

DAVIS

EATON

HOFMANN

HOFMANN
22Ac.

W-572(01)



1.285
1.73w

PROPOSED
LOCATION

W. V. SEC. RT. 9/16

W-206(02)

W-193(01)

MIDDLE

FORK

LEE

CREEK

W-203(02)

ROSIER
8.88Ac.

HOFMANN

HOFMANN

MILLS'

HOFMANN

REFERENCE POINTS:
S 80° 49' W 55' TO W-1231
S 66° 53' E 294' TO WATER
WELL (ELEV. = 634).

W-251(02)

NISE 7

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

FILE NO. B-31
DRAWING NO. _____
SCALE 1" = 500'
MINIMUM DEGREE OF
ACCURACY 1:200
PROVEN SOURCE OF
ELEVATION ROAD INTERSECTION
890' WEST OF LOCATION, ELEV. 634

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 REGU-
LATIONS ISSUED AND PRESCRIBED BY THE DEPART-
MENT 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 MAY 14, 19 85
OPERATOR'S WELL NO. KEM 645
API WELL NO.

47 - 107 - 1368
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
(IF "GAS,") PRODUCTION STORAGE _____ DEEP _____ SHALLOW

LOCATION: ELEVATION 646 WATERSHED MIDDLE FORK OF LEE CREEK

DISTRICT HARRIS 2 COUNTY WOOD

QUADRANGLE LUBECK 449 Belleville 009 NC4

SURFACE OWNER DAVID D. STEELE ACREAGE 100

OIL & GAS ROYALTY OWNER HAROLD KETCHUM LEASE ACREAGE 285

LEASE NO. 90-04-873

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 BEREA SANDSTONE ESTIMATED DEPTH 2,000'

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

465

JUN 03 1985

COUNTY NAME

PERMIT

IV-35
(Rev 8-81)

RECEIVED
AUG 8 - 1985



State of West Virginia
Department of Mines
Oil and Gas Division
DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Date July 26, 1985
Operator's
Well No. KEM 645
Farm Ketchum
API No. 47 - 107 - 1368

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: 646' Watershed Middle Fork of Lee Creek
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 David D. Steele
ADDRESS Rt. 2, Belleville, WV
MINERAL RIGHTS OWNER Harold Ketchum
ADDRESS Hockingport, OH 45739
OIL AND GAS INSPECTOR FOR THIS WORK Glen
Robinson ADDRESS Mineral Wells, WV 26150
PERMIT ISSUED 5/15/85
DRILLING COMMENCED 6/24/85
DRILLING COMPLETED 6/30/85

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cord.			
13-10"			
9 5/8			
8 5/8			
7	7"	276'	100 sks class A
5 1/2			
4 1/2	4 1/2"	1981'	180 sks 50/50 poz
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Berea Sandstone Depth 2000 feet
Depth of completed well 1985 feet Rotary x / Cable Tools ___
Water strata depth: Fresh -- feet; Salt -- feet
Coal seam depths: -- Is coal being mined in the area? NO
Drilled on fluid not known.

OPEN FLOW DATA

Producing formation Berea Pay zone depth 1915-1925 feet
Gas: Initial open flow -- 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 4 hours
Static rock pressure 875 psig (surface measurement) after 72 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

AUG 19 1985
(Continue on reverse side)

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

7/03/85 McCullough perf the Berea from 1915' to 1925' with 31 (.39") shots.
 7/11/85 NOWSCO on location to foam frac the Berea. Broke down formation using foam at 2200 psig. Max. pressure: 1680 psig. Ran a 200 bbl foam pad. Treated with 75 quality foam at 1640 psig. Used 45,000# 20/40 sand and 15,000# 10/20 sand at 4 - 8 ppg concentrations. Water rate: 5 bbl/min; nitrogen: 125 mscf/min; foam rate: 20 bbl/min; total nitrogen: 681,250 scf; total sand laden fluid: 260 bbl; total fluid: 300 bbl; ISIP: 1300 psig; 5 min SIP: 1100 psig.

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	65	
Sand			65	110	
Shale and Siltstone			110	406	
Sand			406	490	
Shale and Siltstone			490	874	
Dunkard Sands			874	1090	
Shale and Siltstone			1090	1215	
Sand			1215	1262	
Shale			1262	1334	
Salt Sands			1334	1560	
Shale			1560	1896	
Coffee Shale (Sunbury)			1896	1916	
Berea Sandstone			1916	1928	S/Oil, S/Gas
Shale			1928	1952	
TOTAL DEPTH:			<u>1952</u>		

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator

By: R. A. P.

Date: July 26, 1985

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."



1) Date: May 15, 19 85
2) Operator's Well No. KEM #645
3) API Well No. 47 -107-1368
State County Permit

RECEIVED

MAY 20 1985

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION

APPLICATION FOR A WELL WORK PERMIT

OIL & GAS DIVISION

- 4) DEPT: DEPT. OF MINES Oil Gas
B (If "Gas", Production Underground storage Deep Shallow)
- 5) LOCATION: Elevation: 646' Watershed: Middle Fork of Lee Creek
District: Harris County: Wood Quadrangle: Lubeck
- 6) WELL OPERATOR Kaiser Exploration and Mining Co. DESIGNATED AGENT R. A. Pryce
Address P. O. Box 8 25350 Address Same
Ravenswood, WV 26164
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Glen Robinson
Address Mt. Pleasant Estate #6
Mineral Wells, WV 26150
- 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
- 12) Estimated depth of completed well, 2000' 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'	100 sks class A	to surface
Coal									Sizes
Intermediate									
Production	4 1/2"			X		2000'	2000'	65 sks 50/50 pozmix 100 sks class A	Deaths set
Tubing									
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY

DRILLING PERMIT

Permit number 47-107-1368

May 28 1985
Date

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 28, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	<input checked="" type="checkbox"/> Agent:	Plat:	Casing:	Fee:
86	AIB	MW	MW	968817

Margaret J. Haise
Administrator, Office of Oil and Gas

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

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

File