

REFERENCE POINTS:

N43°31'W 149' TO N.E. CORNER OF BARN
 S1°09'W 298' TO POWER POLE #95-121


N 17 E 5

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

FILE NO. 8-8
 DRAWING NO. _____
 SCALE 1" = 1,000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION INT. W.V. RT. 11 AND 11/5
ELEV. = 744, 1170' SOUTH 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 <u>SEPTEMBER 24, 1984</u> OPERATOR'S WELL NO. <u>KEM 619</u> API WELL NO. _____	
WELL TYPE: OIL ___ GAS <u>X</u> LIQUID INJECTION ___ WASTE DISPOSAL ___ (IF "GAS,") PRODUCTION <u>X</u> STORAGE ___ DEEP ___ SHALLOW <u>X</u>			<u>47</u> - <u>107</u> - <u>1324</u> STATE COUNTY PERMIT	
LOCATION: ELEVATION <u>742</u> WATERSHED <u>WHITES HOLLOW</u> DISTRICT <u>HARRIS 2</u> COUNTY <u>WOOD</u> QUADRANGLE <u>LUBECK 449</u> Belleville <u>009</u> NW		COUNTY NAME		
SURFACE OWNER <u>ROY WILDMAN, ROBERT AND LUCILLE V. WILDMAN</u> ACREAGE <u>165.25</u> OIL & GAS ROYALTY OWNER <u>ROY WILDMAN, ET. AL.</u> LEASE ACREAGE <u>165.25</u> LEASE NO. <u>86-02-1948</u>				
PROPOSED WORK: DRILL <u>X</u> CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE <u>X</u> PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____		PERMIT		
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ TARGET FORMATION <u>DEVONIAN BROWN SHALE</u> ESTIMATED DEPTH <u>4057'</u>				
WELL OPERATOR <u>KAISER EXPLORATION AND MINING CO.</u> DESIGNATED AGENT <u>R. A. PRYCE</u> ADDRESS <u>P.O. BOX 8, RAVENSWOOD, W.V. 26164</u> ADDRESS <u>P.O. BOX 8, RAVENSWOOD, W.V. 26164</u>		OCT 22 1984		

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State of West Virginia
Department of Mines
Oil and Gas Division
OIL & GAS DIVISION
DEPT. OF MINES
WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

Date 1/2/85
Operator's
Well No. KEM 619
Farm Wildman
API No. 47 - 107 - 1324

WELL TYPE: Oil / Gas x / Liquid Injection / Waste Disposal /
(If "Gas," Production x / Underground Storage / Deep / Shallow x /)

LOCATION: Elevation: 742' Watershed White's Hollow of Ohio River
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 Roy Wildman, et al
ADDRESS Rt. 1 New England, WV 26154
MINERAL RIGHTS OWNER Same
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK Glen
Robinson ADDRESS Mineral Wells, WV
PERMIT ISSUED 10/17/84
DRILLING COMMENCED 10/26/84
DRILLING COMPLETED 10/30/84

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10 ^{3/4}	259' KB	259' KB	to surface
9 5/8			
8 5/8			
7		2026' KB	175 sx 50/50 poz 100 sx class A
5 1/2			
4 1/2			
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Berea Sandstone Depth 1950 feet
Depth of completed well 2040 feet Rotary x / Cable Tools
Water strata depth: Fresh 200 feet; Salt N/A feet
Coal seam depths: N/A Is coal being mined in the area? NO
Drilled on fluid not known.

OPEN FLOW DATA

Producing formation Berea Sandstone Pay zone depth 1950-1953 feet
Gas: Initial open flow 0 Mcf/d Oil: Initial open flow 0 Bbl/d
Final open flow 200 Mcf/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests hours
Static rock pressure 900 psig (surface measurement) after 48 hours shut in
(If applicable due to multiple completion--)
Second producing formation None 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

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(Continue on reverse side)

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

11/07/84 Young's Wireline perf Berea from 1950' to 1953' (KB), 12 holes.
 11/08/84 BJ Hughes foam frac Berea Sandstone. 1670 psig breakdown, 1544 psig treatment, #45,000 of 20/40 sand, 15 BPM rate, 650,000 scf nitrogen, 357 bbl fluid, 1130 psig ISIP.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Soil and Shale			0	113	
Sand			113	170	
Shale			170	295	
Sand			295	320	
Shale and Siltstone			320	444	
Sand			444	528	
Shale and Siltstone			528	800	
Sand			800	822	
Shale			822	900	
Sand			900	933	
Shale			933	1150	
Dunkard Sands			1150	1342	
Shale			1342	1440	
Salt Sands			1440	1582	
Shale			1582	1932	
Coffee Shale (Sunbury)			1932	1950	
Berea Sandstone			1950	1953	
Shale			1953	2045	
TD:			2045		

(Attach separate sheets as necessary)

Kaiser Exploration and Mining Company
Well Operator

By: Ronald W. Duest

Date: 1/2/85

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 those encountered in the drilling of a well."

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1) Date: October 1, 1984
 2) Operator's Well No. KEM #619
 3) API Well No. 47 State 107 County 1324 Permit

**OIL & GAS DIVISION
DEPT. OF MINES**

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

- 4) WELL TYPE: A Oil _____ / Gas X /
 B (If "Gas", Production X / Underground storage _____ / Deep _____ / Shallow X /)
- 5) LOCATION: Elevation: 742' Watershed: Whites Hollow of Ohio River - (0)
 District: Harris County: Wood Quadrangle: Lubeck
- 6) WELL OPERATOR Kaiser Exploration and Mining Co. 7) DESIGNATED AGENT R. A. Pryce
 Address P. O. Box 8 Address Same
Ravenswood, WV 26164
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED:
 Name Jerry Tephabock / GLENN ROBINSON
 Address Rt. 1, Box 101A - Missnaulls, W.V. / Ripley, WV 25271 - 489-9162
- 9) DRILLING CONTRACTOR:
 Name Clint Hurt
 Address P. O. Box 388
Elkview, WV
- 10) PROPOSED WELL WORK: Drill X / Drill deeper _____ / Redrill _____ / Stimulate X /
 Plug off old formation _____ / Perforate new formation _____
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Devonian Brown Shale
- 12) Estimated depth of completed well, 4057 feet
- 13) Approximate trata depths: Fresh, _____ feet; salt, _____ feet.
- 14) Approximate coal seam depths: _____ Is coal being mined in the area? Yes _____ / No X /
- 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	10 3/4"			X		250	250	325 sks Class A to surface	
Coal									Sizes
Intermediate	7"			X		1697	1697	65 sks of 50/50 pozmix	
Production	4 1/2"			X		4057	4057	100 sks class A	
Tubing								225 sks 50/50 pozmix	
Liners									Perforations:
									Top Bottom

**OFFICE USE ONLY
DRILLING PERMIT**

Permit number 47-107-1324 Date October 17 1984

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 October 17, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>86</u>	Agent: <u>MU</u>	Plat: <u>MU</u>	Casing: <u>MU</u>	Fee: <u>968-376</u>
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Margaret J. Hassin
 Administrator, Office of Oil and Gas

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

File