

J-1683
KEM193

FILE NO _____
 DRAWING NO _____
 SCALE 1"=1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION SPOT EL 926
Shown Above

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) Frank J. Barber
 RPE _____ LLS 289

PLACE SEAL HERE

-- DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV 6
 878



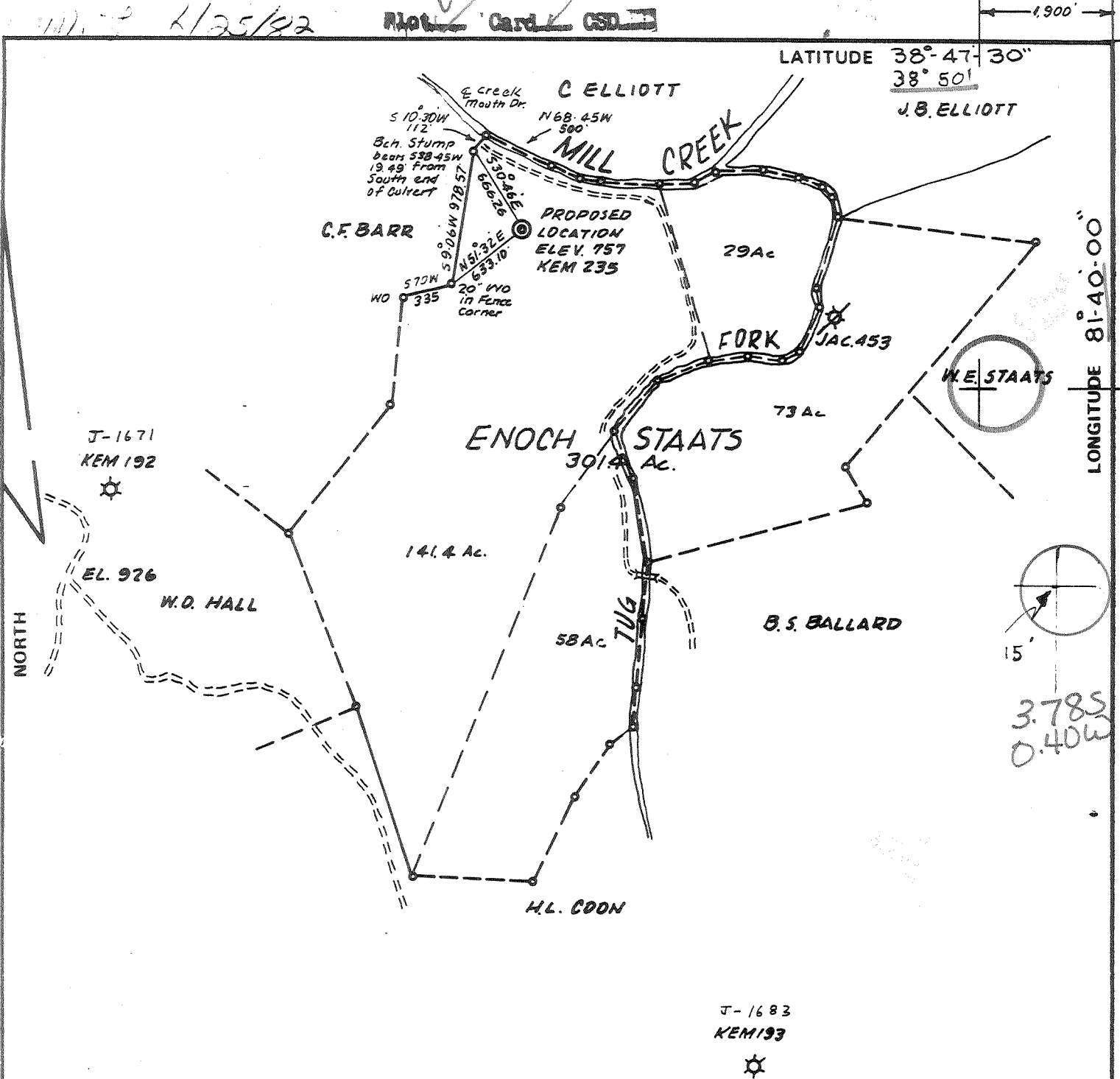
DATE JUNE 9 19 82
 OPERATOR'S WELL NO KEM 235
 API WELL NO 47-035-1731-Frac
 STATE COUNTY PERMIT

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 757 WATER SHED MILL CREEK
 DISTRICT RIPLEY COUNTY JACKSON
 QUADRANGLE RIPLEY
 SURFACE OWNER ENOCH STAATS ACREAGE 272
 OIL & GAS ROYALTY OWNER CLARA L. STAATS LEASE ACREAGE 272
 LEASE NO 87-06-1680
 PROPOSED WORK DRILL ___ CONVERT X DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION DRISKANY ESTIMATED DEPTH 5156'
 WELL OPERATOR KAISER EXPLORATION & MINING CO DESIGNATED AGENT KAISER EXPLORATION & MINING CO
 ADDRESS PO BOX 8 ADDRESS JAME
RAVENSWOOD, W VA 26164 6-6 Elk-Poca (Sissonville) (192) Well

MAY 21 1984

Deep



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION SPOT EL 926
Shown Above

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) Frank J. Barker
 R.P.E. _____ L.L.S. 289

PLACE SEAL HERE

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



DATE JUNE 9 19 82
 OPERATOR'S WELL NO KEM 235
 API WELL NO. _____
47 - 035 - 1731
 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 757 WATER SHED MILL CREEK
 DISTRICT RIPLEY COUNTY JACKSON
 QUADRANGLE RIPLEY 215' 362
 SURFACE OWNER ENOCH STAATS ACREAGE 272
 OIL & GAS ROYALTY OWNER CLARA L. STAATS LEASE ACREAGE 272
 LEASE NO. 87-06-1680
 PROPOSED WORK: DRILL ___ CONVERT X 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 DRISKANY ESTIMATED DEPTH 5156' JUL 12 1982
 WELL OPERATOR KAISER EXPLORATION & MINING CO DESIGNATED AGENT KAISER EXPLORATION & MINING CO
 ADDRESS P.O. BOX 8 ADDRESS JAME
RAVENSWOOD, W VA 26164

RECEIVED



IV-35
(Rev 8-81)

MAY 2 1986

Date April 25, 1986

W. VA. OIL & GAS CONSERVATION COMMISSION **State of West Virginia**

Department of Mines
Oil and Gas Division

Operator's

Well No. KEM #235

Farm Staats

API No. 47 - 035 - 1731 - F

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 /)

LOCATION: Elevation: 757' ^{767' K} Watershed Mill Creek
District: Ripley County Jackson Quadrangle Ripley

COMPANY Kaiser Exploration and Mining Company

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

DESIGNATED AGENT R. A. Pryce

ADDRESS Same

SURFACE OWNER Enoch Staats

ADDRESS 202 Edgewood Drive, Ripley, WV 25271

MINERAL RIGHTS OWNER Clara L. Staats

ADDRESS South Ritchie, Ravenswood, WV 26164

OIL AND GAS INSPECTOR FOR THIS WORK Jerry

Tephabock ADDRESS Rt. 1, Ripley, WV 25271

PERMIT ISSUED 7/2/82 6000

DRILLING COMMENCED 7/11/82 03/25/86

DRILLING COMPLETED 7/17/82 04/01/86

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.	308'	308'	200 sk
13-10"			
9 5/8			
8 5/8			
7	2352'	2352'	165 sks
5 1/2			
4 1/2		5148'	300 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Sandstone Depth 5011' feet

Depth of completed well 5163 feet Rotary X / Cable Tools

Water strata depth: Fresh N/A feet; Salt N/A feet (drilled on fluid)

Coal seam depths: None Is coal being mined in the area? No

(Note: Plugged off Brown Shale w/permanent bridge plug)

OPEN FLOW DATA

Producing formation Berea Sandstone Pay zone depth 2455'-60' feet

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

Final open flow 750 Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure 725 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 psig (surface measurement) after hours shut in

(Continue on reverse side)

JUN 2 1986

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

- 3/25/86: Young Wireline Service set permanent bridge plug at 2600' (KB); perforated 3 holes for squeeze at 2595' (KB).
- 3/26/86: Halliburton recemented 4 1/2" casing w/100 sks class A cement; displaced wiper plug to 2589' (KB).
- 4/1/86: Young Wireline perforated Berea Sandstone 2455'-60' (KB) with 14 holes. Halliburton crosslink polymer fractured zone with 500 gal of 15% HCL acid, 2000 gal methanol, 45000# 20/40 sand, 207,000 scf nitrogen, 613 bbl water, 12 minute rate; 2700 psig breakdown, 1850 psig avg. treating pressure; ISIP: 1210 psig.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BO OM 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: K A P

Date: April 29, 1986

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."

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

- 7/20/82: Oriskany Sandstone Perforation:
5069'-5079' with 4 shots/fl, 40 holes, .50" diameter
- 7/30/82 Oriskany Sandstone Frac:
Treatment pressure was 4100 psig; instantaneous shut in pressure was 3600 psig; 15,000# 80/100 sand; 45,000# of 20/40 sand; total fluid: 906 BBL water and 146,000 SCF nitrogen.
- 1/18/83: Hartwell Wireline set permanent bridge plug in 4 1/2" casing at 4350'(KB); perforated Brown Shale selectively from 4139-4374'(KB), 20 holes.
- 1/21/83: B.J. HUGHES foam fractured Brown Shale w/60,000# of 20/40 mesh sand; 500 gal 15% HCL acid; 1,218,000 SCF of nitrogen; 350 bbl water.

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	100	
Shaly Sandstone			100	235	
Sandstone			235	265	
Sandstone & Shale			265	1103	
Sandstone			1103	1197	
Sandstone & Shale			1197	1645	
Limestone			1645	1963	
Sandstone & Shale			1963	2082	
Shale			2082	2430	
el Coffee Shale			2430	2454	
el Berea Sandstone			2454	2463	S/g at 2454'
Shale - USA			2463	3710	S/g at 3500'
el Brown Shale - low H₂O			3710	4273	S/g at 3726', 3752', 4131'
Shale			4273	4654	
Marcellus			4654	4970	S/g at 4700'
Onondaga Limestone			4970	5011	
Oriskany Sandstone			5011	5093	S/g at 5070' x
<u>Helderberg</u>			5093	5163 T.D.	
el - log' top					
Java			4273		
Angda			4422		
Rhinebeck			4654		

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator
By: R. A. P.
Date: January 31, 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."



Date: June 18, 1982
Operator's Well No. KEM #235
API Well No. 47 035 1731
State County Permit

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

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

LOCATION: Elevation: 757 Watershed: Mill Creek
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 Clara I. Staats
Address South Ritchie Ravenswood, WV

COAL OPERATOR None
Address _____

ACREAGE 272

COAL OWNER(S) WITH DECLARATION ON RECORD:

SURFACE OWNER Enoch Staats

Name Same as minerals

Address 202 Edgewood

Address _____

Ripley, WV 25271

Name _____

ACREAGE 272

Address _____

FIELD SALE (IF MADE) TO:

Name _____

Address _____

Address _____

RECEIVED

JUN 22 1982

OIL AND GAS DIVISION
WV DEPARTMENT OF MINES

OIL & GAS INSPECTOR TO BE NOTIFIED

COAL LESSEE WITH DECLARATION ON RECORD:

Name Richard Morris

Name _____

Address P. O. Box 372

Address _____

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 January 11, 1982, to the undersigned well operator from Clara Staats

(If said deed, lease, or other contract has been recorded:)

Recorded on _____, 19____, in the office of the Clerk of the County Commission of Jackson County, West Va., in Lease Book 168 at page 542. 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

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, 5156 feet Rotary X / Cable tools /

Approximate water strata depths: Fresh, 257 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"					350'	350'	150 sks class A (to surface)
Coal								Sizes
Intermediate	7"					2343	2343	65 sks 50/50 pozmix 100 sks class A
Production	4 1/2"					5156	5156	225 sks 50/50 pozmix set
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 3-2-83

BY [Signature]

[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

FILE COPY



1) Date: April 5, 19 84
 2) Operator's Well No. KEM-235
 3) API Well No. 47 - 035 - 1731-FRAC
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas
 B (If "Gas", Production / Underground storage / Deep / Shallow)
 5) LOCATION: Elevation: 757 Watershed: Mill Creek
 District: Ripley County: Jackson Quadrangle: Ripley
 6) WELL OPERATOR KEMAS Kaiser Exp & Mining Co. 7) DESIGNATED AGENT KA Pryce
 Address P. O. Box 8 Address Same
Ravenswood, WV 26164
 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name J. Tephabock
 Address Ripley, WV 25271
 9) DRILLING CONTRACTOR: Name Kaiser Drilling Rig #1
 Address Ravenswood, WV 26164
 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) Squeeze 4 1/2" csg; treat Berea; isolate Shale, Berea
 11) GEOLOGICAL TARGET FORMATION, Berea Sandstone with tubing & packer
 12) Estimated depth of completed well, 4350' (PBD) feet
 13) Approximate trata depths: Fresh, 200 feet; salt, 800 feet.
 14) Approximate coal seam depths: None Is coal being mined in the area? Yes / No

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									Kinds <u>None</u>
Fresh water	<u>10 3/4</u>	<u>H</u>	<u>40.50</u>	<u>X</u>		<u>308' (KB)</u>	<u>308' (KB)</u>	<u>200 sx Neat</u>	
Coal								<u>65 sks Pozmix</u>	Sizes <u>-</u>
Intermediate	<u>7</u>	<u>K</u>	<u>20</u>	<u>X</u>		<u>2352' (KB)</u>	<u>2352' (KB)</u>	<u>100 sks Neat</u>	
Production	<u>4 1/2</u>	<u>N</u>	<u>11.60</u>	<u>X</u>			<u>5148' (KB)</u>	<u>300 sks Pozmix</u>	
Tubing									
Liners									Perforations:
									Top <u>4139</u> Bottom <u>4374' (KB)</u>

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-035-1731-FRAC

Date May 16, 19 84

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 May 16, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>BLANKET</u>	Agent: <u>lp</u>	Plat: <u>MH</u>	Casing: <u>MH</u>	Fee: <u>967-035</u>
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[Signature]
 Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.