

**U.S. EPA 2021 Multi-Sector General Permit Monitoring Guidance for Discharges into Impaired Waters (Part 4.2.5) - Parameters and Methods for Operators Discharging into Massachusetts Waters – May 2021**

<b>Pollutant Causing Impairment<sup>1</sup></b>	<b>Monitoring Parameter(s)<sup>2</sup></b>	<b>Method Numbers<sup>3</sup></b>
Abnormal Fish Deformities, Erosions, Lesions, Tumors (DELTS)	NMR	--
Ammonia (Un-ionized)	Ammonia-Nitrogen	350.1
Cause Unknown -(Contaminants in Fish and/or Shellfish) -(Sediment Screening Value (Exceedence)) -(Fish Population Imbalance)	NMR	--
Chlordane in Fish Tissue	NMR	--
Chloride	Chloride	300.0, Rev 2.1 300.1-1, Rev 1.0
Exotic Species: -(Eurasian Water Milfoil, <i>Myriophyllum spicatum</i> *) -(Non-Native Aquatic Plants*) -(Zebra mussel, <i>Dreissena polymorph</i> *)	NMR	--
Flow Alterations: -(Low flow alterations*) -(Flow Regime Modification*)	NMR	--
Habitat Alterations: -(Alteration in stream-side or littoral vegetative covers*) -(Fish-Passage Barrier*) -(Habitat Assessment (Streams)*) -(Physical substrate habitat alterations*) -(Other anthropogenic substrate alterations*) -(Combined Biota/Habitat Bioassessments) -Estuarine Bioassessments -Fish Bioassessments -Benthic Macroinvertebrates	NMR	--
Mercury in Fish Tissue Mercury in Water Column	NMR	--
Metals <sup>4</sup> : -Aluminum -Arsenic -Cadmium -Chromium -Copper -Iron -Lead -Nickel -Zinc Unspecified Metals in Sediment	Total Aluminum Total Arsenic Total Cadmium Total Chromium Total Copper Total Iron Total Lead Total Nickel Total Zinc NMR	200. 7; 200.8; 200. 9

Noxious Aquatic Plants: -Algae -Aquatic Plants (Macrophytes) -Chlorophyll-a	Phosphorus & Nitrogen, Total NMR Phosphorus & Nitrogen, Total	See "Nutrients"
Nutrients <sup>5</sup> : -Phosphorus, Total -Nitrogen, Total -Nutrient/Eutrophication Biological Indicators	Phosphorus, Total  Nitrogen, Total	365. 1; 365.2; 365. 3; SM 4500-P-E  351. 1/351.2 + 353. 2; USGS I-4650-03
Objectionable Deposits: -(Debris/Floatables/Trash*) -(Bottom Deposits*) - Foam/Flocs/Scum/Oil Slicks - Flocculant Masses	NMR	--
Oil and Grease or Petroleum Hydrocarbons	Oil & Grease (Total Recoverable)	1664 Rev. A or B
Organic enrichment/low DO: -Dissolved Oxygen Supersaturation -Oxygen, Dissolved -Organic Enrichment (Sewage) Biological Indicators	Phosphorus & Nitrogen, Total Phosphorus & Nitrogen, Total NMR	See "Nutrients" See "Nutrients"
Other Organics	NMR	--
Pathogens <sup>6</sup> : -Escherichia Coli (E. Coli) -Enterococcus -Fecal Coliform	E. Coli Enterococcus Fecal Coliform	1103.1; 1603 1106.1; 1600 1680; 1681
Pesticides and Priority Organics: -Chlordane in Fish Tissue -DDT -Dioxin (including 2,3,7,8-TCDD) -2,3,7,8-Tetrachlorodibenzo-p-dioxin (only) -Pentachlorophenol (PCP) -Polychlorinated biphenyls -PCB in Fish Tissue -Polycyclic Aromatic Hydrocarbons (PAHs) - (Aquatic Ecosystems)	NMR	--
pH, Low or High	pH	150.2
Salinity	NMR	--
Sedimentation/Siltation (Sedimentation/Siltation*)	Total Suspended Solids NMR	160.2 --
Sulfide-Hydrogen Sulfide	NMR	--
Taste, odor, color	NMR	--
Temperature, water	Temperature	SM 2550
Total Suspended Solids (TSS)	Total Suspended Solids	160.2
(Total Dissolved Solids*)	NMR	--
Turbidity Secchi Disk Transparency Transparency / Clarity	Turbidity	180.1

Toxicity: -Sediment Bioassays -- Acute Toxicity Freshwater -Ambient Bioassays -- Chronic Aquatic Toxicity -Whole Effluent Toxicity (WET)	NMR	--
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<sup>1</sup> As identified in the most current [EPA-approved Massachusetts DEP Integrated List of Waters](#)

“(\*)” indicates that the cause of the impairment is classified as a non-pollutant

<sup>2</sup> “NMR” indicates no monitoring required

<sup>3</sup> Only select methods are listed. Additional EPA-approved methods available at: [40 CFR 136](#)

<sup>4</sup> If impaired by “Metals”, monitor for all metals shown. Otherwise, monitor only for the individual metal(s) identified

<sup>5</sup> Nutrients:

- If impaired by “Phosphorus (Total)”, monitor for: phosphorus, total
- If impaired by “Nitrogen (Total)”, monitor for: nitrogen, total
- If Impaired by “Nutrient/Eutrophication Biological Indicators”:
  - If discharge is to coastal or marine waters (Class SA, SB), monitor for: nitrogen, total
  - If discharge is to fresh water (Class A or B), monitor for: phosphorus, total

<sup>6</sup> Pathogens:

- If discharge is to coastal or marine waters (Class SA, SB) or any brackish fresh water influenced by saline backwaters, enumerate enterococci
- If discharge is to fresh water (Class A or B), enumerate *E. coli*
- If discharge is to a water designated for shellfishing, enumerate fecal coliform

See Massachusetts Water Quality Standards ([314 CMR 4.00](#)) for surface water classes and uses