

Wastewater Regulatory Requirements MassDEP and MWRA


Triumvirate Environmental
Life Sciences Roundtable
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Massachusetts Agencies Governing Wastewater Discharges

- U.S. EPA - NPDES and Industrial Pretreatment Programs
- MassDEP - State Programs (not a NPDES delegated state)
- Local POTWs (e.g., MWRA) - Local Programs in accordance with U.S. EPA and MassDEP regulations



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U.S. EPA

- Pretreatment Regulations - 40 CFR Part 403 (general)
- Categorical Standards for Industry - 40 CFR Parts 400-424 and 425-471
 - 40 CFR Part 439 Pharmaceutical Mfg. Point Source Category
- EPA-Approved Industrial Pretreatment Program (IPP)
 - Local Limits



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MassDEP vs. MWRA

 <p>MassDEP</p> <ul style="list-style-type: none">• Focuses on the system and how it is operated and maintained• Certifies Operators	<p>MWRA</p> <ul style="list-style-type: none">• Permitting Authority• Focuses on what's in the discharge, after the treatment system	
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MassDEP


- **State agency - Mass DEP**
 - Approval and grading of wastewater treatment systems
 - WW operator certification
 - Staffing Plans - update every 2 years
 - Requires Operation & Maintenance Manuals
 - Requires decommissioning of WW treatment systems



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MWRA (and other POTWs)

- Local Authority - MWRA; authorized by the MassDEP and NPDES "permitted" by the EPA
- MWRA - Issues Sewer Use Discharge Permits to industrial users in Boston area;
- Focused on compliance with permit limits; what's in the discharge vs. how it's treated
- Industrial Coordinators (by town/city)
- Annual inspections and sampling
- Enforcement



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Massachusetts Department of Environmental Protection



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MassDEP

- 257 CMR 2.00 - Operator Certification & System Grading
- 314 CMR 7.05(2)(g)5 - Staffing Requirements
 - FAIWPS (defined in 314 CMR 7.02)
 - Non FAIWPS
- 314 CMR 7.05(2)(g)(8) - Decommissioning Activities
- 314 CMR 12.00 - Operation & Maintenance Standards

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MassDEP Operator Certification Requirements

- 257 CMR 2.00
 - Exemptions:
 - Lime chip tanks
 - Less than 100 gpd in batches \leq 2 liters
 - Small scale silver recovery
 - Oil/water separators; and
 - Closed loop systems

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Mass DEP IWPS Grading

- 257 CMR 2.13
 - Six systems pre-graded level 2I with or without single or dual stage pH adjustment:
 1. Cartridge filtration
 2. Cartridge metallic ion replacement
 3. Cartridge single or dual stage ion exchange
 4. Reverse osmosis
 5. Ultra filtration system
 6. Carbon absorption

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MassDEP – MWRA Facilities 314 CMR 7.05(2)(g)(4)

- Grading Reports, Staffing Plans, O&M Manuals not required under limited circumstances
 1. pH neutralization system only;
 2. Consists of any one of the following: cartridge filtration, ion exchange, RO, ultra filtration, or carbon adsorption
 3. pH neutralization and one of the above systems

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MassDEP Construction Requirements 314 CMR 7.05(2)(g)3

a. Designed to meet discharge standards	e. Equipment and access to ensure safe operation and maintenance
b. Equipped to treat 120% design flow	f. Accessible locations for representative sample collection
c. Designed to prevent bypass of off-spec wastewater	g. Odor control as necessary
d. Designed to prevent mixing incompatible wastewater	

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MassDEP Construction Requirements, continued

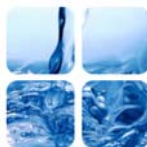
- h. Comply with hazardous waste management rules at 310 CMR 30.605; and
- i. Construct in accordance with engineering plans reviewed, stamped, and signed by a MA Professional Engineer (with the appropriate specialty)
 - Revised plans shall be reviewed, stamped and signed by a MA PE

Mass DEP IWPS Operator Staffing Requirements 314 CMR 7.05(2)(g)5

- Fully Automated (FAIWPS)
 - Grades 11 and 2I: Grade level or higher - Inspect facility 2x/wk and on-call during operation
 - Greater than 2I - no special provisions
- Non-Fully Automated (IWPS)
 - Grade 11 and 2I: Grade level or higher - At least 8 hrs/day
 - Greater than 2I:
 - Grade level at least 8 hrs/day
 - One Grade level lower during the IWPS operation

MassDEP – MWRA Facilities

- Fully Automated Industrial Wastewater Pretreatment Systems (FAIWPS)
 - Equipped with controls to initiate, conduct, and complete treatment processes automatically
 - Capable of responding to potential system malfunctions affecting compliance



FAIWPS

- Response to include:
 - Automatic system shutdown
 - Switch flow to holding tank, or
 - Recirculate until in compliance, AND
 - Alarm signals
 - To staffed location during operating hours, or
 - On-call system that notifies a "responsible operator in a timely manner"

Mass DEP




- 314 CMR 7.00
 - Sewer Connection and Extension Permits
 - Not applicable in MWRA District
- 314 CMR 12.00
 - Authorization to Construct and Operate Wastewater Treatment Facilities
 - Applies to facilities in MWRA District

MassDEP Operation & Maintenance Manual - 314 CMR 7.05(2)(g)6

- Prepare, keep current, and implement an O&M Manual including:
 - a. Introduction - general description of the facility and wastewater
 - b. Copies of all permits and standards
 - c. Description of the IWPS:
 - ✓ principal treatment processes
 - ✓ sources of water supply
 - ✓ sources of sanitary and industrial waste streams
 - ✓ by-product recovery systems
 - ✓ liquid waste flow control measures
 - ✓ flow and material balance diagram
 - ✓ list of raw materials used


**MassDEP O&M Manual,
continued**

d. Sludge handling	h. Safety plan – safety practices and hazardous waste handling
e. Sampling and analytical procedures, locations, frequencies, methods	i. Utility and supply plan – utilities, equipment and spare parts list
f. Maintenance plan – operating and inspections plans	j. Personnel management plan – staffing, operator certification, training programs
g. Emergency operating and response procedures	

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**MassDEP
Documentation for Site Inspections**

1. All permits and approvals
2. Current facility plan for IWPS and related engineering reports
3. As built construction plans
4. Records related to decommissioning
5. O&M Records
6. Sampling and analytical reports
7. Annual O&M manual review/update
8. Summary report of incidents

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**MassDEP - 314 CMR
7.05(2)(g)(4)(a)**

- Elementary Neutralization Exemption
 - Corrosive ONLY, contains no other pollutants
 - Exempt from certified operator provisions when discharged to local POTW, if
 - Batches ≤ 2 liters
 - <100 gallons/day (total, all waste streams)
 - Within permitted pH limits (MWRA: 5.5 - 12 su)
 - Logbooks for weekly probe maintenance and calibration

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MassDEP - 340 CMR 18.00

- Industrial Wastewater Holding Tanks and Containers
- Applies only to facilities that store non-hazardous, non-sanitary wastewater in IWHTs, mobile tanks or containers and intend to truck it directly off-site for disposal, recycling or treatment

Industrial Holding Tanks

- Establishes specific construction and operation standards
- Record-keeping requirements and decommissioning procedures
- A one-time compliance certification requirement for IWHTs



MassDEP IWPS Decommissioning- 314 CMR 7.05(2)(g)8

- a. Collect and Dispose of the Content in the IWPS. Collect, treat, and dispose of the IWPS contents in accordance with applicable provisions in the following:
 - i. Hazardous waste regulations (310 CMR 30.000);
 - ii. Solid waste regulations (310 CMR 19.00);
 - iii. Sewer discharge regulations (314 CMR 7.00);
 - iv. Surface water discharge regulations (314 CMR 3.00);
 - v. Groundwater discharge regulations (314 CMR 5.00).

Decommissioning, continued

- Decommission IWPS
 - Pump and haul away the entire remaining contents of the system;
 - Clean the system and related areas as necessary;
 - Remove in-ground systems or fill tanks with sand... or change the function of the system
- Disconnect the decommissioned IWPS from the sewer system
 - keep all the decommissioning records
 - Report the decommissioning process to POTW

Massachusetts Water Resources Authority




MWRA – 360 CMR

- 10.007 – Permits
- 10.008 – Monitoring, Sampling, Reporting
- 10.013 – Non-complying Discharges: Required Notifications and Actions
- 10.018 – Significant Industrial Users
- 10.024 – Specific Discharge Limitations/Local Limits

MWRA – 360 CMR


- 10.025 – Dilution Prohibition
- 10.036 – Permit Requirements for Industrial Users
- 10.052 – Permit Application and Issuance
- 10.062 – General Permit for Low Flow/Low Pollutant Discharge



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MWRA Sewer Use Permits


- Electronic Submittal of Self-Monitoring Results (<http://websmr.mwra.com>)
- Client/location specific Chain of Custody
- Sample Analyses and Reporting Certification Form (signed by Authorized Representative)



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MWRA Sewer Use Permits

- pH Monitoring
 - Daily logs (excursions, probe maintenance, etc.)
 - Continuous pH Recorder
 - Reporting excursions
 - Below 5.5 su shall not exceed 7 hrs/calendar month
 - Cannot exceed 60 minutes
 - May not be below 5.0 su



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Violations – MWRA Reporting Requirements

- Notify the Authority within 24 hours of becoming aware of the violation.
- Repeat the sampling and analysis and submit the results within 30 days of becoming aware of the violation.

MWRA Permit Modifications

- **10.055: Permit Modifications**
- Provide at least 30 days advance written notification of:
 - (a) substantial expansion
 - (b) substantial increase or decrease in production;
 - (c) modification of any process;
 - (d) alteration of the Pretreatment system or the operation of the Pretreatment system;
 - (e) discharge from a different or relocated sewer connection; or
 - (f) any changes affecting the potential for a Slug Discharge.

MWRA Low Flow Low Pollutant Permits

- Avg < 25,000 gallons per day to sewer (excluding sanitary, noncontact cooling, and boiler blowdown wastewater)
- Does not contain a substance regulated by 360 CMR 10.022 through 10.024;
- Avg < than 300 gallons per day of wastewater to the sewer (excluding sanitary, noncontact cooling, boiler blowdown, and incoming water treatment reject stream wastewater)
- Does not require an active pretreatment system

Additional Requirements for Laboratories

- Written laboratory Chemical Management Plan
- Ensure no spills into the sewer system;
- Eliminate/ minimize disposal of regulated materials to the sewer system
- Properly handle, store, collect, and dispose of lab chemicals
- Maintain disposal manifests;
- Train laboratory employees in proper lab chemical usage and disposal;
- Ensure that the laboratory chemical management plan is followed: post notices at sinks

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Non Compliance – MWRA Enforcement

- Violations
- Exceedences
- Follow Up Sampling
- Notice of Violation (NOV)
- Notice of Non Compliance (NON)
- Demonstration of Compliance
- Significant Non Compliance (SNC)
- Administrative Order (AO)
- Settlement Agreement
- Fines/Penalties (EPA - up to \$35,700 per day per violation)

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Questions??

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