



# Maine Environmental Laboratory

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## Sample Containers / Preservations / Holding Times

	Solids			Aqueous		
INORGANICS	Container <sup>1</sup>	Preservation <sup>2</sup>	Holding Time <sup>3</sup>	Container <sup>1</sup>	Preservation <sup>2</sup>	Holding Time <sup>3</sup>
Metals <sup>4</sup> (except mercury)	P, G	n/a	6 months	P, G - 250 mL	HNO <sub>3</sub> to pH<2	6 months
Mercury <sup>4</sup>	P, G	≤6°C	28 days	P, G - 125 mL	HNO <sub>3</sub> to pH<2	28 days
Alkalinity	P, G	≤6°C	n/a	P, G - 250 mL	≤6°C	14 days
Ammonia-N <sup>5</sup>	P, G	≤6°C	28 days	P, G - 125 mL	H <sub>2</sub> SO <sub>4</sub> to pH<2, ≤6°C; + pre-test kit <sup>5</sup>	28 days
<b>BOD<sub>5</sub></b>	n/a	n/a	n/a	P, G - 1L	≤6°C	<b>24 hours</b>
Boron	P	≤6°C	6 months	P - 60 mL	HNO <sub>3</sub> to pH<2	6 months
Bromide	P, G	≤6°C	n/a	P, G - 60 mL	≤6°C	28 days
<b>CBOD<sub>5</sub></b>	n/a	n/a	n/a	P, G - 1L	≤6°C	<b>24 hours</b>
Chloride	P, G	≤6°C	n/a	P, G - 60 mL	≤6°C	28 days
COD	n/a	n/a	n/a	P, G - 60 mL	H <sub>2</sub> SO <sub>4</sub> to pH<2, ≤6°C	28 days
<b>Coliform (Total or Fecal), E. coli</b>	n/a	n/a	n/a	P - Sterile bottle w/ Sodium Thiosulfate	DW recommended ≤10°C NPDES required ≤10°C	<b>30 hrs-DW 8 hrs - NPDES</b>
<b>Color</b>	n/a	n/a	n/a	P, G - 125 mL	≤6°C, separate bottle	<b>48 hours</b>
Conductivity / Specific Conductance / Salt Toxicity	P, G	≤6°C	28 days	P, G - 125 mL	≤6°C	28 days
Cyanide, Total & Amenable to Chlorination <sup>5</sup>	P, G	≤6°C	14 days	P, G - 100 mL	≤6°C, NaOH to pH>12 + pre-test kit <sup>5</sup>	14 days
Flash Point (aqueous) Ignitability (solids)	1 - 8oz. G (fill to top)	n/a	n/a	1 - 8oz. G; fill to top	None required.	n/a
Fluoride	P	≤6°C	n/a	P - 60 mL	≤6°C	28 days
Hardness <sup>4</sup>	P, G	n/a	6 months	P, G - 60 mL	HNO <sub>3</sub> to pH<2 <sup>6</sup>	6 months
<b>Hexavalent Chromium</b>	P, G	≤6°C	28 days	P, G - 500 mL	≤6°C	<b>24 hours<sup>9</sup></b>
<b>Nitrate-N</b>	P, G	≤6°C	n/a	P, G - 60 mL	≤6°C	<b>48 hours</b>
<b>Nitrite-N</b>	P, G	≤6°C	n/a	P, G - 60 mL	≤6°C	<b>48 hours</b>
Oil & Grease	Amber G	≤6°C	n/a	1L Amber G, teflon lined cap	H <sub>2</sub> SO <sub>4</sub> or HCl to pH<2, ≤6°C	28 days
<b>Orthophosphate-P &amp; Total Reactive Phos.</b>	n/a	n/a	n/a	P, G - 250 mL	Filter immediately, <sup>6</sup> ≤6°C	<b>48 hours</b>
<b>pH</b>	P, G	n/a	n/a	P, G - 125 mL	None required.	<b>Immediately<sup>6</sup></b>
Phenols, total	G	≤6°C	28 days	G - 250mL	H <sub>2</sub> SO <sub>4</sub> to pH<2, ≤6°C	28 days
Phosphorus, Total	P, G	n/a	6 months	P, G - 250 mL	H <sub>2</sub> SO <sub>4</sub> to pH<2, ≤6°C	28 days
Reactivity, Cyanide	P, G	≤6°C	n/a	P, G - 200 mL	≤6°C	14 days
Reactivity, Sulfide	P, G	≤6°C	n/a	P, G - 200 mL	≤6°C	14 days

	Solids			Aqueous		
INORGANICS	Container <sup>1</sup>	Preservation <sup>2</sup>	Holding Time <sup>3</sup>	Container <sup>1</sup>	Preservation <sup>2</sup>	Holding Time <sup>3</sup>
Sulfate	P, G	≤6°C	n/a	P, G - 60 mL	≤6°C	28 days
Sulfide	P, G	≤6°C	7 days	P, G - 250 mL	ZnAcetate & NaOH to pH>9, ≤6°C, no headspace <sup>7</sup>	7 days
Total Dissolved Solids (TDS)	n/a	n/a	n/a	P, G - 1L	≤6°C	7 days
Total Suspended Solids (TSS)	n/a	n/a	n/a	P, G - 1L	≤6°C	7 days
Total Solids	P, G	≤6°C	7 days	P, G - 250 mL	≤6°C	7 days
Total Volatile Solids (TVS) and Loss on Ignition (LOI)	P, G	≤6°C	7 days	P, G - 250 mL	≤6°C	7 days
Tannin & Lignin	n/a	n/a	n/a	P, G - 250 mL	≤6°C	n/a
Total Kjeldahl Nitrogen (TKN)	P, G	≤6°C	28 days	P, G - 125 mL	H <sub>2</sub> SO <sub>4</sub> to pH<2, ≤6°C	28 days
Total Organic Carbon (TOC)	P, G	n/a	28 days	G - 40 mL (fill to top)	H <sub>2</sub> SO <sub>4</sub> to pH<2, ≤6°C	28 days
ORGANICS						
<b>Volatile Organic Compounds (VOCs)</b>	G - 20 mL and total solids	methanol, ≤6°C	14 days	3x 40 mL - glass teflon septum, no headspace <sup>7</sup>	2 vials w/HCl to pH<2, 1 vial unpreserved; ≤6°C	<b>14 days<sup>8</sup> or 72 hrs for VOC624 NPDES</b>
Semi Volatile Organic Compounds (SVOC/ABN)	G	≤6°C	14 days	1L Amber G	≤6°C	7 days
MASS. VPH	G - 20 mL and total solids	methanol, ≤6°C	14 days	3x 40 mL - glass teflon septum, no headspace <sup>7</sup>	HCl to pH<2 ≤6°C	14 days <sup>8</sup>
MASS. EPH	4oz. Amber G	≤6°C	14 days	1L Amber G	HCl to pH<2 ≤6°C	14 days
GRO-8015 (TPH - Gas)	G - 20 mL and total solids	methanol, ≤6°C	14 days	3 x 40 mL - glass teflon septum, no headspace <sup>7</sup>	HCl to pH<2 ≤6°C	14 days
Total Petroleum Hydrocarbons (TPH - Diesel)	G	≤6°C	14 days	1L Amber G	≤6°C	7 days
Pesticides and PCBs	Amber G	≤6°C	14 days	1L Amber G	≤6°C	7 days
PCBs	Amber G	≤6°C	14 days	1L Amber G	≤6°C	7 days
Pesticides	Amber G	≤6°C	14 days	1L Amber G	≤6°C	7 days
Total Organic Halogens (TOX)	G	≤6°C	28 days	250 mL Amber G	H <sub>2</sub> SO <sub>4</sub> to pH<2, ≤6°C	28 days
Methane - RSK175	n/a	n/a	n/a	2x40mL G, teflon septum, no headspace <sup>7</sup>	H <sub>2</sub> SO <sub>4</sub> to pH<2, <6°C	14 days
<b>TCLP - METALS</b>	P, G, 110g	If Hg, <6°C	6 mo., except Hg=28 days	P, G - 500 mL	≤6°C	6 mo., except Hg=28 days
<b>TCLP - VOCs</b>	Separate G, 4oz.	≤6°C, no headspace	14 days	3 x 40 mL - glass teflon septum, no headspace	≤6°C	14 days
<b>TCLP - SVOC, Herbicides &amp; Pesticides</b>	1L Amber G	≤6°C	14 days to ext., then 7 days	3 x 1L Amber Glass	≤6°C	7 days

## Sample Acceptance Criteria

**Sample Condition** Samples will be reviewed for sample acceptance criteria upon receipt. This includes full documentation, sufficient volume, proper chemical and/or temperature preservation, appropriate sample containers and receipt of sample within hold time. If any non-compliant conditions are identified, the client will be notified for continuation or cancellation instructions. Should the client wish to proceed with analysis, the non-compliant conditions will be noted on the Chain of Custody (COC) form, the report's narrative page, and by flagging data on the final report.

**Sample Integrity** Shipping containers received with custody seals are checked for tampering upon receipt. Containers are checked for leaks or any conditions which might compromise the integrity of the samples. Custody seals are available from the laboratory.

**Sample Documentation** The laboratory provides COCs for complete documentation including sample-specific comments, and the following information: client information, sampler name, sample ID, sampling date and time, sample matrix, type of container and preservation, analytical parameters requested, and custody signatures with date and time.

**Sample Labeling** Sample containers should be labeled with permanent ink. Black Sharpie® works well. Include at a minimum Sample ID, date and time of sampling and any preservation included. At the lab, samples will be assigned a unique identifier matched to samples on the COC form. Water-resistant, permanent labels are available from the lab.

**Sample Preservation** Refer to the previous pages for specific preservation requirements. Thermal preservation 0-6° C, but not frozen.

**Suggestions for Chilling Samples** To ensure samples are received within the accepted range of 0-6° C (=fridge temp), use double bagged ice or **completely frozen** gel ice packs. Ice frozen in water bottles works best. Match the amount of ice at least 1:1 to the volume of sample. In cases where the sample is hand-delivered to the lab immediately after sampling, evidence that the chilling process has begun is sufficient and will be documented. When shipping a sample to the lab, waterproof coolers are recommended to maintain required temperatures. Add extra ice if the sample might sit in a UPS/Fed Ex/USPS truck or warehouse over the weekend.

### Notes:

- 1 P = high density polyethylene, pre-cleaned (HDPE); G = glass, pre-cleaned. Solids "P" may use ziplock bags, if not too runny. The volumes listed may be reduced or increased depending on analyte combinations, detection limits and sample-specific quality control. Contact the laboratory for minimum volumes for specific analytical combinations.
- 2 Grab samples: immediate preservation in the field is preferred. Composite samples: preserve each aliquot at time of collection, if possible. When using an automatic sampler, cool sampler to  $\leq 4^{\circ}\text{C}$  until compositing is completed.
- 3 Holding times listed are the maximum that samples may be held before analysis or extraction must begin. Holding times start at time of sampling for grab samples and end of composite period for composites.
- 4 Testing for dissolved metals requires filtration (0.45 micron) prior to preservation. Immediate filtration and preservation in the field is preferred. If this is not possible, deliver samples to the laboratory unpreserved as soon as possible for filtration and preservation. DW metals must be preserved within 14 days of sampling.
- 5 Use test kit prior to preserving in field. Request a kit and pre-test instructions with your bottle order.
- 6 EPA defines "immediately" as within 15 minutes of collection. Holding time exceedances must be noted on lab report.
- 7 Fill container(s) to top with NO HEADSPACE (no air). Invert sample to check for presence of air bubbles. Shoot for none, but 1 lentil bean-sized bubble is ok.
- 8 Holding time is 7 days when sample is not preserved with HCl to pH<2. VOC624 hold time is 72 hrs for certain compounds on list.
- 9 AQ Hexavalent chromium is subbed out to a certified lab, with a 24-hr hold time. Deliver to sub-lab directly. Holding time is 28 days if sample has been filtered (0.45um) and pH-adjusted. Deliver to laboratory as soon as possible.

**QUESTIONS? Call us-- we can help! 207-846-6569.**