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**AMENDMENT TO
1 APRIL 1983 WASTEWATER
TREATMENT CAPACITY ALLOCATION AGREEMENT
(6.15 MGD)**

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EXHIBIT A—Example of County Billing and Credits for BOD and TSS

CONSENTS AND JOINDERS OF MUNICIPAL AUTHORITIES

This AMENDMENT AGREEMENT made this 17th day of April, 1991, by and among LEHIGH COUNTY AUTHORITY (“Authority”), a Pennsylvania municipal authority; COUNTY OF LEHIGH (“County”), a Pennsylvania municipal subdivision; and the Boroughs of ALBURTIS and MACUNGIE, Townships of LOWER MACUNGIE, LOWHILL, UPPER MACUNGIE, UPPER MILFORD, and WEISENBERG, all Pennsylvania municipal subdivisions located in Lehigh County, Pennsylvania, (referred to collectively as “Municipalities”).

WITNESSETH:

WHEREAS, the parties entered an agreement dated 1 April 1983 (“1983 Agreement”)¹ and an amendment thereto dated 1 August 1987², both dealing with issues involving wastewater service in western Lehigh County including rates and charges for the discharges of the Municipalities and their individual customers; and

WHEREAS, §3.02 of the 1983 Agreement states that the Authority is to bill each of the Municipalities based on the total hydraulic flow and loadings of all customers served by the Municipality, with each customer’s wastewater loadings to be determined (a) at actual concentrations if the discharge exceeds

¹ **Cross-Reference:** *see* Codified Ordinances ¶ 65-R(2).

² **Cross-Reference:** *see* Codified Ordinances ¶ 65-R(6).

exceptional strength concentrations as specified therein, or (b) at certain assumed strength concentrations if discharge concentration is below the exceptional strength concentrations; and

WHEREAS, the County has constructed a new pretreatment plant in Upper Macungie Township to treat wastewater discharges from the Stroh brewery and the Kraft facility pursuant to contractual obligations, but because of the configuration of wastewater interceptors in the area the plant will also pretreat wastewater collected in portions of that Township and other upstream municipalities; and

WHEREAS, the new pretreatment plant may operate so that the discharge from that facility will be below assumed strength concentrations; and

WHEREAS, pursuant to existing agreements, the Authority has no ability to reflect concentrations below assumed strength concentrations in billings to any party; and

WHEREAS, reductions in concentrations of biochemical oxygen demand (BOD) and total suspended solids (TSS) below assumed strength concentrations caused by the operation of the County's pretreatment plant may have an effect on the wastewater rates charged to the Authority by the City of Allentown, and thereby on the wastewater rates charged by the Authority to the Municipalities, in that, *inter alia*, (1) rates per unit of BOD and TSS will tend to increase because the costs of the Allentown and Authority systems will be spread over a reduced total BOD and TSS loading, and (2) rates per unit of BOD and TSS may tend to decrease because the Allentown treatment plant will not have to incur costs to remove as many pounds of sludge from the wastewater it treats and because it will no longer have to incur extra costs to treat exceptional strength wastewater and, independent of the plant operation, rates per unit of BOD and TSS may tend to decrease as the number of billable units of BOD and TSS increases due to the addition of new customers to the system and/or the discharge of more effluent by existing customers; and

WHEREAS, the actual effect of the operation of the County's pretreatment plant on the aforesaid wastewater rates is not presently known or reasonably predictable, and may not be reasonably clear until after data is complete for wastewater operations during the 1991, 1992, and 1993 calendar years; and

WHEREAS, in recognition of the benefit the Authority and the Municipalities may receive as a result of the County pretreatment plant reducing the concentrations of the wastewater discharge from the Stroh brewery, Kraft facility, and certain portions of Upper Macungie Township and other upstream municipalities below assumed strength levels, and also in recognition of the public nature of the County pretreatment plant, the Authority and the Municipalities are willing to permit the discharge from the County pretreatment plant to be billed based upon the actual wastewater concentrations discharged from the plant for a temporary period until December 31, 1994.

NOW THEREFORE, the parties hereto intending to be legally bound hereby represent, covenant and agree as follows:

1. **[Effect on Existing Agreements.]** Nothing in this Amendment is intended, and nothing in this Amendment shall be construed to in any way amend, modify, or supersede existing agreements between and among the parties to this Amendment, nor shall this Amendment waive, release, surrender or bar any rights, any issues, transactions or controversies among any of the parties, or to in any other way affect any rights, privileges or obligations of any of the parties, directly or by implication, except to the extent specifically set forth in this Amendment.

2. **[Temporary Exemption of Pretreatment Plant from Being Billed at Assumed Concentrations; Credits to County for Pretreatment.]** With respect to wastewater discharged from the County pretreatment plant from September 13, 1990 through December 31, 1994, the parties agree to exempt the loadings from the County pretreatment plant from those requirements in §3.02 of the 1983 Agreement which provide that loadings having waste concentration equal to or less than 300 mg/l of BOD, 360 mg/l of TSS and 85 mg/l of total kjeldahl nitrogen (TKN) shall be billed based upon the assumed waste concentration as established in the Authority's then current User Charge System.

The County shall be billed at the then-current Authority BOD and TSS rates for the pounds resulting from the volume discharged by Stroh at assumed concentrations of 210 mg/l of BOD and 230 mg/l of TSS, providing that the discharge from the County pretreatment plant is below those concentrations. If said discharge is above either concentration of 210 mg/l of BOD or 230 mg/l of TSS, the County shall be billed at the actual pretreatment plant discharge concentration for all Stroh volume for that concentration. In addition, if the County accepts any waste materials for pretreatment from persons or entities other than Stroh who are not customers of any municipality (*e.g.*, businesses which pump septic tanks), the County shall be billed by Upper Macungie Township for all additional volume discharged at the pretreatment plant as a result of accepting such waste materials in accordance with Upper Macungie Township's then-current User charges at assumed concentrations of 250 mg/l of BOD and 275 mg/l of TSS, providing that the discharge from the County pretreatment plant is below that concentration. If said discharge is above either assumed concentration, the County shall be billed at the actual pretreatment plant discharge concentration for all such volume for that concentration.

The parties recognize that the County pretreatment plant will be accepting and treating the discharge from some customers of Upper Macungie Township and other upstream tributary municipalities and will be treating wastewater from the Stroh brewery and Kraft facility to concentrations below those for which the County is obligated. Accordingly, the parties agree that the County shall receive a credit against its billings from the Authority, determined as follows:

(A) for all reductions in concentration of incoming loadings from the Kraft facility from the concentration billed by Upper Macungie Township to concentrations of 210 mg/l of BOD and 230 mg/l of TSS — a credit shall be granted at the then-current Authority BOD and TSS rates for each pound of BOD and TSS removed;

(B) for all reductions in the concentration of incoming loadings from the Kraft facility from concentrations of 210 mg/l of BOD and 230 mg/l of TSS to concentrations below 210 mg/l of BOD and 230 mg/l of TSS — a credit shall be granted at the then-current City of Allentown BOD and TSS rates for each pound of BOD and TSS removed;

(C) for all reductions in concentration of incoming loadings from other customers of Upper Macungie Township and other upstream tributary municipalities from the concentrations billed by the municipality — a credit shall be granted at the then-current City of Allentown BOD and TSS rates for each pound of BOD and TSS removed;

(D) for all reductions in concentration of incoming loadings from the Stroh brewery from concentrations of 210 mg/l of BOD and 230 mg/l of TSS to concentrations below 210 mg/l of BOD and 230 mg/l of TSS — a credit shall be granted at the then-current City of Allentown BOD and TSS rates for each pound of BOD and TSS removed;

(E) for all reductions in concentrations of incoming loadings from persons or entities other than Stroh who are not customers of any municipality, from concentrations of 250 mg/l of BOD and 275 mg/l of TSS to concentrations below 250 mg/l of BOD and 275 mg/l of TSS — a credit shall be granted at the then-current City of Allentown BOD and TSS rates for each pound of BOD and TSS removed.

The provisions of this paragraph 2 may be illustrated by the example provided in Exhibit "A", which is attached hereto and incorporated herein by reference.

3. **[Billing of Pretreatment Plant after January 1, 1995.]** The requirements of §3.02 of the 1983 Agreement shall be reinstated on January 1, 1995, unless all of the parties agree to a further exemption for the discharge from the County pretreatment plant prior to that date. However, on and after January 1, 1995, so long as the County pretreatment plant discharges at or below the Authority's assumed waste concentration as of September 13, 1990, the County pretreatment plant shall be billed based on the lower of the Authority's assumed waste concentrations as of September 13, 1990, or the Authority's assumed waste concentration as established in its then-current User Charge System.

4. **[Sampling and Testing Procedures for Pretreatment Plant Discharges.]** The Authority, County and Upper Macungie Township may establish reasonable sampling and testing procedures for waste concentrations discharged by the County pretreatment plant and waste strength concentrations which enter the County pretreatment plant which may vary from the requirements in §5.01 of the 1983 Agreement which requires all testing and sampling for waste concentrations to be done by the Authority. Since the County pretreatment plant shall be a customer of Upper Macungie Township, the Authority, County, and Upper Macungie Township may establish any reasonable wastewater billing procedures for the County pretreatment plant.

5. **[No Exemption for any Other Customers.]** The exemption from the provisions of the 1983 Agreement outlined in §2 above shall be granted only to the County pretreatment plant. No other direct user or customer of Upper Macungie Township, or any of the Municipalities, shall be billed at concentrations lower than the Authority's then current assumed strength concentrations. All customers of any of the Municipalities will continue to be billed in accordance with the Authority's User Charge System (except for the Kraft exceptional strength discharge for which the County is obligated).

6. **[Purchase of Allocation by County for Effluent Added by Operation of Pretreatment Plant.]** The County acknowledges that due to the operation of the County pretreatment plant, there may be more effluent from the plant than influent to the plant from Stroh and the customers of Upper Macungie Township and other upstream municipalities, in which event the County shall be required to purchase additional treatment and interceptor allocation for the plant in accordance with the then-current Authority terms and conditions generally applicable to the Municipalities.

7. **[Review of Issues After Operating Information Becomes Available.]** The parties agree to review the issues raised in this Amendment and the method of billing the discharge from the County pretreatment plant and commence discussions among themselves concerning this issue as soon as the data for wastewater operations during the 1991, 1992, and 1993 calendar years is complete, but in no event later than July 1, 1994. Although the ultimate decision of the parties is completely within their discretion, they agree that they will consider and be guided in their discussions by the effects on the wastewater rates of the City of Allentown and the Authority which are attributable to the Operation of the County pretreatment plant in a manner which reduces the loadings of the Authority's wastewater at the point at which it flows into the wastewater system of the City of Allentown to a level below the maximum Allowable Loadings for the Authority under paragraph 3.B. of the Agreement between the City of Allentown, County of Lehigh, Coplay-Whitehall Sewer Authority, Lehigh County Authority, Township of Salisbury, and Township of South Whitehall, dated December 29, 1981 (the "1981 Agreement")³.

The parties agree that changes in federal, state, or local law, labor strikes or disruptions, changes in the application of indirect costs, and capital improvements or changes in debt service (other than capital improvements and changes in debt service caused by the presence of something in the discharge from the pretreatment plant which was not present in the wastewater flowing into the pretreatment plant) are not to be treated as effects of the County pretreatment plant in such review. The parties also agree that capital improvements or changes in debt service which are made to control the impacts of sulfide generation/deterioration are not to be treated as effects of the County pretreatment plant in such review. However, any benefit received from the release of the environmental reserve as a result of the operation of the County pretreatment plant in the manner described in this paragraph 7 may be considered.

8. **[Reports by Authority; Comments by Municipalities.]** In mid-1992, mid-1993, and mid-1994, after the data for wastewater operations of the Authority and the City of Allentown for the preceding calendar year are complete, the Authority shall prepare and send to each of the other parties to this agreement an analysis, to the extent possible, of the effects of the operation of the County pretreatment plant as described in paragraph 7 on the wastewater rates of the Authority and the City of Allentown for the preceding calendar year, the current calendar year, and the next calendar year. The other parties agree to review

³ **Cross-Reference:** *see* Codified Ordinances § 65-Q(2).

such analysis and submit any comments they may then have to the Authority and the other parties within sixty (60) days after receipt of a reasonably complete, final analysis. The Authority shall reprint the provisions of paragraphs 7 and 8 of this Amendment Agreement in the cover letters transmitting each such analysis.

9. **[Effect on 1981 Obligations of Lehigh County.]** Nothing in this Amendment Agreement shall be construed to amend, affect, or waive any provision or obligation of the County under the 1981 Agreement.

10. **[Severability; Governing Law.]** If any provision hereof shall be held to be invalid, such invalidity shall not affect any other provision hereof, and the remaining provisions hereof shall be construed and enforced as if such provision had not been contained herein. The laws of the Commonwealth of Pennsylvania shall govern interpretation hereof.

11. **[Counterparts.]** This Amendment Agreement may be executed in multiple counterparts, each of which shall be regarded for all purposes as an original, and such counterparts shall constitute but one and the same instrument.

12. **[Succession.]** This Amendment Agreement shall be binding upon the parties and their respective successors and assigns.

IN WITNESS WHEREOF, the parties have caused these presents to be executed by their duly authorized officers as of the day and year indicated above.

{Signed and Attested by Officers of Lehigh County Authority, County of Lehigh, Borough of Alburts, Borough of Macungie, Lower Macungie Township, Lowhill Township, Upper Macungie Township, Upper Milford Township, and Weisenberg Township}

{Remainder of Page Intentionally Left Blank; See Next Page for Exhibit A}

EXHIBIT "A"

Example of County Billing and Credits for BOD and TSS¹

ASSUMPTIONS²

Billing Rates

Charging Entity	BOD	TSS
City of Allentown	\$0.17 / lb	\$0.17 / lb
Lehigh County Authority	\$0.25 / lb	\$0.24 / lb
Each Municipality	\$0.28 / lb	\$0.27 / lb

Inflow to Pretreatment Plant During A Given Billing Cycle³

Source	Volume	BOD	TSS
Stroh	117.5310 Mgal	1180 mg/l	275 mg/l
Kraft	24.2757 Mgal	1651 mg/l ⁴	428 mg/l ⁴
Other customers of one of the Municipalities	115.6933 Mgal	260,518 lbs ⁵	284,640 lbs ⁵
Other customers (e.g., liquid waste haulers)	1.0000 Mgal	over 250 mg/l	over 275 mg/l

Outflow from Pretreatment Plant During A Given Billing Cycle³

Source	Volume	BOD strength	TSS strength
All sources	258.5000 Mgal	100 mg/l	100 mg/l

¹ All billing for other characteristics of wastewater (e.g., volume and pounds of TKN) discharged by the County Pretreatment Plant which is attributable to sources other than customers of a Municipality (e.g., Stroh, liquid waste haulers, operation of the plant), shall be in addition to the amounts shown in this Example.

² All amounts listed in these Assumptions that are used in the calculations which follow are fictional numbers used solely to illustrate the provisions of this Agreement. Billing Rates will change from time to time, and the actual volumes and strength of wastewater which flows into and out of the County Pretreatment Plant will inevitably be different.

³ A billing cycle may be monthly, quarterly, or otherwise. Bills and/or credits may be separately calculated for different portions of the billing cycle and added together.

⁴ As billed by the relevant Municipality.

⁵ Pounds billed by the Municipalities. Based on the volume of wastewater, this means there was an average strength of 270 mg/l of BOD and 295 mg/l of TSS.

BILLING TO COUNTY (Based on the above assumptions)⁶

Stroh⁷

BOD Billing Strength (mg/l)	210	TSS Billing Strength (mg/l)	230
x Volume (Mgal.)	117.531	x Volume (Mgal.)	117.531
x Conversion Factor ⁸	8.34	x Conversion Factor ⁸	8.34
= Pounds of BOD	205,843.79	= Pounds of TSS	225,447.96
x LCA BOD Rate (per lb)	\$ 0.25	x LCA TSS Rate (per lb)	\$ 0.24
= Charge for BOD	\$ 51,460.95	= Charge for TSS	\$ 54,107.51

TOTAL CHARGE = \$ 105,568.46

Other Non-Municipal Customers (e.g., liquid waste haulers)⁹

BOD Billing Strength (mg/l)	250	TSS Billing Strength (mg/l)	275
x Volume (Mgal.)	1.0	x Volume (Mgal.)	1.0
x Conversion Factor ⁸	8.34	x Conversion Factor ⁸	8.34
= Pounds of BOD	2085	= Pounds of TSS	2293.5
x UMT BOD Rate (per lb)	\$ 0.28	x UMT TSS Rate (per lb)	\$ 0.27
= Charge for BOD	\$ 583.80	= Charge for TSS	\$ 619.25

TOTAL CHARGE = \$ 1,203.05

CREDITS TO COUNTY (Based on the above assumptions)

Stroh

BOD Reduction from	210	TSS Reduction from	230
- to	<u>100</u>	- to	<u>100</u>
= Amount of Reduction (mg/l)	110	= Amount of Reduction (mg/l)	130
x Volume (Mgal.)	117.531	x Volume (Mgal.)	117.531
x Conversion Factor ⁸	8.34	x Conversion Factor ⁸	8.34
= Pounds of BOD	107,822.93	= Pounds of TSS	127,427.11
x City BOD Rate (per lb)	\$ 0.17	x City TSS Rate (per lb)	\$ 0.17
= Credit for BOD	\$ 18,329.90	= Credit for TSS	\$ 21,662.61

TOTAL CREDIT FOR STROH = \$ 39,992.51

⁶ Not including billing to County for Kraft exceptional strength wastewater.

⁷ Billed by Lehigh County Authority.

⁸ 3.785 l = 1 gal; 454 g = 1 lb. Therefore, there are 8.34 (l . lb) / (Mgal . mg).

⁹ Billed by Upper Macungie Township.

Kraft

STEP ONE: Reduction from UMT Billed Strength to BOD @ 210 and TSS @ 230

BOD Strength (mg/l)	1651	TSS Strength (mg/l)	428
BOD Strength > 2500 mg/l	0	TSS Strength > 400 mg/l	28
+ BOD Strength ≤ 300 mg/l	<u>300</u>	+ TSS Strength ≤ 360 mg/l	<u>360</u>
= BOD Billing Strength (mg/l) ¹⁰	300	= TSS Billing Strength (mg/l) ¹⁰	388
x Volume (Mgal.)	24.2757	x Volume (Mgal.)	24.2757
x Conversion Factor ¹¹	8.34	x Conversion Factor ¹¹	8.34
= Pounds Billed by UMT	60,737.80	= Pounds Billed by UMT	78,554.22
BOD Credit Strength (mg/l)	210	TSS Credit Strength (mg/l)	230
x Volume (Mgal.)	24.2757	x Volume (Mgal.)	24.2757
x Conversion Factor ¹¹	8.34	x Conversion Factor ¹¹	8.34
= Pounds at 210 mg/l	42,516.46	= Pounds at 230 mg/l	46,565.65
Pounds Billed by UMT	60,737.80	Pounds Billed by UMT	78,554.22
- Pounds at 210 mg/l	<u>42,516.46</u>	- Pounds at 230 mg/l	<u>46,565.65</u>
= Pounds Reduced (Step I)	18,221.34	= Pounds Reduced (Step I)	31,988.57
x LCA BOD Rate (per lb)	\$ 0.25	x LCA TSS Rate (per lb)	\$ 0.24
= Partial Credit for BOD	\$ 4,555.34	= Partial Credit for TSS	\$ 7,677.26

STEP TWO: Reduction from BOD @ 210 and TSS @ 230 to PTP Discharge Strength

BOD Reduction from	210	TSS Reduction from	230
- to PTP Discharge Strength	<u>100</u>	- to PTP Discharge Strength	<u>100</u>
= Amount of Reduction (mg/l)	110	= Amount of Reduction (mg/l)	130
x Volume (Mgal.)	24.2757	x Volume (Mgal.)	24.2757
x Conversion Factor ¹¹	8.34	x Conversion Factor ¹¹	8.34
= Pounds Reduced (Step II)	22,270.53	= Pounds Reduced (Step II)	26,319.71
x City BOD Rate (per lb)	\$ 0.17	x City TSS Rate (per lb)	\$ 0.17
= Partial Credit for BOD	\$ 3,785.99	= Partial Credit for TSS	\$ 4,474.35

TOTAL CREDIT FOR KRAFT = \$ 20,492.94

¹⁰ Pursuant to the Agreement dated July 10, 1969 among Kraft, Lehigh County, Lehigh County Authority, and Upper Macungie Township (as amended by the 1977 Amendment), Upper Macungie Township only bills Kraft for the first 300 mg/l of BOD concentrations, all mg/l of BOD in excess of 2500 mg/l, the first 360 mg/l of TSS concentrations, and all mg/l of TSS in excess of 400 mg/l. The remaining BOD and TSS is the obligation of the County, not Kraft.

¹¹ See note 8.

Other Municipal and Non-Municipal Customers

BOD Pounds Billed to Municipal customers (except Kraft)	260,518.00	TSS Pounds Billed to Municipal customers (except Kraft)	284,640.00
+ BOD Pounds Billed with respect to non-municipal customers (except Stroh) (e.g., haulers) ¹²	<u>2,085.00</u>	+ TSS Pounds Billed with respect to non-municipal customers (except Stroh) (e.g., haulers) ¹²	<u>2,293.50</u>
= BOD Pounds Billed	262,603.00	= TSS Pounds Billed	286,933.50

PTP BOD Strength (mg/l)	100	PTP TSS Strength (mg/l)	100
x Volume (Mgal.) ¹³	116.6933	x Volume (Mgal.) ¹³	116.6933
x Conversion Factor ¹⁴	8.34	x Conversion Factor ¹⁴	8.34
= BOD Pounds Discharged by PTP	97,322.21	= TSS Pounds Discharged by PTP	97,322.21

BOD Pounds Billed	262,603.00	TSS Pounds Billed	286,933.50
- Pounds Discharged by PTP	<u>97,322.21</u>	- Pounds Discharged by PTP	<u>97,322.21</u>
= BOD Pounds Reduced	165,280.79	= TSS Pounds Reduced	189,611.29
x City BOD Rate (per lb)	\$ 0.17	x City TSS Rate (per lb)	\$ 0.17
= Credit for BOD	\$ 28,097.73	= Credit for TSS	\$ 32,233.92

TOTAL CREDIT FOR OTHER CUSTOMERS = \$ 60,331.65

Recapitulation

Credit with respect to Stroh	\$ 39,992.51
Credit with respect to Kraft	\$ 20,492.94
<u>Credit with respect to Others</u>	<u>\$ 60,331.65</u>
TOTAL CREDIT	\$ 120,817.10

¹² See the "Billing" section of this Example.

¹³ 115.6933 Mgal for municipal customers + 1.0000 Mgal for non-municipal customers.

¹⁴ See note 8.

CONSENT AND JOINDER

{Separate consents and joinders in the following form were signed and attested by officers of Upper Macungie Township Authority (undated); Lower Macungie Township Authority (undated):}

The {Name of Authority}, an authority located in Lehigh County, Pennsylvania, for value received, and intending to be legally bound, does join in and consent to the foregoing Amendment to the 1 April 1983 Wastewater Treatment Capacity Allocation Agreement (6.15 MGD) and 4 August 1987 Wastewater Treatment Capacity Allocation Agreement (Post-1985 Allocation) by and among the Lehigh County Authority, County of Lehigh, Boroughs of Alburdis and Macungie, and the Townships of Lower Macungie, Lowhill, Upper Macungie, Upper Milford and Weisenberg, and to the extent applicable to it, agrees to abide by the terms of and be duly bound by the terms of said Amendment agreement.

IN WITNESS WHEREOF, the {Name of Authority} has caused this Consent and Joinder to be executed and attested by its proper officers, pursuant to proper action taken this ____ day of _____, 1991.