



# Guide to Holding Times, Containers, and Preservatives

ORGANICS		AQUEOUS				SOIL		
Parameter	EPA Method(s)	Minimum Volume	Container Type	Required Preservative	Holding Time	Container Type	Required Preservative	Holding Time
DGAS - Methane, Ethane, Ethene, CO <sub>2</sub>	RSK SOP 175/147	3 X 40 mL	VOA Vials	Ice	7 / 14 Days CO <sub>2</sub> only			
DGAS - Methane, Ethane, Ethene (w/o CO <sub>2</sub> )	RSK SOP 175/147	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days			
Explosives	8330A	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	8 oz glass jar	Ice	14E / 40A (Days)
Glycols	8015D	500 mL	HDPE/Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
Herbicides	8321B	500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
PAH - Polynuclear Aromatic Hydrocarbons	625/8270D	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
Pesticides - Organochlorine and Organophosphorus	608/625/8270D	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
PCBs/Aroclors - Polychlorinated Biphenyls	608/625/8082/8270	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
SVOC - Semi-Volatile Organics (BNA)	625/8270D	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
TPH - Total Petroleum Hydrocarbons	TX 1005	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days	4 oz glass jar	Ice	14 Days
TPH - Fractionation by TX 1006	TX 1006	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days after 1005E	4 oz glass jar	Ice	14 Days after 1005E
TPH-DRO - Diesel Range Organics	8015D	2 X 500 mL	Amber Glass	HCl to pH<2 / Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
Method 5035 Prep (BTEX-MTBE, GRO, VOC)	5035					3 tared VOA Vials	Ice	<b>**Ship ASAP**</b>
BTEX-MTBE (Aromatic Volatile Organics)	602/624/8021/8260	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days	4 oz glass jar	Ice	14 Days
TPH-GRO - Gasoline Range Organics	8015D	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days	4 oz glass jar	Ice	14 Days
VOC - Volatile Organics by GC/MS	624/8260C	3 X 40 mL	VOA Vials	Unpreserved / Ice	7 Days - Full list+BTEX	4 oz glass jar	Ice	14 Days
VOC - Volatile Organics by GC/MS	624/8260C	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	3 days - Acrylonitrile & Acrolein	4 oz glass jar	Ice	14 Days
VOC - Volatile Organics by GC/MS	624/8260C	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days*	4 oz glass jar	Ice	14 Days

VOC HT - \*14 days for pH<2 (Aq) except for Vinyl Chloride, Styrene, 2-CEVE. Those compounds must be analyzed from an unpreserved VOA vial.

5035 VOC HT - \*\*Analysis must be completed 48 HOURS if samples are not frozen.\*\* If Sample vials are frozen to < -7°C but above -20°C (or methanol), then HT is 14 days from collection.

METALS		AQUEOUS				SOIL		
Parameter	EPA Method(s)	Minimum Volume	Container Type	Required Preservative	Holding Time	Container Type	Required Preservative	Holding Time
Metals	200.8/6020A	500 mL	HDPE Plastic	HNO <sub>3</sub> to pH<2	180 Days	4 oz glass jar	Ice	180 Days
Dissolved Metals (Filtered in field/24 hours)	200.8/6020A	500 mL	HDPE Plastic	HNO <sub>3</sub> to pH<2	180 Days			
Hexavalent Chromium (Cr6) / Chromium VI	7196A/SM3500-Cr D	250 mL	HDPE Plastic	Ice	<b>**24 Hours**</b>	4 oz glass jar	Ice	30E / 7A (Days)
Mercury	245.1/7470/7471	500 mL	HDPE Plastic	HNO <sub>3</sub> to pH<2	<b>28 Days</b>	4 oz glass jar	Ice	28 Days
Hardness (as CaCO <sub>3</sub> )	130.2/SM2340B	500 mL	HDPE Plastic	HNO <sub>3</sub> to pH<2 / Ice	180 Days	4 oz glass jar	Ice	180 Days

Individual Metals (Al, Sb, As, Ba, Be, B, Cd, Ca, Cs, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Hg, Mo, Ni, K, Se, Si, Ag, Na, Sr, Ti, Sn, Ti, U, V, Zn)

Priority Pollutant Metals (Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Ti, Zn)

RCRA 8 Metals (As, Ba, Cd, Cr, Hg, Pb, Se, Ag)

Texas 11 Metals (As, Ba, Cd, Cr, Hg, Pb, Se, Ag + Sb, Be, Ni)

TAL Metals (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Se, Si, Ag, Na, Sr, Ti, Sn, Ti, V, Zn)

WASTE CHARACTERIZATION		LIQUID/SLUDGE				SOIL/SOLID		
Parameter	EPA Method(s)	Minimum Volume	Container Type	Required Preservative	Holding Time	Container Type	Required Preservative	Holding Time
TCLP/SPLP Metals	1311/6020A	1000 mL	Glass	Ice	6L&E / 6A (Months)	8 oz glass jar	Ice	6L&E / 6A (Months)
TCLP/SPLP Mercury	1311/7470A	1000 mL	Glass	Ice	28L&E / 28A (Days)	8 oz glass jar	Ice	28L&E / 28A (Days)
TCLP/SPLP Semi-Volatiles / Pesticides	1311/8270D	1000 mL	Glass	Ice	14L/7E/40A (Days)	8 oz glass jar	Ice	14L/7E/40A (Days)
SPLP/ZHE Extraction VOC	1311/1312	3 X 40 mL	VOA Vials	Ice	14L&E / 14A (Days)	4 oz glass jar	Ice	14L&E / 14A (Days)
TCLP/SPLP Volatiles	1311/8260C	3 X 40 mL	VOA Vials	Ice	14L&E / 14A (Days)	4 oz glass jar	Ice	14L&E / 14A (Days)
RCI - Reactivity Corrosivity Ignitability	SW846 Ch. 7.3.3.2	500 mL	HDPE Plastic	Ice	14 Days	8 oz glass jar	Ice	14 Days



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WET CHEMISTRY	AQUEOUS	SOIL
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If more than one Wet Chemistry Test is requested, then use 500 mL HDPE Plastic container.  
If TSS/TDS/Settleable Solids is also requested, then use 1000 mL HDPE Plastic container.

Parameter	EPA and Standard (SM) Methods	Minimum Volume	Container Type	Required Preservative	Holding Time	Container Type	Required Preservative	Holding Time
Acidity	305.1/SM2310B	250 mL	HDPE Plastic	Ice	14 Days	4 oz glass jar	Ice	28 Days
Alkalinity (Bicarbonate, Carbonate)	310.1/SM2320B	250 mL	HDPE Plastic	Ice	14 Days	4 oz glass jar	Ice	28 Days
Ammonia	350.3/SM4500-NH <sub>3</sub> F	250 mL	HDPE Plastic	H <sub>2</sub> SO <sub>4</sub> to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days
Anions (Br-Bromide, Cl-Chloride, F-Fluoride, SO <sub>4</sub> -Sulfate)	300/9056A	250 mL	HDPE Plastic	Ice (Preservation not required for Cl and F)	28 Days	4 oz glass jar	Ice	28 Days after E
Anions (NO <sub>3</sub> -Nitrate, NO <sub>2</sub> -Nitrite, O-Phosphate)	300/9056A	250 mL	HDPE Plastic	Ice	<b>**48 Hours**</b>	4 oz glass jar	Ice	<b>48 Hours after Extraction</b>
Anions (Combined Nitrate/Nitrite)	300 only	250 mL	HDPE Plastic	H <sub>2</sub> SO <sub>4</sub> to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days after E
Anions (Br-Bromide, Cl-Chloride, F-Fluoride, SO <sub>4</sub> -Sulfate)	620J	250 mL	HDPE Plastic	Ice	No HT	4 oz glass jar	Ice	28 Days after E
Conductivity / Specific Conductance	120.1/SM2510B	250 mL	HDPE Plastic	Ice	28 Days	4 oz glass jar	Ice	No HT
Chemical Oxygen Demand (COD)	HACH 8000/SM5220D	250 mL	HDPE Plastic	H <sub>2</sub> SO <sub>4</sub> to pH<2 / Ice	28 Days			28 Days
Cyanide, Total or Amenable	335.1-2/9010/9014 SM4500-CN E&G	250 mL	HDPE Plastic	NaOH to pH>12 / Ice	14 Days	4 oz glass jar	Ice	14 Days
Cyanide and Sulfide, Reactive	SW846 Ch. 7.3.3.2	500 mL	HDPE Plastic	Ice	14 Days	4 oz glass jar	Ice	14 Days
Ferrous Iron (Fe)	305.1/SM2310A	3 X 40 mL	VOA Vials	Ice	7 Days			
Ignitability	1010A	500 mL	HDPE Plastic	Ice	6 Months	4 oz glass jar	Ice	28 Days
Moisture / Percent Moisture (Dry Weight)	ASTM D2216-05					4 oz glass jar	Ice	Not Regulated
pH / Corrosivity	150.1/9040B/9045C SM4500-H <sup>+</sup> B	40/250 mL	Amber Glass	Ice	<b>**ASAP**</b>	4 oz glass jar	Ice	<b>**ASAP**</b>
Oil and Grease, Hexane Extractable Material	1664A / 9070	1000 mL	Amber Glass	H <sub>2</sub> SO <sub>4</sub> to pH<2 / Ice	28 Days			
Perchlorate	332/6860A	250 mL	HDPE Plastic	Ice	28 Days	4 oz glass jar	Ice	28 Days
Phosphorus, Ortho	365.2/SM4500-P E	250 mL	HDPE Plastic	Ice	<b>**48 Hours**</b>	4 oz glass jar	Ice	14 Days
Phosphorus, Total	365.2/SM4500-P A	250 mL	HDPE Plastic	H <sub>2</sub> SO <sub>4</sub> to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days
Silica, Dissolved	370.1/HACH 8185	250 mL	HDPE Plastic	Ice	28 Days	4 oz glass jar	Ice	28 Days
Solids, Total Dissolved (TDS)	160.1/SM2540C	500 mL	HDPE Plastic	Ice	7 Days			
Solids, Total Suspended (TSS)	160.2/SM2540D	1000 mL	HDPE Plastic	Ice	7 Days			
Solids, Settleable (SETSOLID)	SM2540F	1000 mL	HDPE Plastic	Ice	<b>**48 Hours**</b>			
Sulfide, Total	376.2/SM 4500-S <sup>2</sup> D	250 mL	HDPE Plastic	NaOH+ ZnAc / Ice	7 Days	4 oz glass jar	Ice	14 Days
Total Organic Carbon (TOC)	415.1/9060/SM5310C	3 X 40 mL	VOA Vials	H <sub>3</sub> PO <sub>4</sub> , HCl or H <sub>2</sub> SO <sub>4</sub> to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days
Turbidity	180.1/SM2130A	250 mL	HDPE Plastic	Ice	<b>**48 Hours**</b>			

### Abbreviations:

Containers: VOA Vial - Volatile Organic Analyte (40 mL screw-top vial), HDPE - High Density Polyethylene  
 Preservatives: HCl - Hydrochloric Acid, H<sub>2</sub>SO<sub>4</sub> - Sulfuric Acid, HNO<sub>3</sub> - Nitric Acid, NaOH - Sodium Hydroxide, ZnAc - Zinc Acetate  
 Hold Time(from Date/Time Collected): L - From Field Collection to TCLP Extraction, E - Extraction, A - Analyze

**STORAGE REQUIREMENTS: Samples must arrive at laboratory on ice OR be stored at 6°C.**



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