



State of Hawaii, Department of Health
HEER Office

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APPENDIX 11-B

Laboratory Methods, Containers, Preservation, and Holding Times for Groundwater Samples				
Parameter	Method	Container	Preservation	Holding Time
TPH-G	5035/8015; LUFT	40 mL jar with septum cap	<6°C	7 days
			HCl to pH<2 and <6°C	14 days
TPH-D	5035/8015; 3550/8270; 3540/8270; LUFT	1 L Amber Glass Jar	<6°C	7 day (4°C only)
TPH-O	8015; EPA 1664	1 L Amber Glass Jar	<6°C	E: 7 days
			HCl to pH<2 and <6°C (1664 only)	A: 40 days
BTEX, MtBE	(BTEX only) 8260; EPA 602; EPA 624	40 mL jar with septum cap	<6°C	7 days
	(BTEX and MTBE) 8260; EPA 524.2		HCl to pH<2 and <6°C	14 days
PAHs	8270; 8310; EPA 610; EPA 625 8260;	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
HVOCs	EPA 601; EPA 608; EPA 624; EPA 625	40 mL jar with septum cap	<6°C	7 days
			HCl to pH<2 and <6°C	14 days

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Parameter	Method	Container	Preservation	Holding Time
VOCs	8260; EPA 624	40 mL jar with septum cap	4°C HCl to pH<2 and <6°C	7 days 14 days
SVOCs	8270; EPA 625	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Metals (except Mercury and Chromium VI)	6010; 6020; EPA 200 Series	250 mL Plastic Container	HNO ₃ to pH<2 and <6°C	6 months
Mercury	7470; EPA 245.1	250 mL Plastic Container	HNO ₃ to pH<2 and <6°C	28 days
Chromium VI	7196	250 mL Plastic Container	<6°C	24 hours
PCBs	8082; EPA 608	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Chlorinated Herbicides	8151; EPA 615	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Organochlorine Pesticides	8081; EPA 608	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Triazine Pesticides	8141; 8270; EPA 619	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Organophosphorus Pesticides	8141; 8270; EPA 622; EPA 614	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Carbamates	8321; EPA 632	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Fumigants	8260; EPA 504.1; EPA 524.2	40 mL jar with septum cap	<6°C	7 days
			HCl to pH<2 and <6°C	14 days

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Pentachlorophenol	8151; EPA 625	1 L Amber Glass Jar	<6°C	E: 7 days A: 40 days
Glyphosate	EPA 547	1 L Amber Glass Jar	0.008% Na ₂ S ₂ O ₃ (pH 5-8) and <6°C	14 days
Cyanide	9014; EPA 335.2/335.3	500 mL Plastic Container	NaOH to pH>12 and <6°C	14 days
Dioxins/Furans	8290; EPA 613; EPA 1613	1 L Amber Glass Jar	<6°C	E: 30 days A: 45 days

Notes:	
BTEX	Benzene, toluene, ethylbenzene, and xylene
Dioxins	Polychlorinated dibenzodioxins
Furans	Polychlorinated dibenzofurans
HVOCs	Halogenated volatile organic compounds
MTBE	Methyl-tert butyl ether
PAHs	Polynuclear aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
SVOCs	Semi-volatile organic compounds
TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
TPH-O	Total petroleum hydrocarbons as oil
VOCs	Volatile organic compounds
<	Less than or equal to
°C	Degree Celsius

g	Gram
L	Liter
mL	Milliliter
HCl	Hydrochloric acid
NaOH	Sodium hydroxide
NaS ₂ O ₃	Sodium thiosulfate
HNO ₃	Nitric acid
E	Hold time to extraction
A	Hold time after extraction until analysis
pH	A measure of the acidity or alkalinity of a solution.
EPA	Where the term "EPA" is used with a given method number the prefix indicates that the method comes from Environmental Protection Agency (EPA) wastewater and drinking water standards, both published and maintained by the EPA Safe Drinking Water Act (SDWA) and/or Clean Water Act (CWA). For methods that are presented without the "EPA" notation, the methods come from the guidance document "Test Methods for Evaluating Solid Waste Physical/Chemical Methods" (SW-846). Although SW-846 was written by the EPA originally, they are guidance documents and not prescriptive as the EPA prefix methods.

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