

3/18/87

10,300' 39.25

LATITUDE 39° 22' 30"

LONGITUDE 80° 50' 00"

NORTH

R. UNDERWOOD
128.75 Ac.

R. UNDERWOOD
133.13 Ac.

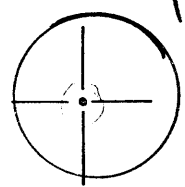
R.L. REED
32 Ac.

O.W. GRIFFIN
104.84 Ac.

O.W. GRIFFIN
26 Ac.

R. KISSNER
32 Ac.

E.L. MOORE
165 Ac.



0.745
1.94W

3.625
1.94W

74

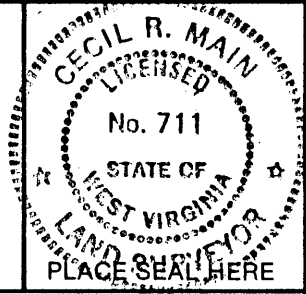
"References"

S 80° - 15 SE 60' To well 0510
North 10° 00' minute east 103 Ft
To stake

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

FILE NO. _____
DRAWING NO. _____
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY 1 PART IN 200
PROVEN SOURCE OF ELEVATION B.M. EL. 782'
NORTH EAST OF WELL

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) Cecil R. Main
R.P.E. _____ L.L.S. 711



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION



DATE MARCH 14, 1987
OPERATOR'S WELL NO. HADLEY #1A (REVISED LOCATION)
API WELL NO. 47-095-1176
STATE COUNTY PERMIT

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

LOCATION: ELEVATION 994' WATER SHED BIG RUN
DISTRICT CENTERVILLE 1 COUNTY TYLER
QUADRANGLE WEST UNION 75 671 133 CS

SURFACE OWNER CLARENCE HADLEY ACREAGE 191
OIL & GAS ROYALTY OWNER CLARENCE HADLEY LEASE ACREAGE 194
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 BENSON ESTIMATED DEPTH 5500
WELL OPERATOR APPALACHIAN ENERGY DEV., INC. DESIGNATED AGENT GEORGE WILLIAMS
ADDRESS P.O. BOX 902 397 ADDRESS P.O. BOX 902
BEWINGTON, W.Va. 26250 BEWINGTON, W.Va. 26250

MAR 23 1987

COUNTY NAME

PERMIT

FORM IV-6 (8-78)
H.T. HALL



WR-35

RECEIVED
APR 13 1987
DIVISION OF OIL & GAS
DEPT. OF ENERGY

State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date 4/7/87
Operator's
Well No. 1-A
Farm Hadley
API No. 47 - 095 - 1176

WELL OPERATOR'S REPORT
OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 994 Watershed Big Run
District: Centerville County Tyler Quadrangle West Union

COMPANY Appalachian Energy Dev., Inc.

ADDRESS Rt 2 Box 499 Grafton, Wv 26354

DESIGNATED AGENT George Williams

ADDRESS Rt 2 Box 499 Grafton, Wv 26354

SURFACE OWNER Clarence Hadley

ADDRESS Rt 1 Middlebourne, Wv 26149

MINERAL RIGHTS OWNER Clarence Hadley

ADDRESS Rt 1 Middlebourne, Wv 26149

OIL AND GAS INSPECTOR FOR THIS WORK Robert
Lowther ADDRESS Middlebourne, Wv

PERMIT ISSUED 3/16/87

DRILLING COMMENCED 3/17/87

DRILLING COMPLETED 3/21/87

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 Cond.			
11-3/4	208	208	100 sxs
9 5/8			
8 5/8	1606	1606	320 sxs
7			
5 1/2			
4 1/2	4997	4997	340 sxs
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Benson Depth 4914 feet

Depth of completed well 5100 feet Rotary X / Cable Tools

Water strata depth: Fresh 215 feet; Salt 2000 feet

Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA These 2 zones are "downhole commingled".

Producing formation Benson Pay zone depth 4917-23 feet

Gas: Initial open flow - Mcf/d Oil: Initial open flow 0 Bbl/d

"Combined" Final open flow (925) Mcf/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1610 psig (surface measurement) after 48 hours shut in
(If applicable due to multiple completion--)

Second producing formation Riley Pay zone depth 4529-50 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

MAY 11 1987
(Continue on reverse side)

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

- 1.) Benson-perf. 4917-23 w/14 holes. frac w/28000# 20/40 sand in 375 bbls total fluid. Avg Rate-24.5 BPM, Avg Pr-2200 psi, ISIP-1650 psi.
- 2.) Riley-perf. 4519 (2 holes), 4522 (2 holes), 4527-31 (5 holes), 4536 (1 hole), 4538-40 (2 holes), 4548-50 (2 holes). Foam frac w/45000# 20/40 sand in 580 bbls 75 quality foam. Avg Rate-24 BPM, Avg Pr-3600 psi, ISIP-2000 psi.

Note: 3 9/16" baffle left in well @ 4647'.

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	200	
sand			200	215	hole wet @ 215'
sand & shale			215	970	
red shale			970	1000	
sand & shale			1000	1845	
Big Lime			1845	1915	
Big Injun			1915	2075	hole wet @ 2000', soap hole
shale			2075	2242	to total depth.
Weir			2242	2354	
sand & shale			2354	4518	
Riley			4518	4556	
shale			4556	4914	
Benson			4914	4924	
shale			4924	5100	Total Depth-5100'

Note: gas tests were inaccurate due to foam in hole.

(Attach separate sheets as necessary)

Appalachian Energy Dev., Inc.
Well Operator

By: George B. Williams

Date: 4/7/87

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 all encountered in the drilling of a well."

FOR... (Obv...)
7/85

RECEIVED
MAR 16 1987



1) Date: 3/16, 19 87
2) Operator's Well No. 1 (REV.)
3) API Well No. 47 095 1176
State County Permit

**DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY**

STATE OF WEST VIRGINIA
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: 994' Watershed: Big Run
District: Centerville County: Tyler Quadrangle: West Union
- 6) WELL OPERATOR Appalachian Energy CODE: _____ 7) DESIGNATED AGENT George Williams
Address Development, Inc. 397 Address P. O. Box 902
P. O. Box 902 Belington, W. Va. 26250
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Robert Lowther 9) DRILLING CONTRACTOR:
Address General Delivery Name Century Petroleum Drilling
Middlebourne, WV 26149 Address Vienna, W. Va.
- 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, Benson 435
- 12) Estimated depth of completed well, 5050' feet
- 13) Approximate trata depths: Fresh, N/A feet; salt, N/A feet.
- 14) Approximate coal seam depths: N/A 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		
Conductor	11 3/4"			X		200'	200'	Surface Kinds <u>8 hours WAITING TIME</u>
Fresh water								Sizes <u>GEL 3% CaCl₂</u>
Coal								Depths set
Intermediate	8 5/8"			X		1580'	1580'	Surface <u>500 SKS</u>
Production	4 1/2"			X		5045'	5045'	1000' fill <u>OR AS RECOMMENDED BY RULC 15.0</u>
Tubing								Perforations
Liners								Top Bottom

**OFFICE USE ONLY
DRILLING PERMIT**

Permit number 47-095-1176 Date March 18 87
19

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 18, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <u>AS</u>	Casing: <u>AS</u>	Fee: <u>456</u> <u>185</u>	WDCP: <u>AS</u>	Other: <u>AS</u>
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NOTE: Keep one copy of this permit posted at the drilling location.

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

John J. Johnston
Director, Division of Oil and Gas
Margaret J. Haase File