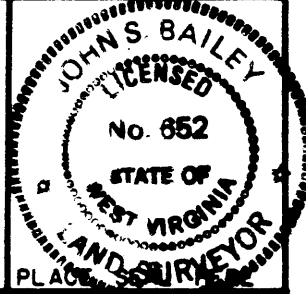


FILE NO. MSES84-554
 DRAWN BY PJD
 SCALE 1"=500'
 MINIMUM DEGREE OF ACCURACY 1 IN 200
 PROVEN SOURCE OF ELEVATION INT. CO. RT. 1/6 & 2/20 2700' SE OF LOC. - EL. 739

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) John S. Bailey
 L.L.S. 652



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



DATE NOVEMBER 7, 1984
 OPERATOR'S WELL NO. CNGD 1503
 API WELL NO. 47-107-1344
 STATE COUNTY PERMIT

Department of Mines
 Oil & Gas Division

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS", PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 985.6' WATER SHED LAUREL FORK
 DISTRICT WALKER 9 COUNTY WOOD 073
 QUADRANGLE WILLOW ISLAND 7.5' 1957 (1976) Manitta 15' SE 9
 SURFACE OWNER ERNIE C. & LAURA S. DONAHUE ACREAGE 40 AC. 75 P.
 OIL & GAS ROYALTY OWNER ERNIE C. & LAURA S. DONAHUE, ET AL. LEASE ACREAGE 103.62
 LEASE NO. DV-615 / DV-477
 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 DEVONIAN SHALE ESTIMATED DEPTH 3850'
 WELL OPERATOR CNG DEVELOPMENT COMPANY DESIGNATED AGENT GARY A. NICHOLAS
 ADDRESS ONE PARK RIDGE CENTER ADDRESS RT. 2, BOX 698
PITTSBURGH, PA 15244 BRIDGEPORT, WV 26330

JAN 14 1985
 JAN 14 1985

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IV-35
(Rev 8-81)

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APR 22 1985

Date April 4, 1985
Operator's
Well No. CNGD WN 1503
Farm Smith
API No. 47 - 107 - 1344

State of West Virginia
Department of Mines
Oil and Gas Division

OIL & GAS DIV.
DEPT. OF MINES

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

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

LOCATION: Elevation: 985.6 Watershed Laurel Fork
District: Walker County Wood Quadrangle Willow Island 7.5

COMPANY CNG DEVELOPMENT COMPANY

ADDRESS 1 Park Ridge Center, P.O. Box 15746
Pittsburgh, PA 15244

DESIGNATED AGENT Gary A. Nicholas

ADDRESS Rt. 2 Box 698
Bridgeport, WV 26330

SURFACE OWNER Ernie C & Laura S. Donahue

ADDRESS 2 Donahue Cr., Culloden, WV 25510

MINERAL RIGHTS OWNER Ernie C & Laura S Donahue

ADDRESS 2 Donahue Cr., Culloden, WV 25510

OIL AND GAS INSPECTOR FOR THIS WORK

Glen P. Robinson ADDRESS Rt. 1 #6 Mt. Pleasant Est.
Minerwells, WV 26150

PERMIT ISSUED 1-3-85

DRILLING COMMENCED 2-15-85

DRILLING COMPLETED 2-21-85

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.			
11-3/4" 11-3/4"	298	298	To Surf.
9 5/8			
8 5/8	1508	1508	To Surf.
7			
5 1/2			
4 1/2	3831	3831	150 Poz 290 Thix.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 3850 feet

Depth of completed well 3850 feet Rotary x / Cable Tools

Water strata depth: Fresh 1075 feet; Salt feet

Coal seam depths: 635-640 Is coal being mined in the area? NO

OPEN FLOW DATA Devonian Shale

Producing formation " " Pay zone depth 3314 - 3422
2630 - 2715
1940 - 2127 feet

Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d

Final open flow (est) (40) Mcf/d Oil: Final open flow (est) (25) Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure 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

OCT 20 1985

(Continue on reverse side)

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

Perfco Perf. Devonian Shale ^{Huron-Jaw} 3314-3422, 22 holes (.39); ^{Up Dev.} 2630-2715, 10 holes (.39);
^{Up Dev.} ← 1940-2127, 25 holes (.39)

Halliburton N₂ Gas Frac 1st Stage - Break 3600, Break Rate 49,000, Avg. SCF/M 80,000,
 Avg. psi 3800, 500 gal MOD 202, Total N₂ (MSCF) 800, ISIP 2500, 5 min 2300.
 2nd Stage - Break 3650, Break Rate 49,000, Avg. SCF/M 80,000
 Avg. psi 3400, 500 gal MOD 202, Total N₂ (MSCF) 800, ISIP 2300, 5 min 2100.
 3rd Stage - Break 4100, Break Rate 20,000, Avg. SCF/M 53,000,
 Avg. psi 3900, 500 gal MOD 202, Total N₂ (MSCF) 800, ISIP 2200, 5 min 1800.

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	10	Coal Seam 635 - 640
Sand, Shale & RR			10	635	
Coal			635	640	
Sand & Shale			640	1190	
Lime & Injun			1190	1345	
Sand, Shale			1345	3850	
Big Lime			1188	1334	
Big Injun ^{GER & RR}			1334	1420	
Berea			1828	1832	
Shale			1832	1832 TD	TD 3850

(Attach separate sheets as necessary)

CNG DEVELOPMENT COMPANY
Well Operator

By: *[Signature]*

Date: April 4, 1985

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

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DEC 10 1984



1) Date: December 4, 19 84
2) Operator's Well No. 1503
3) API Well No. 47 - 107 - 1344
State County Permit

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

OIL & GAS DIVISION
DEPT. OF MINES

- 4) WELL TYPE: A Oil X / Gas
B (If "Gas", Production / Underground storage / Deep / Shallow)
5) LOCATION: Elevation: 985.6 Watershed: Laurel Fork
District: Walker County: Wood Quadrangle: Willow Island 7.5
6) WELL OPERATOR CNG Development Co.
Address C/o Paul W. Garrett, P.O. Box 15746 Pittsburgh, PA 15244 10110
7) DESIGNATED AGENT Mr. Gary Nicholas
Address Crosswind Corporate Park Rt. 2, Box 698, Bridgeport, WV 26330
8) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Glen P. Robinson
Address Rt. 1, #6, Mt. Pleasant Estate Mineralwells, WV 26150
9) DRILLING CONTRACTOR:
Name Sam Jack Drilling Co.
Address P.O. Box 48 Buckhannon, WV 26201
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, Devonian Shale
12) Estimated depth of completed well, 3850 feet
13) Approximate trata depths: Fresh, - 2235 feet; salt, - feet.
14) Approximate coal seam depths: - 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)

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-107-1344 January 3, 19 85
Date

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 January 3, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Table with columns: Bond, Agent, Plat, Casing, Fee. Values: 28, MW, MW, MW, 0988

Margaret J. Hasser
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