NapaSan

COLLECTION · TREATMENT · RECOVERY · REUSE

Best Management Practices *for*

Cooling Towers

Water Quality Concerns Related to Cooling Towers

Cooling tower wastewater has the potential to carry pollutants to the sanitary sewer, including dissolved or suspended minerals, metals, corrosion inhibitors, oil, salt, and algaecides. These pollutants can disrupt the wastewater treatment process, or pass through the treatment process and end up in local waterways.

Enforcement of Cooling Tower BMPs

Section 4.04.110 (Subsection G3) of the Napa Sanitation District (NapaSan) Code states that cooling water is prohibited from being discharged to the sanitary sewer system unless special permission has been granted by the General Manager. Discharge may be allowed to the sewer system at the discretion of the General Manager after obtaining a permit from NapaSan. Applicable fees shall apply. Call NapaSan at (707) 258-6000 for more information.

The NapaSan Code states in Section 4.04.090 that NapaSan may develop BMPs that serve as an enforceable control mechanism for prohibited wastes. Any discharge to the wastewater treatment plant cannot contain concentrations of pollutants of concern that are greater than the local limits[1] in the NapaSan Code. The BMPs listed here as "REQUIRED" will be assessed when a NapaSan inspector visits your facility.

Inspections by NapaSan

NapaSan may inspect any Industrial or Commercial User's facility to ensure compliance with NapaSan Code. NapaSan has the right to collect a sample of water being discharged from the facility at any time to check for compliance with the local limits found in NapaSan Code.

Questions?

If you have any questions, please contact NapaSan by calling 707-258-6000. These BMPs and the NapaSan Code are also available on our website at www.napasan.com.

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[1] Local limits are technically based, defensible numerical limits imposed on industrial users by NapaSan. The local limits are set for pollutants that can interfere with the treatment process or pass through the treatment process without being removed. Local limits can be found in the NapaSan Code online at www.NapaSan.com.

Information About Cooling Towers

Cooling water systems are subject to metal corrosion, scale formation, and biological fouling. These problems can have a direct effect on system operating efficiency, reliability, longevity, and the composition of the bleed-off sent to drain. Commonly used chemical treatment products that contain **copper, zinc and chromium** can address these problems. However, all of these metals pass through the wastewater treatment plant without being removed, and pose a threat to aquatic life and human health.

As of December 1995, products containing tributyltin are prohibited by state law from use in all Bay Area counties, including Napa. Federal law also prohibits the use of hexavalent chromium-based water treatment chemicals in comfort cooling towers and the distribution of such chemicals in commerce for use in comfort cooling towers.

Though an additive's label may not always reveal the presence of a metal such as copper, it may be present as a stabilizer such as in isothiazolin biocide. Even Material Safety Data Sheets (MSDS) may not necessarily list all chemicals found in the product, so chemical analytical data for a product may be necessary to reveal such metals.

Protect yourself: cooling water system owners and operators are legally liable for using any banned product. Ask your vendors to consult with their chemical suppliers to assure that they do not distribute additives containing tributyltin, copper, or hexavalent chromium. Your vendor may also be able to supply or recommend substitutes.

The water that circulates through the system contains sodium and chloride, and when the water is condensed, the sodium and chloride concentrations increase. Any discharge to the sanitary sewer system above the local limit of 90 mg/L sodium and 225 mg/L chloride is not allowed.

The following Best Management Practices are REQUIRED:

These BMPs will be enforced through inspections by NapaSan Inspectors.

Practices

- Per section 4.04.110 of the NapaSan Code, a permit must be obtained in order to discharge cooling water to the sanitary sewer system. Applicable fees shall apply. Call NapaSan at (707) 258-6000 for more information.
- City of Napa and Napa County prohibit discharge of any sewage, industrial or other polluted waters into any storm drain or natural outlet or channel without a valid National Pollution Discharge Elimination System (NPDES) permit. This applies to non-contaminated cooling tower water as well.

The following Best Management Practices are REQUIRED:

- You shall prevent accidental discharge of prohibited materials such as cooling tower chemicals to the storm or sanitary sewer systems.
- Any discharge to the sanitary sewer system cannot contain concentrations of pollutants that are greater than the local limit. The local limits for chemicals commonly associated with cooling tower use and cleaning are listed below. View the full list of local limits for pollutants in the "Title 4-Sewer Use" section of the NapaSan Code at www.napasan.com.

Constituent	Local Limit Concentration In milligrams/Liter (mg/L)
Chloride	225
Chromium (VI)	0.538
Chromium (Total)	1.13
Copper	0.388
Sodium	90
TDS	836
Zinc	0.762
pH	6.0-9.0

- Maintain your cooling tower to the manufacturer's specifications by scheduling routine monitoring and maintenance activities.
- Include specific guidelines addressing chemical substitution options (to avoid tributyltin, copper or hexavalent chromium) in your service contracts.
- When cooling towers are cleaned (scraped, wire brushed or high pressure washed), the sludge or solids shall be collected and disposed of properly as a solid waste. This waste shall not be discharged to the sanitary sewer system.

The following Best Management Practices are RECOMMENDED:

- Consider installing an onsite pre-treatment system for your cooling tower water in order to meet the local limits in the NapaSan Code.
- Install influent and effluent totalizing flow meters to monitor performance of cooling towers.
- Use closed evaporative cooling towers (they use less water than open systems).
- During repair or reconstruction of existing open recirculating tower systems, limit the use of copper-based materials.