

INFORMATION SHEET

Wastewater Overstrength Surcharges

Applies to Industrial, Commercial, and Institutional customers who release wastewater to the sewer system that contains one or more constituents that exceed the concentration indicated in this information sheet. The overstrength charges are billed through your municipality and are adjusted every six months.

Constituents

BOD- Biochemical Oxygen Demand

COD- Chemical Oxygen Demand

TKN- Total Kjeldahl Nitrogen

O/G- Oil and Grease, Total

TP- Total Phosphorus

TSS- Total Suspended Solids

Example Surchargeable and Additional Surcharge Rates

(Actual rates will be found within member municipalities bylaws)

BOD	COD	O&G	TP	TSS	TKN
\$0.3134/kg	\$0.3134/kg	\$0.2796/kg	\$12.8519/kg	\$0.2745/kg	\$1.9778/kg

Allowable Limits

(From the Alberta Capital Region Wastewater Commission Bylaw 8 Schedule B and C)

Constituent	BOD mg/L	COD mg/L	O/G mg/L	TP mg/L	TSS mg/L	TKN mg/L
Surchargeable	>300	>600*	>100	>10	>300	>50
Additional Surcharge	>3,000	>6,000*	>400	>75	>3,000	>200
Maximum Limit	10,000	20,000	500	200	5,000	500

* - or twice the BOD concentration in the wastewater, whichever is greater.

Exceeding any maximum limit is a violation of the Alberta Capital Region Wastewater Bylaw 8

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Calculating Wastewater Overstrength Surcharges

The overstrength surcharge and additional overstrength surcharge is calculated using the same formula. To calculate the total cost the formula must be used on the constituents that are above each limit:

$$\frac{(\text{Annual Water Consumption}) \times (\text{Constituent Concentration} - \text{Constituent Limit})}{1000} \times \text{Constituent Surcharge Rate}$$

Sample Calculation

Industry ABC- Water consumption and Constituent Concentrations

Annual Water Consumption (m3)	BOD	COD*	O&G	TP	TSS	TKN	Total
10,000	500mg/L	2000mg/L	40mg/L	8mg/L	25mg/L	400mg/L	
Surcharge	\$626.80	\$3,134.00	No charge	No charge	No charge	\$6,922.30	\$10,683.10
Additional Surcharge	No charge	No charge	No charge	No charge	No charge	\$3,955.60	\$3,955.60
Total Annual Overstrength Surcharge							\$14,638.70

$$\text{BOD} = (10,000 \times (500 - 300)) / 1000 \times 0.3134 = \$626.80$$

$$\text{COD} = (10,000 \times (2000 - 1000)) / 1000 \times 0.3134 = \$3,134.00$$

$$\text{TKN Surcharge} = (10,000 \times (400 - 50)) / 1000 \times 1.9778 = \$6,922.30$$

$$\text{TKN Additional Surcharge} = (10,000 \times (400 - 200)) / 1000 \times 1.9778 = \$3,395.60$$

$$\text{Total Annual Overstrength Surcharge} = 626.80 + 3,134.00 + 6,922.30 + 3,395.60 = \$14,638.70$$