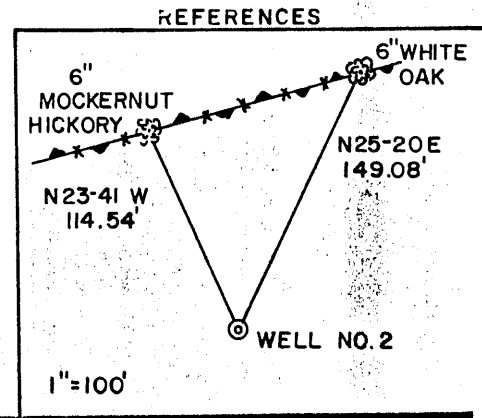
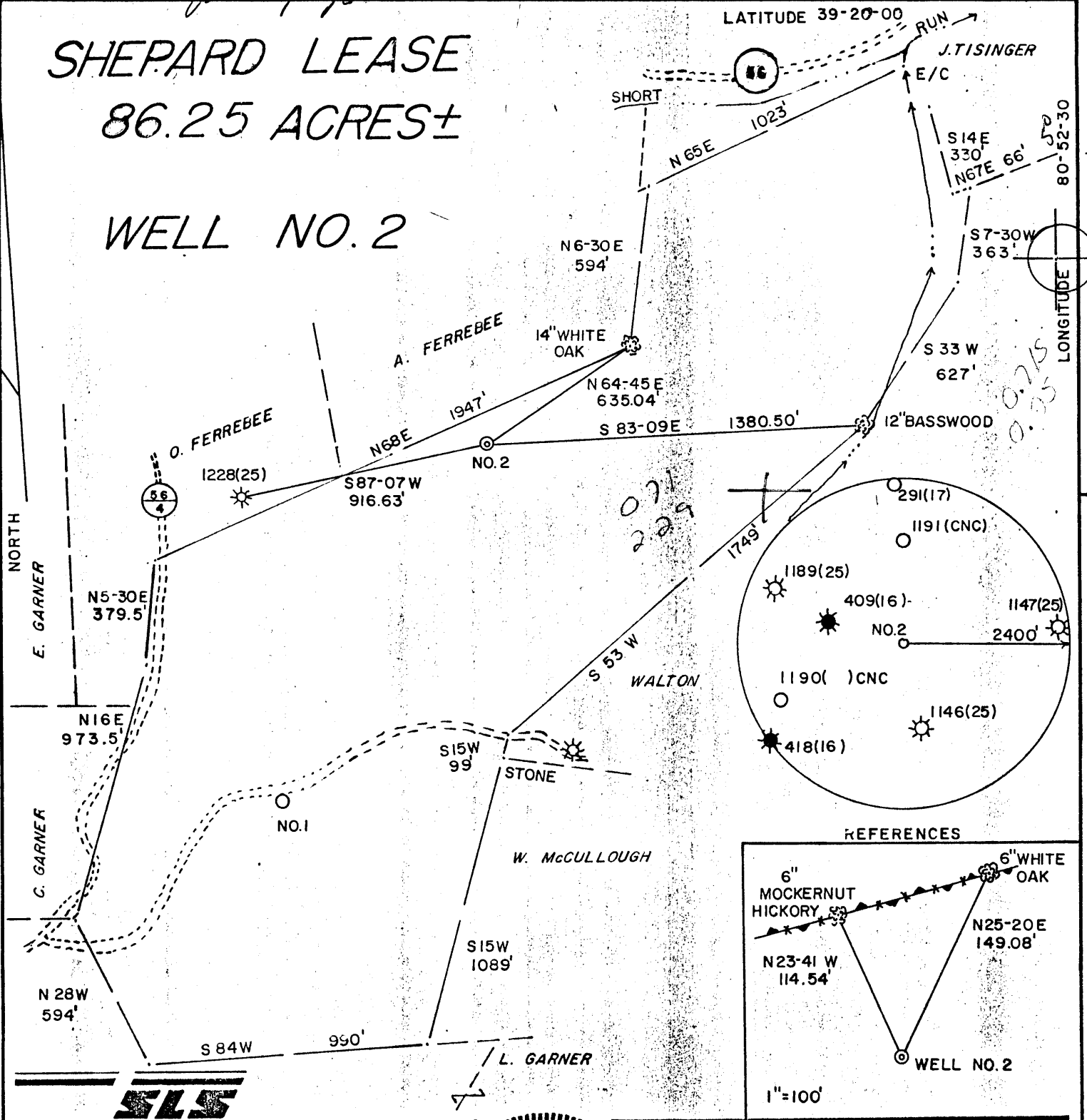


Janice 6/29/88

SHEPARD LEASE

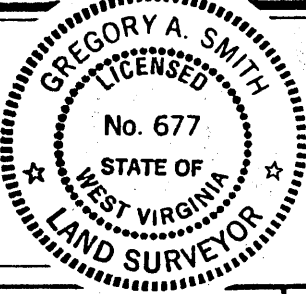
86.25 ACRES±

WELL NO. 2



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.

L.L.S. Gregory A. Smith
677



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

DATE JUNE 7, 19 88

OPERATORS WELL NO. SHEPARD NO. 2

API WELL NO. 47 - 095 - 1247

STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1845 (25-32)

PROVEN SOURCE OF ELEVATION TOP OF KNOB ELEV. = 1308' SCALE 1" = 500'

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
OIL AND GAS DIVISION

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

LOCATION: ELEVATION 1145' WATERSHED SHORT RUN QUADRANGLE PENNSBORO 7.5539

DISTRICT CENTERVILLE COUNTY TYLER ACREAGE 86.25

SURFACE OWNER PHYLLIS A. SHEPARD LEASE ACREAGE 86.25

ROYALTY OWNER PHYLLIS A. SHEPARD LEASE NO. 8

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION ALEXANDER

ESTIMATED DEPTH 5900'

WELL OPERATOR APPALACHIAN ENERGY DEVELOPMENT DESIGNATED AGENT GEORGE WILLIAMS

ADDRESS RT.2 BOX 499, GRAFTON, WV 26354 ADDRESS RT.2 BOX 499, GRAFTON, WV 26354

135960 *6-6 Stanley (90)*

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OCT 3 1 1988



DIVISION OF OIL & GAS
DEPT. OF ENERGY

State of West Virginia

DEPARTMENT OF ENERGY
Oil and Gas Division

Date 10/27/88
Operator's
Well No. 2
Farm Shepard
API No. 47 - 095 - 1247

WR-35

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 X / Underground Storage / Deep / Shallow X /)

LOCATION: Elevation: 1145 Watershed Short Run
District: Centerville County Tyler Quadrangle Pennsboro

COMPANY Appalachian Energy Dev., Inc.
ADDRESS Rt. 2, Box 499, Grafton, WV 26354
DESIGNATED AGENT George R. Williams
ADDRESS Rt. 2, Box 499, Grafton, WV 26354
SURFACE OWNER Phyllis Shepard
ADDRESS 1662 Kaiser Dr., Reynoldsburg, OH 43068
MINERAL RIGHTS OWNER Phyllis Shepard
ADDRESS 1662 Kaiser Dr., Reynoldsburg, OH 43068
OIL AND GAS INSPECTOR FOR THIS WORK Robert Lowther
ADDRESS Middlebourne, WV
PERMIT ISSUED 7/1/88
DRILLING COMMENCED 9/9/88
DRILLING COMPLETED 10/1/88
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.			
13-10"	30	0	0
9 5/8			
8 5/8	1382	1382	Surface
7			
5 1/2			
4 1/2	5379	5379	300 sxs.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander / Benson / Riley Depth 5298 feet
Depth of completed well 5407 feet Rotary X / Cable Tools
Water strata depth: Fresh 460 feet; Salt 1550 feet
Coal seam depths: None Is coal being mined in the area? no

OPEN FLOW DATA NOTE: These zones are downhole commingled.
Producing formation Alexander/Benson/Riley Pay zone depth feet ^{See Perf. Detail.}
Gas: Initial open flow 45 Mcf/d Oil: Initial open flow 0 Bbl/d
Final open flow 780 Mcf/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 1705 psig (surface measurement) after 48 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

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

- 1) Alexander - perf 5298-5314 w/ 18 holes. Frac w/30,000# 20/40 sand in 315 bbls. water using 86,000 SCF N₂.
- 2) Benson - perf 5007-5016 w/16 holes. Frac w/30,000# 20/40 sand in 315 bbls. water using 87,000 SCF N₂.
- 3) Riley - perf 4608-4638 w/16 holes. Foam frac w/30,000# 20/40 sand in 700 bbls. 75 quality foam, using 455,000 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
Sand and shale			0	490	Hole damp @ 460'
Red Rock			490	580	Hole wet @ 1550'
Sand and shale			580	2002	
Big Lime			2002	2070	
Big Injun			2070	2186	
Sand and shale			2186	2340	
Weir			2340	2454	
Sand and Shale			2454	4608	
Riley			4608	4638	
Shale			4638	5007	
Benson			5007	5016	
Shale			5016	5298	
✓ Alexander			5298	5314	
Shale			5314	5407	
TOTAL DEPTH				<u>5407</u>	

(Attach separate sheets as necessary)

APPALACHIAN ENERGY DEV., INC.
Well Operator

By: _____
George R. Williams
Date: 10/27/88

Note: Regulation 2.02(i) provides as follows:
 1290 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

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

6397 2325, 1, 538

- 1) Well Operator: Appalachian Energy Development, Inc.
- 2) Operator's Well Number: Shepard No. 2 3) Elevation: 1145'
- 4) Well type: (a) Oil / or Gas /
(b) If Gas: Production / Underground Storage /
Deep / Shallow /
- 5) Proposed Target Formation(s): Alexander 439
- 6) Proposed Total Depth: 5900 feet
- 7) Approximate fresh water strata depths: 115'
- 8) Approximate salt water depths: N/A
- 9) Approximate coal seam depths: N/A
- 10) Does land contain coal seams tributary to active mine? Yes / No /
- 11) Proposed Well Work: Drill & Stimulate
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	11 3/4			30'	0	0 Sk.
Fresh Water	8 5/8			1740'	1740' ←	CTS 38 CSR 18-11.3
Coal						
Intermediate						
Production	4 1/2			5900'	5900'	CTS or 38 CSR 18-11.1
Tubing						
Liners						

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PACKERS : Kind _____
Sizes _____
Depths set _____

For Division of Oil and Gas Use Only

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

1407
19
Fee(s) paid: Well Work Permit Reclamation Fund WPCP
 Plat WW-9 WW-2B Bond 50 Blanket Agent
(Type)

7290

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

1) Date: June 22, 1988
2) Operator's well number Shepard No. 2
3) API Well No: 47 - 095 - 1247
State - County - Permit

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
(a) Name Phyllis A. Shepard
Address 1662 Kaiser Dr.
Reynoldsburg, OH 43068
(b) Name _____
Address _____
(c) Name _____
Address _____
6) Inspector Robert Lowther
Address General Delivery
Middlebourne, WV 26149
Telephone (304)- 758 - 4764

5) (a) Coal Operator:
Name N/A
Address _____
(b) Coal Owner(s) with Declaration
Name N/A
Address _____
Name _____
Address _____
(c) Coal Lessee with Declaration
Name N/A
Address _____

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

_____ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR
x Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 8 on the above named parties, by:

- _____ Personal Service (Affidavit attached)
- x Certified Mail (Postmarked postal receipt attached)
- _____ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application. I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Appalachian Energy Development, Inc.
By: George R. Williams
Its: President
Address Rt. 2, Box 499
Grafton, WV 26354
Telephone (304) 265 - 4147

Subscribed and sworn before me this 22nd day of June, 1988

Gregory A. Smith Notary Public
My commission expires 12/7/92