MANAGEMENT OF FIRE CONTROL AGENTS

ENVIRONMENTAL GUIDELINES

ACTIVITY DESCRIPTION

The activity of properly procuring, storing, handling, and using fire control agents and containing and disposing firefighting foam waste. Fire control agents include firefighting foams and dry chemicals. Uses include system maintenance, firefighting uses by the Denver Fire Department (DFD) and in fire suppression systems located in aircraft hangars and at the Fuel Farm.

POTENTIAL ENVIRONMENTAL RISKS

The following environmental concerns are associated with these activities:

- Contamination of soil
- Contamination of groundwater
- Contamination of surface water
- Contamination of sanitary sewer
- Improper or inappropriate disposal of fire control agents

Potential consequences from performing the activity incorrectly:

- Property damage, personal injury or damage to the environment
- Noncompliance, Notices of Violation from Regulators, and related [financial & non-financial] penalties

RECOMMENDED OPERATING CONTROLS

Prohibited Activities

i. As of August 2, 2019, the discharge or use of firefighting foam that intentionally contains per and poly-fluoroalkyl substances (PFAS) for testing or training purposes, is prohibited.

ii. Beginning August 2, 2021, a manufacturer may not knowingly sell, offer or sale, distribute for sale, or distribute for use in the state class B fire-fighting foam to which PFAS chemicals have been added.

   a. This restriction does not apply to the sale of PFAS containing foams to the Denver Fire Department for use in aircraft rescue and firefighting (ARFF), since the use of PFAS containing foams is required by federal law, at 14 CFR 139.

   b. This restriction does not apply to the sale of PFAS containing foams to the operator of the fuel system, since that is a jet fuel storage and distribution facility that is supplied by a pipeline.

General Operating Controls

- Foam Products. Stay up to date on fire performance criteria and standards, prohibited products, available products that meet fire performance criteria and standards, and available products that meet fire performance criteria and are environmentally favored (See Environmental Guideline Procurement). Understand which products are third party verified for environmental characteristics, such as products

certified to the Department of Defense Military Specification for AFFF[1] and the GreenScreen Standard[2]. Obtain available information from suppliers on environmental characteristics of products, such as their constituents, and the ecological toxicity and biodegradability of the product in concentrated form and as applied. Review environmental information contained in the product safety data sheet, ask for supplemental information from the supplier, and review additional information available from third party sources.

- Inventory Management. Maintain an up-to-date inventory of products. Track usage and reconcile the inventory to identify any losses. If there are losses investigate to determine the cause. (see Environmental Guideline Storage, Handling, and Management of Hazardous Materials).
- Use in Training. When possible, conduct training with water only. When firefighting foam is used for training, use products that are PFAS free, and obtain verification of such from the product supplier. Provide for capture and disposal of firefighting foam waste.
- Use in Testing. Where possible, conduct testing with water only. If a firetruck or fire suppression system that has PFAS foam must be tested using foam, review C.R.S. 24-33.5.1234 and C.R.S. 25-15-302(3.2) to determine on a case-by-case basis, if testing using PFAS foam is allowed. When testing with any foam (including PFAS free foam), provide for capture and disposal of the firefighting foam waste.
- Accidental Discharge. Train personnel on the foam fire suppression system, to minimize the potential for human caused accidental releases. Conduct condition assessments, inspections, and preventative maintenance on the fire suppression system to minimize the potential for mechanical caused accidental discharge. Follow standard protocol for aircraft handling while in the hangar, to minimize the potential for aircraft caused accidental discharge. Conduct condition assessments, inspections and preventative maintenance on the waste containment system to promote its capability to contain fire-fighting foam waste generated during an accidental discharge. Understand and plan for fire-fighting foam waste flow patterns and provide supplemental waste containment (i.e., spill kits) as appropriate. Train personnel to deactivate the foam suppression system quickly, in the event of an accidental discharge, to minimize waste volumes.
- Emergency Incident. Take preventative measures as described above. After taking immediate action to address the fire incident, evaluate the need for supplemental containment and deploy practices as appropriate. For example, for a rig-based firefighting incident, build berms and deploy spill kits to contain waste. For a fire suppression system-based incident, contain foam that may have left the hangar floor.
- System flushing. System flushing may be necessary. In accordance with manufacturer's recommendations, piping systems and handlines associated with fire-fighting rigs must be flushed following any event where the foam system is activated. When possible flushing should occur in an area where the waste can be contained and collected for disposal. Structural suppression systems such as those located at hangars and the fuel farm may need to be flushed following deployment, to remove residual, or prior to water only system testing, to remove prior residual. Flushing waste should be contained and collected for disposal.

Training Requirements

[1] US. Navy, MIL-PRF-24385F(SH). Performance Specification, Fire Extinguishing Agent, Aqueous Film-Forming Foam (AFFF) Liquid Concentrate for Fresh and Sea Water, 7 May 2019

[2] Clean Product Action. Standard for Firefighting Foam. Version 2.0 September 2020.

All applicable employees should be trained in appropriate procedures for use of fire control agents and containment and disposal of firefighting foam waste.

Storage and Materials Management

Store fire control agents indoors, in appropriate containers in good condition (i.e. original containers that are labeled and don't pose risk to leakage), and utilize secondary containment (see Environmental Guideline Storage, Handling, and Management of Hazardous Materials)

PLANNING REQUIREMENTS

Train all responsible personnel in the use of fire control agents and containment and disposal of fire-fighting foam waste.

CRITICAL TASKS

- Minimize the potential for firefighting agents to be released through non-emergency events.
- After taking immediate action to address a fire incident, evaluate the need for containment and disposal of firefighting foam waste.

EMERGENCY RESPONSE

If a spill occurs, refer to Environmental Guideline Spill Response.

- Call DEN Communications Center immediately at 303-342-4200 for all spills.
- Disposal of Spill cleanup materials generated from cleanup of spills of firefighting foams or Purple K (dry chemical) must be handled in accordance with General Waste Management Environmental Guideline.
- Best practice is to handle waste firefighting foam that contains PFAS as hazardous waste, and to handle waste firefighting foam that does not contain PFAS and waste dry agents, as special waste (see Environmental Guideline Management of Special Waste).

INSPECTION AND MAINTENANCE REQUIREMENTS

- Inspect the local area for releases after fire agent use
- Inspect product storage areas, fire suppression systems, and firefighting foam waste structures and conduct maintenance as necessary to optimize performance.

EXPECTED RECORDS AND OUTPUTS

- Purchase records
- Inventory records
- Usage records
- Waste management records (profiles, manifests, sample results, etc.). Operator must maintain waste management records at the facility for a minimum of 3 years.

REFERENCES

Contacts

- DEN Communications Center (for spill reporting): 303-342-4200
- DEN Environmental Services (Main Line): 303-342-2730; DIA.Environmental@flydenver.com
- Kim Ohlson, DEN Environmental Services: 303-342-2637; Kim.Ohlson@flydenver.com

Guidance Materials

- DEN Stormwater Management Plan
- SDSs

Training Materials

- DEN DFD Standard Operational Procedures (SOPs)

Related Environmental Documents

- Procurement
- Storage, Handling, and Management of Hazardous Materials
- Spill Response
- General Waste Management
- Management of Special Waste

Applicable Regulations

- C.R.S. 24-33.5.1234 Training restrictions with certain firefighting foams - penalty - exemptions - definitions – repeal
- C.R.S. 25-5-1303. Restriction on sale of certain firefighting foams - exemptions
- C.R.S. 25-15-302. Solid and hazardous waste commission - creation - membership - rules - fees - administration - definition
- 40 CFR 260-262 Federal RCRA Regulations
- 6 CCR 1007-3, Parts 260-262 State RCRA Regulations
- CDPHE WQCC Regulation No. 61: Colorado Discharge Permit System Regulations
- Metro Wastewater Reclamation District Rules and Regulations
- DEN Rules and Regulations