



NO.	COURSE & DISTANCE	NO.	COURSE & DISTANCE
1	S10°E 3201.00 FT	13	N74°30'W 1089.00'
2	S30°W 825.00'	14	N14°15'E 981.75'
3	S55°E 874.50'	15	N77°30'W 577.50'
4	S52°E 3531.00'	16	N48°W 891.00'
5	S90°E 412.50'	17	N77°30'W 780.45'
6	S52°E 412.50'	18	S83°W 495.00'
7	S74°E 379.50'	19	N75°30'W 387.75'
8	S11°45'W 2227.50' (DEED) S12°24'58"W 2247.30' (SURVEY)	20	N59°W 851.75'
9	N86°30'E 363.00'	21	N56°30'W 181.50'
10	N27°E 585.75'	22	N00°E 899.25'
11	N26°E 1031.25'	23	N90°W 2887.50' - DEED N86°40'50"W 3347.86' - CALCULATE
12	N29°30'E 4504.50'		

SURVEY BEARINGS AT TRUE NORTH

Minimum Error of Closure 1:2000'

Source of Elevation BM. USGS 815 HANGING ROCK QUADRANGLE

LATITUDE: 39° 23' 30" LONGITUDE: 78° 36' 00"

Fracture.....

New Location.....

Drill Deeper.....

Abandonment.....

I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia.

Signed: W. Thomas Biggart

Squares: N S E W

Company HAMPSHIRE GAS CO.

Address 6801 INDUSTRIAL RD., SPRINGFIELD VA.

Farm JULIAN B. LEWIS

Tract 1 Acres 827± Lease No. 154 & 319

Well (Farm) No. 22 Serial No. _____

Elevation (Spirit Level) + 1017.57'

Quadrangle HANGING ROCK *Levels 7.5' quad*

County HAMPSHIRE District GORE

Engineer W. Thomas Biggart

Engineer's Registration No. 51 (L.L.S. W. VA.)

File No. _____ Drawing No. 7167

Date AUGUST 5, 1971 Scale 1" = 2000'

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

WELL LOCATION MAP

FILE NO. Hamp-30

Converted to stage well

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

— Denotes one inch spaces on border line of original tracing.



FEB 7 1972

OIL & GAS DIVISION
DEPT. OF MINES

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

- Rotary
- Spudder
- Cable Tools
- Storage

Quadrangle Hanging Rock
Permit No. Hamp-30

WELL RECORD

Oil or Gas Well Gas (KIND)

Company <u>Hampshire Gas Company</u>	Casing and Tubing	Used in Drilling	Left in Well	Packers
Address <u>6801 Industrial Rd., Springfield, Va. 22151</u>				
Farm <u>Julian B. Lewis</u> Acres <u>827</u>	Size			Kind of Packer.....
Location (waters) <u>Little Capon</u>	<u>16</u>			Size of.....
Well No. <u>22</u> Elev. <u>1017</u>	<u>13 3/8" csg.</u>		<u>43'</u>	Depth set.....
District <u>Gore</u> County <u>Hampshire</u>	<u>10-5/8" csg.</u>		<u>1490'</u>	
The surface of tract is owned in fee by <u>Julian B. & Rose L. Lewis</u>	<u>8 1/4"</u>		<u>5467'</u>	
Address <u>Three Churches, W. Va</u>	<u>8 3/4"</u>			
Mineral rights are owned by <u>Julian B. & Rose L. Lewis</u>	<u>5 3/16"</u>			
Address <u>Three Churches, W. Va</u>	<u>4 1/2"</u>			
Drilling commenced <u>September 3, 1971</u>	<u>3"</u>			Perf. top.....
Drilling completed <u>November 17, 1971</u>	<u>2 3/8" tbg.</u>		<u>5649</u>	Perf. bottom.....
Date Shot From To	Liners Used			Perf. top.....
With				Perf. bottom.....
Open Flow <u>1/10ths Water in</u> Inch	Attach copy of cementing record.			
<u>1/10ths Merc. in</u> Inch	CASING CEMENTED <u>7" SIZE 5467 No. Ft. 11/5/71</u> Date			
Volume <u>7,300,000</u> Cu. Ft.	Amount of cement used (bags) <u>See Reverse Side</u>			
Rock Pressure <u>1500 psig</u> lbs. hrs.	Name of Service Co. <u>Halliburton</u>			
Oil <u>bbls., 1st 24 hrs.</u>	COAL WAS ENCOUNTERED AT FEET INCHES			
WELL ACIDIZED (DETAILS) <u>13,000 Gal. 28% HCl</u>	FEET INCHES FEET INCHES			
<u>Followed by 2450 Gal. 3% HCl as overflush</u>	FEET INCHES FEET INCHES			
WELL FRACTURED (DETAILS) <u>Displaced by 9000 Gal. H₂O</u>				

RESULT AFTER TREATMENT (Initial open Flow or bbls.) See Reverse Side 17,200,000 Mcf.

ROCK PRESSURE AFTER TREATMENT 1800 psig HOURS 5

Fresh Water Feet 100' Salt Water Feet 2694

Producing Sand. Oriskany Sandstone Depth 5460' - 5647'

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Shale & Siltstone	Red Brown	<i>Shining</i>	0	460	Fresh Water		Some gray sha
Siltstone & Shale	Med. Gray		460	1930			
Shale	Light Gray		1930	2500			Some siltston
Siltstone	Med. Gray		2500	3320	Salt Water		Some gray sla
Shale	Dark Gray to Black		3320	3350			
Siltstone	Dark Gray		3350	3480			Sandy
Shale	Med. Gray		3480	3740			
Shale	Med. & Dark Gray		3740	4020			Limestone Streaks
Shale	Med. Gray		4020	4430			Silty
Shale	Med. Gray		4430	4850			Interbedded with gray siltstone

(over)

FEB 15 1972

Formation	Color	Hard or Soft	Top ϵ	Bottom	Oil, Gas or Water	Depth Found	Remarks
Shale	Dark Gray		4850	4960			
Shale	Dark Gray to Black		4960	5220			Calcareous, Limestone stringers at top
tabentonite		Tioga	5220	5223			
Shale & Limestone	Dark gray	Needmore	5223	5270			
Shale	Light & Medium Gray		5270	5458			Calcareous
Sandstone	White to Light Gray	Oriskany	5458	5651			Calcareous
Limestone	Dark Gray	Helderberg	5651	5663			Very sandy
				(485)			
			<u>CEMENTING</u>	<u>DATA</u>			
13-3/8" csg.			Cemented to surface with 50 sacks of Class "A" cement				
9-5/8" csg.			Cemented to surface with 450 sacks of Dowell's Regulated Fillup cement				
7" csg.			Cemented to surface in two stages. First stage cemented with 151 sacks of class "A" cement and 30 sacks Latex (Halliburton). Second stage cemented with 450 sacks of Diacel "D" cement				
			<u>Initial Open Flow</u>				
			Calculated on the basis of 1 1/2 hour isochromal backpressure curve:				
			(17,200 MCFD)				
			5223	5458	5651		
			1017	1017	1017		
			4206	4441	4634		

13.65 Has gw
and when well
1460 ft deep
L.A. 1/1/72

Date: February 1, 1972
APPROVED: [Signature] Owner
By: [Signature] (Title): [Signature] Storage.

ORGANIZATION: WEST VIRGINIA

SAMPLE #: 72ALB 1666.

STATION: ~~22-0000.00~~ 4

DATE COLLECTED: 10 08 71 TIME:

BALANCE DETERMINATION

	MG/L	ME/L
CALCIUM	1500.00	74.85
MAGNESIUM	160.00	13.16
SODIUM	12000.00	522.00
POTASSIUM	35.00	0.89
AMMONIA AS NH ₄	15.48	0.86

CATION TOTAL

611.76

BICARBONATE	5.00	0.08
CARBONATE	0.0	0.0
SULFATE	1.80	0.04
*CHLORIDE	22000.00	620.62
FLUORIDE	1.30	0.07
NITRATE	0.0	0.0

ANION TOTAL

620.81

DIFFERENCE = -9.05

SUM = 1232.57

% ERROR = -0.73

LOGICAL SURVEY - WATER ANALYSIS

TORY - ALBANY, NEW YORK

PROCESSING DATE: 12/20/71

S IN MILLIGRAMS PER LITER EXCEPT WHERE NOTED)

GAS CO (Hampshire Co Gas Well # 22)

Permit
Hampshire
30

ADDITIONAL CONSTITUENTS

ALK. CO3 AS CaCO3	0.0
ALK. HCO3 AS CaCO3	4.000
CARBONATE EQUIV.	2.000
DISCHARGE, GPM	20.000
DISS. SOLIDS, SUM	35717.000
GAGE HEIGHT, FEET	765.000
HARDNESS, NON-CARB	4400.000
HARDNESS, TOTAL	4404.000
NITRATE AS N	0.0
NITROGEN, NH4 AS N	12.000
PH (LAB)	5.900
SILICA	0.800
SP. CONDUCT. (LAB)	50000.000

This sample contained an unknown amount of water pumped from Little Cacapon River mixed with Air Foam #1 - an alcohol base surface active agent (Air Foam #1 is manufactured by a firm in Charleston W.Va.)

Depth of Sample 1460'

ARDS OR
BY AN *