

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<u>SUBJECT</u>	<u>DATE</u>	<u>PAGE</u>	<u>ITEM NO.</u>
Sample Collection: Requirements for Drinking Water	11/18/19	1 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
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Note 1: Consumer collected samples may be left unpreserved for up to 14 days.

Note 2: ELAP offers Nitrate or Nitrite only for accreditation. ELAP does not offer combined Nitrate-Nitrite. The preservation and holding time requirements for combined Nitrate-Nitrite is Cool to 4°C, H<sub>2</sub>SO<sub>4</sub> to pH<2, and 28 days.

Note 3: Per NELAC/TNI standards, "All samples, which require thermal preservation, shall be considered acceptable if the arrival temperature is either within ± 2 °C of the required temperature or the method specified range. For a sample with a specified temperature of 4 °C, sample with a temperature ranging from just above the freezing temperature of water to 6 °C shall be acceptable..."

**Inorganic Tests:**

Alkalinity	P,G	Separate bottle completely filled to the exclusion of air. Cool, 4°C	14 days
Antimony	P,G	HNO <sub>3</sub> to pH<2	6 months
Arsenic	P,G	HNO <sub>3</sub> to pH<2	6 months
Barium	P,G	HNO <sub>3</sub> to pH<2	6 months
Beryllium	P,G	HNO <sub>3</sub> to pH<2	6 months

**Inorganic Tests:**

Bromate	P,G	50 mg IL EDA	28 days
Cadmium	P,G	HNO <sub>3</sub> to pH<2	6 months
Calcium	P,G	HNO <sub>3</sub> to pH<2	6 months
Chloride	P,G	None	28 days
Chlorine Residual	P,G	None	immediately
Chlorite	P,G	50 mg IL EDA, Cool, 4°C	14 days
Chromium	P,G	HNO <sub>3</sub> to pH<2	6 months
Color	P,G	Cool, 4°C	48 hours

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<b><u>SUBJECT</u></b>	<b><u>DATE</u></b>	<b><u>PAGE</u></b>	<b><u>ITEM NO.</u></b>
Sample Collection: Requirements for Drinking Water	11/18/19	2 of 9	241

<b><u>ANALYTE</u></b>	<b><u>CONTAINER</u></b>	<b><u>PRESERVATION</u></b>	<b><u>MAXIMUM HOLDING TIME</u></b>
Conductivity	P,G	Cool, 4°C	28 days
Copper	P,G	HNO <sub>3</sub> to pH<2 <sup>Note 1</sup>	6 months
Cyanide	P,G	Cool, 4°C, NaOH to pH=12, 1.2 g/L ascorbic acid	14 days
Fluoride	P,G	None	28 days
Lead	P,G	HNO <sub>3</sub> to pH<2 <sup>Note 1</sup>	6 months
Mercury	P,G	HNO <sub>3</sub> to pH<2	28 days
Nickel	P,G	HNO <sub>3</sub> to pH<2	6 months
Nitrate <sup>Note 2</sup>	P,G	Cool, 4°C	48 hours
Chlorinated Samples only	P,G	Cool, 4°C	14 days
Nitrite	P,G	Cool, 4°C	48 hours
pH	P,G	None	immediately
Phosphorus (as Orthophosphate)	P,G	Cool, 4°C	48 hours
Selenium	P,G	HNO <sub>3</sub> to pH<2	6 months
Silica	P	Cool, 4°C	28 days
Silver	P,G	HNO <sub>3</sub> to pH<2	6 months
Sodium	P,G	HNO <sub>3</sub> to pH<2	6 months
Sulfate	P,G	Cool, 4°C	28 days
Thallium	P,G	HNO <sub>3</sub> to pH<2	6 months
Total Filterable Residue	P,G	Cool, 4°C	7 days
Turbidity	P,G	Cool, 4°C	48 hours

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<u>SUBJECT</u>	<u>DATE</u>	<u>PAGE</u>	<u>ITEM NO.</u>
Sample Collection: Requirements for Drinking Water	11/18/19	3 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
UV <sub>254</sub> Absorbance	P,G	Cool, 4°C	48 hours
<b>Organic Tests:</b>			
Trihalomethanes Bromodichloromethane Bromoform Chlorodibromomethane Chloroform	Glass with Teflon-lined Septum	0.008% Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C	14 days
Volatile Halocarbon and Volatile Aromatics: Methy-tert-butyl ether	Glass with Teflon-lined Septum	Ascorbic Acid (25 mg/40 ml) added to empty sample bottle then add 1:1 HCl to pH<2. Cool, 4°C	14 days
Microextractables: Method 504.1	Glass with Teflon-lined Septum	Cool, 4°C, 3 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> per 40 ml vial	14 days
Method 505 analytes Alachlor Aldrin Atrazine Chlordane Dieldrin Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Metolachlor Metribuzin PCB's Simazine Toxaphene	40-ml glass vial with cap liner	3 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C	7 days
Method 506 analytes Di-(2-ethylhexyl)adipate Di-(2-ethylhexyl) phthalate	1-L (or qt.) amber glass with TFE lined cap	60 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C	14 days until extraction, then 14 days after extraction

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<b><u>SUBJECT</u></b>	<b><u>DATE</u></b>	<b><u>PAGE</u></b>	<b><u>ITEM NO.</u></b>
Sample Collection: Requirements for Drinking Water	11/18/19	4 of 9	241

<b><u>ANALYTE</u></b>	<b><u>CONTAINER</u></b>	<b><u>PRESERVATION</u></b>	<b><u>MAXIMUM HOLDING TIME</u></b>
Method 507 analytes Alachlor Atrazine Butachlor Chlordane Metolachlor Metribuzine Propachlor Simazine	1-L Borosilicate glass, graduated, with TFE lined cap	80 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C, Protect from light after extraction	14 days until extraction, then 14 days
Method 508 analytes Aldrin Chlordane Dieldrin Endrin Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Metribuzin PCB's Toxaphene	1-L Borosilicate glass, graduated, with TFE lined cap	80 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C, Protect from light	7 days until extraction, then 14 days after extraction
Method 508A PCB's, Total as decachlorobiphenyl	1-L glass, with TFE lined cap	Cool, 4°C	14 days until extraction, then 30 days after extraction
Method 508.1 All	1-L glass with TFE lined cap	50 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> then 1:1 HCl to pH<2, Cool, 4°C	14 days until extraction then 30 days after extraction
Method 1613 2,3,7,8-TCDD	1-L amber glass with TFE lined cap	80 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C, Protect from light pH 7-9	one year until extraction, then one year after extraction

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<u>SUBJECT</u>	<u>DATE</u>	<u>PAGE</u>	<u>ITEM NO.</u>
Sample Collection: Requirements for Drinking Water	11/18/19	5 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Method 515.1: 515.2, 515.3 Chlorinated Acids	1-L Borosilicate glass, graduated, with TFE lined cap	80 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C  Protect from light	14 days until extraction, then 14 days after extraction
Method 524.3	40-ml VOA vial	See section 8.1 and 8.4 of method.	Analyze within 14 days of collection
Method 525.2 Alachlor Aldrin Atrazine Benzo(a)pyrene Butachlor Chlordane (Technical) Dieldrin Di(2ethylhexyl)adipate Di(2-ethylhexyl) phthalate Endrin Heptachlor Heptachlor Epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Metolachlor Metribuzin Pentachlorophenol Propachlor Simazine Toxaphene	Refrigerated glass sample containers - Sampling must be free of plastic tubing, gaskets, etc. that may leach analytes into water.	Cool, 4 C, Remove Cl residual; adjust pH<2 with 6 N HCl	Extract within 14 days. Analyze within 30 days of sample extraction
Method 531.1 Methylcarbamate pesticides	60-ml vial with PTFE silicone faced septa	1.8 ml acetic acid buffer, 4.8 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , pH=3±0.2 for 4 analytes, Ship at 4°C, Store at - 10°C	28 days

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<b><u>SUBJECT</u></b>	<b><u>DATE</u></b>	<b><u>PAGE</u></b>	<b><u>ITEM NO.</u></b>
Sample Collection: Requirements for Drinking Water	11/18/19	6 of 9	241

<b><u>ANALYTE</u></b>	<b><u>CONTAINER</u></b>	<b><u>PRESERVATION</u></b>	<b><u>MAXIMUM HOLDING TIME</u></b>
Method 531.2 Methylcarbamate pesticides	60-ml vial with PTFE silicone faced septa	Use Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> & C <sub>6</sub> H <sub>7</sub> KO <sub>7</sub> to pH~3.8 for 4 analytes, Ship at ≤10°C, Store in dark at ≤6°C	28 days
Glyphosate	60-ml vial PTFE faced Silicone	6 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , Cool, 4°C, Protect from light	14 days
Endothall	40-ml amber glass vial with TFE lined cap	Cool, 4°C, Protect from light	7 days
Diquat	1-L amber plastic or silanized glass with screw cap	100 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> to pH=2, Cool, 4°C, Protect from light	7 days until extraction, then 21 days after extraction
Benzo(a)pyrene	1-L (or qt.) amber glass with TFE lined cap	100 mg Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , 1:1 HCl to pH<2, Cool, 4°C; Protect from light	7 days until extraction then 30 (40 for Method550.1) days after extraction

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<u>SUBJECT</u>	<u>DATE</u>	<u>PAGE</u>	<u>ITEM NO.</u>
Sample Collection: Requirements for Drinking Water	11/18/19	7 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Method 551.1 Alachlor Atrazine Bromochloromethane Bromodichloromethane Bromoform Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dibromo-3-chloropropane [DBCP] 1,2 Dibromoethane [EDB] Endrin Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Metalochlor Metribuzin Simazine Tetrachloroethylene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene	60 ml glass vials with Teflon lined Septum	Sodium Sulfite or Ammonium Chloride (for microextractables), pH 4.5-5.5 with phosphate buffer, Cool, 4°C	14 days until extraction, then 14 days after extraction
Method 552.1 Dalapon Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid Bromochloroacetic Acid	Amber glass with TFE liner	Add NH <sub>4</sub> Cl to a concentration of 100 mg/L in sample, Cool, 4°C	Extract within 28 days of collection. Analyze extract within 48 hours if stored at 4°C or less.

**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<u>SUBJECT</u>	<u>DATE</u>	<u>PAGE</u>	<u>ITEM NO.</u>
Sample Collection: Requirements for Drinking Water	11/18/19	8 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Method 552.2 Dalapon Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid Bromochloroacetic Acid	Amber glass with TFE liner	Add NH <sub>4</sub> Cl to a concentration of 100 mg/L in sample, Cool, 4°C	Extract within 14 days of collection. Analyze extract within 7 days if stored dark at 4°C or less or 14 days if -10°C or less. See section 8.3 of method.
Method 552.3 Dalapon Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid Bromochloroacetic Acid	Amber glass with TFE liner	Add NH <sub>4</sub> Cl to a concentration of 100 mg/L in sample, Cool, 4°C. Extracts stored at -10°C.	Extract within 14 days. See section 8.4 of method.
Method 555 2,4-D Dicamba Pichloram 2,4,5-TP	Glass with TFE liner	Acidify to pH2 with 1:1 HCl, Dechlorinate with 5 mg NaSO <sub>3</sub> per 100mL sample, Cool, 4°C, Protect from light	Analyze after extraction, within 14 days of collection
<b>Microscopical Tests:</b>			
Asbestos	P,G	Cool, 4°C	48 hours
Asbestos	P,G	Preserved with 10 gm/L of O <sub>3</sub> , and UV treatment	6 months



**ENVIRONMENTAL LABORATORY APPROVAL PROGRAM  
CERTIFICATION MANUAL**

<u>SUBJECT</u>	<u>DATE</u>	<u>PAGE</u>	<u>ITEM NO.</u>
Sample Collection: Requirements for Drinking Water	11/18/19	9 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
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Instructions for containers, preservation procedures and holding times as specified in Method 100.2 must be adhered to for all compliance analyses including those conducted with Method 100.1.

**Radiological Tests:**

Gross Alpha	P,G	HCl or HNO <sub>3</sub> to pH<2	6 months (1yr for composites)
Gross Beta	P,G	HCl or HNO <sub>3</sub> to pH<2	6 months
Strontium-89	P,G	HCl or HNO <sub>3</sub> to pH<2	6 months
Strontium-90	P,G	HCl or HNO <sub>3</sub> to pH<2	6 months
Radium-226	P,G	HCl or HNO <sub>3</sub> to pH<2	6 months (1yr for composites)
Radium-228	P,G	HCl or HNO <sub>3</sub> to pH<2	6 months (1yr for composites)
Radon-222	Glass with teflon-lined septum	Cool, 4°C**	<b>3 days*</b>
Radioactive Cesium	P,G	HCl to pH<2	6 months
Iodine-131	P,G	None	7 days
Tritium	G	None	6 months
Uranium	P,G	HCl or HNO <sub>3</sub> pH<2	6 months (1yr for composites)
Photon Emitters	P,G	HCl or HNO <sub>3</sub> pH<2	6 months

**\* Hold time varies based on the method used. If using Standard Methods, the hold time is 4 days. If using the EPA method, the hold time is 3 days.**

**\*\* Regardless of the method used, the samples are to be stored in a cooler or equivalent insulated container.**