

17711 3-12 code

7,550'

CARD

PLAT

LATITUDE 39°20'00"

MAGNETIC REFERENCE TIES  
 CNGD 1557 TO 24" TWIN BL. LOCUST  
 S89°38'E 175.14'  
 CNGD 1557 TO 8" SASSAFRAS  
 S75°12'E 204.70'

NORTH

LONGITUDE 79°57'30"

8,250'

BOARD OF TRUSTEES  
PARADISE COVE C. C.  
LOT

MITCHELL  
MAYLE  
56.9 AC.

ETHEL R. STURM

RUTH COLLINS STURM,  
ET AL  
100 ± AC.

PROP. WELL  
CNGD 1557  
ELEV. 1568.70'

FLOYD A. STURM  
18.7 AC.

PROPOSED WELL  
CNGD 1389

PROPOSED WELL  
CNGD 1552

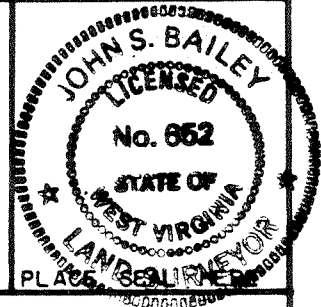
NOTE:  
THERE ARE NO EXISTING  
WITHIN 2400.' OF PROPOSED  
CNGD 1557.

LAH 1-15-85

II 1-15-85

FILE NO. MSES 85-592  
 DRAWN BY SARC  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF  
 ACCURACY 1 PART IN 200  
 PROVEN SOURCE OF  
 ELEVATION JNCT. CO. RT. 9 & 9/9;  
ELEV. 1562.'

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  
 R. P. E. \_\_\_\_\_ L. I. S. 652



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



DATE JANUARY 4, 19 84  
 OPERATOR'S WELL NO. CNGD 1557  
 API WELL NO. 47-091-0474  
 STATE COUNTY PERMIT

Department of Mines  
 Oil & Gas Division

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS", PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X)  
 LOCATION: ELEVATION 1568.70' WATER SHED SWAMP RUN  
 DISTRICT KNOTTSVILLE COUNTY TAYLOR  
 QUADRANGLE THORNTON, WV 7.5' 1958 (1976) 15' SW 7  
 SURFACE OWNER RUTH STURM COLLINS ACREAGE 26.05 ±  
 OIL & GAS ROYALTY OWNER RUTH STURM COLLINS, ET AL LEASE ACREAGE 149 ±  
 LEASE NO. 75172  
 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 HAVERTY ESTIMATED DEPTH 5750' MAR 25 1985  
 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



IV-35  
(Rev 8-81)

State of West Virginia  
Department of Mines  
Oil and Gas Division

Date July 9, 1985  
Operator's  
Well No. CNGD WN 1557  
Farm Sturm Unit  
API No. 47 - 091 - 0474

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE, Aug 2 - 1985

RECEIVED

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

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

LOCATION: Elevation: 1568.7 Watershed Swamp Run  
District: Knottsville County Taylor Quadrangle Thornton WV 7.5

COMPANY CNG Development Company  
ADDRESS P. O. Box 15746  
Pittsburgh, PA 15244  
DESIGNATED AGENT Gary A. Nicholas  
ADDRESS Rt. 2 Box 698  
Bridgeport, WV 26330  
SURFACE OWNER Ruth Sturm Collins  
ADDRESS Rt. 1 Box 457A  
Grafton, WV 26354  
MINERAL RIGHTS OWNER Ruth Sturm Collins, et al  
ADDRESS Rt. 1 Box 457A  
Grafton, WV 26354

OIL AND GAS INSPECTOR FOR THIS WORK  
Donald Ellis ADDRESS 2604 Crab Apple Lane  
Fairmont, WV 26554

PERMIT ISSUED March 14, 1985  
DRILLING COMMENCED June 21, 1985  
DRILLING COMPLETED June 27, 1985

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 Cord.			
13-10"			
9 5/8			
8 5/8	1222	1222	To Surf.
7			
5 1/2			
4 1/2	5356	5356	550 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Haverty Depth 5750 feet  
Depth of completed well 5760 feet Rotary x / Cable Tools       
Water strata depth: Fresh Damp, 720'  
720' feet; Salt      feet  
Coal seam depths: 370 - 375 Is coal being mined in the area? No

OPEN FLOW DATA  
Producing formation 3rd Elk  
Riley  
Balltown Pay zone depth 5192 - 5196  
4156 - 4162  
3397 - 3401 feet  
Gas: Initial open flow      Mcf/d Oil: Initial open flow      Bbl/d  
Final open flow 1,700 Mcf/d Final open flow      Bbl/d  
Time of open flow between initial and final tests 4 hours

Static rock pressure 525 psig (surface measurement) after 1 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

(Continue on reverse side) Aug 12 1985

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

Perfco Ran Corrlog & Perf. 3rd Elk 5192 - 5196, 16 holes; .39 HSC  
Halliburton Foam Frac (50Q) 3rd Elk - Break 2600, Avg TPSI 3600, Avg Rate 16 BPM,  
Screened off @ 4000, 3# Max Sand Conc, used 500 gals 15% FE acid & 20,000# 20/40 Sand  
and 235,000 SCFN2, Blew well back thru 1" and 1/2" Choke

Perfco Perf Riley 4156 - 4162, 16 holes, .39 HSC  
Halliburton Foam Frac (75Q) Riley - Break 3000, Avg TPSI 2760, Avg Rate 20 BPM,  
ISI 1800, used 500 gals 15% FE acid & 55,000 20/40 Sand and 525,000 SCFN2(3# Max Sand Conc)

Perfco Perf Balltown 3397 - 3401, 16 holes HSC  
Halliburton Foam Frac (75Q) Balltown - Break 1700, Avg TPSI 2975, Avg Rate 20 BPM,  
ISI 1830, used 500 gals 15% FE Acid & 40,000# 20/40 Sand and 340,000 SCFN2 (3# Max Sand Conc)

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Sand, Shale			0	370	385' Hole Damp 720' 1/2" stream water
Coal			370	375	
Sand, Shale			375	1440	
Lime & Shale			1440	1470	
Big Lime			1470	1560	
Big Injun			1560	1670	
Sand, Shale & RR			1670	5760	Brallier@TD
<u>LOG TOPS</u>					
B. Lime/B. Injun			1440	1624	
Pocono			1725	1770	
50'			1980'	2070	
Gordon Stray/Gordon			2198	2335	
5th/L. 5th			2440	2570	
Speechley			3150	3245	
Balltown			3260	3402	
Bradford			3633	3744	
Riley			4063	4226	
Benson			4383	4394	
1st Elk			4778	4846	
2nd Elk			4932	5138	
3rd Elk			5152	5212	
4th Elk			5410	5525	
Haverty			5600		

(Attach separate sheets as necessary)

CNG DEVELOPMENT COMPANY

Well Operator

By: *Say A. Shelton*

Date: July 9, 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 coal, encountered in the drilling of a well."



**RECEIVED**

FEB 26 1985

1) Date: February 12, 19 85  
 2) Operator's Well No. 1557  
 3) API Well No. 47 - 091 - 0474  
 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: Gas  / Underground storage  / Deep  / Shallow
- 5) LOCATION: Elevation: 1568.7 Watershed: Swamp Run  
 District: Knottsville County: Taylor Quadrangle: Thornton, WV 7.5
- 6) WELL OPERATOR: CNG Development Company  
 Address: c/o Paul W. Garrett, P.O. Box 15746  
Pittsburgh, PA 15244 <sup>10110</sup>
- 7) DESIGNATED AGENT: Gary Nicholas  
 Address: Crosswind Corporate Park  
Rt. 2, Box 698, Bridgeport, WV 26330
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED: Name: Donald Ellis  
 Address: 2604 Crab Apple Lane  
Fairmont, WV 26554
- 9) DRILLING CONTRACTOR: Name: Sam Jack Drilling Co.  
 Address: P.O. Box 48  
Buckhannon, WV 26201
- 10) PROPOSED WELL WORK: Drill  / Drill deeper  / Redrill  / Stimulate   
 Plug off old formation  / Perforate new formation   
 Other physical change in well (specify) \_\_\_\_\_
- 11) GEOLOGICAL TARGET FORMATION: Haverty
- 12) Estimated depth of completed well, 5750 feet
- 13) Approximate trata depths: Fresh, 50, 235 feet; salt, \_\_\_\_\_ feet.
- 14) Approximate coal seam depths: 50, 120, 195, 480, 785 Is coal being mined in the area? Yes  / No
- 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	11-3/4	H-40	42	X		40	40	To Surface	By Rule 15.05
Coal									Sizes
Intermediate	8-5/8	X-42	23	X		1200	1200	to Surface	By Rule 15.05
Production	4-1/2	J-55	10.5	X		5750	5750	200-400 sks	Depths set
Tubing	1-1/2	CN-55	2.75	X					By Rule 15.01
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY  
 DRILLING PERMIT

Permit number 47-091-0474 Date March 14, 19 85

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 March 14, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>28</u>	<u>MU</u>	<u>MU</u>	<u>MU</u>	<u>6964</u>

*Margaret J. Rouse*  
 Administrator, Office of Oil and Gas

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

File

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