

**Corners (found)**  
 ▲ Sta. 464, Stone w/X  
 ▲ Sta. 443, Iron Rail

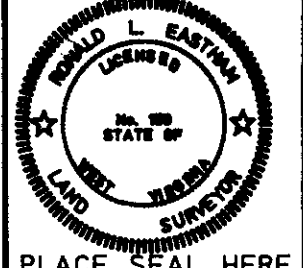
West Virginia State Plane  
 Coordinates for Location No. 93  
 N 34620525 : E 18711964

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

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF  
 ACCURACY 1: 135380  
 PROVEN SOURCE OF  
 ELEVATION U.S.G.S. BM '32 8K6'  
 Elev. 1291.709

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 THE LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

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



PLACE SEAL HERE

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



DATE April 28, 19 93  
 OPERATOR'S WELL NO. Rowland Land Co. 93  
 API WELL NO. 8N 143731  
47-081-0953

WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
 LOCATION: ELEVATION 1139.48 WATER SHED Clear Fork of Big Coal River  
 DISTRICT Clear Fork COUNTY Raleigh  
 QUADRANGLE Dorothy Eccles NW  
 SURFACE OWNER Rowland Land Company, Ltd. ACREAGE 630537  
 OIL & GAS ROYALTY OWNER Rowland Land Company, Ltd. LEASE ACREAGE 4734087  
 LEASE NO. 80594  
 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 INFORMATION Devonian Shale ESTIMATED DEPTH 4,145' KB  
 WELL OPERATOR Ashland Exploration, Inc. DESIGNATED AGENT A. Roy Chandler  
 ADDRESS P.O. Box 391 4619 Ashland, Ky. 41114 ADDRESS Rt. 6 P.O. Box 178 Charleston, W.V. 25311

JUN 4 1993

FORM WW-5

COUNTY NAME PERMIT

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

Well Operator's Report of Well Work

Farm Name: ROWLAND LAND CO.

Operator Well No.: 93-S-143731

Location: Elevation: 1,139.48

Quadrangle: DOROTHY

District: CLEAR FORK

County: RALEIGH

Latitude: 2975 Feet South of 37 Deg. 57 Min. 30 Sec.

Longitude: 2675 Feet West of 81 Deg. 25 Min. Sec.

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

Agent: B. E. Widener

Inspector: RODNEY DILLON

Permit Issued: 06-01-93

Well Work Commenced: 06-16-93

Well Work Completed: 07-15-93

Verbal Plugging

Permission granted on:

Rotary  Cable \_\_\_\_\_ Rig

Total Depth (feet) 4767

Fresh water depths (ft) 1" stream 171'

3" stream 352' Damp @ 505'

Salt water depths (ft) None noted

Is coal being mined in area (Y/N)? N

Coal Depths (ft): 521 - ?

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size 20"	Driven to 49'		
16"	75'	75'	118
11 3/4"	408'	408'	242
8 5/8"	1093'	1093'	362
5 1/2"	4754'	4754'	573
Due to large volume of gas; no tbg. was ran @ this time.			

\*Note: Due to high gas volumes the four zones were commingled for production @ this time.

OPEN FLOW DATA

Producing formation Dev. Shale Gordon Pay zone depth (ft) 3674-4701 2848-2860  
 Gas: Initial open flow 59 MCF/d Oil: Initial open flow --- Bbl/d  
 Final open flow 3632 MCF/d Final open flow --- Bbl/d  
 Time of open flow between initial and final tests 3 Hours  
 Static Rock Pressure \*360 psig (surface pressure) after 72 Hours

Second producing formation M. Weir B. Lime Pay zone depth (ft) 2262-2302 2054-2090  
 Gas: Initial open flow 84 MCF/d Oil: Initial open flow --- Bbl/d  
 Final open flow 3632 MCF/d Final open flow --- Bbl/d  
 Time of open flow between initial and final tests 3 Hours  
 Static Rock Pressure \*360 psig (surface pressure) after 72 Hours

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

JUL 30 1993

Reviewed TMG For: Ashland Exploration, Inc.

Recorded \_\_\_\_\_ By: James L. Stephens James L. Stephens, Eng. Tech.

Date: 7-20-93

**RECEIVED**  
 WV Division of  
 Environmental Protection  
 FORM WW-2B  
 MAY 13 93  
 Permitting  
 Office of Oil & Gas

081-0953

Page 1 of 1  
 Issued 06/01/93

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

Expires 06/01/95

17215

- 1) Well Operator: Ashland Exploration, Inc 2750 ① 325  
Rowland Land Company
- 2) Operator's Well Number: 93, Serial No. 143731 3) Elevation: 1139.5
- 1) Well type: (a) Oil    / or Gas X /  
 (b) If Gas: Production X / Underground Storage    /  
 Deep    / Shallow X /
- ) Proposed Target Formation(s): Devonian Shale
- ) Proposed Total Depth: 4943'KB feet
- 7) Approximate fresh water strata depths: 350'
- 8) Approximate salt water depths: 1022'
- 9) Approximate coal seam depths: Solid - No mineable seams
- 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	42	30	30	CTS
Fresh Water	11 3/4	H-40	42	400	400	CTS
Coal						38CS918-11.3 38CS918-11.2
Intermediate	8 5/8	J-55	24	1082	1082	CTS
Production	5 1/2	J-55	15.5	4943	4943	AS NEEDED
Tubing	1.9	J-55	2.76	-	4850	SIPHON
Liners						38CS918-11.1

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

For Division of Oil and Gas Use Only

506906  
 9

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

RECEIVED

MAY 13 93

- 1) Date: May 10, 1993
- 2) Operator's well number  
Rowland Land Company #93, Serial #143731
- 3) API Well No: 47 - 081 - 0953  
State - County - Permit

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 4) Surface Owner(s) to be served:
  - (a) Name Rowland Land Company  
Address 1033 Quarrier St., Room 301  
Charleston, WV 25301
  - (b) Name \_\_\_\_\_  
Address \_\_\_\_\_
  - (c) Name \_\_\_\_\_  
Address \_\_\_\_\_
- 5) (a) Coal Operator:
  - Name N/A  
Address \_\_\_\_\_
  - (b) Coal Owner(s) with Declaration  
Name Same as No. 4(a)  
Address \_\_\_\_\_
  - Name \_\_\_\_\_  
Address \_\_\_\_\_
  - (c) Coal Lessee with Declaration  
Name Consolidation Coal Company  
Address 898 Workman Creek Road  
Beckley WV 25801
- 6) Inspector Rodney Dillon  
Address P.O. Box 131  
Bradley, WV 25818  
Telephone (304)-877-2912

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: Don K. Cunningham *Don K. Cunningham*  
 Its: Professional Surveyor  
 Address P.O. Box 391  
Ashland, KY 41114  
 Telephone 606-329-3870

Subscribed and sworn before me this 10th day of May, 1993

*Urb. W. Donta* Notary Public  
 My commission expires November 23, 1994

<u>Formation or Rock Type</u>	<u>Top</u>	<u>Base</u>
Sand and Shale (base Lee Sand)	0	810
Pennington	810	1721
U. Princeton	842	872
M. Maxton	1400	1409
L. Maxton	1646	1709
Little Lime	1721	1817
Big Lime	1817	2134
Borden	2134	2622
M. Weir	2206	2256
Sunbury Shale	2622	2640
Berea	2640	2677
Devonian Shale	2677	T.D.
Gordon	2844	2863

Drillers TD 4767      DF-822  
 Loggers TD 4760      DFT-813  
 85/8 and 113/4 cmt't to surface on primary job.

Perf. L. Dev. Shale using SF HCG 1 SPF: <sup>813</sup>4701, 4697, 4666, 4651, 4639, 4627, 4608, 4581, 4540, 4519, 4476, 4431, 4427, 4415, 4395, 4358, 4354, 4332, 4316, 4291<sup>813</sup> (20 shots total). N<sub>2</sub> frac L. Dev. Shale using 500 gal 7½% HCl-Fe acid, 861,000 SCF N<sub>2</sub> @ 107,900 SCF/min. BDP = 3450#, ATP = 3855#, MTP = 3941#, ISIP = 2182#.

Perf U. Dev. Shale using SF HCG 1 SPF: <sup>813</sup>4095, 4093, 4037, 4026, 4023, 3959, 3939, 3908, 3871, 3869, 3839, 3811, 3799, 3797, 3778, 3769, 3761, 3738, 3705, 3674<sup>813</sup> (20 shots total). N<sub>2</sub> frac U. Dev. Shale using 450 gal. 7½% HCl-Fe acid, 816,880 SCF N<sub>2</sub> @ 102,931 SCF/min. BDP = 3502#, ATP = 3506#, MTP = 3586#, ISIP = 1773#.

Perf Gordon using 4" HCG .41 jets 26H/2848-2860. 75Q foam frac Gordon using 500 gal 7% HCl-Fe acid, 47,100# 20/40 sand & 180,000 scf N<sub>2</sub> @ 6757 scf/m. BD @ 1064#, ATP - 1060# @ 20 B/M, MTP - 1302#, ISIP - 1182#, TF - 158 Bbl.

Perf M. Weir using 4" HSC .44 jets 26H/2290-2302 & 22H/2262-2282. HOWCO 75Q foam frac M. Weir using 66,800# 20/40, 500 gal 15.5% HCl-Fe acid, & 270,000 scf N<sub>2</sub> @ 6965 scf/m. BD @ 1585, ATP - 1381 @ 20 B/M foam, MTP - 1708, ISIP - 1584, TF - 183.

Perf B. Lime 4" HSC .41 jets 28H/2077-2090 & 18H/2054-2062. Set Arrow RBP @ 2130'. GT - NS. MIRU Howco - pump ¾ Bbl on RBP. Howco 65Q foam acidized Big Lime using 4500 gal 28% HCl-Fe acid & 500 gal 15.5% HCl-Fe acid & 128,000 scf N<sub>2</sub> @ 6728 scf/m. BD @ 1583, ATP - 1301 @ 20 B/M foam, MTP - 1583, ISIP - 1221, TF - 133 Bbl.

17215