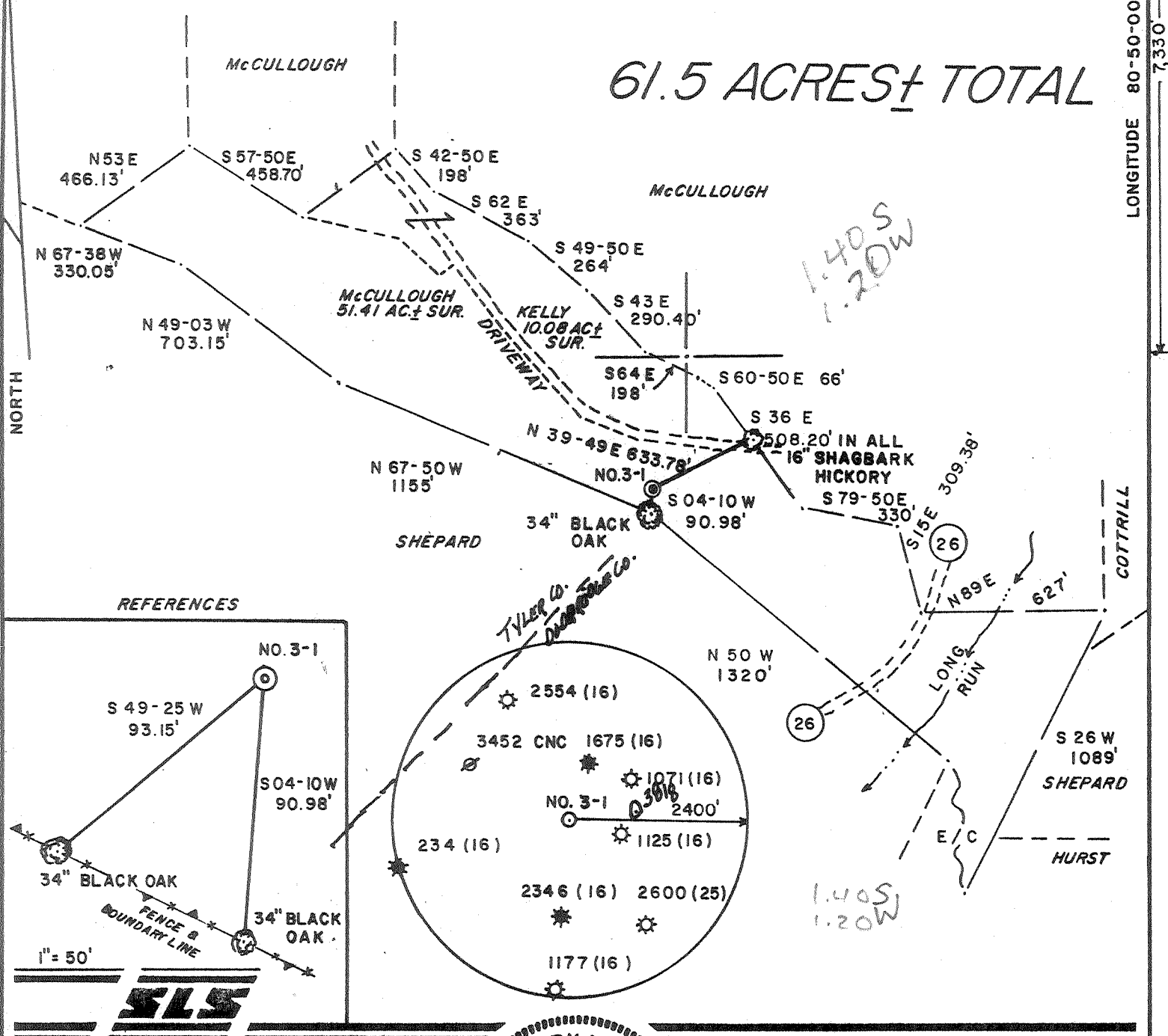


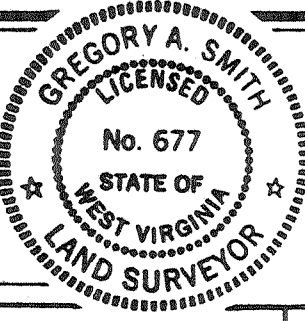
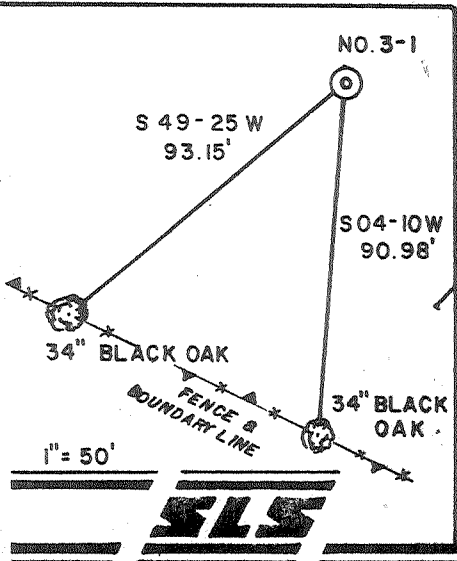
# McCULLOUGH LEASE

## WELL NO.3-1

### 61.5 ACRES ± TOTAL



#### REFERENCES



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE JUNE 11, 19 90  
 OPERATORS WELL NO. McCULLOUGH NO.3-1  
 API WELL NO. 47 - 017 - 3852  
 STATE COUNTY PERMIT

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. 677 *Gregory A. Smith*

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1907 (26-52,31-23)  
 SCALE 1" = 500'  
 PROVEN SOURCE OF ELEVATION JUNCT. OF ROADS ELEV. 802'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION

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

LOCATION:  
 ELEVATION 1008' WATERSHED LONG RUN  
 DISTRICT CENTRAL COUNTY DODDRIDGE QUADRANGLE WEST UNION 7.5'  
 SURFACE OWNER RICHARD F. McCULLOUGH ACREAGE 51.41  
 ROYALTY OWNER RICHARD F. McCULLOUGH LEASE ACREAGE 51.41 OF 61.5

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 DEVONIAN APPALACHIAN CO. INC. DESIGNATED AGENT ROBERT ANDERSON  
 ADDRESS RT.1 BOX 114 B MINERAL WELLS, WV 26150 ADDRESS RT.1 BOX 114 B MINERAL WELLS WV 26150

LONGITUDE 80-50-00  
 COUNTY NAME DODD  
 PERMIT 3852

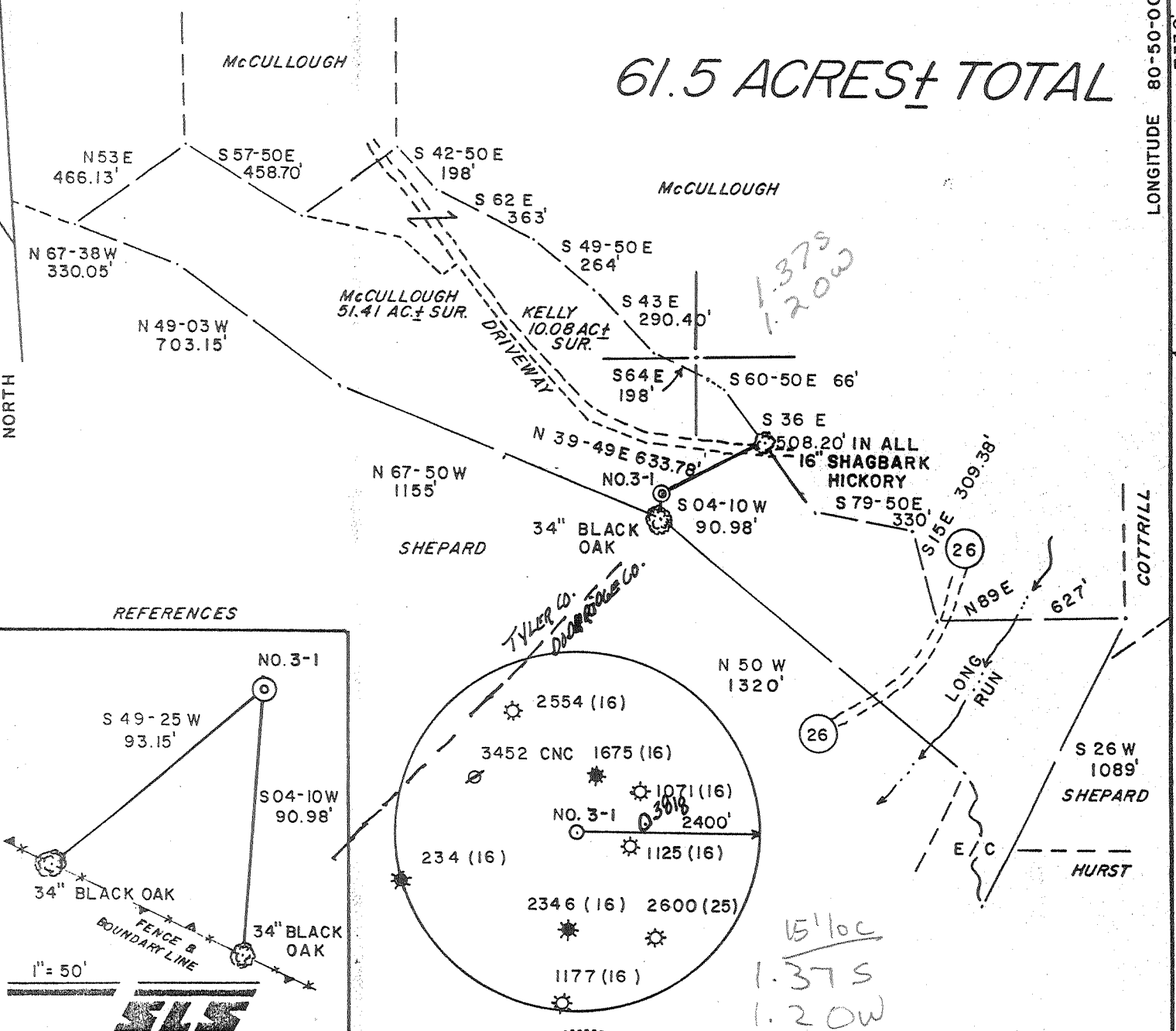
*Janice 9/25/90*

**McCULLOUGH**

**WELL NO.3-1**

**LEASE**

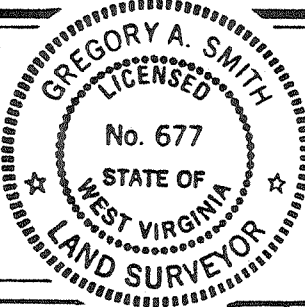
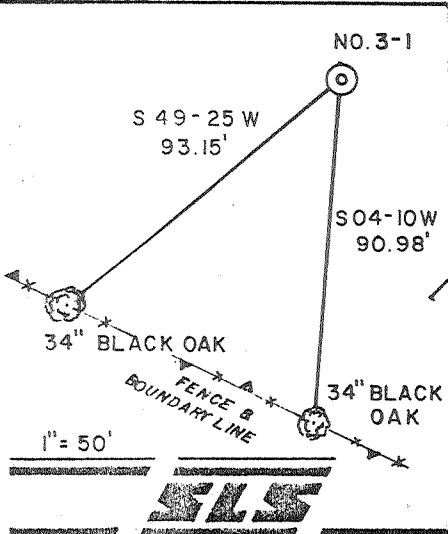
**61.5 ACRES ± TOTAL**



LONGITUDE 80-50-00 7,330'

NORTH

**REFERENCES**




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 11, 19 90  
OPERATORS WELL NO. McCULLOUGH NO.3-1  
API WELL NO. 47 - 017 - 3852  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 1907 (26-52,31-23)  
PROVEN SOURCE OF ELEVATION JUNCT. OF ROADS SCALE 1" = 500'  
ELEV. 802'

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



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

LOCATION: ELEVATION 1008' WATERSHED LONG RUN  
DISTRICT CENTRAL COUNTY DODDRIDGE QUADRANGLE WEST UNION 7.5 SC

SURFACE OWNER RICHARD F. McCULLOUGH ACREAGE 51.41  
ROYALTY OWNER RICHARD F. McCULLOUGH LEASE ACREAGE 51.41 OF 61.5

PROPOSED WORK: LEASE NO. \_\_\_\_\_  
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' *OCT 1 1990*

WELL OPERATOR DEVONIAN APPALACHIAN CO. INC. 4518 DESIGNATED AGENT ROBERT ANDERSON  
ADDRESS RT. 1 BOX 114 B MINERAL WELLS, WV 26150 ADDRESS RT. 1 BOX 114 B MINERAL WELLS WV 26150

COUNTY NAME PERMIT

*6-6 Greenwood (089)*

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

FEB 19 1993

Recording  
Office of Oil & Gas

Well Operator's Report of Well Work

Farm name: McCULLOUGH, RICHARD F. Operator Well No.: McCULLOUGH 3-1

LOCATION: Elevation: 1008.00 Quadrangle: WEST UNION

District: CENTRAL County: DODDRIDGE  
Latitude: 7330 Feet South of 39 Deg. 20Min. 0 Sec.  
Longitude 6370 Feet West of 80 Deg. 50 Min. 0 Sec.

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

Agent: ROBERT A. ANDERSON

Inspector: MIKE UNDERWOOD  
Permit Issued: 12/10/92  
Well work Commenced: \_\_\_\_\_  
Well work Completed: 1/16/93  
Verbal Plugging \_\_\_\_\_  
Permission granted on: N/A  
Rotary N/A Cable N/A Rig  
Total Depth (feet) \_\_\_\_\_  
Fresh water depths (ft) \_\_\_\_\_  
Recompletion  
Salt water depths (ft) \_\_\_\_\_

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
NO CHANGE - SEE PREVIOUS			
W 12-35			

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

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 2571-2850  
Gas: Initial open flow 400 MCF/d Oil: Initial open flow 1 Bbl/d  
Final open flow 100 MCF/d Final open flow 1 Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure 670 psig (surface pressure) after 12 Hours

Second producing formation WEIR Pay zone depth (ft) 2317-2342  
Gas: Initial open flow 400 MCF/d Oil: Initial open flow 1 Bbl/d  
Final open flow 100 MCF/d Final open flow 1 Bbl/d  
Time of open flow between initial and final tests 4 Hours  
Static rock Pressure 670 psig (surface pressure) after 12 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.

MAR 2 1993

For: DEVONIAN APPALACHIAN COMPANY, INC.

Reviewed TMG  
Recorded \_\_\_\_\_

By: [Signature]  
Date: 1/18/93

\*See original WR-35 for well log

Mc 3-1

1st Stage: 2854-56 6 holes, 2657-60 6 holes, 2571-75 10 holes. Frac with 500 gal 22% HCl, 50 sks 80/100 sand, 40 sks. 20/40 sand, 626 bbl treated H2O and 103,600 SCF N2 assist

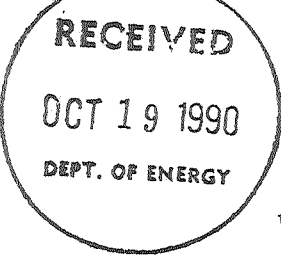
2nd Stage: Perforated 2337-42 8 holes, 2317-26 12 holes, frac with 500 gal 22% HCl 480 sks 20/40 Ottawa sand, 640 bbl H2O, 104,200 SCF N2.

TO 5337 - Varig?

OCT = 439

DE = 424

h/Lb1



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

Well Operator's Report of Well Work

Farm name: McCULLOUGH, RICHARD F. Operator Well No.: McCULLOUGH #3-1

LOCATION: Elevation: 1008.00 Quadrangle: WEST UNION

District: CENTRAL County: DODDRIDGE  
Latitude: 7330 Feet South of 39 Deg. 20Min. 0 Sec.  
Longitude 6370 Feet West of 80 Deg. 50 Min. 0 Sec.

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

Agent: ROBERT A. ANDERSON

Inspector: MIKE UNDERWOOD  
Permit Issued: 09/25/90  
Well work Commenced: 10/10/90  
Well work Completed: 10/17/90  
Verbal Plugging  
Permission granted on:  
Rotary X Cable Rig  
Total Depth (feet) 5337'  
Fresh water depths (ft) 245'

Salt water depths (ft) 1050'

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			80 sks
11 3/4	179.5'	179.5'	
8 5/8	1310.55'	1310.55'	280 sks
4 1/2	5248.7	5248.7	200 sks

OPEN FLOW DATA

Producing formation Alex, Benson, Riley Pay zone depth (ft) 4500  
Gas: Initial open flow 1,100 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 340 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 40 Hours  
Static rock Pressure 1850 psig (surface pressure) after 24 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: 10/19/90

OCT 22 1990

Alexander: Perfed 5203-2 shots, 5188-95:16 shots; Fraced with 65 qual N<sub>2</sub> foam, 5,000# 80/100 and 35,000# 20/40 Ottawa, Misted 28% HCl in 100MCF N<sub>2</sub>  
 Benson: Perfed 4897-4902 with 16 shots. Fraced with 65 qual N<sub>2</sub> foam, 5,000# 80/100 and 25,000# 20/40 Ottawa sand  
 Riley: Perfed 4524-25 4 shots, 4505-06 4 shots, 4497 2 shots, 4491-94 6 shots, 4408-10 4 shots. Fraced with misted 28% HCl, 75 qual N<sub>2</sub> foam, 5,000# 80/100, 35,000# 20/40 Ottawa sand.

Depth	Strata	Notes
0-1910	sand & Shale	
1910-2018	lime	
2018-4490	sand & shale	40/10 on 1"
4490-4530	Riley	
4530-4898	shale	
4898-4893 4903?	Benson	
? 4903 4893-5185	shale	
5185-5206	Alexander	

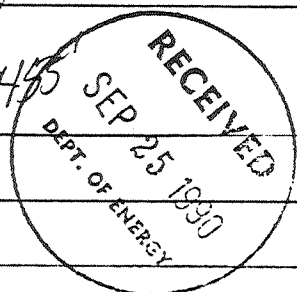
TO 5337

11366

017 - 3852  
 Issued 9/25/90  
 Expires 9/25/92 Page \_\_\_ of \_\_\_

**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) 670
- 2) Operator's Well Number: McCullough #3-1 3) Elevation: 1008'
- 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: 5995 feet
- 7) Approximate fresh water strata depths: 60' 150' 241' 45'
- 8) Approximate salt water depths: 1120' ? 1008'
- 9) Approximate coal seam depths: N/A OR NONE REPORTED
- 10) Does land contain coal seams tributary to active mine? Yes \_\_\_ / No x /
- 11) Proposed Well Work: Drill & Stimulate New Well
- 12)



**CASING AND TUBING PROGRAM**

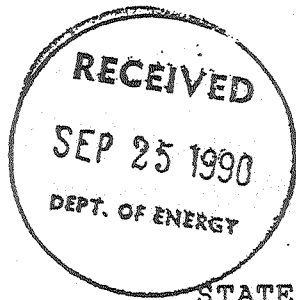
TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT (cu. ft.)
	Size	Grade	Weight per ft.	For drilling	Left in well	
Conductor						
Fresh Water	11 3/4	H 40	27#	175'	175- (38CSR 18-11) <u>3</u>	
Coal						
Intermediate	8 5/8	H 40	28#	1150'	1150' (38CSR 18-11) <u>2.2</u>	
Production	4 1/2	J 55	10.5#	5200'	5200' (38CSR 18-11) <u>1</u>	
Tubing						
Liners						

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

For Division of Oil and Gas Use Only

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

2852  
27



1) Date: September 16, 1990  
2) Operator's well number  
Harris-#1 McCullough #3-1  
3) API Well No: 47 - 017 - 3852  
State - County - Permit

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

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

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 Devonian Appalachian Co., Inc.  
By: Robert A. Underwood  
Its: President  
Address Rt. 1 Box 114B  
Mineral Wells, WV. 26150  
Telephone (304)489-9314

Subscribed and sworn before me this 17th day of September, 1990

Leida R. Sheets Notary Public

My commission expires \_\_\_\_\_  
My Commission Expires \_\_\_\_\_  
November 29, 1993



RECEIVED  
 WV Division of  
 Environmental Protection

16528

017-3852 - Frac.  
 Issued 12/10/92  
 Page \_\_\_ of \_\_\_  
 Expires 12/10/94

FORM WW-2B

DEC 0 7 92

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
 Office of Oil & Gas WELL WORK PERMIT APPLICATION

- 1) Well Operator: Devonian Appalachia Co Inc 13530 (1) 670
- 2) Operator's Well Number: M<sup>c</sup>Callough #3-1 3) Elevation: 1000
- 4) Well type: (a) Oil \_\_\_ / or Gas ^ /  
 (b) If Gas: Production ^ / Underground Storage \_\_\_ /  
 Deep \_\_\_ / Shallow \_\_\_ /
- 5) Proposed Target Formation(s): 5th Sand, Gratz, Weir, Big Suion, Blue Monday
- 6) Proposed Total Depth: N/A feet
- 7) Approximate fresh water strata depths: N/A
- 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: Set temporary plug, Frac New Zones, Knock out plug and comingle all zones
- 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						
Fresh Water	<u>11 3/4</u>			<u>179.5</u>	<u>179.5</u>	} existing from well records:
Coal						
Intermediate	<u>8 5/8</u>			<u>1310.55</u>	<u>1310.55</u>	
Production	<u>4 1/2</u>			<u>5248.7</u>	<u>5248.7</u>	
Tubing						
Liners						

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

4334/2

For Division of Oil and Gas Use Only

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

DEC 0 7 1992  
Office of Oil & Gas

1) Date: McClough #3-1 10/20/92  
2) Operator's well number  
McClough #3-1  
3) API Well No: 47 - 17 - 3852-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. McClough  
Address Rt 1 Box 99  
Greenwood Wv 26360
  - (b) Name Richard F. McClough  
Address Rt 1 Box 99  
Greenwood, Wv 26360
  - (c) Name \_\_\_\_\_  
Address \_\_\_\_\_
- 5) (a) Coal Operator:  
Name \_\_\_\_\_  
Address \_\_\_\_\_
- (b) Coal Owner(s) with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_
- (c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
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:

\_\_\_\_\_ 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)
- \_\_\_\_\_ 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.

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Well Operator Devonian Appalachian Co Inc  
By: Robert R. Anderson  
Its: President  
Address Rt 1 Box 114 B  
Mineral Wells, Wv 26150  
Telephone (304) 489-9314

Subscribed and sworn before me this 1st day of December, 1992

Linda R. Sheets Notary Public  
My commission expires Nov. 29, 1993