



NapaSan

COLLECTION · TREATMENT · RECOVERY · REUSE

Best Management Practices *for* Boiler Blowdown

Water Quality Concerns Related to Boiler Blowdown

Boiler blowdown 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 Boiler Blowdown BMPs

The Napa Sanitation District (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 pollutant concentrations that are greater than the local limits¹ in the NapaSan Code. The BMPs listed here as “REQUIRED” will be assessed when an 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.napaslan.com.

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.

NapaSan

1515 Soscol Ferry Road
Napa, California 94559

Phone: 707-258-6000

Fax: 707-258-6048

E-mail: sturnipseed@napaslan.com

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Information About Boiler Blowdown

Even with the best pretreatment programs, boiler feedwater often contains some degree of impurities, such as suspended and dissolved solids. These impurities can remain and accumulate inside the boiler as operation continues. The increasing concentration of dissolved solids can lead to carryover of boiler water into the steam, causing damage to piping and other equipment. The increasing concentration of suspended solids can form sludge, which reduces boiler efficiency and heat transfer capability.

To avoid these problems, water must be periodically discharged or “blown down” from the boiler to control concentrations of suspended and dissolved solids in the boiler. This blowdown water can contain dissolved or suspended minerals, metals, corrosion inhibitors, chloride, and oil. Reducing the potential impact of these pollutants can be accomplished by reducing both the volume and hazardous make-up of blowdown water by implementing the practices listed below.

The following Best Management Practices are REQUIRED:

These BMPs will be enforced through inspections by NapaSan Inspectors.

Practices

- City of Napa and Napa County prohibit the 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.
- You must prevent accidental discharge of prohibited materials, such as chemicals found in boiler blowdown, 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 boiler blowdown are listed at the top of the following page. View the full list of local limits for pollutants in the “Title 4-Sewer Use” section of the NapaSan Code at www.napaslan.com.

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The following Best Management Practices are REQUIRED:

All discharges to NapaSan's collection system must meet the Constituent Local Limit Concentrations listed in the table below.

Constituent	Local Limit Concentration In milligrams/Liter (mg/L)
Chloride	225
Chromium (VI)	0.538
Chromium (Total)	1.13
Copper	0.388
Iron	5
Sodium	90
TDS	836
Zinc	0.762
pH	6.0-9.0

The following Best Management Practices are RECOMMENDED:

- Minimize the frequency of blowdown water by optimizing the frequency of boiler cleaning.
- Control the composition of boiler feed water through an elevated oxygen treatment process, as opposed to using additives such as hydrazine and morpholine. This treatment process results in a more unified, finer-grained magnetite layer that requires less frequent cleaning.
- Inspect for and replace seals on the steam cycle appurtenances. This will potentially reduce the amount of oxygen that enters the system and, in turn, the frequency of boiler cleanings.
- Establish a boiler cleaning frequency according to the build-up of scale rather than following a predetermined schedule. This may reduce unnecessary cleanings.