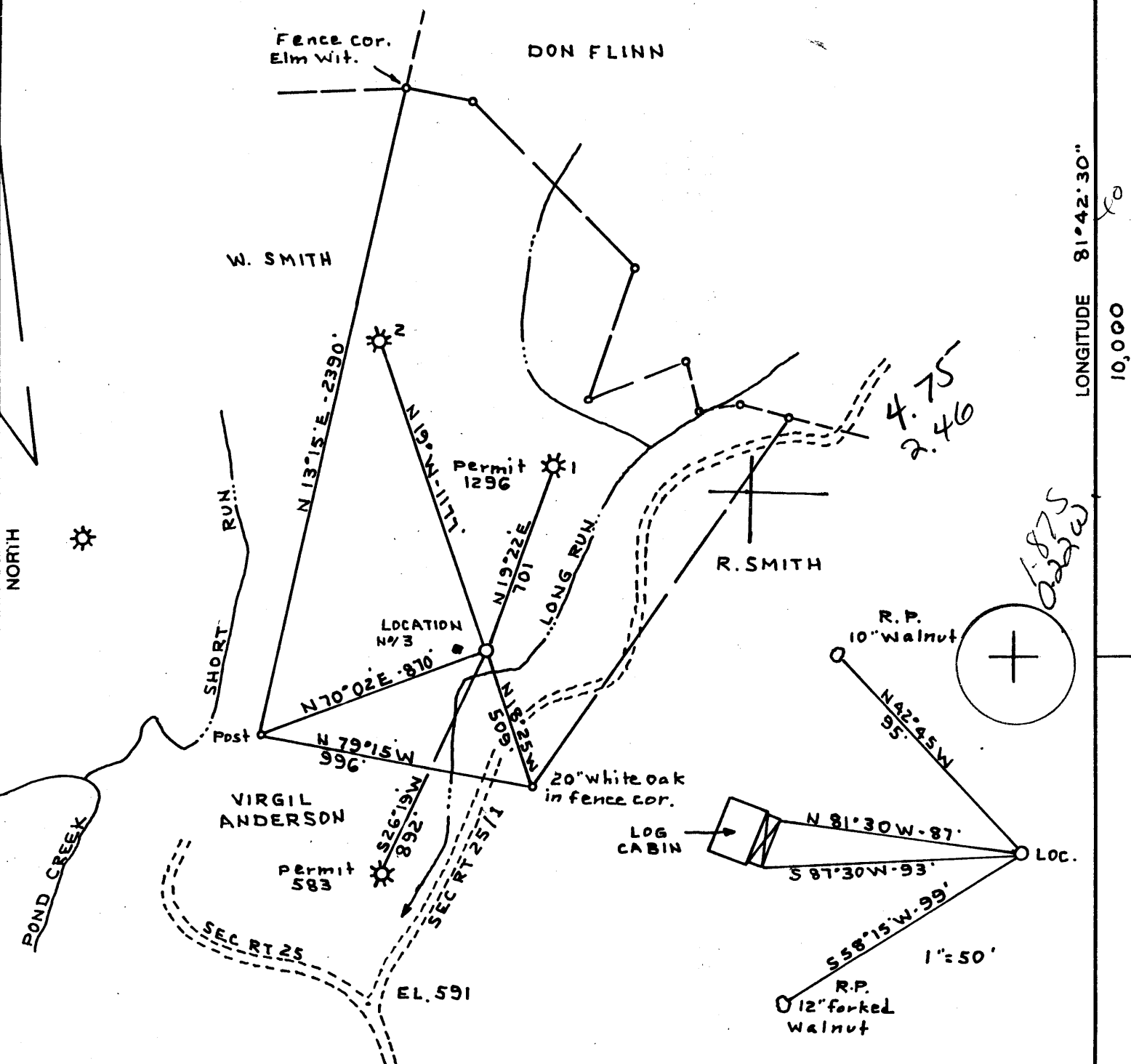


Janice 8/25/1988 ✓

LATITUDE 39°07'30"

1200



LONGITUDE 81°42'30"  
10,000

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

FILE NO. BK 113 PG 1  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1:200'  
 PROVEN SOURCE OF ELEVATION Road forks as shown EL. 591

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) C. J. Valley Jr.  
 R.P.E. \_\_\_\_\_ U.S. 192 \_\_\_\_\_

PLACE SEAL HERE

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



DATE AUG 11, 1988  
 OPERATOR'S WELL NO. HARTSHORN 3  
 API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 595.00 WATERSHED LONG RUN OF POND CREEK  
 DISTRICT HARRIS 2 COUNTY WOOD  
 QUADRANGLE POND CREEK 553 009 4 Belleville WC  
 SURFACE OWNER GLENN A. HARTSHORN ACREAGE 60  
 OIL & GAS ROYALTY OWNER GLENN A. HARTSHORN LEASE ACREAGE 60

COUNTY NAME  
PERMIT

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 BEREA ESTIMATED DEPTH 2300'  
 WELL OPERATOR H.D. WELLS OIL & GAS EXP. & DEV. DESIGNATED AGENT H.D. WELLS  
 ADDRESS PO BOX 1785 ADDRESS PO. BOX 1785  
CHARLESTON WV 25326 943 CHARLESTON WV 25326

6-6 New England

(296)

SEP 06 1988

State of West Virginia  
DEPARTMENT OF ENERGY  
Division of Oil and Gas

Well Operator's Report of Well Work

Farm name: HARTSHORN, GLENN A. Operator Well No.: HARTSHORN #3

LOCATION: Elevation: 595.00 Quadrangle: POND CREEK

District: HARRIS County: WOOD  
Latitude: 10000 Feet South of 39 Deg. 7 Min. 30 Sec.  
Longitude 1200 Feet West of 81 Deg. 42 Min. 30 Sec.

Company: WELLS, H. D. OIL & GAS EX  
POST OFFICE BOX 1785  
CHARLESTON, WV

Agent: HARLEY D. WELLS

Inspector: GLEN P. ROBINSON  
Permit Issued: 08/29/88  
Well work Commenced: 10/1/88  
Well work Completed: 10/7/88

Verbal Plugging  
Permission granted on: \_\_\_\_\_

Rotary  Cable \_\_\_\_\_ Ris \_\_\_\_\_  
Total Depth (feet) 2022  
Fresh water depths (ft) 85

Salt water depths (ft) 1050

Is coal being mined in area (Y/N)? N  
Coal Depths (ft): \_\_\_\_\_

| Casings & Tubing Size | Used in Drilling | Left in Well | Cement Fill Cu. Ft. |
|-----------------------|------------------|--------------|---------------------|
| 8 5/8                 | 610'             | 610'         | to surface          |
| 4 1/2                 | 2022'            | 2022'        | 280 sks.            |



DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

OPEN FLOW DATA

Producing formation Berea Pay zone depth (ft) 1922-1924  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 125 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 8 Hours  
Static rock Pressure 485 psis (surface pressure) after 72 Hours

Second producing formation N/A 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 \_\_\_\_\_ psis (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: WELLS, H. D. OIL & GAS EXP. & DEV. INC.

By: *[Signature]* Date: 11/7/88  
NOV 18 1988

Perf: 14 Holes 1922-1924 *Berea*

Foam Frac: Nitrogen 527,000 SCF  
20/40 Sand 50,000 lbs.  
Methanol 250 gal.

|              |      |      |                    |
|--------------|------|------|--------------------|
| Clay Red     | 0    | 18   |                    |
| Shale Dark   | 18   | 89   | Fresh Water @ 85'  |
| Sand & Shale | 89   | 430  |                    |
| Red Rock     | 430  | 702  |                    |
| Shale        | 702  | 1090 | Salt Water @ 1050' |
| Sand-Salt    | 1090 | 1190 |                    |
| Shale        | 1190 | 1580 |                    |
| Injun Sand   | 1580 | 1922 |                    |
| ✓Berea       | 1922 | 1924 |                    |
| Shale        | 1924 | 2022 | Total Depth        |

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NOV 15 1988

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

107-1439

Issued 8/29/88 Expires 8/29/90

FORM WW-2B

Page 1 of 1

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

52900, 2, 552

- 1) Well Operator: H. D. Wells Oil & Gas Exploration & Development, Inc.
- 2) Operator's Well Number: Hartshorn #3 3) Elevation: 595.0
- 4) Well type: (a) Oil    / or Gas x /  
(b) If Gas: Production x / Underground Storage    /  
Deep    / Shallow x /
- 5) Proposed Target Formation(s): Berea 395
- 6) Proposed Total Depth: 2,200 feet
- 7) Approximate fresh water strata depths: 160, 85', 341', 355', 366', 452', 553'
- 8) Approximate salt water depths: 1,050', 1,009', 1100', 1240', 1443'
- 9) Approximate coal seam depths: OK none
- 10) Does land contain coal seams tributary to active mine? Yes    / No x /
- 11) Proposed Well Work: Drill & Stimulate New Well
- 12)

CASING AND TUBING PROGRAM

| TYPE         | SPECIFICATIONS |       | FOOTAGE INTERVALS |              | CEMENT       |                                      |
|--------------|----------------|-------|-------------------|--------------|--------------|--------------------------------------|
|              | Size           | Grade | Weight per ft.    | For drilling | Left in well | Fill-up (cu. ft.)                    |
| Conductor    |                |       |                   |              | 583'         |                                      |
| Fresh Water  | 8 5/8"         |       |                   | 300'         | 300'         | cir. to surface per Rule 15.05       |
| Coal         |                |       |                   |              |              | 38CSR18-11.3                         |
| Intermediate |                |       |                   |              |              |                                      |
| Production   | 4 1/2"         |       |                   | 2200'        | 2200'        | 280 sks or as required by Rule 15.01 |
| Tubing       |                |       |                   |              |              | 38CSR18-11.1                         |
| Liners       |                |       |                   |              |              |                                      |

PACKERS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

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For Division of Oil and Gas Use Only DEPARTMENT OF ENERGY

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

Plat    WW-9    WW-2B    Bond    50 Blanket    Agent

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AUG 25 1988

DIVISION OF OIL & GAS 3)  
DEPARTMENT OF ENERGY

Date: August 9, 1988  
Operator's well number  
Hartshorn No. 3  
API Well No: 47 - 107 - 1439  
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 Glen A. Hartshorn  
Address Rt. 1, Box 70  
Belleville, WV 26133  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Glen P. Robinson  
Address Rt 1, #6 Mt. Pleasant Estate  
Mineralwells, WV 26150  
Telephone (304)- \_\_\_\_\_

5) (a) Coal Operator:  
Name n/a  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
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  
 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 H. D. Wells Oil & Gas Exp. & Dev., Inc.  
By: [Signature]  
Its: President  
Address P.O. Box 1785  
Charleston, WV 25326  
Telephone 346-2829

Subscribed and sworn before me this 12th day of August, 1988

Karen Gray Jones Notary Public  
My commission expires November 20, 1995