



FILE NO. P.D.C. # 4-1972
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY IN 200
 PROVEN SOURCE OF ELEVATION B.M. = 753' ON OLD RT. 50

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 H. Dean, Sr.
 R.P.E. 1856 L.L.S. _____

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION



DATE MAR. 7, 1983
 OPERATOR'S WELL NO. _____
 API WELL NO. _____
47 - 085 - 6319
 STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WELL TYPE: OIL GAS _____ LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION STORAGE _____ DEEP _____ SHALLOW
 LOCATION: ELEVATION 990' WATER SHED NUTTER FORK
 DISTRICT GRANT COUNTY RITCHIE
 QUADRANGLE SCHULTZ 7 1/2' St. Mary's 15' SW
 SURFACE OWNER W. G. SANDY ACREAGE 53.8
 OIL & GAS ROYALTY OWNER W. G. SANDY LEASE ACREAGE 65
 LEASE NO. 169800

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 5500' 3-3 (083)
 WELL OPERATOR PETROLEUM DEVELOPMENT DESIGNATED AGENT JOHN MITCHELL MAR 21 1983
 ADDRESS PO BOX 26 ADDRESS PO BOX 26 (unnamed)
BRIDGEPORT W.V. BRIDGEPORT W.V.



JUL 18 1983

OIL & GAS DIVISION
DEPT. OF MINES

IV-35
(Rev 8-81)

Date April 12, 1983
Operator's
Well No. #1
Farm W. G. Sandy
API No. 47 - 085 - 6319

State of West Virginia
Department of Mines
Oil and Gas Division

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 x / Underground Storage / Deep / Shallow xx /)

LOCATION: Elevation: 990' Watershed Nutter Fork
District: Grant County Ritchie Quadrangle Schultz 7 1/2'

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 W. G. Sandy et ux
ADDRESS 917 W. Renette St., El Cagon, CA 92020
MINERAL RIGHTS OWNER W. G. Sandy et ux
ADDRESS Same as above.
OIL AND GAS INSPECTOR FOR THIS WORK Samuel
Hersman ADDRESS Smithville, WV 26178
PERMIT ISSUED 3/15/83
DRILLING COMMENCED 3/31/83
DRILLING COMPLETED 4/07/83

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			
7 5/8	1158.5	1158.5	350 sks.
5 1/2			
4 1/2	4226	4226	275 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Marcellus Shale Depth 5500 feet
Depth of completed well 4300 feet Rotary XX / Cable Tools
Water strata depth: Fresh N/A feet; Salt 1893 feet
Coal seam depths: N/A Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Huron Devonian Shale Pay zone depth 3437-4152 feet
Gas: Initial open flow 152 Mcf/d Oil: Initial open flow 31 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 520 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

JUL 18 1983

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

(N₂ + CO₂) 1st Stage 22 perfs Huron (3437-4152) N₂ - 620,000 scf CO₂ - 40,000 lbs.
Acid - 500 gal.

WELL LOG

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	1750	
Big Lime			1750	1844	
Big Injun			1844	1946	Hole damp @ 1893'
Squaw			1946	1983	
Sand, shale			1983	2138	
Weir			2138	2216	
Sand, shale			2216	2313	
Sunbury Shale			2313	2322	
Berea			2322	2338	
Sand, shale			2338	2432	
Gantz			2432	2463	
Sand, shale			2463	2704	
Gordon Stray			2704	2718	
Sand, shale			2718	2733	
Gordon			2733	2750	
Sand, shale			2750	3398	Gas check @ 2873 30/10 thru 2" with H ₂ O
<u>Huron</u>			3398	<u>4300 T.D.</u>	Gas show @ 3130' 231 mcf

4300
1750
2550 exp. log

4652
2332
1814

(Attach separate sheets as necessary)

Petroleum Development Corporation
Well Operator

By: M. Godward

Date: July 11, 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 ~~any~~, encountered in the drilling of a well."



1) Date: _____, 19____
 2) Operator's Well No. _____
 3) API Well No. 47 State _____ County _____ Permit _____

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 08 /
 B (If "Gas", Production XX / Underground storage _____ / Deep _____ / Shallow XX /)
- 5) LOCATION: Elevation: 390' Watershed: Butter Fork
 District: Grant County: Mitchell Quadrangle: Schultz 7/2
- 6) WELL OPERATOR MINING DEVELOPMENT CORPORATION
 Address PO Box 26, 103 East Street, Bridgeport, WV 26301
- 7) OIL & GAS ROYALTY OWNER W. C. Sandye et ux
 Address 417 W. Renette St., El Cerrito, California 92020
 Acreage 65
- 8) SURFACE OWNER W. C. Sandye et ux
 Address 417 W. Renette St., El Cerrito, California 92020
 Acreage 33.8
- 9) FIELD SALE (IF MADE) TO:
 Address _____
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED
 Name Samuel S. Harman
 Address PO Box 64, Smithville, WV 26175
- 11) DESIGNATED AGENT John L. Mitchell
 Address PO Box 26, 103 East Street, Bridgeport, WV 26301
- 12) COAL OPERATOR _____
 Address _____
- 13) COAL OWNER(S) WITH DECLARATION ON RECORD:
 Name _____
 Address _____
- 14) COAL LESSEE WITH DECLARATION ON RECORD:
 Name _____
 Address _____
- 15) PROPOSED WORK: Drill XX / Drill deeper _____ / Redrill _____ / Fracture or stimulate _____ /
 Plug off old formation _____ / Perforate new formation _____ /
 Other physical change in well (specify) _____
- 16) GEOLOGICAL TARGET FORMATION, Carboniferous shale
- 17) Estimated depth of completed well, 3300' feet
- 18) Approximate water strata depths: Fresh, 450 feet; salt, 1350 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	11 3/4"	N-50	44	X		30'	30'	cement to 30'		Kinds
Fresh water										
Coal										Sizes
Intermediate	7 5/8"	N-40	23	X		1140'	1140'	cement to 1140'		
Production	4 1/2"	J-55	10.54	X		4900'	4900'	300 sha		Depths set
Tubing										
Liners										Perforations: 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 _____

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