

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

ORGANICS		AQUEOUS				SOIL		
Parameter	EPA Method(s)	Minimum Volume	Container Type	Required Preservative	Holding Time	Container Type	Required Preservative	Holding Time
Methane, Ethane, Ethene, CO ₂	RSK SOP 175/147	3 X 40 mL	VOA Vials	Ice	7 Days			
Methane, Ethane, Ethene (w/o CO ₂)	RSK SOP 175/147	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days			
Explosives	8330	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
Glycols	8015	500 mL	HDPE/Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
Herbicides	8321	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
PAH - Polynuclear Aromatic Hydrocarbons	625/8270	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
Pesticides, Organochlorine and/or Organophosphorus	625/8270	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
PCBs/Aroclors - Polychlorinated Biphenyls	608/8082 or 625/8270	2 X 500 mL	Amber Glass	Ice	7E / 40A (Days)	4 oz glass jar	Ice	14E / 40A (Days)
SVOC - Semi-Volatile Organics (BNA)	625/8270	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	Unpreserved / Ice HCl to pH<2 / Ice	7E / 14A (Days) 14E / 14A (Days)	4 oz glass jar* or tared VOAs	Ice	14E / 14A (Days)
TPH - Fractionation by TX 1006	TX 1006	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days after 1005E / 14A	4 oz glass jar* or tared VOAs	Ice	14 Days after 1005E / 14A
TPH-DRO - Diesel Range Organics	8015 / OK DEQ DRO	2 X 500 mL	Amber Glass	HCl to pH<2 / Ice	7E / 40A (Days)	4 oz glass jar*	Ice	14E / 40A (Days)

Collect VOLATILE aqueous samples in VOA vials with NO headspace

* Bulk sampling (4 oz. glass jar) technique for soils can be utilized if there are no hydrocarbons between nC6 and nC12

VOLATILE ORGANICS		AQUEOUS				SOIL		
BTEX-MTBE (Aromatic Volatile Organics)	602/624/8021/8260	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days (7 Days if unpreserved)	4 oz glass jar*	Ice	14 Days
TPH-GRO - Gasoline Range Organics	8015 / OK DEQ GRO	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days (7 Days if unpreserved)	4 oz glass jar*	Ice	14 Days
VOC - Volatile Organics by GC/MS	624/8260	3 X 40 mL	VOA Vials	HCl to pH<2 / Ice	14 Days (7 Days if unpreserved)	4 oz glass jar*	Ice	14 Days

The use of SW-846 Method 5035 is required at this time for the TCEQ Superfund program and Petroleum Storage Tank (PST) State-led Program. TCEQ strongly recommends transition to Method 5035 on new projects within the Remediation Division.

METHOD 5035 (BTEX-MTBE, GRO, VOC, TX1005)

Sample Collection	Container Type	Field Preservation	Holding Time to Lab	Laboratory Activity	Holding Time
Closed System Field Collection Using Hermetically Sealed VOA vials	3 tared VOA Vials with stir bar	Collect sample using coring device (Easy Draw), extrude into vial with no preservative / Ice	Less than 48 hours	Store at 4 ± 2°C	48 hours
				Freeze ASAP and store at less than -10°C (recommended)	14 Days

Abbreviations	Containers: VOA Vial - Volatile Organic Analysis (40 mL screw-top vial), HDPE - High Density Polyethylene
	Preservatives: HCl - Hydrochloric Acid, H ₂ SO ₄ - Sulfuric Acid, HNO ₃ - 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



Guide to Holding Times, Containers, and Preservatives

METALS		AQUEOUS				SOIL		
Parameter	EPA Method(s)	Minimum Volume	Container Type	Required Preservative	Holding Time	Container Type	Required Preservative	Holding Time
Metals	200.8/6020	500 mL	HDPE Plastic	HNO ₃ to pH<2	6 Months	4 oz glass jar	Ice	6 Months
Dissolved Metals (Filtered in field/24 hours)	200.8/6020	500 mL	HDPE Plastic	HNO ₃ to pH<2	6 Months			
Hexavalent Chromium (Cr6) / Chromium VI	7196/SM3500-Cr D	250 mL	HDPE Plastic	Ice	24 Hours	4 oz glass jar	Ice	28 Days
Mercury	245.1/7470/7471	500 mL	HDPE Plastic	HNO ₃ to pH<2	28 Days	4 oz glass jar	Ice	28 Days
Hardness (as CaCO ₃)	130.2/SM2340B	500 mL	HDPE Plastic	HNO ₃ to pH<2 / Ice	6 Months	4 oz glass jar	Ice	6 Months
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)								
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, Tl, Sn, Ti, V, Zn)								

WASTE CHARACTERIZATION		LIQUID/SLUDGE				SOIL/SOLID		
Parameter	EPA Method(s)	Minimum Volume	Container Type	Required Preservative	Holding Time (Days)	Container Type	Required Preservative	Holding Time (Days)
TCLP/SPLP Metals (except mercury)	1311/1312/6020	1000 mL	Glass	Ice	180L&E / 180A	8 oz glass jar	Ice	180L&E / 180A
TCLP/SPLP Mercury	1311/1312/7470A	1000 mL	Glass	Ice	28L&E / 28A	8 oz glass jar	Ice	28L&E / 28A
TCLP/SPLP Pesticides	1311/1312/8270	1000 mL	Glass	Ice	14L / 7E / 40A	8 oz glass jar	Ice	14L / 7E / 40A
TCLP/SPLP Herbicides	1311/1312/8321	1000 mL	Glass	Ice	14L / 7E / 40A	8 oz glass jar	Ice	14L / 7E / 40A
TCLP/SPLP Semi-Volatiles	1311/1312/8270	1000 mL	Glass	Ice	14L / 7E / 40A	8 oz glass jar	Ice	14L / 7E / 40A
TCLP/SPLP Volatiles	1311/1312/8260	3 X 40 mL	VOA Vials	Ice	14L&E / 14A	4 oz glass jar	Ice	14L&E / 14A
Abbreviations:								
Hold Time (from Date/Time Collected): L - From Field Collection to TCLP Extraction, E - Extraction, A - Analyze								
TOX - Total Organic Halogens (SUB)	9020/9023	1000 mL	Amber Glass	H ₂ SO ₄ to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days
RCI - Reactivity/Corrosivity/Ignitability	SW846 Ch. 7	500 mL	HDPE Plastic	Ice	14 Days	8 oz glass jar	Ice	14 Days



Guide to Holding Times, Containers, and Preservatives

WET CHEMISTRY			AQUEOUS			SOIL		
If more than one Wet Chemistry Test is requested, then use 500 mL HDPE Plastic container. If TSS/TDS 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 ₃ F	250 mL	HDPE Plastic	H ₂ SO ₄ to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days
Anions (Br-Bromide, Cl-Chloride, F-Fluoride, SO ₄ -Sulfate)	300/9056	250 mL	HDPE Plastic	Ice	28 Days	4 oz glass jar	Ice	28 Days after E
Anions (NO ₃ -Nitrate, NO ₂ -Nitrite)	300/9056	250 mL	HDPE Plastic	Ice	48 Hours	4 oz glass jar	Ice	48 Hours after E
Biochemical Oxygen Demand (BOD)	SM5210 B	100 mL	HDPE Plastic	Ice	48 Hours			
Conductivity / Specific Conductance	120.1/SM2510B	250 mL	HDPE Plastic	Ice	28 Days	4 oz glass jar	Ice	28 Days
Chemical Oxygen Demand (COD)	HACH 8000 SM5220D	250 mL	HDPE Plastic	H ₂ SO ₄ to pH<2 / Ice	28 Days	4 oz glass jar	Ice	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
RCI - Reactivity/Corrosivity/Ignitability	SW846 Ch. 7	500 mL	HDPE Plastic	Ice	14 Days	8 oz glass jar	Ice	14 Days
Ferrous Iron (Fe)	305.1/SM3500-Fe D	3 X 40 mL	VOA Vials	Ice	7 Days (Internal HT)			
Ignitability	1010	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 ⁺ B	40 mL	25.2	Ice	ASAP	4 oz glass jar	Ice	ASAP
Oil and Grease, Hexane Extractable Material	1664/9070	1000 mL	Amber Glass	H ₂ SO ₄ to pH<2 / Ice	28 Days			
Perchlorate	332/6860	250 mL	HDPE Plastic	Ice	28 Days	4 oz glass jar		28 Days
Phosphorus, Ortho	365.2/SM4500-P E	250 mL	HDPE Plastic	Ice	48 Hours	4 oz glass jar	Ice	14 Days
Phosphorus, Total	365.2/SM4500-P A	250 mL	HDPE Plastic	H ₂ SO ₄ to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days
Silica, Dissolved	370.1/SM4500-Si D	250 mL	HDPE Plastic	Ice	28 Days	4 oz glass jar	Ice	28 Days
Solids, Total Dissolved (TDS)	160.1/SM2540C	250 mL	HDPE Plastic	Ice	7 Days			
Solids, Total Suspended (TSS)	160.2/SM2540D	250 mL	HDPE Plastic	Ice	7 Days			
Sulfide, Total	376.2/SM 4500-S ² D	250 mL	HDPE Plastic	NaOH+ ZnAc / Ice	7 Days	4 oz glass jar	Ice	14 Days
Total Organic Carbon (TOC)	9060/ SM5310C	3 X 40 mL	VOA Vials	H ₃ PO ₄ to pH<2 / Ice	28 Days	4 oz glass jar	Ice	28 Days
Turbidity	180.1/SM2130A	250 mL	HDPE Plastic	Ice	48 Hours			
Abbreviations Containers: VOA Vial - Volatile Organic Analysis (40 mL screw-top vial), HDPE - High Density Polyethylene Preservatives: HCl - Hydrochloric Acid, H ₂ SO ₄ - Sulfuric Acid, HNO ₃ - 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								

[Please contact DHL Analytical with your Environmental Analytical Needs](#)

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