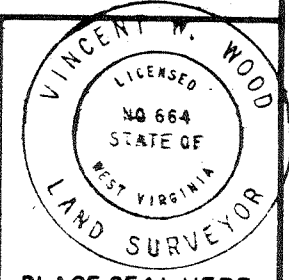


38 46 15
81 41 35

4.305
1.466

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 1,000'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION SPOT ELEV. 926 AT INTER. RT. 25 AND 36

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) Grant W. Wood
R.P.E. _____ L.L.S. 664



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



DATE MAY 13, 1982
OPERATOR'S WELL NO. KEM 224
API WELL NO. _____
47 - 035 - 1712
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 X SHALLOW ___
LOCATION: ELEVATION 838 WATER SHED GRASSLICK RUN
DISTRICT RIPLEY COUNTY JACKSON
QUADRANGLE RIPLEY 15' SW
SURFACE OWNER GRANT E. DONOHEW ACREAGE 438.8
OIL & GAS ROYALTY OWNER GRANT E. DONOHEW LEASE ACREAGE 438.8
LEASE NO. _____
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 ORISKANY ESTIMATED DEPTH 3185'
WELL OPERATOR KAISER EXPLOR. & MIN. CO. DESIGNATED AGENT KAISER EXPLORATION AND MINING CO.
ADDRESS P.O. BOX 8 RAVENSWOOD, W.V. 26164 ADDRESS P.O. BOX 8 RAVENSWOOD, W.V. 26164

JUN 7 1982



REVISED

IV-35
(Rev 8-81)

Date May 17, 1983
Operator's
Well No. KEM #224
Farm Grant Donohew
API No. 47 - 035 - 1712

JUL 05 1983

State of West Virginia
Department of Mines
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 X /)

LOCATION: Elevation: 838' Watershed Grasslick Creek
District: Ripley County Jackson Quadrangle Ripley

COMPANY KAISER EXPLORATION AND MINING COMPANY

ADDRESS P. O. Box 8, Ravenswood, WV 26164

DESIGNATED AGENT Same

ADDRESS _____

SURFACE OWNER Grant Donohew

ADDRESS South Church St., Ripley, WV 25271

MINERAL RIGHTS OWNER Same

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK R. Dougherty

ADDRESS Spencer, WV

PERMIT ISSUED 5/27/82

Workover
DRILLING COMMENCED 1/12/83

Workover
DRILLING COMPLETED 1/20/83

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" | 437'(KB) | 437'(KB) | 220 sx neat |
| 9 5/8 | | | |
| 8 5/8 | | | |
| 7 | 2432(KB) | 2432(KB) | 65 sx pozmix 100 sx neat |
| 5 1/2 | | | |
| 4 1/2 | 5190(KB) | 5190(KB) | 225 sx neat |
| 3 | | | |
| 2 | | 4310(KB) | 2 3/8" X 4 1/2" Hookwell Packer at 4090'(KB) |
| Liners used | | JUN 2 1983 | |
| | | OIL & GAS DIVISION | |

GEOLOGICAL TARGET FORMATION Oriskany Sandstone DEPT. OF MINES
Depth 5040 feet

Depth of completed well 5213 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 Devonian Brown Shale Pay zone depth 4130 - 4325 feet

Gas: Initial open flow 0 Mcf/d Oil: Initial open flow -- Bbl/d

Final open flow 260 Mcf/d Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 925 psig (surface measurement) after -- hours shut in

(If applicable due to multiple completion--)

Second producing formation Berea Sandstone Pay zone depth 2531 - 2539 feet

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

Final open flow 144 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 850 psig (surface measurement) after 96 hours shut in

(Continue on reverse side)

ZONES ISOLATED BY PACKER

new zone completed

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

- 1/13/83: YOUNG's WIRELINE SERVICE set 4 1/2" retrieveable bridge plug at 2615' (KB); Perf. Berea Sandstone 2531' - 2539' (KB), 24 holes.
- 1/14/83: NOWSCO crosslink polimer fractured Berea Sandstone w/60,000# 20/40 mesh sand; 500 gal 15% HCL acid; 655 bbl water; 277,000 SCF of nitrogen; 12 BPM rate; 3400 psig breakdown; 1700 psig average treating pressure; SIP was 700 psig.
- 1/19/83: Ran 2 3/8" tubing and isolation packer; tubing set at 4310' (KB); packer at 4090' (KB).

WELL LOG

| FORMATION | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS Including indication of all fresh and salt water, coal, oil and gas |
|------------------------------|-------|--------------|----------|-------------|--|
| Same as previously submitted | | | | | |
| OG-10 | | | | | |

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator

By: R. A. P. -

Date: June 16, 1983

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."



IV-35
(Rev 8-81)

NOV 1 1982
OIL & GAS DIVISION
DEPT. OF MINES
State of West Virginia
Department of Mines
Oil and Gas Division

Date 9/27/82
Operator's Well No. KEM - 224
Farm Grant Donohew
API No. 47 - 035 - 1712

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: 838' Watershed Grasslick Creek
District: Ripley County Jackson Quadrangle Ripley

COMPANY KAISER EXPLORATION & MINING COMPANY

ADDRESS P.O. Box 8, Ravenswood, WV 26164

DESIGNATED AGENT R. A. Pryce

ADDRESS P.O. Box 8, Ravenswood, WV 26164

SURFACE OWNER Grant Donohew

ADDRESS South Church St., Ripley, WV 25271

MINERAL RIGHTS OWNER Same

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Richard

Morris ADDRESS Box 372, Grantsville

PERMIT ISSUED 5/27/82

DRILLING COMMENCED 6/09/82

DRILLING COMPLETED 6/16/82

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" | | 437' | 220 sks |
| 9 5/8 | | | |
| 8 5/8 | | | |
| 7 | | 2432' | 165 sks |
| 5 1/2 | | | |
| 4 1/2 | | 5190' | 225 sks |
| 3 | | | |
| 2 | | | |
| Liners used | | | |

GEOLOGICAL TARGET FORMATION Oriskany S.S. Depth 5040 feet

Depth of completed well 5213 feet Rotary X / Cable Tools

Water strata depth: Fresh feet; Salt feet

Coal seam depths: Is coal being mined in the area?

OPEN FLOW DATA

Producing formation Oriskany S.S. Pay zone depth 5105-5129 feet

Gas: Initial open flow 35 Mcf/d Oil: Initial open flow --- Bbl/d

Final open flow N/A Mcf/d Oil: Final open flow --- Bbl/d

Time of open flow between initial and final tests N/A hours

Static rock pressure N/A psig (surface measurement) after --- hours shut in

(If applicable due to multiple completion--)

Second producing formation Devonian Brown Shale Pay zone depth 4130'-4325' feet

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

Final open flow 260 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 925 psig (surface measurement) after -- hours shut in

(Continue on reverse side) NOV 8 1982

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

6/18/82 Oriskany S.S. Perforation
5105-5113 and 5123-5129
58 holes, 0.5" in diameter.

6/21/82 Oriskany S.S. Frac: 15,000# 80/100 sand, 45,000# of 20/40 sand,
treatment pressure - 3700 psig; instantaneous shut
in pressure was 3300 psig; total bbl of water = 830 bbl
134,000 SCF of nitrogen used.

9/27/82 Brown shale: Set permanent bridge plug at 4370' (KB); perforated
Brown shale from 4130'-4325' selectively (24 holes,
.39" diameter).

10/01/82 Brown shale: Frac: 60,000# 20/40 sand; treatment pressure = 2350
psig; ISIP: 950 psig; total 345 bbl water and 1,069
MMSCF of WELL LOG nitrogen.

| FORMATION | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS Including indication of all fresh and salt water, coal, oil and gas |
|---------------------|-------|--------------|----------|-------------|---|
| Shale | | | 0 | 295 | |
| Sandstone and shale | | | 295 | 1703 | |
| Limestone | | | 1703 | 2039 | |
| Sandstone and shale | | | 2039 | 2170 | |
| Shale | | | 2170 | 2507 | |
| Coffee shale | | | 2507 | 2530 | |
| Berea S.S. | | | 2530 | 2541 | |
| Shale | | | 2541 | 3768 | |
| Brown shale | | | 3768 | 4318 | s/g @ 4184 |
| Shale | | | 4318 | 4690 | |
| Marcellus | | | 4690 | 4989 | s/g @ 4739 |
| Onondaga L.S. | | | 4989 | 5040 | |
| Oriskany S.S. | | | 5040 | 5130 | s/g @ 5100, 5118 |
| Helderberg | | | 5130 | 5213-TD | |

4130
2541
1589

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator

By: R.A.P.

Date: September 27, 1982

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."



Date: May 17, 19 82

Operator's Well No. KEM #224

API Well No. 47 035 1712

State WV County Permit

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

FORM IV-2 (Obverse) (12-81)

WELL TYPE: Oil / Gas X / (If "Gas", Production X / Underground storage / Deep X / Shallow)

LOCATION: Elevation: 838 Watershed: Grasslick Run
District: Ripley County: Jackson Quadrangle: Ripley

WELL OPERATOR Kaiser Exploration and Mining Co. DESIGNATED AGENT R. A. Pryce
Address P. O. Box 8 Ravenswood, WV 26164 Address P. O. Box 8 Ravenswood, WV 26164

OIL & GAS ROYALTY OWNER Grant Donohew
Address South Church Street Ripley, WV 25271
Acreage 438.8

COAL OPERATOR None
Address

SURFACE OWNER Same
Address
Acreage

COAL OWNER(S) WITH DECLARATION ON RECORD:
Name Same
Address
Name
Address

RECEIVED

MAY 19 1982

OIL AND GAS DIVISION
WV DEPARTMENT OF MINES

FIELD SALE (IF MADE) TO:
Address

COAL LESSEE WITH DECLARATION ON RECORD:
Name
Address

OIL & GAS INSPECTOR TO BE NOTIFIED
Name Richard Morris
Address P. O. Box 372 Grantsville, WV

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed / lease X other contract / dated October 8, 19 80, to the undersigned well operator from Grant & Naomi Donohew
(If said deed, lease, or other contract has been recorded:)

Recorded on November 5, 19 80, in the office of the Clerk of the County Commission of Jackson County, West Va., in Lease Book 157 at page 681. A permit is requested as follows:

PROPOSED WORK: Drill X / Drill deeper / Redrill / Fracture or stimulate / Plug off old formation / Perforate new formation / Other physical change in well (specify)

—planned as shown on the work order on the reverse side hereof.

The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to make by Code §22-4-3 must be filed with the Department of Mines within fifteen (15) days after the receipt of this Application by the Department.

Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:
WEST VIRGINIA OIL AND GAS CONSERVATION COMMISSION
1615 WASHINGTON STREET EAST CHARLESTON, WV 25311
TELEPHONE: (304) 348-3092

KAISER EXPLORATION AND MINING COMPANY
Well Operator
By R.A. Pryce
Its General Manager

BLANKET BOND

THIS IS AN ESTIMATE ONLY:
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) Clint Hurt & Associates, Inc.

Address P. O. Box 388

Elkview, WV 25071

GEOLOGICAL TARGET FORMATION, Oriskany

Estimated depth of completed well, 5183' feet Rotary X / Cable tools /

Approximate water strata depths: Fresh, 388' feet; salt, feet.

Approximate coal seam depths: Is coal being mined in the area? Yes / No X /

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 | | |
| Conductor | | | | | | | | Kinds |
| Fresh Water | 10 3/4" | | | | | <u>985'</u> | <u>425'</u> | 150 sks class A (to surface) |
| Coal | | | | | | | | Sizes |
| Intermediate | 7" | | | | | 2413' | 2413' | 65 sks 50/50 170 sks class A |
| Production | 4 1/2" | | | | | 5183' | 5183' | 225 sks 50/50 <u>Class A</u> |
| Tubing | | | | | | | | |
| Liners | | | | | | | | Perforations: |
| | | | | | | | | Top Bottom |

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form Iv-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

THIS PERMIT MUST BE POSTED AT THE WELL SITE

ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22,

ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY

APPROVED FOR drilling THIS PERMIT SHALL EXPIRE

IF OPERATIONS HAVE NOT COMMENCED BY 1-27-83

BY [Signature]

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof.

WAIVER

The undersigned coal operator / owner / lessee / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: , 19

By

Its

