

Fact Sheet: King County Wastewater Discharge Limits



King County
Department of
Natural Resources and Parks
Wastewater Treatment Division
Industrial Waste Program

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Introduction

This fact sheet provides information about discharge limits and other restrictions for all commercial and industrial users of the sewer system so that they can properly discharge wastewater to the county sewer system.

King County imposes limits on certain pollutants that companies and other facilities discharge in wastewater. The limits are designed to protect wastewater workers, the conveyance system, treatment plant processes, and to prevent contamination of receiving waters and biosolids.

State and federal regulations require that the County establish local discharge limits and restrictions and evaluate existing discharge limits whenever there is a change in the wastewater treatment process, environmental criteria or the influent wastewater quality at a county wastewater treatment plant. The County must develop new local discharge limits whenever the Washington State Department of Ecology or the County determines that the existing local discharge limits are not protective of the wastewater treatment system.

Authority

The federal government has established discharge limits for specific activities (categorical standards) under 40 CFR 403.6 and prohibited discharges under 403.5. State and local pretreatment programs are required under 40 CFR 403.8 (f)(4) to develop specific limits to implement the prohibitions listed under 403.5 (a)(1) and 403.5 (b).

King County 28.84.060, and the Revised Code of Washington (RCW) Title 35.58 provide legal basis for discharge limits. King County's policies and procedures are outlined in PUT8-13-1, King County Industrial Waste Discharge Limits.



SOUNDVIEW AERIAL PHOTOGRAPHY

Local limits are designed to protect worker safety, wastewater treatment plants, and local water bodies. (King County's Brightwater Treatment Plant, 2010.)

Industrial wastewater discharge limits

All commercial and industrial facilities in King County discharging wastewater to the county sewer system are subject to restrictions, or discharge limits, based on National Categorical Pretreatment Standards and/or Local Discharge Limits. Local Limits can be more stringent than federal limits. King County applies the most stringent of the two limits when issuing control documents.

National Categorical Pretreatment Standards

National Categorical Pretreatment Standards limit the pollutant discharges to publicly owned treatment works (POTWs) from specific process wastewaters of particular industrial categories. POTW is a term meaning a sewage treatment plant and associated pipe network that is owned by a governmental entity, typically a municipality or special district.

Companies and facilities that are regulated under federal pretreatment standards must obtain a full King County permit regardless of their wastewater discharge volumes.

Categorical industries include the following:

- Aluminum forming
- Battery manufacturing
- Centralized waste treatment
- Circuit-board manufacturing
- Coil coating
- Copper forming
- Electrical/electronic components
- Electroplating
- Inorganic chemical manufacturing
- Iron/steel manufacturing
- Leather tanning finishing
- Metal finishing
- Metal foundries
- Nonferrous metal manufacturing
- Pesticide manufacturing
- Petroleum refining
- Pharmaceutical manufacturing
- Porcelain enameling
- Pulp/paper mills
- Wood preserving

King County has established local discharge limits or prohibitions for:

1. Heavy metals and cyanide
2. Fats, Oils and Grease (FOG)
3. Corrosives (pH)
4. Hydrogen sulfide
5. Organic compounds
6. Solids and food waste
7. Flammable or explosive materials
8. High temperature

Overview of types of King County local discharge limits:

1. Heavy metals and cyanide

Metals greater than permitted limits can upset or disable county treatment plant operations or affect the quality of the biosolids and the County’s ability to recycle biosolids.

The metal limits indicated in the table below are for total metals, not dissolved metals. If a company or facility discharges less than 5,000 gallons of wastewater per day, it must comply with only the instantaneous limits.

King County local limits for heavy metals and cyanide:

Parameter	Daily Average Maximum	Instantaneous Maximum
	mg/l (ppm)	mg/l (ppm)
Arsenic	1.0	4.0
Cadmium	0.5	0.6
Chromium	2.75	5.0
Copper	3.0	8.0
Lead	2.0	4.0
Mercury	0.1	0.2
Nickel	2.5	5.0
Silver	1.0	3.0
Zinc	5.0	10.0
Cyanide	2.0	3.0

2. Fats, Oils and Grease (FOG)

FOG in the system can cause accumulations that obstruct flow or interfere with the operations or performance of the pump stations or treatment plants.

Nonpolar FOG:

Nonpolar FOG of petroleum or mineral origin can harm the biological phase of sewage treatment where microbes are used to break down wastes.

The local limit: the King County limit for nonpolar FOG is 100 milligrams per liter (100 mg/L) of discharged wastewater.

Oil/water separators: Industries use oil/water separators to pretreat wastewater containing nonpolar FOG. While KCIW must approve plans for separators, the program has approved requests from certain local sewer utilities to allow them to approve oil/water separators. Information on plan submittal and installation guidelines is available in the Oil/Water Separator Fact Sheet prepared by KCIW. (See Resources, last page.)

Polar FOG:

Polar FOG of animal and vegetable origin can block sewer lines. Although polar FOG has no numerical limit, King County rules:

- require dischargers to minimize free-floating polar FOG.
- prohibit use of agents to emulsify free-floating polar FOG.

FOG control plan:

King County may require companies discharging polar FOG to complete a FOG control plan. The goal of the FOG control plan is to implement reasonable and technically feasible controls of free-floating polar FOG.

FOG control plans typically include some combination of facility operational practices to minimize the amount of polar FOG in the industrial wastewater and/or design and operational information for wastewater pretreatment facilities, such as grease interceptors.

3. Corrosive substances (pH)

Wastewater with a pH either above or below the permitted level can damage sewer lines, promote the release of harmful substances in the sewer line or disrupt treatment plant operations.

The local limits:

- **The maximum limit for wastewater discharged into the sanitary sewer is pH 12.**
- **The instantaneous minimum limit is violated when any grab sample or instantaneous recording is less than pH 5.**
- **The daily minimum limit is violated when a recording of 15 minutes or longer remains below pH 5.5 or when four consecutive grab samples collected at 15-minute intervals or longer in a 24-hour period are all below pH 5.5.**

4. Hydrogen sulfide

Hydrogen sulfide gas can be dangerous to breathe and presents serious odor problems (the smell of rotten eggs). It also reacts with water and wastewater microorganisms to form sulfuric acid, which corrodes sewer lines.

The local limit:

The local limit for atmospheric hydrogen sulfide is 10 parts-per-million-volume measured at a designated monitoring manhole. King County also may restrict discharges of soluble sulfide on a case-by-case basis.

5. Organic compounds

Discharges of pure organic products and compounds are prohibited.

In sewer lines, organic compounds such as solvents, cleaners, thinners, pesticides, and laboratory chemicals may cause toxic gases that may harm sewer workers and or the treatment process.

Any company or facility considering the discharge of wastewater containing organic compounds should first consult with KCIW.

Screening levels: KCIW has developed screening levels for certain volatile organic compounds (VOCs). For information about specific VOCs, facilities should contact their assigned KCIW compliance investigators or contact the program. (See Resources, last page.)

On a case by case basis the County establishes specific limits for organic compounds by taking into consideration the impacts to workers, sewer lines, receiving waters, and biosolids quality.

6. Settleable solids and food waste

Solids capable of settling can restrict or block flow in sewer lines. Facilities discharging solids are liable for any damages caused by sewage backups.

The local limits:

Industrial wastewater must contain less than seven milliliters per liter (7 mL/L) of solids capable of settling in a one-hour period.

Food waste, including food-grinder waste, must be capable of passing through a 1/4-inch sieve.

7. Flammable or explosive materials

To prevent explosions and damage to sewer lines, King County prohibits the discharge of flammable or explosive material into the sewer.

Before discharging a solution containing dilute concentrations of flammable or explosive chemicals,

contact KCIW to determine if discharge of the solution is acceptable. (See Resources, last page.)

(A) No person shall discharge any pollutant, as defined in 40 CFR 403.5, that creates a fire or explosion hazard in any sewer or treatment works, including, but not limited to, with a closed-cup of less than 140 degrees Fahrenheit or 60 degrees Centigrade.

(B) At no time shall two successive readings on an explosion hazard meter, taken at the point of discharge into the system or at any point in the system, be more than five percent of the Lower Explosive Limit (LEL) of the meter nor shall any single reading be more than 10 percent of the LEL.

Prohibited pollutants may be anything that King County, the fire department, the U.S. Environmental Protection Agency, and Washington State recognize as a hazard.

These include, but are not limited to:

- alcohols
- aldehydes
- benzene
- bromates
- carbides
- chlorates
- ethers
- gasoline
- hydrides
- kerosene
- ketones
- naphtha
- perchlorates
- peroxides
- sulfides
- toluene
- xylene

8. High temperature

High temperature can cause the release of gases in sewers or disrupt treatment plant operation.

The local limit:

The temperature of industrial wastewater must not exceed 65 degrees Centigrade (150 degrees Fahrenheit) at the point where the wastewater enters the public sewer system.

Resources

Contacting KCIW:

King County Industrial Waste Program
130 Nickerson Street, Ste. 200
Seattle, WA 98109-1658
Ph: 206-263-3000 or TTY: 711
Fax: 206-263-3001
info.kciw@kingcounty.gov

Easy link: www.kingcounty.gov/industrialwaste

Use this easy link and follow the menu on our main Internet page to reach all KCIW Internet pages.

Authority

Electronic Code of Federal Regulations:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=%2Findex.tpl>

Revised Code of Washington: <http://apps.leg.wa.gov/rcw/>

King County Code: www.kingcounty.gov/council/legislation/kc_code.aspx

King County Public Rules: <http://www.kingcounty.gov/operations/policies/masterlist.aspx>

Applicable KCIW fact sheets

Go to: www.kingcounty.gov/industrialwaste and use menu, or use the direct links below.

Discharging industrial wastewater to the King County sewer system:

www.kingcounty.gov/environment/wastewater/~media/environment/wastewater/IndustrialWasteProgram/docs/IWPGeneralFactSheet0710.ashx

Oil/Water Separator Fact Sheet:

www.kingcounty.gov/environment/wastewater/IndustrialWaste/~media/environment/wastewater/IndustrialWasteProgram/docs/DischLimits/FOG/OW_Fact.ashx

File name: 1110_IWfactSheetDischargeLimits.indd skrau