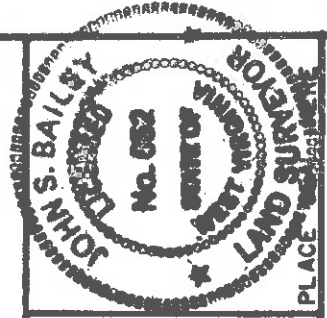


FILE NO. MSES 85-668  
 DRAWN BY SARC/PAT  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 PART IN 200  
 PROVEN SOURCE OF ELEVATION INT. RTS. 13 & 54; 1200' NE OF LOCA.; ELEV. 853.1'

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) *John S. Bailey* (R.P.E.) L.L.A. 652



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

DATE JULY 8 19 85  
 OPERATOR'S WELL NO. S.A. HURST, SR. #5  
 API WELL NO. 47-017-3474  
 STATE COUNTY PERMIT

Department of Mines  
 Oil & Gas Division

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS", PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 1021.0' WATER SHED LITTLE TOMS FORK  
 DISTRICT NEW MILTON COUNTY DODDRIDGE  
 QUADRANGLE NEW MILTON, WV 7.5' 511  
 SURFACE OWNER STOKES A., SR. & RUBY I. HURST ACREAGE 156  
 OIL & GAS ROYALTY OWNER STOKES A., SR. & RUBY I. HURST, ET AL LEASE ACREAGE 156  
 LEASE NO. 123 NW 1 Vach's

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  DEPTH 2200'  
 TARGET FORMATION BIG INJUN ESTIMATED  
 WELL OPERATOR Quaker State Oil Refining Corp. DESIGNATED AGENT SAMUEL F. BARBER  
 ADDRESS P.O. BOX 1327 121 ADDRESS PARKERSBURG, WV 26101  
 PARKERSBURG, WV 26101

PREPARED BY MSES consultants, inc. 6-b Porto Rico (Stout) (134)  
 Parkersburg, WV

OCT 21 1985

CLERK



Date December 20, 1985  
Operator's Well No. 5  
State of West Virginia  
DEPARTMENT OF ENERGY  
Oil and Gas Division  
FARM S.A. HURST, SR.  
API No. 47-017-3474

WELL OPERATOR'S REPORT

OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 1021' Watershed Little Tom's Fork  
District: New Milton County Daddridge New Milton

COMPANY QUAKER STATE OIL REFINING CORPORATION  
ADDRESS P.O. Box 1327; Parkersburg, WV 26101  
DESIGNATED AGENT Samuel F. Barber  
ADDRESS P.O. Box 1327; Parkersburg, WV 26101  
SURFACE OWNER Stokes A. & Ruby Hurst, Sr.  
ADDRESS Rural Delivery, New Milton, WV  
MINERAL RIGHTS OWNER Same  
ADDRESS Same  
OIL AND GAS INSPECTOR FOR THIS WORK \_\_\_\_\_  
H.M. Underwritten ADDRESS Salem, WV  
PERMIT ISSUED 10/11/85  
DRILLING COMMENCED 11/01/85  
DRILLING COMPLETED 11/04/85  
IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
ON \_\_\_\_\_

Casing Tubing Size	Used in Drilling	Left in Well	Cement fill up Cu. ft.
20-16 Cond.			
13-10"	30'	30'	---
9 5/8			
8 5/8	503'	503'	130 SX
7			
5 1/2			
4 1/2	2191'	2191'	150 SX
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Big Lime Depth 2001 feet  
Depth of completed well 2214 feet Rotary XX / Cable Tools \_\_\_\_\_  
Water strata depth: Fresh 488 feet; Salt 1283 feet  
Coal seam depths: 655-660' Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Blue Monday/Big Lime Pay zone depth Comingled feet  
Gas: Initial open flow Show Mcf/d Oil: Initial open flow Show Bbl/d  
Final open flow 30 Mcf/d Final open flow 15 Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ hours  
Static rock pressure \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ 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

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

Stage I: Perforated from 2050-2102' <sup>Big Lime</sup> w/ 23 holes. Frac'd w/ 317 bbls water; 16,000# 12/10 sand; 280 MCF N<sub>2</sub>. Breakdown @ 1000 psi. Treated @ 2850 psi. Avg. Rate 20 BPM. I.S.I.P. @ 2225 psi.

Stage II: Perforated from 1980-1992' <sup>Blue Monday</sup> w/ 13 holes. Frac'd w/ 222 bbls water; 23,000# 20/40 sand; 20 MCF N<sub>2</sub>. Breakdown @ 3200 psi. Treated @ 2598 psi. Avg. Rate 15 BPM. I.S.I.P. @ 2850 psi.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
Shale			0	488	Including indication of all fresh and salt water, coal, oil and gas
Sand			488	502	
Shale			502	521	
Sand			521	541	
Silt & shale			541	655	
Coal			655	660	
Shale			660	698	
Sand			698	736	
Shale			736	842	
Sand			842	860	
Silt & shale			860	1283	
Sand			1283	1310	
Sand & shale			1310	1703	
Sand			1703	1757	
Shale			1757	1947	
Little Lime			1947	1969	
Blue Monday			1969	1995	Gas & oil
Shale			1995	2001	
<u>Big Lime</u>			2001	2141	
Shale			2141	2224	
				<u>2224</u>	TOTAL DEPTH

(Attach separate sheets as necessary)

QUAKER STATE OIL REFINING CORPORATION  
Well Operator

By: Jeffrey W. Hill Jeffrey W. Hill  
Date: December 20, 1985 Geologist

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 <sup>any</sup> encountered in the drilling of a well."



1) Date: August 13, 1985  
2) Operator's Well No. S.A. HURST, SR. #5  
3) API Well No. 47 -017-3474  
State County Permit

SEP 16 1985

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 XX / Gas XX / B (If "Gas", Production XX)  
Underground storage \_\_\_\_\_ Deep \_\_\_\_\_ Shallow \_\_\_\_\_  
Watershed: LITTLE TOMS FORK
- 5) LOCATION: Elevation: 1021'  
District: NEW MILTON 721
- 6) WELL OPERATOR: QUAKER STATE OIL REFINERY Quadrangle: NEW MILTON 7.5'  
Address: P.O. BOX 1327 Address: P.O. BOX 1327  
PARKERSBURG, WV 26101
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED  
Name: HAROLD MIKE UNDERWOOD 9) DRILLING CONTRACTOR:  
Address: Route 2, Box 114 Name: SMITH DRILLING  
Salem, WV 26426 Address: P.O. BOX 150  
LAWRENCEVILLE, IL 62439
- 10) PROPOSED WELL WORK: Drill XX / deeper \_\_\_\_\_ / Redrill \_\_\_\_\_ / Stimulate XX  
Plug off old formation \_\_\_\_\_ / Perforate new formation \_\_\_\_\_  
Other physical change in well (specify) \_\_\_\_\_

11) GEOLOGICAL TARGET FORMATION, BIG INJUN 371

- 12) Estimated depth of completed well, 2196' feet  
13) Approximate true depths: Fresh, 271' feet; salt, 1477' feet.  
14) Approximate coal seam depths: NONE Is coal being mined in the area? Yes \_\_\_\_\_ No XX
- 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
Conductor							
Fresh water	8 5/8"	H-40	20	XX		420'	C.T.S. NEAT
Coal	7"	H-20	17	XX			Sizes
Intermediate							
Production	4 1/2"	J-55	9.5	XX		2196'	1200' OR AS REQUIRED BY RULE
Tubing	2"	J	4.5	XX		2116'	
Liners							Perforations:
							Top
							Bottom

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-017-3474 Date October 11 19 85

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 October 11, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee	WPCP	S&E	Other
	<u>mw</u>	<u>mw</u>	<u>mw</u>	<u>13776</u>	<u>mw</u>	<u>mw</u>	<u>mw</u>

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

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

