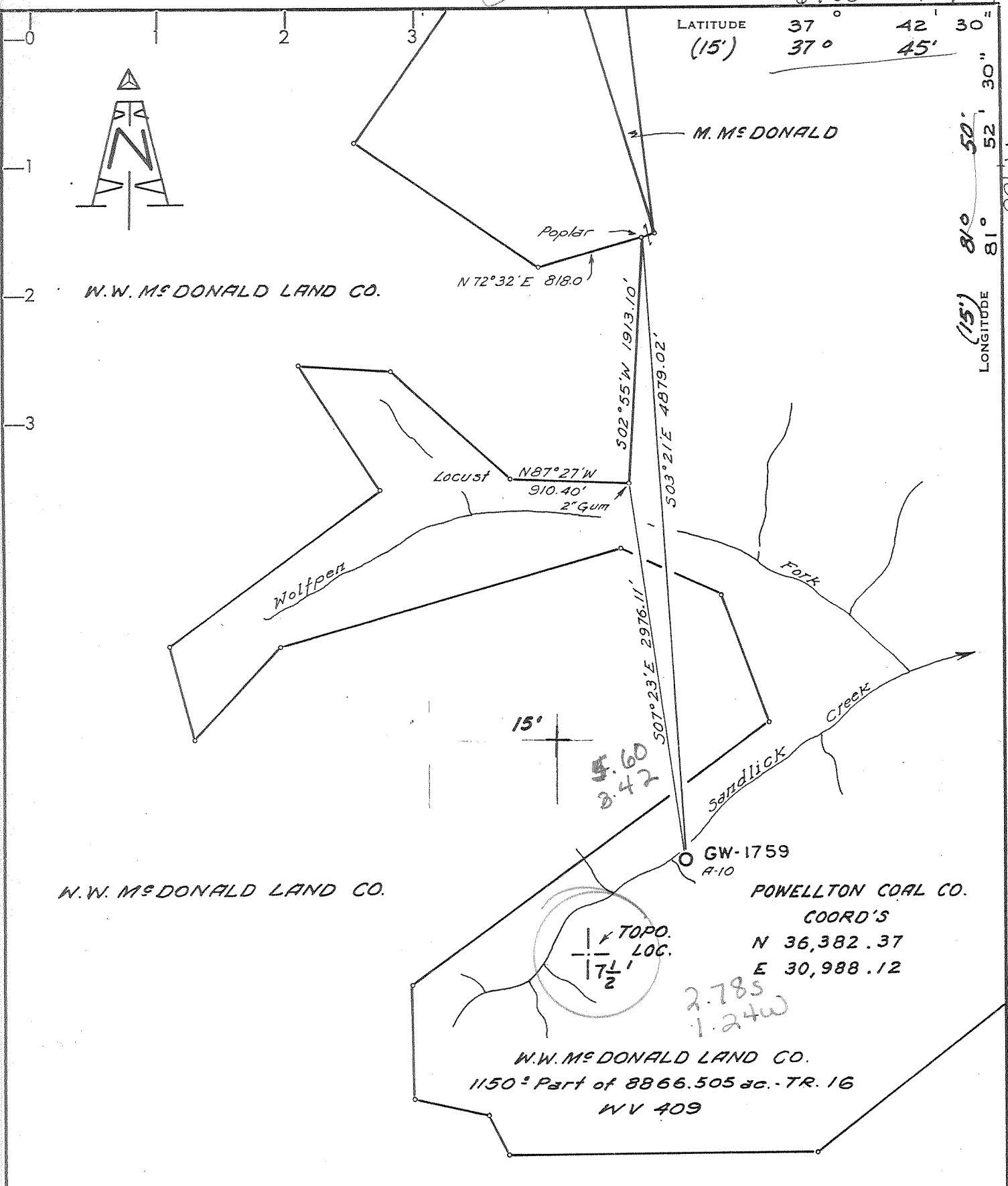


6450' 9/23/76



CERTIFICATE

- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Minimum degree of accuracy is one part in 200
 Signed Donald J. Boy, U.S. #227

COMPANY CITIES SERVICE OIL COMPANY 169
 ADDRESS BOX 873 CHARLESTON, W.VA.
 FARM W.W. McDONALD LAND COMPANY
pt. of 8866.305 ac.
 MAP _____ ACRES 1150 LEASE NO. WV 409
 WELL (FARM) NO. A-10 SERIAL NO. GW-1759
 ELEVATION (SPIRIT LEVEL) 1184.22 Gilbert
 QUADRANGLE MAN 456 049 NC2
 COUNTY LOGAN DISTRICT TRIADELPHIA 3
 POINT OF PROVEN ELEVATION GAS WELL F18848 (LOG. 507)

FILE NO. _____ DRAWING NO. N-7-76
 DATE AUGUST 23, 1976 SCALE 1"=1000'

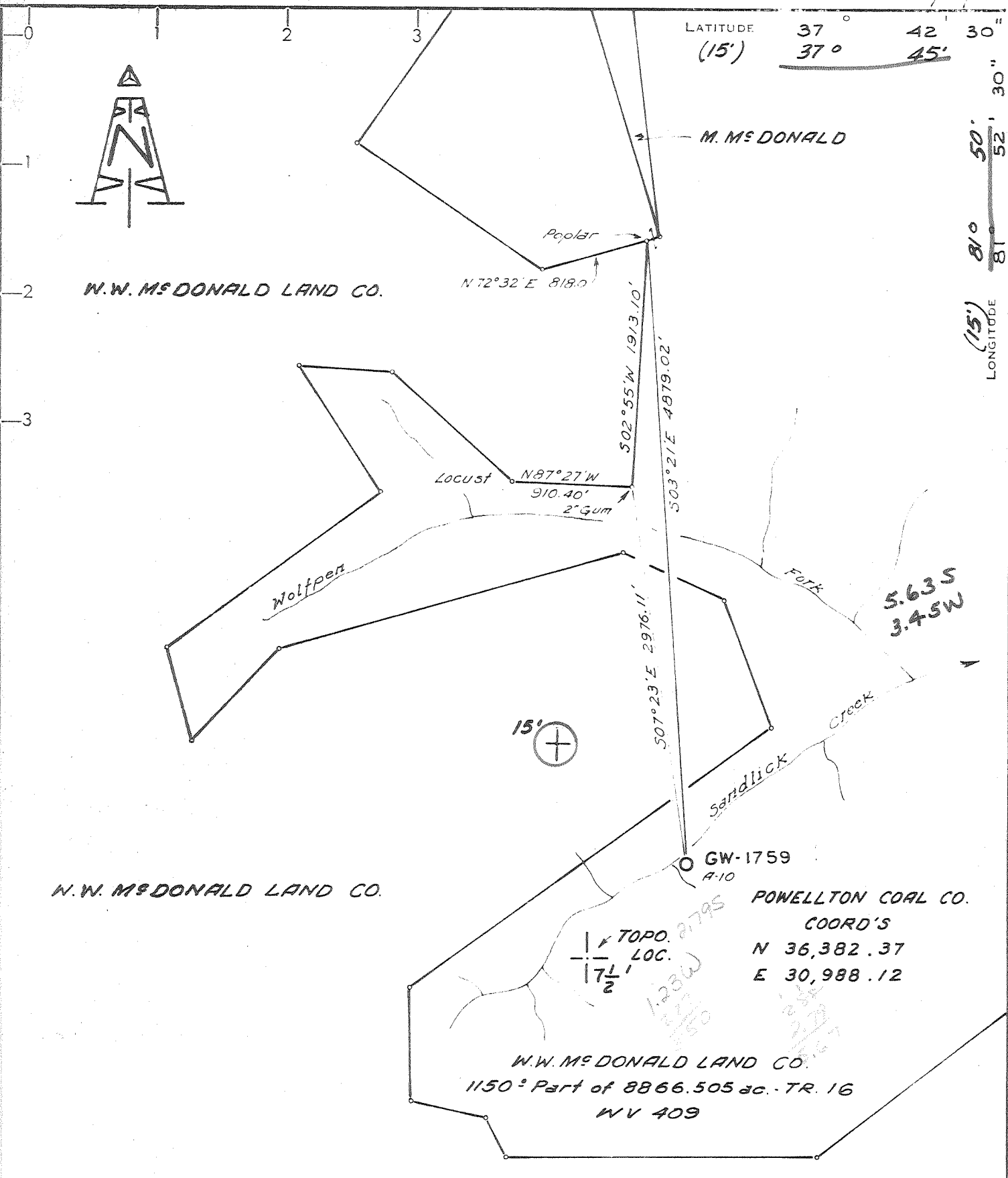
STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

WELL LOCATION MAP
 FILE NO. LOG-948-D

+ DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. SCALE 1 TO 2000 LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN. 47-045

- DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING.

3368' Berea OWDD- 6-6 Magnolia (265)



LATITUDE 37° 42' 30" (15') 37° 45'

LONGITUDE 81° 50' 30" (15') 81° 52'

W.W. McDONALD LAND CO.

POWELLTON COAL CO. COORD'S N 36,382.37 E 30,988.12

W.W. McDONALD LAND CO. 1150[±] Part of 8866.505 ac. - TR. 16 WV 409

CERTIFICATE

- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Minimum degree of accuracy is one part in 200
Signed _____

COMPANY **CITIES SERVICE OIL COMPANY**
 ADDRESS **BOX 873 CHARLESTON, W.VA.**
 FARM **W.W. McDONALD LAND COMPANY**
 MAP _____ ACRES **1150** LEASE NO. **WV 409**
 WELL (FARM) NO. **A-10** SERIAL NO. **GW-1759**
 ELEVATION (SPIRIT LEVEL) **1184.22**
 QUADRANGLE **MAN** **Gilbert 15' NC**
 COUNTY **LOGAN** DISTRICT **TRIADELPHIA**
 POINT OF PROVEN ELEVATION **GAS WELL F18843 (LOG. 507)**
 FILE NO. _____ DRAWING NO. **N-7-76**
 DATE **AUGUST 23, 1976** SCALE **1"=1000'**

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON
 WELL LOCATION MAP
 FILE NO. **LOG-948**
 OCT 12 1976
 + DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. SCALE 1 TO 2000. LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN. **47-045**
 - DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING.

1566 MAGOLIA (265)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD

Quadrangle Man

Permit No. LOG-948
47-045

Rotary X Oil X
Cable _____ Gas _____
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind) _____

Company Cities Service Oil
Address Box 873, Charleston, WV 25323
Farm McDonald Land Co. Acres 1150
Location (waters) Sand Lick Creek
Well No. "A" #10 Elev. 1184.22
District Triadelphia County Logan
The surface of tract is owned in fee by W. W. McDonald Land Company
Address Box 1770, Logan, WV 25601
Mineral rights are owned by The Bruce McDonald Holding Co. et al Address Box 1770, Logan, WV 25601
Drilling Commenced 11-24-76
Drilling Completed 12-3-76
Initial open flow _____ cu. ft. _____ bbls.
Final production 189 M cu. ft. per day _____ bbls.
Well open _____ hrs. before test 800# RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16 " 65# Cond. H-40	50	50	30 sx reg w/3% ca cl
13-10"			
9 5/8			
8 5/8 " 24#K-55	1971	1971	437 sx Litepoz & 100 sx reg.
7			
5 1/2			
4 1/2" 11.6# K-55	3431	3431	113 sx RFC
3			
2-3/8"	3394	3394	
Liners Used			

Well treatment details:

Attach copy of cementing record.

Frac w/500 gal 15% acid, 15,000# 80-100 sand, 31,000# 20-40 sand, 46,000 gal. gelled water. Break down press 400#, max. treating pressure 2200# avg. inj. rate 24 BM ATP 1788#
Final pump press. 950# ISIP 0#

Coal was encountered at 215; 373; 420' Feet 60, 24, 60 Inches
Fresh water 85 Feet Salt Water _____ Feet
Producing Sand Berea Depth 3360 - 3383

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Sand			60	75		
Shale			75	174		
Sand			174	215		
Coal			215	220		
Sand			220	345		
Shale			345	373		
Coal			373	375		
Sand			375	400		
Shale			400	420		
Coal			420	425		
Sand			425	470		
Sandy Shale			470	545		
Shale			545	590		
Sand			590	700		
Sand			700	805		
Sandy Shale			805	1010		
Shale			1010	1094		
Sand			1094	1385		
Sandy Shale			1385	1440		
Sand			1440	1504		
Sand			1504	1605		
Shale Sand			1605	1910		
Sand			1910	1970		
Sand			1970	2008		

(over)

* Indicates Electric Log tops in the remarks section.

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
1 Maxon			2008	2181		
2 Maxon			2181	2340		
3 Maxon			2340	2420		
Little Lime			2420	2568		
Big Lime			2568	2767		
Sand Slate			2767	2870		
Weir			2870	2997		
Sand Shale			2997	3360		
Berea			3360	3383		
Slate			3383	3446 T.D.		

Date February 14, , 19 77

APPROVED Cities Service Oil Company , Owner

By Sam J. Matthews
 (Title) Sam J. Matthews
 Region Production Manager



Date March 11, 1988
 Operator's _____
 Well No. A-10, GW-1759
 Farm McDonald Land Co.
 API No. 47 - 045 - 0948-DD

RECEIVED
 MAR 25 1988

State of West Virginia
 DEPARTMENT OF ENERGY
 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 ___ / Underground Storage ___ / Deep ___ / Shallow x /)

LOCATION: Elevation: 1184.22 Watershed Sandlick Creek
 District: Triadelphia County Logan Quadrangle Man

COMPANY Cities Service Oil and Gas Corporation

ADDRESS P. O. Box 873, Charleston, WV 25323

DESIGNATED AGENT Paul D. Phillips

ADDRESS P. O. Box 873, Charleston, WV 25323

SURFACE OWNER W.W. McDonald Land Co.

ADDRESS P. O. Box 1770, Logan, WV 25601

MINERAL RIGHTS OWNER W.W. McDonald Land Co.

ADDRESS P. O. Box 1770, Logan, WV 25601

OIL AND GAS INSPECTOR FOR THIS WORK Arthur

St. Clair ADDRESS P.O. Box 468, Brenton, WV
 24818

PERMIT ISSUED 7-28-86

DEEPENING COMMENCED 7-24-87

DEEPENING COMPLETED 8-4-87

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

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 16 Cond.	50	50	35 sx reg
13-10"			
9 5/8			
8 5/8	1971	1971	437 sx Litexoz 100 sx reg
7			
5 1/2			
4 1/2	3431	3431	113 sx RFC
3			
* 2 7/8	5384	5384	TOC 3240
Liners used			

*NEW TUBULARS

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 3383-5400 feet

Depth of completed well 5416 feet Rotary x / Cable Tools _____

Water strata depth: Fresh None feet; Salt 3455, 3512 feet

Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale/Gordon Pay zone depth 3721-5242 feet

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

Final open flow (49) Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ hours

Static rock pressure 467 psig (surface measurement) after 62 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 1988
 (Continue on reverse side)

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

Set CIR, squeezed Berea (perfs 3368-77') w/ 75 sx CL A w/ 4% CaCl2.
 Devonian Shale 4436-5242. Frac'd w/ 45,000# 20/40 sd, 1050 MSCF N2, TL&T 350, 23 BPM Foam
 Devonian Shale 3768-4204 & Gordon 3721-44. Frac'd w/ 80,000# 20/40 sd, 645 MSCF N2, TL&T 318,
 30 BPM Foam. ^{PH → RH?}
 UPD.

RECEIVED
 MAR 25 1988

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Berea			3360	3383	
Devonian Shale			3383	5400	SW 3455, 3512
Onondaga Lime			5400	5416	
<p>new TO 5416 Old TO 3446 new log 1970</p>					

(Attach separate sheets as necessary)

Cities Service Oil and Gas Corporation
 Well Operator

By: Paul D. Phillips, Operations Manager

Date: March 11, 1988

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 ⁶⁰⁶³ ~~minerals~~, encountered in the drilling of a well."

7/85

RECEIVED
JUL 10 1986



1) Date: June 23, _____, 1986
 2) Operator's Well No. McDonald Land Co. "A" #10
 3) API Well No. 47 State 045 County 00948-D Permit

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 _____ / Gas XX /
 B (If "Gas", Production X / Underground storage _____ / Deep _____ / Shallow X /)
- 5) LOCATION: Elevation: 1184.22 Watershed: Sand Lick Creek of Guandotte River
 District: Tridelpia 3 County: Logan Quadrangle: Man 456
- 6) WELL OPERATOR Cities Service Oil & Gas Corporation CODE: 9800 7) DESIGNATED AGENT Paul D. Phillips
 Address P.O. Box 873, Charleston, WV 25323 Address P. O. Box 873, Charleston, WV 25323
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Arthur St. Clair 9) DRILLING CONTRACTOR: Name Tri-State Well Service
 Address P. O. Box 468, Brenton, WV 24818 Address P.O. Box 299-One Berea Plaza, Bridgeport, WV 26330
- 10) PROPOSED WELL WORK: Drill _____ / Drill deeper X / Redrill _____ / Stimulate _____
 Plug off old formation X / Perforate new formation _____
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Devonian Shale
- 12) Estimated depth of completed well, 4975 feet
- 13) Approximate strata depths: Fresh, 85 feet; salt, _____ feet.
- 14) Approximate coal seam depths: 215(60"), 373(24"); Is coal being mined in the area? Yes XX / No _____
- 15) CASING AND TUBING PROGRAM 420(60").

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	16"	H-40	65	X		50	50	Surface	Kinds
Fresh water	8-5/8"	K-55	24	X		1971	1971	Surface	
Coal									Sizes
Intermediate	4-1/2"	K-55	11.6	X		3431	3431	TOC 2782	113 SXS.
Production	2-7/8"	N-80	6.5	X		4975	4975	50 Sxs	Depths set
Tubing									
Linings									Perforations: Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-045-0948-D Date July 28 19 86

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 July 28, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee	WPCP	S&E	Other
	<u>AS</u>	<u>AS</u>	<u>AS</u>	<u>93141</u>	<u>AS</u>	<u>AS</u>	

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



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED
SEP 23 1976

OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division
OIL AND GAS WELL PERMIT APPLICATION

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

DATE September 22, 1976

Surface Owner W. W. McDonald Land Co.
Box 1770, Logan, WV 25601
Address

Company Cities Service Oil Company
Address Box 873, Charleston, WV 25323
Farm W. W. McDonald Land Co. 1150 ac Pt of
Acres 8866.505 ac

Mineral Owner The Bruce McDonald Holding Co.
Box 1770, Logan, W. Va. 25601
Address

Location (waters) Sand Lick Creek

Coal Owner Powellton Coal Company
Attn: Hurtle Brown, Vice President
Address Mallory, W. Va. 25634

Well No. "A" #10, GW-1759 Elevation 1184.22

Coal Operator Powellton Coal Company
Mallory, W. Va. 25634
Address

District Triadelphia County Logan
Quadrangle Man

THIS PERMIT MUST BE POSTED AT THE WELL SITE

Paul C. Winter, Agent for Millard McDonald Heirs
Box 1770, Logan, WV 25601

All provisions being in accordance with Chapter 22.
of the W. Va. Code, the location is hereby approved
for drilling. This permit shall expire if
operations have not commenced by 1-24-77.

Paul C. Winter, Agent for Bruce McDonald Heirs
214 White & Browning Bldg.
Logan, WV 25601

Robert T. [Signature]
Deputy Director - Oil & Gas Division

INSPECTOR TO BE NOTIFIED Arthur St. Clair
PH: 732-6227 ADDRESS Brenton, W. Va.

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 grant or lease dated August 19, 1950 by W. W. McDonald Land Co. made to Columbian Carbon Co. (now Cities Service Oil Co.) and recorded on the _____ day of _____ 19____, in Logan County, Book 14 Page 182

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 30th day Aug. 1976 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:

Very truly yours, CITIES SERVICE OIL COMPANY
(Sign Name) Verlin Meier
Well Operator Verlin Meier
Box 873 Street
Charleston City or Town
West Virginia 25323 State

West Virginia Geological and Economic Survey
P. O. Box 879
Morgantown, W. Va. 26505

Address
of
Well Operator

have read and understand the requirements of the Code as set forth in Chapter 22, Article 4, Section 3-B and will carry out the specified requirements.

Signed by Verlin Meier

*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

Log-948 PERMIT NUMBER
47-045

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

PROPOSED WORK ORDER TO X DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) _____ RESPONSIBLE AGENT: _____
 NAME unknown _____ NAME Sam J. Matthews _____
 ADDRESS _____ ADDRESS Box 873, Charleston, WV 25323 _____
 TELEPHONE _____ TELEPHONE 304-344-8383 _____
 ESTIMATED DEPTH OF COMPLETED WELL: 3368 _____ ROTARY X _____ CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Berea _____
 TYPE OF WELL: OIL _____ GAS X _____ 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" H-40 65#		60'	<i>to surface</i>
13 - 10			
9 - 5/8			
8 - 5/8 8-5/8" K-55 24#		2010'	<i>to surface</i>
5 1/2			
4 1/2" 4 1/2 K-55 10.5#		3368'	
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 100 FEET _____ SALT WATER _____ FEET _____
 APPROXIMATE COAL DEPTHS 144' (40") 184' (35") _____
 IS COAL BEING MINED IN THE AREA? No _____ BY WHOM? _____

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