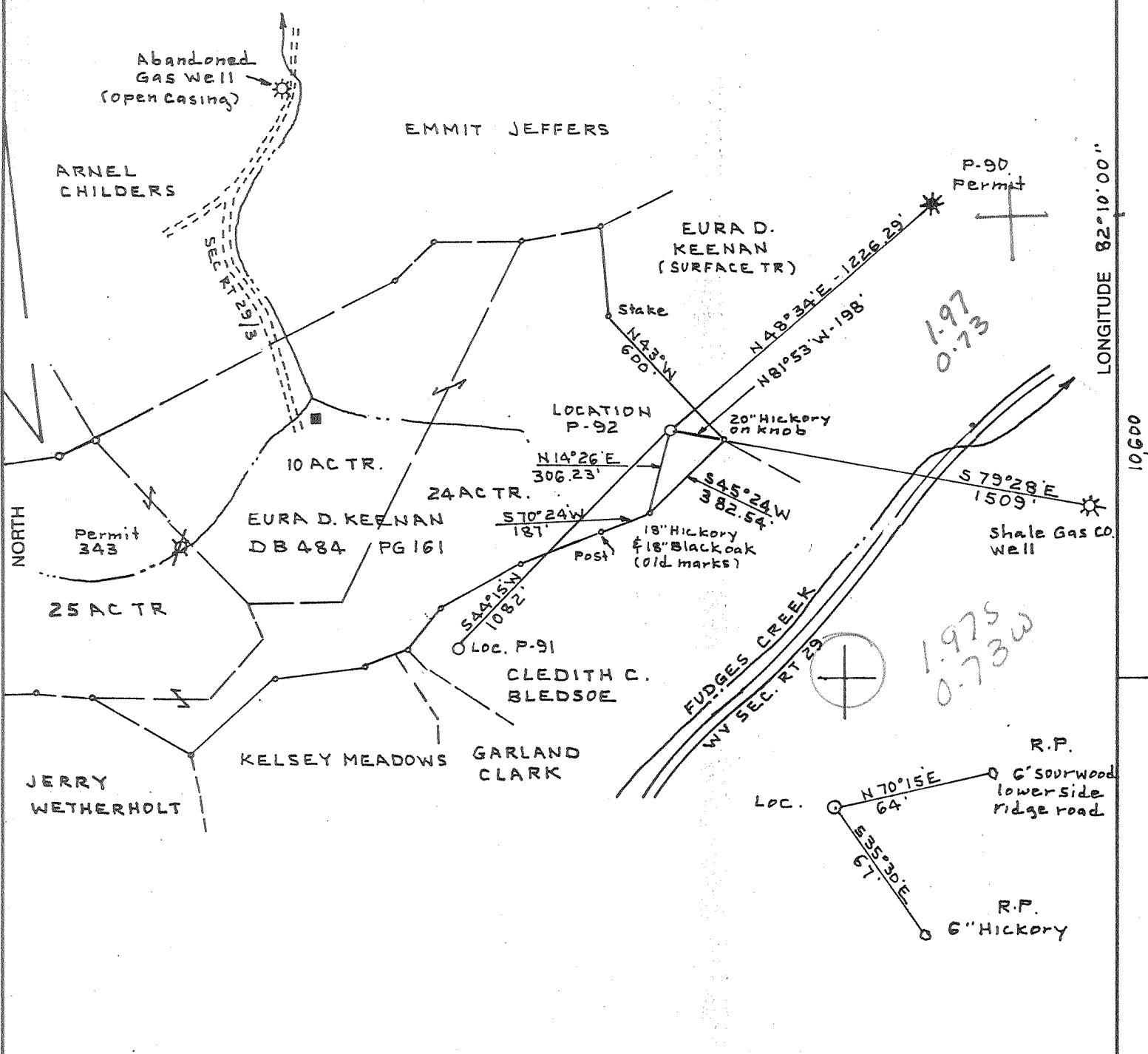


3850'

LATITUDE 38°25'00"

Permit P-89  
0820

*Janice 7/18/88*



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

FILE NO. BK 112 PG 40  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1:2500  
 PROVEN SOURCE OF ELEVATION USGS BM 149 JJS  
E1 676

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) C. J. Volney Jr.  
 R.P.E. \_\_\_\_\_ L.S. 92

PLACE SEAL HERE

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



DATE JULY 2, 1988  
 OPERATOR'S WELL NO. P-92  
 API WELL NO. 47-011-0829  
 STATE COUNTY PERMIT

WELL TYPE: OIL  GAS  LIQUID INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW   
 LOCATION: ELEVATION 896.17 WATERSHED FUDGES CREEK OF MUD RIVER  
 DISTRICT GRANT 3 COUNTY CABELL  
 QUADRANGLE MILTON 476 081 4 +15 WC  
 SURFACE OWNER EURA D. KEENAN ACREAGE 58.5  
 OIL & GAS ROYALTY OWNER EURA D. KEENAN LEASE ACREAGE 58.5  
 LEASE NO. 2640  
 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 BEREA ESTIMATED DEPTH 2650'  
 WELL OPERATOR SOUTHEASTERN GAS CO. DESIGNATED AGENT FRED RADFORD  
 ADDRESS P.O. BOX 2347 ADDRESS P.O. BOX 2347  
CHARLESTON WV 25328 CHARLESTON WV 25328

COUNTY NAME PERMIT

*Merritt Creek - Salt Rock (206) 6-6*

*JUL 22 1988*

State of West Virginia  
DEPARTMENT OF ENERGY  
Division of Oil and Gas

Well Operator's Report of Well Work

Farm name: KEFNAN, EURA D. Operator Well No.: P-92

LOCATION: Elevation: 896.17 Quadrangle: MILTON

District: GRANT County: CARELL  
Latitude: 10600 Feet South of 38 Deg. 25Min. 0 Sec.  
Longitude 3850 Feet West of 82 Deg. 10 Min. 0 Sec.

Company: SOUTHEASTERN GAS CO.  
P. O. BOX 2347  
CHARLESTON, WV

Agent: FRED A. RADFORD

Inspector: JERRY TEPHAROCK  
Permit Issued: 07/19/88  
Well work Commenced: 8/18/88  
Well work Completed: 9/16/88

Verbal Pluggings  
Permission granted on:  
Rotary  Cable  Ris  
Total Depth (feet) 2639'  
Fresh water depths (ft) 284'  
Salt water depths (ft) 1465'

Is coal being mined in area (Y/N)? N  
Coal Depths (ft):

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill (Cu. Ft.)
9-5/8	947'	947'	335
4-1/2	2621'	2621'	130
2-3/8	2560'	2560'	



DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

OPEN FLOW DATA

Producing formation Berea Pay zone depth (ft) 2544-55'  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow (12) Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure 485 psig (surface pressure) after 12 Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: SOUTHEASTERN GAS CO.  
By: Fred A. Radford Vice President  
Date: November 3, 1988

Ran CBL, perforated Berea at 2544' to 2555' - 12 hours. Broke down with 500 gals. 15% acid and 500 gals. methanol at 2910 psi. Fractured with 75Q Foam at 28 BPM, average pressure 2,208 psi. ISIP: 1530 psi, 15 min. 1430 psi. Used 430,000 SCF of N<sub>2</sub> and 40,000 # of 20/40 sand. Total of 278 bbl. of water.

FORMATION	TOP	BOTTOM	REMARKS
Sand	0	73	
Sandy Shale	73	112	
Shale	112	138	
Sand	138	226	
Sandy Shale	226	354	Fresh Water 284'
Sand & Shale	354	510	
Shale	510	582	
Sand	582	649	
Shale	649	672	
Sand	672	747	
Sand & Shale	747	802	
Shale	802	851	
Sandy Shale	851	933	
Shale	933	1122	
Sand & Shale	1122	1422	
Salt Sand	1422	1621	Salt Water 1465'
Shale	1621	1725	
Maxton Sand	1725	1752	
Shale	1752	1758	
Big Lime	1758	1954	
Shaley Lime	1954	2013	
Injun Sand	2013	2088	
Weir Shale	2088	2497	
Coffee (Sunbury) Shale	2497	2542	
Berea Sand	2542	2555	Show of Oil 2548'-51'
Devonian Shale	2555	2639	
	DTD	<u>2639'</u>	
	LTD	2637'	

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DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

NOV 10 1988

7397

011-0829

Issued 7/19/88 Expires 7/19/90  
Page 3 of

FORM WW-2B

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

- 1) Well Operator: Southeastern Gas Company *40400, 3, 476*
- 2) Operator's Well Number: P-92 3) Elevation: 896.17
- 4) Well type: (a) Oil  / or Gas  /  
(b) If Gas: Production  / Underground Storage  /  
Deep  / Shallow  /
- 5) Proposed Target Formation(s): Berea Sandstone
- 6) Proposed Total Depth: 2650 feet
- 7) Approximate fresh water strata depths: 330', 897'
- 8) Approximate salt water depths: 1447'
- 9) Approximate coal seam depths: 639'
- 10) Does land contain coal seams tributary to active mine? Yes  / No  /
- 11) Proposed Well Work: Drill New Well
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS			CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	
Conductor						<i>30CSR18-11.3</i>
Fresh Water	9-5/8"	J	32.3	930'	930'	Cement to Surface <i>30CSR18-11.22</i>
Coal						
Intermediate						
Production	4-1/2"	J	10.5	2650'	2650'	<i>30CSR18-11.1</i> 175
Tubing	2-3/8"	J	4.6	2650'	2650'	
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

*0365*  
*[Signature]*

Fee(s) paid:  Well Work Permit  Reclamation Fund  WPCP

Plat *[Signature]* WW-9 *[Signature]* WW-2B *[Signature]* Bond 50 Blanket *[Signature]* Agent

(Type)

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JUL 13 1988

Page 1 of  
Form WW2-A  
(09/87)  
File Copy

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

Date: July 11, 1988  
Operator's well number P-92  
API Well No: 47 - 011 - 0829  
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 Eura D. Keenan  
Address 988 Fudges Creek Rd.  
Barboursville, WV 25504  
(b) Name  
Address  
(c) Name  
Address

5) (a) Coal Operator:  
Name (Coal not operated)  
Address  
(b) Coal Owner(s) with Declaration  
Name Eura D. Keenan  
Address 988 Fudges Creek Rd.  
Barboursville, WV 25504  
Name  
Address

6) Inspector Jerry Tephabock  
Address Rt. 1, Box 101-A  
Ripley, WV 25271  
Telephone (304)- 372-6805

(c) Coal Lessee with Declaration  
Name (Coal not leased)  
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  
 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 \_\_\_ on the above named parties, by:  
 Personal Service (Affidavit attached)  
 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 Southeastern Gas Company  
By: Fred A. Radford  
Its: Vice President  
Address P O Box 2347  
Charleston, WV 25328  
Telephone 304-343-9566

Subscribed and sworn before me this 11th day of July, 1988

Sandra K. Urban Notary Public  
My commission expires May 24, 1993