

FG-9-15

OIL AND GAS WELL SUMMARY REPORT

API No. 45-195-20751 VDMR Well Rep. No. \_\_\_\_\_

DMQ File No. WS132

Operator ANR Production Co

Farm Penn Va. 684

Co. Well No. 10083

County Wise Quadrangle Flat Top-7 1/2'

Location (UTM) N4,097,660; E 347,490 UTM Zone 17

(Lat. and Long.) \_\_\_\_\_

Field \_\_\_\_\_ Province Appalachian Plateau

Elev. (specify) 2937 KB 2827.44 GR TD 6133 Form. at TD Coinferous

Initial Flow - None Age Devonian

Date compl. or abandoned June 11, 1985

Result Shd well

Gas Shows \_\_\_\_\_

Gas Pays \_\_\_\_\_

Main Production \_\_\_\_\_ Prod. Form. Devonian; Berea, Weir

Final Flow - 581,000 CU. FT. Age Devonian; Mississippian

Treatment: Lower Devonian - 75 quality foam pac, 42,500 pounds of 20/40 sand, 7500 pounds of 10/20 sand, 705,000 SCF of N2. Upper Devonian, Berea - 75 quality foam pac, 42,500 pounds of 20/40 sand, 7500 pounds of 10/20 sand, 682,000 SCF of N2. Weir - 75 quality foam pac, 40,000 pounds of 10/20 sand, 491,000 SCF of N2.

Initial Production of N2.

Oil shows \_\_\_\_\_

Water FW yes at 80' at \_\_\_\_\_ at \_\_\_\_\_

SW \_\_\_\_\_ at \_\_\_\_\_ at \_\_\_\_\_ at \_\_\_\_\_

Coal 345-349.5, 563-567, 590-592.5

Plat \_\_\_\_\_ Plotted \_\_\_\_\_ Completion Report X

Drillers Log X Geologic Log \_\_\_\_\_

Samples \_\_\_\_\_ Interval Sheet \_\_\_\_\_

Sample Interval \_\_\_\_\_

Remarks \_\_\_\_\_

Geophysical Logs S.P. \_\_\_\_\_ Res \_\_\_\_\_ Gamma \_\_\_\_\_ Neutron \_\_\_\_\_

Density \_\_\_\_\_ Sonic \_\_\_\_\_ Other \_\_\_\_\_

Stratigraphic Data Source

(E. Log) Frank Janssen Jr

Formation	Top	Datum (Subsea)	Thickness
Top Greenbrier	4386	-1549	
Base Greenbrier	4893	-2056	
Sunbury	5090	-2253	
Berea	5263	-2426	
Devonian Shale	5296	-2459	
Carboniferous	6058	-3221	

6/10/87

Remarks

References

Released to Open File: Completion

September 15, 1985

Sample

None

(Note: UTM measurements in meters, all others in feet)

ANR PROD. CO.  
PENN VA. 684  
10083  
FLAT GAP 7 1/2'  
SL.

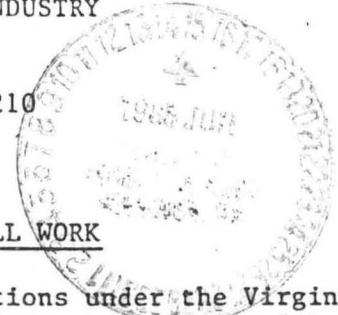
API Well No. 45 - 195 - 20751  
State County Permit

Date: June 11, 19 85

Operator's Well No. 10083

WS-132

VIRGINIA OIL AND GAS INSPECTOR  
DEPARTMENT OF LABOR AND INDUSTRY  
OIL AND GAS SECTION  
205 W. Main Street  
Abingdon, Virginia 24210  
Phone 703 628-8115



REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in Gladeville District, Wise County, Virginia on 11th day, June Month, 19 85.

WELL TYPE: Oil    / Gas X / Enhanced recovery    / Waste disposal    /  
If "Gas", Production X / Underground storage    /

Exempt by Code § 45.1-300.B.1 from general oil and gas conservation law: Yes X / No    /

WELL WORK: Drill X / Deepen    / Redrill    / Stimulate X /  
Plug off old formation    / Perforate new formation X /  
Plug    / Replug    /  
Other physical change in well (specify)   

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA § 45.1-332:

X Ninety days from the filing of this report,

or

   Two years from   , 19   , the date on which the referenced well was completed, the well being an exploratory well as defined in Code of Virginia § 45.1-288.21.

APPLICANT: ANR PRODUCTION COMPANY

By [Signature]  
Its Manager, Drilling & Engineering

Address: 111 E. Capitol St., Suite 400  
Jackson, MS 39201-2185

Telephone: (601) 961-6315

FORM 16  
 APPENDIX A,  
 SHEET 1, (OBVERSE)

API WELL NO. 45 - 195 - 20751  
 State County Permit  
 Date: June 11, 1985  
 Operator's Well  
 Name 10083

REPORT OF COMPLETION OF WELL WORK  
IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING CONTRACTOR Clint Hurt & Assoc., Inc.  
 ADDRESS P.O. Box 1973  
 TELEPHONE Midland, Texas 79702

GEOLOGICAL TARGET FORMATION Devonian Shale, Weir, Big Lime  
 DEPTH OF COMPLETED WELL 6,106 FEET  
 DATE DRILLING COMMENCED 4-17-85  
 DATE DRILLING COMPLETED 5-6-85  
 DRILLING RIG: ROTARY X / CABLE TOOL        /

GEOLOGICAL DATA	Depth		Thickness
	Top	Bottom	

Fresh Water		80'	
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Salt water		Not Known	
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	Name	MINING IN AREA		
		Yes	No	Mined Out
Coal Seams				
	345' 349.5' 45.5' Low Splint	X		
	563' 567' 4.0' Taggart			X
	590' 592.5' 2.5' Marker		X	

Oil and Gas	Name
	Not Measurable

The data on depth of strata is based on the source(s) checked below:

- Applicant's own drilling experience in the area
- Information supplied by the coal operator in the area
- Information already in possession of the Inspector
- As follows \_\_\_\_\_

OTHER GENERAL INFORMATION

An electric log survey was X/ was not \_\_\_/ conducted pursuant to Code of Virginia § 45.1-333.B.2, at the coal owner's or operator's request.

An electric log survey was X/ was not \_\_\_/ run for other purposes. This survey did X/ did not \_\_\_/ disclose the vertical location of a coal seam.

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Code of Virginia § 45.1-333.B.3.

Deviation surveys were X/ were not \_\_\_/ required under Code of Virginia § 45.1-333.C "to the bottom of the lowest published coal seam depth".

Note: If deviation surveys were required, the survey results are attached.

A continuous survey was \_\_\_/ was not X/ required under Code of Virginia § 45.1-333.C.

Note: If a continuous directional survey was required, the survey results are attached.

CHANGES IN THE PERMITTED WELL WORK

The well operator did \_\_\_/ did not X/ make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

Note: The nature and purpose of each such change, if any, is set out below or on additional sheets if such are required.

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

Is the subject well underlaid by the red shales? YES x/ No     /  
 If "YES", was a coal protection string set to the red shales? YES x/ NO     /

PROGRAM DETAILS

<u>SIZE</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>LENGTH</u>	<u>PERFORATED</u>	
				<u>FROM</u>	<u>TO</u>
<u>Conductor</u>					

Casing circulated and cemented in to the surface:

13-3/8"	Surface	37.95'	37.95'		
10-3.4"	Surface	726.98'	726.98'		
7 "	Surface	3,967.80'	3,967.80'		
<u>Coal protection casing set under the special rule of Code of Virginia S 45.1-334.B:</u>					
7 "	Surface	3,967.80'	3,967.80'		

Other casing and tubing left in the well:

4-1/2" Surface 6,111.55 6,111.55

Liners left in well, under Code of Virginia S 45.1-336 or otherwise:

None

Other casing used in drilling but not left in the well:

None

Packers or bridge plugs:                      Kind                      Size                      Set At

None

REMARKS (SHUT DOWN DEPTHS, DATES: FISHING JOB DEPTHS, DATES: CAVING: ETC.)

SAMPLES AND CUTTINGS

will x/                      will not     /                      be available for examination by a member of the  
 Division of Mineral Resources

will x/                      will not     /                      be furnished the Division of Mineral Resources  
 upon request

will     /                      will not     /                      require sacks to be furnished by the Division of  
 Mineral Resources

DRILLER'S LOG

COMPILED BY Roswell K. Barranco

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth Ft.</u>		<u>Thickness</u>	<u>Remark</u>
				<u>Top</u>	<u>Bottom</u>		
Pennsylvanian	Wise & Norton	Sandstone		0	2,108	2,108	
	Lee	Sandstone & Shale		2,108	3,570	1,462	
Mississippian	Bluestone	Sandstone & Shale		3,570	3,707	137	
	Ravenclyff	Sandstone		3,707	3,806	99	
	Hinton	Sandstone & Shale		3,806	4,199	393	
	Maxon	Sandstone		4,033	4,199	166	
	Bluefield	Sandstone, Shale & Limestone		4,199	4,420	221	
	Greenbrier (Big Lime)	Limestone		4,420	4,893	473	
	Injun	Sandstone & Shale		4,893	4,907	14	
	Weir	Siltstone		4,907	5,090	183	
	Sunbury	Shale		5,090	5,263	173	
	Berea	Siltstone		5,263	5,324	61	
Devonian	Devonian Shale	Shale		5,324	6,057	733	
	Decollement			5,814	5,866	52	
	Corniferous	Limestone		6,057	6,133	76	

APPENDIX TO REPORT OF COMPLETION OF WELL WORK  
ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF

Indicated potential flow before stimulation N/A BOD  
Gravity and grade: N/A

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation N/A MCFD  
Rock pressure: Not measurable N/A hour test

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: Lower Devonian Formation  
75 quality foam frac, 42,500# 20/40, 7,500# 10/20  
705,000 SCF of N<sub>2</sub>  
Perforated 5,630'-6,048' # Perfs. 65 Perf. Size .375  
Breakdown 3,100 psig. Avg. Injection 4,150 psig.  
Avg. I.R. 70 BPM Init. S.I.P. 1,600 psig 15 Min. S.I.P. 1,410 psig

Zone 2: Upper Devonian, Berea, Formation  
75 quality foam frac; 42,500# 20/40, 7,500# 10/20  
682,000 SCF of N<sub>2</sub>  
Perforated 5,264'-5,598' # Perfs. 65 Perf. Size .375  
Breakdown 4,400 psig. Avg. Injection 4,139 psig.  
Avg. I.R. 70 BPM Init. S.I.P. 2,100 psig 15 Min. S.I.P. 1,530 psig

Zone 3: Weir Formation  
75 quality foam frac; 40,000# 10/20, 491,000 SCF of N<sub>2</sub>  
Perforated 4,980'-5,076' # Perfs. 79 Perf. Size .375  
Breakdown 2,230 psig. Avg. Injection 3,342 psig.  
Avg. I.R. 93 BPM Init. S.I.P. 1,100 psig 15 Min. S.I.P. 760 psig

Final production ( ) natural (X) after stimulation

	BOD	MCFD	Hours Tested	Rock Pressure	Hours Tested
Zone 1: Lower Devonian					
Zone 2: Upper Devonian, Berea,					
Zone 3: Weir					

Final production if gas zones are comingled: 581 MCFD  
3 hours tested: 3 psig. 3 hours tested



## DEVIATION SURVEY

## Results

Depth From	Depth To	Survey
0'	400'	$3/4^{\circ}$
0'	900'	$1-3/4^{\circ}$
0'	1,200'	$1^{\circ}$
0'	2,000'	$1^{\circ}$
0'	2,500'	$2^{\circ}$
0'	3,000'	$1-1/2^{\circ}$
0'	4,000'	$2^{\circ}$
0'	4,500'	$2^{\circ}$
0'	5,000'	$1-1/4^{\circ}$
0'	6,133'	$6^{\circ}$

(FOR OFFICE USE ONLY: API Well No. 45 - -  
State County Permit

Date: 12-10, 1984

Operator's Well No. 10083

105-132

VIRGINIA OIL AND GAS INSPECTOR  
DEPARTMENT OF LABOR AND INDUSTRY  
DIVISION OF MINES  
219 Wood Avenue  
Big Stone Gap, Virginia 24219-1799  
Phone 703-523-0335

WELL PLAT

+ Denotes location of well on United States Topographic Maps, scale 1 to 24,000. Latitude and longitude lines are represented by border lines as shown.

This plat is new    / updated   x   /

This plat is   x   / is not    / based on a mine coordinate system established for the areas of the well location.

Well operator   ANR PRODUCTION COMPANY  

Address   JACKSON, MISSISSIPPI    
Farm   PENN VIRGINIA RESOURCES CORPORATION    
Tract   684   Acres   5010.46   Lease No.     
Elevation   2828.42'    
Quadrangle   FLAT GAP    
County   WISE   District   GLADEVILLE    
Registered Engineer   X   Registration No.   11439    
Certified Land Surveyor    Cert. No.     
File No.    Drawing No.     
Date   12-10-84   Scale   1" = 400'  

Certification of Well Plat

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 of the Virginia Well Review Board.

  [Signature]    
Registered Engineer or Certified Land Surveyor  
in Charge



1,700'

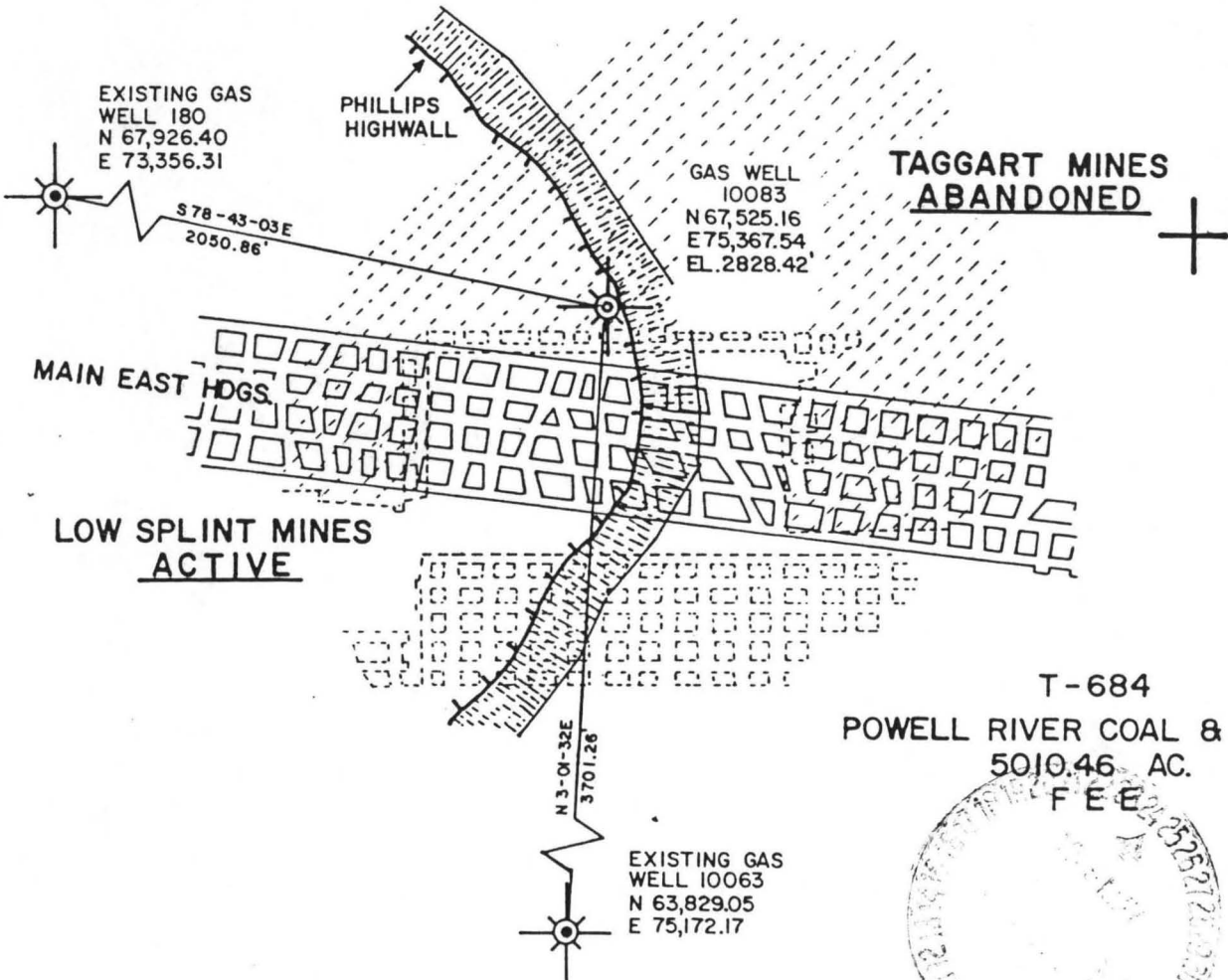
Latitude 37° 02' 30"

# FINAL LOCATION

Longitude 82° 42' 30"

9,850'

— LOW SPLINT DIXIE ENERGY SEAM MINES ACTIVE  
 - - - TAGGART PINE BRANCH SEAM MINES ABANDONED



**TAGGART MINES  
ABANDONED**

**LOW SPLINT MINES  
ACTIVE**

T-684  
 POWELL RIVER COAL & IRON  
 5010.46 AC.  
 FEE



DRILLER'S LOG

COMPILED BY Roswell K. Barranco

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth Ft.</u>		<u>Thickness</u>	<u>R</u>
				<u>Top</u>	<u>Bottom</u>		
Pennsylvanian	Wise & Norton	Sandstone		0	2,108	2,108	
	Lee	Sandstone & Shale		2,108	3,570	1,462	
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	Greenbrier (Big Lime)	Limestone		4,420	4,893	473	
	Injun	Sandstone & Shale		4,893	4,907	14	
	Weir	Siltstone		4,907	5,090	183	
	Sunbury	Shale		5,090	5,263	173	
	Berea	Siltstone		5,263	5,324	61	
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	Decollement			5,814	5,866	52	
	Corniferous	Limestone		6,057	6,133	76	