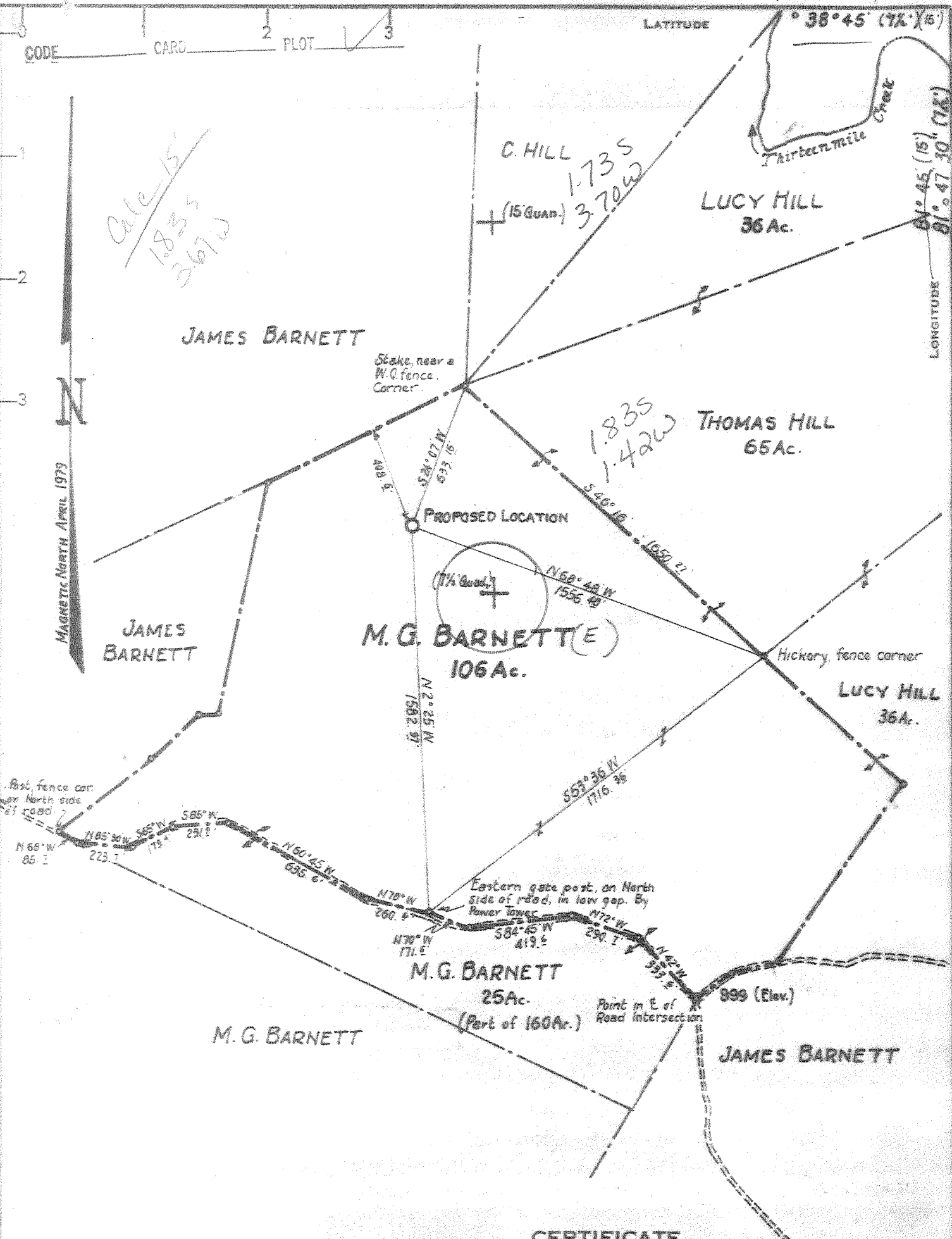


4/18/79



- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

**CERTIFICATE**

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Minimum degree of accuracy is one part in 200

Signed William S. Beverly L.L.S. No. 116

(N.B. No. 116 P. 54)

COMPANY: KAISER EXPLORATION & MINING COMPANY 465

ADDRESS: P.O. Box 8, RAVENSWOOD, W. VA., 26164

FARM: M. G. BARNETT (E)

MAP: \_\_\_\_\_ ACRES: 232 Ac. UNIT (106 Ac.) KEM 5

WELL (FARM) NO: \_\_\_\_\_ SERIAL NO: 139 NE3

ELEVATION (SPIRIT LEVEL): 880.48 738

QUADRANGLE: WINFIELD N.E. (ELMWOOD 1:24,000 QUAD.)

COUNTY: PUTNAM MASON DISTRICT: UNION 9

POINT OF PROVEN ELEVATION: U.S.G.S. DATUM (As Shown above)

FILE NO: \_\_\_\_\_ DRAWING NO: \_\_\_\_\_

DATE: APRIL 5, 1979. SCALE: 1" = 500'

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

WELL LOCATION MAP

FILE NO. 47-053-0196-F

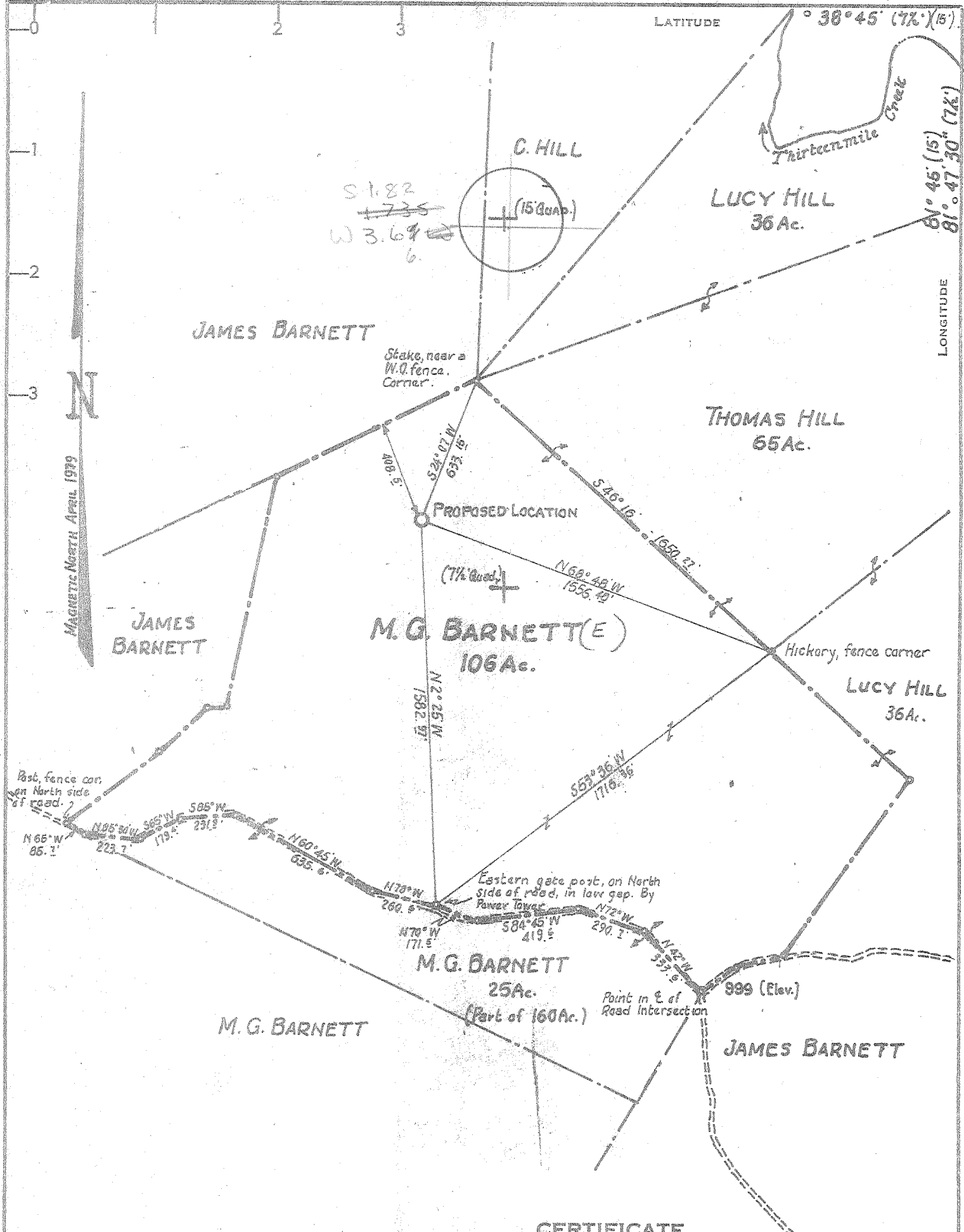
MAR 24 1986

— DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. SCALE 1" TO 24,000'. LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN.

— DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING.

4900' Oriskany DEEP WELL owwo. 6-6 Rock Castle (346)

4/18/79



- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

**CERTIFICATE**

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Minimum degree of accuracy is one part in 200

Signed William S. Gravelly L.L.S. No. 116

(N.B. No. 116 Pg. 54)

COMPANY KAISER EXPLORATION & MINING COMPANY  
 ADDRESS P.O. Box 8, RAYERSWOOD, W. VA., 26164  
 FARM M.G. BARNETT (E)  
 MAP ACRES 232 Ac. UNIT (106 Ac.) KEM 5  
 WELL (FARM) NO. 1 SERIAL NO. \_\_\_\_\_  
 ELEVATION (SPIRIT LEVEL) 880.48'  
 QUADRANGLE WINFIELD N.E. (ELMWOOD I: 24000 QUAD.)  
 COUNTY PUTNAM MASON DISTRICT UNION  
 POINT OF PROVEN ELEVATION U.S.G.S. DATUM (As Shown above)

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON  
 WELL LOCATION MAP  
 FILE NO. 47-053-0196

APRIL 5, 1979. Deep Well 1" = 500'

MAY 22 1979

4900' Oriskany 6-6 Rock Castle (346)



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

**RECEIVED**

FEB 20 1980

**Oil and Gas Division**  
**WELL RECORD**

OIL & GAS DIVISION  
**DEPT. OF MINES**  
Rotary Oil  
Cable \_\_\_\_\_ Gas X  
Recycling \_\_\_\_\_ Comb. \_\_\_\_\_  
Water Flood \_\_\_\_\_ Storage \_\_\_\_\_  
Disposal \_\_\_\_\_ (Kind)

Quadrangle Elmwood  
Permit No. 47-053-0196

Company <u>Kaiser Exploration and Mining Company</u>	Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Address <u>P. O. Box 8, Ravenswood, WV 26164</u>	Size			
Farm <u>McKinley Grant Barnette Acres 106</u>	20-16			
Location (waters) <u>Thirteen Mile Creek</u>	Cond.			
Well No. <u>KEM 5</u> Elev. <u>880.48</u>	<u>13-10" 10 3/4' 245' (KB)</u>	<u>Same</u>	<u>Same</u>	<u>100 sx class A (To surface) (Halliburton)</u>
District <u>Union</u> County <u>Mason</u>	<u>9 5/8</u>			
The surface of tract is owned in fee by <u>McKinley Grant Barnette</u>	<u>8 5/8</u>			<u>65 sx pozmix</u>
Address <u>119 Ohio River Road, Pt. Pleasant, WV</u>	<u>7</u>	<u>2640' (KB)</u>	<u>Same</u>	<u>100 sx class A (Dowell)</u>
Mineral rights are owned by <u>Same</u>	<u>5 1/2</u>			
Address _____	<u>4 1/2</u>	<u>4975' (KB)</u>	<u>Same</u>	<u>225 sx Pozmix (Dowell)</u>
Drilling Commenced <u>7/19/79</u>	<u>3</u>			
Drilling Completed <u>8/4/79</u>	<u>2</u>		<u>4890' (KB)</u>	
Initial open flow <u>13,440</u> cu. ft. <u>--</u> bbls.	Liners Used			
Final production <u>500 M</u> cu. ft. per day <u>--</u> bbls.				
Well open <u>18</u> hrs. before test <u>1780</u> RP.				

Well treatment details: Attach copy of cementing record.  
Perforated the Oriskany S.S. from 4884' - 4888' (K.B.) w/4 holes/ft (8/7/79);  
fractured the Oriskany (Dowell and Aircowell) w/30,000# 80/100 mesh sand, 30,000#  
20/40 mesh sand, 1000 gal of 28% HCL, 901 BBL water, and 198,000 SCF of nitrogen.

500 MCF

Coal was encountered at \_\_\_\_\_ Feet \_\_\_\_\_ Inches  
 Fresh water \_\_\_\_\_ Feet Salt Water \_\_\_\_\_ Feet  
 Producing Sand Oriskany Depth 4884-88

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Soil			0	6		
Red Shale & Sand			6	146		
Sand			146	175		
Siltstone			175	246		
Shale			246	294		
Red Rock			294	347		
Shale			347	372		
Red Rock			372	398		
Shale			398	428		
Siltstone			428	438		
Shale			438	449		
Red Rock			449	462		
Shale			462	487		
Siltstone			487	493		
Red Rock			493	524		
Shale			524	552		
Red Rock			552	584		
Shale			584	614		
Siltstone			614	628		
Shale			628	648		
Coal			648	656		
Red Rock			656	715		
Sand			715	730		

from 68100 - 21887 1/2  
H 3746  
C 4201  
A 4333  
R 4548  
D 4777

(over)

\* Indicates Electric Log tops in the remarks section.

*need back of drillers log*

MAR 10 1980



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD

Rotary X Oil \_\_\_\_\_  
Cable \_\_\_\_\_ Gas X \_\_\_\_\_  
Recycling \_\_\_\_\_ Comb. \_\_\_\_\_  
Water Flood \_\_\_\_\_ Storage \_\_\_\_\_  
Disposal \_\_\_\_\_ (Kind) \_\_\_\_\_

Quadrangle Elmwood

Permit No. 47-053-0196

Company Kaiser Exploration and Mining Company  
Address P. O. Box 8, Ravenswood, WV 26164  
Farm McKinley Grant Barnette Acres 106  
Location (waters) Thirteen Mile Creek  
Well No. KEM 5 Elev. 880.48  
District Union County Mason  
The surface of tract is owned in fee by \_\_\_\_\_  
McKinley Grant Barnette  
Address 119 Ohio River Road, Pt. Pleasant, WV  
Mineral rights are owned by Same  
Address \_\_\_\_\_  
Drilling Commenced 7/19/79  
Drilling Completed 8/4/79  
Initial open flow 13,440 cu. ft. -- bbls.  
Final production 500 M cu. ft. per day -- bbls.  
Well open 18 hrs. before test 1780 RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13-10" 10 3/4"	245' (KB)	Same	100 sx class A (To surface) (Halliburton)
9 5/8			
8 5/8			65 sx pozmix
7	2640' (KB)	Same	100 sx class A (Dowell)
5 1/2			
4 1/2	4975' (KB)	Same	225 sx Pozmix (Dowell)
3			
2		4890'	(KB)
Liners Used			

Well treatment details: Attach copy of cementing record.  
Perforated the Oriskany S.S. from 4884' - 4888' (K.B.) w/4 holes/ft (8/7/79);  
fractured the Oriskany (Dowell and Aircowell) w/30,000# 80/100 mesh sand, 30,000#  
20/40 mesh sand, 1000 gal of 28% HCl, 901 BBL water, and 198,000 SCF of nitrogen.

Coal was encountered at \_\_\_\_\_ Feet \_\_\_\_\_ Inches  
Fresh water \_\_\_\_\_ Feet \_\_\_\_\_ Salt Water \_\_\_\_\_ Feet \_\_\_\_\_  
Producing Sand Oriskany Depth \_\_\_\_\_

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Soil			0	6		<i>Tops from D.F. = 886'</i>
Red Shale & Sand			6	146		
Sand			146	175		
Siltstone			175	246		
Shale			246	294		
Red Rock			294	347		
Shale			347	372		
Red Rock			372	398		
Shale			398	428		
Siltstone			428	438		
Shale			438	449		
Red Rock			449	462		
Shale			462	487		
Siltstone			487	493		
Red Rock			493	524		
Shale			524	552		
Red Rock			552	584		
Shale			584	614		
Siltstone			614	628		
Shale			628	648		
Coal			648	656		
Red Rock			656	715		
Sand			715	730		

(over)

\* Indicates Electric Log tops in the remarks section.

*Rec'd orig 8/25/86*

OCT. 20 1986

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
Red Rock			730	830		
Siltstone			830	911		
Sand			911	963		
Shale			963	989		
Sand			989	1002		
Shale			1002	1016		
Sand			1016	1048		
Shale			1048	1108		
Sand			1108	1140		
Shale			1140	1161		
Sand			1161	1266		
Shale			1266	1339		
Siltstone			1339	1417		
Sand			1417	1438		
Shale			1438	1510		
Sand			1510	1519		
Shale			1519	1590		
Siltstone			1590	1620		
Shale			1620	1670		
Siltstone			1670	1717		
Sand			1717	1730		
Shale			1730	1768		
Sand			1768	1806		
Shale			1806	1882		
Maxton			1882	1941		
Big Lime			1941	2028		
Shale			2028	2090		
Big Injun			2090	2212		
Shale			2212	2510		
Sand			2510	2522		
Coffee Shale			2522	2548		
Berea			2548	2558		
Shale			2558	3740		
Brown Shale			3740	4202		
Shale			4202	4548		
Marcellus			4548	4777		
Onondaga			4777	4852		
Oriskany			4852	4900		
Helderberg			4900	4996		
Total Depth			4996			

Date February 20 1980

APPROVED Kaiser Exploration and Mining Company

By Operations Manager



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

RECEIVED

APR 18 1979

OIL & GAS DIVISION  
DEPT. OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

DATE April 11, 1979

Surface Owner <u>McKinley Grant Barnette</u>	Company <u>Kaiser Exploration and Mining Company</u>
Address <u>119 Ohio River Road, Point Pleasant, WV</u>	Address <u>P. O. Box 8, Ravenswood, WV 26164</u>
Mineral Owner <u>McKinley Grant Barnette</u>	Farm <u>McKinley Grant Barnette</u> Acres <u>106</u>
Address <u>119 Ohio River Road, Point Pleasant, WV</u>	Location (waters) <u>Thirteen Mile Creek</u>
Coal Owner <u>Union Carbide</u>	Well No. <u>KEM #5</u> Elevation <u>880.48</u>
Address <u>Charleston, WV</u>	District <u>Union</u> County <u>Mason</u>
Coal Operator <u>None</u>	Quadrangle <u>Elmwood</u>
Address <u>None</u>	

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22, of the W. Va. Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 1-3-80

INSPECTOR  
TO BE NOTIFIED Kenneth Butcher

ADDRESS RFD #1, Barboursville, WV 25504

PHONE 736-4885

Robert I. [Signature]  
Deputy Director - Oil & Gas Division

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 March 15 19 79 by McKinley Grant Barnette, et al, made to Kaiser Exploration & Mining Co. and recorded on the 21st day of March 19 79 in Mason County, Book 45 Page 290

XXX 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  
AC-304 - 292-6331

Address  
of  
Well Operator

Very truly yours,  
(Sign Name) R. A. Pryce Well Operator  
P. O. Box 8  
Street  
Ravenswood  
City or Town  
West Virginia  
State

BLANKET BOND

\*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.



7/85



1) Date: February 11, 1986  
 2) Operator's Well No. KEM #5, Barnett  
 3) API Well No. 47 State 053 County 196-F Permit

**RECEIVED**  
 FEB 27 1986

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY, 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 X / Shallow         )
- 5) LOCATION: Elevation: 880.48 Watershed: Thirteen Mile Creek  
 District: Union County: Mason Quadrangle: Elmwood
- 6) WELL OPERATOR Kaiser Exploration and CODE: 25380 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  
 Address Rt. 1, Box 101A  
Ripley, WV 25271
- 9) DRILLING CONTRACTOR: Name Kaiser Company Tools  
 Address Same
- 10) PROPOSED WELL WORK: Drill          / Drill deeper          / Redrill          / Stimulate X /  
 Plug off old formation          / Perforate new formation X /  
 Other physical change in well (specify) Commingle Oriskany, Brown Shale after perforating
- 11) GEOLOGICAL TARGET FORMATION, and stimulating Brown Shale
- 12) Estimated depth of completed well, 4890' (KB) feet ADP
- 13) Approximate strata depths: Fresh, N/A feet; salt, N/A feet.
- 14) Approximate coal seam depths: None 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 <u>None</u>
Fresh water	<u>10 3/4</u>	<u>H-40</u>	<u>32.75</u>	<u>X</u>		<u>245' (KB)</u>	<u>245' (KB)</u>	<u>100 sks</u>	
Coal									Sizes
Intermediate	<u>7"</u>	<u>K-55</u>	<u>20</u>	<u>X</u>		<u>2640' (KB)</u>	<u>2640' (KB)</u>	<u>165 sks</u>	
Production	<u>4 1/2</u>	<u>N-80</u>	<u>11.6</u>	<u>X</u>			<u>4975' (KB)</u>	<u>225 sks</u>	Depths set
Tubing	<u>2 3/8</u>	<u>J-55</u>	<u>4.6</u>	<u>X</u>			<u>4890' (KB)</u>		
Lin...									Perforations
									Top <u>4884'</u> Bottom <u>4888 (KB)</u>

OFFICE USE ONLY  
 DRILLING PERMIT

Permit number: 47-053-0196-Frac

March 20, 19 86  
 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 March 20, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>✓</u>	Agent: <u>AS</u>	Plat: <u>AS</u>	Casing: <u>AS</u>	Fee: <u>969363</u>	WPCP: <u>FRAC</u>	S&E: <u>AS</u>	Other: <u>        </u>
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NOTE: Keep one copy of this permit posted at the drilling location.

*John D. Johnston by Margaret J. Bass*  
 Director, Division of Oil and Gas

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

File





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

See Previous IV-35

6/19/86 Young's Wireline Perf Brown Shale with 20 holes from 4044 - 4200'. Huron

6/19/86 NOWSCO foam frac Brown Shale with 60,000# 20/40 sand; total N<sub>2</sub>: 700 MSCF; total fluid: 290 bbls; ISIP: 1400 psig; 5 MIN SIP: 1200 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
See Previous IV - 35					

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY  
Well Operator

By: R. A. P.

Date: October 6, 1986

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 soil, encountered in the drilling of a well."