GUIDANCE FOR DISCHARGES ASSOCIATED WITH FIRE SUPPRESSION SYSTEMS

December 31, 2014

This discharge guidance provides information regarding discharges associated with fire suppression systems, including potable water from distribution systems that supply the fire suppression systems and non-potable water from water-based fire suppression systems. Discharges addressed in this policy include all releases of water to state waters (including streams, lakes, wetlands, groundwater, etc.); to the ground; and to conveyances to surface water such as storm sewers, street gutters, and ditches.

This document provides guidance on requirements included in the following policies, and does not establish new policy or requirements.

- **Colorado Water Quality Control Division Implementation Policy Clean Water 5, Discharge from Water-Based Fire Suppression Systems, December 19, 2014.**
  - Identifies discharges from water-based fire suppression systems for which the Water Quality Control Division will not seek application for CDPS permit coverage or take enforcement action against those operators that have not obtained permit coverage, and identifies limitations for those discharges.
- **Discharge of Potable Water Guidance under the Colorado Water Quality Control Division Water Quality Policy 27, Low Risk Discharges, August 2009.**
  - Identifies discharges from potable water systems for which the Water Quality Control Division will not seek application for CDPS permit coverage or take enforcement action against those operators that have not obtained permit coverage, and identifies limitations for those discharges.

The two policies listed above identify discharges associated with fire suppression systems for which the Water Quality Control Division will not seek application for CDPS permit coverage or take enforcement action against those operators that have not obtained permit coverage. The policies address two different sources of water, discharge from water-based fire suppression systems (Section C, below) and discharges from potable water distribution systems (Section B, below). Between these two policies, most discharges associated with maintaining and testing fire suppression systems are addressed. Section A, below, provides information of some discharges associated with fire suppression that are not allowed under these policies.

Definitions

- **Backflow Prevention Assembly or Device:** Any mechanical assembly or device installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the mechanical assembly is appropriate for the identified contaminant at the cross connection and is an in-line field-testable assembly.
- **Operator:** The party that has operational control over the discharge, including the ability to meet the applicable limitations.
- **Potable Water:** Water suitable for human consumption in accordance with Colorado Primary Drinking Water Regulations (5 CCR 1002-11), or water intended for human consumption from a public or private supply system not subject to 5 CCR 1002-11.
- **Source Water:** The water that is used to supply the water based fire suppression system.
- **Water-Based Fire Suppression System:** Device, equipment, and systems used to extinguish or control a fire using water. The system also includes tanks or reservoirs used to contain supply water for the system.

A. Discharges NOT allowed by division policies

1. Types of discharges associated with fire suppressions not allowed by policy:

i. **Non Potable Water Systems:** Water that is from a system not supplied by potable water (see definitions). 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. Note that discharges from some systems supplied by tanks or reservoirs filled from a potable water source may still be allowed; refer to Part 1 of the Background section of Clean Water Policy 5.

ii. **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.

iii. **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.

iv. **Discharges not Meeting Limitations:** Any discharge for which the limitations included in the Clean Water 5 or Potable Water Guidance under Water Quality Policy 27 has not been met. These limitations are summarized below under the allowable discharge sections.

2. Guidance for disposing of water from these sources:

Water that is not allowed under one of the policies must be disposed of by alternative means. This typically involves capturing the water or routing it to an alternative disposal location. Options for disposal include requesting authorization from the wastewater treatment facility operator to direct the water to a sanitary sewer, and injection 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. System owners may grant blanket authorization to direct the water to their systems. Additional local approvals, restrictions, and guidelines may apply.

Individual discharge permit coverage may still be available from the division to discharge to state waters, but is not expected to be a solution for most operators and is therefore outside of the scope of this guidance.

B. Allowed Potable Water Discharges (prior to the backflow prevention assembly or device):

The Low Risk Policy, Water Quality Policy 27, and the Potable Water Guidance address water from within a potable water distribution system that supplies a fire suppression system. This is the water prior to the backflow prevention assembly or device. This guidance refers to water from this source as potable water. Potable water that is discharged in accordance with the guidance is determined to have a low potential risk to water quality.

1. Potable water discharges allowed by policy:

The discharge must be from a potable water distribution system, tank, or storage that has been maintained for potable water distribution use. Discharges from a distribution system, tank, or storage that is used for conveyance or storage of materials other than potable water are not authorized. The water must be prior to the back flow prevention assembly or device. For water downstream of the backflow prevention assembly or device, refer to Section C, below.

2. **Limitations:** (Note these limitations are also applicable to water from within the fire suppression system.)

   i. The discharge of cleaning materials or chemicals, including dyes, is strictly prohibited.
   ii. The water shall not be used in any additional process.
   iii. The discharge shall not cause erosion of a land surface. Erosion for the purpose of the policy is intended to address conditions that could cause pollution of the receiving water and includes visible erosion such as forming rills or gullies on the land surface. It is understood that minimal suspension of sediment is inherent to any water running across soils. However potential water quality impacts should be minimized through practices such as diffusing flows and avoiding flows across bare soils.
   iv. 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.
   v. 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. The guidance included in this document 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.
   vi. 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.
   vii. Best management practices should be implemented as necessary to meet the conditions below:
      - For discharge to the ground, the water should not cause any toxicity to vegetation. When discharging, allow the water to drain slowly so that it soaks into the ground as much as possible.
      - 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 a state surface water. Dechlorination, if necessary, may be achieved by allowing water to stand uncovered until no chlorine is detected. The use of dechlorinators as best management practices to remove chlorine is allowed by the policies, 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.
      - 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, a best management practice, or combination of practices, for filtering or settling suspended solids and other debris should be used to remove suspended solids or other debris. Examples of suspended solid removal practices include, but are not limited to, check dams, filter bags, and inlet protection. These devices should be used and maintained in accordance with the manufacturer's specifications.

C. **Allowable Fire Suppression System Water Discharges (downstream of the backflow prevention assembly or device)**

The Discharge from Water-Based Fire Suppression Systems policy, Clean Water 5, addresses water that is discharged from within a fire suppression system that is isolated downstream of a backflow prevention assembly or device for that system. This guidance refers to water from this source as fire suppression system water. Unlike potable water, fire suppression system water has a potential to result in water quality impacts as a result of the various metals that the system may contribute to this discharge. The potential is greater for discharges to surface water than it is to the ground water via a discharge to the ground. **Therefore, this guidance strongly encourages operators to dispose of the water into a sanitary sewer system when feasible and allowed, or to the ground.**

1. **Fire Suppression System discharges allowed by policy:**
   The discharge must be from a water-based fire suppression system for which the source water is potable water. Although discharges to surface waters are allowed, operators are strongly encouraged to minimize the need to discharge to surface water. Elevated metals in the discharge do have the potential to be detrimental to surface water quality and both aquatic life and drinking water uses. When surface water discharges do occur, please refer to the practices listed in subsection 3 to help reduce the potential for impacts.

2. **Limitations for Fire Suppression System discharges:**
   i. All limitations listed above in Section B.2 must be met in addition to the limitations listed below.
   ii. The source water used to supply the fire suppression system must be potable water.
   iii. The operator of the discharge must be registered (i.e. certified) by the Colorado Division of Fire Prevention and Control to perform the activity resulting in the discharge, including but not limited to registered fire suppression contractors, fire suppression inspectors, and backflow contractors.
   iv. The operator that is registered in accordance with limitation iii, above, shall keep records for every discharge event. The records shall include the purpose (e.g., type of test/maintenance being conducted), date, time, location, and estimated volume for every discharge to a state water, storm sewer, or to the ground.

3. **Additional Guidance to Minimize Water Quality Impacts**
   Although the following measures are not required, operators are encouraged to take these, and other, measures to try to reduce the discharge of pollutants to waters of the state and reduce the potential for water quality impacts.

   i. When feasible, avoid discharging to surface waters, or conveyances leading to surface waters. The operator should attempt to direct water to either a sanitary sewer system or to a location where it can soak into the ground. If the water will go to the sanitary sewer, contact the local wastewater treatment facility and collection system prior to discharge. System owners may grant blanket authorization to direct the water to their systems. This must be done to ensure that the facility is able to accept the flow and pollutants. Additional local approvals, restrictions , and guidelines may apply.
   ii. If it is not feasible to avoid a surface water discharge, try to minimize the quantity of water discharged if possible. Specifically, attempt to avoid discharges to surface water that are visibly more turbid, such as may occur at the beginning of the discharges.
   iii. Avoid discharges to sensitive surface waters. Specifically, wetlands and small streams or ponds that support aquatic life may be more susceptible to impacts due to the lack of dilution and flushing that may occur. Avoid discharge immediately upstream of water supply intakes.
   iv. Best management practices identified above (B.2.vii) can further help reduce the transport of pollutants to surface waters and should be used when possible.
   v. If sediment or other solids are deposited to the ground during the discharge, collect and dispose of these residual materials. This will help avoid the potential for future storm events to carry the materials to surface waters.