



REFERENCE POINTS:  
 N 10° 28' W 266' TO 12" TWIN HICKORY N 17 E S  
 N 65° 41' W 109' TO 18" WHITE OAK

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

FILE NO. 8-60  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1,000'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION DRIVEWAY & RT. 11 INTER.  
ELEV. = 612, 700' S.W. 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 SEPTEMBER 24, 1986  
 OPERATOR'S WELL NO. KEM 715  
 API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 743 WATERSHED STILLWELL HOLLOW  
 DISTRICT HARRIS 2 COUNTY WOOD  
 QUADRANGLE LUBECK 449 009 NW, Belleville  
 SURFACE OWNER WILBERT G. AND CLARA L. HOFMANN ACREAGE 189.69  
 OIL & GAS ROYALTY OWNER WILBERT & CLARA HOFMANN LEASE ACREAGE 195  
 LEASE NO. 1938  
 PROPOSED WORK: DRILL X CONVERT \_\_\_ 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 BEREA ESTIMATED DEPTH \_\_\_\_\_  
 WELL OPERATOR KAISER EXPLORATION & MINING CO. DESIGNATED AGENT R.A. PRYCE  
 ADDRESS P.O. BOX 8, RAVENSWOOD, W.V. 26164 ADDRESS P.O. BOX 8, RAVENSWOOD, W.V. 26164

NOV 24 1986

465

6-6 New England (296)

FORM IV-6 (8-78)  
 H.T. HALL

COUNTY NAME  
 PERMIT

LONGITUDE 81° 42' 30"  
 13 850'

IV-35  
(Rev 8-81)

**RECEIVED**  
DEC 24 1986

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY



State of West Virginia  
Department of Mines  
Oil and Gas Division

Date December 18, 1986

Operator's

Well No. KEM #715

Farm Hofmann

API No. 47 - 107 - 1408

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: 743 Watershed Stillwell Hollow

District: Harris County Wood Quadrangle Lubeck

COMPANY KAISER EXPLORATION AND MINING COMPANY

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

DESIGNATED AGENT R. A. Pryce

ADDRESS same

SURFACE OWNER Wilbert & Clara Hofmann

ADDRESS Rt. 1 Box 46, New England, WV

MINERAL RIGHTS OWNER same

ADDRESS same

OIL AND GAS INSPECTOR FOR THIS WORK Glenn

Robinson ADDRESS Rt. 1, Mineral Wells, WV

PERMIT ISSUED 11/19/86

DRILLING COMMENCED 12/08/86

DRILLING COMPLETED 12/12/86

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.			
13-10"			
9 5/8			
8 5/8			
7	257	257	100 sks Class A
5 1/2			
4 1/2	1971	1971	175 sks Class A
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Berea Sandstone Depth 1950/1952 feet

Depth of completed well feet Rotary / Cable Tools

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

Coal seam depths: N/A Is coal being mined in the area? NO

OPEN FLOW DATA

Producing formation Berea Sandstone Pay zone depth 1950/1952 feet

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

Final open flow 400 (est.) Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure 800 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 hours

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

(Continue on reverse side)

JAN 12 1987

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

12/17/86 - Young's Wireline perf Berea with 16 holes from 1950 - 1952.

12/18/86 - Halliburton foam frac Berea Sandstone with 45,000 lbs 20/40 sand; 15,000 lbs 10/20 sand; 308 bbls fluid; 626 MSCF of N<sub>2</sub>; and ISIP: at 1150 psig.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fre and salt water, coal, oil and g
Shale and Siltstone			0	123	
Sand			123	172	
Shale and Siltstone			172	440	
Sand			440	534	
Shale and Siltstone			534	1020	
Sand			1020	1049	
Shale			1049	1150	
Sand			1150	1198	
Shale			1198	1256	
Sand			1256	1330	
Shale			1330	1440	
Salt Sands			1440	1584	
Shale			1584	1930	
Coffee Shale (Sunbury)			1930	1947	
Berea Sand			1947	1950	
Shale			1950	2001	
Total Depth			2001		

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY

Well Operator

By: R. A. P.

Date: December 19, 1986

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic detailed analytical record of all formations, including

(Obverse)



- 1) Date: November 14, 1986
- 2) Operator's Well No. KEM #715
- 3) API Well No. 47-107-1408  
State County Permit

7185  
**RECEIVED**  
NOV 19 1986

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

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

- 4) WELL TYPE: A Oil  / Gas  / B (If "Gas", Production  / Underground storage  / Deep  / Shallow )
- 5) LOCATION: Elevation: 743' Watershed: Stillwell Hollow  
District: Harris 425 2 County: Wood Quadrangle: Lubeck 449
- 6) WELL OPERATOR: Kaiser Exploration and Mining Company CODE: 25650 7) DESIGNATED AGENT R. A. Pryce  
Address P. O. Box 8 Ravenswood, WV 26164 Address Same
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED: Name Glen Robinson Address #1 Mt. Pleasant Estates Mineral Wells, WV
- 9) DRILLING CONTRACTOR: Name Unknown Address \_\_\_\_\_
- 10) PROPOSED WELL WORK: Drill  / Drill deeper  / Redrill  / Stimulate  / Plug off old formation  / Perforate new formation  / Other physical change in well (specify) \_\_\_\_\_
- 11) GEOLOGICAL TARGET FORMATION, Berea Sandstone 395
- 12) Estimated depth of completed well, 1995' feet
- 13) Approximate strata depths: Fresh, \_\_\_\_\_ feet; salt, \_\_\_\_\_ feet.
- 14) Approximate coal seam depths: \_\_\_\_\_ 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
Fresh water	7"			X		250	250	cement to surface	Per Rule 15.05
Coal									Sizes
Intermediate									
Production	4 1/2"			X		1995	1995	100 sks 50/50 cement mix	as required by rule 15.01
Tubing									Perforations:
Lin.									Top Bottom

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-107-1408

Date November 20 19 86

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 November 20, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <u>ASB</u>	Plat: <u>AS</u>	Casing: <u>AS</u>	Fee: <u>969840</u>	WPCR: <u>AS</u>	SWP: <u>AS</u>	Other: _____
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NOTE: Keep one copy of this permit posted at the drilling location.

*[Signature]*  
Director, Division of Oil and Gas