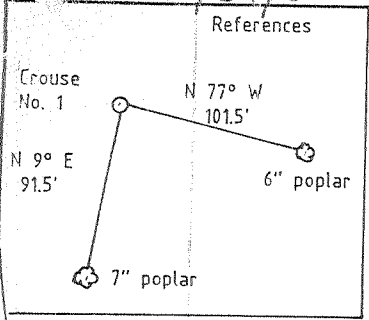


EB 7/24/87

8675'

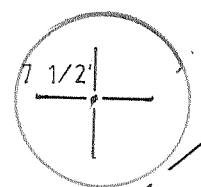
LATITUDE 39°15'00" N



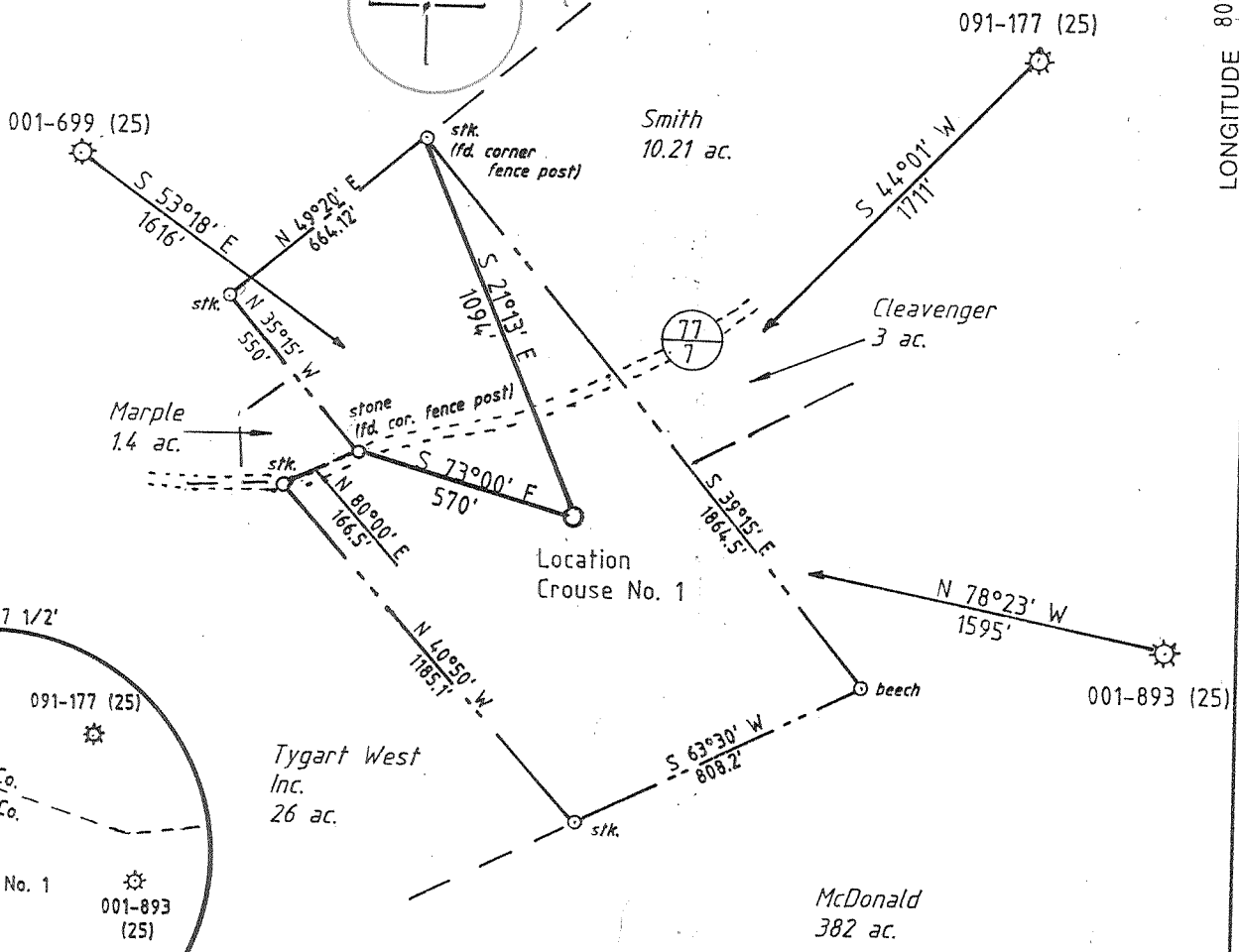
Stewart
198.04 ac.

0.85 S
386 W

Note: SW Corner of House is
279' from the Location.



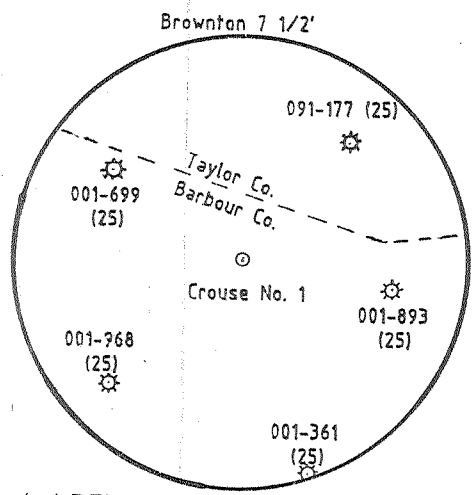
0.85 S
1.63 W



NORTH

LONGITUDE 80°07'30" W

4525'



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

FILE NO. _____
 DRAWING NO. 1
 SCALE 1"=500'
 MINIMUM DEGREE OF ACCURACY 1 in 200
 PROVEN SOURCE OF ELEVATION BM 3200' NE of Location: elev. 1080'

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) David J. Jackson
 R.P.E. _____ L.L.S. 708

PLACE SEAL HERE

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
OIL AND GAS DIVISION



DATE May 26, 19 87
 OPERATOR'S WELL NO. Crouse No. 1
 API WELL NO. _____

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 1145' WATER SHED Bartlett Run
 DISTRICT Pleasant COUNTY Barbour
 QUADRANGLE Brownston 7 1/2' 266 104 NC2 Phillipi
 SURFACE OWNER Velma E. Crouse, heirs ACREAGE 30.5
 OIL & GAS ROYALTY OWNER Orlan Crouse Jr. et al LEASE ACREAGE 30.5
 LEASE NO. 398600

PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

AUG 17 1987

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Benson ESTIMATED DEPTH 5000
 WELL OPERATOR Petroleum Development Corp. DESIGNATED AGENT Steven Williams
 ADDRESS P.O. Box 26, Bridgeport, WV 26330 687 ADDRESS P.O. Box 26, Bridgeport, WV 26330

6.6 Elk Creek (overfield) (155)

COUNTY NAME

PERMIT



WR-35

RECEIVED
SEP 28 1987

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

State of West Virginia

DEPARTMENT OF ENERGY

Oil and Gas Division

Date _____

Operator's _____

Well No. #1 _____

Farm Orlan Crouse _____

API No. 47 - 001 - 2356 _____

WELL OPERATOR'S REPORT
OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas xx / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production xx / Underground Storage ___ / Deep ___ / Shallow xx /)

LOCATION: Elevation: 1145' Watershed Bartlett Run
District: Pleasant County Barbour Quadrangle Brownton 7 1/2'

COMPANY PETROLEUM DEVELOPMENT CORPORATION
ADDRESS PO BOX 26, BRIDGEPORT, WV 26330
DESIGNATED AGENT STEVEN R. WILLIAMS
ADDRESS PO BOX 26, BRIDGEPORT, WV 26330
SURFACE OWNER ORLAN CROUSE, EXECUTOR
ADDRESS 209 S. WALNUT ST., PHILIPPI, WV 26416
MINERAL RIGHTS OWNER VELMA CROUSE ESTATE
C/O ORLAN CROUSE, JR.
ADDRESS 353 S. MAIN ST., PHILIPPI, WV 26416
OIL AND GAS INSPECTOR FOR THIS WORK _____
PHILLIP TRACY ADDRESS PO BOX 2536
ELKINS, WV 26241
PERMIT ISSUED August 10, 1987
DRILLING COMMENCED August 31, 1987
DRILLING COMPLETED September 6, 1987
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"	37'		
9 5/8			
8 5/8	904'	904'	200 sks
7			
5 1/2			
4 1/2	4543'	4543'	240 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION BENSON Depth 5000 feet
Depth of completed well 4592 feet Rotary xx / Cable Tools _____
Water strata depth: Fresh 50; 120 feet; Salt none feet
Coal seam depths: 322-26; 784-88 Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation BENSON Pay zone depth 4434-38 feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow 622 Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ hours
Static rock pressure 1425 psig (surface measurement) after 72 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 OCT 1987 hours
Static rock pressure _____ psig (surface measurement) after _____ hours shut in

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

STAGE	FORMATION	PERFS	80/100 SKS	20/40 SKS	ACID GAL	N2 (MCF)
1ST	<u>BENSON</u>	13 (4434 - 4438)	100	550	500	70

635 BBLs SAND LADEN FLUID

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
KB - GL			0	10	coal 322-26; 784-88
sand, shale, RR			10	1480	hole damp @ 50'
Big Lime			1480	1544	1" stream fresh H2O @ 120'
Keener			1544	1582	hole damp @ 950
sand, shale			1582	1593	1/4" H2O @ 1050'
Big Injun			1593	1627	
sand, shale			1627	1879	gas check @ 1676' no show
Gantz			1879	1892	
sand, shale			1892	1929	
50 ft			1929	1990	gas check @ 1985' odor
sand, shale			1990	2374	gas check @ 2282' odor
4th			2374	2399	
sand, shale			2399	2446	gas check @ 2406' no show
5th			2446	2472	
sand, shale			2472	2826	gas check @ 2498' no show
Speechley			2826	3162	gas check @ 2934' no show
sand, shale			3162	3284	
Balltown			3284	3490	gas check @ 3458' no show
sand, shale			3490	3587	
Bradford			3587	3694	
sand, shale			3694	4088	
Riley			4088	4274	
sand, shale			4274	4424	gas check @ 4432' 120/10 - 1" H2O
Benson			4424	4481	gas check @ 4462' 70/10 - 1" H2O
sand, shale			4481	4592	Driller TD 50/10 - 1" H2O
				4612	Logger TD @ DC 38/10 - 1" H2O

RECEIVED
SEP 28 1987

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

PETROLEUM DEVELOPMENT CORPORATION
Well Operator

By: _____

Date: September 16, 1987

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."

RECEIVED
JUL 21 1987



1) Date: June 1, 19 87
2) Operator's Well No. Crouse #1
3) API Well No. 47 001 2356
State County Permit

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

- 4) WELL TYPE: A Oil / Gas XX / B (If "Gas", Production XX / Underground storage / Deep / Shallow XX /)
- 5) LOCATION: Elevation: 1145 Watershed: Bartlett Run
District: Pleasant County: Barbour 001 Quadrangle: Brownton 7 1/2 260
- 6) WELL OPERATOR Petroleum Deve. CODEP DESIGNATED AGENT Steven R. Williams
Address P. O. Box 26 Address P. O. Box 26
Bridgeport, WV 26330 Bridgeport, WV 26330
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Phillip Tracy 9) DRILLING CONTRACTOR:
Address P. O. Box 2536 Address
Elkins, WV 26241
- 10) PROPOSED WELL WORK: Drill XX / Drill deeper / Redrill / Stimulate X /
Plug off old formation / Perforate new formation /
Other physical change in well (specify)
- 11) GEOLOGICAL TARGET FORMATION, Benson
- 12) Estimated depth of completed well, 5000 feet
- 13) Approximate tratra depths: Fresh, 54530, 126 feet; salt, none feet.
- 14) Approximate coal seam depths: 430, 685, 788 Is coal being mined in the area? Yes / No X
- 15) CASING AND TUBING PROGRAM from Barb 6995 893

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling		
Conductor	11 3/4	H-40	42	X		30	-	Kinds
Fresh water								
Coal								Sizes
Intermediate	8 5/8	J-55	20	X		900	900	cts by rule 15.05
Production	4 1/2	J-55	10.5	X		5000	5000	400 sks
Tubing								Perforations:
Lin...								Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-001-2356 Date August 10 19 87

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector. (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.
Permit expires August 10, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <input checked="" type="checkbox"/>	Gasing: <input checked="" type="checkbox"/>	Fee: <u>2.20</u>	Other: <input checked="" type="checkbox"/>	Other: <input checked="" type="checkbox"/>
---	--	---	---	------------------	--	--

NOTE: Keep one copy of this permit posted at the drilling location. Director, Division of Oil and Gas File

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

RECEIVED
JUL 21 1987



1) Date: June 1, 19 87
2) Operator's Well No. Crouse #1
3) API Well No. 47 State 001 County 2356 Permit

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

- 4) WELL TYPE: A Oil / Gas XX / B (If "Gas", Production XX / Underground storage / Deep / Shallow XX /)
- 5) LOCATION: Elevation: 1145 Watershed: Bartlett Run
District: Pleasant County: Barbour Quadrangle: Brownnton 7 1/2 200
- 6) WELL OPERATOR Petroleum Deve. CODEP: 38209 DESIGNATED AGENT Steven R. Williams
Address P. O. Box 26 Address P. O. Box 26
Bridgeport, WV 26330 Bridgeport, WV 26330
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Phillip Tracy Address P. O. Box 2536
Elkins, WV 26241
- 9) DRILLING CONTRACTOR: Name Address
- 10) PROPOSED WELL WORK: Drill XX / Drill deeper / Redrill / Stimulate X /
Plug off old formation / Perforate new formation /
Other physical change in well (specify)
- 11) GEOLOGICAL TARGET FORMATION, Benson
- 12) Estimated depth of completed well, 5000 feet
- 13) Approximate trata depths: Fresh, 54530, 126 feet; salt, none feet.
- 14) Approximate coal seam depths: 430, 685, 788 Is coal being mined in the area? Yes / No X
- 15) CASING AND TUBING PROGRAM from Barb 6993 893

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling		
Conductor	11 3/4	H-40	42	X		30	-	Kinds
Fresh water								
Coal								Sizes
Intermediate	8 5/8	J-55	20	X		900	900	cts by rule 15.05
Production	4 1/2	J-55	10.5	X		5000	5000	400 sks
Tubing								
Lin...								Perforations:
								Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-001-2356 Date August 10 19 87

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector. (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.

Permit expires August 10, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <input checked="" type="checkbox"/>	Casing: <input checked="" type="checkbox"/>	Fee: <input checked="" type="checkbox"/>	Other: <input checked="" type="checkbox"/>
---	--	---	---	--	--

NOTE: Keep one copy of this permit posted at the drilling location.

Director, Division of Oil and Gas

File

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.