

TRACE METALS

SAMPLING CONTAINERS & HOLDING TIMES

| Parameter | Matrix | Prep Method | Analytical Method | Holding Time ² | Minimum Volume | Water Sampling | |
|---------------------------------|--------|--------------------------------|----------------------|---------------------------|----------------|----------------|---------------------------|
| | | | | | | Container | Preservative ³ |
| Cations | Water | EPA 3010 | EPA 6010 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.7 | EPA 200.7 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.8 | EPA 6020 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.8 | EPA 200.8 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | Soil | EPA 3050 | EPA 6010 | 6 mo | 2 g | | |
| | | EPA 3050 | EPA 6020 | 6 mo | 2 g | | |
| ICP Metals | Water | EPA 3010 | EPA 6010 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.7 | EPA 200.7 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | Soil | EPA 3050 | EPA 6010 | 6 mo | 2 g | | |
| ICP-MS Metals | Water | EPA 200.8 | EPA 6020 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.8 | EPA 200.8 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | Soil | EPA 3050 | EPA 6020 | 6 mo | 2 g | | |
| Hexavalent Chromium | Water | METHOD ¹ | EPA 7196A | 24 hr | 100 mL | 500 mL P | None |
| | | METHOD ¹ | EPA 7199 | 24 hr | 50 mL | 250 mL P | None |
| | Soil | METHOD ¹ | EPA 7196A | 30 days | 40 g | | |
| Lead | Water | EPA 3010 | EPA 6010 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.7 | EPA 200.7 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.8 | EPA 6020 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | | EPA 200.8 | EPA 200.8 | 6 mo | 100 mL | 250mL P | HNO ₃ |
| | Soil | EPA 3050 | EPA 6010 | 6 mo | 2 g | | |
| | | EPA 3050 | EPA 6020 | 6 mo | 2 g | | |
| Lead in High Volume Air Filters | Air | METHOD ¹ | EPA 7420 | NS | Varies | | |
| Mercury | Water | METHOD ¹ | EPA 7470 | 28 days | 100 mL | 250mL P | HNO ₃ |
| | | METHOD ¹ | EPA 245.1 | 28 days | 100 mL | 250mL P | HNO ₃ |
| | Soil | METHOD ¹ | EPA 7471 | 28 days | 0.5 g | | |
| Organic Lead | Water | CA LUFT ¹ | CA LUFT ¹ | 14 days | 100 mL | 500mL G | None |
| | Soil | CA LUFT ¹ | CA LUFT ¹ | 14 days | 50 g | | |
| Priority Pollutant Metals | Water | EPA 3010/ Method ¹ | EPA 6010/ 7470 | 6 mo/ 28d ⁴ | 100 mL | 500mL P | HNO ₃ |
| | | EPA 200.8/ Method ¹ | EPA 6020/ 7470 | 6 mo/ 28d ⁴ | 100 mL | 500mL P | HNO ₃ |

| Parameter | Matrix | Prep Method | Analytical Method | Holding Time ² | Minimum Volume | Water Sampling | |
|-------------------------------|--------|--------------------------------|-------------------|---------------------------|--------------------|----------------|---------------------------|
| | | | | | | Container | Preservative ³ |
| Priority Pollutant Metals | Soil | EPA 3050/ Method ¹ | EPA 6010/ 7471 | 6 mo/ 28d ⁴ | 5 g | | |
| | | EPA 3050/ Method ¹ | EPA 6020/ 7471 | 6 mo/ 28d ⁴ | 5 g | | |
| RCRA (8) Metals | Water | EPA 3010/ Method ¹ | 6010/ 6020/ 7470 | 6 mo/ 28d ⁴ | 100 mL | 500mL P | HNO ₃ |
| | Soil | EPA 3050/ Method ¹ | 6010/ 6020/ 7471 | 6 mo/ 28d ⁴ | 5 g | | |
| STLC Extraction for CA-W.E.T. | Soil | CCR T22-66261 | 6010/ 6020/ 7470 | 6 mo/ 28d ⁴ | 50 g | | |
| SPLP Extraction for Metals | Soil | EPA 1312 | 6010/ 6020/ 7470 | 6 mo/ 28d ⁴ | 100 g ⁵ | | |
| TCLP Extraction for Metals | Soil | EPA 1311 | 6010/ 6020/ 7470 | 6 mo/ 28d ⁴ | 100 g ⁵ | | |
| TCLP Extraction for SVOC | Soil | EPA 1311 | Various | 14 days | 100 g ⁵ | | |
| TCLP-ZHE Extraction for VOC | Soil | EPA 1311 | Various | 14 days | 25 g | | |
| CA Title 22 Metals (CAM 17) | Water | EPA 3010/ Method ¹ | EPA 6010/ 7400 | 6 mo/ 28d ⁴ | 100 mL | 500mL P | HNO ₃ |
| | | EPA 200.8/ Method ¹ | EPA 6020/ 7400 | 6 mo/ 28d ⁴ | 100 mL | 500mL P | HNO ₃ |
| | Soil | EPA 3050/ Method ¹ | EPA 6010/ 7400 | 6 mo/ 28d ⁴ | 5 g | | |
| | | EPA 3050/ Method ¹ | EPA 6020/ 7400 | 6 mo/ 28d ⁴ | 5 g | | |
| Tributyl Tin ("Organotin") | Water | EPA 3520 | GC/ FPD | 7 days | 1 L | 1L G | None |
| | Soil | EPA 3550 | GC/ FPD | 14 days | 10 g | | |

Notes:

- "Method" indicates that the prep method is an integral part of the referenced analytical method.
"NS" indicates that no holding time is specified in the regulations.
- Holding time specified in 40CFR136 Table 2 (Clean Water Act/ NPDES 2012) and SW-846 Table 2-36 (1996)
Requires submission of two polyethylene bottles, one preserved with HCl and one with HNO₃.
- Samples should be kept at ≤ 6°C 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
- 28 day holding time for Mercury; 6 month holding time for all ICP and ICP-MS metals.
- 100g minimum for TCLP or SPLP Extraction. 50g required for each analysis.

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