

LATITUDE 38°07'30"

1-1/2" IRON PIPE BY ROAD ON RIDGE 2 CHESTNUT OAK, PINE, SMALL HICKORY & SOURWOOD MARKED & PAINTED

1-1/2" IRON PIPE ON FLAT KNOB BLACK OAK, CHESTNUT OAK & SMALL MAPLE WITNESS.

COLUMBIA GAS TRANSMISSION CORP. MINERAL CYFERS ESTATE, SURFACE 177 ACRES

6277 826-A

STAKE SOUTH EAST SIDE OF RIDGE 2 BLACK OAK, 2 MAPLE & WHITE OAK WITNESS MARKED AND PAINTED

S 82°00'W 485' 6456 894 S 61°15'W 351

STAKE ON RIDGE BY ROAD 3 SMALL HICKORIES & 2 SMALL MAPLE WITNESS MARKED AND PAINTED

21480-T

S 56°30'W 239'

STAKE ON RIDGE BY ROAD BLACK OAK & SMALL SOURWOOD WITNESS MARKED AND PAINTED

S 86°00'W - 1156' S 87°00'E 955'

S 32°15'W 984'

430'

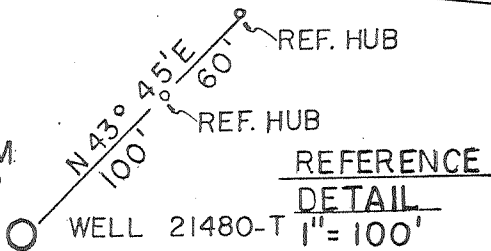
LONGITUDE 82°05'00"

14,200'

COLUMBIA GAS TRANSMISSION CORP. SURFACE & MINERAL-Tract No 4

SWEETLAND LAND & MINERAL CO.

FARM MAP



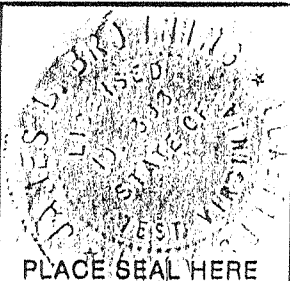
LATITUDE 38°05'09" LONGITUDE 82°06'34" M.D.K. BOOK 2488 PG. 47

+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS COAL NOT OPERATED

FILE NO. 36-41 DRAWING NO. 21480-T SCALE 1" = 500' MINIMUM DEGREE OF ACCURACY 1 PART IN 200 PROVEN SOURCE OF ELEVATION U.S. GOV'T. BM AT GILL, W.V. - ELEV. 600'

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) James S. Browning R.P.E. L.L.S. 398-W.V.



STATE OF WEST VIRGINIA DEPARTMENT OF MINES OIL AND GAS DIVISION



DATE SEPTEMBER 10, 1985 OPERATOR'S WELL NO. 21480-T API WELL NO.

47-043-2678-P STATE COUNTY PERMIT

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL (IF "GAS,") PRODUCTION X STORAGE DEEP X SHALLOW

LOCATION: ELEVATION 1121' WATER SHED BIG UGLY CREEK DISTRICT HARTS CREEK COUNTY LINCOLN QUADRANGLE BIG CREEK, W.V.

SURFACE OWNER COLUMBIA GAS TRANSMISSION CORPORATION ACREAGE 8998.25 OIL & GAS ROYALTY OWNER COL. GAS TRANS. CORP. LEASE ACREAGE 6398.25 LEASE NO. REF. 24687

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 TARGET FORMATION TUSCARORA ESTIMATED DEPTH 5870'

WELL OPERATOR COL. GAS TRANS. CORP. DESIGNATED AGENT J.L. WEEKLEY ADDRESS P.O. BOX 1273 CHARLESTON, W.V. 25325 ADDRESS SAME

JUL 14 1986

DEEPWELL

3-0

(275)

M 15 10-20-85 36

7,450' 38 10
LATITUDE 38° 07' 30"

CODE _____ CARD _____ PLOT _____

**COLUMBIA GAS TRANSMISSION CORP. MINERAL
CYFERS ESTATE, SURFACE
177 ACRES**

1-1/2" IRON PIPE BY ROAD
ON RIDGE 2 CHESTNUT
OAK, PINE, SMALL HICKORY
& SOURWOOD MARKED &
PAINTED

1-1/2" IRON PIPE
ON FLAT KNOB
BLACK OAK,
CHESTNUT OAK
& SMALL MAPLE
WITNESS.

S 82° 15' W
430'

S 32° 15' W
984'

6277
826-A

STAKE SOUTH EAST SIDE OF RIDGE
2 BLACK OAK, 2 MAPLE & WHITE
OAK WITNESS MARKED AND PAINTED

S 82° 00' W
485' 6456
894

S 6° 15' W
351'

S 86° 00' W - 1156'
S 87° 00' E
955'

21480-T S 56° 30' W
239'

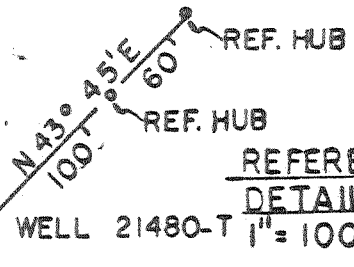
STAKE ON RIDGE BY
ROAD 3 SMALL HICKORIES
& 2 SMALL MAPLE WITNESS
MARKED AND PAINTED

STAKE ON RIDGE BY ROAD
BLACK OAK & SMALL SOURWOOD
WITNESS MARKED AND PAINTED

**COLUMBIA GAS TRANSMISSION CORP.
SURFACE & MINERAL - Tract No 4**

**SWEETLAND LAND &
MINERAL CO.**

X FARM
MAP



REFERENCE
DETAIL

WELL 21480-T 1" = 100'

LATITUDE 38° 05' 09"
LONGITUDE 82° 06' 34"
M.D.K. BOOK 2488 PG. 47

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS **COAL NOT OPERATED**

FILE NO. 36-41
DRAWING NO. 21480-T
SCALE 1" = 500'
MINIMUM DEGREE OF
ACCURACY 1 PART IN 200
PROVEN SOURCE OF
ELEVATION U.S. GOV'T. BM
AT GILL, W.V. - ELEV. 600'

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 REGU-
LATIONS ISSUED AND PRESCRIBED BY THE DEPART-
MENT OF MINES
(SIGNED) James L. Browning
R.P.E. _____ L.L.S. 398-W.V.



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



DATE SEPTEMBER 10, 1985
OPERATOR'S WELL NO. 21480-T
API WELL NO. _____

WELL TYPE: OIL _____ GAS X LIQUID INJECTION _____ WASTE DISPOSAL _____
(IF "GAS,") PRODUCTION X STORAGE _____ DEEP X SHALLOW _____

LOCATION: ELEVATION 1121' WATERSHED BIG UGLY CREEK
DISTRICT HARTS CREEK 3 COUNTY LINCOLN
QUADRANGLE BIG CREEK, W.V. 251 080 C.S. Mickiff

SURFACE OWNER COLUMBIA GAS TRANSMISSION CORPORATION ACREAGE 8998.25
OIL & GAS ROYALTY OWNER COL. GAS TRANS. CORP. LEASE ACREAGE 8998.25
LEASE NO. REF. 24687

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 _____
TARGET FORMATION TUSCARORA ESTIMATED DEPTH 5870'
WELL OPERATOR COL. GAS TRANS. CORP. 175 DESIGNATED AGENT J.L. WEEKLEY
ADDRESS P.O. BOX 1273 ADDRESS SAME
CHARLESTON, W.V. 25325

NOV 2 1985
NOV 4 1985

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

COUNTY NAME



IV-35
(Rev 8-81)

State of West Virginia
Department of Mines
Oil and Gas Division

Date June 18, 1986
Operator's
Well No. 21480-T
Farm Columbia Gas Transmission
API No. 47 - 043 - 2678

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 ___ / Shallow ___ /)

LOCATION: Elevation: 1121' Watershed Big Ugly Creek
District: Harts Creek County Lincoln Quadrangle Big Creek

COMPANY Columbia Natural Resources
ADDRESS P. O. Box 1273-Charleston, WV 25325
DESIGNATED AGENT J. E. Campbell
ADDRESS P. O. Box 1273-Charleston, WV 25325
SURFACE OWNER Columbia Gas Trans. Tract No. 4
ADDRESS P. O. Box 1273-Charleston, WV 25325
MINERAL RIGHTS OWNER Columbia Gas Transmission
ADDRESS P. O. Box 1273-Charleston, WV 25325
OIL AND GAS INSPECTOR FOR THIS WORK Jerry Holcomb
ADDRESS RR #1, Box 28-Hamlin, WV
PERMIT ISSUED October 29, 1985
DRILLING COMMENCED December 6, 1985
DRILLING COMPLETED January 17, 1986
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON 3-3-86

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cord.	27'	27'	29.50
13-10"	552.55	552.55	489.70
9 5/8	2036.45		813.50
8 5/8			
7	4384'	1950'	197
5 1/2			
4 1/2	5658.80	1433'	175
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Tuscarora Depth 5350 feet
Depth of completed well 5970 feet Rotary X / Cable Tools _____
Water strata depth: Fresh _____ feet; Salt _____ feet
Coal seam depths: 428-430 Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Big Lime Pay zone depth 1826-1836 feet
Gas: Initial open flow 35 Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow 0 Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests 6 hours
Static rock pressure 120 psig (surface measurement) after 72 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

(Continue on reverse side)

P
4/23/1986

- DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.
 (1) Matrix Acid Frac with 750 gallons of 15% Hcl on Tuscarora Formation from 5448' to 5504.
 (2) Acid Clean up with 750 gallons of 15% Hcl on Newburg formation from 4780' to 4700'
 (3) Acidized Big Lime formation with 3000 gallons of 15% Hcl from 1826' to 1836'.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Soil			0	10	
Slate			10	22	
Sand			22	428	
Coal			428	430	
Sand & Shale			430	590	
Shale			590	665	
Sand & Shale			665	795	
Shale			795	960	
Salt Sand			960	1335	
Sand & Shale			1335	1420	
Sand & Shale			1420	1730	
Little Lime			1730	1780	
Big Lime			1780	1980	
Injun Sand			1980	2025	
Sand			2025	2180	
Shale			2180	2500	
Berea			395 2500	2520	
Shale			2500	2520	
Devonian Shale			441 2520	4220	
Onondaga			461 4220	4290	
Oriskany			475 4290	4300	
Limestone & Dolomite			475 4300	4760	
Newburg			535 4760	5010	
Shale			5010	5050	
Rose Hill			555 5050	5272	
Shale			5272	5440	
Tuscarora			575 5440	5500	
Juniata			615 5500	5880	
Cynthiana			5880	5970	T.D.

all exploratory

(Attach separate sheets as necessary)

COLUMBIA NATURAL RESOURCES, INC.

Well Operator

By: S. J. Friend

Date: June 25, 1986

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."

RECEIVED
OCT 23 1985



1) Date: October 21, 19 85
 2) Operator's Well No. 21480-T
 3) API Well No. 47-043-2678
 State _____ County _____ Permit _____

DIVISION OF OIL & GAS
DEPT. OF ENERGY STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY, OIL AND GAS DIVISION
APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil _____ / Gas X /
 B (If "Gas", Production X / Underground storage _____ / Deep X / Shallow _____ /)
- 5) LOCATION: Elevation: 1121 Watershed: Big Ugly Creek
 District: Harts Creek 175 County: Lincoln Quadrangle: Big Creek
- 6) WELL OPERATOR Columbia Gas Trans CODE: 10450 7) DESIGNATED AGENT J. L. Weekley
 Address P. O. Box 1273 Address P. O. Box 1273
Charleston, WV 25325 Charleston, WV 25325
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Jerry Holcomb
 Address RR #1, Box 28
Hamlin, WV 25523
- 9) DRILLING CONTRACTOR: Name _____ Address _____
- 10) PROPOSED WELL WORK: Drill X / Drill deeper _____ / Redrill _____ / Stimulate X /
 Plug off old formation _____ / Perforate new formation _____
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Tuscarora 575
- 12) Estimated depth of completed well, 5870 feet
- 13) Approximate trata depths: Fresh, 520 feet; salt, _____ feet.
- 14) Approximate coal seam depths: _____ Is coal being mined in the area? Yes _____ / No X /

15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	Size	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS	
		Grade	Weight per ft.	New	Used	For drilling			Left in well
Conductor	13-3/8	H	48	X		550 300	550 300	To surface	Kinds
Fresh water									
Coal	9-5/8	H	32	X		2000	2000	To surface	Sizes
Intermediate	7	K	20	X		4310			
Production	4-1/2	K	10.5	X		5700	5700	as required by rule	15.01
Tubing									
Lin...									Perforations:
									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-043-2678 Date October 29 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 29, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond <input checked="" type="checkbox"/>	Agent: <u>ALB</u>	Plat: <u>MU</u>	Casing: <u>MU</u>	Fee: <u>406600</u> <u>56</u>	WPCP: <u>MU</u>	S&E: <u>MU</u>	Other: _____
--	-------------------	-----------------	-------------------	---------------------------------	-----------------	----------------	--------------

[Signature]
 Director, Division of Oil and Gas

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

JUL - 2 1986

FORM WR-38
(Affidavit of Plugging)

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

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE MADE IN TRIPPLICATE, one copy mailed to the Division, one copy to retained by the Well Operator and the third copy (and extra copies if required) should mailed to each coal operator at their respective addresses.

Columbia Coal Gasification
Coal Operator or Owner

Address _____

Coal Operator or Owner

Address _____

Columbia Gas Transmission
Lease or Property Owner

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

Columbia Natural Resources
Name of Well Operator

P. O. Box 1273 - Charleston, WV 25325
Complete Address

May 15 19 86

WELL AND LOCATION

Harts Creek District

Lincoln County

WELL NO. 21480-T

Columbia Gas Min. Tr. #4 Farm

STATE INSPECTOR SUPERVISING PLUGGING Jerry Holcomb
AFFIDAVIT

STATE OF WEST VIRGINIA,
County of Lincoln ss:

Kenneth Pennington and Ronald Hutchinson
being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by Columbia Gas Transmission Corp., well operator, and participated in the work of plugging and filling the above well, that said work was commenced on the 4th day of March 19 86, and that the well was plugged and filled in the following manner:

Sand or Zone Record Formation	Filling Material	Plugs Used Size & Kind	Casing	
			CSG PULLED	CSG LEFT IN
Tuscarora 5448-5504'	Cement 5520-5360'	Mech. Brdg-4780'		
Newburg 4700-4780'	Cement 4780-4740'	Mech. Brdg-4700'	4225	1433'
Corniferous 4220-4320'	Latex Cement 4700-4640'	Mech. Brdg-4220'	2440	1950
Devonian Shale 2520-4220'	Latex Cement 4220-4170'	Mech. Brdg-2550'		2310'
Berea 2500-2520'	Cement 2486-2350'			
Injun 1990-2030'	Gel 2350-2100'			
Big Lime 1710-1910'	Cement 2100-1980'			
Salt Sand 950-1330'	Gel 1980-1870'			
	Cement 1870-1720'			
	Gel 1720-1000'			
	Cement 1000-900'			
	Gel 900-700'			
	Cement 700-600'			
	Gel 600-250'			
	Cement 250-Surface			
Coal Seams				
(Name) Stockton 240-250'		7" riser 36" AGI, stating		
(Name)		"CMR; #21480-T, 47-043-2678;		
(Name)		P & A"		
(Name)				

and that the work of plugging and filling said well was completed on the 23rd day of April, 19 86.
And further deponents saith not.

Sworn to and subscribed before me this 28th day of May, 19 86.

Kenneth Pennington
Ronald Hutchinson
Thema C. Pittenger
Notary Public
Commissioned as Thema C. Pittenger
Permit No. 47-043-2678

My commission expires:
June 17, 1990

043 2678