



FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE **1"=500'**  
 MINIMUM DEGREE OF ACCURACY **1:200**  
 PROVEN SOURCE OF ELEVATION **HG. PT. 1165'**

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) *William R. Ross*  
 R.P.E. \_\_\_\_\_ L.L.S. **551**

PLACE SEAL HERE

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



DATE **11 DECEMBER**, 19 **81**  
 OPERATOR'S WELL NO. **H-1311**  
 API WELL NO. **1414**  
**47 - 073 - 1414**  
 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 **1108'** WATER SHED **LEFT FORK-FRENCH CREEK**  
 DISTRICT **MC/KIM** COUNTY **PLEASANTS**  
 QUADRANGLE **SCHULTZ 7 1/2' QUAD.**  
 SURFACE OWNER **G.W. KEARSE** ACREAGE **24.47**  
 OIL & GAS ROYALTY OWNER **T.E. CUNNINGHAM HEIRS** LEASE ACREAGE **24.47**  
 LEASE NO. \_\_\_\_\_  
 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 **SHALE** ESTIMATED DEPTH **5400'**  
 WELL OPERATOR **HAUGHT, INC.** DESIGNATED AGENT **WARREN HAUGHT**  
 ADDRESS **SMITHVILLE, W.VA. 26178** ADDRESS **SMITHVILLE, W.VA. 26178**

JAN 27 1982



IV-35  
(Rev 8-81)

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OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

State of West Virginia

Department of Mines  
Oil and Gas Division

Date July 20, 1982

Operator's Well No. H-1311

Farm Cunningham

API No. 47 - 073 - 1414

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil X / Gas X / Liquid Injection     / Waste Disposal     /  
(If "Gas," Production X / Underground Storage     / Deep     / Shallow     /)

LOCATION: Elevation: 1108' Watershed Left fork of French Creek  
District: McKim County Pleasants Quadrangle Schultz, WV

COMPANY National Operating, Inc.  
ADDRESS Giddings, TX 78942  
DESIGNATED AGENT John R. Cox  
ADDRESS P. O. Box 362, St. Marys, WV 26170  
SURFACE OWNER G. W. Kearse  
ADDRESS St. Marys, WV 26170  
MINERAL RIGHTS OWNER T. E. Cunningham Heir  
ADDRESS Vienna, WV  
OIL AND GAS INSPECTOR FOR THIS WORK Robert Lowther  
ADDRESS Middlebourne, WV  
PERMIT ISSUED 1-11-82  
DRILLING COMMENCED 5-19-82  
DRILLING COMPLETED 5-24-82  
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"	40'	40'	-
9 5/8			
8 5/8	1300'	1300'	297 sks.
7			
5 1/2			
4 1/2		5534	650 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Black Shale Depth 5580 feet  
Depth of completed well 5560 feet Rotary X / Cable Tools      
Water strata depth: Fresh 80 feet; Salt N/A feet  
Coal seam depths: N/A Is coal being mined in the area? No

OPEN FLOW DATA  
Producing formation Rhinestreet Black Shale Pay zone depth 5186-5474 feet  
Gas: Initial open flow 100 Mcf/d Oil: Initial open flow 0 Bbl/d  
Final open flow 30 Mcf/d Final open flow 1 Bbl/d  
Time of open flow between initial and final tests 48 hours  
Static rock pressure 980 psig (surface measurement) after 24 hours shut in  
(If applicable due to multiple completion--)  
Second producing formation N/A 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

AUG 2 1982

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

16 - .49 shots            5186' - 5474'

500 Gal. 15% Acid

567,000 SCF N<sub>2</sub> used to stimulate

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fres and salt water, coal, oil and ga
Red Rock			50	61	
Slate			61	75	
Sand			75	87	
Shale			87	101	
Red Rock			101	111	
Shale			111	130	
Sand			130	145	
Red Rock			145	172	
Sand & Shale			172	250	
Sand			250	350	
Sand & Shale			350	430	
Sand			430	555	
Red Rock			555	640	
Sand			640	775	
Sand & Shale			775	850	
Sand			850	985	
Sand			985	1050	
Sand & Shale			1050	1170	
Sand			1170	1259	
Sand & Shale			1259	1321	
Sand			1321	1330	
Shale			1330	1360	
Red Rock			1360	1375	
Shale			1375	1380	
Sand			1380	1400	
Shale			1400	1420	
Red Rock			1420	1430	
Sand & Shale			1430	1480	
Shale			1480	1500	
Sand			1500	1590	
Shale			1590	1600	
Maxon			1704	1743	
Big Lime			1797	1850	
Keener			1870	1908	
Big Injun			1909	2010	
Squaw			2011	2032	
Weir			2312	2320	

(Continued)

(Attach separate sheets as necessary)

National Operating, Inc.  
Well Operator

By: [Signature], Designated Agent  
Date: 7-22-82

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic  
detailed geologic record of all formations, including  
encountered the drilling of a well."

<u>FORMATION</u>	<u>TOP FEET</u>	<u>BOTTOM FEET</u>	<u>REMARKS</u>
Berea	2350	2362	
Gantz	2490	2506	
Fifty Foot	2562	2571	
Thirty Foot	2650	2670	
Gordon	2762	2782	
Fourth Sand	2880	2888	
Fifth Sand	2942	2960	
Byard	3020	3050	
Elizabeth	3180	3200	
Warren First	3284	3314	
Speechley	3600	3620	
Balltown	3674	3704	
Schfield	3850	3880	
Bradford	4008	4040	
Kane	4052	4070	
Riley	4150	4170	
Elk	4244	4255	
Benson	4890	4910	
Black Shale Rhinestreet to Marcellus	4910	<u>5560</u>	T.D. - Gas

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OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

AUG 2 1982

(Obverse)  
(Revised 3-81)



Form T.E. Cunningham  
APL #47-073-1414  
Date December 31, 1981

STATE OF WEST VIRGINIA  
OFFICE OF OIL AND GAS - DEPARTMENT OF MINES

OIL AND GAS WELL PERMIT APPLICATION

WELL TYPE: Oil X / Gas X /  
(If "Gas", Production X / Underground storage \_\_\_ / Deep \_\_\_ / Shallow X /

LOCATION: Elevation: 1108' Watershed: Left Fork-French Creek  
District: McKim County: Pleasants Quadrangle Schultz, WV

WELL OPERATOR Haught, Inc. DESIGNATED AGENT Warren R. Haught  
Address Rt. 3 Box 14 Address Smithville, WV 26178  
Smithville, WV 26178

OIL AND GAS ROYALTY OWNER T. E. Cunningham Heirs et al COAL OPERATOR None  
Address c/o A. B. Cunningham, 913-19th St. Address \_\_\_\_\_  
Vienna, WV 26105  
Acreage 24.47

SURFACE OWNER G. W. Kearse COAL OWNER(S) WITH DECLARATION ON RECORD:  
Address St. Marys, WV 26170 NAME \_\_\_\_\_  
Acreage 24.47 Address \_\_\_\_\_  
NAME \_\_\_\_\_  
Address \_\_\_\_\_

FIELD SALE (IF MADE) TO:  
NAME Columbia Gas Transmission Corp. COAL LESSEE WITH DECLARATION ON RECORD:  
Address P. O. Noc 1273 NAME None  
Charleston, WV 25305 Address \_\_\_\_\_

OIL AND GAS INSPECTOR TO BE NOTIFIED:  
NAME Phillip L. Tracy  
Address Rt. 23  
Alma, WV 26320  
Telephone 758-4573

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OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed \_\_\_ / leases X / other contract \_\_\_ / dated 12/22/80-1/28/81 to the undersigned well operator from Mary Eddy-T.E. Cunningham Hrs.-G.W. Kearse 2/18/81

(If said deed, lease, or other contract has been recorded:)

Recorded on 2/6/81-2/17/81-3/17-81 in the office of the Clerk of County Commission of Pleasants County, West Virginia, in Deed Book 162 at page 7 A permit is requested as follows:

PROPOSED WORK: Drill X / Drill Deeper \_\_\_ / Redrill \_\_\_ / Fracture or stimulate \_\_\_ / Plug off old formation \_\_\_ / Perforate new formation \_\_\_ / Other physical change in well (specify) \_\_\_\_\_

--planned as shown on the work order on the reverse side hereof.

The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to make by Code §22-4-3 must be filed with the Department of Mines within fifteen (15) days after receipt of this Application by the Dept. Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessees on or before the day of the mailing or delivery of this Application to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:  
WEST VIRGINIA OIL AND GAS CONSERVATION COMMISSION  
1613 WASHINGTON ST., E.  
CHARLESTON, WV 25311  
Telephone - 304/348-3092

BLANKET BOND

By: Haught, Inc.  
Well Operator  
Warren R. Haught  
Its: President

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) Haught, Inc.

Address Rt. 3 Box 14

Smithville, WV 26178

GEOLOGICAL TARGET FORMATION (Marcellus) Devonian Shale

Estimated depth of completed well 5400 feet. Rotary X / Cable tools /

Approximate water strata depths: Fresh, 75 feet; salt, feet.

Approximate coal seam depths: None

Is coal being mined in this area: Yes / No X /

CASING AND TUBING PROGRAM

Table with columns: CASING OR TUBING TYPE, SPECIFICATIONS (Size, Grade, Weight, New, Used), FOOTAGE INTERVALS (For Drilling, Left in Well), CEMENT FILL UP OR SACKS (Cubic ft.), PACKERS (Kinds, Sizes, Depths set, Perforations: Top Bottom)

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code §22-4-2, (iii) Form IV-9, "Reclamation Plan" applicable to the reclamation required by Code §22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code §22-4-12a, and (v) if applicable, the consent required by Code §22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

All operations being in accordance with Chapter 22, of the West Virginia Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 9-12-82.

Signature of Fred B. Russell, Deputy Director - Oil & Gas Division

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code §22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof:

W A I V E R

The undersigned coal operator / owner / lessee / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: , 19 .

By: \_\_\_\_\_

Its: \_\_\_\_\_