

FILE NO. BK 93 PG 4
 DRAWING NO. _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION USGS VE Point 5162' N.E. of location E12517

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) C. J. Galley Jr.
 R.P.E. _____ D.L.S. 92

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE APRIL 20, 1985
 OPERATOR'S WELL NO. 2178
 API WELL NO. BISMARCK PROSPECT
47 - 023 - 0011 - Frac
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

Fracture Cancelled

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
 LOCATION: ELEVATION 2885.68 WATER SHED HEADWATERS ELKCLICK RUN
 DISTRICT UNION COUNTY GRANT
 QUADRANGLE GREENLAND GAP
 SURFACE OWNER UNION LAND MANAGEMENT CO ACREAGE 1001.70
 OIL & GAS ROYALTY OWNER UNION LAND MANAGEMENT CO LEASE ACREAGE 1001.70
 LEASE NO. 178680
 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 ORISKANY ESTIMATED DEPTH 9100'
 WELL OPERATOR EQUITABLE Resources DESIGNATED AGENT JOSEPH VANZANT
 ADDRESS P.O. DRAWER 40 BUCKHANNON WV 26201 ADDRESS P.O. DRAWER 40 BUCKHANNON WV 26201

DEC 3 1990

Janice 6/14/89

15' 2600'

LATITUDE 39°12'30"

LONGITUDE 79°12'30"

NORTH

BILLIE HALT
DB 88 P 204

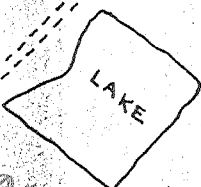
UNION LAND MANAGMNT CO.
DB 95 P 518

JOHN A. SMITH, HEIRS
DB 8 P 284

CLEO HAWK
DB 41 P 389

300 AC TR 1
DB 95 P 518

LOCATION



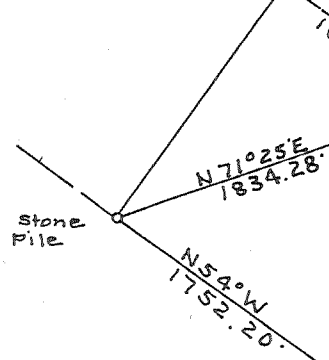
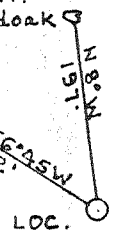
UNION LAND
MANAGMNT CO
DB 103 P 47

UNION LAND
MANAGMNT CO
DB 95 P 518

WALTER D GUTHRIE
DB 42 P 204

R.P.
16" Redoak

R.P.
16" leaning
Redoak



Stone pile in fen. Twin chestnut oak & Maple



Set stone in fen cor Redoak, 2-chestnut oak & pine

Stone pile in fen. cor. white oak, 2 chestnut oak

1255
0.49w

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FORM IV-6 (8-78)



DATE APRIL 20, 1985
OPERATOR'S WELL NO. 2178
API WELL NO. BISMARCK PROSPECT
47 - 023 - 0011-Pr
STATE COUNTY PERMIT

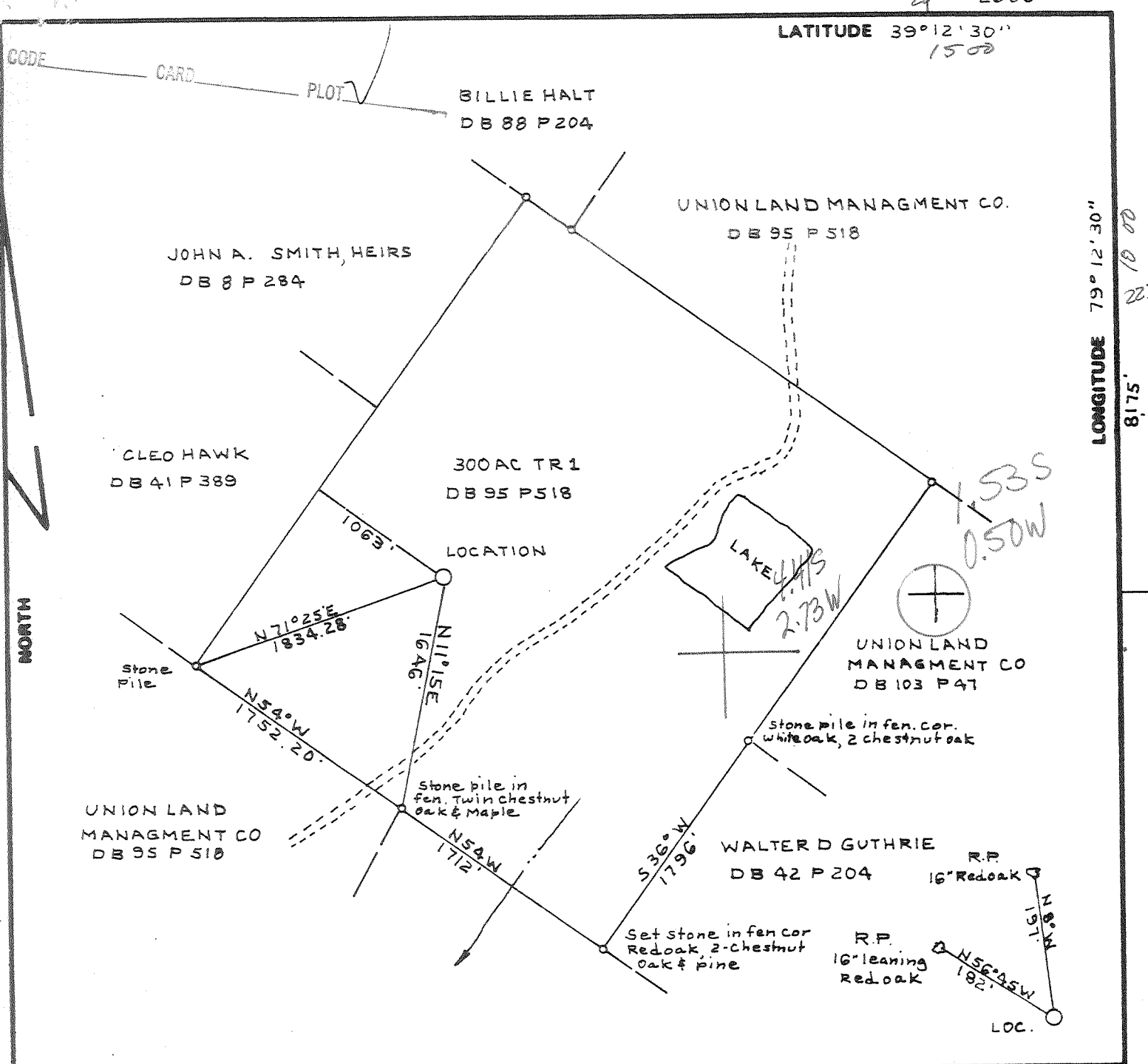
STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
LOCATION: ELEVATION 2885.68 WATER SHED HEADWATERS ELCLICK RUN
DISTRICT UNION 3 COUNTY GRANT
QUADRANGLE GREENLAND GAP 383 0521
SURFACE OWNER UNION LAND MANAGMNT CO ACREAGE 1001.70
OIL & GAS ROYALTY OWNER UNION LAND MANAGMNT CO LEASE ACREAGE 1001.70
LEASE NO. 178680
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 ORISKANY ESTIMATED DEPTH 9100'
WELL OPERATOR EQUITABLE RESOURCES EXPLOITATION DESIGNATED AGENT JOSEPH VANZANT
ADDRESS P.O. DRAWER 40 BUCKHANNON WV 26201 ADDRESS P.O. DRAWER 40 BUCKHANNON WV 26201

JUL 1 1988

GRANT 0011



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 FORM IV-6 (8-78)



DATE APRIL 20, 1985
 OPERATOR'S WELL NO. 2178
 API WELL NO. BISMARCK PROSPECT
47 - 023 - 0011
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 2885.68 WATERSHED HEADWATERS ELKCLICK RUN
 DISTRICT UNION 3 COUNTY GRANT
 QUADRANGLE GREENLAND GAP 383 052 NW1
 SURFACE OWNER UNION LAND MANAGEMENT CO ACREAGE 1001.70
 OIL & GAS ROYALTY OWNER UNION LAND MANAGEMENT CO LEASE ACREAGE 1001.70
 LEASE NO. 178680
 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 ORISKANY ESTIMATED DEPTH 9100'
 WELL OPERATOR UNION DRILLING INC DESIGNATED AGENT JOSEPH VANZANT
 ADDRESS P.O. DRAWER 40 893 BUCKHANNON WV 26201 ADDRESS PO DRAWER 40 BUCKHANNON WV 26201

JUL 29 1985

IV-35
(Rev 8-81)

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DEC 10 1986



Date December 4, 1986

Operator's
Well No. 1 - 2178

State of West Virginia

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Department of Mines
Oil and Gas Division

Farm Union Land Management #1

API No. 47 - 023 - 0011

(CONFIDENTIAL WELL)✓

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 ___ / Underground Storage ___ / Deep xx / Shallow ___ /)

LOCATION: Elevation: 2885' Watershed Headwaters Elklick Run
District: Union County Grant Quadrangle Greenland Gap

COMPANY Union Drilling, Inc.

ADDRESS P.O. Drawer 40, Buckhannon, WV 26201

DESIGNATED AGENT Joseph C. Pettey

ADDRESS P.O. Drawer 40, Buckhannon, WV 26201

SURFACE OWNER Union Land Management Company

ADDRESS Box 466, Herndon, VA 22070

MINERAL RIGHTS OWNER same

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK

Donald Ellis ADDRESS 2604 Crab Apple Lane, Fairmont, WV 26554

PERMIT ISSUED 7/19/85

DRILLING COMMENCED 8/20/85

DRILLING COMPLETED 10/21/85

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.			
13-10"	40.00	40.00	
9 5/8	2446.70	2446.70	1121 cf
8 5/8			
7			
5 1/2		9343.52'	1074 cf
4 1/2			
3			
2.375		8942.79'	
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Depth 9100' feet

Depth of completed well 9349' feet Rotary xxx / Cable Tools

Water strata depth: Fresh 17, 97' feet; Salt feet

Coal seam depths: none Is coal being mined in the area?

OPEN FLOW DATA

Producing formation Oriskany Pay zone depth 9078' feet

Gas: Initial open flow 5050 ¹⁷³⁰¹ Mcf/d Oil: Initial open flow Bbl/d

Final open flow N/A ⁶¹⁶⁰ Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure N/A psig (surface measurement) after 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 Oil: 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

DEC 15 1986

(Continue on reverse side)

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

Halliburton - 1 stage Foam Frac - 12/20/85

8934/42, 8955/59, 9032/38, 9047/51, 9061/9068, 9077/78

Oriskany - 95,000# sand, 1717 bbls water and 167,000 scf nitrogen

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Sand & Shale			0	187	1/2" stream fresh water @17'
Big Lime			187	705	3/4" stream fresh water @97'
Injun			712	742	
Pocona			743	1588	
Hampshire			1589	2831	
Fore Knobs (Chemung)			2832	2940	
Pound Sandstone			2941	3144	
Brierly Gap Sandstone			3454	3661	
Scherr			4650	6793	
Brallier			6794	7908	
Harrell Shale			7909	8076	
Tully Horizon			8077	8093	
Mahantango			8094	8513	
Upper Marcellus			8514	8640	
Lower Marcellus			8709	8766	
Needmore Shale			8782	8911	
Oriskany			8912	9141	
✓ Helderberg			9151	9349' T.D.	

(Attach separate sheets as necessary)

Union Drilling, Inc.

Well Operator

By:

Date: Joseph C. Pettey, Vice President of Production

12/4/86

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 ... encountered in the drilling of a well."

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

- 1) Well Operator: ¹⁸⁰⁰ Equitable Resources Exploration, Inc. 16155, 3, 383
- 2) Operator's Well Number: WVG02178 3) Elevation: 2885
- 4) Well type: (a) Oil / or Gas X/
- (b) If Gas: Production X/ Underground Storage /
Deep X/ Shallow /
- 5) Proposed Target Formation(s): Shriver Chert 486
- 6) Proposed Total Depth: 9349 feet
- 7) Approximate fresh water strata depths: 17; 97'
- 8) Approximate salt water depths: none
- 9) Approximate coal seam depths: none
- 10) Does land contain coal seams tributary to active mine? Yes / No X/
- 11) Proposed Well Work: Clean-out to original TD, Frac Shriver Chert.
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT	
	Size	Grade	Weight per ft.	For drilling		Left in well
Conductor	13 3/8			40	40	To surface
Fresh Water						
Coal						
Intermediate	9 5/8			2446.70	2446.70	To surface
Production	5 1/2"			9343.52	9343.52	As required
Tubing	2.375			8943	8943	
Liners						

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JUN 06 1988

PACKERS : Kind _____
Sizes _____
Depths set _____

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

For Division of Oil and Gas Use Only

1226
44255
Fee(s) paid: Well Work Permit Reclamation Fund WPCP
Plat WW-9 WW-2B Bond 50 Blanket Agent
(Type)

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JUN 06 1988

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 1) Date: May 25, 1988
- 2) Operator's well number
WVG02178 - Union Land Management #1
- 3) API Well No: 47 - 023 - 0011 - FRAC.
State - County - Permit

- 4) Surface Owner(s) to be served:
 - (a) Name Union Land Management CO.
Address Box 466
Herndon, VA 22070
 - (b) Name _____
Address _____
 - (c) Name _____
Address _____
- 6) Inspector Phillip Tracy
Address P. O. Box 2536
Elkins, WV 26241
Telephone (304)- 636-8798

- 5) (a) Coal Operator:
 - Name _____
 - Address _____
- (b) Coal Owner(s) with Declaration
 - Name Union Land Management Company
 - Address Box 466
Herndon, VA 22070
 - Name _____
 - Address _____
- (c) Coal Lessee with Declaration
 - Name _____
 - Address _____

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR x Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 6 on the above named parties, by:

- Personal Service (Affidavit attached)
- X Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application. I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Equitable Resources Exploration, Inc.
By: Douglas P. Terry DOUGLAS P. TERRY
Its: Operations Manager - North
Address P. O. Drawer 40
Buckhannon, WV 26201
Telephone (304) 472-4610

Subscribed and sworn before me this 25th day of May, 19 88

Linda S. Casfield Notary Public
My commission expires December 23, 1997

RECEIVED



JUL 18 1985

TO BE HELD CONFIDENTIAL

1) Date: May 8, 19 85
 2) Operator's Well No. 2178
 3) API Well No. 47 -- 023-0011
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas XX /
 B (If "Gas", Production XX / Underground storage / Deep XX / Shallow)
- 5) LOCATION: Elevation: 2885.68 Watershed: Headwaters Elklick Run
 District: Union County: Grant Quadrangle: Greenland Gap
- 6) WELL OPERATOR Union Drilling, Inc. 893 7) DESIGNATED AGENT Joseph C. Pettey
 Address Post Office Drawer 40 Address Post Office Drawer 40
Buckhannon, WV 26201 Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Donald Ellis Name Union Drilling, Inc.
 Address 2604 Crab Apple Lane Address Post Office Drawer 40
Fairmont, WV 26554 Buckhannon, WV 26201
- 10) PROPOSED WELL WORK: Drill XX / Drill deeper / Redrill / Stimulate XX /
 Plug off old formation / Perforate new formation
 Other physical change in well (specify)
- 11) GEOLOGICAL TARGET FORMATION, Oriskany 475
- 12) Estimated depth of completed well, 9100 feet
- 13) Approximate strata depths: Fresh, feet; salt, feet.
- 14) Approximate coal seam depths: Is coal being mined in the area? Yes / No XX /

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	13-3/8			X		XXX 30'	XXX 30'		Kinds
Fresh water						400	400		<u>CTS by rule 15-05</u>
Coal									Sizes
Intermediate	9-5/8			X		3500'	3500'	to surface	
Production	5-1/2			X		9100'	9100'	as required	<u>by set rule 15-01</u>
Tubing									
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-023-0011 Date July 19 19 85

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 July 19, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <u>MW</u>	Casing: <u>MW</u>	Fee: <u>034202</u>
---	--	-----------------	-------------------	--------------------

[Signature]
 Administrator, Office of Oil and Gas
 Director, Division of Oil & Gas

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

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

File