

Parameters	Method	Holding Time ⁸		Minimum Volume		Water Sampling	
		Water	Soil	Water	Soil	Container	Preservative ⁹
Acidity	SM 2310B	14 days	--	100 mL	--	250mL P	None
Alkalinity (as CaCO ₃)	SM 2320B	14 days	NS ⁵	100 mL	--	250mL P	None
Ammonia Nitrogen	SM 4500NH3-D	28 days	--	100 mL	--	250mL P	H ₂ SO ₄
Asbestos	Various	NS ⁵	NS ⁵	1 L	50 g	1L P	None
Bicarbonate Alkalinity	SM 2320B	14 days	--	100 mL	--	250mL P	None
Bioassay, %survival	NPDES	36 hr	--	5 gallons	--	5gal cube	None
Bioassay, Haz Waste screen	CCR Title 22	36 hr	36 hr	500 mL	200 g	1L G	None
Biochemical Oxygen Demand (BOD)	SM 5210B	48 hr	--	600 mL	--	1L P	None
Carbon, Total Organic	SM 5310C	28 days	--	40 mL	--	250mL G	H ₂ SO ₄
	Walkley-Black	--	NS ⁵	--	25 g	--	--
Carbon, Total Inorganic	SM 5310C	28 days	--	40 mL	--	250mL G	H ₂ SO ₄
Carbonate Alkalinity	SM 2320B	NS ⁵	--	100 mL	--	250mL P	None
Cation Exchange Capacity	EPA 9081	--	6 mo	--	10 g	--	--
Chemical Oxygen Demand (COD)	SM 5220D	28 days	--	25 mL	--	100mL P	H ₂ SO ₄
COD, Filtered	SM 5220D	28 days	--	25 mL	--	100mL P	H ₂ SO ₄
Chloride	EPA 300.0	28 days	--	100 mL	--	250mL P	None
Chlorine, Residual	SM 4500Cl-G	15 min	--	100 mL	--	250mL G	Foil wrapped
Coliform, Fecal		6 hr	--	100 mL	--	sterile 100mL P	Na ₂ S ₂ O ₃
Color	SM 2120B	48 hr	--	50 mL	--	250mL G	None
Conductivity	SM 2510B	28 days	--	100 mL	--	250mL P	None
Corrosivity to Steel (NACE)	EPA 1110A	NS ⁵	NS ⁵	1 L	1000 g	1L G	None
Chromium, Hexavalent	EPA 7196A	24 hr ¹⁰	30 days	100 mL	40 g	500mL P	None
	SM 3500Cr-D	24 hr ¹⁰	--	100 mL	--	500mL P	None
	EPA 7199	24 hr ¹⁰	--	50 mL	--	250mL P	None
Cyanide	SM 4500Cn-E	14 days	14 days	500 mL	5 g	500mL P	NaOH
	EPA 9010/9014	14 days	14 days	500 mL	5 g	500mL P	NaOH
Cyanide, Amenable	SM 4500Cn-E	14 days	14 days	500 mL	5 g	500mL P	NaOH
	EPA 9010/9014	14 days	14 days	500 mL	5 g	500mL P	NaOH
Cyanide, Reactive	SW846 Ch.7	NS ⁵	NS ⁵	25 mL	10 g	500mL P	None

Parameters	Method	Holding Time ⁸		Minimum Volume		Water Sampling	
		Water	Soil	Water	Soil	Container	Preservative ⁹
Density	ASTM or AOCS	NS ⁵	--	200 mL	--	250mL P or G	None
Dissolved Organic Carbon	SM 5310C	28 days	--	40 mL	--	250mL G	H ₂ SO ₄
Dissolved Oxygen	SM 4500O-G	15 min	--	100 mL	--	250mL G	None
Dissolved Sulfide	SM 4500S ² -D	7 days	--	50 mL	--	500mL P	NaOH
Ferrous Iron (Fe ²⁺)	SM 3500Fe-D	in field	--	50 mL	--	100mL P or G	HCL
Ferric Iron (Fe ³⁺)	SM 3500Fe-D	24 hr	--	See Notes	--	2 x 100mL P	see Notes (6)
Flash Point	EPA 1010A	NS ⁵	--	60 mL	NA	250mL P	None
Fluoride	EPA 300.0	28 days	28 days	100 mL	10 g	250mL P	None
Free Liquids (Paint Filter Test)	EPA 9095B	NS ⁵	NS ⁵	100 mL	50 g	500mL wide G	None
Halogens, Total Organic	EPA 9020	28 days	28 days	200 mL	10 g	250mL P or G	H ₂ SO ₄
Hardness, as CaCO ₃	SM 2340B	6 mo.	--	100 mL	--	250mL P	HNO ₃
Hexavalent Chromium	EPA 7196A	24 hr ¹⁰	30 days	100 mL	40 g	500mL P	None
	SM 3500Cr-D	24 hr ¹⁰	--	100 mL	--	500mL P	None
	EPA 7199	24 hr ¹⁰	--	50 mL	--	250mL P	None
Ignitability	SW846 Ch.7	--	NS ⁵	--	10 g	--	None
Iron, Ferrous (Fe ²⁺)	SM 3500FeD	24 hr	--	50 mL	--	100mL P	HCL
Iron, Ferric (Fe ³⁺)	SM 3500FeD	24 hr	--	See Notes	--	2 x 100mL P	see Notes (6)
MBAS (Surfactants)	SM 5540C	48 hr	--	250 mL	--	1L P	None
Moisture	CLP-SOW	--	NS ⁵	--	25 g	--	None
Nitrate Nitrogen	EPA 300.0	48 hr	--	100 mL	--	250mL P	None
Nitrite Nitrogen	EPA 300.0	48 hr	--	100 mL	--	250mL P	None
Nitrate/ Nitrite Nitrogen	EPA 353.2	28 days	--	100 mL	--	250mL P	H ₂ SO ₄
Nitrogen, Ammonia	SM 4500NH ₃ -D	28 days	28 days	100 mL	10 g	250mL P	H ₂ SO ₄
Nitrogen, Total Kjeldahl (TKN)	SM 4500NH ₃ -C	28 days	28 days	50 mL	5 g	1L P	H ₂ SO ₄
Oil & Grease, Petroleum (H.E.M.-SG)	EPA 1664A	28 days	--	1 L	--	1L G	HCL
Oil & Grease, Total (H.E.M.)		28 days	--	1 L	--	1L G	HCL
Organic Carbon, Total	SM 5310C	28 days	--	40 mL	--	250mL G	H ₂ SO ₄
	Walkley-Black	--	NS ⁵	--	25 g	--	--
Organic Lead	CA LUFT ⁷	14 days	14 days	100 mL	50 g	500mL G	None

Parameters	Method	Holding Time ⁸		Minimum Volume		Water Sampling	
		Water	Soil	Water	Soil	Container	Preservative ⁹
Ortho-phosphate Phosphorus	SM 4500P-E	48 hr ¹¹	--	50 mL	--	100mL P	None
Oxygen Demand, Biochemical	SM 5210B	48 hr	--	600 mL	--	1L P	None
Oxygen Demand, Chemical	SM 5220D	28 days	--	100 mL	--	250mL P	H ₂ SO ₄
Oxygen, Dissolved	SM 4500O-G	15 min	--	100 mL	--	250mL G	None
Paint Filter Test	EPA 9095	NS ⁵	NS ⁵	100 mL	50 g	500mL wide	None
Perchlorate	EPA 314.0	28 days	--	100 mL	--	250mL P	None
PH	SM 4500H+B	15 min		100 mL		250mL P	None
	EPA 9040C/ 9045D	24 hr	14 days	100 mL	50 g	250mL P	None
Phenolic Compounds	EPA 420.1	28 days	--	500 mL	--	1L G	H ₂ SO ₄
Phosphate, ortho-	SM 4500P-E	48 hr	--	50 mL	--	100mL P	None
Phosphate, Total	SM 4500P-E	28 days	28 days	50 mL	10 g	250mL P	H ₂ SO ₄
Reactive Cyanide	SW846 Ch.7	NS ⁵	NS ⁵	25 mL	10 g	500mL P	None
Reactive Sulfide	SW846 Ch.7	NS ⁵	NS ⁵	25 mL	10 g	500mL P	None
Residual Chlorine	SM 4500CI-G	15 min	--	50 mL	--	100mL G	None
Resistivity	SM 2510B	28 days	--	100 mL	--	250mL P	None
Salinity	SM 2520B	NS ⁵	--	250 mL	--	250mL G	wax seal
Silica	SM 4500SiO ₂ -C	28 days	28 days	50 mL	10 g	100mL P	None
Solids, Settleable	SM 2540F	48 hr	--	1 L	--	1L G	None
Solids, Total Dissolved	SM 2540C	7 days	--	100 mL	--	250mL P	None
Solids, Total Suspended	SM 2540D	7 days	--	100 mL	--	250mL P	None
Solids, Total Volatile	SM 2540E	7 days	NS ⁵	100 mL	50 g	250mL P	None
Sulfate	EPA 300.0	28 days	--	100 mL	--	250mL P	None
Sulfide	SM 4500S ² -D	7 days	--	50 mL	--	500mL P	NaOH + ZnAc
Sulfide, Dissolved	SM 4500S ² -D	7 days	--	50 mL	--	500mL P	NaOH
Sulfide, Reactive	SW846 Ch.7	NS ⁵	NS ⁵	25 mL	10 g	500mL P	None
Sulfite	SM 4500SO ₃ -B	15 min	--	100 mL	--	500mL P	None
Surfactants (MBAS)	SM 5540C	48 hr	--	250 mL	--	1L P	None
Total Dissolved Solids (TDS)	SM 2540C	7 days	--	100 mL	--	250mL P	None
Total Inorganic Carbon	SM 5310C	28 days	28 days	40 mL	25 g	250mL G	H ₂ SO ₄

Parameters	Method	Holding Time ⁸		Minimum Volume		Water Sampling	
		Water	Soil	Water	Soil	Container	Preservative ⁹
Total Kjeldahl Nitrogen (TKN)	SM 4500NH3-C	28 days	28 days	50 mL	5 g	1L P	H ₂ SO ₄
Total Organic Carbon (TOC)	SM 5310C	28 days	--	40 mL	--	250mL G	H ₂ SO ₄
	Walkley-Black	--	NS ⁵	--	25 g	--	--
Total Organic Halogens (TOX)	EPA 9020B	28 days	28 days	200 mL	10 g	250mL G ¹²	H ₂ SO ₄
Total Suspended Solids (TSS)	SM 2540D	7 days	--	100 mL	--	250mL P	None
Total Volatile Solids (TVS)	SM 2540E	7 days	NS ⁵	100 mL	50 g	250mL P	None
Tributyl Tin	GC/FPD	NS ⁵	NS ⁵	1 L	10 g	1L P or G	None
Turbidity	SM 2130B	48 hr	--	100 mL	--	250mL P	None
Viscosity	ASTM methods	NS ⁵	--	25 mL	--	50mL P	None

General Minerals	Method	Holding Time ⁸		Minimum Volume		Water Sampling	
		Water	Soil	Water	Soil	Container	Preservative ⁹
Alkalinity (as CaCO ₃)	SM 2320B	14 days	NS ⁵	100 mL	--	250mL P	None
Chloride, Sulfate	EPA 300.0	28 days	--	100 mL	10 g	250mL P	None
Conductivity	SM 2510B	28 days	--	100 mL	--	250mL P	None
pH	SM 4500H+B	15 min	--	100 mL	--	250mL P	None
Total Dissolved Solids (TDS)	SM 2540C	7 days	--	100 mL	--	250mL P	None
Ca, Fe, Mg, Na, Zn	EPA 200.7	6 mo	6 mo	100 mL	--	250mL P	HNO ₃
Hardness (run with Metals)	SM 2340B	6 mo	6 mo	100 mL	--	250mL P	HNO ₃
Optional Analyses (included upon request):							
Surfactants (MBAS)	SM 5540C	48 hr	--	250 mL	--	1L P	None

Ion Chromatography	Method	Holding Time ⁸		Minimum Volume		Water Sampling	
		Water	Soil	Water	Soil	Container	Preservative ⁹
Bromide	EPA 300.0	28 days	--	100 mL	10 g	250mL P	None
Chloride	EPA 300.0	28 days	--	100 mL	10 g	250mL P	None
Fluoride	EPA 300.0	28 days	--	100 mL	10 g	250mL P	None
Nitrate Nitrogen	EPA 300.0	48 hr	--	100 mL	10 g	250mL P	None
Nitrite Nitrogen	EPA 300.0	48 hr	--	100 mL	10 g	250mL P	None

Ion Chromatography	Method	Holding Time ⁸		Minimum Volume		Water Sampling	
		Water	Soil	Water	Soil	Container	Preservative ⁹
Sulfate	EPA 300.0	28 days	--	100 mL	10 g	250mL P	None
Hexavalent Chromium	EPA 7199	24 hr ¹⁰	--	50 mL	10 g	250mL P	None
Perchlorate	EPA 314.0	28 days	--	100 mL	10 g	250mL P	None

Notes:

5. NS: No holding time is specified in the regulations for this method.
6. Ferric Iron (Fe³⁺) is the difference between total and ferrous iron.
Requires submission of two polyethylene bottles, one preserved with HCl and one with HNO₃.
7. CA LUFT: California Department of Health Services Leaking Underground Fuel Tank Manual 1989
8. Holding time specified in 40CFR136 Table 2 (Clean Water Act/ NPDES 2012) and SW-846 Table 2-36 (1996)
9. Samples should be kept at ≤ 6⁰C from time of collection until analysis. Containers can be supplied by C&T.
HCL: Hydrochloric Acid to pH < 2
HNO₃: Nitric Acid to pH < 2
H₂SO₄: Sulfuric Acid to pH < 2
NaOH: Sodium Hydroxide to pH > 12
ZnAc: Zinc Acetate
10. Holding time can be extended to 28 days by preservation with EPA 218.6 buffer to pH 9.3 – 9.7.
11. Samples for Ortho-phosphate must be filtered within 15 minutes of collection and analyzed within 48 hours.
12. Samples for TOX (Total Organic Halides) should be collected with no headspace remaining in bottle.

Legend:

- mg/L milligrams per liter (ppm)
 µg/L micrograms per liter (ppb)
 mg/Kg milligrams per kilogram (ppm)
 µg/Kg micrograms per kilogram (ppb)
- VOA 40mL Amber VOA Vial
 G Amber Glass
 P Polyethylene