



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1 IN 200
 PROVEN SOURCE OF ELEVATION FORKS OF ROAD
ELEV. 941
5000± E. OF LEASE

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) Carroll R. Boice
 R.P.E. _____ L.L.S. 667

PLACE SEAL HERE

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



DATE JULY 2, 1984
 OPERATOR'S WELL NOW W.S. BARNETT-2
 API WELL NO. 47-105-1150
 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 1142 WATER SHED STRAIGHT FORK
 DISTRICT BURNING SPRINGS COUNTY WIRT
 QUADRANGLE MACFARLAN 7 1/2 Harrisville 057 SW7
 SURFACE OWNER D. JONES 450 ACREAGE 45
 OIL & GAS ROYALTY OWNER W.S. BARNETT ETAL LEASE ACREAGE 45
 LEASE NO. _____
 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'
 WELL OPERATOR N.G. + K.E. BUSCH DESIGNATED AGENT K. E. BUSCH SEP 17 1984
 ADDRESS BROHARD 134 ADDRESS BROHARD
WEST VIRGINIA 26138 WEST VIRGINIA 26138

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IV-35 (Rev 8-81)

OIL & GAS DIVISION DEPT. OF MINES State of West Virginia Department of Mines Oil and Gas Division

Date October 31, 1984 Operator's Well No. Barnett #2 Farm M. S. Barnett API No. 47 - 105 - 1150

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

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

LOCATION: Elevation: 1142 Watershed Stright Fork District: Burning Spring County Wirt Quadrangle Macfarlan

COMPANY N.G. Busch, Inc. ADDRESS Brohard, WV 26138 DESIGNATED AGENT K. E. Busch ADDRESS Brohard, WV 26138 SURFACE OWNER Denzil J. Jones ADDRESS Brohard, WV 26138 MINERAL RIGHTS OWNER Barnett Heirs ADDRESS Parkersburg, WV 26101 OIL AND GAS INSPECTOR FOR THIS WORK Homer Dougherty ADDRESS Looneyville, Wv PERMIT ISSUED September 13, 1984 DRILLING COMMENCED September 20, 1984 DRILLING COMPLETED September 23, 1984 IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Table with 4 columns: Casing & Tubing Size, Used in Drilling, Left in Well, Cement fill up Cu. ft. Rows include sizes 13-10", 9 5/8, 8 5/8, 7, 5 1/2, 4 1/2, 3, 2, and Liners used.

GEOLOGICAL TARGET FORMATION Gordon Sandstone Depth 2946 feet Depth of completed well 3037 feet Rotary x / Cable Tools Water strata depth: Fresh 190 feet; Salt 2040 feet Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Gordon Sandstone Pay zone depth 2946 feet Gas: Initial open flow 161 Mcf/d Oil: Initial open flow 2 Bbl/d Final open flow N/A Mcf/d Final open flow N/A Bbl/d

Time of open flow between initial and final tests hours Static rock pressure 610 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

MAR 25 1985 (Continue on reverse side)

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

Perforation Depths: 8- .49 holes from 2943 to 2946

Fractured by Dowell/schlumberger

Material: 12 bbl 15% HCL Acid treated with A-200, W-22, L-53, U-42
250# J-266(gel), treated with W-22, L-53, f-78

10,000# 80/100 sand, 20,000# 20/40 sand

180,000 Standard Cubic Feet of Nitrogen Gas

Average treatment pressure: 2040psi

Average treatment rate: 4.9MSCF/minute

Average fluid rate: 20.16BBL/min

Total Fluid: 685BBL

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Clay			0	70	
Sand			70	190	Fresh water
Slate & Shells			190	572	
Pink rock			572	746	
Sand			746	951	
Big red rock			951	1172	
Slate & Shells			1172	1241	
Big Dunkard			1241	1256	
Siltstone: md gray			1256	1440	
Sandstone: lt gray			1440	1472	
1st Salt sand			1472	1568	
Siltstone: drk gray			1568	1604	
2nd Salt Sand			1604	1634	
Siltstone: drk gray			1634	1790	
3rd Salt sand			1790	1854	
Siltstone: md gray			1854	1920	
Shale: md gray			1920	1952	
Maxton Sandstone lt tan			1952	2044	Salt water
Big lime: gray/tan			2044	2134	
Big Injun sand lt gray/tan			2134	2178	Show gas
Limestone: gray/tan			2178	2201	
Squaw Sand: lt tan			2201	2212	
Sandstone: md gray			2212	2230	
Shale: drk gray			2230	2260	
Siltstone: drk gray			2260	2310	
Shale: md gray			2310	2410	
Siltstone: md gray			2410	2581	
Brerea Sand: brown shale			2581	2582	
Shale: drk gray			2582	2650	
Siltstone: lt gray			2650	2673	
Fifty foot sand: lt gray			2673	2684	
Siltstone: lt gray			2684	2800	
Shale: drk gray			2800	2910	
Siltstone drk gray			2910	2946	
Gorden Sandstone			2946	2954	Show Oil & gas
Siltstone: drk gray			2954	3037	

(Attach separate sheets as necessary)

M.G. Busch, Inc
Well Operator

By: A. Busch Agent

Date: 10/31/84

8037
1142
1895

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: July 18, 1984
 2) Operator's Well No. MS BARNETT #2
 3) API Well No. 47 105-1150
 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 Gas
 B (If "Gas", Production Underground storage Deep Shallow)
- 5) LOCATION: Elevation: 1142 Watershed: STRAIGHT FORK LK 39B
 District: BURNING SPRINGS County: WIRT Quadrangle: MACFARLAN
- 6) WELL OPERATOR N.G. BUSCH 7) DESIGNATED AGENT K. E. BUSCH
 Address BROHARD, WV 26138 Address BROHARD, WV 26138
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name HOMER DOUGHERTY 9) DRILLING CONTRACTOR: Name HAUGHT, INC
 Address LINDEN RT. BOX 3-A Address SMITHVILLE WV
LOONEYVILLE WV 25259
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, MARCELLUS SHALE
- 12) Estimated depth of completed well, 5500 feet
- 13) Approximate trata depths: Fresh 2242, 120 feet; salt, 1900 feet.
- 14) Approximate coal seam depths: NONE Is coal being mined in the area? Yes No

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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		Kinds	Sizes
Conductor										
Fresh water	10"			X		325'	325'	50 SKS	CTS	NEAT
Coal										
Intermediate	7"			X		2300'	2300'	100 SKS		
Production	4 1/2"			X		5500'	5500'	350 SKS		
Tubing										Depth set or as required by rule
Liners										Perforations: 15.01
										Top Bottom

OIL & GAS DIVISION
DEPARTMENT OF MINES

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-105-1150 Date September 13, 1984

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 September 13, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>26</u> BLANKET	Agent: <u>✓</u>	Plat: <u>✓</u>	Casing	Fee
	<u>Lo</u>	<u>MHM21</u>		<u>1297</u>

Margaret J. Hase
Administrator, Office of Oil and Gas

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

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

File