

45'
 15 MIN Longitude 81° 50'
 7.5 MIN TOPO 81° 50'

New Location
 Drill Deeper
 Abandonment
 Part Plug 7/25/79
 9/25/78

Minimum Error of Closure 1 IN 200
 Source of Elevation U.S.G.S. Elev 981 TOP OF KNOB SOUTH OF LOC
 "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."

Company KAISER EXPL. & MINING CO.
 Address Box 98 RAVENSWOOD, WV
 Farm W. E. COSSIN ET AL.
 Tract _____ Acres 58 Lease No. 3031
 Well (Farm) No. DEK # 47 Serial No. _____
 Elevation (Spirit Level) 915.0
7.5 MIN. COTTAGEVILLE
 Quadrangle 15 MIN. RAVENSWOOD
 County MASON District COLOGNE
 SURVEYOR James D. Setton
 SURVEYOR'S 149
 Engineer's Registration No. _____
 File No. _____ Drawing No. _____
 Date 7-6-77 Scale 1" = 500'

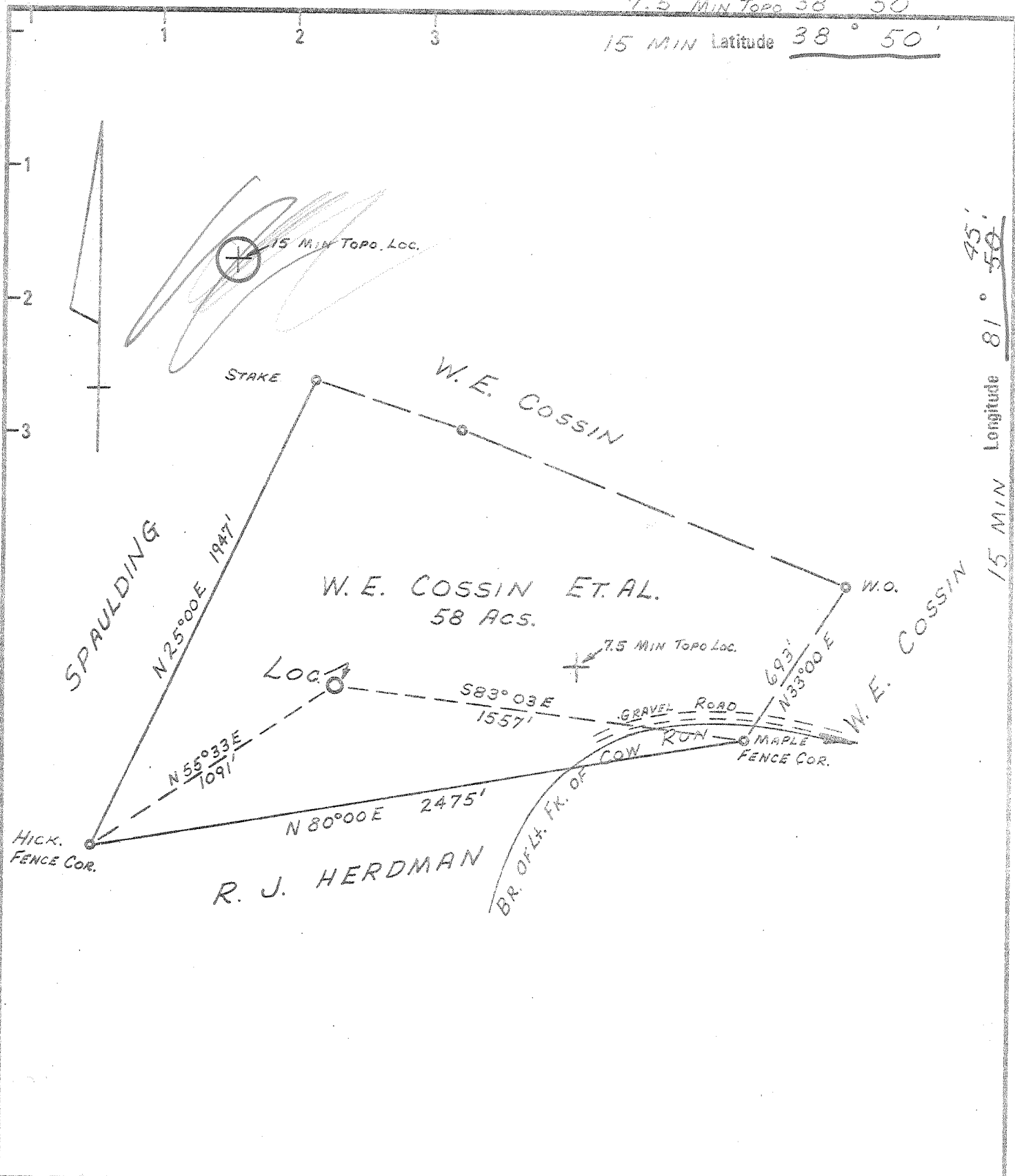
STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

WELL LOCATION MAP
 FILE NO. MAS-145-PP-P

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500 latitude and longitude lines being represented by border lines as shown.
 - Denotes one inch spaces on border line of original tracing.

47-053 AUG 10 1978

7.5 MIN Topo 38° 50'
 15 MIN Latitude 38° 50'



New Location <input checked="" type="checkbox"/> Drill Deeper <input type="checkbox"/> Abandonment <input type="checkbox"/> Part Plug 9/25/78	Minimum Error of Closure 1 IN 200 Source of Elevation U.S.G.S ELEV 981 TOP OF KNOB SOUTH OF LOC. "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."
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 Address Box 98 RAVENSWOOD, WV
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 7.5 MIN. COTTAGEVILLE
 Quadrangle 15 MIN. RAVENSWOOD SCSE
 County MASON District COLOGNE
 SURVEYOR James D. Coffey
 SURVEYOR'S Registration No. 149
 File No. _____ Drawing No. _____
 Date 7-6-77 Scale 1" = 500'

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

WELL LOCATION MAP
 FILE NO. MAS-145-PP

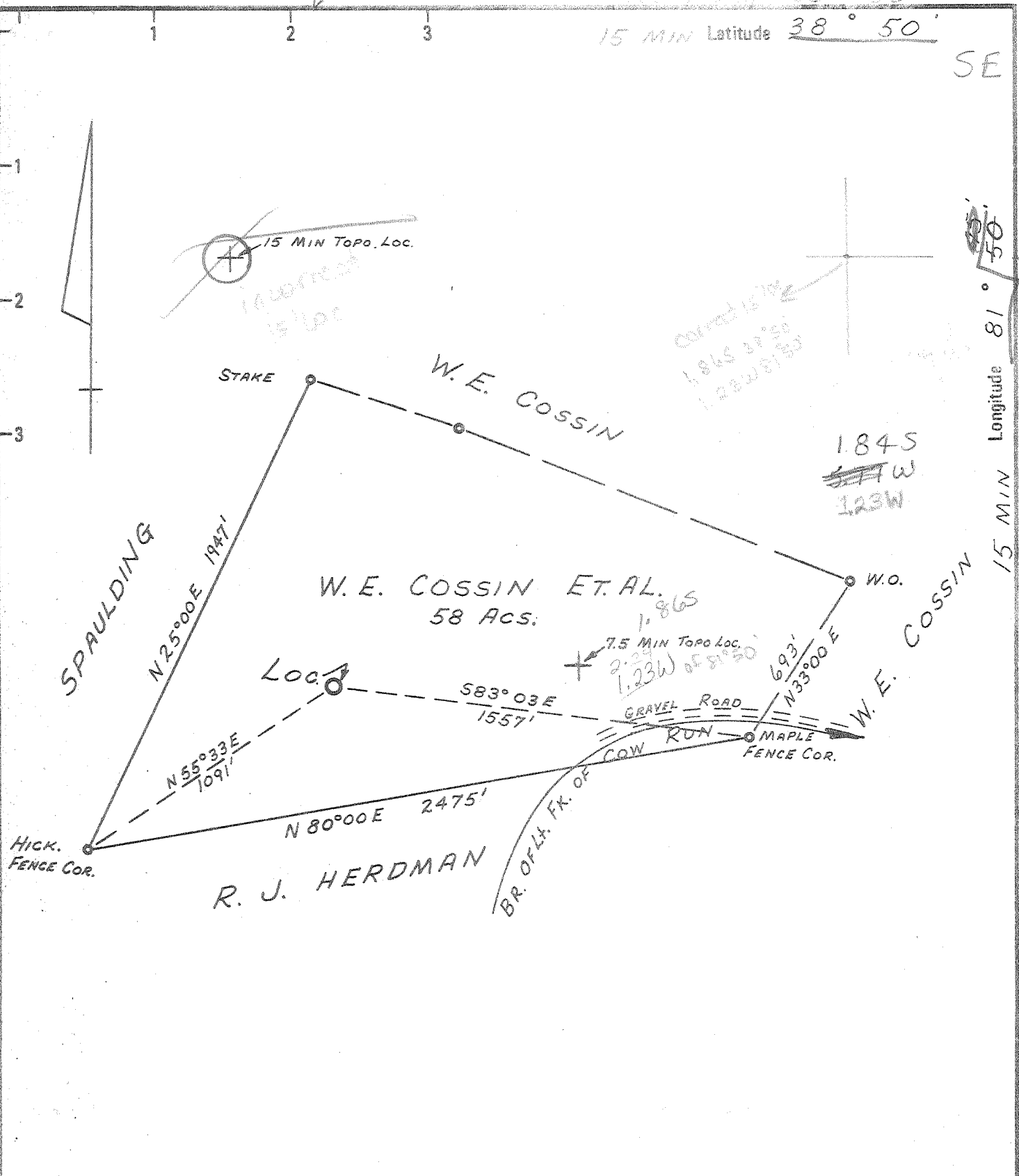
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47-053 OCT 17 1978

15 MIN Latitude 38° 50'

SE



Longitude 81° 50'
15 MIN
7.5 MIN TOPO

New Location
Drill Deeper
Abandonment

Minimum Error of Closure 1 IN 200
Source of Elevation U.S.G.S. Elev 981 Top of Knob South of Loc.

"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."

Company KAISER EXPL & MINING CO.
 Address Box 98 RAVENSWOOD, WV
 Farm W.E. COSSIN ET AL.
 Tract _____ Acres 58 Lease No. 3031
 Well (Farm) No. DEK 47 Serial No. _____
 Elevation (Spirit Level) 915.0
 Quadrangle 7.5 MIN. COTTAGEVILLE
15 MIN. RAVENSWOOD (SC)
 County MASON District COLOGNE
 SURVEYOR James D. Sefton
 SURVEYOR'S Registration No. 149
 File No. _____ Drawing No. _____
 Date 7-6-77 Scale 1" = 500'

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

WELL LOCATION MAP
FILE NO. MAS-145

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47-053



RECEIVED
JUL 25 1979

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division

WELL RECORD

Rotary Oil _____
Cable _____ Gas
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind)

Quadrangle Cottageville

Permit No. MAS-145

Company Kaiser Expl. & Mining Co.
Address Box 98, Ravenswood, W. Va.
Farm W.E. Cossin Acres 58
Location (waters) Left fork of Cow Run
Well No. DEK #47 Elev. 915
District Cologne County Mason
The surface of tract is owned in fee by _____
W.E. Cossin
Address RFD Cottageville, W. Va.
Mineral rights are owned by Same as above
_____ Address _____
Drilling Commenced 7/25/77
Drilling Completed 8/3/77
Initial open flow Show cu. ft. _____ bbls.
Final production (65) MCFD ~~CMX SIX PERCENT~~ bbls.
Well open _____ hrs. before test 1000 RP.
Well treatment details:

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13-10"			
9 5/8	307'	307'	120 SAX=to S
8 5/8			
7	2,542	2,542	75 SAX= 625
5 1/2			
4 1/2		4,740	150 SAX= 1800
3			
2			
Lines Used			

Attach copy of cementing record. All cementing by Halliburton.

Perforated Oriskany @ 4599 - 4601 with 16 shots
Fractured with 876 BBLS water and 37,000 # sand.
Perforated Marcellus ^{Rhinectret} 4334 to 4512 with 25 shots.
Treated with 1,000 gallons of acid.

Coal was encountered at None Feet _____ Inches _____
Fresh water _____ Feet _____ Salt Water _____ Feet _____
Producing Sand Oriskany and Marcellus Depth See above

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
Sand & Shale			Surface	72		
Red Shale			72	184		
Sand			184	210		
Red Shale			210	285		
Sand			285	298		
Slate			298	319		
Red Rock			319	330		
Slate			330	385		
Sand			385	428		
Red Rock			428	444		
Sand			444	458		
Red Rock			458	510		
Sand			510	534		
Red Rock			534	568		
Sand			568	598		
Red Rock			598	644		
Slate			644	748		
Sand			748	780		
Red Rock			780	902		
Sand			902	922		
Black Shale			922	1002		
Sand			1002	1060		
Red Rock			1060	1081		

(over)

* Indicates Electric Log tops in the remarks section

001 8/25/86

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Broken Sand			1081	1172		
Salt Sand			1172	1244		
Gray Shale			1244	1376		
Sand	Tops From KB 923		1376	1422		
Shale			1422	1548		
Sand			1548	1578		
Shale			1578	1622		
Sand			1622	1664		
Shale			1664	1688		
Sand			1688	1698		
Gray Shale			1698	1752		
Maxon Sand			1752	1814		
Big Lime			1814	1936		
Red & Gray Shale			1936	1960		
Injun Sand			1960	2107		
Gray Shale			2107	2422		
Coffee Shale			2422	2435		
Berea Sand	GR log - el. 923' KB		2435	2454		
Gray Shale			2454	3580		
Brown Shale			3580	4007		
Gray Shale			4007	4394		
Marcellus Shale			4394	4514		
Onondaga L.S.			4514	4594		
Oriskany Sand			4594	4608		
Helderberg L.S.			4608	4740		
Log T.D.				4740		

GR log - El. 923' KB

H 3582
 J 4004
 A 4136
 Rh 4332
 On 4514

Date MARCH 2 1928

APPROVED L. C. A. [Signature] Owner

By [Signature] (Title)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

RECEIVED

JUL 25 1977

OIL & GAS DIVISION
DEPT. OF MINES

OIL AND GAS WELL PERMIT APPLICATION

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

Surface Owner W. E. Cossin
Address RFD Cottageville, WVa.
Mineral Owner W. E. Cossin
Address RFD Cottageville, WVa.
Coal Owner Same As Above
Address _____
Coal Operator Not Operated
Address _____

DATE July 18, 1977
Company Kaiser Exploration & Mining Co.
Address Box 98, Ravenswood, WVa.
Farm W. E. Cossin Acres 58
Location (waters) Left Fork of Cow Run
Well No. DEK #47 Elevation 915
District Cologne County Mason
Quadrangle Cottageville 7-1/2

THIS PERMIT MUST BE POSTED AT THE WELL SITE

Conditions 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 11-25-77.

INSPECTOR
TO BE NOTIFIED Kenneth Butcher
ADDRESS Barboursville, W. Va.
PHONE 736-4885

Robert A. Pryce
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 April 13 1977 by W.E. & Mabel Cossin made to Devon & Eason and recorded on the 5th day of July 1977 in Mason County, Book 42 Page 285
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:

Very truly yours, Kaiser Exploration & Mining Co.
(Sign Name) Robert A. Pryce
Well Operator Robert A. Pryce

W. VA. OIL & GAS CONSERVATION COMMISSION
1613 WASHINGTON STREET, EAST
CHARLESTON, WEST VIRGINIA 25311

Address
of
Well Operator

Box 98
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.

MAS-145 PERMIT NUMBER

47-053

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 12-b and will carry out the specified requirements."

Signed by Robert A. Pryce

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

PROPOSED WORK ORDER TO XXX DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) RESPONSIBLE AGENT:
 NAME FWA Drilling Co. NAME Bill W. Backus
 ADDRESS Box 448, Flkview, WVa. ADDRESS Box 1433, Charleston, WVa.
 TELEPHONE 965-3379 TELEPHONE 342-3171
 ESTIMATED DEPTH OF COMPLETED WELL: 4725 ROTARY XXX CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Oriskany
 TYPE OF WELL: OIL _____ GAS XXX 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	300	300	125 sax = to surf
8 - 5/8			
7	2550	650	75 sax = 625'
5 1/2			
4 1/2	4725	4725	150 sax = 1800'
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS _____ FEET _____ SALT WATER _____ FEET _____
 APPROXIMATE COAL DEPTHS None Anticipated
 IS COAL BEING MINED IN THE AREA? No 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

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

RECORDED

MAR 24 1980

AFFIDAVIT OF PLUGGING AND FILLING WELLS
OIL & GAS DIVISION
DEPT. OF MINES

AFFIDAVIT SHOULD BE MADE IN TRIPPLICATE, ONE COPY MAILED TO THE DEPARTMENT, ONE COPY TO BE RETAINED BY THE WELL OPERATOR AND THE THIRD COPY (AND EXTRA COPIES IF REQUIRED) SHOULD BE MAILED TO EACH COAL OPERATOR AT THEIR RESPECTIVE ADDRESSES.

Not Operated
COAL OPERATOR OR OWNER
--
ADDRESS
W. E. Cossin
COAL OPERATOR OR OWNER
RFD, Cottageville, WV
ADDRESS
W. E. Cossin
LEASE OR PROPERTY OWNER
RFD, Cottageville, WV
ADDRESS

Kaiser Exploration and Mining Company
NAME OF WELL OPERATOR
P. O. Box 8, Ravenswood, WV 26164
COMPLETE ADDRESS
March 17 1980
WELL AND LOCATION
Cologne District
Mason County
Well No. DEK 47
W. E. Cossin Farm

STATE INSPECTOR SUPERVISING PLUGGING.....Kenneth Butcher

AFFIDAVIT

STATE OF WEST VIRGINIA,
County of Mason } ss:

Richard L. Coty and Robert A. Pryce
being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by Kaiser Exploration and Mining Co. well operator, and participated in the work of plugging and filling the above well, that said work was commenced on the 1st day of October, 1979, and that the well was plugged and filled in the following manner:

SAND OR ZONE RECORD FORMATION	FILLING MATERIAL	PLUGS USED SIZE & KIND	CASING		
			CSG PULLED	CSG LEFT IN	
Marcellus: 4394-4574	PBTD: 4565' perm. B.P., 6%				
Berea: 2435-2454	gel: 4565-4300'				
	Permanent Bridge Plug: 4300'	60 Internationa			
	Class A Cement: 4300'-4200' }				
	6% Gel: 4200'-2600' }	50 sx Total	2500'	2240'	4 1/2"
	Class A Cement: 2600'-2400' }				
	6% Gel: 2400'-1300' }				
	Class A Cement: 1300'-1100' }		1200'	1343'	7"
	6% Gel: 1100'-400' }	200 sx Total			
	Class A Cement: 400'-0' }			315'	9 5/8"
	NOTE: 20 sx (100 lb ea.) of gel used to mix 6% gel in total.				
COAL SEAMS	None				
(NAME)		DESCRIPTION OF MONUMENT			
(NAME)		Joint of 7" casing used as monument;			
(NAME)		approximately 3' above ground; properly			
(NAME)		marked.			

and that the work of plugging and filling said well was completed on the 4th day of October, 1979.

And further deponents saith not.

Sworn to and subscribed before me this 21 day of March, 1980.

My commission expires:

Aug. 6, 1980

Robert A. Pryce
Richard L. Coty
Notary Public.

Permit No. 47-053-0145