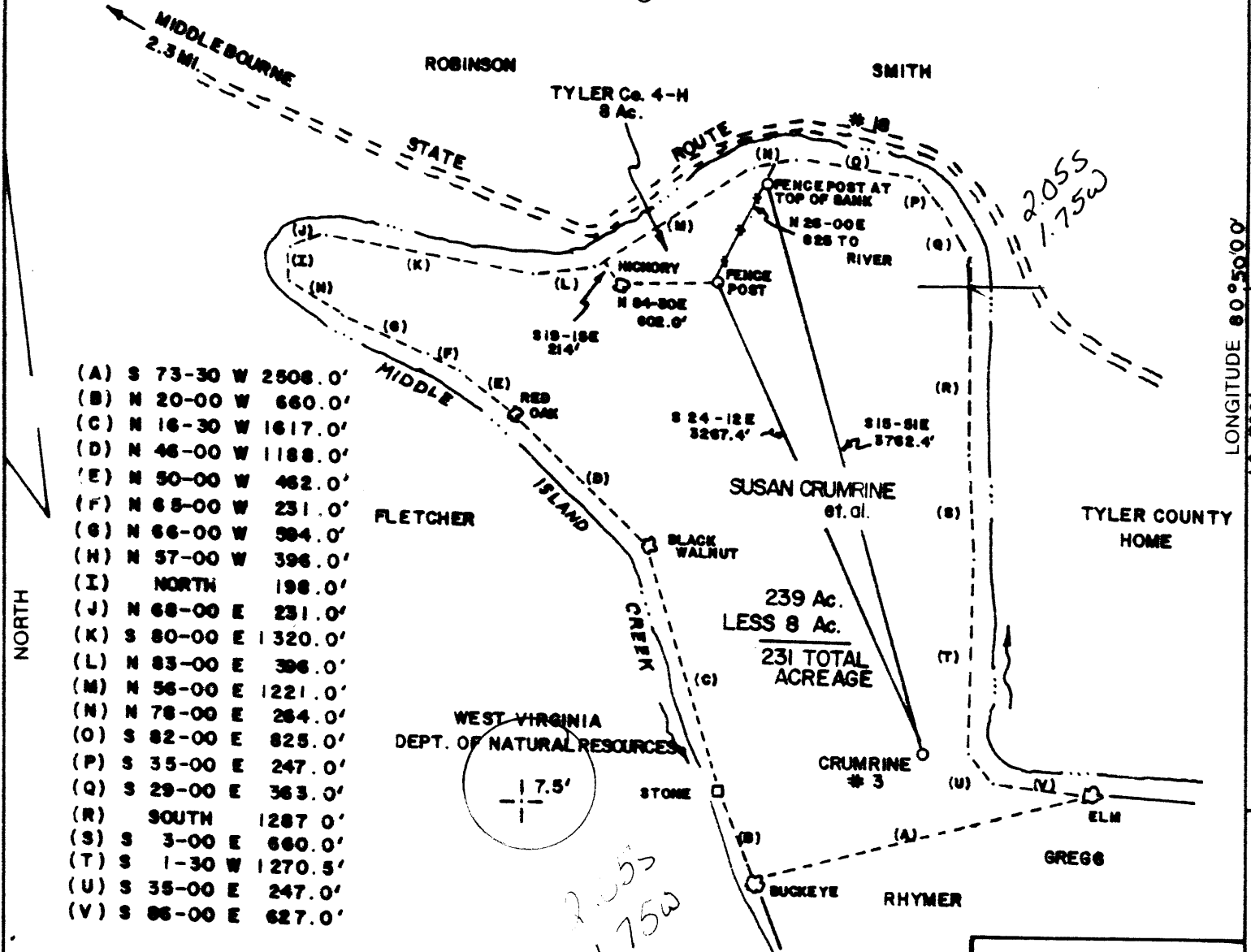


MS 1/31/86

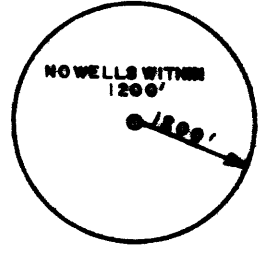
9280'

CODE CARD PLOT LATITUDE 39° 30' 00"

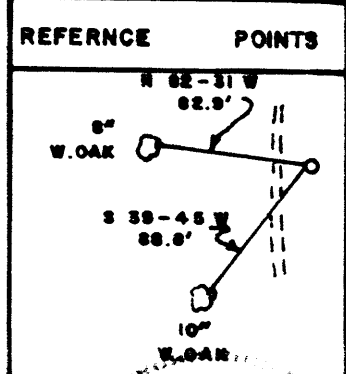


- (A) S 73-30 W 2508.0'
- (B) N 20-00 W 660.0'
- (C) N 16-30 W 1617.0'
- (D) N 46-00 W 1188.0'
- (E) N 50-00 W 462.0'
- (F) N 65-00 W 231.0'
- (G) N 66-00 W 594.0'
- (H) N 57-00 W 396.0'
- (I) NORTH 198.0'
- (J) N 68-00 E 231.0'
- (K) S 80-00 E 1320.0'
- (L) N 83-00 E 396.0'
- (M) N 56-00 E 1221.0'
- (N) N 78-00 E 264.0'
- (O) S 82-00 E 825.0'
- (P) S 35-00 E 247.0'
- (Q) S 29-00 E 363.0'
- (R) SOUTH 1287.0'
- (S) S 3-00 E 660.0'
- (T) S 1-30 W 1270.5'
- (U) S 35-00 E 247.0'
- (V) S 86-00 E 627.0'

SHIRLEY 7.5'



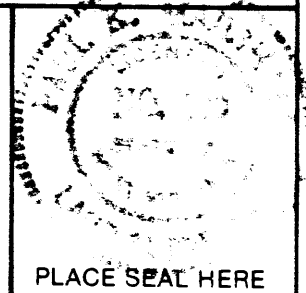
NOTE: ● - STAKE (DEED)



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

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION ROAD INTERSECTION  
 717'

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) Paul K. Marshall  
 R.P.E. \_\_\_\_\_ L.L.S. 580



PLACE SEAL HERE

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



DATE JAN. 16 1986  
 OPERATOR'S WELL NO. CRUMRINE # 3  
 API WELL NO. 47 095 1128  
 STATE COUNTY PERMIT

WELL TYPE: OIL  GAS  LIQUID INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW   
 LOCATION: ELEVATION 1005' WATER SHED MIDDLE ISLAND CREEK  
 DISTRICT ELLSWORTH COUNTY TYLER  
 QUADRANGLE SHIRLEY 7.5' 607 133 NC2 West Union  
 SURFACE OWNER CRUMRINE & JOHN CRUMRINE ACREAGE 231  
 OIL & GAS ROYALTY OWNER CHARLES E. CRUMRINE LEASE ACREAGE 239  
 LEASE NO. \_\_\_\_\_  
 PROPOSED WORK: DRILL  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 GORDON ESTIMATED DEPTH 3200'  
 WELL OPERATOR D.A.C. DESIGNATED AGENT KENNY MASON  
 ADDRESS RT.1 BOX 51A ADDRESS SAME  
CAIRO, W.V. 26357

6-0 unnamed (b)

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

COUNTY NAME PERMIT

V-35  
ev 8-8

**RECEIVED**  
JUN 13 1986

DIVISION OF OIL & GAS  
DEPT. OF ENERGY



State of West Virginia  
Department of Mines  
Oil and Gas Division

Date June 4, 1986  
Operator's  
Well No. Crumrine #3  
Farm Crumrine  
API No. 47 - 095 - 1128

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil X / Gas X / Liquid Injection    / Waste Disposal    /  
(If "Gas," Production    / Underground Storage    / Deep    / Shallow X /)

LOCATION: Elevation: 1005' Watershed Middle Island Creek  
District: Ellsworth County Tyler Quadrangle Shirley 7.5'

COMPANY Drilling Appalachian Corporation (DAC)

ADDRESS Rte. 1, Box 51A, Cairo, WV 26337

DESIGNATED AGENT Kenneth Mason

ADDRESS Rt. 1, Box 51A, Cairo, WV 26337

SURFACE OWNER Charles Crumrine and John Crumrine

ADDRESS Middlebourne, WV 26149

MINERAL RIGHTS OWNER Charles and John Crumrine

ADDRESS Middlebourne, WV 26149

OIL AND GAS INSPECTOR FOR THIS WORK Robert Lowther

ADDRESS Middlebourne, West Va. 26149

PERMIT ISSUED February 4, 1986

DRILLING COMMENCED March 25, 1986

DRILLING COMPLETED March 28, 1986

IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
  

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8			
8 5/8			
7	420'	420'	To surface
5 1/2			
4 1/2	2545'	2545'	105 sacks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Gordon Depth 3200 feet

Depth of completed well 3025 feet Rotary X / Cable Tools   

Water strata depth: Fresh 200 feet; Salt    feet

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

OPEN FLOW DATA

Producing formation Berea Pay zone depth 2482 feet

Gas: Initial open flow Still testing Mcf/d Oil: Initial open flow Still testing 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

(If applicable due to multiple completion--)

Second producing formation Big Injun Pay zone depth 1920 feet

Gas: Initial open flow Still testing Mcf/d Oil: Initial open flow Still testing bbl/d

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

Time of open flow between initial and final tests    hours JUN 23 1986

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

1st stage:

Water and Sand frac  
Weir and Berea  
40,000 lbs. 20/40 sand  
550 bbls. treated water  
500 gallons HCL 15%  
11 perforations

2nd stage:

30,000 lbs. 20/40 sand  
400 bbls. treated water  
500 gallons 15% HCL  
4 perforations

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all free and salt water, coal, oil and ga
Red			0	20	
Sand			21	79	
Red			80	89	
Lime			90	99	
Sand			100	234	
Slate			235	250	
Red			251	284	
Slate			285	339	
Red			340	354	
Slate			355	396	
Red			397	414	
Slate			415	694	
Sand			695	724	
Slate			725	809	
Red			810	815	
Slate			816	866	
Red			867	1019	
Slate			1020	1030	
Sand			1030	1082	
Slate			1082	1090	
Sand			1091	1249	
Slate, First Salt Sand			1250	1349	
Sandy, Second Salt Sand			1350	1449	
Slate and sand, 3rd salt sand			1450	1469	Fluorescence
Slate			1470	1514	
Sand			1515	1574	
Slate			1575	1770	
Sand, Maxon			1771	1820	
Big Lime			1821	1915	
Slate, Big Lime			1915	1931	
Big Injun			1932	2149	Shows
Sand and Lime			2150	2249	
Sand, Weir			2250	2370	
Sand and Lime			2371	2465	Fluorescence
Slate			2466	2479	
Sand			2480	2489	
Slate			2490	2585	Traces of pyrites ; good shows of fl
Sand			2586	2620	
Slate			2621	2918	
Gordon Sand			2919	2929	
Slate			2930	3025	

(Attach separate sheets as necessary)

DRILLING APPALACHIAN CORPORATION

Well Operator

By: Kenneth R. Mason

Date: Kenneth Mason  
June 4, 1986

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic

7/85

**RECEIVED**  
JAN 24 1986



1) Date: Jan. 17, 1986  
2) Operator's Well No. Crumrine #3  
3) API Well No. 47 - 95 - 1128  
State County Permit

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

- 4) WELL TYPE: A Oil  / Gas   
B (If "Gas", Production  / Underground storage  / Deep  / Shallow )
- 5) LOCATION: Elevation: 1005' Watershed: Middle Island Creek  
District: Elleworth 311 County: Tyler Quadrangle: Shirley 7.5'
- 6) WELL OPERATOR Drilling App. Corp. CODE: 14425 7) DESIGNATED AGENT Kenneth R. Mason  
Address Rt. 1, Box 51A Address Rt. 1, Box 51A  
Cairo, WV 26337 Cairo, WV 26337
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Robert Lowther  
Address Middlebourne, WV 26149
- 9) DRILLING CONTRACTOR: Name Clint Hurt  
Address Charleston, West Virginia
- 10) PROPOSED WELL WORK: Drill  / Drill deeper  / Redrill  / Stimulate   
Plug off old formation  / Perforate new formation   
Other physical change in well (specify) \_\_\_\_\_
- 11) GEOLOGICAL TARGET FORMATION, Gordon 419
- 12) Estimated depth of completed well, 3200' feet
- 13) Approximate trata depths: Fresh, 165' feet; salt, \_\_\_\_\_ feet.
- 14) Approximate coal seam depths: None 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		
Conductor	11 3/4	H-40	42	x		30'	0'	Kinds
Fresh water								
Coal								Sizes
Intermediate	8 5/8	J-55	20	x		400'	400'	By Rule 15.05 CTS Neat by rule 15.01 TO COVER Salt SANDS OR BY
Production	4 1/2	J-55	10 1/2	x		3200'	3200'	
Tubing								Perforations:
Liners								Top Bottom

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-095-1128

February 4 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 February 4, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <u>MS</u>	Plat: <u>MS</u>	Casing: <u>MS</u>	Fee: <u>1774</u>	WPCP: <u>MS</u>	S&E: <u>MS</u>	Other: _____
---	------------------	-----------------	-------------------	------------------	-----------------	----------------	--------------

NOTE: Keep one copy of this permit posted at the drilling location.

[Signature]  
Director, Division of Oil and Gas

File

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