



1.67
1.02

1.675
1.02w



NOTE: COAL NOT OPERATED AT PRESENT.

DETAIL
1" = 100'

REVISED 2/24/87

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. 68 - 55
 DRAWING NO. 20656
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1 Part in 200
 PROVEN SOURCE OF ELEVATION U.S. GOV'T. B.M.
M.O. POINT LICK BR. EL. 632.94
 BOOK: 2414 PAGE: 70-86 B

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 ENERGY.

(SIGNED) _____
 R.P.E. _____ L.L.S. 398 W V

PLACE SEAL HERE

BOOK: 2483 PAGE: 50 J.A.C. REV. BOOK 2487 PAGE 1

STATE OF WEST VIRGINIA M.D.K.

DEPARTMENT OF ENERGY
OIL AND GAS DIVISION



DATE FEBRUARY 20, 19 85
 OPERATOR'S WELL NO. 20656
 API WELL NO. _____

LAT: 38° 18' 32" LONG: 81° 31' 09"
 WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS.") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___

47 - 039 - 4483
 STATE COUNTY PERMIT

LOCATION: ELEVATION 1218.6 WATERSHED RT. FK. COAL FORK, CAMPBELLS CREEK
 DISTRICT MALDEN COUNTY KANAWHA

QUADRANGLE CHARLESTON EAST 289 024 SE
 SURFACE OWNER W. D. LEWIS, ESTATE ACREAGE 1598
 OIL & GAS ROYALTY OWNER CHAS. NAT. BANK, TRUSTEE LEASE ACREAGE 640 Ac. UNIT
 LEASE NO. 181197

PROPOSED WORK: DRILL X 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 ___

JUN 1 1987

TARGET FORMATION TUSCARORA ESTIMATED DEPTH 6630'
 WELL OPERATOR COL. NAT. RES., INC. DESIGNATED AGENT J. E. CAMPBELL
 ADDRESS P.O. BOX 1273 CHARLESTON, WV ADDRESS SAME
1013 25325 deep well 6-6 Indian Creek (358)

5

NORTH

FORM W.V. 5

HT HALL

IV-35
(Rev 8-81)



Date September 3, 1987
 Operator's
 Well No. 20656
 Farm Chas. Nat. Bank Trustee
 API No. 47 - 039 - 448
 Kan

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State of West Virginia
 Department of Mines
 Oil and Gas Division

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY
 WELL OPERATOR'S REPORT
 OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 1218.6 ft. Watershed Right Fork of Coal Fork Campbell's Creek
 District: Malden County Kanawha Quadrangle Charleston East

COMPANY Columbia Natural Resources

ADDRESS P.O. Box 2374, Charleston, WV 25325-1273

DESIGNATED AGENT Joseph E. Campbell

ADDRESS P.O. Box 1273, Charleston, WV 25325-1273

SURFACE OWNER Chas. Nat. Bank, Trustee

ADDRESS P.O. Box 1113, Charleston, WV 25324

MINERAL RIGHTS OWNER Chas. Nat. Bank, Trustee

ADDRESS P.O. Box 1113, Charleston, WV 25324

OIL AND GAS INSPECTOR FOR THIS WORK Carlos W. Hively
 ADDRESS Elkview, WV

PERMIT ISSUED May 28, 1987

DRILLING COMMENCED 6-16-87

DRILLING COMPLETED 7-2-87

IF APPLICABLE: PLUGGING OF DRY HOLE OR
 CONTINUOUS PROGRESSION FROM DRILLING OR
 REWORKING. VERBAL PERMISSION OBTAINED
 ON NA

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	33'	33'	To Surfa
13-10 3/8	575'	575'	To Surfa
9 5/8	1893'	1893'	To Surfa
8 5/8			
7	5273'	5273'	200 Sack
6 3/4			
4 1/2	6604'	6604'	120 Sack
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Tuscarora Depth 6665 feet

Depth of completed well 6675 feet Rotary X / Cable Tools

Water strata depth: Fresh ___ feet; Salt ___ feet

Coal seam depths: ___ Is coal being mined in the area? ___

OPEN FLOW DATA

Producing formation Tuscarora Pay zone depth 6665 feet

Gas: Initial open flow ___ Mcf/d Oil: Initial open flow ___ Bbl/d

Final open flow 14,125 Mcf/d Final open flow ___ Bbl/d

Time of open flow between initial and final tests ___ hours

Static rock pressure 1442 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

SEP 21 1987
 (Continue on reverse)

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

✓ Open Hole Completion

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Sand			0	50	
Shale			50	60	
Sand			60	100	
Sand and Shale			100	220	
Sand			220	639	
Sand and Shale			639	670	
Sand			670	734	
Sand and Shale			734	765	
Sand			765	826	
Sand and Shale			826	1100	
Salt Sand			1100	1325	
Sand Shale			1325	1395	
Sand			1395	1695	
Lime			1680	1825	
Big Injun			1825	1855	
Sand			1855	1970	
Sand and Shale			1970	2260	
Sand			2260	2510	
Sand and Shale			2510	2542	
Sand			2542	2648	
Sand and Shale			2648	2760	
Sand			2760	2792	
Sand and Shale			2792	4300	
Shale			4300	5065	
Lime			5065	5150	
Sand			5150	5180	
Sand and Shale			5180	5420	
Dolomite			5420	5840	
Sand			5840	5870	
Lime and Dolomite			5870	6190	
Keefer			6190	6220	
Shale			6220	6460	
Clinton Shale			6460	6630	
Tuscarora			6630	6665	
✓ Juniata Shale			6665	6675	

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

Columbia Natural Resources, Inc.

Well Operator

By: *Joseph Campbell*

Date: *9-8-87*

Note: Regulation 2.02(i) provides as follows:

10095 "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."

7/85

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MAY 07 1987



1) Date: March 4, 1987
 2) Operator's Well No. 20656
 3) API Well No. 47 039 4483
 State County Permit

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

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil / Gas /
 B (If "Gas", Production / Underground storage / Deep / Shallow)
 5) LOCATION: Elevation: 1218.6 Watershed: Right Fork of Coal Fork, Campbells Creek 289
 District: Malden 7 County: 039 Kanawha Quadrangle: Charleston East
 6) WELL OPERATOR Columbia Natural Resources, Inc. 7) DESIGNATED AGENT Joseph E. Campbell
 Address P. O. Box 1273 10460 Address P. O. Box 1273
Charleston, WV 25325 Charleston, WV 25325
 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Carlos W. Hively
 Address 223 Pinch Ridge Road
Elkview, WV 25071
 9) DRILLING CONTRACTOR: Name _____ Address _____
 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, Tuscarora
 12) Estimated depth of completed well, 6630 feet
 13) Approximate strata depths: Fresh, _____ feet; salt, _____ feet.
 14) Approximate coal seam depths: Alto 21090 Is coal being mined in the area? Yes _____ / No /

15) CASING AND TUBING PROGRAM see 039-0172, 0252

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	20"			X		30'	30'	To surface	Kinds } Per Rule 15.05 Sizes }
Fresh water	13-3/8"			X		550'	550'	To surface	
Coal	9-5/8"			X		1800'	1800'	To surface	
Intermediate	7"			X		5200'			Depths set } AS REQUIRED BY Rule 15.01
Production	4-1/2"			X		6630'	6630'	660 SKS OF	
Tubing									Perforations: Top Bottom
Lin.									

GAS IN THE BIG IN JUN @ 1815

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-039-4483 Date May 28 19 87

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 May 28, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <u>185</u>	Casing: <u>185</u>	Fee: <u>Sc 11708</u> <u>201</u>	WPCB: <u>185</u>	S&E: <u>185</u>	Other: <u>185</u>
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NOTE: Keep one copy of this permit posted at the drilling location.
 Director, Division of Oil and Gas File
 See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

10095-1