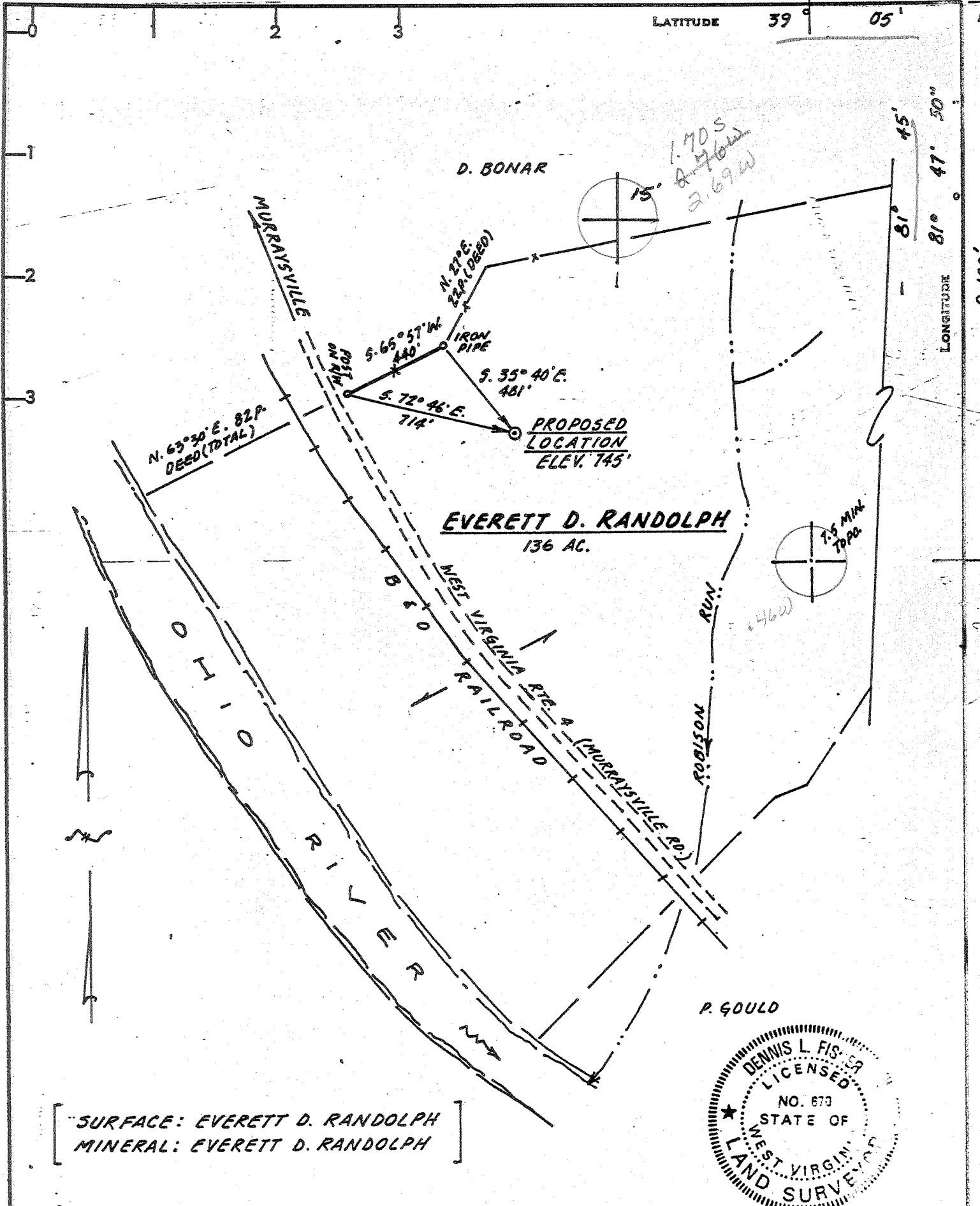
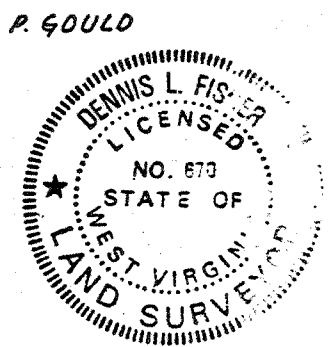


el 4/29 Plot. ✓ Card ✓ CSD

2,475'



[ SURFACE: EVERETT D. RANDOLPH  
MINERAL: EVERETT D. RANDOLPH ]



**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

*Dennis L. Fisher* LLS #670

- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

COMPANY	KAISER EXPLORATION & MINING CO.		
ADDRESS	PO BOX #8, RAVENSWOOD, WEST VIRGINIA		
FARM	EVERETT D. RANDOLPH	26164	
MAP	ACRES 136	LEASE NO.	
WELL (FARM) NO.		SERIAL NO.	KEM 98
ELEVATION (SPIRIT LEVEL)	745'		Kemo 18' SE
QUADRANGLE	PORTLAND, OHIO-W. VA.	7.5 MIN.	
COUNTY	JACKSON	DISTRICT	GRANT
POINT OF PROVEN ELEVATION	SPOT ELEV. 596, E RTE 4 600' S.W. OF PROPOSED LOCATION		
FILE NO.	DRAWING NO.		
DATE	APRIL 16, 1981		
	SCALE 1" = 500'		

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

**WELL LOCATION MAP**

FILE NO. 47-035-1576

+ 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.

deep well Oriskany 6-6 North 42 85' (255) MAY 21 1981

**APPROVED**  
OCT 19 1983



OCT 23 1983

OIL & GAS DIVISION  
DEPT. OF MINES  
State of West Virginia  
Department of Mines  
Oil and Gas Division

Date May 18, 1983  
Operator's Well No. KEM #98  
Farm Everett Randolph  
API No. 47 - 035 - 1576

**REVISED**

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: 745' Watershed Robinson Run, Ohio River  
District: Grant County Jackson Quadrangle Portland, O.-WV

COMPANY Kaiser Exploration and Mining Company

ADDRESS P. O. Box 8, Ravenswood, WV 26164

DESIGNATED AGENT R. A. Pryce

ADDRESS Same

SURFACE OWNER Everett Randolph

ADDRESS Rt. 1, Box 7, Murravsville, WV

MINERAL RIGHTS OWNER Same

ADDRESS \_\_\_\_\_

OIL AND GAS INSPECTOR FOR THIS WORK Homer

Dougherty ADDRESS Linden Rt., Box 38

PERMIT ISSUED 4/30/81

DRILLING COMMENCED 6/22/81

DRILLING COMPLETED 6/27/81

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"	243(KB)	243(KB)	150 sks neat
9 5/8			
8 5/8			
7	1818(KB)	1818(KB)	65 sks pozmix 100 sks neat
5 1/2			
4 1/2		4242(KB)	250 sks pozmix
3			
2			
Liners used	None		

GEOLOGICAL TARGET FORMATION Oriskany Sandstone Depth 4285' feet

Depth of completed well 4225 feet Rotary x / Cable Tools \_\_\_\_\_

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

Coal seam depths: -- Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Oriskany Sandstone Pay zone depth 4150 feet

Gas: Initial open flow 112 Mcf/d Oil: Initial open flow -- Bbl/d

Final open flow 250 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 1400 psig (surface measurement) after 24 hours shut in  
(If applicable due to multiple completion--)  
NOTE: Uneconomical to produce excess salt water.

Plug Back ~~XXXXXX~~ Second producing formation Brown Shale Pay zone depth 3388-3554 feet

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

Final open flow 81 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 525 psig (surface measurement) after 48 hours shut in

DETAILS OF PERFORMED INTERVALS, FRACIURING OR STIMULATING, PHYSICAL CHANGE, ETC.

- 5/02/83: Young Wireline set 4 1/2" permanent bridge plug at 3650' (KB), perforated the Brown Shale at 3388-3554' (KB); 20 holes; .39" diameter.
- 5/11/83: NOWSCO foam fractured Brown Shale w/60,000# 20/40 mesh sand; 280 bbl water; 75 quality foam (23-28,000 SCF/min nitrogen rate); 657,000 SCF of nitrogen, 40 BPM down hole equivalent rate; 2850 psig breakdown; average treating pressure was 2350 psig; ISIP was 1210 psig; 5 minute shut in was 780 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
Same as originally filed OG-10				never received	

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY  
 Well Operator  
 By: R.A.P.  
 Date: May 23, 1983

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

WELL OPERATOR'S REPORT  
OF

Operator's Well No. KEM - 98  
API No. 49 - 035 - 1576  
County Putnam Permit

WELL TYPE: Oil  / Gas  / Liquid Injection  / Waste Disposal   
(If "Gas", Production  / Underground storage  / Free  / Shallow   
LOCATION: Elevation: 745 Watershed: Robinson Run and Ohio River  
District: Grant County: Jackson Township: Portland, O. - WV

WELL OPERATOR Kaiser Exploration and Mining Co. DESIGNATED AGENT SAME  
Address P. O. Box 8 Address \_\_\_\_\_  
Ravenswood, WV 26164

PERMITTED WORK: Drill  / Convert  / Drill deeper  / Re-drill   
Plug off old formation  / Perforate new formation   
Other physical change in well (specify) \_\_\_\_\_

**RECEIVED**  
FEB 9 - 1982  
OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

PERMIT ISSUED ON April 30, 1981 OIL & GAS INSPECTOR FOR THIS WORK:  
Name Richard Morris  
Address P. O. Box 372  
Grantsville, WV

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED \_\_\_\_\_, 19\_\_\_\_  
GEOLOGICAL TARGET FORMATION: Oriskany Sandstone Depth 4285 feet  
Depth of completed well, 4224 feet Rotary  / Cable Tools \_\_\_\_\_  
Water strata depth: Fresh, --- feet; salt, --- feet.  
Coal seam depths: --- Is coal being mined in the area? NO  
Work was commenced June 22, 1981; and completed June 28, 1981

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	Minds	NONE
Water	3/4"	H	32.75	X		243(KB)	243(KB)	150sx Class		
		K	20			1818(KB)	1818(KB)	65sx Poznix 100sx Class	Sizes	
		(erw)	11.60	X			4242(KB)	250sx Poznix	Depth set	
									Perforations:	
									Top	Bottom
									4150	4160(KB)

FLOW DATA

Producing formation Oriskany Sandstone Pay zone depth 4150-4160 feet  
Gas: Initial open flow, 112 Mcf/d Oil: Initial open flow, --- bbl/d  
Final open flow, 250 Mcf/d Final open flow, --- bbl/d  
Time of open flow between initial and final tests, --- hours  
Static rock pressure, 1400 psig (surface measurement) after 24 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 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.

[08-78]

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

- 7/1/81: Basin Surveys Perforated Oriskany 4150'-4160' (KB); 3 1/2 glass jets; 4 holes/ft.; 40 holes; .50" diameter.
- 7/3/81: Halliburton, BJ Hughes Hydrofractured Oriskany Sandstone w/15,000# 80/100 sand; 45,000# 20/40 sand; 500 gal. 287 HCL Acid; 180,000 SCF nitrogen; 840 BBL water; 2400 hydraulic horsepower; 34.5 BPM avg. rate; 2850 psig avg. treating pressure; breakdown was 2500 psig; Instantaneous shut in pressure was 2000 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
Soil & Shale			0	92	
Sand			92	150	
Shale			150	210	
Sand & Shale			210	359	
Sand			359	413	
Shale			413	491	
Sand			491	510	
Shale			510	567	
Sand			567	606	
Siltstone & Shale			606	1110	
Salt Sand			1110	1170	
Shale			1170	1232	
Salt Sand			1232	1262	
Shale			1262	1387	
Sand			1387	1400	
Shale			1400	1434	
Sand			1434	1504	
Big Lime (Greenbrier)			1504	1562	
Shale			1562	1971	
Coffee Shale (Sunbury)			1971	1990	
Berea Sand			1990	1992	
Shale			1992	3126	
Brown Shale			3126	3564	
Shale			3564	3877	
Marcellus Shale			3877	4060	
Onondaga Lime			4060	4137	
Oriskany Sand			4137	4175	
Tellierberg Lime			4175	4258	Gas show @ 4154
Total Depth			4258		

(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 cor., encountered in the drilling of a well."



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

RECEIVED

APR 27 1981

Oil and Gas Division

OIL & GAS DIVISION

OIL AND GAS WELL PERMIT APPLICATION

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

DATE April 23, 1981

Surface Owner Everett D. Randolph  
Address Rt. 1, Box 7, Murraysville, WV  
Mineral Owner Same  
Address \_\_\_\_\_  
Coal Owner Same  
Address \_\_\_\_\_  
Coal Operator None  
Address \_\_\_\_\_

Company Kaiser Exploration and Mining Company  
Address P. O. Box 8, Ravenswood, WV 26164  
Farm Everett D. Randolph Acres 136  
Location (waters) Robinson Run & Ohio River  
Well No. KEM #98 Elevation 745  
District Grant County Jackson  
Quadrangle Portland, 0 - WV

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 12-30-81

INSPECTOR

TO BE NOTIFIED Richard Morris

ADDRESS P. O. Box 372, Grantsville, WV

PHONE 354-7259

Richard Morris  
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 June 11 19 79 by Everett &  
Lola Randolph made to Kaiser Exploration and Mining Company and recorded on the 6 day of July  
19 79 in Jackson County, Book 152 Page 658

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

Very truly yours,

(Sign Name) Richard Morris

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

47-035-1576

PERMIT NUMBER

THIS IS AN ESTIMATE ONLY  
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

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: 4285' 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	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10			
9 - 5/8      10 3/4	250'	250'	150 sacks class A (to surface)
8 - 5/8			
7	1900'	1900'	65 sacks pozmix, 100 sks class A
5 1/2			
4 1/2	4285'	4285'	250 sacks pozmix
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