

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 ₂	RSK SOP 175	3 X 40 mL	VOA Vials	≤ 6°C	7 / 14 Days CO ₂ only	—	—	—
DGAS - Methane, Ethane, Ethene (w/o CO ₂)	RSK SOP 175	3 X 40 mL	VOA Vials	HCl to pH<2 / ≤ 6°C	14 Days	—	—	—
Herbicides	8321B	500 mL	Amber Glass	≤ 6°C	7E / 40A (Days)	4-oz glass jar	≤ 6°C	14E / 40A (Days)
PAH - Polynuclear Aromatic Hydrocarbons	625.1/8270E	2 X 500 mL	Amber Glass	≤ 6°C	7E / 40A (Days)	4-oz glass jar	≤ 6°C	14E / 40A (Days)
Pesticides - Organochlorine Pesticides and Organophosphorus Pesticides	625.1/8270E	2 X 500 mL	Amber Glass	≤ 6°C	7E / 40A (Days)	4-oz glass jar	≤ 6°C	14E / 40A (Days)
PCBs/Aroclors - Polychlorinated Biphenyls	608.3/625.1/8082/8270E	2 X 500 mL	Amber Glass	≤ 6°C	7E / 40A (Days)	4-oz glass jar	≤ 6°C	14E / 40A (Days)
SVOC - Semi-Volatile Organics (BNA)	625.1/8270E	2 X 500 mL	Amber Glass	≤ 6°C	7E / 40A (Days)	4-oz glass jar	≤ 6°C	14E / 40A (Days)
TPH - Total Petroleum Hydrocarbons	TX 1005	3 X 40 mL	VOA Vials	HCl to pH<2 / ≤ 6°C	14 Days	3 tared VOA Vials	≤ 6°C	14E / 40A (Days)
TPH - Fractionation by TX 1006	TX 1006	3 X 40 mL	VOA Vials	HCl to pH<2 / ≤ 6°C	14 Days after 1005E	4-oz glass jar	≤ 6°C	14 Days after 1005E
TPH-DRO - Diesel Range Organics	8015D	2 X 500 mL	Amber Glass	≤ 6°C	7E / 40A (Days)	4-oz glass jar	≤ 6°C	14E / 40A (Days)
BTEX-MTBE (Aromatic Volatile Organics)	624.1/8260D	3 X 40 mL	VOA Vials	HCl to pH<2 / ≤ 6°C	14 Days	4-oz glass jar	≤ 6°C	14 Days
TPH-GRO - Gasoline Range Organics	8015D	3 X 40 mL	VOA Vials	HCl to pH<2 / ≤ 6°C	14 Days	4-oz glass jar	≤ 6°C	14 Days
VOC - Volatile Organics by GC/MS	624.1/8260D	3 X 40 mL	VOA Vials	Unpreserved / ≤ 6°C	7 Days	4-oz glass jar	≤ 6°C	14 Days
VOC - Volatile Organics by GC/MS	624.1/8260D	3 X 40 mL	VOA Vials	HCl to pH<2 / ≤ 6°C	14 Days	4-oz glass jar	≤ 6°C	14 Days
VOC - Acrolein only	624.1	3 X 40 mL	VOA Vials	Unpreserved / ≤ 6°C	3 Days	---	---	---
METHOD 5035 Prep (BTEX-MTBE, GRO, VOC)	5035	**Ship ASAP**				3 tared VOA Vials	≤ 6°C	*48 hours / 14 Days*
METHOD 5035 VOC SOIL HT: *Analysis must be completed 48 HOURS from sample collection if samples are not frozen.* *If METHOD 5035 VOC SOIL Sample vials are frozen to < -7°C but above -20°C (or methanol preservation for high concentration samples), 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 (except Cr6 and Mercury)	200.8/6020B	500 mL	HDPE Plastic	HNO ₃ to pH<2	180 Days	4-oz glass jar	—	180 Days
Dissolved Metals (Filtered in field/24 hours)	200.8/6020B	250 mL	HDPE Plastic	HNO ₃ to pH<2	180 Days	—	—	—
Hexavalent Chromium (Cr6) / Chromium VI	7196A/SM3500-Cr D	250 mL	HDPE Plastic	≤ 6°C	**24 Hours**	4-oz glass jar	≤ 6°C	30E / 7A (Days)
Mercury	245.1/7470/7471	500 mL	HDPE Plastic	HNO ₃ to pH<2 / ≤ 6°C	28 Days	4-oz glass jar	≤ 6°C	28 Days
Hardness (as CaCO ₃)	SM2340B	500 mL	HDPE Plastic	HNO ₃ to pH<2 / ≤ 6°C	180 Days	4-oz glass jar	≤ 6°C	180 Days
Individual Metals (Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Hg, Mo, Ni, K, Se, Si, Ag, Na, Sr, Tl, Sn, Ti, U, V, Zn) Priority Pollutant Metals (Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, Zn) Texas 11 Metals (As, Ba, Cd, Cr, Hg, Pb, Se, Ag + Sb, Be, Ni) RCRA 8 Metals (As, Ba, Cd, Cr, Hg, Pb, Se, Ag) Baseline Metals (Al, Fe) Texas 12 Metals (As, Ba, Cd, Cr, Cu, Hg, Pb, Mn, Ni, Se, Ag, Zn) 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, Tl, 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	1311/6020B	500 mL	Glass / HDPE	≤ 6°C	180L&E / 180A (Days)	8-oz glass jar	≤ 6°C	180L&E / 180A (Days)
TCLP/SPLP Mercury	1311/7470A	500 mL	Glass / HDPE	≤ 6°C	28L&E / 28A (Days)	8-oz glass jar	≤ 6°C	28L&E / 28A (Days)
TCLP/SPLP Semi-Volatiles / Pesticides	1311/8270E	500 mL	Glass	≤ 6°C	14L/7E/40A (Days)	8-oz glass jar	≤ 6°C	14L/7E/40A (Days)
SPLP/ZHE Extraction VOC	1311/1312	250 mL	Glass	≤ 6°C	14L&E / 14A (Days)	4-oz glass jar	≤ 6°C	14L&E / 14A (Days)
TCLP/SPLP Volatiles	1311/8260D	250 mL	Glass	≤ 6°C	14L&E / 14A (Days)	4-oz glass jar	≤ 6°C	14L&E / 14A (Days)
RCI - Reactivity Corrosivity Ignitability	SW846 Ch. 7.3.3.2	250 mL	HDPE Plastic	≤ 6°C	14 Days	8-oz glass jar	≤ 6°C	14 Days
Hold Time (from Date/Time Collected): L - From Field Collection to TCLP Extraction E - Extraction A - Analyze								

WET CHEMISTRY

AQUEOUS

SOIL

**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	SM2310B	250 mL	HDPE Plastic	≤ 6°C	14 Days	4-oz glass jar	≤ 6°C	28 Days
Alkalinity (Bicarbonate, Carbonate)	SM2320B	250 mL	HDPE Plastic	≤ 6°C	14 Days	4-oz glass jar	≤ 6°C	28 Days
Ammonia	SM4500-NH ₃ F	250 mL	HDPE Plastic	H ₂ SO ₄ to pH<2 / ≤ 6°C	28 Days	4-oz glass jar	≤ 6°C	28 Days
Anions (Br-Bromide, Cl-Chloride, F-Fluoride, SO ₄ -Sulfate)	300/9056A	250 mL	HDPE Plastic	≤ 6°C (Preservation not required for Cl and F)	28 Days	4-oz glass jar	≤ 6°C	28 Days after E
Anions (NO ₃ -Nitrate, NO ₂ -Nitrite)	300/9056A	250 mL	HDPE Plastic	≤ 6°C	**48 Hours**	4-oz glass jar	≤ 6°C	48 Hours after Extraction
Anions (Combined Nitrate/Nitrite)	300 only	250 mL	HDPE Plastic	H ₂ SO ₄ to pH<2 / ≤ 6°C	28 Days	4-oz glass jar	≤ 6°C	28 Days after E
Conductivity / Specific Conductance	SM2510B	250 mL	HDPE Plastic	≤ 6°C	28 Days	4-oz glass jar	≤ 6°C	No HT
Chemical Oxygen Demand (COD)	HACH 8000	250 mL	HDPE Plastic	H ₂ SO ₄ to pH<2 / ≤ 6°C	28 Days	4-oz glass jar	≤ 6°C	28 Days
Cyanide, Total and Amenable	9010/9014 SM4500-CN E&G	250 mL	HDPE Plastic	NaOH to pH>12 / ≤ 6°C	14 Days	4-oz glass jar	≤ 6°C	14 Days
Cyanide and Sulfide, Reactive	SW846 Ch. 7.3.3.2	500 mL	HDPE Plastic	≤ 6°C	14 Days	4-oz glass jar	≤ 6°C	14 Days
Ferrous Iron (Fe)	SM2310A	3 X 40 mL	VOA Vials	≤ 6°C	7 Days	—	—	—
Ignitability	1010A	500 mL	HDPE Plastic	≤ 6°C	6 Months	4-oz glass jar	≤ 6°C	28 Days
Moisture / Percent Moisture (Dry Weight)	ASTM D2216-05	—	—	—	—	4-oz glass jar	≤ 6°C	Not Regulated
pH / Corrosivity	SM4500-H+ B (Aq) 9045D (Soil)	40/250 mL	Amber Glass	None Required	**ASAP**	4-oz glass jar	None Required	**ASAP**

****For pH determination of samples for Wastewater Treatment Discharge Permitting (SM-4500 H⁺ B), the 15 minute holding time must be used as specified in 40 CFR 136 and noted in the test report if exceeded.****

Oil and Grease, Hexane Extractable Material	1664A	1000 mL	Amber Glass	H ₂ SO ₄ to pH<2 / ≤ 6°C	28 Days	—	—	—
Phosphorus, Ortho	SM4500-P E	250 mL	HDPE Plastic	≤ 6°C	**48 Hours**	4-oz glass jar	≤ 6°C	14 Days
Phosphorus, Total	SM4500-P E	250 mL	HDPE Plastic	H ₂ SO ₄ to pH<2 / ≤ 6°C	28 Days	4-oz glass jar	≤ 6°C	28 Days
Silica, Dissolved	HACH 8185	250 mL	HDPE Plastic	≤ 6°C	28 Days	4-oz glass jar	≤ 6°C	28 Days
Solids, Total Dissolved (TDS)	SM2540C	500 mL	HDPE Plastic	≤ 6°C	7 Days	—	—	—
Solids, Total Suspended (TSS)	SM2540D	1000 mL	HDPE Plastic	≤ 6°C	7 Days	—	—	—
Solids, Settleable (SETSOLID)	SM2540F	1000 mL	HDPE Plastic	≤ 6°C	**48 Hours**	—	—	—
Sulfide, Total	SM 4500-S ² D	250 mL	HDPE Plastic	NaOH + ZnAc to pH>9 ≤ 6°C	7 Days	4-oz glass jar	≤ 6°C	14 Days
Total Organic Carbon (TOC)	9060A / SM5310C	3 X 40 mL	VOA Vials	H ₃ PO ₄ to pH<2 / ≤ 6°C	28 Days	2-oz glass jar	≤ 6°C	28 Days
Turbidity	180.1	250 mL	HDPE Plastic	≤ 6°C	**48 Hours**	—	—	—

Abbreviations:

Containers: VOA Vial - Volatile Organic Analyte (40 mL screw-top vial), HDPE - High Density Polyethylene
 Preservatives: HCl - Hydrochloric Acid, H₂SO₄ - Sulfuric Acid, HNO₃ - 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.