

WELL REFERENCES:  
 S59°30'W, 148' TO 12" R.OAK  
 S44°E, 114' TO 12" MULBERRY

*James 10/12/88*

C. SHAHAN

T. PRITT

LATITUDE 39°15'00"

J. OWENS

LN 66050  
 NO. 179  
 W. HOVATTER  
 98 AC.

LN 58735  
 NO. 309  
 J. OWENS  
 38 AC.

LN 58735  
 NO. 309  
 J. OWENS  
 137 AC.

LN 58710  
 NO. 257  
 D. PIFER  
 33 AC. 19 P.

LN 66048  
 NO. 201  
 W. GOFF  
 56 AC.

LAND SURVEYING SERVICES  
 21 CEDAR LANE  
 BRIDGEPORT, WV 26330  
 PHONE: 304-842-2018

N08°09'E  
 1695.83'

N64°37'E 883.80'

1061.48'

S52°06'W 1204.50'

STONE  
 N09°09'E  
 275.92'

1/2" REBAR

S39°W 973.50'

N64°18'W  
 193.44'

CONC. MON.  
 S08°08'W  
 288.75'

22 (07)  
 2830'

14 (07)  
 3040'

24 (07)  
 2905'

E-70  
 3000'

NORTH

LONGITUDE 79°45'00"

*1.84  
 0.12*

*1.845  
 0.12W*

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

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION BM 1400' W. OF LOCATION  
 ELEV. 2119'

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) *Stephen D. Losh*

R.P.E. \_\_\_\_\_ L.L.S. 674  
 STEPHEN D. LOSH

PLACE SEAL HERE

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION



DATE SEPTEMBER 13, 19 88  
 OPERATOR'S WELL NO. E-70  
 API WELL NO.

47 - 093 - 00071  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION 2264' WATER SHED JACOBS RUN  
 DISTRICT LICKING COUNTY TUCKER  
 QUADRANGLE COLEBANK 7.5 min. 303 0083 Belington NE

SURFACE OWNER SAMUEL B. OWENS ACREAGE 38  
 OIL & GAS ROYALTY OWNER JOHN OWENS, HEIRS UNIT LEASE ACREAGE 175 (OWENS) 589 (UNIT NO.5)  
 LEASE NO. 58735

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 HELDERBURG ESTIMATED DEPTH 6000'  
 WELL OPERATOR EXCEL ENERGY, INC. DESIGNATED AGENT HARRY L. BARNETT  
 ADDRESS P.O. BOX 1020 ADDRESS P.O. BOX 1020  
 BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT

*DEEP WELL*

*3.3*

*Etam*

*(260)*

*DPD-Helderberg*

*OCT 17 1988*

FORM WW-6  
 H.T. HALL 98673

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14-Oct-88  
API # 47- 93-00071

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

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY Well Operator's Report of Well Work

Farm name: OWENS, SAMUEL B. Operator Well No.: E-70

LOCATION: Elevation: 2264.00 Quadrangle: COLEBANK

District: LICKING County: TUCKER  
Latitude: 9770 Feet South of 39 Deg. 15Min. 0 Sec.  
Longitude: 630 Feet West of 79 Deg. 45 Min. 0 Sec.

Company: EXCEL ENERGY, INC  
901 W. MAIN STREET, SUITE 201  
BRIDGEPORT, WV

Asent: H. L. BARNETT

Inspector: PHILLIP TRACY  
Permit Issued: 10/14/88  
Well work Commenced: 10/30/88  
Well work Completed: 11/22/88

Verbal Plussings  
Permission granted on:  
Rotary  Cable  Ris   
Total Depth (feet) 5259  
Fresh water depths (ft) 1/2" @ 80'  
3/4" @ 573  
Salt water depths (ft) N/A

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

Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
11 3/4	30	30	
8 5/8	1600	1600	C.T.S
4 1/2	5214	5214	180 SKS

OPEN FLOW DATA

Producing formation HELDERBERG, ORISKANY Pay zone depth (ft) 5059-5205  
Gas: Initial open flow SHOW MCF/d Oil: Initial open flow Bbl/d  
Final open flow 592 MCF/d Final open flow Bbl/d  
Time of open flow between initial and final tests Hours  
Static rock Pressure 600 psis (surface pressure) after 24 Hours

Second producing formation HUNTERSVILLE Pay zone depth (ft) 4888-5025  
Gas: Initial open flow SHOW MCF/d Oil: Initial open flow Bbl/d  
Final open flow COMINGLED MCF/d Final open flow Bbl/d  
Time of open flow between initial and final tests Hours  
Static rock Pressure COMINGLED psis (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: EXCEL ENERGY, INC  
By: *Bradley W. Thoms* CONSULTANT  
Date: 12/02/88  
DEC 12 1988

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

STAGE I - 22 HOLES (<sup>Orisk-Held</sup>5059'-5205') 1500 GAL 15% HCL, 700 BBL 60Q FOAM, 40,000# 20/40 SAND  
 STAGE II - 18 HOLES (<sup>Hunt</sup>4888'-5025') 1000 GAL 15% HCL, 900 BBL 60Q FOAM, 80,000# 20/40 SAND

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	BROWN	SOFT	0	13	1/2" FW @ 80', 3/4" @ 573'
SAND & SHALE	GREY	HARD	13	915	OIL ODOR @ 604'
SAND	GREY	HARD	915	1100	
SAND & SHALE		MED.	1100	1857	
SAND	BROWN	SOFT	1857	1950	(BENSON)
SHALE	GREY	SOFT	1950	4435	
LIME	BROWN	HARD	4435	4460	(TULLY)
SHALE	GREY	SOFT	4460	4730	
SHALE	BLACK	SOFT	4730	4820	(MARCELLUS)
LIME	BROWN	MED.	4820	4840	(ONONDAGA)
CHERT	GREY	HARD	4840	5040	(HUNTERSVILLE) -- GAS SHOW
SAND	WHITE	HARD	5040	5140	(ORISKANY) -- GAS SHOW
SAND & LIME	GREY & WHITE	HARD	5140	TD	(HELDERBERG) -- GAS SHOW
			DTD	5267	
			LTD	5259	

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DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

5267  
5140  
127-expl.ftg.

(Attach separate sheets as necessary)

EXCEL ENERGY, INC.

Well Operator

By: Bradley W. Thoms, CONSULTANT

Date: 12/02/88

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  
 coal, encountered in the drilling of a well."

DEC 12 1988

784

29

093-0071

Issued 10/14/88 Expires 10/14/90  
Page \_\_\_\_\_ of \_\_\_\_\_

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

- 1) Well Operator: <sup>1027</sup> Excel Energy, Inc. 16570, G, 303
- 2) Operator's Well Number: E-70 3) Elevation: 2264
- 4) Well type: (a) Oil  / or Gas  /  
(b) If Gas: Production  / Underground Storage  /  
Deep  / Shallow  /
- 5) Proposed Target Formation(s): Helderburg
- 6) Proposed Total Depth: 6,000 feet
- 7) Approximate fresh water strata depths: 1120-1290 501, 952, 640
- 8) Approximate salt water depths: N/A 2770'
- 9) Approximate coal seam depths: OK N/A
- 10) Does land contain coal seams tributary to active mine? Yes  / No  /
- 11) Proposed Well Work: Drill & Stimulate New Well
- 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	113/4		42	30	0	SANDED IN
Fresh Water						
Coal						
Intermediate <sup>DB</sup>	85/8		23	1550	1550	330 sks 30CSR18-11.3
Production	41/2		11.60	5300	5300	400 sks 30CSR14-11.1
Tubing						
Liners						

PACKERS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

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For Division of Oil and Gas Use Only

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

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

Plat     WW-9     WW-2B     Bond 50 Blanket Agent      
(Type)

7124  
1103  
34

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Page 1 of \_\_\_\_\_  
Form WW2-A  
(09/87)  
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DIVISION OF OIL & GAS 3)  
DEPARTMENT OF ENERGY

Date: SEPTEMBER 26TH, 1988  
Operator's well number  
E-70  
API Well No: 47 - 093 - 00071  
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 SAMUEL B. OWENS  
Address RT. 1 BOX 350  
ST. GEORGE, WV 26290  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_

5) (a) Coal Operator:  
Name SAMUEL B. OWENS  
Address RT. 1 BOX 350  
ST. GEORGE, WV 26290  
(b) Coal Owner(s) with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_

6) Inspector PHILLIP TRACY  
Address FOREST FESTIVAL TERRACE  
APT #24, ELKINS, WV 26241  
Telephone (304)-636-8798

(c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
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 \_\_\_\_\_ 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.



OFFICIAL SEAL  
NOTARY PUBLIC  
STATE OF WEST VIRGINIA  
KELLY R. OSBORN  
901 W. Main St., Suite 201  
Bridgeport, W. Va. 26330  
MY COMMISSION EXPIRES JULY 16, 1996

Well Operator EXCEL ENERGY, INC.  
By: [Signature] H. L. BARNETT  
Its: PRESIDENT  
Address 901 W. MAIN STREET, SUITE 201  
P.O. BOX 1020, BRIDGEPORT, WV 26330  
Telephone (304)-842-6927

~~Subscribed and sworn to~~ before me this 26TH day of SEPTEMBER, 1988

My commission expires 7-16-96

[Signature] Notary Public