ORDINANCE NUMBER 46-A

AN ORDINANCE REVISING SECTION THREE (3) OF ARTICLE IV OF ORDINANCE NUMBER FORTY-SIX (46) TO READ AS FOLLOWS:

There shall be a minimum charge of One Dollar and Thirty-Six Cents ($1.36) per two month period. Each contributor shall pay a User Sewer charge for operation and maintenance, including replacement, during any portion of a two month billing period that water service is in effect whether any water usage occurred or not.

This Ordinance shall be in full force and effect from and after its passage and approval. This Ordinance shall take precedence over any terms or conditions of agreements or contracts between the Grantee and Users which are inconsistant with the requirements of SECTION 204 (B) (1) (A) of the Clean Water Act and Corresponding Regulations. Any Ordinance or parts thereof in conflict with this Ordinance are hereby repealed.

WHEREUPON: This Ordinance was read three times and approved by vote of the Board of Aldermen of the City of Arcadia, Missouri on this 29th day of December, 1995.

Kenneth W. Lumbley, Mayor
City of Arcadia, Missouri

ATTEST:
Mary Johnson, City Clerk
City of Arcadia, Missouri

CITY OF ARCADIA

SEWER TAP PERMIT

Date_____ Location_____ Permit No._____

Issued to:_____ Contractor Name_____

Address:_____ Address_____

Pipe Size _____ Sewer Taps Req'd_____ at _____ =_____

Type Pipe Material _____

Backfill Material _____

Permit Issued By:_____ Total Fees.....$_____

Date:_____ Cash ___ Check___ Check No. _____ Amount _____

Excavation & Tap Inspection Approved _____ By _____ Date_____

Restoration: The holder of any such permit shall upon completion of his sewer tap project, fill such excavated area to the level of the street with chat, white rock, or other such material as may be authorized by the City of Arcadia, Missouri, and recompact same. Upon completion of such excavation and recompaction, the holder of any such permit shall immediately notify the City of Arcadia. Upon such notice, the City of Arcadia shall restore the paved portion of the excavated area. The City of Arcadia shall provide the fitting and perform the actual tap into the City sewer line.

Backfill Inspection Approved _____ By _____ Date_____

I certify that I understand the requirements of this permit and agree to comply with the requirements.

Received By _____ Date_____

JOHN ASHCROFT
Governor

RON KUCERA
Acting Director

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102

December 1, 1992

The Honorable Kenneth Lumbley
Mayor of Arcadia
West Orchard Street
P. O. Box 86
Arcadia, Missouri 63621

Re: Arcadia C291131-03

Dear Mayor Lumbley:

The enacted Sewer Use Ordinance for Arcadia, Missouri has been reviewed by the Division of Environmental Quality. The ordinance complies with federal requirements and is approved.

Should you have any questions regarding the above matter please contact me at (314) 751-1301.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

Steven M. Dyer
Project Coordinator

SMD/mck

cc: Stack and Associates

MEL CARNAHAN
Governor

DAVID A. SHORR
Director

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102

February 22, 1993

The Honorable Ken Lumbley
Mayor of Arcadia
West Orchard St.
P. O. Box 86
Arcadia, Missouri 63621

Re: Arcadia C291131-03

Dear Mayor Lumbley:

We have reviewed the enacted user charge ordinance for Arcadia, Missouri and hereby approve this document.

Should you have any questions please contact me at (314) 751-1301.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

Steven M. Dyer
Project Coordinator

SMD/mck

cc: Stack and Associates

APPENDIX "A" TO USER CHARGE ORDINANCE
(Actual Use Rate Structure)

This appendix presents the methodology to be used in calculating user charge rates and surcharges and illustrates the calculations followed in arriving at the first year's user charges and surcharges. The unit costs established in this appendix are based on estimates of expenses and loadings. The actual expenses and loadings that occur may differ from these estimates and certainly they will change as time passes. Therefore, the unit costs must be reestablished whenever necessary to reflect actual expenses and loadings. Once the system is in use, the expenses and loadings can be determined from operating records and the unit costs can be adjusted based on these figures.

1. Expenses: The total annual expenses associated with the treatment works, as defined in Article II, Section 8, are estimated as follows:

ITEM	ANNUAL EXPENSE
Salaries and Benefits	$4,044.00
Billing and Collection	250.00
Power	1,400.00
Testing and Chemicals	1,500.00
Sewer Line Maintenance Account	1,200.00
Replacement Account	1,790.00
Total	10,184.00 *

* This total includes I/I costs. See Item 5 next page for derivation of this cost.

TOTAL VARIABLE COST.....$ 10,184.00

2. Allocation of Expenses: The total operation and maintenance including replacement expense is allocated to the appropriate pollutants in the following manner. (NOTE: If debt service allocation is to be addressed in this ordinance, it may be allocated in the same manner or it may be allocated in any other manner that the grantee desires.)

Annual $ to Treat Annual Flow = % annual costs allocated to flow x (total annual O&M budget minus billing & collection)
35% x $ 10,184 = $ 3,564

Annual $ to Treat Annual BOD = % annual cost allocated to BOD x (total annual O & M budget minus billing & collection)
45% x $ 10,184 = $ 4,583

Annual $ to Treat Annual SS = % annual cost allocated to SS x (total annual O & M budget minus billing & collection)
20% x $ 10,184 = $ 2,037

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Annual $ to Treat Annual SS = % annual cost allocated to SS x (total annual O & M budget minus billing & collection)
20% x $ 10,184 = $ 2,037

(NOTE: The billing and collection, testing, and sewer line maintenance account expenses are deducted from the total O & M budget at this point because each user will pay the same for this expense per billing period. See paragraph 5 below. In some situations other appropriate expenses may be handled in the same manner.)

3. Loadings:

The initial hydraulic loading is estimated to be 14,870,500 gal/year. (This loading is metered potable water)

The initial BOD loading is estimated to be 31,500 pounds/year.

The initial SS loading is estimated to be 31,500 pounds/year.

4. Unit costs:

Initial unit cost for flow in $/gallons = $\frac{\text{Annual \$ to treat annual flow}}{\text{Estimated annual hydraulic loading}}$

3,564/14,870 = $.24/1,000 gal

Initial unit cost for BOD in $/pound = $\frac{\text{Annual \$ to treat annual BOD}}{\text{Estimated annual BOD loading}}$

4,583/31,500 = $.145/#BOD

Initial unit cost for SS in $/pound = $\frac{\text{Annual \$ to treat annual SS}}{\text{Estimated Annual SS loading}}$

2,037/31,500 = $.0647/#SS

The unit costs for BOD, SS and Other Pollutants are to be inserted in Article IV, Section 4, of the ordinance.

5. I/I Cost:

The Estimated cost for I/I is derived from actual additional cost expected to be spent by the City to handle the I/I flow:

Electric	$100.00
Salaries & Benefits	$100.00
Sewer Line Maintenance	$ 57.00
Total	$357.00

These amounts are included in the annual expense shown on Appendix "A", Item 1 expenses.

There is no minimum charge per billing period. Sewer useage is billed on gallon useage only.

(NOTE: The above procedure allocates the cost of transporting and treating infiltration/inflow according to the flow volume of the user.)

6. Residential User Unit Charge: The residential user unit charge is calculated as follows using the pollutant concentrations defining normal domestic wastewater in Article II, Section 2, of this ordinance.

Residential unit charge =unit flow charge	$.240/1,000 Gal.
(.145) (250) (.00834)	$.302/1,000 Gal.
(.0647) (250) (.00834)	$.135/1,000 Gal.
where: Residential unit charge is in $/1,000 Gal.	$.68

Unit flow charge is in $/1,000 Gal. from paragraph 1

Unit BOD charge is in $/lb. BOD from paragraph 4

Unit SS charge is in $/lb. SS from paragraph 4

BOD_N is the normal domestic BOD strength in milligrams per liter (mg/l) as defined in Article II, Section 2, of the ordinance.

SS_N is the normal domestic SS strength in mg/l as defined in Article II, Section 2, of the ordinance and .00834 is a unit conversion factor.

This total residential unit charge is to be inserted in Article IV, Section 3, of the ordinance.

An example calculation of a residential charge for a resident of the City of Arcadia follows:

Assume a residential sewer use has a bi-monthly water usage of 17,000 gallons. The sewer charge would be completed as follows:

Water used x unit charge

17.0 thousand gal x .68 = $11.56

The sewer charge based on usage of 3,000 gal/2 mo. would be

3.0 thousand x $.68 = $ 2.04

The flat rate monthly charge for residential and light commercial users without water meters shall be based on an assumed usage of 12,000 gal/2 months and would be computed as follows:

Water usage x unit charge

12.0 thousand gal x 0.68 = $ 8.16

If more than one residence is attached to a single water meter, the total water usage by all the residences connected to the single meter shall be divided by the number of residences and each residence shall pay the charge for the average gallonage used. (The average gallonage shall be adjusted on an annual basis).

7. Extra Strength Users: For users who contribute wastewater that has greater strength than normal domestic wastewater, the user charge will be calculated as follows:

Total monthly charge to extra strength user =

charge to residential user + surcharge for BOD (if appropriate) + surcharge for SS (if appropriate) + surcharge for other pollutant (if appropriate).

Total monthly charge to extra strength user =

+v (residential unit charge)
+v (unit BOD charge) (BOD_{ES} - BOD_{ND}) (.00834)
+v (unit SS charge) (SS_{ES} - SS_{ND}) (.00834)
+ and so on for any other appropriate pollutants(s) (Specify).

where: Total monthly charge to extra strength user is in dollars. V is the total volume of wastewater in 1,000 gallons discharged by the extra strength user during the month.

Residential unit charge is in $/1,000 gallons as calculated in paragraph 6.

Unit BOD charge is in $/lb BOD from paragraph 4.

Unit SS charge is in $/lb SS from paragraph 4.

BOD_{ES} is the average BOD concentration in milligrams per liter (mg/l) contributed by the extra strength user during the month.

SS_{ES} is the average SS concentration in mg/l contributed by the extra strength user during the month.

BOD_{ND} is the normal domestic BOD strength in mg/l as defined in Article II, Section 2, of the ordinance.

SS_{ND} is the normal domestic SS strength in mg/l as defined in Article II, Section 2, of the ordinance.

and .00834 is a unit conversion factor.

An example user charge calculation for an extra strength user of the Arcadia treatment works follows:

Assume a commercial user discharges 18,000 gallons per quarter of wastewater with BOD and SS concentrations of 800 mg/l and 750 mg/l respectively.

His sewer charge is computed as follows:

Usage x unit charge + usage (.00834)
(0.145) (BOD_{ES} -250) + total usage (.00834) (.0647)
(SS_{ES} -250).

18.0 thousand gal x 0.68 + 18.0 (.00834)
0.145 (800-250) + (18.0 thousand gal) (.00834) 0.0647
(750-250) = $ 29.07

APPENDIX B

ARCADIA REPLACEMENT FUND CALCULATION

Expenses which are expected to be required for equipment replacement during the (20) year design life of the treatment works.

(Assumption: 4% inflation and 8% interest)

ITEM	REPLACEMENT	REPLACEMENT COST PRESENT WORTH	FACTOR	Annual
West Lagoon Lift Station	10 Yr.& 20 Yr.	$6,000	.1169	701
Lift Station #1	10 Yr.& 20 Yr.	$ 5,000	.1169	585
Grinder Lift Station	7.5 & 15 Yr.	3,000	.1675	503

ANNUAL COST $ 1,790.00

YEAR	EXPENSE (4% INFLATION)	INCOME (8% INTEREST)	BALANCE AT END OF PERIOD
7 1/2	(2,000) 1.342 = 5,280	1,790 (9.780-) = 17,506	$12,298
10	11,000 (1.4802) = 16,282	12.298(.2131) = 2,621	3,821
15	3,000 (1.8009) = 5,403	3,821 (.4693) = 1,793 +1,790 (5.867) = 10,502	10,713
20	11,000 (2.1911) = 24,102	10,713 (.4693) = 5,028 1,790 (5.867) = 10,502	2,141