

87B 12/22/86

5780'

LATITUDE 39-00-00

# FERGUSON LEASE

## 104 ACRES ±

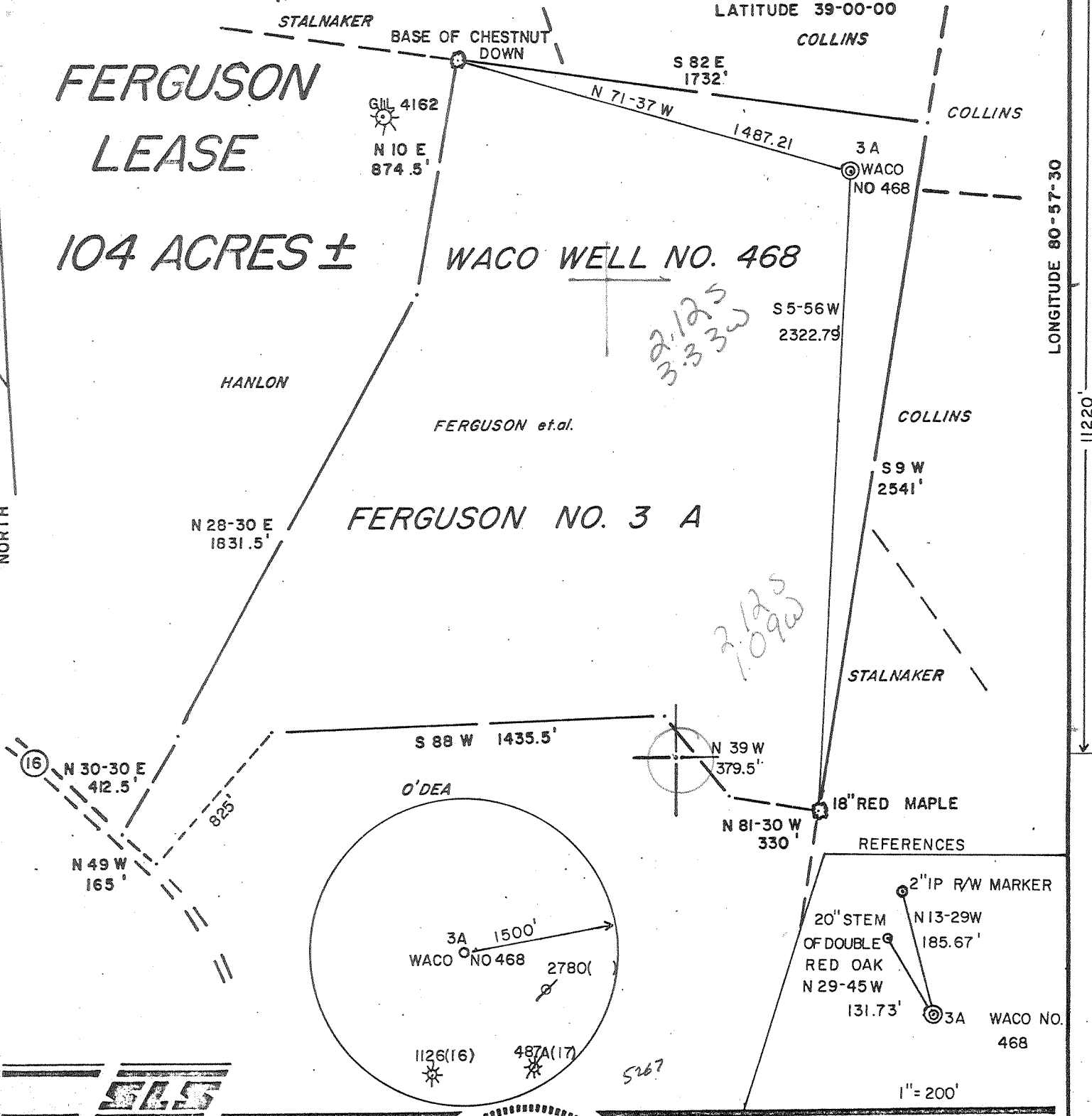
### WACO WELL NO. 468

### FERGUSON NO. 3 A

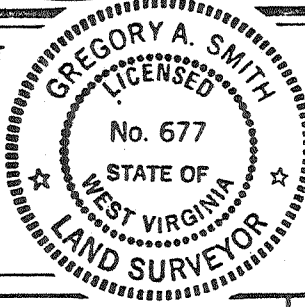
NORTH

LONGITUDE 80-57-30

11221



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.




(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE DECEMBER 13, 19 86  
 OPERATORS WELL NO. WACO NO. 468 3A  
 API WELL NO. 47-021-4546  
 STATE COUNTY PERMIT

L.L.S. Gregory A. Smith  
677

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1582 (20-38)  
 PROVEN SOURCE OF ELEVATION TOP OF KNOB 1182' SCALE 1" = 500'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 905' WATERSHED LAUREL FORK DISTRICT DEKALB 2 COUNTY GILMER QUADRANGLE TANNER 7.5' 634

SURFACE OWNER L. FERGUSON HRS. ACREAGE 103.50 050  
 ROYALTY OWNER L. FERGUSON HRS. LEASE ACREAGE 104 DW

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION BENSON ESTIMATED DEPTH 5100

COUNTY NAME PERMIT

WELL OPERATOR WACO OIL & GAS CO. INC. 933 DESIGNATED AGENT STEPHEN HOLLOWAY  
 ADDRESS P.O. BOX 397 GLENVILLE, WV 26351 ADDRESS P.O. BOX 397 GLENVILLE, WV 26351  
DEEP WELL 6-6 Tanner (178)



Date Feb. 5, 1987  
 Operator's Waco #468  
 Well No. Waco #468  
 Farm Ferguson #3A  
 API No. 47 - 021 - 4546

State of West Virginia  
 DEPARTMENT OF ENERGY  
 Oil and Gas Division

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 X / Underground Storage    / Deep    / Shallow X /)

LOCATION: Elevation: 905' Watershed Laurel Fork  
 District: DeKalb County Gilmer Quadrangle Tanner 7.5'

COMPANY WACO OIL & GAS CO., INC.  
 ADDRESS PO Box 397, Glenville, WV 26351  
 DESIGNATED AGENT Stephen E. Holloway  
 ADDRESS PO Box 397, Glenville, WV 26351  
 SURFACE OWNER L. Ferguson Hrs.  
 ADDRESS Smithville, WV  
 MINERAL RIGHTS OWNER L. Ferguson Hrs.  
 ADDRESS Smithville, WV  
 OIL AND GAS INSPECTOR FOR THIS WORK Craig Duckworth  
 ADDRESS Gassaway, WV  
 PERMIT ISSUED December 30, 1986  
 DRILLING COMMENCED January 14, 1987  
 DRILLING COMPLETED January 19, 1987  
 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 Cond.			
13-10"			
9 5/8			
8 5/8	1062	1062	surf
7			
5 1/2			
4 1/2		6143	600 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Benson Depth 5100' feet  
 Depth of completed well 6202 feet Rotary X / Cable Tools     
 Water strata depth: Fresh 88 feet; Salt none feet  
 Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Shale, Elk, Alexander, Benson Pay zone depth see treatment feet  
 Gas: Initial open flow    Mcf/d Oil: Initial open flow    Bbl/d  
 Final open flow 1627 Mcf/d Final open flow show Bbl/d  
 Time of open flow between initial and final tests 4 hours  
 Static rock pressure 1615 psig (surface measurement) after 48 hours shut in  
 (If applicable due to multiple completion--)  
 Second producing formation Riley, Balltown, Speedway Pay zone depth see treatment 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

0214546

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

- 1st Stage - Shale (6124-5810) 1000 gal 15% Hcl, 20 ton CO<sub>2</sub>, 500 MCF N<sub>2</sub>
- 2nd Stage - Elk, Alexander (5303-4900) 500 gal 15% Hcl, 40 ton CO<sub>2</sub>, 500 MCF N<sub>2</sub>
- 3rd Stage - Benson, riley (4660-4480) 500 gal 15% Hcl, 40 ton CO<sub>2</sub>, 500 MCF N<sub>2</sub>
- 4th Stage - Riley, Balltown (4365-3635) 750 gal 15% Hcl, 50 ton CO<sub>2</sub>, 700 MCF N<sub>2</sub>
- 5th Stage - Speechly (3280-3228) 750 gal 15% hcl, 20 ton CO<sub>2</sub>, 80 MCF N<sub>2</sub>

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Clay			0	5	
Redrock			5	35	
Sand & Shale			35	536	1/4" Fresh water @ 88'
Sand, Shale, Redrock			536	928	
Sand & Shale			928	1818	
Little Lime			1818	1832	404 2250
Blue Monday			1832	1854	83 3350
Big Lime			1854	1902	822 4600
Big Injun			1902	1998	825 4825
Sand & Shale			1998	3238	830 5125
Speechly Section			3238	3568	835 6000
Shale			3568	3633	
Balltown Section			3633	4195	
Riley Section			4195	4606	
Shale			4606	4658	
Benson			4658	4662	
Shale			4662	4866	
Alexander			4866	4934	
Shale			4934	5071	
Elk Section			5071	5308	
Shale			5308	6142	
Marcellus Shale			6142	6182	
Onondaga Limestone			6182	6202	TD

(Attach separate sheets as necessary)

WACO OIL & GAS CO., INC.  
Well Operator

By: Dan Chapman, Geologist

Date: February 5, 1987

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 coal, encountered in the drilling of a well."

JUL 13 1987

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DEC 19 1986



1) Date: December 15, 19 86  
2) Operator's Well No. Waco 468-Ferguson 3A  
3) API Well No. 47 -021- 4546  
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 X / B (If "Gas", Production X / Underground storage / Deep / Shallow X /)
5) LOCATION: Elevation: 905' Watershed: Laurel Fork District: Dekalb 2923 County: Gilmer 021 Quadrangle: Tanner 7.5' 633
6) WELL OPERATOR Waco Oil & Gas CODE: 51800 7) DESIGNATED AGENT Stephen E. Holloway Address P.O. Box 397 Glenville, WV 26351
8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Craig Duckworth Address Box 107, Davison Rt. Gassaway, WV 26624 9) DRILLING CONTRACTOR: Name I.L. Morris Well Service, Inc. Address P.O. Box 397 Glenville, WV 26351
10) PROPOSED WELL WORK: Drill X / Drill deeper / Redrill / Stimulate X / Plug off old formation / Perforate new formation / Other physical change in well (specify)
11) GEOLOGICAL TARGET FORMATION, Benson 435
12) Estimated depth of completed well, 5100 feet
13) Approximate strata depths: Fresh, 35 feet; salt, none feet.
14) Approximate coal seam depths: none Is coal being mined in the area? Yes / No X

15) CASING AND TUBING PROGRAM

Table with columns: CASING OR TUBING TYPE, SPECIFICATIONS (Size, Grade, Weight per ft., New, Used), FOOTAGE INTERVALS (For drilling, Left in well), CEMENT FILL-UP OR SACKS (Cubic feet), PACKERS (Kinds, Sizes, Depths set, Perforations: Top, Bottom). Includes handwritten entries for Intermediate and Production casing.

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-021-4546

Date December 30 19 86

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 December 30, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Table with columns: Bond, Agent, Plat, Casing, Fee, WPCP, SSE, Other. Includes handwritten initials and the number 1692/161.

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

Director, Division of Oil and Gas

File

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

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NOV 29 1988

Page 1 of \_\_\_\_\_  
Form WW2-A  
(09/87)  
File Copy

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

1) Date: 11-10-88  
2) Operator's well number  
Hardman #1-D-8806  
3) API Well No: 47 - 021 - 4546  
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 Robert E. Evans  
Address 22680 Kurtz Rd  
Minerva, Ohio 44657
- (b) Name Charles C. Woodford  
Address SAME ADDRESS
- (c) Name \_\_\_\_\_  
Address \_\_\_\_\_
- 5) (a) Coal Operator:  
Name \_\_\_\_\_  
Address NONE
- (b) Coal Owner(s) with Declaration  
Name \_\_\_\_\_  
Address NONE
- (c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address NONE
- 6) Inspector D. Craig Duckworth  
Address 107 Davison Rt  
Gassaway, WV 26624  
Telephone (304)- 364-5942

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

xx 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)

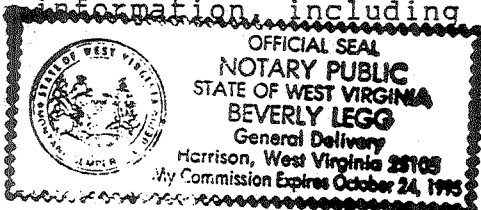
I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through        on the above named parties, by:

- Personal Service (Affidavit attached)
- xx        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 \_\_\_\_\_  
By: Henry J. Hall  
Its: President  
Address \_\_\_\_\_  
Rt 2 Box 2 Glendon, WV 26623

Subscribed and sworn before me this 304-364-6652  
18 day of November, 19 xx

Beverly Legg Notary Public  
My commission expires 10-26-95

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

20585, 2, 633

- 1) Well Operator: H. Y. Hall's Drilling Ser. Inc.
- 2) Operator's Well Number: Hardman #1-D-8806 3) Elevation: 1147
- 4) Well type: (a) Oil \_\_\_ / or Gas X  
(b) If Gas: Production X / Underground Storage \_\_\_  
Deep \_\_\_ / Shallow \_\_\_
- 5) Proposed Target Formation(s): Devonian Shale
- 6) Proposed Total Depth: 5900 feet
- 7) Approximate fresh water strata depths: 450', 496', 229', 259', 189'
- 8) Approximate salt water depths: 1249'
- 9) Approximate coal seam depths: 740'-745'
- 10) Does land contain coal seams tributary to active mine? Yes \_\_\_ / No \_\_\_
- 11) Proposed Well Work: Drill & Stimulate New
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT	
	Size	Grade	Weight per ft.	For drilling		Left in well
Conductor			<i>Comment to Sub</i> 775	775	38CSR18-11.3	
Fresh Water	8 5/8		23	500	500	38CSR18-11.2.2
Coal						
Intermediate						38CSR18-11.1
Production	4 1/2	10.5 11.6			3000'	700'
Tubing						
Liners						

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

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For Division of Oil and Gas Use Only  
DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

9386  
39  
Fee(s) paid: Plat Well Work Permit Blanket Reclamation Fund Blanket WPCP  
Plat WW-9 Blanket WW-2B Blanket Bond Blanket Agent