

STORMWATER BMPS: POTABLE WATER LINE DISCHARGES (CHLORINATED WATER LINE AND HYDRANT FLUSHING)

AFFECTED FACILITIES

These BMPs apply to all municipal and county water utilities, fire hydrants, and potable water distribution systems.

BACKGROUND

Potable water is chlorinated. The discharge of chlorine to surface waters can damage aquatic life. New potable water lines are often flushed with “super-chlorinated” water: water that is treated at a higher-than-normal dosage of chlorine. Discharge of super-chlorinated water (greater than 5 mg/L) poses acute toxicity risk to aquatic environments. Operators need to understand the importance of ensuring that super-chlorinated water does not reach State waters, without adequate dissipation or treatment to prevent harm to the environment. To a lesser degree, lower levels of chlorine (less than 5 mg/L) in distribution water can also adversely affect aquatic environments under certain conditions. These BMPs prevent discharge of these waters unless it is de-chlorinated or a permit is obtained.

BEST MANAGEMENT PRACTICES

- Do not discharge super-chlorinated water to any storm drain, street, ditch or surface water.
- Super-chlorinated water may only be discharged after de-chlorination by aeration, retention, dissipation, or chemical treatment to “no measurable chlorine” content.
- A State of Colorado Discharge Permit or Treated Water Management Plan may be required. Please contact the Colorado Department of Public Health and Environment, Water Quality Control Division at 303-692-3500 or <http://www.cdphe.state.co.us/wq/PermitsUnit/>
- The discharge of cleaning materials or chemicals is strictly prohibited, and should be sent to the sanitary sewer, with permission of the local wastewater treatment facility, or otherwise collected and disposed of.
- All discharges must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts, and other local agencies regarding any discharges to storm drain systems, conveyances, ditches or other watercourses under their jurisdiction.
- If the discharge is to a storm sewer, prior to discharge the owner/operator must notify the owner of the conveyance system of the date, approximate time, location, and duration of the discharge(s).
- If the discharge is to a ditch, the owner/operator must obtain permission from the owner of the ditch prior to discharge.
- The discharge shall not result in flooding of neighboring property, streets, gutters or storm sewers.
- The discharge must be diverted from building foundations or other areas that may be damaged from ground settling or swelling.

- The discharge must be visibly clear and not contain floating or solid materials.
- A visible sheen must not be evident in the discharge.
- If the discharge is directly to State surface waters (any stream, creek, gully, whether dry or flowing), it must not contain any residual chlorine.
- If the discharge is to a storm sewer, which has adequate travel time to allow for any chlorine to dissipate (generally 1 mile), de-chlorination may not be necessary.
- If discharge is to the sanitary sewer or a storm sewer, be sure to contact the local wastewater treatment facility or owner of the storm sewer prior to discharge. This must be done to ensure that the facility is able to accept the discharge. Not all facilities are able to accept such discharges. Note that additional restrictions or local guidelines may apply.
- If the discharge is to a ditch, the owner of the ditch may limit the chlorine content. However, if the ditch returns flow to state water, it must not contain any residual chlorine, unless travel time will be sufficient for removal of the chlorine.
- For discharge to the ground, the water should not be allowed to pond on the surface, cause any toxicity to vegetation, and must be diverted from building foundations. When discharging, allow the water to drain slowly so that it soaks into the ground without ponding and without running off of the property, or causing flooding issues.
- Removal of any residual chlorine must be completed before any direct discharge to state surface water, or for any discharge to a storm sewer or conveyance where the chlorine will not dissipate prior to reaching state surface water. Dechlorination, if necessary, may be achieved by allowing water to stand uncovered until no chlorine is detected, or by dechlorination using a portable de-chlorinator. Pay particular attention when handling super-chlorinated waters. A longer period of time is needed to dissipate chlorine from super-chlorinated waters.
- The discharge should be routed in such a way that it will not pick up additional suspended solids, or cause erosion of a land surface. Where the discharge will not be visibly clear, a filter bag or similar filtration device should be used to remove suspended solids or other debris. This device should be used and maintained in accordance with the manufacturers specifications.
- The discharge should be routed in such a way that it will not pick up any oil and grease and that a visible sheen will not be seen on the discharge. An absorbent oil pad, boom or similar device should be used to eliminate any oil from the discharge water.
- During emergency discharges such as water main breaks or when water mains must be flushed at high velocity and high volume due to a human health concern, shut the water down as soon as possible in such a manner that is protective of human health and safety and implement BMPs to protect storm drains from the discharge or contaminants.

REQUIRED STRUCTURES AND EQUIPMENT

- De-chlorination system for water line or hydrant flushing
- Neutralizing chemicals to reduce residual chlorine concentrations
- Sediment traps (i.e. sand/oil separators, gravel filter berms, filter bags, etc.)
- Storm drain protection devices (berms, dykes, covers, waddles etc.)

INSTALLATIONS REQUIRED FOR NEW CONSTRUCTION OR RENOVATIONS

- See: *NEW CONSTRUCTION AND RENOVATION OF BUILDINGS AND FACILITIES* BMP.

REQUIRED EMPLOYEE AND CONTRACTOR TRAINING

- Train all current employees and contractors who perform potable water line flushing.
- Train all new hires and job transferees who will conduct potable line flushing on this BMP.
- Conduct refresher training on this BMP for all employees and contractors who conduct potable line flushing as needed.
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.

RECORDS

- Keep records of employee and contractor trainings.
- Keep records of the volumes of water discharged to storm drains, ditches or surface waters including the analytical test results showing “no measurable chlorine” content.

REFERENCES

1. Colorado’s Phase II Municipal Guidance, October 2001
2. *California Stormwater BMP Handbook*, January 2003
3. *Knoxville (TN) BMP Manual, Activities & Methods*, January 2001
4. *City of Tacoma: Surface Water Management Manual (Vol. IV Source Control BMPs)*, January 2003
5. *Municipal Facility Runoff Control Plan* (City of Lakewood, CO)
6. *Best Management Practices for Industrial Storm Water Pollution Control* (Santa Clara Valley, CA)
7. Colorado Department of Public Health and Environment, Water Quality Control Division, Industrial Permits, <http://www.cdphe.state.co.us/wg/PermitsUnit/Industrial/>