

STORMWATER BMPS: FIREFIGHTING, FIRE TRAINING, AND FIRE SUPPRESSION SYSTEM TESTING ACTIVITIES

AFFECTED FACILITIES

These BMPs apply when municipal employees or fire personnel discharge water from fire hydrants, use fire suppressant chemicals to fight a fire, conduct training activities, and conduct fire suppression system tests.

BACKGROUND

The wastewater from firefighting and system testing can contain a variety of contaminants. These contaminants can flow into surface waters if wastewater is allowed to enter storm drains or ditches. The municipal separate storm sewer system (MS4) permit only allows for the discharge from emergency fire fighting activities or discharges meeting the conditions and requirements of CDPHE's Low Risk Discharge Guidance: Discharges of Potable Water.

POST-EMERGENCY FIREFIGHTING ACTIVITIES

These BMPs only apply after the fire is under control and personnel are available to conduct these activities.

- If hazardous materials are suspected in the wastewater from a fire, contact the Boulder County Environmental Emergency Response Team (EERT) or auxiliary fire personnel to block storm drain inlets, drainage ditches or creeks and to assure cleanup. Contact EERT by calling 303-441-3851 and entering pager number 5800, or have Dispatch page EERT.
- If possible, use covers, wattles, rock socks, berms, booms, sand bag dams or plastic sheeting to prevent fire-fighting flows from reaching storm drains or surface waters.
- Never flush any materials into storm drains. Even chlorinated water, dirt and sediment are considered to be stormwater pollutants.
- Do not dump hazmat decontamination water into street, parking lots or storm drains.

FIRE TRAINING ACTIVITIES

- Be aware of storm drains during fire training activities. Protect storm drains so that nothing but potable water enters them.
- During fire extinguisher training, spray extinguishers only in areas where the foam can be collected. Sweep up any spilled foam and dispose of properly. Do not hose down waste extinguisher materials to the storm drain.
- When performing engine pump tests or hydrant tests, direct water flows to landscaped areas, detention areas, and/or implement BMPs to prevent discharge to storm drains or surface waters. (See Colorado Department of Public Health and Environment (CDPHE) "[Low Risk Discharge Guidance: Discharges of Potable Water](#)" and "[Guidance for Discharges Associated with Fire Suppression Systems](#)".)
- Ensure that discharges from fire training activities are discharged to sanitary sewer, meet the guidelines in the "[Guidance for Discharges Associated with Fire Suppression Systems](#)" or obtain the proper stormwater discharge permit from CDPHE, Water Quality Division at: <http://www.coloradowaterpermits.com/>.

FIRE SUPPRESSION SYSTEM TESTING

- Discharges must follow CDPHE's "[Low Risk Discharge Guidance: Discharges of Potable Water](#)" and "[Guidance for Discharges Associated with Fire Suppression Systems](#)".
- Discharges from inspector tests, main drain tests and full flow (back flow) tests may be subject to a "[General Discharge Permit for Treated Water Distribution Systems](#)" or a "[Hydrostatic Testing of Pipelines, Tanks and Similar Vessels Discharge Permit](#)".

Allowed Discharges

- ❖ Discharges from a **potable water distribution system, pipe, tank, or storage device** that has been maintained for potable water distribution use.
- ❖ Discharge of water **prior to the back flow prevention assembly or device**.

BEST MANAGEMENT PRACTICES

- The discharge of cleaning materials or chemicals, including dyes, is strictly prohibited.
- The water shall not be used in any additional process.
- The discharge shall not cause erosion of a land surface or pollution of the receiving water including visible erosion such as forming rills or gullies on the land surface.
- The discharge shall not contain solid materials in concentrations that can settle to form bottom deposits detrimental to the beneficial uses of the state waters or form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses.
- All discharges must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts, ditch owners, and other local agencies regarding any discharges to storm drain systems, conveyances, ditches or other water courses under their jurisdiction. This guidance in no way reduces the existing authority of the owner of a storm sewer, ditch owner, or other local agency, from prohibiting or placing additional conditions on the discharge.
- If the discharge is directly to a state surface water (any stream, creek, gully, whether dry or flowing), it must not contain any residual chlorine. The operator is responsible for determining what is necessary for removing chlorine from the discharge.
- If the discharge is to a ditch, chlorine content may be limited by the owner of the ditch. However, if the ditch returns flow to classified state waters, it must not contain any residual chlorine at the point where it discharges to the classified state water.
- Removal of any residual chlorine must be done for any direct discharge to state surface waters or for any discharge to a storm sewer or conveyance where the chlorine will not dissipate prior to reaching state surface waters. Dechlorination, if necessary, may be achieved by allowing water to stand uncovered until no chlorine is detected.
- The use of dechlorinators to remove chlorine is allowed and the proper use of chemicals as part of the operation of a dechlorinator is therefore allowed for. The operator must ensure proper quantities and rates are used based on the concentration of chlorine, that adequate mixing occurs, and that enough time is allowed prior to flows reaching a surface water for the dechlorination chemicals to react with the chlorine in the water.
- For discharge to the ground, the water should not cause any toxicity to vegetation.
 - When discharging to ground, allow the water to drain slowly so that it soaks into the ground as much as possible.

- The discharge should be conducted to minimize the potential to pick up additional suspended solids from the fire suppression system or as the water flows across surfaces such as pavement or vegetation.
- When possible, check dams, filter bags, and inlet protection or a combination of practices, should be used to remove suspended solids or other debris.

Non-allowable Discharges:

- ❖ **Non-Potable Water Systems:** Water from a system not supplied by potable water. (Examples include, but are not limited to, fire-suppression systems and their associated supply systems that are supplied with pond water, reclaimed waste water, or from a non-potable well.)
- ❖ **Added Chemicals/Materials:** Any water for which chemicals or other materials are added. (Examples include, but are not limited to, water from fire suppression systems where antifreeze, biocides to reduce microbial corrosion, extinguishing agents, or foaming agents have been added.)
- ❖ **Water Used for other Purposes:** Any water that is used for an additional process other than supplying the fire suppression system. (Examples include, but are not limited to, water that has been used for washing, heat exchange, manufacturing, or hydrostatic testing of pipelines not associated with the fire suppression system.)

BEST MANAGEMENT PRACTICES

- Water that is not allowed to be discharged to the environment and/or storm drains must be disposed of by alternative means.
 - Capture the water and send it to an alternative disposal location.
 - Inject the water back into the fire suppression system (when allowable.)
 - If the water will go to the sanitary sewer, contact the local wastewater treatment facility and collection system prior to discharge. (This must be done to ensure that the collection system and facility is able to accept the flow and pollutants.)

REQUIRED STRUCTURES AND EQUIPMENT

- De-chlorination equipment and storm drain protection equipment
- Booms, berms, wattles (rock socks), filter bags, storm drain covers, and wet vacs

INSTALLATIONS REQUIRED FOR NEW CONSTRUCTION OR RENOVATIONS

- Sanitary sewer connections for discharges from training facilities.
- Post-construction water quality control features (detention, infiltration) areas for storm water runoff from development of over an acre.

REQUIRED EMPLOYEE TRAINING

- Train all current employees on these BMPs.
- Train all newly-hired employees on these BMPs before they are assigned to their new duties.
- Conduct refresher training for all employees as needed.

RECORDS

- Keep records of all employees trained.
- Keep records of contract and contractor activities.
- Keep copies of applicable discharge permits.

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 the Environment, *Guidance for Discharges Associated with Fire Suppression Systems*, December 31, 2014.
8. Colorado Department of Public Health and the Environment, *Low Risk Discharge Guidance: Discharges of Potable Water*. August, 2009.