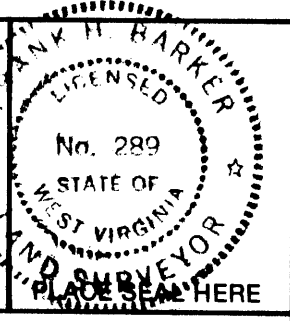


(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1000 FT.  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION POINT ON KNOB  
ELEV. 2202

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) Frank J. Barker  
 R.P.E. \_\_\_\_\_ L.L.S. 289



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



DATE OCT. 15, 19 90  
 OPERATOR'S WELL NO. BERWIND NO 2  
 API WELL NO. 47 047 1103  
 STATE WV COUNTY MC DOWELL PERMIT \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 2201.5 WATERSHED LICK BRANCH  
 DISTRICT BIG CREEK 2 COUNTY MC DOWELL  
 QUADRANGLE WAR Welch SW  
 SURFACE OWNER BERWIND LAND CO. ACREAGE 417.75  
 OIL & GAS ROYALTY OWNER BERWIND LAND CO. LEASE ACREAGE 417.75  
 LEASE NO. \_\_\_\_\_

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 GORDON ESTIMATED DEPTH 5,500'  
 WELL OPERATOR WACO OIL & GAS CO. DESIGNATED AGENT STEVE HOLLOWAY  
 ADDRESS P.O. BOX 397 933 ADDRESS P.O. BOX 397  
GLENVILLE, WV. 26351 GLENVILLE, WV. 26351

DEC 14 1990

H.T. HALL 48673 FORM WW-6

COUNTY NAME PERMIT

**RECEIVED**

State of West Virginia  
DEPARTMENT OF ENERGY  
Division of Oil and Gas

Reviewed TM6  
Recorded \_\_\_\_\_

**FEB 13 92**

Division of Energy  
(Oil and Gas Section)

Well Operator's Report of Well Work

Farm name: BERWIND LAND CO Operator Well No.: BERWIND 2

LOCATION: Elevation: 2201.50 Quadrangle: WAR

District: BIG CREEK County: MCDOWELL  
Latitude: 13650 Feet South of 37 Deg. 17Min. 30 Sec.  
Longitude: 1000 Feet West of 81 Deg. 40 Min. 0 Sec.

Company: WACO OIL & GAS CO., INC.  
1297 N. LEWIS ST.  
GLENVILLE, WV 26351-0000

Agent: STEPHEN E. HOLLOWAY

Inspector: TIM BENNETT  
Permit Issued: 12/13/90  
Well work Commenced: 08/14/91  
Well work Completed: 09/03/91  
Verbal Plugging  
Permission granted on: N/A  
Rotary X Cable N/A Rig  
Total Depth (feet) 5,254  
Fresh water depths (ft) \_\_\_\_\_  
None Reported  
Salt water depths (ft) \_\_\_\_\_  
1,023'  
Is coal being mined in area (Y/N)? N  
Coal Depths (ft): 120-125, 834-838

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
11-3/4"	521	521	295
8-5/8"	1,524	1,524	466
4-1/2"	0	5,108	230

OPEN FLOW DATA

Producing formation Gordon and Berea Pay zone depth (ft) 4870-5003  
 Gas: Initial open flow show MCF/d Oil: Initial open flow None Bbl/d  
 Final open flow 387 MCF/d Final open flow None Bbl/d  
 Time of open flow between initial and final tests 48 Hours  
 Static rock Pressure 345 psig (surface pressure) after 24 Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_  
 Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ 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 pressure) after \_\_\_\_\_ 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.

For: WACO OIL & GAS CO., INC.

By: Barry K. Jay  
Date: February 11, 1992

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

1st Stage: Gordon 4966-5001 - 8 Holes, 500 gal 15% HCL,  
75 Q Foam made up of 164 Bbls. H<sub>2</sub>O and 460,000 scf N<sub>2</sub>  
with 31,700 Lb. 20/40 Sand

2nd Stage: Berea 4874-4878 - 8 Holes, 500 gal 15% HCL,  
75 Q Foam made up of 133 Bbls. H<sub>2</sub>O and 295 scf N<sub>2</sub>  
with 10,000 Lb. 20/40 Sand (treatment problems)

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Soil			0	4	
Sandstone and Shale			4	120	
Coal			120	125	
Sandstone and Shale			125	834	
Coal			834	838	
Sandstone and Shale			838	1750	Hole Damp @ 1023'
Ravencliff			1750	1901	
Sandstone and Shale			1901	2800	
Maxon			2800	2840	
Sandstone and Shale			2840	3560	
Big Lime			3560	4080	
Big Injun			4080	4238	
Shale			4238	4366	
Weir			4366	4488	
Shale			4488	4822	
Coffee Shale			4822	4846	
Berea			4846	4890	
Shale			4890	4934	
Gordon			4934	5002	
Shale			5002	5254	T. D.

98911

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

WELL WORK PERMIT APPLICATION

Permitting  
Oil and Gas Section

933

- 1) Well Operator: Waco Oil and Gas Company, Inc. 51800 (2) 656
- 2) Operator's Well Number: Berwind #2 3) Elevation 2201.5
- 4) Well type: (a) Oil \_\_\_ / or Gas X /  
(b) If Gas: Production X / Underground Storage \_\_\_  
Deep \_\_\_ / Shallow X /
- 5) Proposed Target Formation(s): Gordon 49
- 6) Proposed Total Depth: 5500 feet
- 7) Approximate fresh water strata depths: 45
- 8) Approximate salt water depths: 2700
- 9) Approximate coal seam depths: 950
- 10) Does land contain coal seams tributary to active mine? Yes \_\_\_ / No \_\_\_
- 11) Proposed Well Work: Drill and stimulate new well
- 12)

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Division of Energy  
DEC 12 90  
Permitting  
Oil and Gas Section

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor						
Fresh Water	11-3/4"	H	42	150	150	C.T.S.
Coal	8-5/8"	J	20	1,400	1,400	C.T.S.
Intermediate						
Production	4-1/2"	J	10.5	5,400	5,400	200 Cu.Ft.
Tubing						
Liners						

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

0095  
34

For Division of Oil and Gas Use Only

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

Plat WW-9 WW-2B Bond Security Agent

**RECEIVED**

Division of Energy

DEC 12 90

Permitting  
Oil and Gas Section

1) Date: November 7, 1990  
2) Operator's well number  
Berwind #2  
3) API Well No: 47 - 047 - 1103  
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 Berwind Land Co.  
Address 1050 One Valley Square  
Charleston, WV 25301  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Tim Bennett  
Address Rt. 2, Box 61-B  
Chapmanville, WV 25508  
Telephone (304)- 855-7705

5) (a) Coal Operator:  
Name N/A  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name Berwind Lands Co.  
Address 1050 One Valley Square  
Charleston, WV 25301  
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 \_\_\_\_\_ on the above named parties, by:

- X 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 Waco Oil and Gas Company, Inc.  
By: Stephen E. Holloway Stephen E. Holloway  
Its: Agent  
Address P. O. Box 397  
Glenville, WV 26351  
Telephone (304) 462-5347

Subscribed and sworn before me this 7th day of November, 1990

Notary Public  
My commission expires 5 mo, 1991