

ward CSD

39° 10' - 15'

9,825'

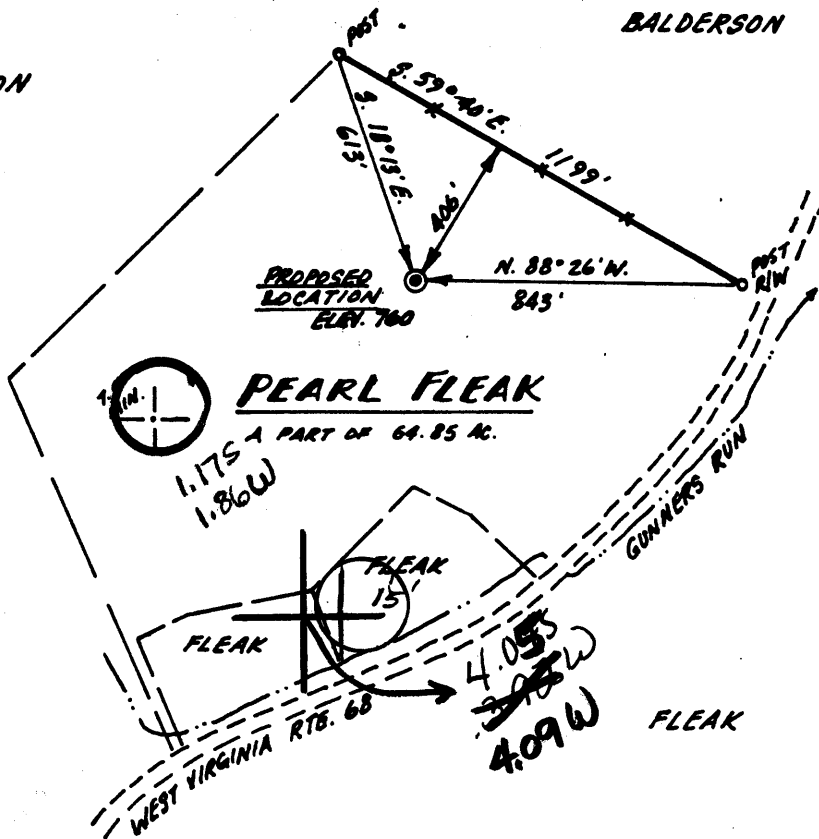
LATITUDE

39° 12' 30"

39° 15' - 15'

BALDERSON

BALDERSON



81° 35' - 15'

LONGITUDE 81° 37' 30"

6,150'

81° 35' - 15'

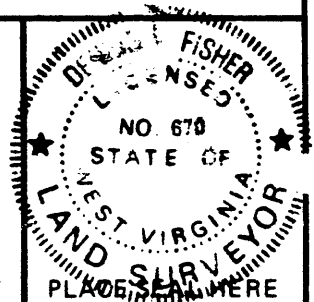
NOTE: THERE ARE NO WELLS WITHIN 2400 FT. OF PROPOSED LOC.

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION SPOT ELEV. 679  
AT RTE. 68

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) Dennis L. Fisher

R.P.E. \_\_\_\_\_ L.L.S. 670



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

FORM IV-6 (8-78)



DATE OCTOBER 27, 1981  
 OPERATOR'S WELL NO. KEM 136  
 API WELL NO. \_\_\_\_\_  
47 - 107 - 1184  
 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 760 WATER SHED GUNNERS RUN  
 DISTRICT HARRIS COUNTY WOOD  
 QUADRANGLE LUBECK Belleme 15' NG  
 SURFACE OWNER PEARL FLEAK ACREAGE 64.85  
 OIL & GAS ROYALTY OWNER PEARL FLEAK LEASE ACREAGE 64.85  
 LEASE NO. \_\_\_\_\_

PROPOSED WORK: DRILL X 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 DRISKANY ESTIMATED DEPTH 4495'  
 WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY  
 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164

DEC 4 1981



State of West Virginia  
Department of Mines  
Oil and Gas Division

Date January 28, 1983  
Operator's  
Well No. KEM #136  
Farm Pearl Fleak  
API No. 47 - 107 - 1184

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 X / Shallow    /)

LOCATION: Elevation: 760' Watershed Gunner's Run  
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 P. O. Box 8, Ravenswood, WV 26164

SURFACE OWNER Pearl Fleak

ADDRESS Rt. 2, Box 98, New England, WV

MINERAL RIGHTS OWNER Same

ADDRESS   

OIL AND GAS INSPECTOR FOR THIS WORK Deo

Mace ADDRESS Rt. 1, Box 65, Sandridge, WV

PERMIT ISSUED November 16, 1981

DRILLING COMMENCED November 18, 1981

DRILLING COMPLETED November 28, 1981

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 Cord.			
10 3/4" <del>12x10</del>	262(KB)	262(KB)	(to surface) 150 sks class
9 5/8			
8 5/8			
7	1941(KB)	1941(KB)	65 sks pozmix 100 sks class A
5 1/2			
4 1/2		4494(KB)	225 sks pozmix
3			
2			
Liners used	None		

GEOLOGICAL TARGET FORMATION Oriskany Sandstone Depth 4421 feet

Depth of completed well 4527 feet Rotary X / Cable Tools   

Water strata depth: Fresh -- feet; Salt -- feet

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

OPEN FLOW DATA

Producing formation Oriskany Sandstone Pay zone depth 4421 feet

Gas: Initial open flow 0 Mcf/d Oil: Initial open flow 0 Bbl/d

Final open flow uneconomic Mcf/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests N/A hours

Static rock pressure 1375 psig (surface measurement) after 24 hours shut in  
(If applicable due to multiple completion--)

PLUGGED BACK PERMANENTLY TO  
DEVONIAN BROWN SHALE

Second producing formation Brown Shale Pay zone depth 3595 feet

Gas: Initial open flow 0 Mcf/d Oil: Initial open flow 0 Bbl/d

Final open flow 200 Mcf/d Oil: Final open flow 0 Bbl/d

Time of open flow between initial and final tests N/A hours

Static rock pressure 875 psig (surface measurement) after 36 hours shut in

MAY 29 1981

[08-78]

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

- 12/2/81: Basin Surveys perforated Oriskany at 4421-4427(KB) and 4435-4439(KB), 4 holes/ft, 40 holes; 3 1/2" strip.
- 12/3/81: Dowell, BJ Hughes hydrofractured Oriskany w/15,000# 80/100 sand; 45,000# 20/40 sand; 500 gal 28% HCL Acid; 341,000 SCF nitrogen; 845 BBL water; breakdown was 3000 psig; avg. treating rate was 29 BPM; avg. pressure was 2500 psig; 1300 psig instantaneous shut in pressure.
- 11/16/82: Set 4 1/2" <sup>Huron</sup> permanent bridge plug at 3850' (KB); perforated Brown Shale from 3595-3750(KB), 24 holes (Basin Surveys).
- 12/2/82: Nowco Well Service foam fractured Brown Shale w/60,000# 20/40 mesh sand 1,062,000 SCF nitrogen; 500 gal 15% HCL acid.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including Indication of all fr and salt water, coal, oil and
Soil & Shale			0	138	
Siltstone			138	221	
Sand			221	268	
Shale			268	332	
Sand			332	346	
Shale			346	390	
Siltstone			390	478	
Sand			478	482	
Shale & Siltstone			482	598	
Sand & Shale			598	862	
Sand			862	904	
Shale			904	1130	
Sand			1130	1138	
Shale			1138	1146	
Sand			1146	1158	
Shale			1158	1180	
Sand			1180	1189	
Shale			1189	1200	
Sand			1200	1316	
Shale			1316	1440	
Sand			1440	1452	
Shale			1452	1546	
Salt Sand			1546	1694	
Shale			1694	2034	
Coffee Shale (Sunbury)			2034	2058	
Berea Sand			2058	2060	
Shale			2060	3223	
Brown Shale			3223	3751	
Shale			3751	4094	
Marcellus Shale			4094	4323	Gas show @ 3990
Onondaga Lime			4323	4414	Gas show @ 4352, 4356, 4400
Oriskany Sand			4414	4466	Gas show @ 4414, 4425, 4438
Helderberg Lime			4466	4545	Gas show @ 4480
Total Depth			4545		

3595  
2060  
1535

(Attach separate sheets to complete as necessary)

KAISER EXPLORATION AND MINING COMPANY  
Well Operator

By R. A. P.

Its General Manager

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 strata encountered in the drilling of a well."



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

RECEIVED

NOV - 2 1981

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,  
Charleston, W. Va.

Surface Owner Pearl Fleak  
Address Rt. 2, Box 98, New England, WV  
Mineral Owner Same  
Address Same  
Coal Owner Same  
Address Same  
Coal Operator None  
Address \_\_\_\_\_

DATE October 30, 1981  
Company Kaiser Exploration and Mining Company  
Address P. O. Box 8, Ravenswood, WV 26164  
Farm Pearl Fleak Acres 64.85  
Location (waters) Gunners Run  
Well No. KEM #13G Elevation 760  
District Harris County Wood  
Quadrangle Lubeck

THIS PERMIT MUST BE POSTED AT THE WELL SITE

provisions, being in accordance with Chapter 22, \_\_\_\_\_  
the W. Va. Code, the location is hereby approved

for Drilling. This permit shall expire if  
operations have not commenced by 7-16-82

[Signature]  
Deputy Director - Oil & Gas Division

INSPECTOR  
TO BE NOTIFIED Deo Mace  
ADDRESS Rt. 1, Box 65, Sandridge, WV  
PHONE 655-8693

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated December 3 1979 by Pearl & Opal Fleak made to Kaiser Exploration and Mining Company and recorded on the \_\_\_\_\_ day of \_\_\_\_\_ 9, in Wood County, Book 733 Page 457  
 NEW WELL \_\_\_\_\_ DRILL DEEPER \_\_\_\_\_ REDRILL \_\_\_\_\_ FRACTURE OR STIMULATE  
OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days.

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address \_\_\_\_\_ day \_\_\_\_\_ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL  
GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND  
ECONOMIC SURVEY  
P. O. BOX 879  
MORGANTOWN, WEST VIRGINIA 26505  
C-304 - 292-6331

Address  
of  
Well Operator

Very truly yours,  
(Sign Name) [Signature]  
Well Operator  
Kaiser Exploration and Mining Company  
P. O. Box 8  
Street  
Ravenswood  
City or Town  
West Virginia 26164  
State

\*SECTION 3 . . . . If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

47-107-1184

PERMIT NUMBER

PROPOSED WORK ORDER TO X DRILL            DEEPEN            FRACTURE-STIMULATE  
 DRILLING CONTRACTOR: (If Known)            RESPONSIBLE AGENT:             
 NAME Clint Hurt & Associates, Inc. NAME Robert A. Pryce  
 ADDRESS P. O. Box 388, Elkview, WV 25071 ADDRESS P. O. Box 8, Ravenswood, WV 26164  
 TELEPHONE 273-5371 TELEPHONE 273-5371  
 ESTIMATED DEPTH OF COMPLETED WELL: 4495' ROTARY X CABLE TOOLS             
 PROPOSED GEOLOGICAL FORMATION: Oriskany  
 TYPE OF WELL: OIL            GAS X COMB.            STORAGE            DISPOSAL             
 RECYCLING            WATER FLOOD            OTHER           

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LIFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10			
9 - 5/8 10 3/4"	250'	250'	150 sks class A <u>CTS</u>
8 - 5/8			
7	1950'	1950'	65 sks 50/50 pozmix
5 1/2			100 sks class A
4 1/2	4495'	4495'	225 sks class A <u>into 7"</u>
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS            FEET            SALT WATER            FEET             
 APPROXIMATE COAL DEPTHS             
 IS COAL BEING MINED IN THE AREA? None BY WHOM?           

TO DRILL:  
 SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:  
 SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND. ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:  
 OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.  
 OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.  
 Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for            Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.  
 We the            Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

            
 For Coal Company  
            
 Official Title