

Wastewater Engineering

Treatment and Reuse

Fourth Edition

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Table 3-15
Typical composition of untreated domestic wastewater

Contaminants	Unit	Concentration ^a		
		Low strength	Medium strength	High strength
Solids, total (TS)	mg/L	390	720	1230
Dissolved, total (TDS)	mg/L	270	500	860
Fixed	mg/L	160	300	520
Volatile	mg/L	110	200	340
Suspended solids, total (TSS)	mg/L	120	210	400
Fixed	mg/L	25	50	85
Volatile	mg/L	95	160	315
Settleable solids	mL/L	5	10	20
Biochemical oxygen demand, 5-d, 20°C (BOD ₅ , 20°C)	mg/L	110	190	350
Total organic carbon (TOC)	mg/L	80	140	260
Chemical oxygen demand (COD)	mg/L	250	430	800
Nitrogen (total as N)	mg/L	20	40	70
Organic	mg/L	8	15	25
Free ammonia	mg/L	12	25	45
Nitrites	mg/L	0	0	0
Nitrates	mg/L	0	0	0
Phosphorus (total as P)	mg/L	4	7	12
Organic	mg/L	1	2	4
Inorganic	mg/L	3	5	10
Chlorides ^b	mg/L	30	50	90
Sulfate ^b	mg/L	20	30	50
Oil and grease	mg/L	50	90	100
Volatile organic compounds (VOCs)	mg/L	<100	100-400	>400
Total coliform	No./100 mL	10 ⁶ -10 ⁸	10 ⁷ -10 ⁹	10 ⁷ -10 ¹⁰
Fecal coliform	No./100 mL	10 ³ -10 ⁵	10 ⁴ -10 ⁶	10 ⁵ -10 ⁸
<i>Cryptosporidium</i> oocysts	No./100 mL	10 ⁻¹ -10 ⁰	10 ⁻¹ -10 ¹	10 ⁻¹ -10 ²
<i>Giardia lamblia</i> cysts	No./100 mL	10 ⁻¹ -10 ¹	10 ⁻¹ -10 ²	10 ⁻¹ -10 ³

^aLow strength is based on an approximate wastewater flowrate of 750 L/capita·d (200 gal/capita·d).
Medium strength is based on an approximate wastewater flowrate of 460 L/capita·d (120 gal/capita·d).
High strength is based on an approximate wastewater flowrate of 240 L/capita·d (60 gal/capita·d).

^bValues should be increased by amount of constituent present in domestic water supply.

Note: mg/L = g/m³.