

BS 5/20/87

4900'

LATITUDE 37° 55' 00"

REF "B"
TAG 237
12" POPLAR

REF "A"
TAG 236
20" POPLAR

REFERENCES
1" = 50'

00 03 18
EDITION NOT

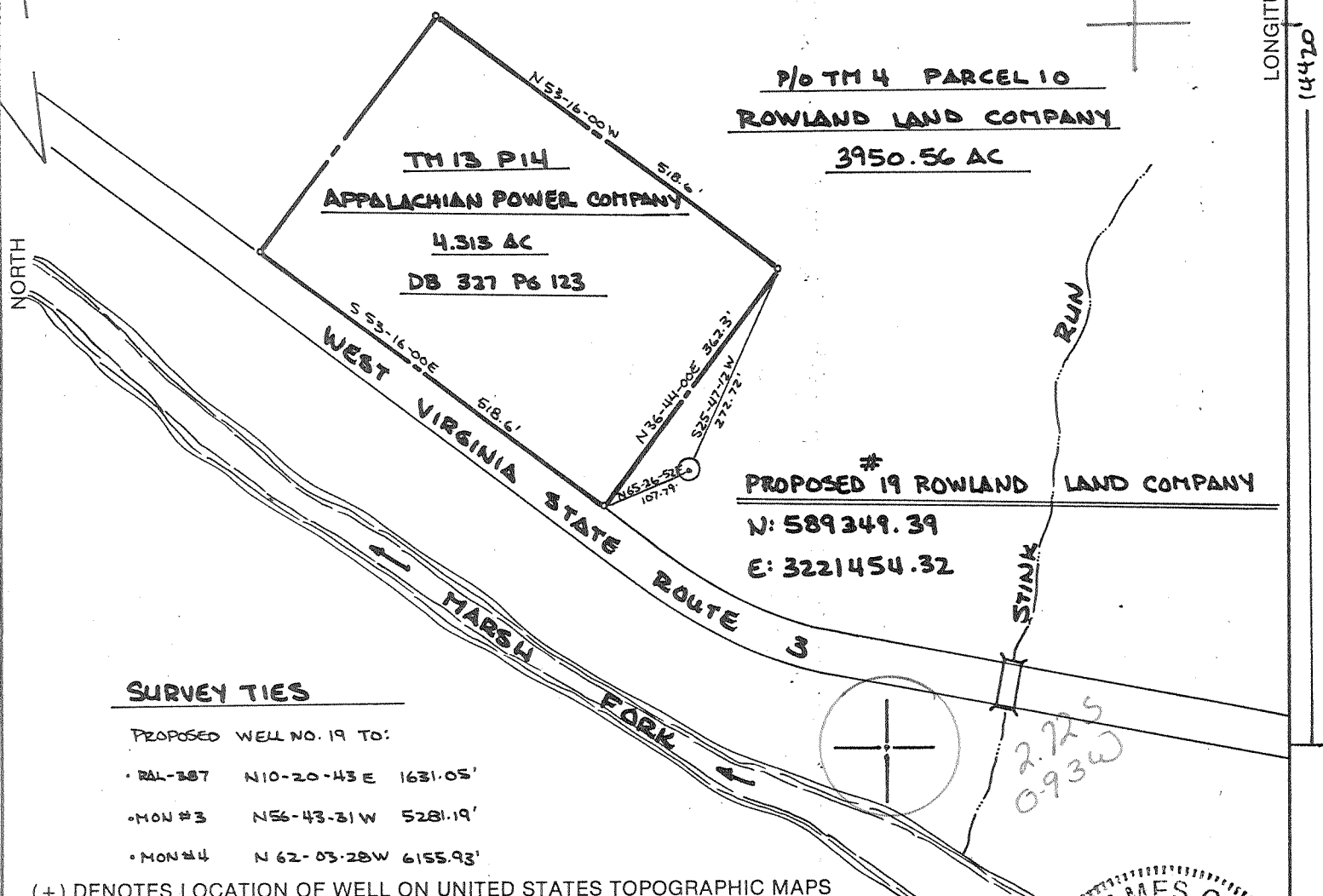
07471

9/0 TH 4 PARCEL 10
ROWLAND LAND COMPANY
3950.56 AC

TH 13 P 14
APPALACHIAN POWER COMPANY
4.513 AC
DB 327 P 6 123

PROPOSED # 19 ROWLAND LAND COMPANY
N: 589349.39
E: 3221454.32

NORTH



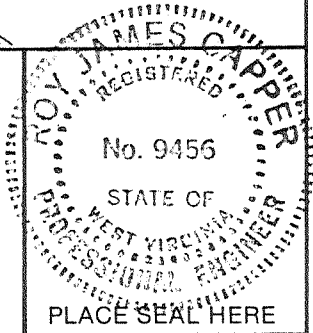
SURVEY TIES

- PROPOSED WELL NO. 19 TO:
- BAL-387 N10-20-43 E 1631.05'
- MON #3 N56-43-31 W 5281.19'
- MON #4 N 62-03-28 W 6155.93'

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. AW-081-009
 DRAWING NO. _____
 SCALE 1" = 200'
 MINIMUM DEGREE OF ACCURACY 1 IN 10000
 PROVEN SOURCE OF ELEVATION BH ± 5400' NW OF LOCATION (985')

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 ENERGY.
 (SIGNED) Ray James Capper
 R.P.E. 9456 L.L.S. _____



STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 OIL AND GAS DIVISION



DATE 5 MAY, 19 87
 OPERATOR'S WELL NO. ROWLAND #19
 API WELL NO. _____

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1032.7' WATER SHED MARSH FORK OF BIG COAL RIVER
 DISTRICT MARSH FORK 2 COUNTY RALEIGH
 QUADRANGLE WHITESVILLE 7.5' 677 006 EC 6 Balk Knob
 SURFACE OWNER ROWLAND LAND COMPANY ACREAGE 3950.56
 OIL & GAS ROYALTY OWNER SAME LEASE ACREAGE 15000 ±
 LEASE NO. _____

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 MARCELLUS ESTIMATED DEPTH 5900'
 WELL OPERATOR ALLEGHENY & WESTERN DESIGNATED AGENT DENNIS L. MANN
 ADDRESS POST OFFICE BOX 2587 ADDRESS POST OFFICE BOX 2587
CHARLESTON, W.VA. 25329 004 CHARLESTON, W.VA. 25329

DEEP WELL look Hopkins Valley - Jarrold Valley (047)

COUNTY NAME PERMIT

HT. HALL 48673 FORM WW-6



IV-35
(Rev 8-81)

Date October 15 1987
Operator's Well No. Rowland # 19
Farm Rowland Land
API No. 47 - 081 - 0763

10/23/87

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 X / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production ___ / Underground Storage ___ / Deep ___ / Shallow X /)

LOCATION: Elevation: 1032.7 Watershed Marsh Fork of Coal River
District: Marsh Fork County Releigh Quadrangle Whitesville 7.5

COMPANY Allegheny & Western Energy Corp
ADDRESS P.O.Box 2587, Charleston, W.Va., 25329
DESIGNATED AGENT Dennis L. Mann
ADDRESS P.O.Box 2587, Charleston, W.Va., 25329
SURFACE OWNER Rowland Land Co
ADDRESS 1033 Quarrier St, Charleston, W.Va.
MINERAL RIGHTS OWNER Same
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK Rodney
Dillon ADDRESS P.O.Box 1526
Sophia, W.Va.
PERMIT ISSUED 5/20/87
DRILLING COMMENCED 5/22/87
DRILLING COMPLETED 6/5/87

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cord.			
13-10"			
9 5/8	947	947	375 sks
8 5/8			
7	2125	2125	175 sks
5 1/2			
4 1/2	5650	5650	230 sks
3			
2			
Liners used			

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON _____

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 5290 feet
Depth of completed well 5660 feet Rotary X / Cable Tools _____
Water strata depth: Fresh 40 feet; Salt 400 feet
Coal seam depths: N/A Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 2812 feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow (531) Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 24 hours

"Static" rock pressure 900 psig (surface measurement) after 24 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)

OCT 26 1987

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

2812-3947 perf w/ 45 holes frac w/ 60,000# 20/50 sd + 656,000 scf n2
 3980-4920 perf w/ 41 holes frac w/ 60,000# 20/50 sd + 1,276,000 scf n2
 4990-5491 perf w/ 29 holes frac w/ 60,000# 20/50 sd + 1,276,000 scf n2

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
sandstone & shale			0	1344	
salt sand			1344	1529	
shale			1529	1557	
salt sand			1557	1781	
sandstone & shale			1781	2013	
little lime			2013	2046	
pencil cave			2046	2056	
big lime			2056	2352	
shale			2352	2421	
weir			2421	2566	
shale			2566	2804	
sunbury shale			2804	2812	
sandy siltstone & shale			2812	3006	
gordon sand			3006	3024	
grey & lt brown shale			3024	5538	
marcellus shale			5538	5626	
Onondaga Lime			5626	5660	TD. 5660 KB.
	404	2812			
	813	4012			
	822	4762			
	825	4962			
	830	5262			

(Attach separate sheets as necessary)

Allegheny & Western Energy Corp

Well Operator

By: Dennis R. Moran Vice President

Date: October 15, 1987

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 those encountered in the drilling of a well."

1495

FOR: WW-2(B)
(Reverse)
7/85

RECEIVED
MAY 20 1987



1) Date: 12 May, 19 87
 2) Operator's Well No. Rowland Land Company #19
 3) API Well No. 47 - 081 - 0763
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas XXX /
 B (If "Gas", Production XXX / Underground storage / Deep / Shallow XXX)
- 5) LOCATION: Elevation: 1032.7 Watershed: Marsh Fork of Big Coal River
 District: Marsh Fork 2 County: Raleigh Quadrangle: Whitesville 7.5' 676
- 6) WELL OPERATOR A&W Energy Corp. CODE: 1100 7) DESIGNATED AGENT Dennis L. Mann
 Address Post Office Box 2587 Address Post Office Box 2587
Charleston, west Virginia 25329 Charleston, West Virginia 25329
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Rodney Dillon Name NA
 Address 1526 (Post Office Box) Address
Sophia, West Virginia 25921
- 10) PROPOSED WELL WORK: Drill XXX / Drill deeper / Redrill / Stimulate XXX /
 Plug off old formation / Perforate new formation
 Other physical change in well (specify)
- 11) GEOLOGICAL TARGET FORMATION, Weir, Devonian Shales 444
- 12) Estimated depth of completed well, 5900' feet
- 13) Approximate trata depths: Fresh, 40 feet; salt, 400 feet.
- 14) Approximate coal seam depths: na 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		
Conductor								Kinds
Fresh water	9-5/8	sm1s	32	x		947	947	300 sks cts by rule 15.05
Coal	7	sm1s	23	x		2727	2727	200 sks Sizes
Intermediate								
Production	4-1/2	sm1s	10.5	x		5900	5900	200-400 sks Depths set or aas required
Tubing								by rule 15.01
Liners								Perforations:
								Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-081-0763 Date May 20 19 87

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 May 20, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>✓</u>	Agent: <u> </u>	Plat: <u>MS</u>	Casing: <u>MS</u>	Fee: <u>5761</u>	WPCP: <u>MS</u>	ISIP: <u>MS</u>	Other: <u> </u>
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NOTE: Keep one copy of this permit posted at the drilling location.

John D. Johnston
 Director, Division of Oil and Gas

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

File