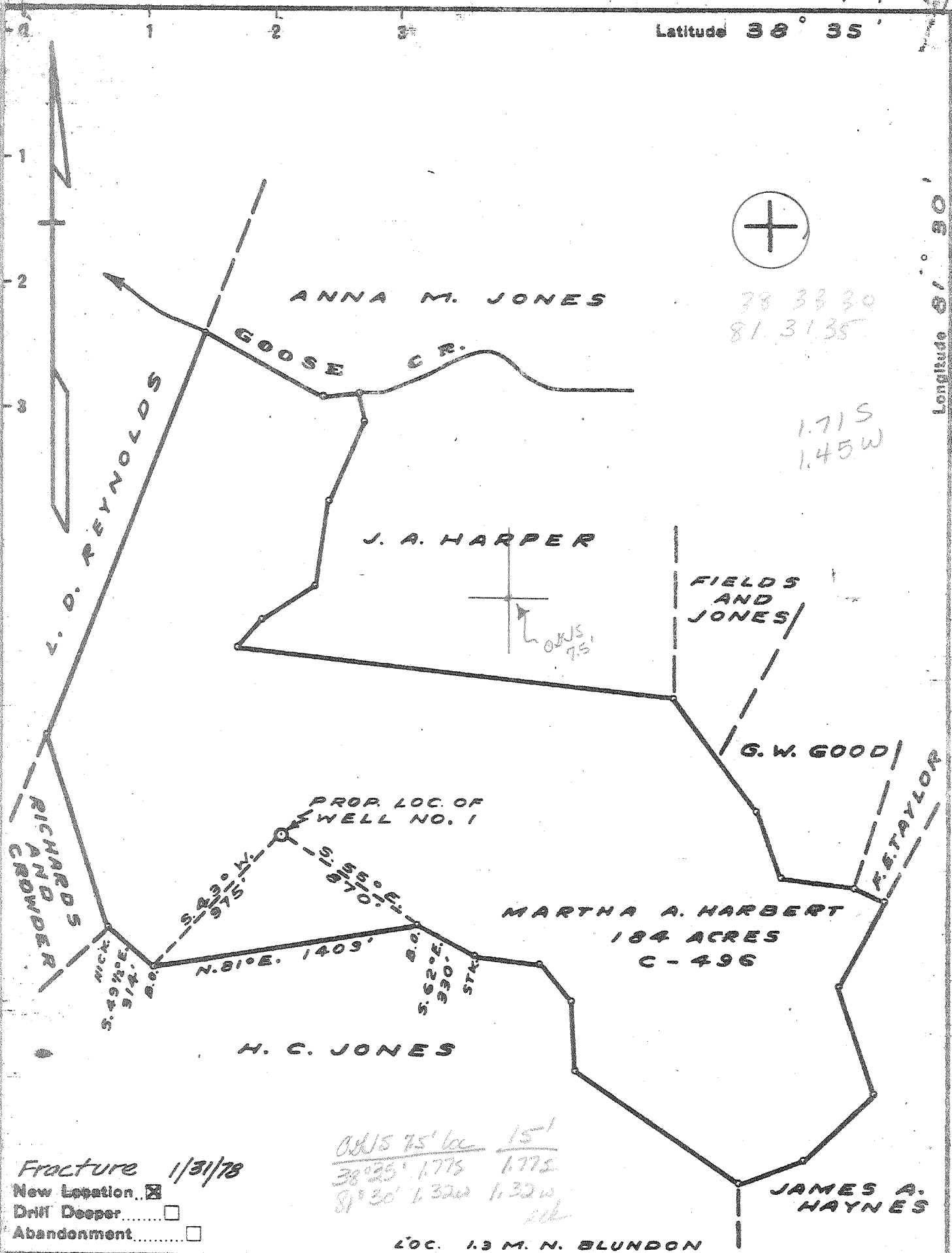


1/30/78

Latitude 38° 35'

Longitude 81° 30'



Fracture 1/31/78  
 New Location   
 Drill Deeper   
 Abandonment

OWS 75' loc 15'  
 38° 35' 1.778 1.772  
 81° 30' 1.32W 1.32W

LOC. 1.3 M. N. BLUNDON

Company CITIES SERVICE CO.  
 Address BOX 873 - CHARLESTON - W. VA.  
 Farm MARTHA A. HARBERT  
 Tract \_\_\_\_\_ Acres 184 Lease No. C-496  
 Well (Farm) No. ONE Serial No. GW-457  
 Elevation (Spirit Level) 1031.8  
 Quadrangle KENNA - S.E. (7)  
 County KANAWHA District POCA  
 Engineer J. McCall  
 Engineer's Registration No. 772  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date JUNE 8, 1940 Scale 1" = 660'

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

WELL LOCATION MAP  
 FILE NO. KAN-719-FRAC

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

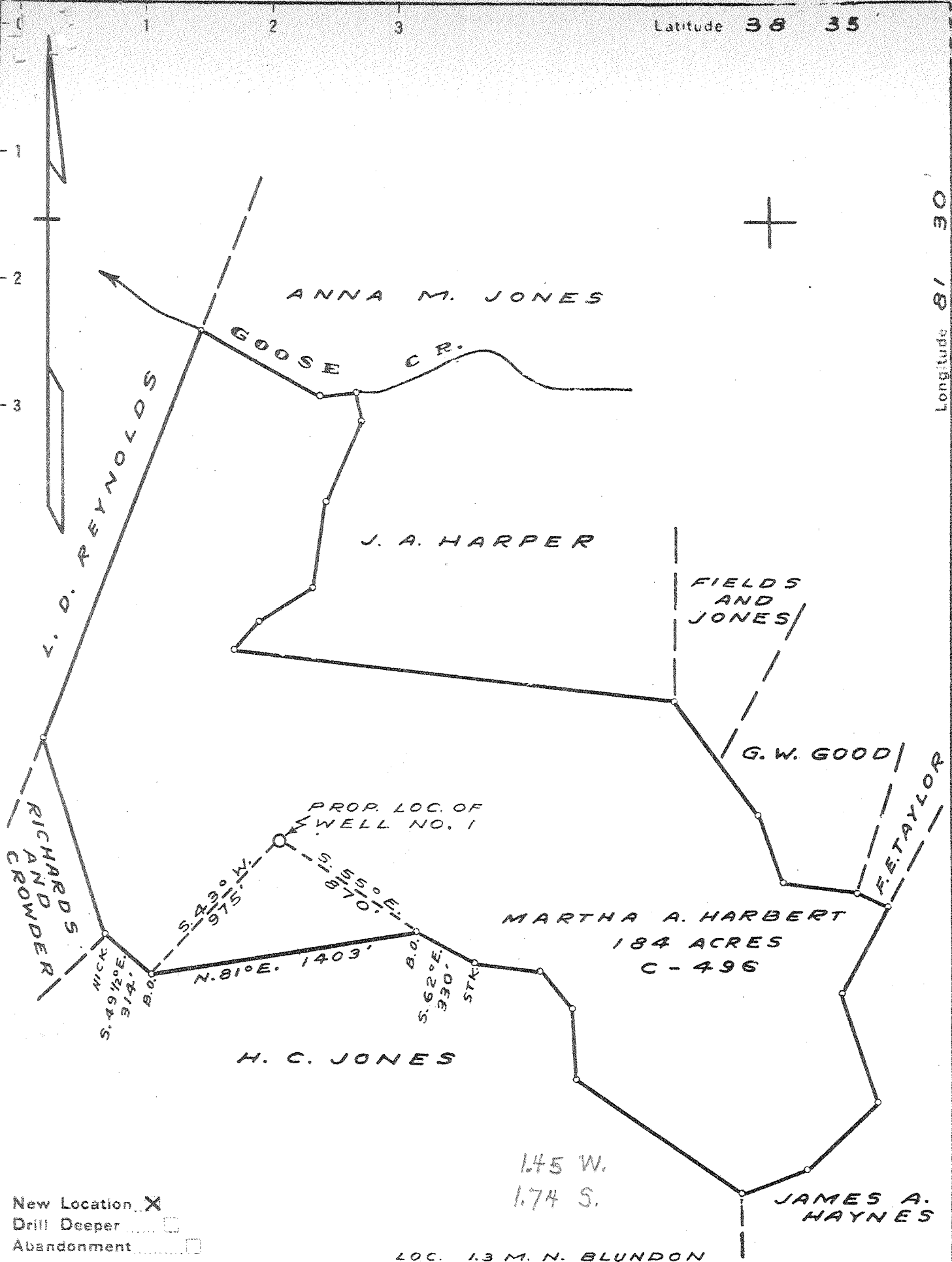
- Denotes one inch spaces on border line of original tracing.

47-039 FEB 9 1978

1900 R. 4 P. 660 6-6 Hickumbottom Run (294)

Latitude 38 35

Longitude 81 30



- New Location  X
- Drill Deeper
- Abandonment

1.45 W.  
1.74 S.

LOC. 1.3 M. N. BLUNDON

Company COLUMBIAN CARBON CO.  
 Address BOX 1240 - CHARLESTON - W. VA.  
 Farm MARTHA A. HARBERT  
 Tract \_\_\_\_\_ Acres 184 Lease No. C-496  
 Well (Farm) No. ONE Serial No. \_\_\_\_\_  
 Elevation (Spirit Level) 1031.8  
 Quadrangle KENNA - S.E. (7)  
 County KANAWHA District POCA  
 Engineer J. M. Sell  
 Engineer's Registration No. 772  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date JUNE 8, 1940 Scale 1" = 660'

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

WELL LOCATION MAP  
 FILE NO. KAN-719

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown  
 - Denotes one inch spaces on border line of original tracing.

WEST VIRGINIA DEPARTMENT OF MINES  
OIL & GAS DIVISION  
W E L L R E C O R D

Permit No. Kan-719  
Kenna S. E. Quad.

Gas Well

Company           Columbian Carbon Co.  
Address           Box 1240, Charleston, W. Va.  
Farm              Martha A. Harbert   ACRES 184  
Location          Goose Creek of Poca River  
Well No.          1 (GW-457)   ELEV. 1033.8 DF  
District          Poca - Kanawha County  
Surface & Mineral   Martha Harbert, et ux  
                    Island Branch, W. Va.  
Drilling commenced   7/19/40  
Drilling completed   10/26/40  
Shot              Not shot  
Volume            2,314,000 c.f.  
Rock Pressure      1650 lbs. 24 hrs.  
Oil                1846-55 - show  
Salt Water        1470 - 1½-10" blr. every 2 hrs.  
                    1520 - hole full  
                    1846-55 - enough to drill

CASING & TUBING

	14	43-0	43-0
	10-3/4	640-9	bulled
	8-5/8	1816-4	1816-4
	7	5183-11	5183-11
	2-3/8	5363-2	5363-2

No packer

Red Rock	0	43	Brown Slate	3869	3900
Sand	43	112	White Slate	3900	4055
Slate	112	120	Brown Slate	4055	4180
Sand	120	145	Slate	4180	4195
Red Rock & Slate	145	245	Lime, hard	4195	4214
Lime & Sand	245	295	Slate	4214	4661
Red Rock	295	320	Brown Shale	4661	4700
Sand	320	345	Slate	4700	4810
Red Rock	345	480	Brown Shale	4810	5038
Sand	480	492	White Slate	5038	5080
Red Rock	492	540	Black Shale	5080	5139 SLM
Sand, hard	540	573	Corniferous Lime	SLM 5139	5259 SLM
Slate	573	585	Oriskany Sand	SLM 5259	5302
Red Rock	585	600	Black Lime break-	5302	5316
Slate	600	674	Oriskany Sand	5316	5335
Sand	674	860	Lime - H	5335	5343
Slate	860	965	Total Depth		5343
Sand	965	1052			
Slate	1052	1090			
Sand	1090	1115			
Slate	1115	1135			
Sand	1135	1158			
Slate	1158	1285			
Sand	1285	1318			
Slate	1318	1326			
Sand	1326	1378			
Slate	1378	1387			
Salt Sand	1387	1704			
Slate	1704	1710			
Sand	1710	1736			
Slate	1736	1745			
Sand	1745	1750			
Little Lime	1750	1772			
Slate	1772	1781			
Lime Shell, white	1781	1793			
Slate	1793	1797			
Big Lime	1797	1930			
Big Injun Sand	1930	1968			
Slate	1968	1978			
Sand	1978	1985			
Slate	1985	2018			
Lime Shell	2018	2029			
Slate & Lime	2029	2745			
Sand Shell	2745	2756			
Slate & Shells	2756	3869			

PAYS: 5271 SLM-5279  
5287-5293

CEMENT RECORD:

7/28/40 - Aquagaled 10" casing. Ran 9 sacks Aquagel 4% mixture. Ran plug on top Aquagel and 10' spacer. F. M. Mills, Cementer, Halliburton Oil Well Cementing Co.

8/24/40 - Cemented 8-5/8 casing. Ran 70 sacks cement mixed with 1 sack Aquagel. Ran 6 sacks Aquagel ahead of cement. Plug on top Aquagel and plug on top cement. 10' spacer. 25' of solid cement in hole. L. C. Miller, Cementer - Halliburton Oil Well Cementing Co.

10/14/40 - Aquagaled 7" casing. Ran 70 sacks Aquagel and 7 bales fibratex (350#). circulated with 327 barrels of water. Ran plug on top Aquagel. F. M. Mills, Cementer - Halliburton Oil Well Cementing Co.

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

Operator's  
Well No. #1, GW-457 FRAC  
API Well No. 47 - 039 - 719  
State County Permit

FORM IV-35  
(Obverse)

WELL OPERATOR'S REPORT  
OF

DRILLING, FRACURING AND/OR STIMULATING, OR PHYSICAL CHANGE

[08-78]

WELL TYPE: Oil  / Gas  / Liquid Injection  / Waste Disposal  /  
(If "Gas", Production  / Underground storage  / Deep  / Shallow  )  
LOCATION: Elevation: 1033.8 Watershed: Goose Creek of Poca River  
District: Colbon (Poca) County: Kanawha Quadrangle: Kenna

WELL OPERATOR Cities Service Company DESIGNATED AGENT Sam J. Matthews  
Address Box 873 Address Box 873  
Charleston, WV 25323 Charleston, WV 25323

PERMITTED WORK: Drill  / Convert  / Drill deeper  / Re-drill  / Fracture stimulation  /  
Plug off old formation  / Perforate new formation  /  
Other physical change in well (specify) \_\_\_\_\_

PERMIT ISSUED ON January 27, 1978 OIL & GAS INSPECTOR P. P. THOMAS  
Name Martin Nichols  
Address Box 554, Clendenin, WV 25045

IF APPLICABLE: PLUGGING OF DRY HOLE OR CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED  
GEOLOGICAL TARGET FORMATION: Big Lime Depth 1797-1930  
Depth of completed well, 1968 feet Rotary  / Cable Tools   
Water strata depth: Fresh, - feet; salt, 1855 feet.  
Coal seam depths: - Is coal being mined in the area? No  
Work was commenced July 21, 1978, and completed June 20, 1979

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		MUD FILLOUT OR JACKS (Cubic feet)	REMARKS
	Size	Grade	Weight per ft	New	Used	For drilling		
Conductor	14		42			43	43	None
Fresh water	10-3/4		32.75			650'9"	Pulled	
Coal								None
Intermediate	8-5/8		25.55			1816	1816	70 sx
Production	7		22			5184	2013	40 sx
Tubing	2-3/8		4.7				1875	
Liners								Perforations: 1840 - 1840
JUN 25 1979								

OPEN FLOW DATA

DEPT. OF MINES  
1840-46

Producing formation: Big Lime  
Gas: Initial open flow, - Mcf/d Oil: Initial open flow, 10 Mcf/d  
Final open flow, - Mcf/d Final open flow, 1.67 Mcf/d  
Time of open flow between initial and final tests, 490 hours  
Static well pressure, 140 psig (surface measurement) after 14 hours shut in  
(If applicable due to multiple completion--)  
Second producing formation: \_\_\_\_\_  
Gas: Initial open flow, \_\_\_\_\_ Mcf/d Oil: Initial open flow, \_\_\_\_\_ Mcf/d  
Final open flow, \_\_\_\_\_ Mcf/d Final open flow, \_\_\_\_\_ Mcf/d  
Time of open flow between initial and final tests, \_\_\_\_\_ hours  
Static well pressure, \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

JUL 17 1979

[08-78]


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

Well plugged back from Oriskany Sand to the Big Lime.  
 Set cement plug 5155-5080'. Gelled hole. Shot and pulled 7"  
 casing up into 8-5/8" to log. Set 7" at 2013' w/140 sx cement  
 PBD 1968'. Acidized Big Lime perfs 1840-46 with 5000 gal.  
 of 15% HCL. B. D. 1900#, Avg. Treating pressure 1700#, ISIP 1250#  
 15 Min. SIP 1000#. A.I.R. 3.5 B/M. Flowed back load and 10 bbls. of oil.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks
					Including indication of all fresh and salt water, coal, oil and gas
Big Lime			1797	1930	1846-55 Oil & Salt Water

(Attach separate sheets to complete as necessary)

Cities Service Company  
 Well Operator  
 By   
 Sam J. Matthews  
 Its Region Production Manager

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."



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

Oil and Gas Division

JAN 27 1978

DEPARTMENT OF MINES  
OIL AND GAS DIVISION

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,  
Charleston, W. Va.

DATE January 27, 1978

Surface Owner J. P. Hamer Lumber Company  
Div. of Gamble Bros.  
Address 4601 Almond Avenue  
Louisville, KY

Company Cities Service Company  
Address Box 873, Charleston, WV 25323

Mineral Owner Martha A. Harbert Heirs  
Address \_\_\_\_\_

Farm Martha A. Harbert Acres 184  
Location (waters) Goose Creek of Poca River

Coal Owner NA  
Address \_\_\_\_\_

Well No. #1, GW-457 Elevation 1033.8

Coal Operator NA  
Address \_\_\_\_\_

District Colbon (Poca) County Kanawha

Quadrangle Kenna

Address \_\_\_\_\_

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22,  
of the W. Va. Code, the location is hereby approved  
for fracturing. This permit shall expire if  
operations have not commenced by 5-31-78

INSPECTOR  
TO BE NOTIFIED Martin Nichols

ADDRESS P. O. Box 554, Clendenin, WV 25045

PHONE 548-6993

Deputy Director - Oil & Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under ~~lease~~ lease dated August 19, 1940 by Martha & F. M. Harbert made to Columbian Carbon Co. (now Cities Service Company) and recorded on the 24 day of Aug 1940 in Kanawha County, Book 68 Page 128 68 446  
NEW WELL DRILL DEEPER REDRILL  FRACTURE OR STIMULATE  
OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days. \*

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address \_\_\_\_\_ day \_\_\_\_\_ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL  
GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND  
ECONOMIC SURVEY  
P. O. BOX 879  
MORGANTOWN, WEST VIRGINIA 26505  
AC-304 - 292-6331

Address  
of  
Well Operator

Very truly yours, Cities Service Company  
(Sign Name)   
Well Operator Sam J. Matthews  
Region Prod. Manager  
Box 873 Street  
Charleston City or Town  
W. Va. 25323 State

\*SECTION 3 . . . . If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

KAN-719 - FRAC PERMIT NUMBER

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 12-b and will carry out the specified requirements."

Signed by

47-039

*Survey*

THIS IS AN ESTIMATE ONLY  
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

PROPOSED WORK ORDER TO: DRILL DEEPEN X FRACTURE-STIMULATE  
 DRILLING CONTRACTOR: (If Known) \_\_\_\_\_ RESPONSIBLE AGENT: \_\_\_\_\_  
 NAME Duckworth NAME Cities Service Company  
 ADDRESS Box 222, Greenway, W. Va. 26624 ADDRESS Box 873, Charleston, WV 25323  
 TELEPHONE \_\_\_\_\_ TELEPHONE 304-344-8383  
 ESTIMATED DEPTH OF COMPLETED WELL: 1900' ROTARY \_\_\_\_\_ CABLE TOOLS \_\_\_\_\_  
 PROPOSED GEOLOGICAL FORMATION: Big Lime  
 TYPE OF WELL: OIL X GAS \_\_\_\_\_ COMB. \_\_\_\_\_ STORAGE \_\_\_\_\_ DISPOSAL \_\_\_\_\_  
 RECYCLING \_\_\_\_\_ WATER FLOOD \_\_\_\_\_ OTHER \_\_\_\_\_

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16 <u>14" 42#</u>		<u>43'</u>	
13 - 10			
9 - 5/8			
8 - 5/8 " <u>25.55#</u>		<u>1808'</u>	<u>70 sacks</u>
7 <u>22#</u>		<u>1950'</u>	<u>35 sacks</u>
5 1/2			
4 1/2			
3			Perf. Top <u>1846'</u>
2 <u>2-3/8"</u>		<u>1900'</u>	Perf. Bottom <u>1855'</u>
Liners			Perf. Top _____ Perf. Bottom _____

APPROXIMATE FRESH WATER DEPTHS Unk FEET Unk SALT WATER 1470-1520 FEET  
1846-55  
 APPROXIMATE COAL DEPTHS Unknown  
 IS COAL BEING MINED IN THE AREA? No BY WHOM? NA

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND. ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:

OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.

Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for \_\_\_\_\_ Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.

We the \_\_\_\_\_ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

\_\_\_\_\_  
For Coal Company

\_\_\_\_\_  
Official Title