

12/16/82

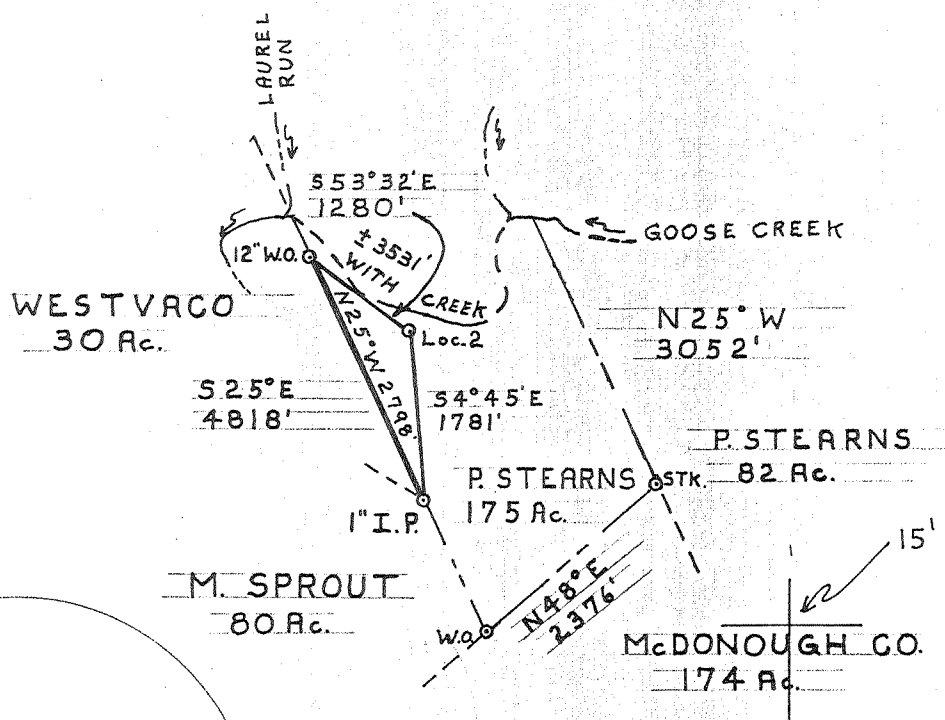
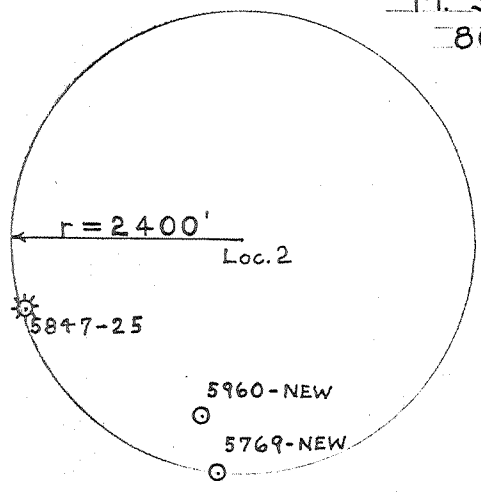
200'

LATITUDE 39°12'30"
39°15'00"

LONGITUDE 81°15'00"
81°17'30"

9,150'

NORTH



FILE NO. P.D.C.# 4-Pg. 59
 DRAWING NO. 1
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY 1 IN 200
 PROVEN SOURCE OF ELEVATION B.M. = 698' ON B.C. O.R.R. BRIDGE - GOOSE CREEK

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 MINES.
 (SIGNED) Paul G. Dean, Jr.
 R.P.E. 1856 L.L.S. _____

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE DEC. 14, 1982
 OPERATOR'S WELL NO. 2
 API WELL NO. 47-085-6092-P
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

Plugging Permit Cancelled

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION STORAGE _____ DEEP _____ SHALLOW
 LOCATION: ELEVATION 810' WATER SHED GOOSE CREEK
 DISTRICT GRANT COUNTY RITCHIE
 QUADRANGLE PETROLEUM 7 1/2
 SURFACE OWNER PHILLIP STEARNS ACREAGE 175
 OIL & GAS ROYALTY OWNER PHILLIP STEARNS LEASE ACREAGE 96.5
 LEASE NO. 362201
 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 MARCELLUS SHALE ESTIMATED DEPTH 4500'
 WELL OPERATOR PETROLEUM DEVELOPMENT DESIGNATED AGENT JOHN R. MITCHELL
 ADDRESS P.O. BOX 26 ADDRESS P.O. BOX 26
BRIDGEPORT W.V. BRIDGEPORT W.V.

R.T. - 6092

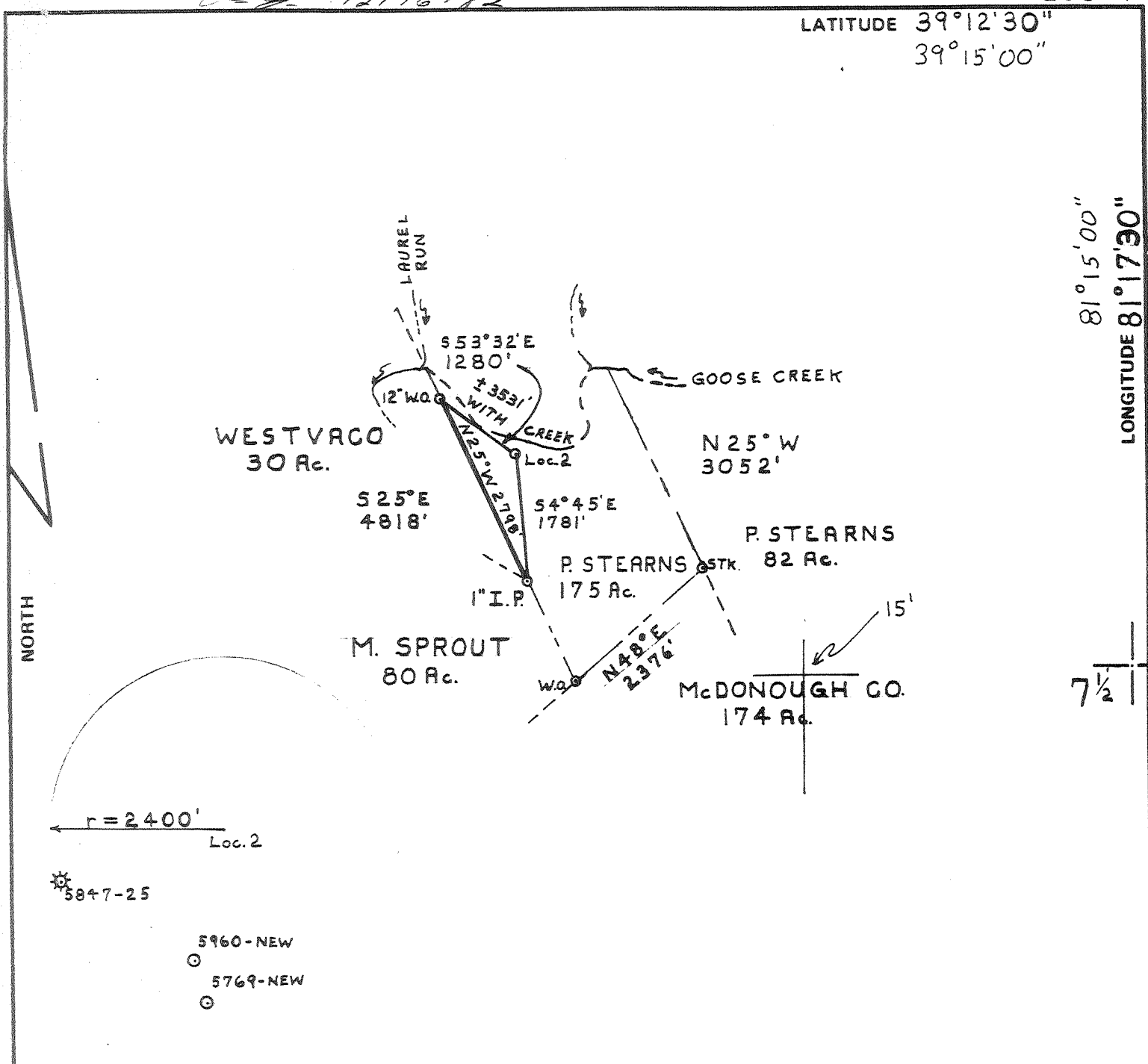
NOV 17 1986

12/16/82

200'

LATITUDE 39°12'30"
39°15'00"

81°15'00"
LONGITUDE 81°17'30"



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 FORM IV-6 (8-78)



DATE DEC. 14, 1982
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 API WELL NO. 47-085-6092-P
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION STORAGE _____ DEEP _____ SHALLOW
 LOCATION: ELEVATION 810' WATER SHED GOOSE CREEK
 DISTRICT GRANT COUNTY ITCHIE
 QUADRANGLE PETROLEUM 7 1/2
 SURFACE OWNER PHILLIP STEARNS ACREAGE 175
 OIL & GAS ROYALTY OWNER PHILLIP STEARNS LEASE ACREAGE 965
 LEASE NO. 362201
 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 MARCELLUS SHALE ESTIMATED DEPTH 4500'
 WELL OPERATOR PETROLEUM DEVELOPMENT DESIGNATED AGENT JOHN R. MITCHELL
 ADDRESS P.O. BOX 26 ADDRESS P.O. BOX 26
BRIDGEPORT W.V. BRIDGEPORT W.V.

AUG 6 1984

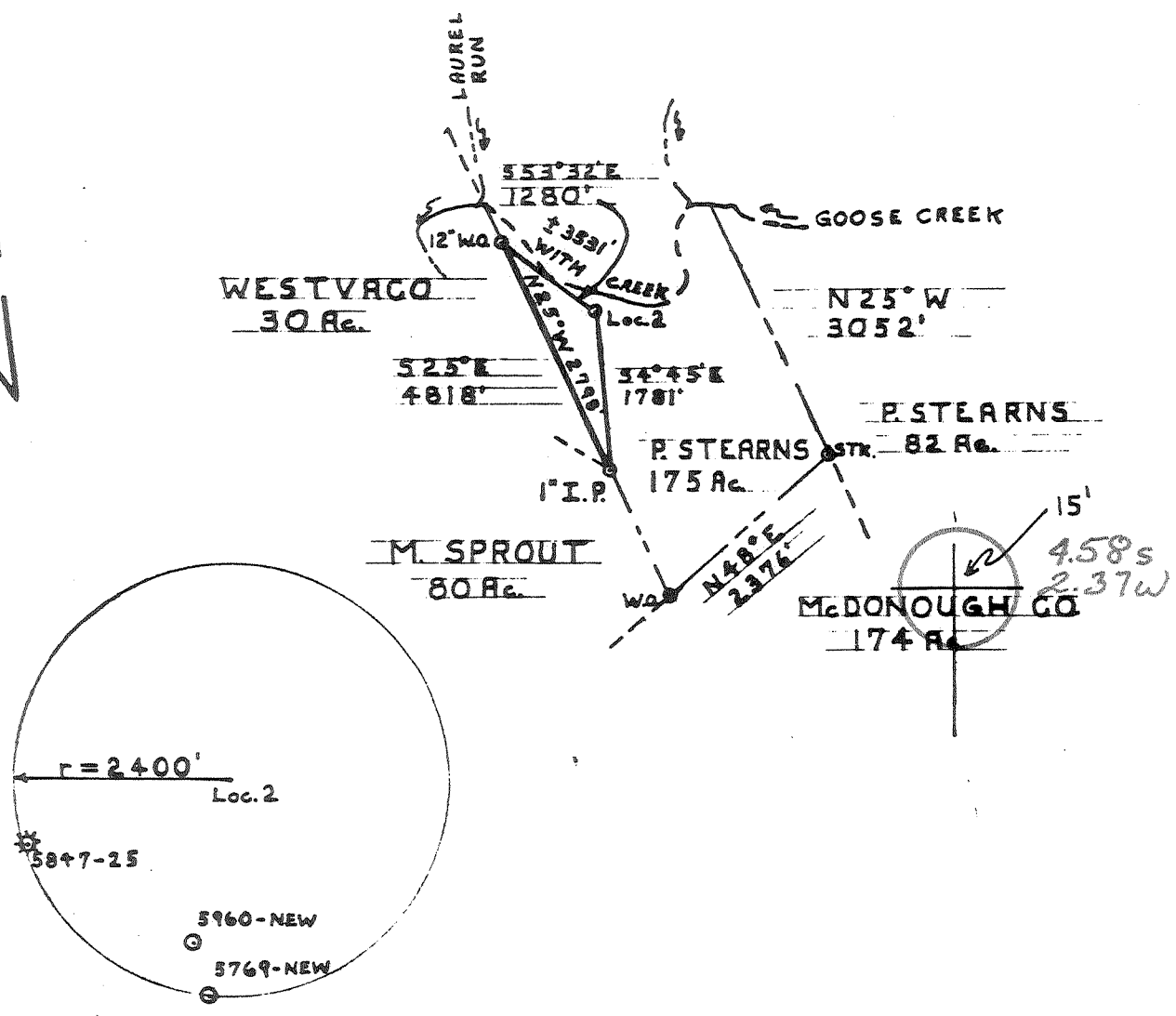
Plot Card CSD
12/16/82

200'

LATITUDE 39°12'30"
39°15'00"

81°15'00"
LONGITUDE 81°17'30"

NORTH



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 (SIGNED) Paul H. Dean, Jr.
 R.P.E. 1856 L.L.S.

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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-8 (8-78)



DATE DEC. 14, 1982
 OPERATOR'S WELL NO. 2
 API WELL NO. 47-085-6092
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
 LOCATION: ELEVATION 810' WATER SHED GOOSE CREEK
 DISTRICT GRANT COUNTY RITCHIE
 QUADRANGLE PETROLEUM 7 1/2' Elizabeth 15' NE
 SURFACE OWNER PHILLIP STEARNS ACREAGE 175
 OIL & GAS ROYALTY OWNER PHILLIP STEARNS LEASE ACREAGE 965
 LEASE NO. 362201
 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 MARCELLUS SHALE ESTIMATED DEPTH 4500'
 WELL OPERATOR PETROLEUM DEVELOPMENT DESIGNATED AGENT JOHN R. MITCHELL (112)
 ADDRESS P.O. BOX 26 BRIDGEPORT W.V. ADDRESS P.O. BOX 26 BRIDGEPORT W.V.

DEC 20 1982



Date January 10, 1983
 Operator's
 Well No. #2
 Farm Stearns
 API No. 47 - 085 - 6092

State of West Virginia
 Department of Mines
 Oil and Gas Division

MAY 23 1983

WELL OPERATOR'S REPORT
 OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 810' Watershed Goose Creek
 District: Grant County Ritchie Quadrangle Petroleum

COMPANY Petroleum Development Corporation
 ADDRESS P.O. Box 26, Bridgeport, WV 26330
 DESIGNATED AGENT Michael L. Edwards
 ADDRESS P.O. Box 26, Bridgeport, WV 26330
 SURFACE OWNER Phillip Stearns et al
4701 Willard St., Apt. 1626
 ADDRESS Chevy Chase, MD 20015
 MINERAL RIGHTS OWNER Same as Surface Owner.
 ADDRESS Same.
 OIL AND GAS INSPECTOR FOR THIS WORK Samuel
Hersman ADDRESS Box 66, Smithville, WV
26178
 PERMIT ISSUED December 16, 1982
 DRILLING COMMENCED December 23, 1982
 DRILLING COMPLETED January 1, 1983 ✓
 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"	30'	30'	Cement to surface.
9 5/8			
8 5/8	885	885	250 sks.
7			
5 1/2			
4 1/2	4408	4408	550 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Marcellus Shale Depth 4500 feet
 Depth of completed well 4503 feet Rotary XX / Cable Tools
 Water strata depth: Fresh feet; Salt 3692 feet
 Coal seam depths: 144 Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 2288-4371 feet
 Gas: Initial open flow 122 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 398 psig (surface measurement) after 24 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 hours
 Static rock pressure psig (surface measurement) after hours shut in

DEPT. OF MINES

MAY 23 1983

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

			CO ₂ (1000 ² lbs.)	N ₂ (MCF)	ACID (Bbls)
1st Stage	N ₂ + CO ₂	27 perfs (3698-4371)	Angola 13 Rhinest	338	6
2nd Stage	N ₂ + CO ₂	3 1/2 perfs (2748-3597)	Huron 21 → Java →	310	6
3rd Stage	N ₂ + CO ₂	28 perfs (2288-2722)	Huron 32	310	6

WELL LOG

Huron 2288 - 3075
Java - 3075 - 3440
Angola - 3440 - 3814
Rhinestreet - 3814 - 4371

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
K.B. - G.L.			0	10	
Sand, shale, red rock			10	480	
Big Lime			480	558	
Big Injun			558	662	
Squaw			662	674	
Sand, shale			674	1040	
Sunbury Shale			1040	1048	
Berea			1048	1074	
Sand, shale			1074	1454	Gas check @ 1446' - 6/10 thru 1" H ₂ O
Gordon			1454	1479	
Sand, shale			1479	2150	
Huron			2150	3075	Gas check @ 2525' - 6/10 thru 1" H ₂ O
Java			3075	3440	
Angola			3440	3814	Gas check @ 3474' - 6/10 thru 1" H ₂ O
Rhinestreet			3814	4456	Salt H ₂ O @ 3692'
				4456 T.D.	

(Attach separate sheets as necessary)

Petroleum Development Corporation

Well Operator

By: M. Edwards

Date: May 7, 1983

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."



1) Date: December 14, 1982
2) Operator's Well No. 72
3) API Well No. 47 State West Virginia County Putnam Permit 8191

DRILLING CONTRACTOR:

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

OIL AND GAS WELL PERMIT APPLICATION

- 4) WELL TYPE: A Oil XX / Gas XX /
B (If "Gas", Production XX / Underground storage XX / Deep XX / Shallow XX /)
- 5) LOCATION: Elevation: 3117 Watershed: Goose Creek
District: Grant County: Ritchie Quadrangle: Petroleum 7A'
- 6) WELL OPERATOR PETROLEUM DEVELOPMENT CORPORATION 11) DESIGNATED AGENT John R. Mitchell
Address PO Box 20, 103 East Main St. Address PO Box 20, 103 East Main St.
Bridgeport, WV 26130 Bridgeport, WV 26130
- 7) OIL & GAS ROYALTY OWNER Phillip Stearns et al 12) COAL OPERATOR _____
Address 4701 Willard Street, Apt 1026 Address _____
Chevy Chase, Maryland 20015
- 8) SURFACE OWNER same as royalty 13) COAL OWNER(S) WITH DECLARATION ON RECORD:
Name none Address _____
Address _____
- 9) FIELD SALE (IF MADE) TO: Name _____ Address _____
Address _____
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED Name Samuel W. Hersman Address _____
Address PO Box 95
Smithville, WV 26175
- 15) PROPOSED WORK: Drill X / Drill deeper _____ / Redrill _____ / Fracture or stimulate _____ /
Plug off old formation _____ / Perforate new formation _____ /
Other physical change in well (specify) _____
- 16) GEOLOGICAL TARGET FORMATION, Marcellus Shale
- 17) Estimated depth of completed well, _____ feet
- 18) Approximate water strata depths: Fresh, _____ feet; salt, 1140 feet.
- 19) Approximate coal seam depths: none Is coal being mined in the area? Yes _____ / No XX /

20) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS	
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well			
Conductor										Kinds
Fresh water										
Coal										Sizes
Intermediate										Depths set
Production										
Tubing										Perforations:
Liners										Top Bottom

- 21) EXTRACTION RIGHTS
Check and provide one of the following:
 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil or gas.
 The requirement of Code 22-4-1-(c) (1) through (4). (See reverse side for specifics.)
- 22) ROYALTY PROVISIONS
Is the right to extract, produce or market the oil or gas based upon a lease or other continuing contract or contracts providing for flat well royalty or any similar provision for compensation to the owner of the oil or gas in place which is not inherently related to the volume of oil or gas so extracted, produced or marketed? Yes No
If the answer above is No, nothing additional is needed. If the answer is Yes, you may use Affidavit Form IV-60.
- 23) Required Copies (See reverse side.)
- 24) Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

Notary: _____
My Commission Expires _____

Signed: _____
Its: _____

OFFICE USE ONLY
DRILLING PERMIT

Permit number _____ Date _____ 19 _____

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. 10) 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.)

Permit expires _____ unless drilling is commenced prior to that date and prosecuted with due diligence.
Bond: _____ Agent: _____ Plat: _____ Casing: _____ Fee: _____
Administrator, Office of Oil and Gas