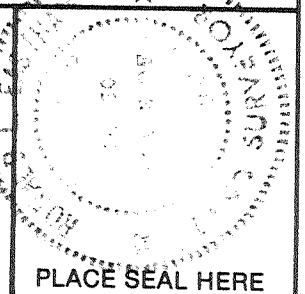


FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2,000  
 MINIMUM DEGREE OF ACCURACY 1: 37,779  
 PROVEN SOURCE OF ELEVATION T.B.M. for Pardee No. 73  
 Elev. = 1418.21

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 ENERGY.  
 (SIGNED) Ronald L. Carth  
 R.P.E. \_\_\_\_\_ L.L.S. 150



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

DATE November 7, 19 91  
 OPERATOR'S WELL NO. The Southern Land Co., et al  
 API WELL NO. No. 19, S.N. 137501

47 - 005 - 1551  
 STATE COUNTY PERMIT

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X

LOCATION: ELEVATION 1551.39 WATERSHED Spruce Laurel Fork of Little Coal River  
 DISTRICT Washington 5 COUNTY Boone  
 QUADRANGLE Lorado Bald Knob WC

SURFACE OWNER The Southern Land Company, et al ACREAGE 7,000  
 OIL & GAS ROYALTY OWNER The Southern Land Company, et al LEASE ACREAGE 15,404  
 LEASE NO. 33666

PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR  
 STIMULATE X PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW  
 FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_

TARGET FORMATION Devonian Shale ESTIMATED DEPTH 5,950' KB

WELL OPERATOR Ashland Exploration, Inc. DESIGNATED AGENT Bobby E. Widener  
 ADDRESS P.O. Box 391 ADDRESS P.O. Box 379  
DEEP WELL Ashland, Ky. 41114 6-6 Man-Oleona (266) Brenton, W. Va. 24818

FEB 14 1992

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

Reviewed TMG  
Recorded \_\_\_\_\_

Well Operator's Report of Well Work

Farm name: THE SOUTHERN LAND CO Operator Well No.: 19 S 137501

LOCATION: Elevation: 1551 Quadrangle: LORADO

District: WASHINGTON County: BOONE  
Latitude: 14600 Feet South of 37 Deg. 52 Min. 30 Sec.  
Longitude: 10600 Feet West of 81 Deg. 40 Min. 0 Sec.

Company: ASHLAND EXPLORATION, INC.  
P. O. BOX 391, A1-6  
ASHLAND, KY 41114-0391

Agent: B. E. WIDENER

Inspector: RICHARD CAMPBELL

Permit Issued: 02/11/92  
Well work Commenced: 05/07/92  
Well work Completed: 08/03/92  
Verbal Plugging: \_\_\_\_\_  
Permission granted on: \_\_\_\_\_  
Rotary X Cable \_\_\_\_\_ Rig  
Total Depth (feet) 5944  
Fresh water depths (ft) \_\_\_\_\_  
43' 1/2" stream  
Salt water depths (ft) \_\_\_\_\_  
None noted  
Is coal being mined in area (Y/N)? N  
Coal Depths (ft): None noted

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size			
20"	20'	20'	Driven
16"	43'	43'	194
8 5/8"	1942'	1942'	1002
5 1/2"	5930'	5930'	832
1.9" @ 1.9" @	5763' w/ 3524'	R-4 pkr @	3574

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 3827-5813  
Gas: Initial open flow 0 MCF/d Oil: Initial open flow --- Bbl/d  
Final open flow 1127 MCF/d Final open flow --- Bbl/d  
Time of open flow between initial and final tests 3 Hours  
Static rock pressure 795# psig (surface pressure) after 72 Hours

Second producing formation Berea Pay zone depth (ft) 3501-3512  
Gas: Initial open flow 0 MCF/d Oil: Initial open flow --- Bbl/d  
Final open flow 1057 MCF/d Final open flow --- Bbl/d  
Time of open flow between initial and final tests 3 Hours  
Static rock Pressure 660# psig (surface pressure) after 72 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1. DETAILS OF PERFORATED INTERVALS, FRACTURING OF STIMULATING, PHYSICAL CHANGE, ETC. 2.) THE WELL LOG WHICH IS A SYSTEMATIC DETIALED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: ASHLAND EXPLORATION, INC. AUG 21 1992  
By: James L. Stephens James L. Stephens, Eng. Tech.  
Date: 8/12/92

<u>Formation on Rock Type</u>	<u>TOP</u>	<u>BASE</u>
Sand and Shale (Base Lee Fm)	0	1950
Pennington formation	1950	2613
Ravenscliff 2021-2050		
U. Maxton 2191-2229		
M. Maxton 2383-2395		
L. Maxton 2561-2575		
Little Lime	2613	2693
Big Lime	2693	3013
Borden formation	3013	3472
Sunbury Shale	3472	3487
Berea	3487	3514
Devonian Shale	3514	5929
Onondaga Ls	5929	TD

DTD 5944  
LTD 5944

8%" casing cemented to surface on primary job.

### Well Treatment

Perf Rhinestreet 20H/5466-5813. N<sub>2</sub> frac using 400 gal 8% fe acid, 811,000 scf N<sub>2</sub> @ 64,148 scf/min. ATP 3119#, MTP 4260# and ISIP 2879.

Perf L. Huron 23H/4629-5124. N<sub>2</sub> frac using 550 gal 8% fe acid, 810,000 scf N<sub>2</sub> @ 99,818 scf/min. BD 3109#, ATP 3300#, MTP 3529# and ISIP 2495.

Perf U. Dev. Shale 17H/3827-4203. N<sub>2</sub> frac using 590 gal 8% fe acid, 850,000 scf N<sub>2</sub> @ 98,000 scf/min. ATP 3248#, MTP 4139# and ISIP 2397#.

Perf Berea 12H/3501-3512. 75 quality foam frac the Berea using 500 gal 15% fe acid, 71,700# 20/40 sand and 301,500 scf N<sub>2</sub> @ 9,950-10,000 scf/min. BD 1208#, ATP 1125# @ 25 bpm foam rate MTP 1300# and ISIP 1150#.

005-1551

FORM WW-2B-SD

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

Issued

2/11/92

Expires 2/11/94

JAN 21

- 1) Well Operator: <sup>43</sup> Ashland Exploration, Inc. 2750 (5) 445  
Southern Land Co., et al
- 2) Operator's Well Number: 19, Serial #137501 3) Elevation: 1551.0'
- 4) Well type: (a) Oil\_\_\_/ or Gas\_X/  
(b) If Gas: Production\_X/ Underground Storage\_\_\_/  
Deep\_\_\_/ Shallow\_X/
- 5) Proposed Target Formation(s): <sup>441</sup> Devonian Shale
- 6) Proposed Total Depth: 5950'KB feet
- 7) Approximate fresh water strata depths: Base 491'KB (Map WV-12)
- 8) Approximate salt water depths: Top 991'KB (Map WV-12)
- 9) Approximate coal seam depths: Solid - No Seams Operated
- 10) Does land contain coal seams tributary to active mine? Yes\_\_\_/ No\_X/
- 11) Proposed Well Work: Drill and Stimulate New Well
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu.ft.)
Conductor	16	LS	36.91	30	30	CTS
Fresh Water						
Coal						
Intermediate	8 5/8	J55	24.0	1950	1950	CTS
Production	5 1/2	J55	15.5	5950	5950	AS NEEDED
Tubing	1.9	J55	2.76	-	5900	SIPHON
Liners						

13155

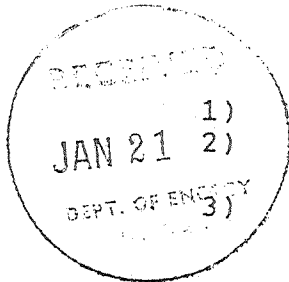
PACKERS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

506 428 For Division of Oil and Gas Use Only

# 2

Fee(s) paid:  Well Work Permit  Reclamation Fund  WPCP

Plat  WW-9  WW-2B  Bond Surety  Agent  
(Type)



Date: January 17, 1992  
Operator's well number The Southern Land Co. etal #19, Serial #13750  
API Well No: 47 - 005 - 1551  
State - County - Permit

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

4) Surface Owner(s) to be served:  
(a) Name The Southern Land Co., etal  
Address P.O. Box 1385  
Charleston, WV 25325  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Richard S. Campbell  
Address Box 163  
Hamlin, WV 25523  
Telephone (304)- 824-5828

5) (a) Coal Operator:  
Name Peabody/Eastern Associated Coal  
Address P.O. Box 29  
Wharton, WV 25208  
(b) Coal Owner(s) with Declaration  
Name Same as No. 4(a)  
Address \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Coal Lessee with Declaration  
Name Peabody Coal Company  
Address P.O. Box 1233  
Charleston, WV 25334

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  
 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 2 on the above named parties, by:  
\_\_\_\_\_ Personal Service (Affidavit attached)  
 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 Ashland Exploration, Inc.  
By: W. Mark Parks *W. Mark Parks*  
Its: Operations Manager  
Address P.O. Box 391  
Ashland, KY 41114  
Telephone 606-329-5450

Subscribed and sworn before me this 17th day of January, 1992  
*Luchi W. Santa*  
\_\_\_\_\_  
Notary Public  
My commission expires November 23, 1994