	Floor Drains in Laboratories EH&S Lab Safety Design Guide	Document Number: EHS.FD.001 Effective Date: 1-24-2010 Revision Date: 7-24-014

1.0 Purpose and Applicability

1.1. The United States Environmental Protection Agency (EPA) regulates the discharge of water from facilities through provisions of the Clean Water Act 40 CFR 403. Activities performed in laboratory facilities are subject to the Clean Water Act through the discharge of pollutants to our sewer system or the Amherst Publicly Owned Treatment Works (POTW). The POTW must meet the requirements of their EPA National Pollution Discharge Elimination Permit (NPDES). Some laboratory discharges are also regulated under the Massachusetts Department of Environmental Protection via 314 CMR 7.00 the Sewer System and Connection Permit Program. Also note that hazardous wastes are prohibited from being discharged into our drainage system and must be disposed of according to local, state and federal regulations. All discharges must comply with the UMass Amherst Sewer Use Protocol EHS-SEW-SOP.01 which can be found on the EHS web site http://www.ehs.umass.edu/policies.html

1.2. Compliance with all provisions of these regulations must be accomplished in a manner consistent with Massachusetts Plumbing and Building code requirements, and Fire prevention regulations. This policy applies to all new construction as well as remodeling/reconstruction involving plumbing and flooring in laboratories.

1.3 It is the intention of this policy to prevent accidental releases of hazardous materials to the sanitary sewer in the event of a laboratory spill.

1.4 It is also the intention of this policy to prevent noxious odors that are caused by infrequently used or inadequately maintained floor drains.

2.0 Definitions

2.1 Laboratory: Any room operated by the University of Massachusetts that will store and/or use hazardous materials and/or non- hazardous CEMS inventoried substances. Examples include the traditional science laboratories as well as art studios, film developing rooms, theater set design rooms, etc.

2.2 Commercial and Industrial Facility: A public or private establishment where the principal use is the supply, sale, and/or manufacture of services, products, or information, including but not limited to: manufacturing, processing, or other industrial operations; service or retail establishments; printing or publishing establishments; research and development facilities; small or large quantity generators of hazardous waste; laboratories; hospitals.

2.3 Discharge: The accidental or intentional disposal, deposit, injection, dumping, spilling, leaking, incineration, or placing of toxic or hazardous material or waste upon or into any land or water so that such hazardous waste or any constituent thereof may enter the land or waters of the Commonwealth. Discharge includes, without limitation, leakage of such materials from failed or

discarded containers or storage systems and disposal of such materials into any on-site leaching structure or sewage disposal system.

2.4 Floor Drain: An intended drainage point on a floor constructed to be otherwise impervious which serves as the point of entry into any subsurface drainage, treatment, disposal, containment, or other plumbing system.

2.5 Leaching Structure: Any subsurface structure through which a fluid that is introduced will pass and enter the environment, including, but not limited to, dry wells, leaching catch basins, cesspools, leach fields, and oil/water separators that are not water-tight.

2.6 Oil/Water Separator: A device designed and installed so as to separate and retain petroleum based oil or grease, as well as sand and particles from normal wastes while permitting normal sewage or liquid wastes to discharge into the drainage system by gravity. Other common names for such systems include MDC traps, gasoline and sand traps, grit and oil separators, grease traps, and interceptors.

2.7 Toxic or Hazardous Material: Any substance or mixture of physical, chemical, or infectious characteristics posing a significant, actual, or potential hazard to water supplies or other hazards to human health if such substance or mixture were discharged to land or water. Toxic or hazardous materials include, without limitation, synthetic organic chemicals, petroleum products, heavy metals, radioactive or infectious wastes, acids and alkalis, and all substances defined as Toxic or Hazardous under Massachusetts General Laws (MGL) Chapter 21C and 21E or Massachusetts Hazardous Waste regulations (310 CMR 30.000), and also include such products as solvents, thinners, and pesticides in quantities greater than normal household use.

2.8 Use of Toxic or Hazardous Material: The handling, generation, treatment, storage, or management of toxic or hazardous materials.

3.0 Roles and Responsibilities

3.1 Architects, building designers, Facilities and Planning staff and Plant Operations staff must all be aware of the policy for floor drains in laboratories.

4.0 Procedure

4.1 New Laboratory facilities

4.1.1 New laboratory facilities will incorporate floor drains into their designs for safety showers

4.2 Future Renovation Projects

4.2.1 The requirements of this policy are such that the owners of existing floor drain systems shall have them dealt with in the following manner on future renovation projects:

4.2.2 Disconnect and plug all applicable inlets to and outlets from (where possible) applicable sanitary sewer lines, leaching structures, oil/water separators, and/or septic systems

4.2.3 Remove all existing sludge in traps, oil/water separators, septic systems, and where accessible, leaching structures. Any sludge determined to be a hazardous waste shall be disposed of in accordance with State hazardous waste regulations (310 CMR 30.000). Remedial activity involving any excavation and/or soil or groundwater sampling must be performed in accordance with appropriate Mass DEP policies

4.3 Exceptions

4.3.1 Indirect drains – Examples of this type of equipment with these drains are: steam autoclaves, some reverse osmosis water purification units, and ice machines. The autoclave drains should be fitted with a funnel that is large enough to collect the waste water and to avoid splashing on to the surrounding floor.

4.3.2 Animal Care Facilities – are allowed floor drains unless there is a strict laboratory space within the animal facility that is used for no other purpose than chemical storage and/or experiments.

4.3.3 If the researcher has a valid reason for a floor drain, Environmental Health and Safety's approval is required. Telephone: 413-545-2682.

4.3.4 Safety showers should be located near a floor drain. Floor drains with removable plugs are acceptable

5.0 Key References:

5.1 United States Environmental Protection Agency:
EPA Small Business Office:
http://www.epa.gov/smallbusiness/help.htm or call (800) 368-5888.

EPA Compliance Assistance Centers:
http://es.epa.gov/oeca/main/compasst/ compcenters.html

5.2 Massachusetts Department of Environmental Protection:
http://www.mass.gov/dep/