

FILE NO. 6-5

DRAWING NO. _____

SCALE 1" = 500'

MINIMUM DEGREE OF ACCURACY 1:200

PROVEN SOURCE OF ELEVATION HIGH POINT ELEV. = 948, 1100' N.E. OF LOCATION

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) Vincent W. Wood

R.P.E. _____ L.L.S. 664

PLACE SEAL HERE

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION



DATE APRIL 11, 1983

OPERATOR'S WELL NO. KEM 359

API WELL NO. _____

47 - 107 - 1253-PP-F

STATE COUNTY PERMIT

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

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___

(IF "GAS,") PRODUCTION STORAGE ___ DEEP SHALLOW ___

LOCATION: ELEVATION 873 WATER SHED MASSEY HOLLOW

DISTRICT HARRIS COUNTY WOOD

QUADRANGLE LUBECK

SURFACE OWNER W. E AND LENA K. KAUFMAN ACREAGE 70

OIL & GAS ROYALTY OWNER W.E. AND LENA K. KAUFMAN LEASE ACREAGE 70

LEASE NO. 88-03-1217

PROPOSED WORK: DRILL 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 4513'

WELL OPERATOR KAISER EXPLOR. & MIN. CO. DESIGNATED AGENT KAISER EXPLORATION AND MINING CO.

ADDRESS P.O. BOX 8 ADDRESS P.O. BOX 8

DRILL WELL RAYENSWOOD, W. V. 26164 RAYENSWOOD, W. V. 26164

60000 6-6 New England (296) NOV 19 1984

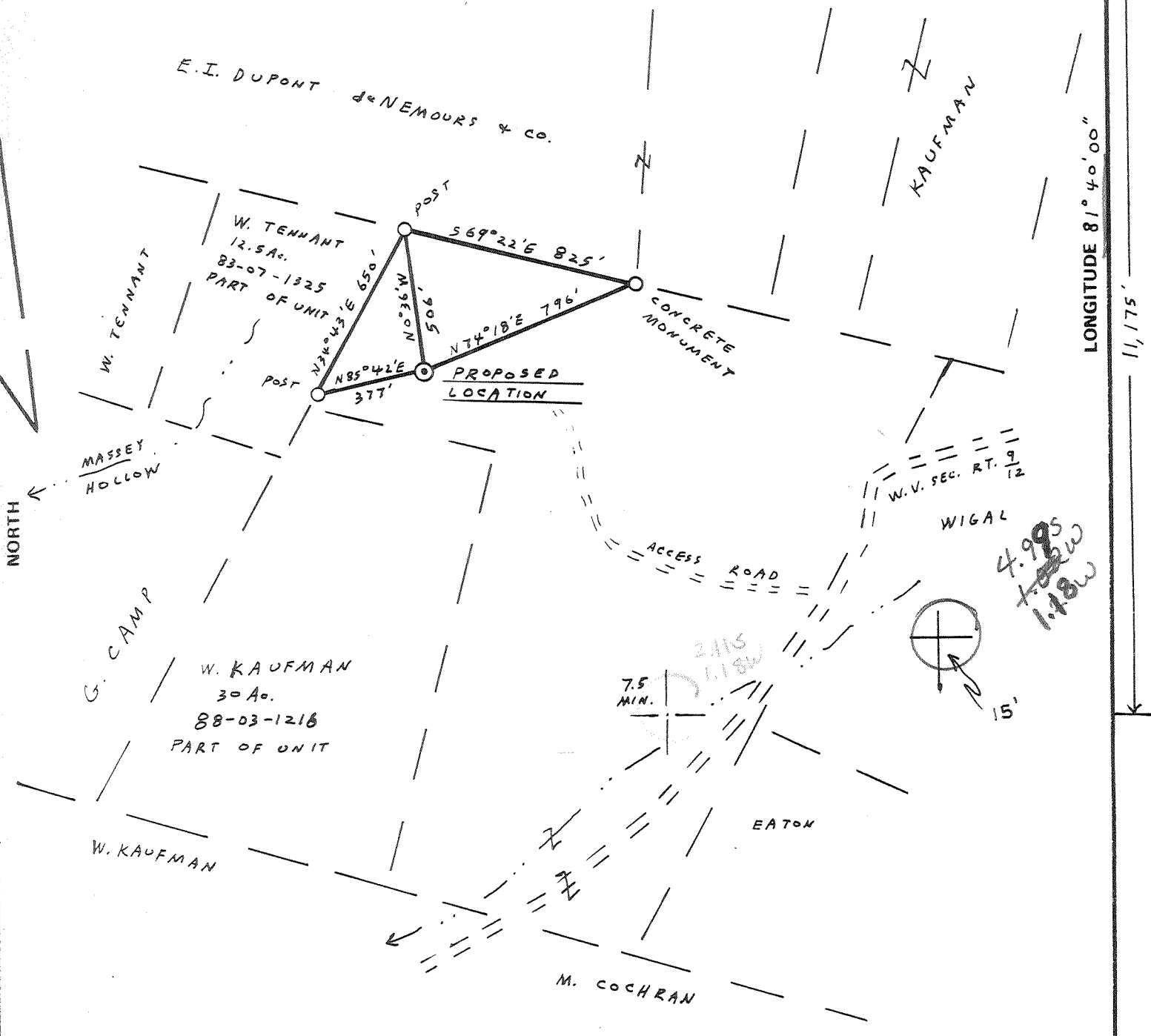
FORM IV-6 (8-78)

WOOD 1253

4-22-83

LATITUDE 39°12'30"
39°15'-15"

LONGITUDE 81°40'00"



NO WELLS WITHIN 2,400'

N 17 E 8

FILE NO. 6-5
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION HIGH POINT ELEV. = 948, 1100' N.E. OF LOCATION

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

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION



DATE APRIL 11, 1983
 OPERATOR'S WELL NO. KEM 359
 API WELL NO. _____
47 - 107 - 1253
 STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
 LOCATION: ELEVATION 873 WATER SHED MASSEY HOLLOW
 DISTRICT HARRIS COUNTY WOOD
 QUADRANGLE LUBECK Bellville 15' NW
 SURFACE OWNER W. E AND LENA K. KAUFMAN ACREAGE 70
 OIL & GAS ROYALTY OWNER W. E. AND LENA K. KAUFMAN LEASE ACREAGE 70
 LEASE NO. 88-03-1217
 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 4573' New England deep well
 WELL OPERATOR KAISER EXPLOR. & MIN. CO. DESIGNATED AGENT KAISER EXPLORATION AND MINING CO.
 ADDRESS P.O. BOX 8 ADDRESS P.O. BOX 8
DEEP WELL RAVENSWOOD, W. V. 26164 RAVENSWOOD, W. V. 26164

WOOD 1253



RECEIVED

IV-35
(Rev 8-81)

JAN 19 1984

OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date June 27, 1983
Operator's
Well No. KEM #359
Farm Kaufman
API No. 47 - 107 - 1253

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: 873' Watershed Masey Hollow
District: Harris County Wood Quadrangle Lubeck

COMPANY KAISER EXPLORATION AND MINING COMPANY

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

DESIGNATED AGENT Robert A. Pryce

ADDRESS Same

SURFACE OWNER W. E. & L. K. Kaufman

ADDRESS Rt. 2, Belleville, WV

MINERAL RIGHTS OWNER Same

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK Homer

Dougherty ADDRESS Linden Rt., Box 3-A

PERMIT ISSUED Looneyville, WV
April 18, 1983

DRILLING COMMENCED May 25, 1983

DRILLING COMPLETED May 30, 1983

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 Cord. | | | |
| <u>4 1/2</u> | | <u>372</u> | <u>150 sx Class A</u> |
| <u>9 5/8</u> | | | |
| <u>8 5/8</u> | | | |
| <u>7</u> | | <u>1891</u> | <u>100 sx 10% salt</u> <u>100 sx Class A</u> <u>3% CaCl</u> |
| <u>5 1/2</u> | | | <u>200 sx Class A</u> |
| <u>4 1/2</u> | | <u>4335</u> | <u>50/50 poz.</u> <u>10% salt</u> |
| <u>3</u> | | | |
| <u>2</u> | | | <u>12.5#/sk gilson</u> <u>1/4#/sk floccel</u> |
| Liners used | | | |

GEOLOGICAL TARGET FORMATION Oriskany Sandstone Depth 4573 feet

Depth of completed well 4560 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 Sandstone Pay zone depth 4444-4449 feet

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

Final open flow (200) Mcf/d Final open flow -- Bbl/d

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

Static rock pressure 1525 psig (surface measurement) after -- 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 JUN 30 1984 hours

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

(Continue on reverse side)

107-1253

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

- 6/01/83 Oriskany perforated w/20 shots (.41") 4444' - 4440', 4 holes/ft.
- 6/02/83 Oriskany breakdown with 500 gal 28% acid; breakdown at 1200 psig w/10 BPM water. Displaced 20 bbl total ISIP: 500 psig.
- 6/17/83 Oriskany Sandstone fracture: cross-link frac: 28,000# 20/40 sand. Treating pressure: 1330-3600 psig; liquid rate: 6 BPM; N2 rate: 4,000 SCF/M; 200 bbl of sand-laden fluid, 507 total lbs; total N2: 290,000 SCF. ISIP: 3600 psig; 15-min SIP: 3160.

WELL LOG

| FORMATION | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS |
|----------------------|-------|--------------|----------|-------------|---|
| | | | | | Including indication of all fresh and salt water, coal, oil and gas |
| Shale | | | 0 | 290 | |
| Sandstone | | | 290 | 416 | |
| Siltstone and Shale | | | 416 | 1230 | |
| Sandstone | | | 1230 | 1258 | |
| Shale | | | 1258 | 1338 | |
| Sandstone | | | 1338 | 1378 | |
| Shale | | | 1378 | 1418 | |
| Sandstone | | | 1418 | 1445 | |
| Shale | | | 1445 | 1486 | |
| Sandstone | | | 1486 | 1525 | |
| Shale | | | 1525 | 1630 | |
| Sandstone | | | 1630 | 1774 | |
| Shale and Siltstone | | | 1774 | 2114 | |
| Coffee Shale | | | 2114 | 2134 | |
| Berea Sandstone | | | 2134 | 2137 | |
| Grey Shale | | | 2137 | 3594 | |
| Brown Shale | | | 3594 | 3790 | |
| Shale | | | 3790 | 4158 | |
| Marcellus Shale | | | 4158 | 4336 | |
| Onondaga Limestone | | | 4336 | 4416 | |
| Oriskany Sandstone | | | 4416 | 4476 | |
| Helderberg Limestone | | | 4476 | 4560 TD | |

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator

By: A. P.
Date: July 19, 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 well."



IV-35
(Rev 8-77)

RECEIVED
AUG 15 1985

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

State of West Virginia
Department of Mines
Oil and Gas Division

Date June 25, 1985
Operator's Well No. KEM 359
Farm Kaufman
API No. 47 - 107 - 1253

Frac.

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: 873' Watershed Masey Hollow
District: Harris County Wood Quadrangle Lubeck

COMPANY Kaiser Exploration and Mining Co.

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

DESIGNATED AGENT R. A. Pryce

ADDRESS Same

SURFACE OWNER W. E. & L. K. Kaufman

ADDRESS Rt. 2, Belleville, WV

MINERAL RIGHTS OWNER Same

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK Homer

Daugherty ADDRESS Linden Rt, Box 3-A

PERMIT ISSUED 4/18/83 / 1115184 Looneyville, WV

DRILLING COMMENCED 5/25/83 / 5/9/85

DRILLING COMPLETED 5/30/83 / 6/20/85

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 ^{3/4} | | 372' | 150 sks class |
| 9 5/8 | | | |
| 8 5/8 | | | 100 sks 50/50 |
| 7 | | 1891' | 3% CaCl 10% salt |
| 5 1/2 | | | |
| 4 1/2 | | 4335' | 200 sks class 50/50 poz 10 sal |
| 3 | | | |
| 2 | | | 12.5#/sk Gils ite, 1/2#/sk Floccle |
| Liners used | | | |

GEOLOGICAL TARGET FORMATION Oriskany Sandstone Depth 4573' feet

Depth of completed well 4560' feet Rotary X / Cable Tools _____

Water strata depth: Fresh N/A feet; Salt _____ feet

Coal seam depths: NONE Is coal being mined in the area? NO
Drilled on fluid not known.

OPEN FLOW DATA

Producing formation Brown Shale ^{Huron} Pay zone depth 3655 - 3777 feet

* Gas: Initial open flow -- Mcf/d Oil: Initial open flow -- Bbl/d
Final open flow (500) Mcf/d Final open flow -- Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 850 psig (surface measurement) after 24 hours shut in
(If applicable due to multiple completion--)

Second producing formation Berea Pay zone depth 2132-2136 feet

* Gas: Initial open flow -- Mcf/d Oil: Initial open flow -- Bbl/d
Final open flow 500 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 850 psig (surface measurement) after 24 hours shut in

*Commingled

(Continue on reverse side)

New zones completed

Oct 6 1986

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

6/01/83 Oriskany perfs @ 4444' - 4440', 4 holes/ft, 20 shots.
 6/02/83 Oriskany breakdown with 500 gal 28% acid, breakdown @ 1200 psig w/10 BPM water. Displaced 20 bbl total. ISIP: 500 psig.
 6/17/83 Oriskany frac with cross-link frac: 28,000# 20/40 sand, treating pressure: 1330' - 3600 psig, liquid rate: 6 BPM, N₂ rate: 4000 scf/min, sand laden fluid: 290 bbl, total fluid: 507 bbl, total N₂: 290,000 scf. ISIP: 3600 psig, 15 min SIP: 3160 psig. **Set permanent plug at 3900' on 5/9/85.
 6/19/85 McCulough perf Brown Shale @ 3655' - 3777', 20 holes, frac plug @ 2170' KB. ^{Hebron}
 6/20/85 NOWSCO & BJ to 2-STAGE 75% foam frac the Brown Shale & Berea.
 Brown Shale: Breakdown pressure: 2260 psig, Sand: 60,000# 20/40, total N₂: 687,500 scf, total sand laden fluid: 197 bbl, total fluid: 263 bbl, ISIP: 1150 psig, 5 min SIP: 1000 psig. BEREA: Perf @ 2132' - 2136', 4 holes/ft. Breakdown pressure: 1680 psig, sand: 60,000# 20/40, ISIP: 920 psig, 5 min SIP: 850 psig, tot. fluid: 294 bb, tot. sand lad. fluid: 234 bbl, tot. N₂: 602,800 scf.

| 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. | | | | | |

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator

By: R. A. P.

Date: June 25, 1985

Note: Regulation 2.02(i) provides as follows:
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