



FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE **1" = 500'**  
 MINIMUM DEGREE OF ACCURACY **1:200**  
 PROVEN SOURCE OF ELEVATION **ROAD INT. ELEV. 736'**

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) William F. Rawson  
 R.P.E. \_\_\_\_\_ L.L.S. **551**

PLACE SEAL HERE

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



DATE **21 SEPTEMBER**, 19**83**  
 OPERATOR'S WELL NO. **#4**  
 API WELL NO. **47-085-6757**

WELL TYPE: OIL  GAS  LIQUID INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW   
 LOCATION: ELEVATION **1040'** WATER SHED **OIL SPRING RUN**  
 DISTRICT **GRANT** COUNTY **RITCHIE**  
 QUADRANGLE **PETROLEUM 7 1/2' QUAD. Elizabeth 15' NE**  
 SURFACE OWNER **WESTVACO** ACREAGE **146.66**  
 OIL & GAS ROYALTY OWNER **DAVIS-HEWITT LEASE** LEASE ACREAGE **147**

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 **RHINESTREET** ESTIMATED DEPTH **5500'**  
 WELL OPERATOR **PETROLEUM DEVELOPMENT CORP.** DESIGNATED AGENT **MICHAEL L. EDWARDS**  
 ADDRESS **P.O. BOX 26** ADDRESS **P.O. BOX 26**  
**BRIDGEPORT, W.VA. 26330** **BRIDGEPORT, W.VA. 26330**

NOV 07 1983

FORM IV-6 (8-78)  
 H.T. HALL

COUNTY NAME  
 PERMIT

Volcano (111)

IV-35  
(Rev 8-81)

RECEIVED  
APR 24 1984

OIL & GAS DIVISION  
DEPT. OF MINES



State of West Virginia  
Department of Mines  
Oil and Gas Division

Date 1/17/84  
Operator's #4  
Well No. Sue Davis  
Farm Sue Davis  
API No. 47 - 085 - 6757

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: 1040 Watershed Oil Spring Run  
District: Grant County Ritchie Quadrangle Petroleum 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 West Virginia Pulp & Paper  
ADDRESS #2 Ferguson Drive, Parkersburg, WV 26101  
MINERAL RIGHTS OWNER Davis-Hewitt Lease  
ADDRESS 409 E. Main, Harrisville, WV 26362  
OIL AND GAS INSPECTOR FOR THIS WORK Samuel  
N. Hersman ADDRESS Box 66, Smithville, WV 26178  
PERMIT ISSUED November 1, 1983  
DRILLING COMMENCED December 21, 1983  
DRILLING COMPLETED January 2, 1984  
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.			
11-3/4" 13-10"	30	30	To Surface
9 5/8			
8 5/8	1055	1055	265 Sk.
7			
5 1/2			
4 1/2	4639	4639	400 Sk.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Rhinestreet Depth 5500 feet  
Depth of completed well 4700 feet Rotary XX / Cable Tools      
Water strata depth: Fresh 132 feet; Salt 1680 feet  
Coal seam depths: N/A Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 2648-4580 feet  
Gas: Initial open flow     Mcf/d Oil: Initial open flow     Bbl/d  
Final open flow 69 Mcf/d Final open flow 10 Bbl/d  
Time of open flow between initial and final tests     hours  
Static rock pressure     psig (surface measurement) after 48 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

NOV 05 1984

NOV 05 1984

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

4073-4414 Huron

4-Stage Frac Job		Acid/gal	N <sub>2</sub> (Scf)	Foam H <sub>2</sub> O	BBLs	Sand (lbs.)
1st	13 Perfs (4073- <del>5080</del> )	500	864,000	78	20/40	8,500
2nd	23 Perfs (3431-3866)	600	1,060,000			10 balls
3rd	19 Perfs (3000-3372)	400	737,800			
4th	18 Perfs (2648-2927)	250	737,800			

*Handwritten notes: 4580? → 4414-4580 Java; Huron → Java; Up. Dev. undiff. bc*

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	½" Stream Fresh H <sub>2</sub> O @ 132'
Sand, Shale, Red Rock			10	1150	
Sand			1150	1200	
Sand, Shale, Red Rock			1200	1535	Gas @ 1414 (Order)
Sand			1535	1600	
Shale			1600	1625	
Sand			1625	1740	1" Stream Salt H <sub>2</sub> O @ 1680'
Big Injun			1740	1836	
Sand, Shale			1836	2226	
Sunbury Shale			2226	2234	
Berea			2234	2238	
Sand, Shale			2238	2659	
Gordon Stray/Gordon			2659	2683	
Sand, Shale			2683	3322	
Huron			3322	4414	
<u>Java</u>			4414	4700	
				TD	

*Handwritten calculations:*  
 4700  
 2238  
 -----  
 2462  
 4700  
 1040  
 -----  
 3660

(Attach separate sheets as necessary)

Well Operator

By: \_\_\_\_\_

Date: \_\_\_\_\_

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



1) Date: September 30, 1983  
2) Operator's Well No. #4  
3) API Well No. 47 - 085 - 6757  
State County Permit

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

- 4) WELL TYPE: A Oil XX Gas XX  
B (If "Gas", Production XX Underground storage \_\_\_\_\_ Deep \_\_\_\_\_ Shallow XX)  
5) LOCATION: Elevation: 1040 Watershed: Oil Spring Run  
District: Grant County: Ritchie Quadrangle: Petroleum 7 $\frac{1}{2}$ '  
6) WELL OPERATOR PETROLEUM DEVELOPMENT CORPORATION 7) DESIGNATED AGENT MICHAEL L. EDWARDS  
Address PO BOX 26, 103 EAST MAIN STREET Address PO BOX 26, 103 EAST MAIN STREET  
BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330  
8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:  
Name Samuel N. Hersman Name \_\_\_\_\_  
Address PO Box 66 Address \_\_\_\_\_  
Smithville, WV 26178

**RECEIVED**  
OCT 24 1983

- 10) PROPOSED WELL WORK: Drill XX Drill deeper \_\_\_\_\_ Redrill \_\_\_\_\_ Stimulate \_\_\_\_\_  
Plug off old formation \_\_\_\_\_ Perforate new formation \_\_\_\_\_  
Other physical change in well (specify) \_\_\_\_\_  
11) GEOLOGICAL TARGET FORMATION, Rhinestreet  
12) Estimated depth of completed well, 5500' feet  
13) Approximate strata depths: Fresh, 400 feet; salt, 1320 feet.  
14) Approximate coal seam depths: \_\_\_\_\_ Is coal being mined in the area? Yes \_\_\_\_\_

OIL & GAS DIVISION  
DEPT. OF MINES

15) 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	<u>11 3/4</u>	<u>H-40</u>	<u>32#</u>	<u>X</u>		<u>30'</u>	<u>30'</u>	<u>cement to surface</u>	
Fresh water									
Coal									
Intermediate	<u>8 5/8</u>	<u>J-55</u>	<u>23#</u>	<u>X</u>		<u>1200'</u>	<u>1200'</u>	<u>cement to surface</u>	Sizes
Production	<u>4 1/2</u>	<u>J-55</u>	<u>10.5#</u>	<u>X</u>		<u>5500'</u>	<u>5500'</u>	<u>500 sks</u>	Depths set
Tubing									Perforations:
Liners									Top Bottom

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-085-6757 Date November 1, 1983

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 November 1, 1985 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <b>BLANKET BOND</b>	Agent: <u>[Signature]</u>	Plat: <u>[Signature]</u>	Casing <u>[Signature]</u>	Fee <u>829</u> <u>722</u>
---------------------------	---------------------------	--------------------------	---------------------------	---------------------------------

[Signature]  
Administrator, Office of Oil and Gas

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