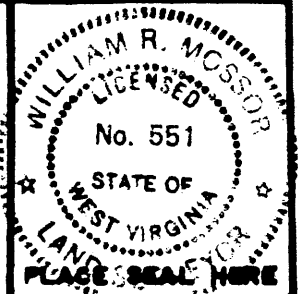


5490'
"08' 10" 18
81° 05'

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 500'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION High Point 1047'

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. Mossor
R.P.E. _____ L.L.S. 551



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



DATE 26 Feb., 1981
OPERATOR'S WELL NO H-1237
API WELL NO. 47-073-1142-Frac
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 1047' WATER SHED Turkey Run
DISTRICT McKim COUNTY Pleasants
QUADRANGLE Schultz, W.Va. 7 1/2 Quad.
SURFACE OWNER Benson D. Ward ACREAGE 84.8
OIL & GAS ROYALTY OWNER Benson D. Ward LEASE ACREAGE 101
LEASE NO. _____
PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE _____ PLUS OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____
TARGET FORMATION Shale ESTIMATED DEPTH 4500'
WELL OPERATOR Haught, Inc. DESIGNATED AGENT Warren Haught
ADDRESS Smithville, W.Va. 26178 ADDRESS Smithville, W.Va. 26178

Nov 05 1984

RECEIVED
MAY 23 1985



RECEIVED
JUL 3 - 1985

IV-35
(Rev 8-81)

OIL & GAS DIVISION
DEPT. OF MINES

OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date May 21, 1985
Operator's Ward H-1237
Well No. Ward
Farm Ward
API No. 47 - 073 - 1142
FRAC

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

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

LOCATION: Elevation: 1047 Watershed Turkey Run
District: McKim County Pleasants Quadrangle Schultz

COMPANY Haught, Inc.
ADDRESS 4424 Emerson Ave., Parkersburg, WV 26104
DESIGNATED AGENT Warren R. Haught
ADDRESS Rt. 3 Box 14, Smithville, WV 26178
SURFACE OWNER Benson Ward
ADDRESS St. Clair Shores, MD 48081
MINERAL RIGHTS OWNER Benson Ward
ADDRESS Same
OIL AND GAS INSPECTOR FOR THIS WORK Robert Lowther
ADDRESS Middlebourne, WV 26149

PERMIT ISSUED 10-23-84
DRILLING COMMENCED 11-6-84
REWORK
DRILLING COMPLETED 11-28-84

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		615	100 sks
7			
5 1/2			
4 1/2		4002	530 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Depth feet
Depth of completed well 4313' feet Rotary n/a / Cable Tools n/a
Water strata depth: Fresh n/a feet; Salt n/a feet
Coal seam depths: n/a Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 2824-3001 feet
Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
Final open flow (100) Mcf/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests hours

Static rock pressure No Test psig(surface measurement) after hours shut in
(If applicable due to multiple completion--)

Second producing formation 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

JUL 15 1985

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

10 holes (2824-3001) ^{up to w. undiff.}

Frac plug at 3040

720,000 scf N² Frac

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas

(Attach separate sheets as necessary) ⁴³¹³ ¹⁰⁴⁷ ³⁶⁵⁰ ¹¹ ²⁵

Haught, Inc.
Well Operator
By: David C. Jackson, Well Administrator
Date: May 21, 1985

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

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

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

WELL TYPE: Oil / Gas / Liquid Injection Waste Disposal
(If "Gas", Production / Underground storage / Deep / Shallow /)
LOCATION: Elevation: 1047' Watershed: Turkey Run
District: McKim County: Pleasants Quadrangle: Schultz, W.V. 7 1/2'
WELL OPERATOR Haught, Inc. DESIGNATED AGENT Benson D. Ward H-1237
Address Rt. 3 Box 14 Address Smithville, WV 26178
Smithville, WV 26178

SERVICED WORK: Drill / Convert / Drill deeper / Redrill / Fracture or stimulate
Plug off old formation / Perforate new formation /
Other physical change in well (specify) _____

PERMIT ISSUED ON March 17, 1981, OIL & GAS INSPECTOR FOR THIS WORK:
IF APPLICABLE: PERMISSING OF DRY HOLE OR CONTINUOUS PROGRESSION FROM DRILLING OR REMOVED. VERBAL PERMISSION OBTAINED Name Phillip Lee Tracy
Address Rt. 23
Alma, W.V. 26320

GEOLOGICAL TARGET FORMATION: Shale Depth 3286 to 4094 feet
Depth of completed well, 4313 feet Rotary / Cable Tools _____
Water strata depth: Fresh, _____ feet; salt, _____ feet.
Coal seam depths: None if coal being mined in the area? No
Work was commenced April 2, 1981 and completed April 7, 1981

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling		
Conductor								Rinds
Fresh water	8-5/8	K-55	20#	X		615'	615'	100 sacks.
Coal								Sizes
Intermediate								
Production	4 1/2"	J-55	10.5#	X			4302	530 sacks
Tubing								
Liners								Perforations:
								Top Bottom
								3638 3865

OPEN FLOW DATA

Producing formation Shale Pay zone depth 3286 to 4094 feet
Gas: Initial open flow, _____ Mcf/d Oil: Initial open flow, _____ Bbl/d
Final open flow, 160 Mcf/d Final open flow, _____ Bbl/d
Time of open flow between initial and final tests, 8 hours
Static rock pressure, 465 psig (surface measurement) after 12 hours shut in
[If applicable due to multiple completion--]
Second producing formation _____ Pay zone depth _____ feet
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 measurement) after _____ hours shut in

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

Nitrogen Fraced by B.J. Hughes Production Services
720,000 SCF -- 500 Gal. Acid.

Perforations: 26--3865--3638

Hughes

FORMATION	Color	Hard, or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fr and salt water, coal, oil and
le	Gray	Soft	0	50	
Rock	Red	Soft	50	75	
le	Gray	Soft	75	640	
Shale	Gray	Soft	640	776	
Red Rock	Red	Soft	776	808	
Shale	Gray	Soft	802	966	
Red Rock	Red	Soft	966	997	
Shale	Blue	Soft	997	1184	
Red Rock	Red	Soft	1184	1194	
Shale	Gray	Soft	1194	1247	
Shale	Gray	Soft	1247	1820	
Sand	Gray/Wht	Soft	1820	1845	
Shale	Gray	Soft	1845	1870	
Sand/Lime	Gray/Wht	Soft	1870	1885	
Shale/Sand	White	Soft	1885	1900	
Shale	Grat	Soft	1900	2060	
Shale	Blue/Gry	Soft	2060	3286	
Shale	Gray	Soft	3286	3700	
Shale	Gray	Soft	3700	3850	
Shale	D.Gray	Med.	3850	4094	
Shale	L.Gray	Soft	4094	4313	T.D.

Hughes

NOTE: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic, detailed professional record of all formations,

Haught, Inc.
Well Operator
By *Walter R. Haught*
Its President

RECEIVED

JUN - 4 1981

Date: May 4, 1981
 Operator's Well No. H-1237
 API Well No. 47-073-1142
State County Permit

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

OIL & GAS DIVISION
 DEPT. OF MINES
WELL OPERATOR'S REPORT OF DRILLING, REPAIRS AND/OR STIMULATION, OR PHYSICAL CHANGE

WELL TYPE: Oil / Gas / Liquid Injection / Waste Disposal
(For "Gas", Production / Underground storage / Deep / Shallow)
 LOCATION: Elevation: 1047' Watershed: Turkey Run
 District: McKim County: Pleasants Quadrangle: Schultz, W.V. 7 1/2'
 WELL OPERATOR: Haught, Inc. Benson D. Ward H-1237
 Address: Rt. 3 Box 14 Smithville, WV 26178 Designated Agent: Warren R. Haught
 Address: Smithville, WV 26178

PERMITTED WORK: Drill / Convert / Drill deeper / Redrill / Fracture or stimulate
Plug off old formation / Perforate new formation
 Other physical change in well (specify) _____

PERMIT ISSUED ON March 17, 1981, OIL & GAS INSPECTOR FOR THIS WORK:
 Name Phillip Lee Tracy
 Address Rt. 23
Alma, W.V. 26320

GEOLOGICAL TARGET FORMATION: Shale Depth 3286 to 4094 feet
 Depth of completed well, 4313 feet Rotary / Cable Tools _____
 Water strata depth: Fresh, _____ feet; salt, _____ feet.
 Coal seam depths: None Is coal being mined in the area? No
 Work was commenced April 2, 1981 and completed April 7, 1981

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		WEIGHT PER FOOT (LBS)	PACKERS
	Size	Grade	Weight per ft	New	Used For drilling	Left in well		
Conductor								Hands
Fresh water	8-5/8"	K-55	20#	X	615'	615'	100 sacks.	
Coal								Sizes
Intermediate								
Production	4 1/2"	J-55	10.5#	X		4302	530 sacks	Becks sec
Tubing								
Screens								Perforations:
								Top
								Bottom
								3638
								3865

OPEN FLOW DATA
 Producing formation: Shale Pay zone depth: 3286 to 4094 feet
 Gas: Initial open flow, _____ McF/d Gas: Initial open flow, _____ McF/d
 Final open flow, 160 McF/d Final open flow, _____ McF/d
 Time of open flow between initial and final tests, 8 hours
 Static rock pressure, 465 psig (surface measurement) after 12 hours shut in
(If applicable due to multiple completions--)
 Second producing formation: _____ Pay zone depth: _____
 Gas: Initial open flow, _____ McF/d Gas: Initial open flow, _____ McF/d
 Final open flow, _____ McF/d Final open flow, _____ McF/d
 Time of open flow between initial and final tests, _____ hours
 Static rock pressure, _____ psig (surface measurement) after _____ hours shut in

JUN 23 1981

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

Nitrogen Fraced by B.J. Hughes Production Services
720,000 SCF -- 500 Gal. Acid.

Perforations: 26--3865--3638

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all and salt water, coal, oil an
Shale	Gray	Soft	0	50	
Red Rock	Red	Soft	50	75	
Shale	Gray	Soft	75	640	
Shale	Gray	Soft	640	776	
Red Rock	Red	Soft	776	808	
Shale	Gray	Soft	802	966	
Red Rock	Red	Soft	966	997	
Shale	Blue	Soft	997	1184	
Red Rock	Red	Soft	1184	1194	
Shale	Gray	Soft	1194	1247	
Shale	Gray	Soft	1247	1820	
Sand	Gray/Wht	Soft	1820	1845	
Shale	Gray	Soft	1845	1870	
Sand/Lime	Gray/Wht	Soft	1870	1885	
Shale/Sand	White	Soft	1885	1900	
Shale	Grat	Soft	1900	2060	
Shale	Blue/Gry	Soft	2060	3286	
Shale	Gray	Soft	3286	3700	
Shale	Gray	Soft	3700	3850	
Shale	D.Gray	Med.	3850	4094	
Shale	L.Gray	Soft	4094	4313	
<u>Shale</u> <i>DEVSH</i>					T.D. <i>Huron</i>

NOTE: Replication 2.02(i) provides as follows:

"The term 'log' or 'well log'

Haught, Inc.
Well Operator

By *Walter R. Haught*

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

OIL AND GAS WELL PERMIT APPLICATION

February 27, 1981
H-1237
APD Well No. 07 - 073 - 1142
STATE COUNTY

WELL TYPE: Oil / Gas
(If "Gas", Production / Underground Storage Deep Shallow

LOCATION: Elevation: 1047' Watershed: Turkey Run
District: McKim County: Pleasants Quadrant: Schultz, W.V. 7 1/2'

WELL OPERATOR Haught, Inc.
Address Route 3, Box 14
Smithville, WV 26178

DESIGNATED AGENT Warren R. Haught
Address Smithville, WV 26178

OIL & GAS ROYALTY OWNER Benson D. Ward
Address 26413 Princeton
St. Clair Shores, MI 48081

COAL OPERATOR None
Address _____

ACREAGE 101
SURFACE OWNER Benson D. Ward
Address 26413 Princeton
St. Clair Shores, MI 48081
ACREAGE 84.8

COAL OWNER(S) WITH DECLARATION ON RECORD:
Name _____
Address _____
Name _____
Address _____

FIELD SALE (IF MADE) TO:
Name Columbia Gas Transmission Corp.
Address P.O. Box 1273
Charleston, WV 25325

COAL LESSEE WITH DECLARATION ON RECORD:
Name None
Address _____

OIL & GAS INSPECTOR TO BE NOTIFIED
Name Phillip Lee Tracy
Address Rt. 23
Alma, W.V. 26320

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed ___ / lease / other contract ___ / dated May 27, 19 80, to the undersigned well operator from Benson D. Ward

[If said deed, lease, or other contract has been recorded:]
Recorded on June 9, 19 80, in the office of the Clerk of the County Commission of Pleasants County, West Virginia, in Deed Book 156 at page 249. A permit is requested as follows:

PROPOSED WORK: Drill / Drill Seeper ___ / Redrill ___ / Fracture or stimulate ___ /
Plug off old formation ___ / Perforate new formation ___ /
Other physical change in well (specify) _____

As 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 § 20-2-3 must be filed with the Department of Mines within fifteen (15) days after the receipt of this Application by the Department.

Copies of this Permit Application and the enclosed plan and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit 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
1625 WASHINGTON STREET EAST
CHARLESTON, WV 25311
TELEPHONE: (304) 542-3092

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

NET BOND

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-22 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) Haught, Inc.
Address Smithville, WV 26178

USUAL TARGET FORMATION, Shale
Estimated depth of completed well, 4500' Feet Rotary Cable tools
Approximate water stages depths: Fresh, 75 feet; salt, feet.
Approximate coal seam depths: None Is coal being mined in the area? Yes No

LOGGING AND TUBING PROGRAM

LOG OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Other Feet)	REMARKS
	Size	Grade	Weight per ft	Flow	Used	For drilling	Left in well		
Water	5/8"	K-55	20#	X		200'	200'	75 sacks	Stand Cement to Surface Stops
Production	4 1/2"	J-55	10.5#	X			4500	100 sacks	Depth set Perforations: Top Bottom

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 plan 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-3, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-121 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 § 22-4-2c from the owner of any water well or dwelling within 225 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.

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22, of the W. Va. Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 11-27-81.

[Signature]
Deputy Director - Oil & Gas Division

The following subject must be completed by the coal operator and by any coal owner or coal lessee who has exceeded a declaration under Code § 22-4-21, if the permit is to be issued within fifteen (15) days of receipt thereof:

W A R N I N G

The undersigned coal operator / owner / lessee / of the coal under this well has not examined this proposed well location. If a mine map exists which covers the area of the location, the well location has been added to the mine map. The undersigned has no objection to the location 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.

By _____
Date _____

RECEIVED

18 1984



1) Date: 10-9, 19 84
 2) Operator's Well No. Ward H-1237
 3) API Well No. 47 073 1142 FRAC
 State County Permit

**OIL & GAS DIV.
DEPT. OF MINES**

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

- 4) WELL TYPE: A Oil XX / Gas XX /
 B (If "Gas", Production XX / Underground storage _____ / Deep _____ / Shallow XX /)
 5) LOCATION: Elevation: 1047 Watershed: Turkey Run 057F1
 District: McKim County: Pleasants Quadrangle: Schultz 7.5
 6) WELL OPERATOR Haught, Inc. 21500 7) DESIGNATED AGENT Warren R. Haught
 Address 4424 Emerson XXXXX WYAVE Address Rt 3 Box 14
Parkersburg, WV 26104 Smithville, WV 26178
 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Robert Lowther Name Haught, Inc.
 Address General Delivery Address 4424 Emerson Ave.
Middlebourne, WV 26149 Parkersburg, WV 26104
 10) PROPOSED WELL WORK: Drill _____ / Drill deeper _____ / Redrill _____ / Stimulate XX /
 Plug off old formation _____ / Perforate new formation XX /
 Other physical change in well (specify) _____
 11) GEOLOGICAL TARGET FORMATION, Devonian Shale
 12) Estimated depth of completed well, 4313 feet
 13) Approximate strata depths: Fresh, N/A feet; salt, N/A feet.
 14) Approximate coal seam depths: N/A Is coal being mined in the area? Yes _____ / No XX /

15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water	8 5/8	K-55	20#	In	Well		615	100 sacks	<p style="writing-mode: vertical-rl; transform: rotate(180deg);"> RECEIVED OCT 18 1984 OIL & GAS DIV. DEPT. OF MINES </p>
Coal									
Intermediate									
Production	4 1/2	J-55	10 1/2#	In	Well		4302	530 sacks	
Tubing									
Liners									Perforations

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-073-1142 FRAC Date October 23 1984

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 October 23, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>74</u>	<u>ML</u>	<u>ML</u>	<u>ML</u>	<u>6774</u>

Margaret J. Haase
 Administrator, Office of Oil and Gas

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

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

File