



INTERNATIONAL ANALYTICAL GROUP

SAMPLE CONTAINERS, PRESERVATION AND HOLDING TIMES

PARAMETER GROUP	METHOD ¹	MATRIX ²	CONTAINER ³ (PER SAMPLE/ PER METHOD)	PRESERVATION	HOLDING TIME	PERMISSIBLE SAMPLE TYPE ⁴
BACTERIAL TESTS						
Coliform, Fecal	SM908C	DW, SW, GW, WW	1-100ml sterile whirl-pak or glass bottle. Do not rinse container.	If chlorinated use Na ₂ S ₂ O ₃ preserved whirl-pak or add 10 drops, 10% Na ₂ S ₂ O ₃ prior to sterilizing the glass bottle. Cool, 4°C	6 hours	G
	SM909D	DW, SW, GW, WW				
Coliform, Total	SM909C	DW, SW, GW, WW				
	SM908A	DW, SW, GW, WW				
	SM909A	DW, SW, GW, WW				
Fecal Strep	SM909B	DW, SW, GW, WW			3 hours (potability)	
	SM910C	DW, SW, GW, WW				
GENERAL, UNPRESERVED⁵						
Acidity	305.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	14 days	G or C
Alkalinity	310.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	14 days	G or C
Biochemical Oxygen Demand (BOD ₅)	405.1	DW, SW, GW, WW	1-500 or 1L plastic	Cool, 4°C	48 hours	G or C
Bromide	320.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	28 days	G or C
Chloride, Manual	325.3	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	28 days	G or C
Chloride, IC	300	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	28 days	G or C
Color	110.2	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	48 hours	G or C
Conductance	120.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	28 days	G or C
Fluoride, IC	300	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	28 days	G or C
Hardness	130.2	DW, SW, GW, WW	1-500ml plastic	Cool, 4 C	6 months	G or C



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Nitrate, IC	300	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	48 hours	G or C
Nitrite, IC	300	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	48 hours	G or C
Solids, Total Dissolved	160.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	7 days	G or C
Solids, Total Suspended	160.2	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	7 days	G or C
Solids, Total	160.3	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	7 days	G or C
Silica	370.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	28 days	G or C
Sulfate, IC	300	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	28 days	G or C
Surfactants, MBAS	425.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	48 hours	G or C
Turbidity	180.1	DW, SW, GW, WW	1-500ml or 1L plastic	Cool, 4°C	48 hours	G
GENERAL, OTHER						
Oxygen, Winkler	360.2	DW, SW, GW, WW	2-300ml BOD bottles	Field Fix(6)	8 hours	G
Solids, Settleable	160.5	DW, SW, GW, WW	500 ml or 1L plastic	Cool, 4°C	48 hours	G
Oil & Grease	1664	DW, SW, GW, WW	1-1000ml Amber Glass w/Teflon-lined lid	2ml conc.HCl or H ₂ SO ₄ per liter of sample, pH <2 DO NOT rinse container with sample.	28 days	G
Oil & Grease, Total	9070	S,SED, HW	1-500ml glass widemouth jar Teflon-lined lid	Cool, 4°C	28 days	G or C
Cyanide, Total or Amenable	335.3 9010	DW, SW, GW, WW SW, GW, WW	1-500-or 1L plastic Glass widemouth jar, teflon-lined lid	If chlorinated, add 0.6g ascorbic acid (sulfide present add cadmium nitrate (7)) 2ml,	14 days	G or C



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	9010 9011	S,SED, HW S,SED, HW		5N, NaOH per liter. pH>12 Cool, 4°C Cool, 4°C	14 days	G or C
Chemical Oxygen Demand	410.1 410.2 410.3	DW, SW, GW, WW DW, SW, GW, WW DW, SW, GW, WW	1-500ml plastic	1ml, conc H ₂ SO ₄ pH <2 Cool, 4°C	28 days	G or C
Odor	140.1	DW, SW, GW, WW	1-500 ml or 1L glass	Cool, 4°C	6 hours	G
Total Organic Carbon (TOC)	415.1	DW, SW, GW, WW	1-40ml glass vial, teflon-lined cap : HCL ph<2: Cool 4 °C	Shimadzu 5050 Cool, 4°C	14 days	G
Total Phenols, Manual (4AAP) or Automated	420.1 420.2 9065 9066	DW, SW, GW, WW DW, SW, GW, WW S,SED, HW S,SED, HW	1-500ml Amber glass bottle w/Teflon-lined cap 1-500ml glass widemouth jar	2ml, conc. H ₃ PO ₄ pH <2, Cool, 4°C	28 days	G
Sulfide	376.1 3030	DW, SW, GW, WW S,SED, HW	1-500 ml or 1L plastic 1-500ml glass widemouth jar, teflon-lined lid	2ml, zinc acetate mix with sample. Add 1 ml, 5N NaOH, pH >9, Cool, 4°C Cool, 4°C	7 days	G
Sulfite	397.1	DW, SW, GW, WW	1-500 ml or 1L plastic	Cool, 4°C	24 hours	G
Total Organic Halides (TOX)	9020 5050/9252	DW, SW, GW, WW	1-250ml glass bottle teflon/silicone septum	Cool, 4°C	14 days	G
Total Halogens in Oils	5050/9252 9075 9076 9077	HW HW HW	1-250 ml glass widemouth jar, teflon-lined lid	none required	none listed	G



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Total Recoverable Petroleum Hydrocarbon & FL-PRO	418.1 FL-PRO	DW, SW, GW, WW	1-1L Amber glass bottle w/ teflon-lined cap	2ml, conc. HCl pH <2, Cool, 4°C Do not rinse container with sample.	28 days	G
	9073 FL-PRO	S,SED, HW	1-500ml glass widemouth jar, teflon-lined lid	Cool, 4°C Do not rinse container with sample.		G or C
Chlorophyll(a)	SM1002G	SW, WW	1-1L dark plastic	2ml, 1% MgCO ₃ Cool, 4°C Store in dark Freeze filter	Filter within 24 hours Frozen filters 21 days	G
NUTRIENTS(5)						
Ammonia	350.1	DW, SW, GW, WW	1-500ml plastic	1ml, conc. H ₂ SO ₄ pH <2	28 days	G or C
Kjeldahl Nitrogen (TKN)	351.2	DW, SW, GW, WW	1-500ml plastic	1ml conc. H ₂ SO ₄ pH <2	28 days	G or C
	351.2	S,SED, HW	1-500ml plastic widemouth	WWTP liquid sludge: 2ml, conc. H ₂ SO ₄ pH <2, Cool, 4°C Dry solids: Cool, 4°C		
Nitrate/Nitrite, IC (NO ₃ /NO ₂)	300	DW, SW, GW, WW	1-500ml plastic	Cool, 4°C	28 days	G or C
Orthophosphate, IC	300	DW, GW, SW, WW DW, GW, SW, WW	1-500ml plastic	Field filter 0.45µ Cool, 4°C	48 hours	G or C
Total Phosphorus	365.1	DW, GW, SW, WW	1-500ml plastic	1ml, conc. H ₂ SO ₄ pH<2, Cool, 4°C	28 days	G or C
	365.2	DW, GW, SW, WW				
	365.1	S,SED, HW				



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	365.2	S,SED, HW	1-500ml plastic widemouth	WWTP Liquid Sludge: 2ml, conc. H ₂ SO ₄ , pH <2 Cool, 4°C, Dry solids: Cool, 4°C		
FIELD PARAMETERS						
pH	150.1	DW, SW, GW, WW	plastic or glass	None	analyze immediately	G
Temperature	170.1	DW, SW, GW, WW	plastic or glass	None	analyze immediately	G
Chlorine Residual	330.4	DW, SW, GW, WW	plastic or glass	None	analyze immediately	G
Total or Free	Orion Electrode	DW, SW, GW, WW	plastic or glass	None	analyze immediately	G
Oxygen, Probe	360.1	DW, SW, GW, WW	all glass	None	analyze immediately	G
METALS						
Metals(5) Mercury (Hg)	245.1	DW, SW, GW, WW	1-500ml plastic	1ml, conc. HNO ₃ pH <2	28 days	G or C
Hexavalent Chromium (Cr ⁺⁶)	SSM307B USGS 1- 230-84 SM312B	DW, SW, GW, WW SW, GW, WW	1-500ml plastic	Cool, 4°C	24 hours	G or C
All metals except Hg and Cr ⁺⁶	200 series	DW, SW, GW, WW	1-1L plastic	2ml conc. HNO ₃ pH <2	6 months	G or C
All metals	7000 series	S,SED, HW	1-250ml glass widemouth jar, teflon-lined lids	Cool, 4°C	6 months Hg (28 days)	G or C



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ORGANIC CONSTITUENTS						
Purgeable Halocarbons and aromatics combined	502.2 524.1 524.2 601/602 8021 624 8260	DW DW DW SW, GW, WW SW, GW, WW SW, GW, WW SW, GW, WW	2-40ml glass vials teflon/silicone septum	(if chlorinated, 4 drops 10% Na ₂ S ₂ O ₃ per vial)(8) 4 drops, conc. HCL per vial, pH <2 Zero headspace Cool, 4°C (9)	14 days	G
Purgeable Halocarbons and/or aromatics	8010 8020 8021 8260	S,SED, HW S,SED, HW S,SED, HW S,SED, HW	2-40 ml glass vials or 1-125ml widemouth glass jar with teflon/silicone septum	minimal headspace Cool, 4°C (9) pH <2	14 days	G
EDB + DBCP Fumigants	504	DW, SW, GW, WW	1-40ml glass vials teflon/silicone septum	(if chlorinated, 4 drops, 10% Nathio per vial) zero headspace, Cool, 4°C	14 days	G
Purgeable Halocarbons Only	601 624 8010 8021 8260	SW, GW, WW SW, GW, WW SW, GW, WW SW, GW, WW SW, GW, WW	2-40ml glass vials teflon/silicone septum	(if chlorinated, 4 drops 10% Na ₂ S ₂ O ₃ per vial) zero headspace Cool, 4°C (9)	14 days	G
Purgeable Aromatics Only	602 624 8020 8021 8260	SW, GW, WW SW, GW, WW SW, GW, WW SW, GW, WW SW, GW, WW	2-40ml glass vials teflon/silicone septum	(if chlorinated, 4 drops 10% Na ₂ S ₂ O ₃ per vial)(8) 4 drops, conc. HCl, pH <2, zero headspace Cool, 4°C	14 days	G
Semivolatle Organics GC, HPLC and GC/MS, includes:	505 507 509A	DW DW DW, SW, GW, WW	1-1L glass Amber bottle w/ teflon-lined caps.	(if chlorinated, 1ml 10% Na ₂ S ₂ O ₃ per liter of sample) do not rinse the bottle with	Extraction 7 days analysis 40	G



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base, neutral, and acid extractables, pesticides and dioxin	509B	DW, SW, GW, WW	1-500ml widemouth glass jar teflon-lined lid	sample Cool, 4°C (10,11,12,13,14) Cool, 4°C, Store in the dark	days	
	515	DW				
	608	SW, GW, WW				
	610	SW, GW, WW				
	614	SW, GW, WW				
	615	SW, GW, WW				
	625	SW,SW, GW,WW				
	8080	SW, GW, WW				
	8100	SW, GW, WW				
	8140	SW, GW, WW				
	8270	SW, GW, WW				
	8080	S,SED, HW				
8100	S,SED, HW					
8140	S,SED, HW					
8270	S,SED, HW					
HPLC: Carbamates	531	DW, SW, GW, WW	1-40ml glass vial, teflon/silicone	1.2ml monochloroacetic acid buffer prior to adding sample. Do not rinse container with sample. pH = 3 Cool 4°C field and shipment Cool -10°C lab storage	28 days	G
Glyphosate	547	DW,SW,GW,WW	500 ml glass	Na2S2O3, Cool	14 days	G
Endothall	548	DW,SW,GW,WW	500 ml glass	Cool	7 days	G
Diguat/Paragat	549	DW,SW,GW,WW	500 ml plastic	Na2S2O3, Cool	21 days	G
Haloacetic Acids	552	DW,SW,GW,WW	500 ml glass	NH4Cl (0.05 grams)	14 days	G
RADIOLOGICALS						
Gross Alpha and Beta	900.0	DW, SW, GW, WW	1-1L plastic	2ml, conc. HNO ₃ pH <2	6 months	G or C
Radium, Total	903.0	DW, SW, GW, WW	1-1 gal. container	5 ml, conc HNO ₃ pH <2	6 months	G or C



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WASTES, OTHER						
Ignitability (Flash Point)	1010	WW, S, SED, HW	1-250ml glass widemouth jar. teflon-lined lid	none required	28 days	G
Corrosivity, RCRA	1110	WW, HW	1-250ml glass widemouth jar - teflon-lined lid	none required	28 days	G
Reactivity	9010 9011 9030 9031	WW, S, SED, HW WW, S, SED, HW WW, S, SED, HW WW, S, SED, HW	1-500ml glass widemouth jar - teflon-lined lid	none required	14 days	G
TCLP	1311	S, SED, HW	1-500ml glass widemouth jar up to 3-1L glass widemouth jars w/ teflon-lined lids (depending on sample phase and fractions needed)	none required	Days to TCLP extraction: Volatiles, 14 Semivolatiles , 14 Mercury, 28 Metals, 180 Follow Method prep. and analysis hold times from TCLP extraction forward	G