

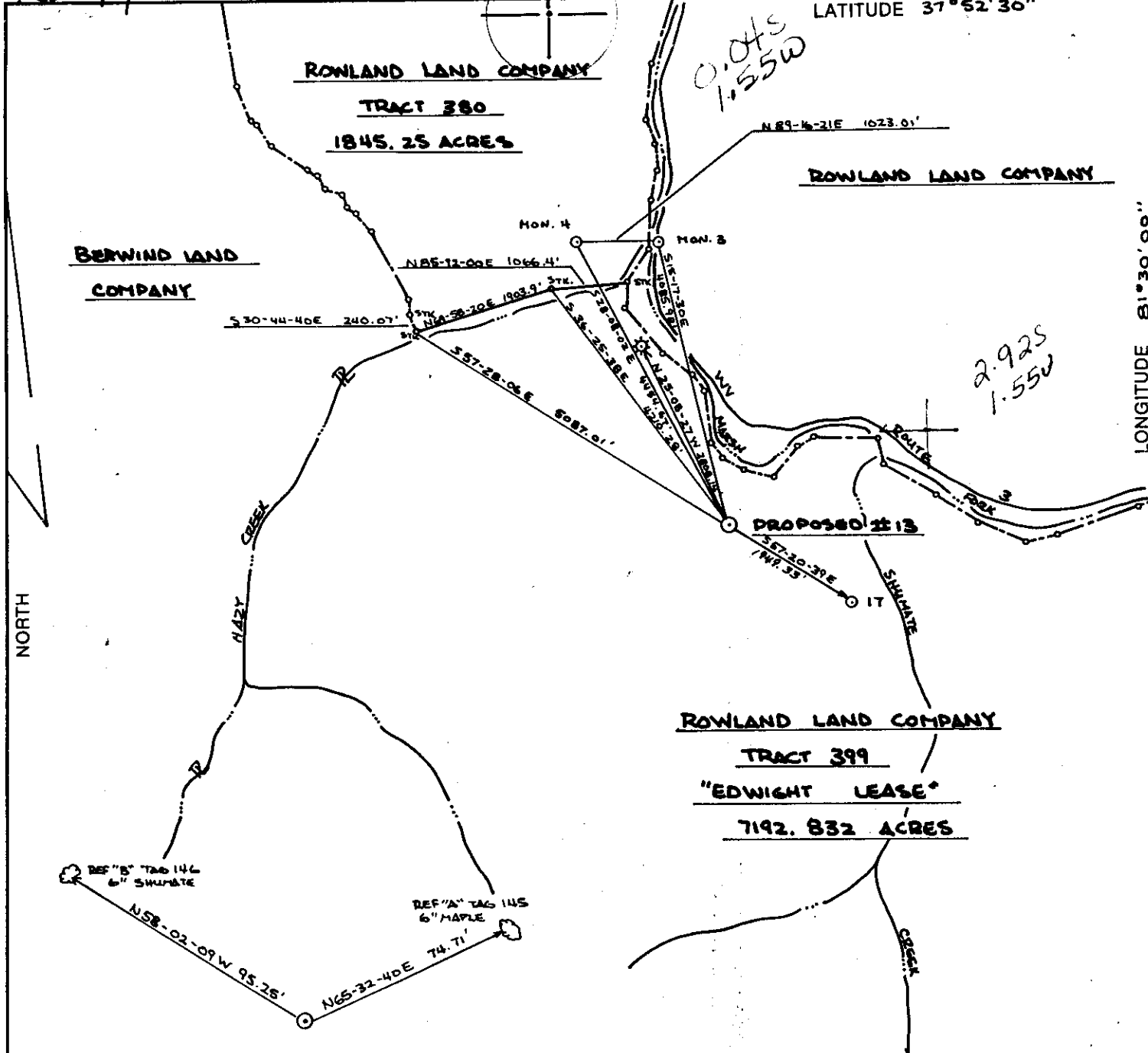
AS 12/3/86

8220' 37 55

LATITUDE 37°52'30"

NORTH

LONGITUDE



REFERENCES

1" = 50'

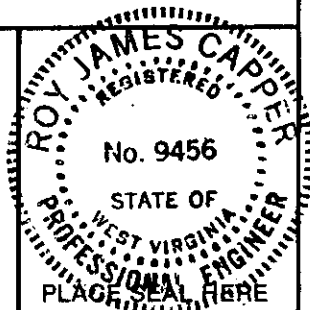
PEABODY COAL COORDINATES:

N: 588305.62
E: 321816.58

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

FILE NO. 86-081-016
 DRAWING NO. 86051
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY 1 IN 5000
 PROVEN SOURCE OF ELEVATION BM N-404 ON BRIDGE ART. IN EDWIGHT (ELEVATION) 3 984.657'

CO: 081 PMT: 750
 Loc Digitized from OGIS 7.5' Mylar
 QUAD: 547 DATE: 12-JUN-90
 LAT: 37 52.5 Miles South: 0.00
 LONG: 81 30.0 Miles West : 1.61
 (SIGNED) Roy James Capper
 R.P.E. 9456 I.L.S.



STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 OIL AND GAS DIVISION



DATE 29 OCTOBER, 19 86
 OPERATOR'S WELL NO. ROWLAND #13
 API WELL NO.

47-081-0750
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1414.3 WATER SHED MARSH FORK OF BIG COAL

DISTRICT MARSH FORK 2 COUNTY RALEIGH

QUADRANGLE PILOT KNOB 7.5' 547 006 ECG Bald Knob

SURFACE OWNER ROWLAND LAND COMPANY ACREAGE 7192.832

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 SHALE ESTIMATED DEPTH 5300'

WELL OPERATOR ALLEGHENY + WESTERN DESIGNATED AGENT DENNIS L. MANN

ADDRESS P.O. BOX 2587 ADDRESS P.O. BOX 2587

CHARLESTON, WEST VIRGINIA 25329 CHARLESTON, WEST VIRGINIA 25329

6-6 Hopkins Fork - Jarrolds Valley (247)

COUNTY NAME

PERMIT

FORM WV-6 H.T. HALL 48673

DEC 8 1986

FORM WW-2(B)
 RECEIVED
 DEC 01 1986



1) Date: 20 November, 1986
 2) Operator's Well No. Rowland Land #13
 3) API Well No. 47 - 081 - 0750
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas /
 B (If "Gas", Production / Underground storage / Deep / Shallow /)
- 5) LOCATION: Elevation: 1414.3 Watershed: Marsh Fork of Big Coal
 District: Marsh Fork 2 County: Raleigh 081 Quadrangle: Pilot Knob 7.5:546
- 6) WELL OPERATOR A & W Energy Corp CODE: 1100 7) DESIGNATED AGENT Dennis L. Mann
 Address P.O. Box 2587 004 Address P.O. Box 2587
Charleston, West Virginia 25329 Charleston, West Virginia 25329
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Rodney Dillon
 Address P.O. Box 1526
Sophia, WV 25921
- 9) DRILLING CONTRACTOR: Name Ray Resources
 Address _____
- 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, Weir, Devonian Shale 401
- 12) Estimated depth of completed well, 5300 feet
- 13) Approximate trata depths: Fresh, 50 feet; salt, 500 feet.
- 14) Approximate coal seam depths: _____ 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	9-5/8	smls	32	x		847	847	300sks CTS	by rule 15.05
Coal	7	smls	23	x		2862	2862	200 sks CTS	Sizes by rule 15.05
Intermediate									
Production	4-1/2	smls	10.5	x		5300	5300	200-400 sks	Depths set or as required
Tubing									by rule 15.01
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-081-0750 Date December 4 19 86

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 December 4, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <u>RS</u>	Plat: <u>RS</u>	Casing: <u>RS</u>	Fee: <u>4054</u>	WCCP: <u>RS</u>	S&E: <u>RS</u>	Other: _____
---	------------------	-----------------	-------------------	------------------	-----------------	----------------	--------------

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

 Director, Division of Oil and Gas

File

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

8799

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

weir 2957-2982 perf w/ 21 holes frac w/ 45,000# 20/50 sd + 1,000 gal 15% acid + 635,000 scf n2
 Go 3453-3457 perf w/ 9 holes frac w/ 30,000# 20/50 sd + 500 gal 15% acid + 290,000 scf n2
 4175-4415 perf w/ 15 holes frac w/ 45,000# 20/50 sd + 1,000 gal 15% acid + 1,015,000 scf n2
 4462-5070 perf w/ 24 holes frac w/ 45,000# 20/50 sd + 1,000 gal 15% acid + 1,054,000 scf n2
 5226-5862 perf w/ 19 holes frac w/ 45,000# 20/50 sd + 1,000 gal 15% acid + 1,200,000 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
shale & sand			0	1508	
salt sand			1508	1632	
shale			1632	1689	
salt sand			1689	1852	
shale & sand			1852	2324	
little lime			2324	2384	
slate & lime			2384	2419	
big lime			2419	2772	
shale			2772	2845	
upper weir			2845	2897	
shale			2897	2927	
lower weir			2927	2990	
shale			2990	3238	
sunbury shale			3238	3252	
sandy siltstone & shale			3252	3454	
gordon			3454	3468	
grey & brown shale			3468	5900	
404	3252				
813	4452				
822	5204				
825	5404				
830	5704				

RECEIVED
AUG 11 1987

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

TD 5900 KB

5900
1414
4486

(Attach separate sheets as necessary)

Allegheny & Western Energy Corp
Well Operator

By: Don G. Man, Vice President

Date: April 6, 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 encountered in the drilling of a well."