

**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	07/26/18	1 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
----------------	------------------	---------------------	-------------------------------------

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, H₂SO₄ 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 ₃ to pH<2	6 months
Arsenic	P,G	HNO ₃ to pH<2	6 months
Barium	P,G	HNO ₃ to pH<2	6 months
Beryllium	P,G	HNO ₃ to pH<2	6 months

Inorganic Tests:

Bromate	P,G	50 mg IL EDA	28 days
Cadmium	P,G	HNO ₃ to pH<2	6 months
Calcium	P,G	HNO ₃ 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 ₃ to pH<2	6 months
Color	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	07/26/18	2 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Conductivity	P,G	Cool, 4°C	28 days
Copper	P,G	HNO ₃ to pH<2 ^{Note 1}	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 ₃ to pH<2 ^{Note 1}	6 months
Mercury	P,G	HNO ₃ to pH<2	28 days
Nickel	P,G	HNO ₃ to pH<2	6 months
Nitrate ^{Note 2}	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 ₃ to pH<2	6 months
Silica	P	Cool, 4°C	28 days
Silver	P,G	HNO ₃ to pH<2	6 months
Sodium	P,G	HNO ₃ to pH<2	6 months
Sulfate	P,G	Cool, 4°C	28 days
Thallium	P,G	HNO ₃ to pH<2	6 months
Total Filterable Residue	P,G	Cool, 4°C	7 days
Turbidity	P,G	Cool, 4°C	48 hours
UV ₂₅₄ Absorbance	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	07/26/18	3 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Organic Tests:			
Trihalomethanes Bromodichloromethane Bromoform Chlorodibromomethane Chloroform	Glass with Teflon-lined Septum	0.008% Na ₂ S ₂ O ₃ , 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 ₂ S ₂ O ₃ 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 ₂ S ₂ O ₃ , 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 ₂ S ₂ O ₃ , Cool, 4°C	14 days until extraction, then 14 days after extraction
Method 507 analytes	1-L Borosilicate	80 mg Na ₂ S ₂ O ₃ , Cool, 4°C, Protect	14 days until extraction, then

**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	07/26/18	4 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Alachlor Atrazine Butachlor Chlordane Metolachlor Metribuzine Propachlor Simazine	glass, graduated, with TFE lined cap	from light after extraction	14 days
Method 508 analytes	1-L Borosilicate glass, graduated, with TFE lined cap	80 mg Na ₂ S ₂ O ₃ , Cool, 4°C, Protect from light	7 days until extraction, then 14 days after extraction
Aldrin Chlordane Dieldrin Endrin Heptachlor Heptachlor epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Metribuzin PCB's Toxaphene			
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 ₂ S ₂ O ₃ 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 ₂ S ₂ O ₃ , Cool, 4°C, Protect from light pH 7-9	one year until extraction, then one year after extraction
Method 515.1: 515.2, 515.3 Chlorinated Acids	1-L Borosilicate glass, graduated, with TFE lined	80 mg Na ₂ S ₂ O ₃ , Cool, 4°C Protect from light	14 days until extraction, then 14 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	07/26/18	5 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
	cap		
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	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
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			
Method 531.1	60-ml vial with PTFE silicone faced septa	1.8 ml acetic acid buffer, 4.8 mg Na ₂ S ₂ O ₃ , pH=3±0.2 for 4 analytes, Ship at 4°C, Store at -10°C	28 days
Methylcarbamate pesticides			
Method 531.2	60-ml vial with PTFE silicone faced septa	Use Na ₂ S ₂ O ₃ & C ₆ H ₇ KO ₇ to pH~3.8 for 4 analytes, Ship at ≤10°C, Store in dark at ≤6°C	28 days
Methylcarbamate pesticides			

**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	07/26/18	6 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Glyphosate	60-ml vial PTFE faced Silicone	6 mg Na ₂ S ₂ O ₃ , 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 ₂ S ₂ O ₃ H ₂ SO ₄ 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 ₂ S ₂ O ₃ , 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
Method 551.1 Aalachlor 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	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

**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	07/26/18	7 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Simazine Tetrachloroethylene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene			
Method 552.1	Amber glass with TFE liner	Add NH ₄ 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.
Dalapon Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid Bromochloroacetic Acid			
Method 552.2	Amber glass with TFE liner	Add NH ₄ 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.
Dalapon Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid Bromochloroacetic Acid			
Method 552.3	Amber glass with TFE liner	Add NH ₄ 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.
Dalapon Monochloroacetic acid Dichloroacetic acid Trichloroacetic acid Monobromoacetic acid Dibromoacetic acid Bromochloroacetic Acid			
Method 555	Glass with TFE liner	Acidify to pH2 with 1:1 HCl, Dechlorinate with 5 mg NaSO ₃ per 100mL sample, Cool, 4°C, Protect	Analyze after extraction, within 14 days of collection
2,4-D Dicamba Pichloram 2,4,5-TP			

**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	07/26/18	8 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
----------------	------------------	---------------------	-----------------------------

from light

Microscopical Tests:

Asbestos	P,G	Cool, 4°C	48 hours
Asbestos	P,G	Preserved with 10 gm/L of O ₃ , and UV treatment	6 months

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

**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	07/26/18	9 of 9	241

<u>ANALYTE</u>	<u>CONTAINER</u>	<u>PRESERVATION</u>	<u>MAXIMUM HOLDING TIME</u>
Tritium	G	None	6 months
Uranium	P,G	HCl or HNO ₃ pH<2	6 months (1yr for composites)
Photon Emitters	P,G	HCl or HNO ₃ pH<2	6 months