

*Janie 1/25/89*

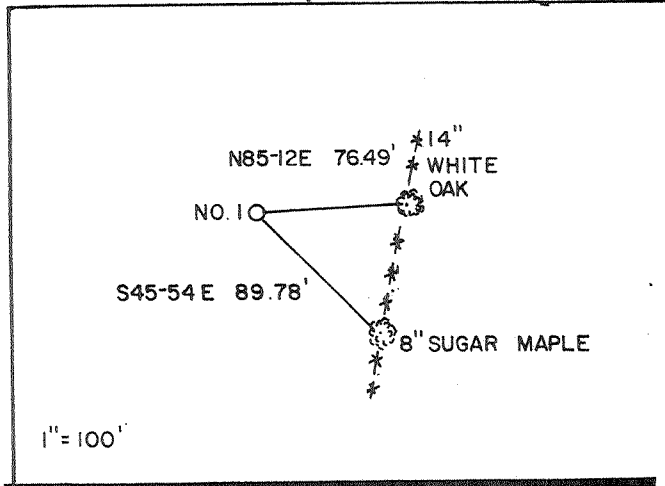
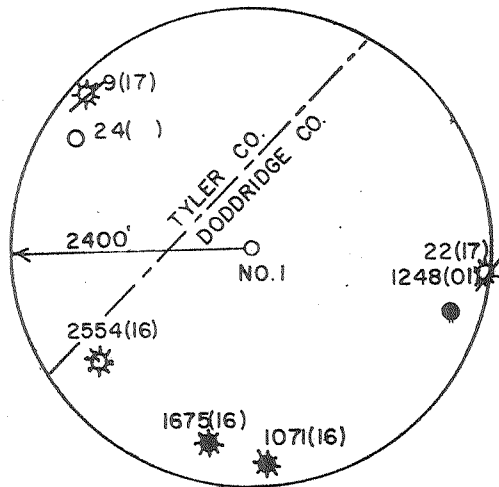
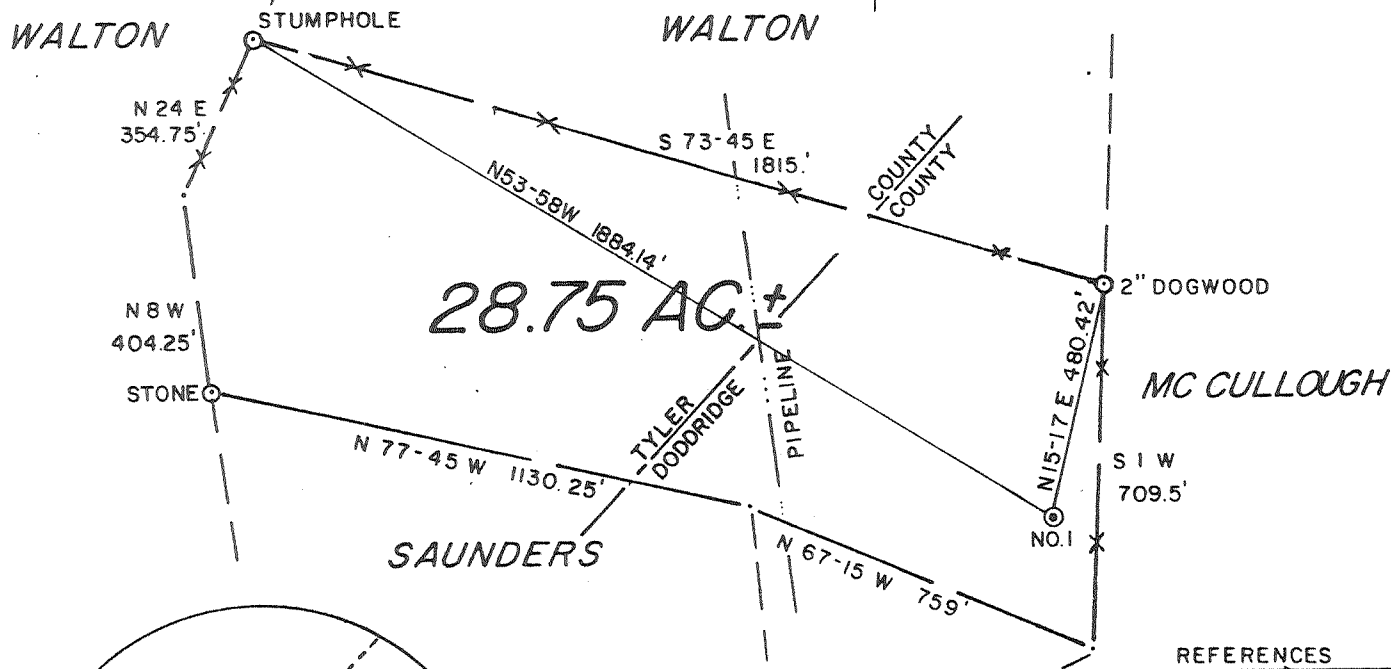
# MC CULLOUGH LEASE WELL NO. 1

*0.855  
1.27W*

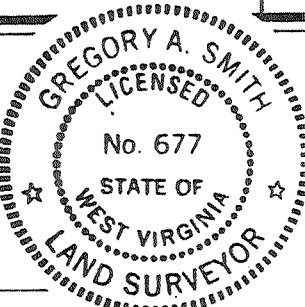
LONGITUDE 80°-50'-00"

4530

NORTH



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.




(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE DECEMBER 31, 19 88  
 OPERATORS WELL NO. McCULLOUGH NO. 1  
 API WELL NO. 47 - 017 - 3693 - F  
 STATE COUNTY PERMIT

L.L.S. *Gregory A. Smith*  
 677

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1906(24-77)  
 PROVEN SOURCE OF ELEVATION TOP OF KNOB 1130' SCALE 1" = 400'

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 986' WATERSHED TRIBUTARY OF LONG RUN  
 DISTRICT CENTRAL COUNTY DODDRIDGE QUADRANGLE WEST UNION 7.5' SC

SURFACE OWNER RICHARD F. & SARAHLENE McCULLOUGH ACREAGE 28.75  
 ROYALTY OWNER RICHARD F. & SARAHLENE McCULLOUGH LEASE ACREAGE 28.75

PROPOSED WORK: LEASE NO. \_\_\_\_\_  
 DRILL  CONVEPT  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 DEVONIAN APPALACHIAN CO. INC. DESIGNATED AGENT ROBERT A. ANDERSON  
 ADDRESS 2510 7TH AVENUE ADDRESS 2510 7TH AVENUE  
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

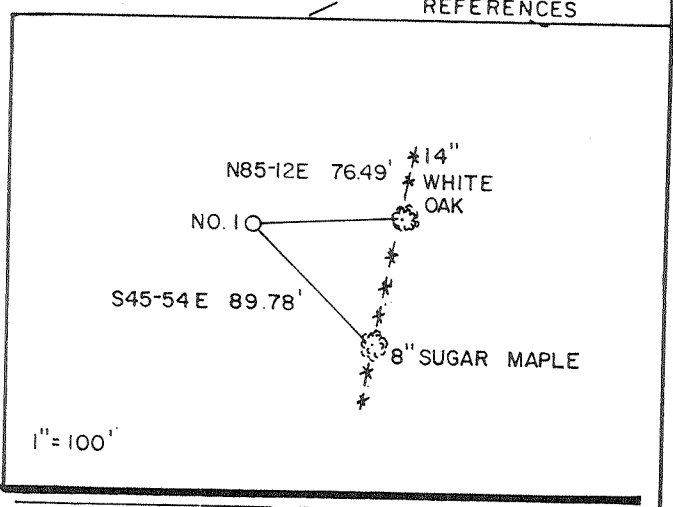
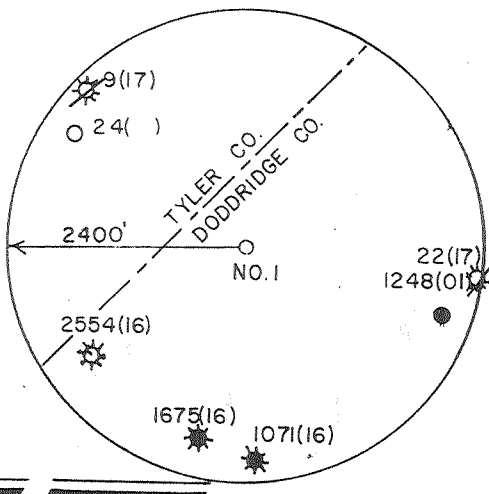
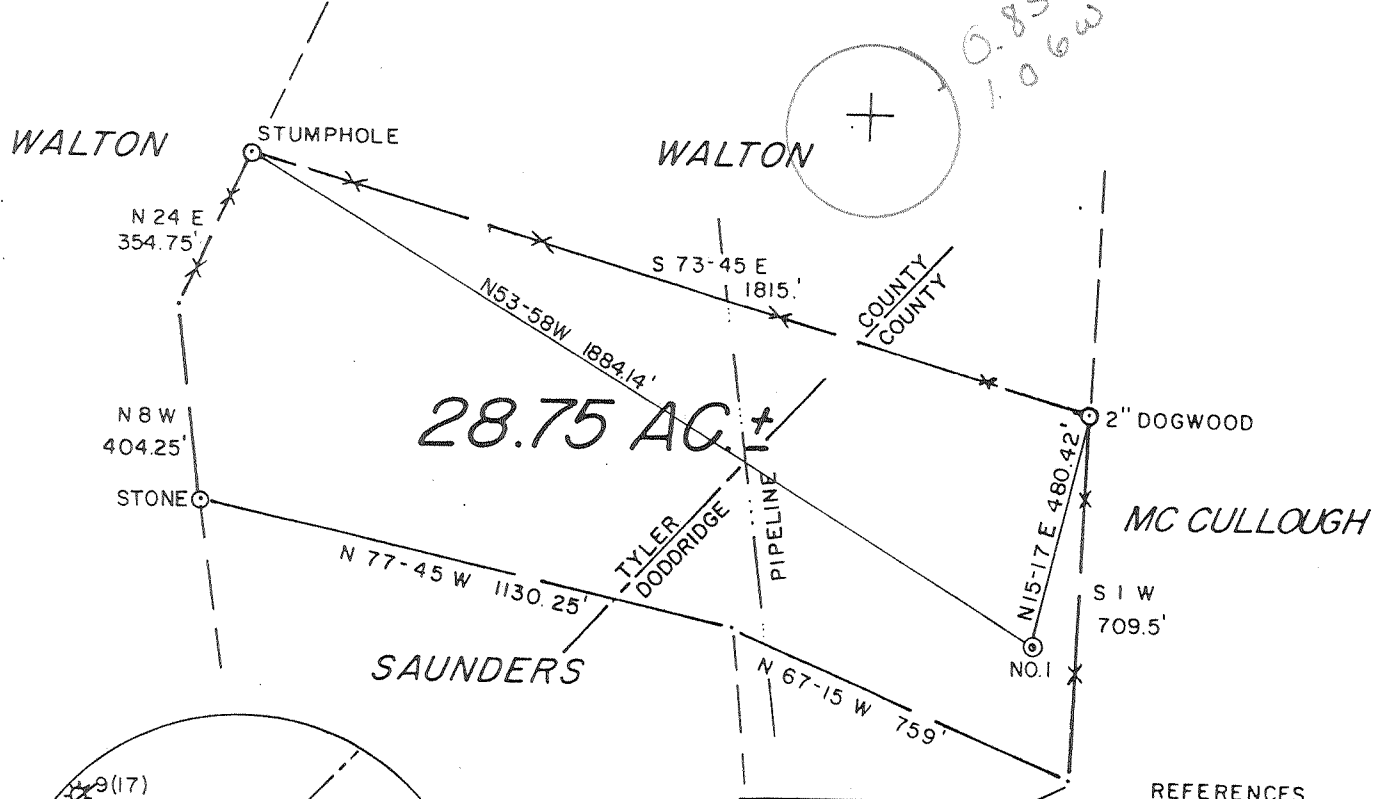
COUNTY NAME PERMIT

0000

3693

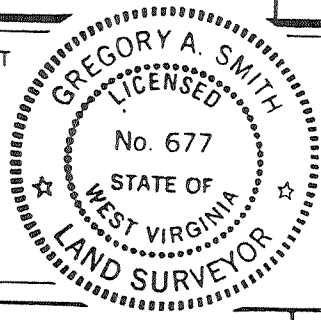
*Janie 1/25/89*

# MC CULLOUGH LEASE WELL NO. 1



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 DECEMBER 31, 19 88  
 OPERATORS WELL NO. McCULLOUGH NO. 1  
 API WELL NO. 47 - 017 - 3693  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1906(24-77)  
 PROVEN SOURCE OF ELEVATION TOP OF KNOB 1130' SCALE 1" = 400'

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 986' WATERSHED TRIBUTARY OF LONG RUN

DISTRICT CENTRAL 1 COUNTY DODDRIDGE QUADRANGLE WEST UNION 7.5' 671  
 SURFACE OWNER RICHARD F. & SARAHLENE McCULLOUGH ACREAGE 28.75  
 ROYALTY OWNER RICHARD F. & SARAHLENE McCULLOUGH LEASE ACREAGE 28.75

PROPOSED WORK:  
 DRILL  CONVEPT  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 5960 *MAR 24 1989*

WELL OPERATOR DEVONIAN APPALACHIAN CO. INC. DESIGNATED AGENT ROBERT A. ANDERSON  
 ADDRESS 2510 7TH AVENUE ADDRESS 2510 7TH AVENUE  
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

*4518  
6-6 Central Station (991)*

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

Well Operator's Report of Well Work

Farm name: McCULLOUGH, RICHARD ETUX Operator Well No.: McCULLOUGH #1

LOCATION: Elevation: 986.00 Quadrangle: WEST UNION

District: CENTRAL County: DODDRIDGE  
Latitude: 4530 Feet South of 39 Deg. 20Min. Sec.  
Longitude 5680 Feet West of 80 Deg. 50 Min. Sec.

Company: DEVONIAN APPALACHIAN COMP  
ROUTE 1, BOX 114B  
MINERAL WELLS, WV 26150-0114

Agent: ROBERT A. ANDERSON

Inspector: MIKE UNDERWOOD  
Permit Issued: 11/17/93  
Well work Commenced: 10/25/93  
Well work Completed: 10/30/93  
Verbal Plugging  
Permission granted on: \_\_\_\_\_  
Rotary \_\_\_\_\_ Cable \_\_\_\_\_ Rig  
Total Depth (feet) N/A  
Fresh water depths (ft) \_\_\_\_\_

Salt water depths (ft) \_\_\_\_\_

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

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size	NO CHANGE/ EXISTING CASING IN PLACE		
RECOMPLETION!			

OPEN FLOW DATA

2406-2832

Producing formation Gordon, 5th, Berea, Gantz Pay zone depth (ft) \_\_\_\_\_  
 Gas: Initial open flow 950 MCF/d Oil: Initial open flow 0 Bbl/d  
 Final open flow 450 MCF/d Final open flow 0 Bbl/d  
 Time of open flow between initial and final tests 12 Hours  
 Static rock Pressure 1150 psig (surface pressure) after 48 Hours

Second producing formation Wein, Squaw Pay zone depth (ft) 2041-2313  
 Gas: Initial open flow 950 MCF/d Oil: Initial open flow 0 Bbl/d  
 Final open flow 450 MCF/d Final open flow 0 Bbl/d  
 Time of open flow between initial and final tests 12 Hours  
 Static rock Pressure 1150 psig (surface pressure) after 48 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: DEVONIAN APPALACHIAN COMPANY, INC.

By: Robert A. Anderson  
Date: 2/7/94

FEB 10 1994

Fracture Treatment

1st Stage: Perf 2828-2, 2830-2, 2650-2, 2648-2, 2634-2, 2549-2, 2547-2, 2405-2, Fraced with 500 gal HCl, 40,000# 20/40 Ottawa sand, Water and 99,700 scf N2 675 bbl

2nd Stage: Perf 2314-2, 2307-2, 2306-2, 2295-2, 2294-2, 2290-2, 2215-2224-8 shots, 2073-2, 2041-2. Fraced with 500 gal 22% HCl, 482 bbl water, 67,000 scf N2 assist, 35,000# 20/40 Ottawa sand.

Well log per existing WR-35 no change, RECOMPLETION!

18104

WR-35  
**RECEIVED**  
MAY 04 1989

27-Jan-89  
API # 47-17-03693

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

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

Farm name: McCULLOUGH, RICHARD F. Operator Well No.: McCULLOUGH 1

LOCATION: Elevation: 986.00 Quadrangle: WEST UNION

District: CENTRAL County: DODDRIDGE  
Latitude: 4530 Feet South of 39 Deg. 20Min. 0 Sec.  
Longitude 5680 Feet West of 80 Deg. 50 Min. 0 Sec.

Company: DEVONIAN APPALACHIAN COMP  
2510 SEVENTH STREET  
PARKERSBURG, WV 26101-0000

Agent: ROBERT A. ANDERSON

Inspector: MIKE UNDERWOOD  
Permit Issued: 01/27/89  
Well work Commenced: 02/20/89  
Well work Completed: 02/28/89  
Verbal Plugging \_\_\_\_\_  
Permission granted on: \_\_\_\_\_  
Rotary  Cable \_\_\_\_\_ Rig \_\_\_\_\_  
Total Depth (feet) 5386'  
Fresh water depths (ft) \_\_\_\_\_  
                                  none reported \_\_\_\_\_  
Salt water depths (ft) \_\_\_\_\_  
                                  none reported \_\_\_\_\_  
Is coal being mined in area (Y/N)? N  
Coal Depths (ft): \_\_\_\_\_

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
11 3/4"	177'	177'	40 sks
8 5/8"	1589'	1589'	359 sks
4 1/2"	5325'	5325'	261 sks

OPEN FLOW DATA

Producing formation Riley, Benson, Alexander Pay zone depth (ft) 4500, 5200, 4900  
Gas: Initial open flow 0 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 1,400 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 4 Hours  
Static rock Pressure 1620 psig (surface pressure) after 48 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: DEVONIAN APPALACHIAN COMPANY, INC.

By: Robert A. Anderson  
Date: 2/14/89

MAY 24 1989

Alexander: Perforated 14 shots .51 entry from 5198' to 5206'

Benson: Perforated 4 shots .51 entry from 4906' to 4908'  
2 shots .51 entry from 4911'

Riley: Perforated .51 entry, 3 shots @ 4528', 3 shots @ 4521',  
2 shots @ 4514', 4 shots @ 4506', 4 shots @ 4500'  
4 shots @ 4495'

Fraced Alexander & Benson in first stage with 750 bbls Nitrogen foam and  
50,000# 20/40 Ottawa sand at 20 bbl/minute

Fraced Riley in second stage with 750 bbls Nitrogen foam and 40,000#  
20/40 Ottawa sand at 20 bbl/minute

<u>Formation</u>	<u>Top</u>	<u>Bottom</u>	<u>Indications</u>
sand, shale lime	o	1950'	Maxon gas
Big Lime	1957'	2010'	gas
Big Injun	2010'	2052'	gas & oil
Squaw	2052'	2062'	
Shale	2062'	2220'	
Weir	2220'	2335'	gas & oil
Shale	2335'	2412'	
Berea	2412'	2416'	
Shale	2416'	2552'	
Gantz	2552'	2558'	gas
Shale	2558'	2638'	
Gordon Section	2638'	2666'	gas & oil
Shale	2666'	2832'	
Fifth Sand	2832'	2838'	gas & oil
Shale	2838'	3328'	
Warren	3328'	3368'	gas & oil
Shale	3368'	4490'	
Riley	4490'	4530'	gas & oil
Shale	4530'	4902'	
Benson	4902'	4908'	gas
Shale	4908'	5190'	
Alexander	5190'	5220'	gas & oil

(Indications were derived from sample studies)

**RECEIVED**  
MAY 04 1989

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

MAY 21 1989

8236

017- 3693 Frac.  
Issued 11/17/93  
Page 1 of 1  
Expires 11/17/95

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

- 1) Well Operator: Devonian Appalachian Co. Inc 13530 <sup>4518</sup> ① 671
- 2) Operator's Well Number: M. Cullough #1 3) Elevation: 986'
- Well type: (a) Oil    / or Gas X
- (b) If Gas: Production X / Underground Storage     
Deep    / Shallow X
- Proposed Target Formation(s): Synaw/Payan well, Becca. Lantz, 50', 5th Sand, Weirton <sup>427</sup>
- Proposed Total Depth: existing/recomplete feet
- Approximate fresh water strata depths: none reported
- 8) Approximate salt water depths: none reported
- 9) Approximate coal seam depths: N/A
- 10) Does land contain coal seams tributary to active mine? Yes    / No X
- 11) Proposed Well Work: Set temporary Plug above parts, complete uphole zones  
And knockout Plug & cement all zones
- 12)

**CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT	
	Size	Grade	Weight per ft.	For drilling		Left in well
Conductor						
Fresh Water	11 3/4	}	existing casing	}	177'	45K3
Coal	4 1/8				589'	559 SK3
Intermediate	8 5/8				5325'	261 SK3
Production	4 1/2					
Tubing						
Liners						

PACKERS : Kind N/A  
Sizes     
Depths set   

RECEIVED  
Division of Environmental Protection

OCT 12 93

For Division of Oil and Gas Use Only

Permitting  
Office of Oil & Gas

4940 20

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

Plat  WW-9  WW-2B  Bond  Agent

1) Date: McCullough 9/28/93  
2) Operator's well number  
McCullough #1  
3) API Well No: 47 - 017 - 3693 - F  
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 Richard F. McCullough  
Address Rt 1 Box 99  
Greenwood, WV. 26360  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Mike Underwood  
Address Rt 2 Box 135  
Salem, WV.  
Telephone (304)-782-1043

5) (a) Coal Operator:  
Name N/A  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name \_\_\_\_\_  
Address OCT 1 2 93  
Name Permitting  
Address Office of Oil & Gas  
(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

\_\_\_\_\_ 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 Deysoria Appalachian Co. Inc.  
By: Robert K. Anderson  
Its: President  
Address Rt 1 Box 114-B  
Mineral Wells, WV. 26150  
Telephone (304) 489-9314

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_

\_\_\_\_\_  
Notary Public  
My commission expires \_\_\_\_\_



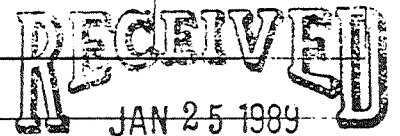
STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

- 1) Well Operator: Devonian Appalachian Co., Inc. 13530, 1, G70
- 2) Operator's Well Number: McCullough #1 3) Elevation: 986'
- 4) Well type: (a) Oil \_\_\_ / or Gas X /  
(b) If Gas: Production X / Underground Storage \_\_\_ /  
Deep \_\_\_ / Shallow X /
- 5) Proposed Target Formation(s): Alexander, Benson, Riley
- 6) Proposed Total Depth: 5500' feet
- 7) Approximate fresh water strata depths: 150', 219', 450', 494'
- 8) Approximate salt water depths: 1,420', 1140'
- 9) Approximate coal seam depths: OK N/A
- 10) Does land contain coal seams tributary to active mine? Yes \_\_\_ / No X /
- 11) Proposed Well Work: Drill and Frac New Well.
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT	
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (ft.)
Conductor	11 3/4"	H-40	42#	177'	177'	OK
Fresh Water						OK
Coal						38CSR18-11.3
Intermediate	8 5/8"	LS .264 R-3 ERW	24#	1650'	1650'	OK
Production	4 1/2"	J-55	10.5#	5297'	5297'	38CSR18-11.7
Tubing						
Liners						

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



For Division of Oil and Gas Use Only

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

1609

Fee(s) paid: OK Well Work Permit | OK Reclamation Fund | OK WFCP

Plat OK WW-9 | OK WW-2B | OK Bond 10 days well complete | OK Agent

(Type)

**RECEIVED**  
JAN 25 1989

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

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 1) Date: \_\_\_\_\_
- 2) Operator's well number  
McCullough # 1
- 3) API Well No: 47 - 017 - 3693  
State - County - Permit

- 4) Surface Owner(s) to be served:
  - (a) Name Richard F. McCullough  
Address Rt. 1 Box 99  
Greenwood, WV. 26360
  - (b) Name Sarahlene McCullough  
Address Same 8751219
  - (c) Name \_\_\_\_\_  
Address \_\_\_\_\_
- 5) (a) Coal Operator:
  - Name N/A  
Address \_\_\_\_\_
  - (b) Coal Owner(s) with Declaration  
Name N/A  
Address \_\_\_\_\_
  - Name N/A  
Address \_\_\_\_\_
  - (c) Coal Lessee with Declaration  
Name N/A  
Address \_\_\_\_\_
- 6) Inspector Mike Underwood  
Address Rt. 2 Box 135  
Salem, WV. 26426  
Telephone (304)- 782-1043

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

x 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)

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- \_\_\_\_\_ Certified Mail (Postmarked postal receipt attached)
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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  
CARR E. PIERCE  
RT. 1, BOX 302  
WASHINGTON, W.VA. 26131  
My Commission Expires May 21, 1996

Well Operator Devonian Appalachian Co., Inc.  
By: Robert A. Anderson Robert A. Anderson  
Its: President  
Address 2510 7th Avenue  
Parkersburg, WV 26101  
Telephone (304) 422-9997

Subscribed and sworn before me this 3 day of January, 1989

Carr E. Pierce Notary Public  
My commission expires May 21, 1996