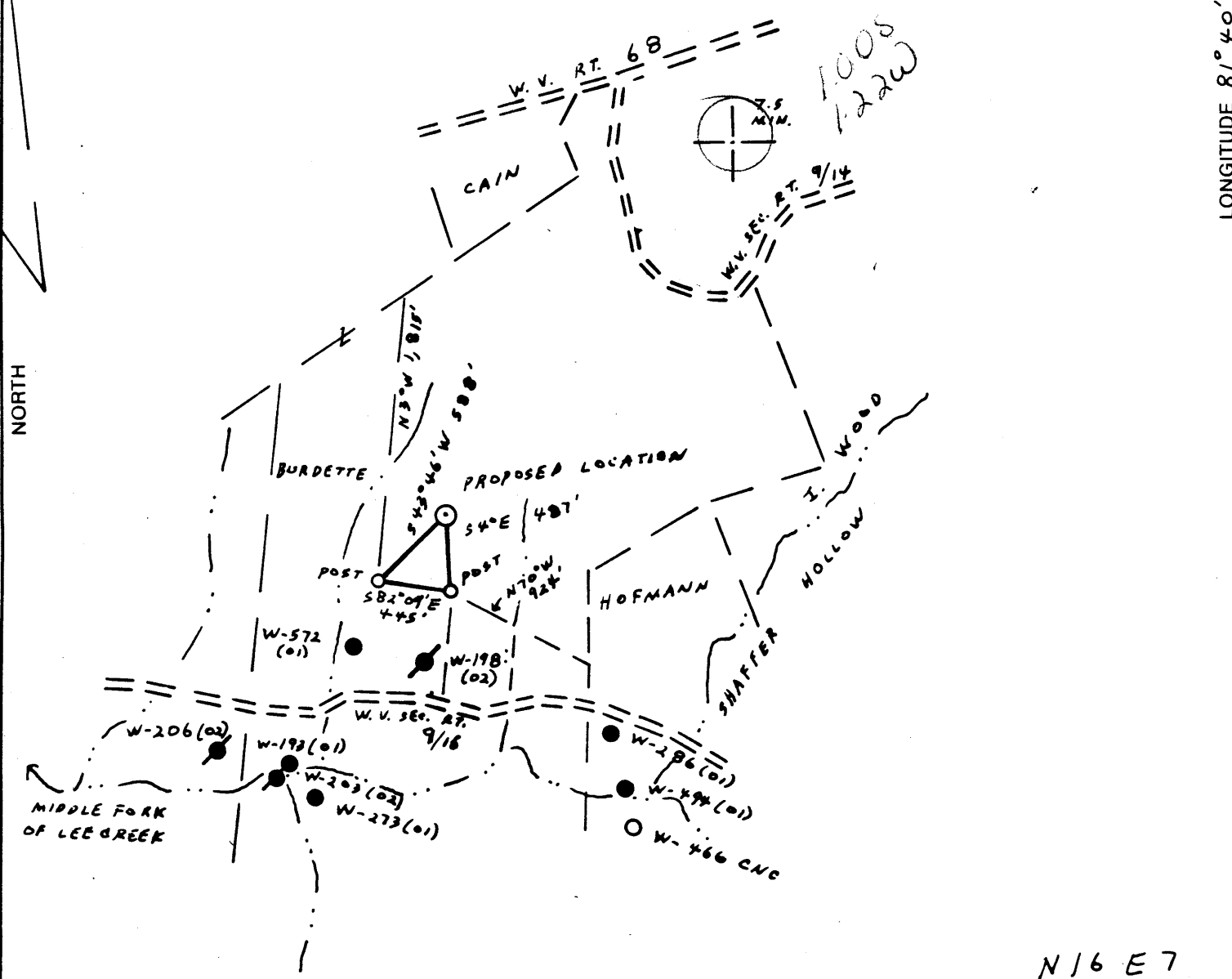


6,475'

REFERENCE POINTS: CODE CARD PLOT LATITUDE 39°10'00"

S35°03'E 221' TO 12" PINE
S71°26'W 184' TO 14" ELM

1005
122W



NORTH

LONGITUDE 81°04'00"

N16 E 7

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

FILE NO. 8-5
 DRAWING NO. _____
 SCALE 1"=1,000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION ROAD INTERSECTION
ELEV. = 654, 1230' 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 SEPT. 19, 19 84
 OPERATOR'S WELL NO. KEM 614
 API WELL NO. _____

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ STATE COUNTY PERMIT
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 828 WATERSHED MIDDLE FORK OF LEE CREEK
 DISTRICT HARRIS 2 COUNTY WOOD
 QUADRANGLE LUBECK 449 Bellville 15' WCY
 SURFACE OWNER CHESTER A. AND EDITH C. FLEAK 609 ACREAGE 119.74
 OIL & GAS ROYALTY OWNER CHESTER A. AND EDITH C. FLEAK LEASE ACREAGE 119.74
 LEASE NO. 84-12-872

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 DEVONIAN BROWN SHALE ESTIMATED DEPTH 4338' NOV 13 1984
 WELL OPERATOR KAISER EXPLORATION AND 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

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

COUNTY NAME PERMIT

465



IV-35
(Rev 8-81)

State of West Virginia
Department of Mines
Oil and Gas Division

Date March 4, 1985
Operator's
Well No. KEM # 614
Farm C.A. Fleak
API No. 47 - 107 - 1326

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: 828 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 Chester & Edith Fleak
ADDRESS Rt. 1, Box 162C, Belleville, WV 26133
MINERAL RIGHTS OWNER Same
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK Jerry
Tephabock ADDRESS Rt. 1 Box 101A Ripley, WV
PERMIT ISSUED 12/7/84
DRILLING COMMENCED 11/9/84
DRILLING COMPLETED 11/30/84
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"	10 3/4"	263'	175 sks Class A
9 5/8			
8 5/8			
7	7"	2187	400 sks Class A
5 1/2			
4 1/2			
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Brown Shale Depth 4338 feet
Depth of completed well 2200 feet Rotary x / 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
Drilled on fluid not known.

OPEN FLOW DATA
Producing formation Berea Sandstone Pay zone depth 2118-2122 feet
Gas: Initial open flow (25) Mcf/d Oil: Initial open flow (1) Bbl/d
Final open flow ? Mcf/d Final open flow -- Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 575 psig (surface measurement) after 48 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

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

- 11/15/84 Young's Wireline perforated the Berea from 2118' to 2122' with 16 shots.
- 11/27/84 Halliburton and BJ Hughes 75 quality foam frac Berea with #45,000 of 20/40 sand, #15,000 of 10/20 sand, 639 mcsf N₂, 322 bbl fluid, ISIP: 1410 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 and Siltstone			0	608	All depths taken from KB. S/Oil
Sand			608	657	
Shale and Siltstone			657	1280	
Sand			1280	1295	
Shale			1295	1405	
Sand			1405	1515	
Shale			1515	1596	
Salt Sands			1596	1770	
Shale			1770	2102	
Coffee Shale (Sunbury)			2102	2122	
Berea Sandstone			2122	2126	
Shale			2126	2200	
Total Depth:			2200		

(Attach separate sheets as necessary)

Kaiser Exploration and Mining Company
Well Operator

By: K. A. P.

Date: 03/04/85

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 all, encountered in the drilling of a well."

RECEIVED

OCT 11 1984



- 1) Date: October 1, 19 84
 2) Operator's Well No. KEM #614
 3) API Well No. 47 - 107 - 125
 State County Permit

1326

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

OIL & GAS DIVISION

DEPT. OF MINES

- 4) WELL TYPE: A Oil / Gas X /
 B (If "Gas", Production X / Underground storage / Deep / Shallow X)
 5) LOCATION: Elevation: 828 / Watershed: Middle Fork of Lee Creek
 District: Harris / County: Wood / Quadrangle: Lubeck
 6) WELL OPERATOR Kaiser Exploration and Mining Company 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
 Address Rt. 1, Box 101A
Ripley, WV 25271
 9) DRILLING CONTRACTOR: Name Clint Hurt
 Address P. O. Box 8
Elkview, WV
 10) PROPOSED WELL WORK: Drill X / Drill deeper / Redrill / Stimulate
 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, 4338 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	10 3/4			X		250	250	325 sks class A to surface	
Coal								65 sks 50/50 pozmix	Sizes
Intermediate	7"			X		2175	2175	100 sks class A	
Production	4 1/2"			X		4338	4338	225 sks 50/50 pozmix	Depths
Tubing									
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-107-125 ¹³²⁶ / Date November 7, 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 November 7, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>86</u>	Agent: <u>MHJ</u>	Plat: <u>TS</u>	Casing: <u>TS</u>	Fee: <u>968.376</u>
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T. H. Pryce
 Administrator, Office of Oil and Gas