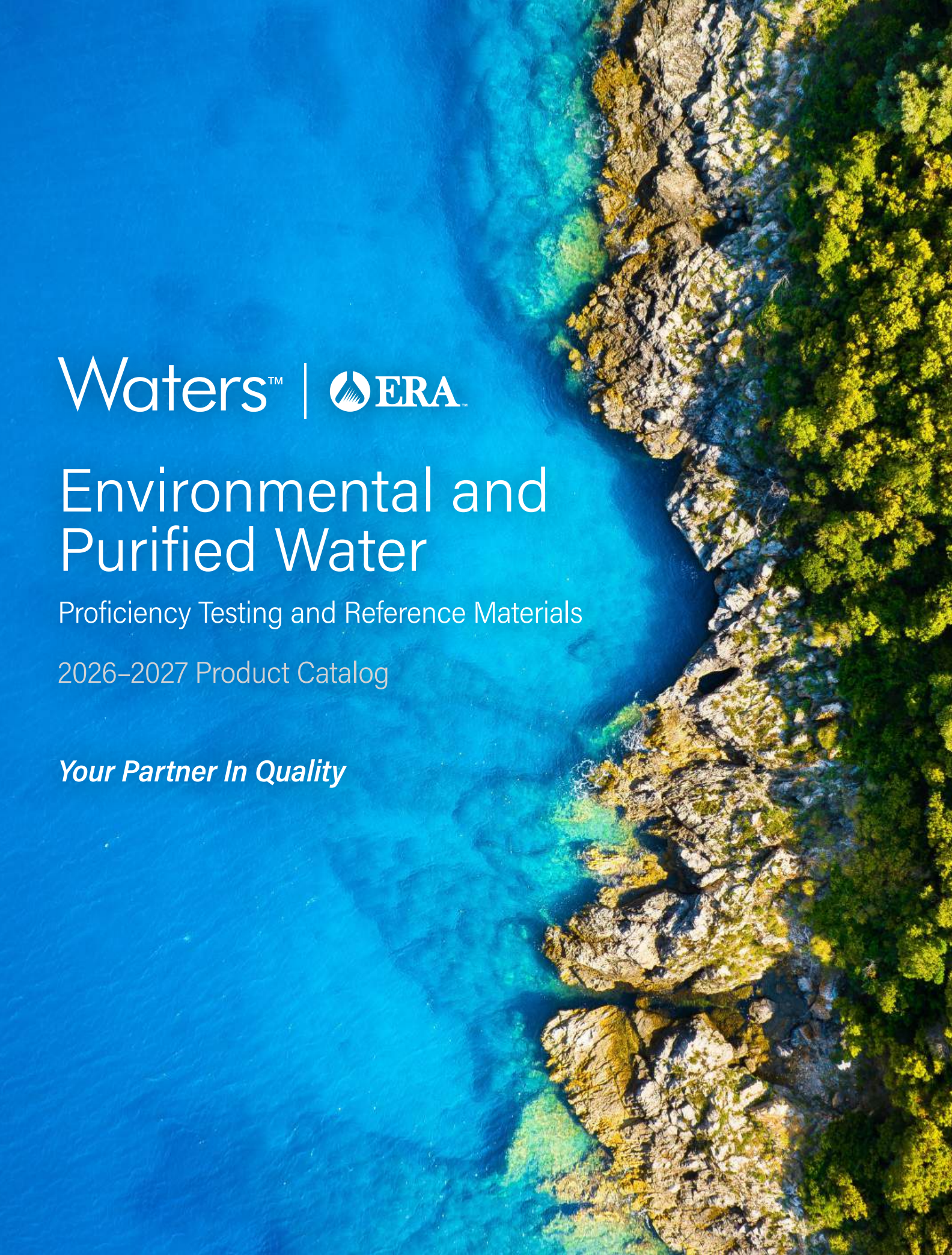
Waters™ | ERA™

Environmental and Purified Water

Proficiency Testing and Reference Materials

2026–2027 Product Catalog

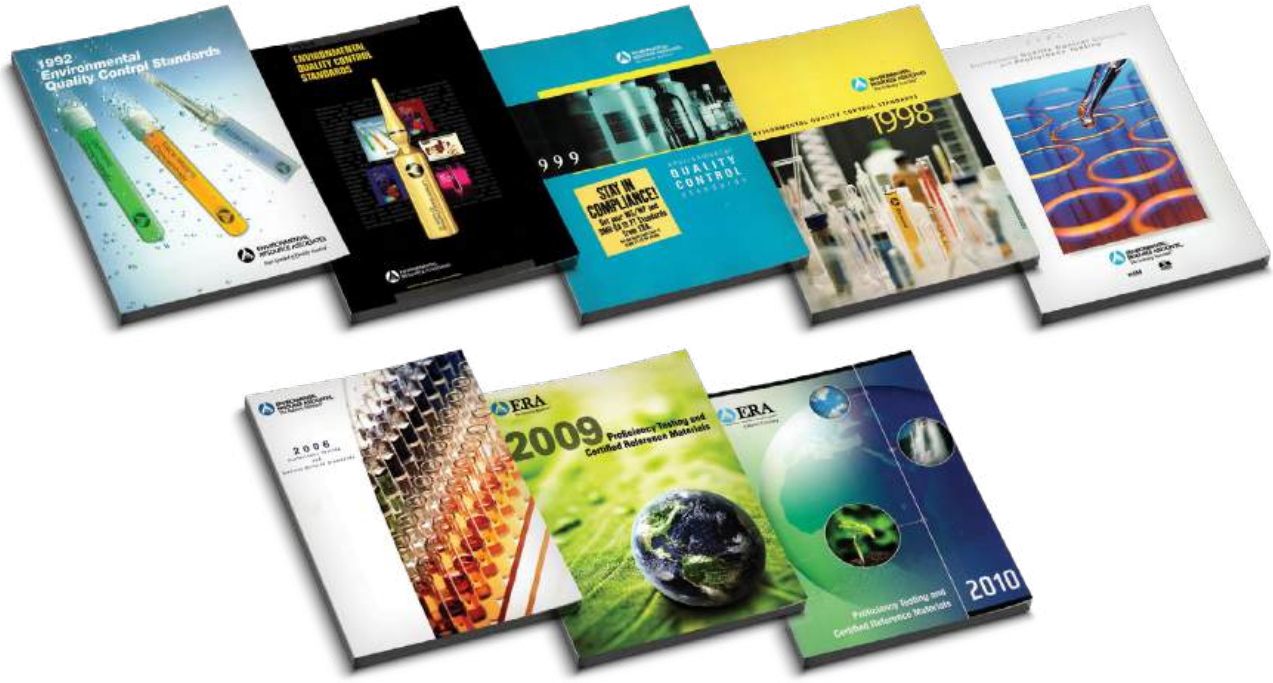
Your Partner In Quality



Commitment to Quality

For more than 45 years, ERA™ has been providing analytical laboratories and organizations with the products and services required to eliminate inaccurate results. Laboratories globally rely on ERA's products to be integrated into their quality programs to ensure total confidence in their data analysis.

Our comprehensive range of Proficiency Testing (PT) programs and Certified Reference Materials (CRMs) are designed to provide you with confidence that your data is valid and defensible. Whether complying with regulatory requirements or internal quality programs, you can depend on ERA to support your efforts in providing sound, well documented data so you can have confidence in your decisions.



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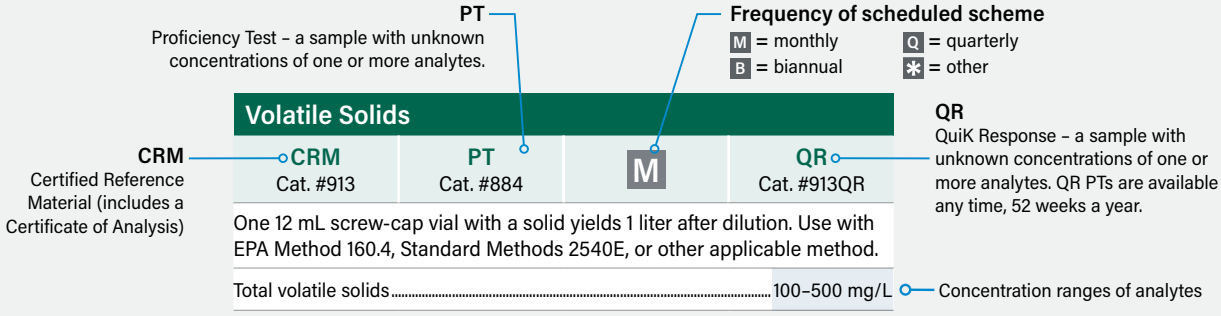
Ordering Your Standards



Delivering Continuous Support

1977

Environmental Resource Associates (ERA) is founded in Chicago, Illinois by Mark Carter and Terry Epstein as a reference materials provider for environmental laboratories.

1982

Analytical Products Group, Inc. (APG) is founded in Marietta, Ohio as a proficiency testing provider.

1993

ERA receives ISO 9001 certification.

1999

ERA achieves PT provider accreditation by NIST/NVLAP for EPA approved studies.

2000

Process standards product line is launched including reference materials for total organic carbon and conductivity.

2006

ERA is acquired by Waters™ Corp, the world wide leader in liquid chromatography, mass spectrometry and thermal analysis.

2006

ERA opens international office in Manchester, UK offering reference materials to laboratories throughout Europe.

2008

Waters ERA products go to the International Space Station.

2008

Waters ERA acquires Analytical Products Group, Inc. (APG).

Waters ERA introduces Stationary Source Audit Sample (SSAS).

2013

2014

Waters ERA innovates 2-day turn around for final study reports.

eDATA 2.0 launched.

2015

Major upgrades to business systems that deliver superior customer experience.

2019

2022

New website launched.

Waters ERA 50th Anniversary.

2027

Today

After more than 45 years in business, Waters ERA products are in use in over 80 countries by nearly 13,000 labs

2026 Proficiency Testing Scheme Schedule

Air & Emissions

	Scheme #	Opens	Closes
Q	AE 75	Jan 30	Mar 16
Q	AE 76	May 1	Jun 15
Q	AE 77	Jul 31	Sep 14
Q	AE 78	Oct 30	Dec 14

MRAD

Scheme #	Opens	Closes
MRAD 44	Mar 23	May 22
MRAD 45	Sep 21	Nov 20

2 schemes per year - open for 60 days

Radiochemistry

	Scheme #	Opens	Closes
Q	RAD 144	Jan 12	Feb 26
Q	RAD 145	Apr 13	May 28
Q	RAD 146	Jul 13	Aug 27
Q	RAD 147	Oct 9	Nov 23

Soil (including UST in Soil)

	Scheme #	Opens	Closes
Q	SOIL 133	Jan 26	Mar 12
Q	SOIL 134	Apr 27	Jun 11
Q	SOIL 135	Jul 27	Sep 10
Q	SOIL 136	Oct 23	Dec 7

Water Supply

	Scheme #	Opens	Closes
Q	**WS 354**	Jan 12	Feb 26
	WS 355	Feb 9	Mar 26
	WS 356	Mar 9	Apr 23
Q	**WS 357**	Apr 13	May 28
	WS 358	May 11	Jun 25
	WS 359	Jun 8	Jul 23
Q	**WS 360**	Jul 13	Aug 27
	WS 361	Aug 10	Sep 24
	WS 362	Sep 8	Oct 23
Q	**WS 363**	Oct 9	Nov 23
	WS 364	Nov 2	Dec 17
	WS 365	Dec 7	Jan 21, 2027

Water Pollution (including UST in Water)

	Scheme #	Opens	Closes
Q	**WP 372**	Jan 20	Mar 6
	WP 373	Feb 16	Apr 2
	WP 374	Mar 16	Apr 30
Q	**WP 375**	Apr 20	Jun 4
	WP 376	May 18	Jul 2
	WP 377	Jun 15	Jul 30
Q	**WP 378**	Jul 20	Sep 3
	WP 379	Aug 17	Oct 1
	WP 380	Sep 14	Oct 29
Q	**WP 381**	Oct 16	Nov 30
	WP 382	Nov 6	Dec 21
	WP 383	Dec 14	Jan 28, 2027

DMR-QA 46

Scheme #	Opens	Closes
DMR-QA 46	Est. April TBD, 2026	Est. July TBD, 2026

DMR-QA Study Open and Close dates determined by EPA

QuiK Response PT

Need PT results fast? QuiK Response™ PTs are available on demand, 52 weeks a year. Plus, when you report in eDATA, you receive your final QuiK Response PT results instantly. Contact your Customer Service Representative or an authorized Waters ERA sales partner to place your QuiK Response order.

Schedule subject to change – see Waters ERA's website at eraqc.com.

Q Quarterly Study

For the latest products and information, please visit us online at eraqc.com

The Industry Standard for over 45 years

Waters™ | ERA™

2027 Proficiency Testing Scheme Schedule

Air & Emissions

	Scheme #	Opens	Closes
Q	AE 79	Jan 29	Mar 15
Q	AE 80	Apr 30	Jun 14
Q	AE 81	Jul 30	Sep 13
Q	AE 82	Oct 29	Dec 13

MRAD

Scheme #	Opens	Closes
MRAD 46	Mar 22	May 21
MRAD 47	Sep 20	Nov 19

2 schemes per year - open for 60 days

Radiochemistry

	Scheme #	Opens	Closes
Q	RAD 148	Jan 11	Feb 25
Q	RAD 149	Apr 12	May 27
Q	RAD 150	Jul 12	Aug 26
Q	RAD 151	Oct 8	Nov 22

Soil (including UST in Soil)

	Scheme #	Opens	Closes
Q	SOIL 137	Jan 25	Mar 11
Q	SOIL 138	Apr 26	Jun 10
Q	SOIL 139	Jul 26	Sep 9
Q	SOIL 140	Oct 22	Dec 6

Water Supply

	Scheme #	Opens	Closes
Q	WS 366	Jan 11	Feb 25
	WS 367	Feb 8	Mar 25
	WS 368	Mar 8	Apr 22
Q	WS 369	Apr 12	May 27
	WS 370	May 10	Jun 24
	WS 371	Jun 7	Jul 22
Q	WS 372	Jul 12	Aug 26
	WS 373	Aug 9	Sep 23
	WS 374	Sep 7	Oct 22
Q	WS 375	Oct 8	Nov 22
	WS 376	Nov 1	Dec 16
	WS 377	Dec 6	Jan 20, 2028

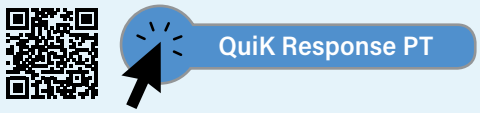
Water Pollution (including UST in Water)

	Scheme #	Opens	Closes
Q	WP 384	Jan 19	Mar 5
	WP 385	Feb 15	Apr 1
	WP 386	Mar 15	Apr 29
Q	WP 387	Apr 19	Jun 3
	WP 388	May 17	Jul 1
	WP 389	Jun 14	Jul 29
Q	WP 390	Jul 19	Sep 2
	WP 391	Aug 16	Sep 30
	WP 392	Sep 13	Oct 28
Q	WP 393	Oct 15	Nov 29
	WP 394	Nov 5	Dec 20
	WP 395	Dec 13	Jan 27, 2028

DMR-QA 47

Scheme #	Opens	Closes
DMR-QA 47	Est. April TBD, 2027	Est. July TBD, 2027

DMR-QA Study Open and Close dates determined by EPA



Need PT results fast? QuiK Response™ PTs are available on demand, 52 weeks a year. Plus, when you report in eDATA, you receive your final QuiK Response PT results instantly. Contact your Customer Service Representative or an authorized Waters ERA sales partner to place your QuiK Response order.

Schedule subject to change – see Waters ERA's website at eraqc.com.

Q Quarterly Study

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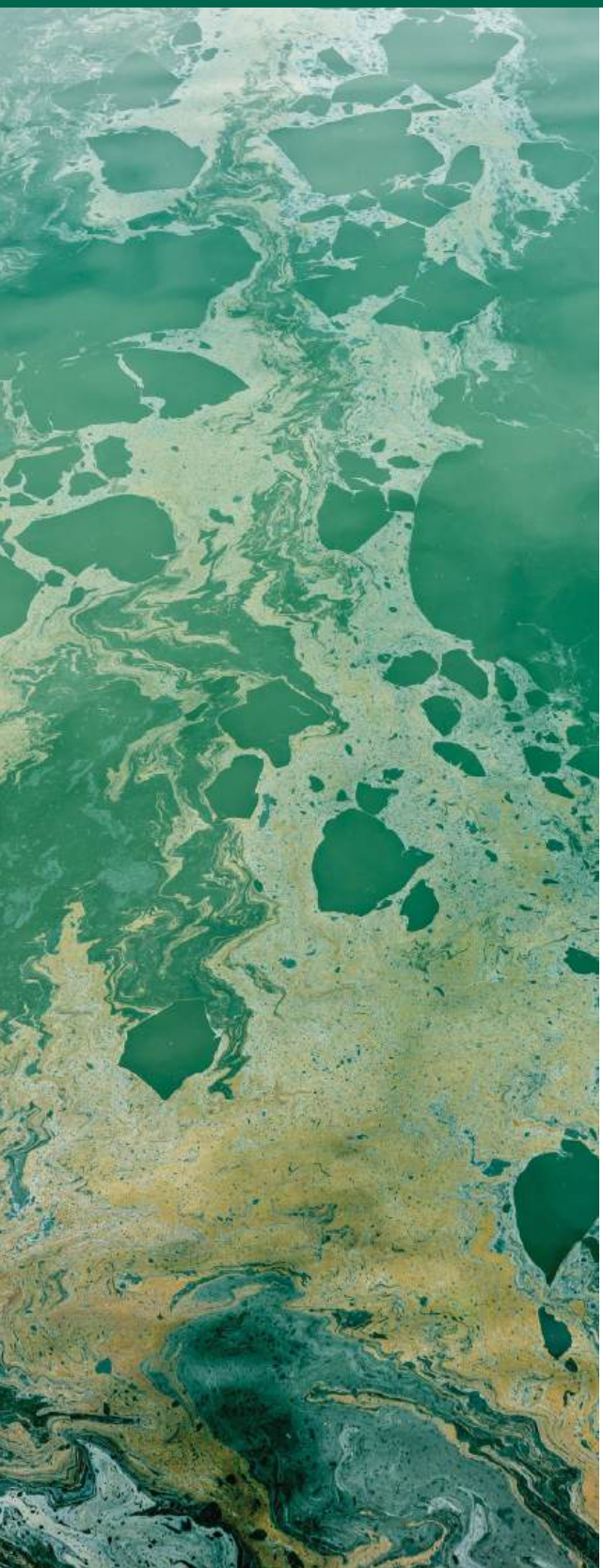
Water Pollution

Matrices with high concentrations of analytes for testing water pollution or waste water. Standards may be used to satisfy PT requirements worldwide.



Water Pollution (including UST in Water) PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	WP 372	Jan 20	Mar 6
	WP 373	Feb 16	Apr 2
	WP 374	Mar 16	Apr 30
Q	WP 375	Apr 20	Jun 4
	WP 376	May 18	Jul 2
	WP 377	Jun 15	Jul 30
Q	WP 378	Jul 20	Sep 3
	WP 379	Aug 17	Oct 1
	WP 380	Sep 14	Oct 29
Q	WP 381	Oct 16	Nov 30
	WP 382	Nov 6	Dec 21
	WP 383	Dec 14	Jan 28, 2027

2027 Schedule

	Scheme #	Opens	Closes
Q	WP 384	Jan 19	Mar 5
	WP 385	Feb 15	Apr 1
	WP 386	Mar 15	Apr 29
Q	WP 387	Apr 19	Jun 3
	WP 388	May 17	Jul 1
	WP 389	Jun 14	Jul 29
Q	WP 390	Jul 19	Sep 2
	WP 391	Aug 16	Sep 30
	WP 392	Sep 13	Oct 28
Q	WP 393	Oct 15	Nov 29
	WP 394	Nov 5	Dec 20
	WP 395	Dec 13	Jan 27, 2028

Schedule subject to change – see Waters ERA's website at eraqc.com

Contents

CRM Certified Reference Material
PT Proficiency Testing
QR QuiK Response
RM Reference Material

All Waters ERA WP PTs open monthly (M), quarterly (Q), or biannually (B) unless otherwise noted.

* WP Lithium PTs open in February and August. Quarterly months are January, April, July, and October. Biannual months are January and July.

Minerals/Solids

Minerals

CRM	PT	M	QR
Cat. #506	Cat. #581		Cat. #506QR

One 500 mL whole-volume bottle is ready to analyze.

Total alkalinity as $CaCO_3$	25–400 mg/L
Chloride	35–275 mg/L
Fluoride	0.4–4 mg/L
Potassium	4–40 mg/L
Sodium	10–100 mg/L
Specific conductance at 25 °C	200–1200 µmhos/cm
Sulfate	5–125 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total solids at 105 °C	140–800 mg/L

Hardness

CRM	PT	M	QR
Cat. #507	Cat. #580		Cat. #507QR

One 500 mL whole-volume bottle is ready to analyze.

Calcium	10–100 mg/L
Calcium hardness as $CaCO_3$	25–250 mg/L
Total hardness as $CaCO_3$	40–415 mg/L
Magnesium	4–40 mg/L
Total suspended solids (TSS)	20–100 mg/L

Settleable Solids

CRM	PT	M	QR
Cat. #911	Cat. #883		Cat. #911QR

One 60 mL poly bottle with a solid yields 1 liter after dilution. Use with EPA Method 160.5, Standard Methods 2540F, or other applicable method.

Settleable solids	5–50 mL/L

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at eraqc.com/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Volatile Solids

CRM	PT	M	QR
Cat. #913	Cat. #884		Cat. #913QR

One 12 mL screw-cap vial with a solid yields 1 liter after dilution. Use with EPA Method 160.4, Standard Methods 2540E, or other applicable method.

Total volatile solids	100–500 mg/L

Solids Concentrate

CRM	PT	M	QR
Cat. #4032	Cat. #4030		Cat. #4032QR

One 24 mL screw-cap vial with a powder yields 1 liter of solution.

Total solids at 105 °C	140–800 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total suspended solids (TSS)	20–100 mg/L

Solids

CRM	PT	M	QR
Cat. #499	Cat. #241		Cat. #499QR

One 500 mL whole-volume bottle is ready to analyze.

Total solids at 105 °C	140–800 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total suspended solids (TSS)	20–100 mg/L

Nutrients

Simple Nutrients

CRM	PT	M	QR
Cat. #505	Cat. #584		Cat. #505QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Ammonia as N	1–20 mg/L
Nitrate as N	2–25 mg/L
Nitrate plus nitrite as N	2.5–25 mg/L
ortho-Phosphate as P	0.5–5.5 mg/L
Total nitrogen	3–45 mg/L

Complex Nutrients

CRM	PT	M	QR
Cat. #525	Cat. #579		Cat. #525QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Total Kjeldahl nitrogen as N	3–35 mg/L
Total phosphorus as P	0.5–10 mg/L

Nitrite

CRM	PT	M	QR
Cat. #770	Cat. #888		Cat. #770QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Nitrite as N	0.4–4 mg/L

Oil & Grease/Total Petroleum Hydrocarbons

When ordering Oil & Grease or Total Petroleum Hydrocarbons (TPH) PTs, please specify if you need a sample compatible with SPE.

Oil & Grease

CRM
Cat. #504

One 250 mL whole-volume bottle is ready to analyze. For gravimetric and IR analyses.

Hexane Extractable Materials (O&G) ..... 20–200 mg/bottle

Oil & Grease Concentrate

CRM	PT		QR
Cat. #4122	Cat. #4120	M	Cat. #4122QR

One 24 mL screw-cap vial yields up to 2 liters after dilution. Use with EPA Method 1664, or other applicable method. Gravimetric analysis only.

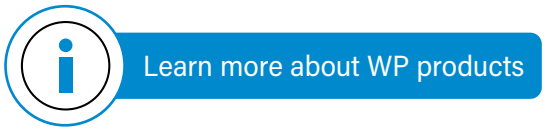
Hexane Extractable Materials (O&G) ..... 20–200 mg/L

1 Liter Oil & Grease

CRM	PT		QR
Cat. #518	Cat. #582	M	Cat. #518QR

One liter whole-volume glass bottle with a 33–430 thread is ready to analyze. For gravimetric and IR analyses.

Hexane Extractable Materials (O&G) ..... 20–200 mg/L



HEM/SGT-HEM

CRM	PT		QR
Cat. #519	Cat. #489	Q	Cat. #519QR

One 5 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Method 1664, or other applicable method to measure hexane extractable material (HEM) and silica gel treated-HEM. Contains both hexadecane and stearic acid.
Note: If a NELAC compliant PT is required, use Cat. #582 or Cat. #4120.

Hexane extractable material ..... 5–100 mg/L
Silica gel treated-HEM ..... 5–100 mg/L

Total Petroleum Hydrocarbons (TPH) in Water #1

CRM	PT		QR
Cat. #600	Cat. #642	Q	Cat. #602QR

One liter whole-volume bottle is ready to analyze for TPH without interfering fatty acids. Use with EPA Methods 1664, 5520.

Total petroleum hydrocarbons ..... 20–200 mg/L

Total Petroleum Hydrocarbons (TPH) in Water #2

CRM	PT		QR
Cat. #601	Cat. #642	Q	Cat. #602QR

One liter whole-volume bottle is ready to analyze for TPH in the presence of interfering fatty acids. Use with EPA Methods 1664, 5520.

Total petroleum hydrocarbons ..... 20–200 mg/L

Demand

HEM/SGT-HEM

CRM	PT		QR
Cat. #516	Cat. #578	M	Cat. #516QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

5-day BOD ..... 18–230 mg/L
Carbonaceous BOD ..... 18–230 mg/L
COD ..... 30–250 mg/L
TOC ..... 6–100 mg/L

Metals

Trace Metals

CRM	PT		QR
Cat. #500	Cat. #586	M	Cat. #500QR

One 30 mL amber HDPE bottle yields up to 1 liter after dilution. Use with AA, ICP-OES or ICP-MS and select colorimetric methods.

Aluminum	200–4000 µg/L
Antimony	90–900 µg/L
Arsenic	90–900 µg/L
Barium	100–2500 µg/L
Beryllium	50–500 µg/L
Boron	800–2000 µg/L
Cadmium	100–1000 µg/L
Chromium	100–1000 µg/L
Cobalt	100–1000 µg/L
Copper	100–1000 µg/L
Iron	200–4000 µg/L
Lead	100–1500 µg/L
Manganese	200–2000 µg/L
Molybdenum	60–600 µg/L
Nickel	200–2000 µg/L
Selenium	100–1000 µg/L
Silver	100–1000 µg/L
Strontium	50–500 µg/L
Thallium	80–800 µg/L
Vanadium	50–2000 µg/L
Zinc	300–2000 µg/L

Mercury

CRM	PT		QR
Cat. #514	Cat. #574	M	Cat. #514QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Analyze for total mercury.

Total mercury	3–30 µg/L

Low-Level Mercury

CRM	PT		QR
Cat. #931	Cat. #896	Q	Cat. #931QR

One 5 mL flame-sealed ampule yields up to 4 liters after dilution. Use with EPA1631, or other sensitive mercury analysis methods.

Total mercury	20–100 ng/L

Waters ERA Low-Level Mercury is also available during February and March WP PT schemes.

Hexavalent Chromium

CRM	PT		QR
Cat. #984	Cat. #898	M	Cat. #984QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with IC or colorimetric methods.

Hexavalent chromium	90–900 µg/L

Tin and Titanium

CRM	PT		QR
Cat. #517	Cat. #573	M	Cat. #517QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Use with AA, ICP-OES or ICP-MS methods.

Tin	200–2000 µg/L
Titanium	60–300 µg/L

Uranium

CRM	PT		QR
Cat. #4402	Cat. #4400	Q	Cat. #4402QR

One 15 mL screw-cap vial yields up to 1 liter after dilution.

Uranium	25–200 µg/L

Lithium

CRM	PT		QR
Cat. #4992	Cat. #4990	*	Cat. #4992QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Designed for the Ohio VAP program.

Lithium	50–500 µg/L

* Waters ERA WP Lithium PTs open in February and August.

Physical Property

Color

CRM	PT		QR
Cat. #1070C	Cat. #882C	Q	Cat. #1070CQR

One 30 mL screw-cap bottle yields up to 200 mL after dilution. Use with EPA Methods 110.1, 110.2, and 110.3, Standard Methods 2120B, 2120C, 2120E, or other applicable method.

Color ..... 10–75 PC units

Turbidity

CRM	PT		QR
Cat. #777	Cat. #893	M	Cat. #777QR

One 24 mL amber glass vial yields up to 1 liter after dilution. Use with nephelometric methods.

Turbidity ..... 2–30 NTU

Miscellaneous Chemistry

Cyanide

CRM	PT		QR
Cat. #502	Cat. #588	M	Cat. #502QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Total cyanide ..... 0.1–1 mg/L
Amenable cyanide ..... 0.1–1 mg/L
Available cyanide ..... 0.1–1 mg/L

Dissolved Oxygen

CRM	PT		QR
Cat. #213	Cat. #212	Q	Cat. #213QR

One 500 mL whole-volume bottle is ready to analyze.

Dissolved oxygen ..... 1–20 mg/L

Total Organic Halides (TOX)

CRM	PT		QR
Cat. #670	Cat. #895	B	Cat. #670QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Analyze for total organic halides with adsorption pyrolysis titrimetric methods.

TOX ..... 300–1500 µg/L

Total Phenolics (4-AAP)

CRM	PT		QR
Cat. #515	Cat. #589	M	Cat. #515QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Analyze for total phenolic compounds by 4-AAP methods.

Total phenolics by 4-AAP ..... 0.5–5 mg/L

Perchlorate

CRM	PT		QR
Cat. #1501	Cat. #1500	Q	Cat. #1501QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with EPA methods 314.0, 314.2, 331.0, 332.0, or other applicable methods. LCMS and IC compatible.

Perchlorate ..... 10–200 µg/L

Silica

CRM	PT		QR
Cat. #775	Cat. #890	Q	Cat. #775QR

One 60 mL poly bottle yields up to 1 liter after dilution. Analyze for silica as SiO2 with colorimetric or ICP methods.

Silica as SiO2 ..... 50–250 mg/L

Sulfide

CRM	PT		QR
Cat. #071	Cat. #891	M	Cat. #071QR

One 10 mL flame-sealed ampule yields up to 1 liter after dilution. Preserved sample is guaranteed stable. Analyze for sulfide by titrimetric or colorimetric methods or ISE.

Sulfide ..... 2–10 mg/L

Sulfite

CRM	PT		QR
Cat. #534	Cat. #244	B	Cat. #534QR

One 10 mL concentrate yields up to 2 liters after dilution.

Sulfite ..... 10–250 mg/L

B Waters ERA WP Sulfite PTs open in January and July.

Surfactants-MBAS

CRM	PT		QR
Cat. #776	Cat. #892	Q	Cat. #776QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Analyze for surfactants-MBAS with EPA Method 425.1, or other applicable method.

Surfactants-MBAS ..... 0.2–1 mg/L

Acidity

CRM	PT		QR
Cat. #915	Cat. #885	Q	Cat. #915QR

One 250 mL whole-volume bottle is ready to analyze. Designed for use with titrimetric methods to a pH endpoint of 8.3 S.U.

Acidity as $CaCO_3$ ..... 650–1800 mg/L

Miscellaneous Chemistry (continued)

pH

CRM	PT		QR
Cat. #977	Cat. #577	M	Cat. #977QR

One 250 mL whole-volume bottle is ready to analyze.

pH ..... 5–10 units

Boron

CRM	PT		QR
Cat. #919	Cat. #886	Q	Cat. #919QR

One unpreserved 60 mL poly bottle yields in excess of 2 liters after dilution. Designed for colorimetric methods.

Boron ..... 800–2000 µg/L

Bromide

CRM	PT		QR
Cat. #769	Cat. #887	Q	Cat. #769QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with ion chromatography or colorimetric methods.

Bromide ..... 1–10 mg/L

Total Residual Chlorine (TRC)

CRM	PT		QR
Cat. #501	Cat. #587	M	Cat. #501QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with titrimetric or colorimetric methods.

Total residual chlorine ..... 0.5–3 mg/L
Free residual chlorine ..... 0.5–3 mg/L

Low-Level Total Residual Chlorine (TRC)

CRM	PT		QR
Cat. #917	Cat. #881	M	Cat. #917QR

Designed for testing at low µg/L levels. One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with sensitive titrimetric or colorimetric methods.

Total residual chlorine ..... 50–250 µg/L

Volatiles

Volatile Aromatics

CRM	PT		QR
Cat. #4452	Cat. #4450	Q	Cat. #4452QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 602, 8021, or other applicable method. Each standard contains all listed analytes at 10–300 µg/L after dilution.

Benzene
Chlorobenzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Ethylbenzene
Naphthalene
Toluene
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
m&p Xylene
o-Xylene
Xylenes, total

Volatiles (continued)

Volatiles

CRM	PT		QR
Cat. #710	Cat. #830	M	Cat. #710QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 601, 602, 8021, 624, 8260, or other applicable method. Contains a subset of the analytes listed below at 5–300 µg/L.

Acetone
Acetonitrile
Acrolein
Acrylonitrile
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone (MEK)
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (EDB)
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
cis-1,2-Dichloroethene
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,3-Dichloropropane
1,2-Dichloropropane
2,2-Dichloropropane
cis-1,3-Dichloropropene
1,1-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
Hexachloroethane
2-Hexanone
Isopropylbenzene
p-Isopropyltoluene
Methyl tert-butyl ether (MTBE)
4-Methyl-2-pentanone (MIBK) Methylene chloride
Naphthalene
Nitrobenzene
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl acetate
Vinyl chloride
m&p Xylene
o-Xylene
Xylenes, total

1,4-Dioxane

CRM	PT		QR
Cat. #402	Cat. #597	B	Cat. #402QR

One 2 mL flame-sealed ampule yields up to 1 liter after dilution. Use with modified versions of EPA methods 8260, 8270, 1624, or other applicable methods.

1,4-Dioxane ..... 3–30 µg/L

BTEX & MTBE in Water

CRM	PT		QR
Cat. #760	Cat. #643	Q	Cat. #760QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 602, 8021, or other applicable method. Includes all BTEX compounds and MTBE at 10–300 µg/L after dilution.

Gasoline Range Organics (GRO) in Water

CRM	PT		QR
Cat. #762	Cat. #640	Q	Cat. #762QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with both purge and trap and modified EPA 8015 GC/FID methods or other applicable methods to test for GRO at 400–4000 µg/L. Also use to test for BTEX in gasoline.

Note: This standard is not compliant with the NELAC concentration ranges for the BTEX analytes. If you require a NELAC-compliant sample for these analytes, use WP Volatiles catalog #830 or BTEX in Water catalog #643.

PCBs

PCBs in Water

CRM	PT		QR
Cat. #734S	Cat. #832S	M	Cat. #734SQR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 608, 8082, or other applicable method. Contains a different aroclor randomly selected from the list below at 2–10 µg/L.

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

PCBs in Water Standards

PCBs in water standards are sold individually in 2 mL flame-sealed ampules that yield 1 liter after dilution. Use with EPA Methods 608, 8082, or other applicable methods. Each standard contains an Aroclor at 1–15 µg/L after dilution.

CRM Cat. #	Aroclor	Range
860	1016	1–15 µg/L
861	1221	1–15 µg/L
862	1232	1–15 µg/L
863	1242	1–15 µg/L
864	1248	1–15 µg/L
865	1254	1–15 µg/L
866	1260	1–15 µg/L

PCBs in Oil

CRM	PT		QR
Cat. #729S	Cat. #835S	–	Cat. #729SQR

One 10 mL flame-sealed ampule is ready to analyze. Use with EPA Method 8082, or other applicable method. Contains a different aroclor randomly selected from the list below at 10–50 mg/kg.

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

Waters ERA PCBs in Oil WP PT is available Jan, Feb, Mar, Apr, Jul, Aug, Sep, and Oct.

NEW!

PCB Congeners in Wastewater

CRM	PT		QR
Cat. #5370	Cat. #2685	Q	Cat. #5370QR

One 2 mL flame-sealed ampule yields in excess of 2 L after dilution. The diluted standard is certified for 18 analytes spiked at 1 – 20 ng/L. The sample is designed for GC/MS for analyzing wastewater, specifically EPA Method 1668 and EPA Method 1628.

2,4,4'-Trichlorobiphenyl (28)
2,2',5,5'-Tetrachlorobiphenyl (52)
3,3',4,4'-Tetrachlorobiphenyl (101)
3,4,4',5-Tetrachlorobiphenyl (81)
2,2',4,5,5'-Pentachlorobiphenyl (77)
2,3,3',4,4'-Pentachlorobiphenyl (123)
2,3,4,4',5-Pentachlorobiphenyl (118)
2,3',4,4',5-Pentachlorobiphenyl (114)
2,3',4,4',5'-Pentachlorobiphenyl (153)
3,3',4,4',5-Pentachlorobiphenyl (105)
2,2',3,4,4',5'-Hexachlorobiphenyl (138)
2,2',4,4',5,5'-Hexachlorobiphenyl (126)
2,3,3',4,4',5-Hexachlorobiphenyl (167)
2,3,3',4,4',5'-Hexachlorobiphenyl (156)
2,3',4,4',5,5'-Hexachlorobiphenyl (157)
3,3',4,4',5,5'-Hexachlorobiphenyl (180)
2,2',3,4,4',5,5'-Heptachlorobiphenyl (169)
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)

Per-and Polyfluoroalkyl Substances (PFAS)

PFAS in Wastewater

CRM	PT		QR
Cat. #404	Cat. #599	Q	Cat. #404QR

The diluted standard will contain all of the analytes from the list below.

Perfluorobutanoic acid, PFBA	40–400 ng/L
Perfluoropentanoic acid, PFPeA	40–400 ng/L
Perfluorohexanoic acid, PFHxA	20–200 ng/L
Perfluoroheptanoic acid, PFHpA	20–200 ng/L
Perfluorooctanoic acid, PFOA	20–200 ng/L
Perfluorononanoic acid, PFNA	20–200 ng/L
Perfluorodecanoic acid, PFDA	20–200 ng/L
Perfluoroundecanoic acid, PFUdA	20–200 ng/L
Perfluorododecanoic acid, PFDoA	20–200 ng/L
Perfluorotridecanoic acid, PFTrDA	20–200 ng/L
Perfluorotetradecanoic acid, PFTeDA	20–200 ng/L
Perfluorobutanesulfonic acid, PFBS	20–200 ng/L
Perfluoropentanesulfonic acid, PFPeS	20–200 ng/L
Perfluorohexanesulfonic acid, PFHxS	20–200 ng/L
Perfluoroheptanesulfonic acid, PFHpS	20–200 ng/L
Perfluorooctanesulfonic acid, PFOS	20–200 ng/L
Perfluorononanesulfonic acid, PFNS	20–200 ng/L
Perfluorodecanesulfonic acid, PFDS	20–200 ng/L
Perfluorododecanesulfonic acid, PFDoS	20–200 ng/L
4:2 fluorotelomersulfonic acid, 4:2 FTS	40–400 ng/L
6:2 fluorotelomersulfonic acid, 6:2 FTS	40–400 ng/L
8:2 fluorotelomersulfonic acid, 8:2 FTS	40–400 ng/L
Perfluorooctanesulfonamide, PFOSA	20–200 ng/L
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA	20–200 ng/L
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA	20–200 ng/L
N-ethyl perfluorooctanesulfonamide, NEtFOSA	20–200 ng/L
N-methyl perfluorooctanesulfonamide, NMeFOSA	20–200 ng/L
N-ethyl perfluorooctanesulfonamidoethanol, NEtFOSE	20–200 ng/L
N-methyl perfluorooctanesulfonamidoethanol, NMeFOSE	20–200 ng/L
3-Perfluoropropyl propanoic acid, 3:3 FTCA	40–400 ng/L
2H,2H,3H,3H-Perfluorooctanoic acid, 5:3 FTCA	40–400 ng/L
3-Perfluoroheptyl propanoic acid, 7:3 FTCA	40–400 ng/L
Hexafluoropropylene oxide dimer acid, HFPO-DA	40–400 ng/L
4,8-dioxa-3H-perfluorononanoic acid, ADONA	40–400 ng/L
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS	40–400 ng/L
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS	40–400 ng/L
Perfluoro-4-methoxybutanoic acid, PFMBA	40–400 ng/L
Perfluoro-3-methoxypropanoic acid, PFMPA	40–400 ng/L
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA	40–400 ng/L
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA	40–400 ng/L
Pentafluoropropanoic acid, PFPrA	40–400 ng/L
2H-perfluoro-2-octenoic acid, FHUEA	20–200 ng/L
2H-perfluoro-2-decenoic acid, FOUEA	20–200 ng/L
Bis(trifluoromethane)sulfonamide	20–200 ng/L

Herbicides

Chlorinated Acid Herbicides

CRM	PT		QR
Cat. #718	Cat. #829	M	Cat. #718QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 615, 8151, or other applicable methods. Contains a subset of the analytes listed below at 2–10 µg/L (except MCPA and MCPP at 10–100 µg/L).

Note: 4-nitrophenol and pentachlorophenol are not within the EPA/NELAC range. Use the Acids standard (page 16) for these compounds in the EPA/NELAC range.

Acifluorfen	Dalapon	MCPP
Bentazon	Dicamba	4-Nitrophenol
Chloramben	3,5-Dichlorobenzoic acid	Pentachlorophenol
2,4-D	Dichlorprop	Picloram
2,4-DB	Dinoseb	2,4,5-T
Dacthal diacid (DCPA)	MCPA	2,4,5-TP (Silvex)

Semivolatiles

Base/Neutrals

CRM	PT		QR
Cat. #711	Cat. #833	M	Cat. #711QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 625, 8270, or other applicable method. Contains a subset of the analytes listed below at 10–225 µg/L (except Benzidine at 200–1000 µg/L).

Acenaphthene	bis(2-Chloroethyl)ether	Hexachlorobenzene
Acenaphthylene	1-Chloronaphthalene	Hexachlorobutadiene
Acetophenone	2-Chloronaphthalene	Hexachlorocyclopentadiene
2-Amino-1-methylbenzene	4-Chlorophenyl phenyl ether	Hexachloroethane
(o-Toluidine)	Chrysene	Indeno(1,2,3-cd)pyrene
Aniline	n-Decane	Isophorone
Anthracene	Dibenz(a,h) anthracene	2-Methylnaphthalene
Atrazine	Dibenzofuran	Naphthalene
Azobenzene	2,3-Dichloroaniline	2-Nitroaniline
Benzaldehyde	1,2-Dichlorobenzene	3-Nitroaniline
Benzidine	1,3-Dichlorobenzene	4-Nitroaniline
Benzo(a)anthracene	1,4-Dichlorobenzene	Nitrobenzene
Benzo(b)fluoranthene	3,3-Dichlorobenzidine	N-Nitrosodiethylamine
Benzo(k)fluoranthene	Diethyl phthalate	N-Nitrosodimethylamine
Benzo(g,h,i)perylene	Dimethyl phthalate	N-Nitroso-di-n-propylamine
Benzo(a)pyrene	Di-n-butyl phthalate	N-Nitrosodiphenylamine
Benzyl alcohol	1,3-Dinitrobenzene	n-Octadecane
1,1-Biphenyl	2,4-Dinitrotoluene	2,2'-Oxybis(1-Chloropropane)
4-Bromophenyl phenyl ether	2,6-Dinitrotoluene	
Butyl benzyl phthalate	1,2-Diphenylhydrazine	Pentachlorobenzene
Caprolactam	Di-n-octyl phthalate	Phenanthrene
Carbazole	bis(2-Ethylhexyl)phthalate	Pyrene
4-Chloroaniline	Fluoranthene	Pyridine
bis(2-Chloroethoxy) methane	Fluorene	1,2,4,5-Tetrachlorobenzene
		1,2,4-Trichlorobenzene

EDB/DBCP/TCP

CRM	PT		QR
Cat. #692	Cat. #562	Q	Cat. #692QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Method 8011, or other applicable method. Each lot contains all analytes at 0.2–2.0 µg/L.

1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (EDB)
1,2,3-Trichloropropane (TCP)

Semivolatiles (continued)

Acids

CRM	PT		QR
Cat. #712	Cat. #834	M	Cat. #712QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 604, 625, 8041, 8270, or other applicable method. Contains a subset of the analytes listed below at 30–200 µg/L.

Benzoic acid	2,4-Dinitrophenol	Pentachlorophenol
4-Chloro-3-methylphenol	2-Methyl-4,6-dinitrophenol	Phenol
2-Chlorophenol	2-Methylphenol	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	4-Methlyphenol	2,4,5-Trichlorophenol
2,6-Dichlorophenol	2-Nitrophenol	2,4,6-Trichlorophenol
2,4-Dimethylphenol	4-Nitrophenol	

Diesel Range Organics (DRO) in Water

CRM	PT		QR
Cat. #764	Cat. #641	Q	Cat. #764QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with modified EPA 8015 GC/FID methods, or other applicable method. Includes #2 Diesel at 800–6000 µg/L.

Glycols in Water

CRM	PT		QR
Cat. #401	Cat. #271	Q	Cat. #401QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 8015B, 8430, 1671, or other applicable method. Each lot contains all analytes in the concentration range 75–200 mg/L.

Diethylene glycol	Propylene glycol	Triethylene glycol
Ethylene glycol	Tetraethylene glycol	

Low-Level Nitroaromatics & Nitramines

CRM	PT		QR
Cat. #677	Cat. #932	Q	Cat. #677QR

One 2 mL flame-sealed ampule yields up to 2 liters of sample after dilution. Use with EPA Methods 8330, 8091, or other applicable method for explosive and explosive residue analytes. Contains at least 80% of the analytes, randomly selected from the list below at 1–20 µg/L.

4-Amino-2,6-dinitrotoluene	HMX	RDX
2-Amino-4,6-dinitrotoluene	Nitrobenzene	Tetryl
1,3-Dinitrobenzene	2-Nitrotoluene	1,3,5-Trinitrobenzene
2,4-Dinitrotoluene	3-Nitrotoluene	2,4,6-Trinitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene	

Low-Level PAHs

CRM	PT		QR
Cat. #715	Cat. #836	Q	Cat. #715QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA HPLC Methods 610, 8310, or other applicable method, and GC/MS Method 8270 SIM. Contains a subset of the analytes listed below at 0.5–20 µg/L.

Acenaphthene	Benzo(g,h,i)perylene	Fluorene
Acenaphthylene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene
Anthracene	Chrysene	Naphthalene
Benzo(a)anthracene	Dibenz(a,h)anthracene	Phenanthrene
Benzo(b)fluoranthene	Fluoranthene	Pyrene
Benzo(k)fluoranthene		

Semivolatiles (continued)

PAHs – GC/GCMS

CRM	PT		QR
Cat. #4882	Cat. #4880	Q	Cat. #4882QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 625, 8100, 8270, or other applicable method. Each standard contains a subset of the analytes listed below at 10–200 µg/L.

Acenaphthene	Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(g,h,i)perylene	1-Methylnaphthalene
Anthracene	Chrysene	2-Methylnaphthalene
Benzo(a)anthracene	Dibenz(a,h)anthracene	Naphthalene
Benzo(a)pyrene	Fluoranthene	Phenanthrene
Benzo(b)fluoranthene	Fluorene	Pyrene

Pesticides

Organochlorine Pesticides

CRM	PT		QR
Cat. #713	Cat. #831	M	Cat. #713QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 608, 8081, or other applicable method. Contains a subset of the analytes listed below at 1–20 µg/L.

Aldrin	4,4'-DDD	Endrin
alpha-BHC	4,4'-DDE	Endrin aldehyde
beta-BHC	4,4'-DDT	Endrin ketone
delta-BHC	Dieldrin	Heptachlor
gamma-BHC (Lindane)	Endosulfan I	Heptachlor epoxide (beta)
alpha-Chlordane	Endosulfan II	Methoxychlor
trans-Chlordane	Endosulfan sulfate	

Chlordane

CRM	PT		QR
Cat. #716	Cat. #837	M	Cat. #716QR

One 2 mL flame-sealed ampule yields up to 2 liters of sample after dilution. Use with EPA Methods 608, 8081, or other applicable method. Contains technical chlordane at 3–25 µg/L.

Toxaphene

CRM	PT		QR
Cat. #717	Cat. #838	M	Cat. #717QR

One 2 mL flame-sealed ampule yields up to 2 liters of sample after dilution. Use with EPA Methods 608, 8081, or other applicable method. Contains toxaphene at 20–100 µg/L.

Pesticides (continued)

Carbamate Pesticides

CRM	PT		QR
Cat. #908	Cat. #899	B	Cat. #908QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA method 632, or other applicable method. Contains a subset of the analytes listed below at 5–200 µg/L.

Aldicarb	Carbaryl	Methiocarb
Aldicarb sulfone	Carbofuran	Methomyl
Aldicarb sulfoxide	Diuron	Oxamyl
Baygon	3-Hydroxycarbofuran	Propham

Nitrogen Pesticides

CRM	PT		QR
Cat. #674	Cat. #487	Q	Cat. #674QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 619, 633, 8141, 8270, or other applicable method. Contains a subset of the analytes listed below at 2–20 µg/L.

Alachlor	Deethyl atrazine	Prometon
Ametryn	Deisopropyl atrazine	Prometryn
Anilazine	Diaminoatrazine	Pronamide
Atraton	EPTC (eptam)	Propachlor
Atrazine	Hexazinone	Propazine
Bromacil	Metolachlor	Simazine
Butachlor	Metribuzin	Terbacil
Butylate	Napropamide	Trifluralin
Cyanazine		

Organophosphorus Pesticides (OPP)

CRM	PT		QR
Cat. #665	Cat. #934	Q	Cat. #665QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA methods 614, 622, 8141, or other applicable method. Contains a subset of the analytes listed below at 2–20 µg/L.

Azinphos-methyl (guthion)	Dioxathion	Malathion
Carbophenothion	Disulfoton	Methyl parathion
Chlorpyrifos	Ethion	Phorate
Demeton	Ethoprop	Phosmet
Demeton O & S	Ethyl Parathion (parathion)	Ronnel
Diazinon	Famphur	Stirophos (tetrachlorovinphos)
Dichlorvos (DDVP)	Fonofos	Terbufos
Dimethoate		

Ready-to-Use CRMs

The following whole-volume standards are ready-to-use as provided and require no dilution before analysis.*

Minerals

CRM
Cat. #506

One 500 mL whole-volume bottle is ready to analyze.

Total alkalinity as $CaCO_3$	25–400 mg/L
Chloride	35–275 mg/L
Fluoride	0.4–4 mg/L
Potassium	4–40 mg/L
Sodium	10–100 mg/L
Specific conductance at 25 °C	200–1200 µmhos/cm
Sulfate	5–125 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total solids at 105 °C	140–800 mg/L

Hardness

CRM
Cat. #507

One 500 mL whole-volume bottle is ready to analyze.

Calcium	10–100 mg/L
Calcium hardness as $CaCO_3$	25–250 mg/L
Total hardness as $CaCO_3$	40–415 mg/L
Magnesium	4–40 mg/L
Total suspended solids (TSS)	20–100 mg/L

pH

CRM
Cat. #977

One 250 mL whole-volume bottle is ready to analyze.

pH	5–10 units

Oil & Grease

CRM
Cat. #504

One 250 mL whole-volume bottle is ready to analyze. Use with EPA hexane extraction Method 1664, or other applicable method. Certified values are provided for IR and gravimetric methods. For additional Oil & Grease CRMs see page 11.

Oil and grease	20–200 mg/bottle

Solids

CRM
Cat. #499

One 500 mL whole-volume bottle is ready to analyze.

Total solids at 105 °C	140–800 mg/L
Total dissolved solids at 180 °C	140–800 mg/L
Total suspended solids (TSS)	20–100 mg/L

Trace Metals*

RM
Cat. #740

One 500 mL whole-volume bottle is ready to analyze. Use with AA, ICP-OES, ICP-MS, and selected colorimetric methods.

Aluminum	200–4000 µg/L
Antimony	90–900 µg/L
Arsenic	90–900 µg/L
Barium	100–2500 µg/L
Beryllium	50–500 µg/L
Boron	800–2000 µg/L
Cadmium	100–1000 µg/L
Chromium	100–1000 µg/L
Cobalt	100–1000 µg/L
Copper	100–1000 µg/L
Iron	200–4000 µg/L
Lead	100–1500 µg/L
Manganese	200–2000 µg/L
Molybdenum	60–600 µg/L
Nickel	200–2000 µg/L
Selenium	100–1000 µg/L
Silver	100–1000 µg/L
Strontium	50–500 µg/L
Thallium	80–800 µg/L
Vanadium	50–2000 µg/L
Zinc	300–2000 µg/L

Demand*

RM
Cat. #743

One 500 mL whole-volume bottle is ready to analyze.

5-day BOD	18–230 mg/L
Carbonaceous BOD	18–230 mg/L
COD	30–250 mg/L
TOC	6–100 mg/L

Simple Nutrients*

RM
Cat. #739

One 500 mL whole-volume bottle is ready to analyze.

Ammonia as N	1–20 mg/L
Nitrate as N	2–25 mg/L
Nitrate plus nitrite as N	2.5–25 mg/L
ortho-Phosphate as P	0.5–5.5 mg/L

Complex Nutrients*

RM
Cat. #741

One 500 mL whole-volume bottle is ready to analyze.

Total Kjeldahl nitrogen as N	3–35 mg/L
Total phosphorus as P	0.5–10 mg/L

*These standards are guaranteed stable for a minimum of one month after receipt at your facility.

QC Plus

The QC Plus Program includes environmental analytes at concentrations that reflect realistic levels of pollutants in industrial settings. Each sample level is designed for wastewater and industrial analysis. These Certified Reference Materials (CRMs) are an asset to any quality assurance program because they enable you to test your internal systems to ensure that your equipment, methods, and analysts are producing quality data.

QC Plus – Demand

CRM
Cat. #4013

One 24 mL screw-cap vial yields up to 1 liter after dilution.

5-day BOD	100–300 mg/L
Carbonaceous BOD	87.0–256 mg/L
COD	150–500 mg/L
TOC	50.0–200 mg/L

QC Plus – Minerals

CRM
Cat. #4053

Two 30 mL screw-cap vials to be diluted together to yield up to 2 liters of sample.

Alkalinity as $CaCO_3$	10.0–300 mg/L
Calcium	5.00–150 mg/L
Calcium hardness as $CaCO_3$	12.5–375 mg/L
Chloride	10.0–700 mg/L
Conductivity	100–4000 µmhos/cm
Magnesium	1.00–50.0 mg/L
Potassium	1.00–300 mg/L
Sodium	10.0–300 mg/L
Sulfate	10.0–300 mg/L
Total dissolved solids at 180 °C	20.0–2400 mg/L
Total hardness as $CaCO_3$	15.0–600 mg/L

QC Plus – Nutrients

CRM
Cat. #4023

Two 15 mL screw-cap vials yield up to 2 liters each after dilution.

Ammonia nitrogen as N	0.250–10.0 mg/L
Nitrate nitrogen as N	0.250–10.0 mg/L
ortho-Phosphate as P	0.0500–10.0 mg/L
Total Kjeldahl nitrogen	0.250–10.0 mg/L
Total phosphorus as P	0.100–10.0 mg/L

QC Plus – Oil & Grease

CRM
Cat. #4123

One 24 mL screw-cap vial yields up to 2 liters after dilution.

Oil and grease	10.0–100 mg/L

QC Plus – pH

CRM
Cat. #4063

One 250 mL whole-volume bottle is ready to analyze.

pH	2.00–12.0 units

QC Plus (continued)

QC Plus – Solids

CRM
Cat. #4033

One 24 mL screw-cap vial with a powder yields 1 liter after dilution.

Total dissolved solids at 180 °C	500–2000 mg/L
Total solids at 105 °C	600–2500 mg/L
Total suspended solids (TSS)	100–500 mg/L

QC Plus – Total Residual Chlorine

CRM
Cat. #4103

One 24 mL amber screw cap vial yields up to 2 liters of solution after dilution.

Total residual chlorine	0.100–1.00 mg/L

PFAS Secondary Source Standard

Standard is suitable for various applications, including Internal Calibration Verification (ICV), Laboratory Control Sample (LCS), Matrix Spike (MS), and Limit of Quantitation (LOQ) studies.

NEW!

Wastewater/Solids

CRM
Cat. #PFAS10001

One 2 mL flame-sealed ampule with 1.5 mL of PFAS standard containing 44 analytes at 25-625 ng/mL. The standard is suitable for matrices to include, but not limited to, wastewater and solids and compatible with methods EPA 1633 and 1633A, EPA 8327, ASTM D8421-21, ASTM D7979 and other comparable methods.

Perfluorobutanoic acid	PFBA	100 ng/mL
Perfluoropentanoic acid	PFPeA	50 ng/mL
Perfluorohexanoic acid	PFHxA	25 ng/mL
Perfluoroheptanoic acid	PFHpA	25 ng/mL
Perfluorooctanoic acid	PFOA	25 ng/mL
Perfluorononanoic acid	PFNA	25 ng/mL
Perfluorodecanoic acid	PFDA	25 ng/mL
Perfluoroundecanoic acid	PFUdA	25 ng/mL
Perfluorododecanoic acid	PFDoA	25 ng/mL
Perfluorotridecanoic acid	PFTrDA	25 ng/mL
Perfluorotetradecanoic acid	PFTeDA	25 ng/mL
Perfluorobutanesulfonic acid	PFBS	25 ng/mL
Perfluoropentanesulfonic acid	PFPeS	25 ng/mL
Perfluorohexanesulfonic acid	PFHxS	25 ng/mL
Perfluoroheptanesulfonic acid	PFHpS	25 ng/mL
Perfluorooctanesulfonic acid	PFOS	25 ng/mL
Perfluorononanesulfonic acid	PFNS	25 ng/mL
Perfluorodecanesulfonic acid	PFDS	25 ng/mL
Perfluorododecanesulfonic acid	PFDoS	25 ng/mL
4:2 fluorotelomersulfonic acid	4:2FTS	100 ng/mL
6:2 fluorotelomersulfonic acid	6:2FTS	100 ng/mL
8:2 fluorotelomersulfonic acid	8:2FTS	100 ng/mL
Perfluorooctanesulfonamide	PFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	25 ng/mL
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	25 ng/mL
N-ethyl perfluorooctanesulfonamide	NEtFOSA	25 ng/mL
N-methyl perfluorooctanesulfonamide	NMeFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	250 ng/mL
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	250 ng/mL
3-Perfluoropropyl propanoic acid	3:3FTCA	125 ng/mL
2H,2H,3H,3H-Perfluorooctanoic acid	5:3FTCA	625 ng/mL
3-Perfluoroheptyl propanoic acid	7:3FTCA	625 ng/mL
Hexafluoropropylene oxide dimer acid	HFPO-DA	100 ng/mL
4,8-dioxa-3H-perfluorononanoic acid	ADONA	100 ng/mL
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	100 ng/mL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	100 ng/mL
Perfluoro-4-methoxybutanoic acid	PFMBA	50 ng/mL
Perfluoro-3-methoxypropanoic acid	PFMPA	50 ng/mL
Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	50 ng/mL
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	50 ng/mL
Pentafluoropropanoic acid	PFPrA	100 ng/mL
2H-perfluoro-2-octenoic acid	FHUEA	100 ng/mL
2H-perfluoro-2-decenoic acid	FOUEA	100 ng/mL
Bis(trifluoromethane)sulfonamide		100 ng/mL

Trust the DMR-QA experts

Whether you are new to the U.S. EPA's Discharge Monitoring Report-Quality Assurance (DMR-QA) study, or are a seasoned participant, Waters ERA offers readily-accessible tools and a team of professionals to help you:

- Report data easily with access to eDATA tools
- Receive WP study reports two days after close date
- Access NPDES data from eDATA at the close of study
- Meet study requirements and be successful with the DMR-QA journey

LEARN MORE AT
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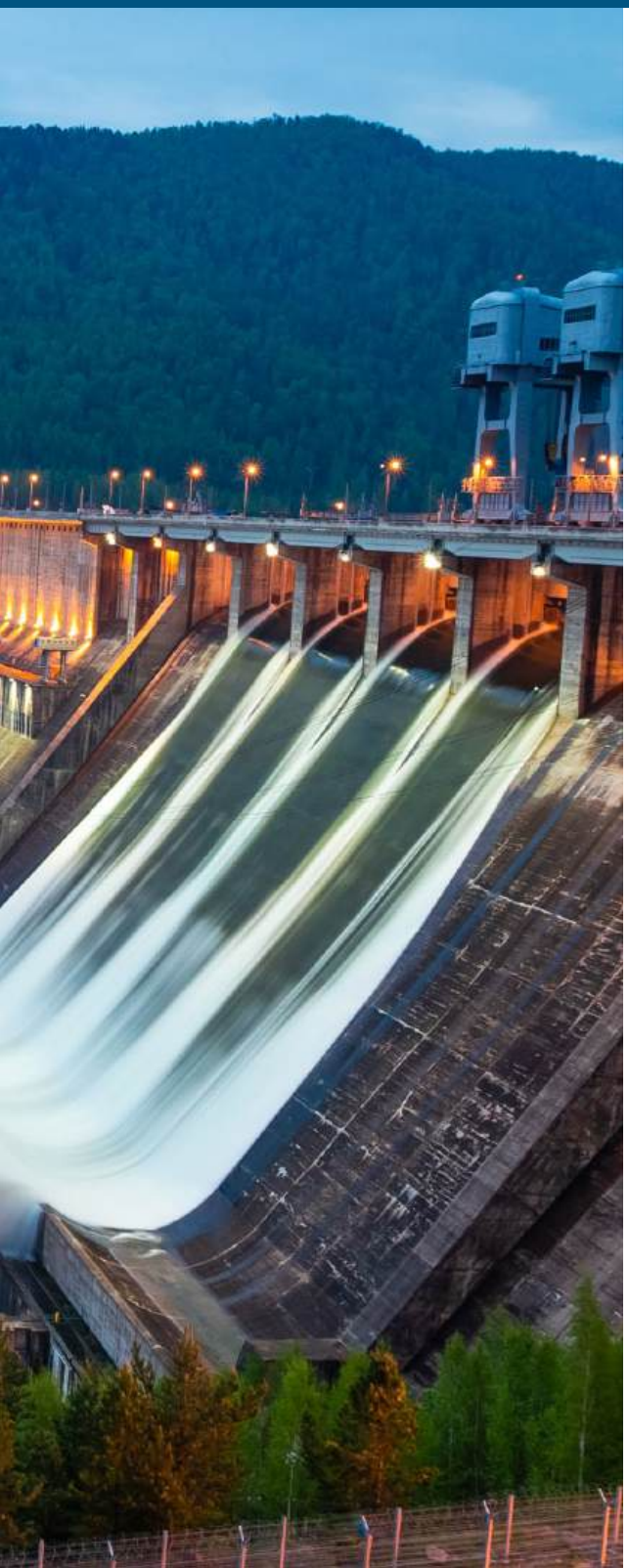
Water Supply

Matrices with low concentrations of analytes for testing water supply, drinking water, or ground water. Standards are based on requirements of the United States Environmental Protection Agency Safe Drinking Water Act and may be used to satisfy PT requirements worldwide.



Water Supply PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	WS 354	Jan 12	Feb 26
	WS 355	Feb 9	Mar 26
	WS 356	Mar 9	Apr 23
Q	WS 357	Apr 13	May 28
	WS 358	May 11	Jun 25
	WS 359	Jun 8	Jul 23
Q	WS 360	Jul 13	Aug 27
	WS 361	Aug 10	Sep 24
	WS 362	Sep 8	Oct 23
Q	WS 363	Oct 9	Nov 23
	WS 364	Nov 2	Dec 17
	WS 365	Dec 7	Jan 21, 2027

2027 Schedule

	Scheme #	Opens	Closes
Q	WS 366	Jan 11	Feb 25
	WS 367	Feb 8	Mar 25
	WS 368	Mar 8	Apr 22
Q	WS 369	Apr 12	May 27
	WS 370	May 10	Jun 24
	WS 371	Jun 7	Jul 22
Q	WS 372	Jul 12	Aug 26
	WS 373	Aug 9	Sep 23
	WS 374	Sep 7	Oct 22
Q	WS 375	Oct 8	Nov 22
	WS 376	Nov 1	Dec 16
	WS 377	Dec 6	Jan 20, 2028

Schedule subject to change – see Waters ERA's website at eraqc.com

Contents

CRM Certified Reference Material
PT Proficiency Testing
QR QuiK Response
RM Reference Material

All Waters ERA WS PTs open monthly (M), quarterly (Q), or biannually (B) unless otherwise noted.

Quarterly months are January, April, July, and October. Biannual months are January and July.

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at eraqc.com/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Minerals/Solids

Hardness

CRM	PT		QR
Cat. #693	Cat. #555	M	Cat. #693QR

One 250 mL whole-volume bottle is ready to analyze.

Calcium	30–90 mg/L
Calcium hardness as $CaCO_3$	75–225 mg/L
Total hardness as $CaCO_3$	83–307 mg/L
Magnesium	2–20 mg/L
Sodium	12–50 mg/L

Inorganics

CRM	PT		QR
Cat. #698	Cat. #591	M	Cat. #698QR

One 500 mL whole-volume bottle is ready to analyze. The CRM is also certified for sodium at 10–400 mg/L. For a sodium PT, order Hardness, Cat. #555.

Alkalinity as $CaCO_3$	25–200 mg/L
Chloride	20–160 mg/L
Fluoride	1–8 mg/L
Nitrate as N	3–10 mg/L
Nitrate plus nitrite as N	3–10 mg/L
Potassium	10–40 mg/L
Specific conductance at 25 °C	130–1300 µmhos/cm
Sulfate	25–250 mg/L
Total dissolved solids (TDS) at 180 °C	100–1000 mg/L

Solids Concentrate

CRM	PT		QR
Cat. #5152	Cat. #5150	M	Cat. #5152QR

One 24 mL screw-cap vial with a powder yields 1 liter after dilution.

Total filterable residue (TDS) at 180 °C	100–1000 mg/L
Total solids (TS) at 105 °C	123–1100 mg/L
Total suspended solids (TSS)	23–100 mg/L

The Industry Standard for over 45 years

Trace Metals

Metals

CRM	PT		QR
Cat. #697	Cat. #590	M	Cat. #697QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with ICP-OES, ICP-MS, and AA methods.

Aluminum	130–1000 µg/L
Antimony	6–50 µg/L
Arsenic	5–50 µg/L
Barium	500–3000 µg/L
Beryllium	2–20 µg/L
Boron	800–2000 µg/L
Cadmium	2–50 µg/L
Chromium	10–200 µg/L
Copper	50–2000 µg/L
Iron	100–1800 µg/L
Lead	5–100 µg/L
Manganese	40–900 µg/L
Molybdenum	15–130 µg/L
Nickel	10–500 µg/L
Selenium	10–100 µg/L
Silver	20–300 µg/L
Thallium	2–10 µg/L
Vanadium	50–1000 µg/L
Zinc	200–2000 µg/L

Mercury

CRM	PT		QR
Cat. #666	Cat. #551	M	Cat. #666QR

One 15 mL screw-cap vial yields up to 1 liter after dilution. Use with CVAA, ICP-MS, or CVAFS methods.

Total mercury	0.5–10 µg/L

Hexavalent Chromium

CRM	PT		QR
Cat. #658	Cat. #854	Q	Cat. #658QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Hexavalent chromium	5–50 µg/L

Uranium

CRM	PT		QR
Cat. #930	Cat. #858	Q	Cat. #930QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Use with ICP-MS methods.

Uranium	3–104 µg/L

Vanadium

CRM	PT		QR
Cat. #660	Cat. #856	B	Cat. #660QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Designed to meet California ELAP requirements.

Vanadium	5–50 µg/L

B Waters ERA Vanadium PTs open in April and October.

Disinfection By-Products

Chloral Hydrate

CRM	PT		QR
Cat. #676	Cat. #853	B	Cat. #676QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Method 551, or other applicable method. Includes chloral hydrate at 4–30 µg/L.

B Waters ERA WS Chloral Hydrate PTs open in January and July.

Haloacetic Acids (HAA)

CRM	PT		QR
Cat. #684	Cat. #852	M	Cat. #684QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Method 552, or other applicable method. Includes all the analytes below at 5–50 µg/L.

Bromochloroacetic acid	Dichloroacetic acid	Monochloroacetic acid
Dibromoacetic acid	Monobromoacetic acid	Trichloroacetic acid

Inorganic Disinfection #1

CRM	PT		QR
Cat. #5272	Cat. #5270	M	Cat. #5272QR

One 24 mL screw-cap vial yields up to 4 liters after dilution.

Chlorate	60–180 µg/L
Chlorite	100–1000 µg/L

Inorganic Disinfection #2

CRM	PT		QR
Cat. #5262	Cat. #5260	M	Cat. #5262QR

One 24 mL screw-cap vial yields up to 4 liters after dilution.

Bromate	7–50 µg/L
Bromide	50–300 µg/L

Nutrients

Ammonia as N

CRM	PT		QR
Cat. #1359	Cat. #1319	B	Cat. #1359QR

One 15 mL screw-cap vial yeilds up to 1 liter after dilution.

Ammonia as N	0.1–1 mg/L

B Waters ERA WS Ammonia as N PTs open in January and July.

Nitrite

CRM	PT		QR
Cat. #695	Cat. #594	M	Cat. #695QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Nitrite as N	0.4–2 mg/L

o-Phosphate Nutrients

CRM	PT		QR
Cat. #667	Cat. #558	M	Cat. #667QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

ortho-Phosphate as P	0.5–5.5 mg/L

Miscellaneous Inorganic

Residual Chlorine

CRM	PT		QR
Cat. #696	Cat. #593	M	Cat. #696QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution.

Total residual chlorine	0.5–3 mg/L
Free residual chlorine	0.5–3 mg/L

Cyanide

CRM	PT		QR
Cat. #983	Cat. #556	M	Cat. #983QR

One 15 mL screw-cap vial yields up to 2 liters after dilution. Source material is free cyanide.

Free cyanide	0.1–0.5 mg/L
Total cyanide	0.1–0.5 mg/L
Cyanide	0.1–0.5 mg/L

Organic Carbon

CRM	PT		QR
Cat. #669	Cat. #557	M	Cat. #669QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Total organic carbon	1.3–13 mg/L
Dissolved organic carbon	1.3–13 mg/L

Perchlorate

CRM	PT		QR
Cat. #910	Cat. #903	Q	Cat. #910QR

One 15 mL screw-cap vial yields up to 1 liter after dilution.

Perchlorate	4–20 µg/L

pH

CRM	PT		QR
Cat. #779	Cat. #552	M	Cat. #779QR

One 250 mL whole-volume bottle is ready to analyze.

pH	5–10 units

Silica

CRM	PT		QR
Cat. #785	Cat. #902	Q	Cat. #785QR

One 60 mL poly bottle yields 1 liter after dilution.

Silica as SiO2	5–75 mg/L

Surfactants-MBAS

CRM	PT		QR
Cat. #784	Cat. #901	Q	Cat. #784QR

One 15 mL screw-cap vial yields up to 2 liters after dilution.

Surfactants-MBAS	0.1–1 mg/L

Physical Property

Color

CRM	PT		QR
Cat. #661C	Cat. #859C	Q	Cat. #661CQR

One 30 mL screw-cap bottle yields up to 200 mL after dilution.

Color ..... 10–75 PC units

Corrosivity

CRM	PT		QR
Cat. #980	Cat. #900	Q	Cat. #980QR

One 500 mL whole-volume bottle is ready to analyze for corrosivity, calcium carbonate saturation, and Langelier Saturation Index.

Corrosivity ..... -4 to +4 SI units

Turbidity

CRM	PT		QR
Cat. #699	Cat. #592	M	Cat. #699QR

One 24 mL amber glass vial yields up to 1 liter after dilution. Use with nephelometric methods.

Turbidity ..... 0.5–8 NTU

UV 254 Absorbance

CRM	PT		QR
Cat. #662	Cat. #904	Q	Cat. #662QR

One 15 mL screw-cap vial yields up to 1 liter after dilution.

UV 254 absorbance 0.05–0.7 cm-1

Volatile Organics

1,4-Dioxane

CRM	PT		QR
Cat. #689	Cat. #272	B	Cat. #689QR

One 2 mL flame-sealed ampule yields 500 mL after dilution. Use with EPA method 522.

1,4-Dioxane ..... 0.1–10 µg/L

Gasoline Additives

CRM	PT		QR
Cat. #909	Cat. #905	Q	Cat. #909QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Method 524.2, or other applicable method for gasoline additives/oxygenates. Contains all of the analytes below at 5–50 µg/L.

tert-Amyl methyl ether (TAME)	Ethyl tert-butyl ether (ETBE)	Trichlorofluoromethane (Freon® 11)
tert-Butyl alcohol	Methyl tert-butyl ether (MTBE)	Trichlorotrifluoroethane (Freon 113)
Di-isopropylether (DIPE)		

Halomethanes (THMs)

CRM	PT		QR
Cat. #702	Cat. #842	M	Cat. #702QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 502.2, 524.2, 551, or other applicable method. Contains all of the analytes below at 5–50 µg/L.

Bromodichloromethane	Chlorodibromomethane	Chloroform
Bromoform		

Regulated Volatiles

CRM	PT		QR
Cat. #703	Cat. #840	M	Cat. #703QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 502.2, 524.2, or other applicable method. Contains all of the analytes below at 2–50 µg/L.

Benzene	cis-1,2-Dichloroethylene	Toluene
Carbon tetrachloride	trans-1,2-Dichloroethylene	1,2,4-Trichlorobenzene
Chlorobenzene	1,2-Dichloropropane	1,1,1-Trichloroethane
1,2-Dichlorobenzene	Ethylbenzene	1,1,2-Trichloroethane
1,4-Dichlorobenzene	Methylene chloride	Trichloroethylene
1,2-Dichloroethane	Styrene	Vinyl chloride
1,1-Dichloroethylene	Tetrachloroethylene	Xylenes, total

Unregulated Volatiles

CRM	PT		QR
Cat. #683	Cat. #841	M	Cat. #683QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 502.2, 524.2, or other applicable method. Contains at least 60% of the analytes randomly selected from the list below at 2–50 µg/L.

Bromobenzene	1,3-Dichlorobenzene	4-Isopropyltoluene
Bromochloromethane	Dichlorodifluoromethane	Methyl tert-butyl ether (MTBE)
Bromomethane	1,1-Dichloroethane	Naphthalene
n-Butylbenzene	1,3-Dichloropropane	n-Propylbenzene
sec-Butylbenzene	2,2-Dichloropropane	1,1,1,2-Tetrachloroethane
tert-Butylbenzene	1,1-Dichloropropene	1,1,2,2-Tetrachloroethane
Chloroethane	cis-1,3-Dichloropropene	1,2,3-Trichlorobenzene
Chloromethane	trans-1,3 Dichloropropene	1,2,3-Trichloropropane
2-Chlorotoluene	Fluorotrichloromethane	1,2,4-Trimethylbenzene
4-Chlorotoluene	Hexachlorobutadiene	1,3,5-Trimethylbenzene
Dibromomethane	Isopropylbenzene	

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS in Drinking Water

CRM	PT	Q	QR
Cat. #733	Cat. #959		Cat. #733QR

One 2 mL flame-sealed ampule yields in excess of 1.5 L after dilution. The sample is designed for LC/MS/MS methods for analyzing potable water, specifically EPA Methods 533, 537 and 537.1. The diluted standard is certified for the 32 analytes listed below.

Perfluorobutanoic acid, PFBA	20–200 ng/L
Perfluoropentanoic acid, PFPeA	20–200 ng/L
Perfluorohexanoic acid, PFHxA	20–200 ng/L
Perfluoroheptanoic acid, PFHpA	20–200 ng/L
Perfluorooctanoic acid, PFOA	20–200 ng/L
Perfluorononanoic acid, PFNA	20–200 ng/L
Perfluorodecanoic acid, PFDA	20–200 ng/L
Perfluoroundecanoic acid, PFUdA	20–200 ng/L
Perfluorododecanoic acid, PFDoA	20–200 ng/L
Perfluorotridecanoic acid, PFTrDA	20–200 ng/L
Perfluorotetradecanoic acid, PFTeDA	20–200 ng/L
Perfluorobutanesulfonic acid, PFBS	20–200 ng/L
Perfluoropentanesulfonic acid, PFPeS	20–200 ng/L
Perfluorohexanesulfonic acid, PFHxS	20–200 ng/L
Perfluoroheptanesulfonic acid, PFHpS	20–200 ng/L
Perfluorooctanesulfonic acid, PFOS	20–200 ng/L
Perfluorononanesulfonic acid, PFNS	20–200 ng/L
Perfluorodecanesulfonic acid, PFDS	20–200 ng/L
4:2 fluorotelomersulfonic acid, 4:2 FTS	20–200 ng/L
6:2 fluorotelomersulfonic acid, 6:2 FTS	20–200 ng/L
8:2 fluorotelomersulfonic acid, 8:2 FTS	20–200 ng/L
Perfluorooctanesulfonamide, PFOSA	20–200 ng/L
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA	20–200 ng/L
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA	20–200 ng/L
Hexafluoropropylene oxide dimer acid, HFPO-DA	20–200 ng/L
4,8-dioxa-3H-perfluorononanoic acid, ADONA	20–200 ng/L
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS	20–200 ng/L
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS	20–200 ng/L
Perfluoro-4-methoxybutanoic acid, PFMBA	20–200 ng/L
Perfluoro-3-methoxypropanoic acid, PFMPA	20–200 ng/L
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA	20–200 ng/L
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA	20–200 ng/L

PFAS Secondary Source Standard

Standard is suitable for various applications, including Internal Calibration Verification (ICV), Laboratory Control Sample (LCS), Matrix Spike (MS), and Limit of Quantitation (LOQ) studies.

NEW!

Drinking Water

CRM
Cat. #PFAS10002

One 2 mL flame-sealed ampule with 1.5 mL of PFAS standard containing 29 analytes at 50 ng/mL. The standard is suitable for matrices to include, but not limited to, drinking water and compatible with methods EPA 533, EPA 537, EPA 537.1 and other comparable methods.

Perfluorobutanoic acid, PFBA	50 ng/mL
Perfluoropentanoic acid, PFPeA	50 ng/mL
Perfluorohexanoic acid, PFHxA	50 ng/mL
Perfluoroheptanoic acid, PFHpA	50 ng/mL
Perfluorooctanoic acid, PFOA	50 ng/mL
Perfluorononanoic acid, PFNA	50 ng/mL
Perfluorodecanoic acid, PFDA	50 ng/mL
Perfluoroundecanoic acid, PFUdA	50 ng/mL
Perfluorododecanoic acid, PFDoA	50 ng/mL
Perfluorotridecanoic acid, PFTrDA	50 ng/mL
Perfluorotetradecanoic acid, PFTeDA	50 ng/mL
Perfluorobutanesulfonic acid, PFBS	50 ng/mL
Perfluoropentanesulfonic acid, PFPeS	50 ng/mL
Perfluorohexanesulfonic acid, PFHxS	50 ng/mL
Perfluoroheptanesulfonic acid, PFHpS	50 ng/mL
Perfluorooctanesulfonic acid, PFOS	50 ng/mL
4:2 fluorotelomersulfonic acid, 4:2FTS	50 ng/mL
6:2 fluorotelomersulfonic acid, 6:2FTS	50 ng/mL
8:2 fluorotelomersulfonic acid, 8:2FTS	50 ng/mL
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA	50 ng/mL
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA	50 ng/mL
Hexafluoropropylene oxide dimer acid, HFPO-DA	50 ng/mL
4,8-dioxa-3H-perfluorononanoic acid, ADONA	50 ng/mL
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS	50 ng/mL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS	50 ng/mL
Perfluoro-4-methoxybutanoic acid, PFMBA	50 ng/mL
Perfluoro-3-methoxypropanoic acid, PFMPA	50 ng/mL
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA	50 ng/mL
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA	50 ng/mL

Learn more about WS products

Pesticides

Pesticides

CRM	PT		QR
Cat. #709	Cat. #850	M	Cat. #709QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 505, 507, 508, 525, or other applicable method for organochlorine, nitrogen, and organophosphorus pesticides. Each standard contains at least 14 analytes randomly selected from the list below at 0.2–20 µg/L.

Alachlor	Heptachlor	Metribuzin
Aldrin	Heptachlor epoxide (beta)	Molinate (ordram)
Atrazine	Hexachlorobenzene	Prometon
Bromacil	Hexachlorocyclopentadiene	Propachlor
Butachlor	Lindane (gamma-BHC)	Simazine
Diazinon	Methoxychlor	Thiobencarb
Dieldrin	Metolachlor	Trifluralin
Endrin		

Carbamate/Carbamoxyloxime Pesticides

CRM	PT		QR
Cat. #707	Cat. #846	M	Cat. #707QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 531.1, 531.2, 632, or other applicable method. Each standard contains at least 8 of the analytes below at 15–150 µg/L.

Aldicarb	Carbaryl	Methiocarb
Aldicarb sulfone	Carbofuran	Methomyl
Aldicarb sulfoxide	3-Hydroxycarbofuran	Oxamyl
Baygon		

EDB/DBCP/TCP

CRM	PT		QR
Cat. #706	Cat. #847	M	Cat. #706QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 504, 551, or other applicable method. Each lot contains all analytes below at 0.05–2 µg/L.

1,2-Dibromo-3-chloropropane (DBCP)
Ethylene dibromide (EDB)
1,2,3-Trichloropropane (1,2,3-TCP)

Low-Level 1,2,3-TCP

CRM	PT		QR
Cat. #682	Cat. #596	B	Cat. #682QR

One 2 mL flame-sealed ampule yields 100 mL after dilution. Use with California method SRL 524M, or other applicable method. Each standard contains 1,2,3-Trichloropropane (TCP) at 5–100 ng/L after dilution.

B Low-Level 1,2,3-TCP available in January and July.

Chlordane

CRM	PT		QR
Cat. #705	Cat. #845	M	Cat. #705QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 505, 508, 525, or other applicable method. Each standard contains technical chlordane at 2–20 µg/L.

Toxaphene

CRM	PT		QR
Cat. #700	Cat. #844	M	Cat. #700QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 505, 508, 525, or other applicable method. Each standard contains toxaphene at 2–20 µg/L.

Semivolatile Organics

Dioxin

CRM	PT		QR
Cat. #663	Cat. #857	Q	Cat. #663QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 613, 1613, 8280, 8290, or other applicable method. Each standard contains 2,3,7,8-TCDD at 20–100 pg/L.

PCBs as Decachlorobiphenyl

CRM	PT		QR
Cat. #708	Cat. #839	Q	Cat. #708QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Quantitative Method 508A. This standard can also be used for aroclor identification and quantification using EPA Methods 505, 508, 508.1, or other applicable method. Includes an aroclor randomly selected from the list below at 0.5–5 µg/L as decachlorobiphenyl.

Aroclor 1016	Aroclor 1242	Aroclor 1254
Aroclor 1221	Aroclor 1248	Aroclor 1260
Aroclor 1232		

Semivolatiles #1

CRM	PT		QR
Cat. #690	Cat. #848	M	Cat. #690QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 506, 525, 550, or other applicable method for PAHs, phthalates, and adipates. Each standard contains benzo(a)pyrene, bis(2-ethylhexyl)adipate, and bis(2-ethylhexyl)phthalate plus at least 13 additional analytes, selected from the list below, at 0.2–50 µg/L.

Acenaphthene	Butyl benzyl phthalate	bis(2-Ethylhexyl)phthalate
Acenaphthylene	Chyrsene	Fluoranthene
Anthracene	Dibenz(a,h)anthracene	Fluorene
Benzo(a)anthracene	Di-n-butyl phthalate	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	Diethyl phthalate	Naphthalene
Benzo(k)fluoranthene	Dimethyl phthalate	Phenanthrene
Benzo(g,h,i)perylene	Di-n-octyl phthalate	Pyrene
Benzo(a)pyrene	bis(2-Ethylhexyl)adipate	

Naphthalene is not within the EPA/NELAC range. Use the Unregulated Volatiles standard (page 27 for this compound in the EPA/NELAC range.

Tackle Your Most Stringent PFAS Limits and Get Ready to Conquer Your Analytical Challenges With the Waters LC-MS/MS Workflow Solutions

From sample prep to outcome-based professional services training and proficiency testing, Waters is committed to revolutionizing your PFAS analysis. Partner with Waters PFAS experts to strengthen your analytical game plan and achieve detection limits as precise as singe-digit ppq with the Xevo™ TQ Absolute. Safeguard your analysis against contamination and control interference with our PFAS LC kits and Oasis™ WAX SPE.

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	 waters_connect™	 Acquity PREMIER Xevo™	 OASIS™ SAMPLE EXTRACTION PRODUCTS

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Herbicides

Chlorinated Acid Herbicides

CRM	PT	M	QR
Cat. #704	Cat. #851		Cat. #704QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 515.1, 515.2, 515.3, 515.4, 555, or other applicable method. All lots include at least 10 analytes from the list below at 1–120 µg/L.

Acifluorfen	Dalapon	4-Nitrophenol
Bentazon	Dicamba	Pentachlorophenol
Chloramben	3,5-Dichlorobenzoic acid	Picloram
2,4-D	Dichlorprop	2,4,5-T
2,4-DB	Dinoseb	2,4,5-TP (silvex)
Dacthal diacid (DCPA)		

Semivolatiles #2 Herbicides

CRM	PT	M	QR
Cat. #691	Cat. #849		Cat. #691QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Methods 547, 548, 549, or other applicable method. Each standard contains all the analytes below at 8–800 µg/L.

Diquat	Glyphosate	Paraquat
Endothall		

Evolution in Dioxin Analysis Technology

Waters provides industry leading technology to address complex environmental challenges affecting human health.

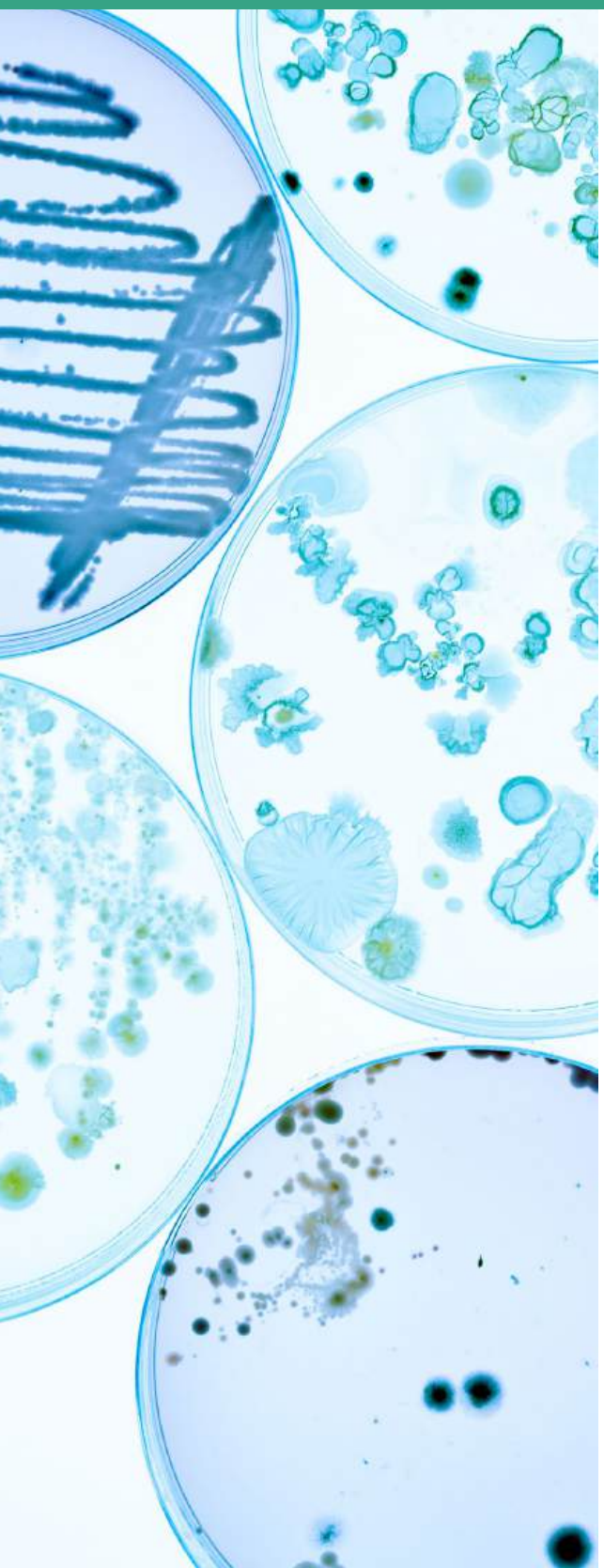
Dioxin analysis is particularly demanding due to low level regulatory exposure limits and complex sample matrices. With the adoption of atmospheric pressure chemical ionization with tandem mass spectrometry (APCI-MS/MS) as an acceptable alternative, your operational efficiency and analytical quality will improve as you experience:

- Improved robustness and sensitivity for increased productivity
- Improvements in sample preparation efficiency
- Versatile system capable of enhanced operation for SVOC and other analyses
- Widely compatible with carrier gas options including nitrogen

LEARN MORE AT waters.com/dioxins

Microbiology

Matrices with low and high concentrations of analytes for testing bacteria in drinking water and waste water. Samples are delivered as lyophilized pellets in a glass vial with phosphate buffer dilution water.



Water Pollution (including UST in Water) PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	WP 372	Jan 20	Mar 6
	WP 373	Feb 16	Apr 2
	WP 374	Mar 16	Apr 30
Q	WP 375	Apr 20	Jun 4
	WP 376	May 18	Jul 2
	WP 377	Jun 15	Jul 30
Q	WP 378	Jul 20	Sep 3
	WP 379	Aug 17	Oct 1
	WP 380	Sep 14	Oct 29
Q	WP 381	Oct 16	Nov 30
	WP 382	Nov 6	Dec 21
	WP 383	Dec 14	Jan 28, 2027

2027 Schedule

	Scheme #	Opens	Closes
Q	WP 384	Jan 19	Mar 5
	WP 385	Feb 15	Apr 1
	WP 386	Mar 15	Apr 29
Q	WP 387	Apr 19	Jun 3
	WP 388	May 17	Jul 1
	WP 389	Jun 14	Jul 29
Q	WP 390	Jul 19	Sep 2
	WP 391	Aug 16	Sep 30
	WP 392	Sep 13	Oct 28
Q	WP 393	Oct 15	Nov 29
	WP 394	Nov 5	Dec 20
	WP 395	Dec 13	Jan 27, 2028

Schedule subject to change – see Waters ERA's website at eraqc.com

Contents

CRM Certified Reference Material
PT Proficiency Testing
QR QuiK Response
RM Reference Material

All Waters ERA Microbiology PTs open monthly (M), quarterly (Q), or biannually (B) unless otherwise noted.

* Waters ERA Massachusetts Ground Water Enterococci PT is available any time. Quarterly months are January, April, July, and October. Biannual months are January and July.

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at eraqc.com/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Water Supply PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	**WS 354**	Jan 12	Feb 26
	WS 355	Feb 9	Mar 26
	WS 356	Mar 9	Apr 23
Q	**WS 357**	Apr 13	May 28
	WS 358	May 11	Jun 25
	WS 359	Jun 8	Jul 23
Q	**WS 360**	Jul 13	Aug 27
	WS 361	Aug 10	Sep 24
	WS 362	Sep 8	Oct 23
Q	**WS 363**	Oct 9	Nov 23
	WS 364	Nov 2	Dec 17
	WS 365	Dec 7	Jan 21, 2027

2027 Schedule

	Scheme #	Opens	Closes
Q	**WS 366**	Jan 11	Feb 25
	WS 367	Feb 8	Mar 25
	WS 368	Mar 8	Apr 22
Q	**WS 369**	Apr 12	May 27
	WS 370	May 10	Jun 24
	WS 371	Jun 7	Jul 22
Q	**WS 372**	Jul 12	Aug 26
	WS 373	Aug 9	Sep 23
	WS 374	Sep 7	Oct 22
Q	**WS 375**	Oct 8	Nov 22
	WS 376	Nov 1	Dec 16
	WS 377	Dec 6	Jan 20, 2028

WP Microbiology

Wastewater Coliform Microbe

CRM	PT		QR
Cat. #083	Cat. #576	M	Cat. #786QR

Each PT sample is one lyophilized quantitative standard for use with all Clean Water Act quantitative methods, including MF and MPN. If determining MPN by SM 9221 or similar multiple tube techniques, use 083A, 576A, or 786A.

CRM also includes one blank sample. Each standard can be used for total coliform, fecal coliform, and E. coli which are present in the range 20–2400 CFU/100 mL or MPN/100 mL.

Wastewater Coliform Microbe – 9221

CRM	PT		QR
Cat. #083A	Cat. #576A	M	Cat. #786AQR

Each PT sample is one lyophilized quantitative standard for use with Standard Methods 9221 or similar multiple tube techniques.

CRM also includes one blank sample. Each standard can be used for total coliform, fecal coliform, and E. coli which are present in the range of 20–2400 MPN/100 mL.

Enterococci

CRM	PT		QR
Cat. #081	Cat. #880	Q	Cat. #787QR

Each PT sample is one lyophilized standard, which can be analyzed for enterococci and/or fecal streptococci, MF or MPN in the range 20–1000 CFU/100 mL or MPN/100 mL.

CRM also includes one blank sample. Use with EPA Methods 1106.1 and 1600, ASTM Methods D5259-92, D6503-99, and Standard Methods 9230B and 9230C, and Enterolert Quantitray.

Heterotrophic Plate Count

CRM	PT		QR
—	Cat. #935	B	—

One lyophilized sample containing a Heterotrophic bacteria. SPC PT standards are required for laboratories seeking NELAC accreditation as well as by many other state programs.

B Offered Biannually in March and September.

Learn more about Microbiology products

State-Specific Microbiology

Massachusetts Ground Water Enterococci

CRM	PT		QR
Cat. #081	—	*	Cat. #077QR

Each PT sample set is composed of 10 lyophilized samples to be analyzed for presence or absence of enterococci. This sample is specifically designed for the State of Massachusetts certification for compliance with the federal Ground Water Rule. Each CRM sample set is composed of two lyophilized samples - one quantitative positive and one blank.

* Massachusetts Ground Water Enterococci QR is available any time.

WS Microbiology

Heterotrophic Plate Count

CRM	PT		QR
Cat. #084	Cat. #079	M	Cat. #084QR

Each sample is one lyophilized standard containing a heterotrophic bacteria present in the range 5–500 CFU/mL or MPN/mL. Use with the Standard Methods 9215B – Pour Plate Method, and Most Probable Number (MPN) Method (simplate).

Potable Water Coliform Microbe

CRM	PT		QR
Cat. #694	Cat. #080	M	Cat. #085QR

Each sample set consists of lyophilized standards for the presence or absence analysis of total coliform, fecal coliform, and E. coli. The standards are applicable to all SDWA promulgated methods-MF, MPN, presence/absence, and ONPG-MUG. The Potable Water Coliform Microbe PT standard is available in all 12-monthly WS studies.

Source Water Microbe

CRM	PT		QR
Cat. #078	Cat. #595	Q	Cat. #078QR

Each sample is one lyophilized quantitative standard containing E. coli in the range 20–200 CFU/100 mL or MPN/100 mL. Use with all SDWA quantitative methods. Each standard can be used for total coliform, fecal coliform, and E. coli. If determining MPN by SM 9221 or similar multiple tube techniques, use 078A, 595A, and 078AQR.

Source Water Microbe – 9221

CRM	PT		QR
Cat. #078A	Cat. #595A	Q	Cat. #078AQR

Each sample is one lyophilized quantitative standard containing E. coli in the range of 20–200 MPN/100 mL for use with Standard Methods 9221 or similar multiple tube techniques. Each standard can be used for total coliforms, fecal coliforms, and E. coli.

Going Beyond the Standard.

Supplying Proficiency Testing (PT) and Certified Reference Material (CRM) standards is not unique. What sets us apart is our commitment to being more than a standards provider. Since 1977, we've worked as your partner, helping you produce reliable, defensible data, maintain critical accreditations, and make your laboratory successful.

- **Data Tools to Help You Succeed:** eDATA online PT data management portal allows you to effectively manage your proficiency testing program, assess risk, and evaluate trends over time.
- **Expert Guidance at Your Fingertips:** Direct access to one of the most qualified Customer Service and Technical Support teams in the environmental PT and CRM industry.
- **Superior Standards for Better Results:** Waters ERA maintains ISO 17025, ISO 17034, and ISO 17043 accreditations, giving you greater confidence in your data due to the largest studies, two-day report turn-around time, and more reliable performance evaluations.

LEARN MORE AT
eraqc.com/pt-crm-explained

Soil

Matrices designed to fulfill requirements for monitoring soil and solid matrices. Dried and homogenized standards of soil and sewage sludge may be used to satisfy PT requirements.

Soil (including UST in Soil) PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	**SOIL 133**	Jan 26	Mar 12
Q	**SOIL 134**	Apr 27	Jun 11
Q	**SOIL 135**	Jul 27	Sep 10
Q	**SOIL 136**	Oct 23	Dec 7

2027 Schedule

	Scheme #	Opens	Closes
Q	**SOIL 137**	Jan 25	Mar 11
Q	**SOIL 138**	Apr 26	Jun 10
Q	**SOIL 139**	Jul 26	Sep 9
Q	**SOIL 140**	Oct 22	Dec 6

Schedule subject to change – see Waters ERA's website at eraqc.com

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CRM Certified Reference Material
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RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Metals

Metals in Soil

CRM	PT	Q	QR
Cat. #540	Cat. #620		Cat. #540QR

One 30 g soil sample in a screw-cap bottle for all ICP and AA, RCRA and Superfund Methods including EPA Digestion Methods 3050 Hot Plate and 3051 Microwave, or other applicable methods. Includes all metals shown below.

Aluminum	2500–25,000 mg/kg
Antimony	80–300 mg/kg
Arsenic	40–400 mg/kg
Barium	100–1000 mg/kg
Beryllium	40–400 mg/kg
Boron	80–800 mg/kg
Cadmium	40–400 mg/kg
Calcium	1500–25,000 mg/kg
Chromium	40–400 mg/kg
Cobalt	40–400 mg/kg
Copper	40–400 mg/kg
Iron	5000–50000 mg/kg
Lead	40–400 mg/kg
Lithium	50–250 mg/kg
Magnesium	1200–25,000 mg/kg
Manganese	100–2000 mg/kg
Mercury	1–35 mg/kg
Molybdenum	30–300 mg/kg
Nickel	40–500 mg/kg
Potassium	1400–25,000 mg/kg
Selenium	40–400 mg/kg
Silver	20–100 mg/kg
Sodium	150–15,000 mg/kg
Strontium	40–400 mg/kg
Thallium	40–400 mg/kg
Tin	50–250 mg/kg
Titanium	10–2000 mg/kg
Uranium	1–250 mg/kg
Vanadium	40–400 mg/kg
Zinc	100–1000 mg/kg

Hexavalent Chromium in Soil

CRM	PT	Q	QR
Cat. #921	Cat. #876		Cat. #921QR

One 40 g standard in a screw-cap bottle for use with all promulgated hexavalent chromium methods.

Hexavalent chromium	40–300 mg/kg

TCLP Metals in Soil

CRM	PT	Q	QR
Cat. #544	Cat. #629		Cat. #544QR

One 105 g soil standard in a screw-cap bottle designed specifically to meet all state requirements for TCLP extraction and analysis for the metals listed below. Sample is designed to be extracted with fluid #1.

Antimony	Cadmium	Nickel
Arsenic	Chromium	Selenium
Barium	Lead	Silver
Beryllium	Mercury	Zinc

Metals in Sewage Sludge

CRM	PT	Q	QR
Cat. #160	Cat. #619		Cat. #160QR

One 40 g sludge standard in a screw-cap bottle to be analyzed for the metals listed below.

Aluminum	1000–50,000 mg/kg
Antimony	80–300 mg/kg
Arsenic	50–400 mg/kg
Barium	250–2000 mg/kg
Beryllium	30–200 mg/kg
Cadmium	40–300 mg/kg
Calcium	5000–70,000 mg/kg
Chromium	40–300 mg/kg
Cobalt	5–50 mg/kg
Copper	40–1000 mg/kg
Iron	1000–50,000 mg/kg
Lead	50–250 mg/kg
Magnesium	1200–25,000 mg/kg
Manganese	100–2000 mg/kg
Mercury	1–50 mg/kg
Molybdenum	5–250 mg/kg
Nickel	40–250 mg/kg
Potassium	1400–25,000 mg/kg
Selenium	50–250 mg/kg
Silver	50–250 mg/kg
Sodium	150–15,000 mg/kg
Strontium	200–2000 mg/kg
Thallium	50–250 mg/kg
Vanadium	5–250 mg/kg
Zinc	70–1500 mg/kg

Physical Parameters

Corrosivity/pH in Soil

CRM	PT	Q	QR
Cat. #914	Cat. #875		Cat. #914QR

One 100 g soil standard in a screw-cap bottle. Use to measure corrosivity.

Corrosivity/pH	2–12 S.U.

Ignitability/Flash Point

CRM	PT	Q	QR
Cat. #979	Cat. #874		Cat. #979QR

One standard packaged in three 30 mL bottles. Use to measure ignitability.

Ignitability/flashpoint	100–200 °F

Oil & Grease

Oil & Grease in Soil

CRM	PT	Q	QR
Cat. #549	Cat. #867		Cat. #549QR

One screw-cap bottle containing 50 g of soil ready to analyze. Use with gravimetric method 9071B or infrared spectrometric analysis.

n-Hexane extractable material (O&G) (Gravimetric) ..... 300–3000 mg/kg
n-Hexane extractable material (O&G) (Infrared) ..... 300–3000 mg/kg

Inorganics

Anions in Soil

CRM	PT	Q	QR
Cat. #543	Cat. #873		Cat. #543QR

One 40 g soil standard in a screw-cap bottle designed for a DI water extraction procedure for all the anions listed below.

Bromide ..... 10–100 mg/kg
Chloride ..... 200–1000 mg/kg
Fluoride ..... 25–500 mg/kg
Nitrate as N ..... 25–500 mg/kg
Nitrite as N ..... 0–500 mg/kg
Nitrate + Nitrite as N ..... 0–2000 mg/kg
Phosphate as P ..... 25–500 mg/kg
Sulfate ..... 25–2000 mg/kg

Cyanide in Soil

CRM	PT	Q	QR
Cat. #541	Cat. #621		Cat. #541QR

One 40 g soil standard in a screw-cap bottle for all distillation/colorimetric methods.

Total cyanide ..... 20–200 mg/kg
Amenable cyanide ..... 0–100 mg/kg

Nutrients in Soil

CRM	PT	Q	QR
Cat. #542	Cat. #869		Cat. #542QR

One 40 g soil standard in a screw-cap bottle. Use to analyze for all the nutrients listed below.

Ammonia as N ..... 300–3000 mg/kg
Total Kjeldahl nitrogen as N ..... 400–4000 mg/kg
Total organic carbon (TOC) ..... 1000–20,000 mg/kg
Total phosphorus as P ..... 300–3000 mg/kg

Nutrients in Sludge

CRM	RM	–	QR
–	Cat. #545		–

One 40 g sludge standard in a screw-cap bottle is ready for analysis.

Ammonia as N ..... 0.1–5% (w/w)
Total Kjeldahl nitrogen as N ..... 2–10% (w/w)
Total organic carbon (TOC) ..... 5–50% (w/w)
Total phosphorus as P ..... 0.5–10% (w/w)

Volatiles

Volatiles in Soil

CRM	PT	Q	QR
Cat. #721	Cat. #623		Cat. #721QR

One 2 mL flame-sealed ampule in methanol requires spiking onto the provided ten grams of solid matrix before analysis. Use with EPA Methods 8021, 8260, or other applicable methods. Includes a subset of the analytes listed below at 20–200 µg/kg (40–400 µg/kg for total xylenes, 80–1000 for selected ketones, and 100–1000 µg/kg for acetonitrile).

cetone
Acetonitrile
Acrolein
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone (MEK)
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
2-Chlorotoluene
4-Chlorotoluene
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (EDB)
Dibromomethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropylene
trans-1,3-Dichloropropylene
Ethylbenzene
Hexachlorobutadiene
Hexachloroethane
2-Hexanone
Isopropylbenzene
p-Isopropyltoluene
Methyl tert-butyl ether (MTBE)
4-Methyl-2-pentanone (MIBK)
Methylene chloride
Naphthalene
Nitrobenzene
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl acetate
Vinyl chloride
m&p-Xylene
o-Xylene
Xylenes, total

This standard is not compliant with the NELAC concentration for hexachloroethane, hexachlorobutadiene, and nitrobenzene. If a NELAC compliant sample is required for these analytes, use Ready-to-Use VOAs in Soil, or Base/Neutrals and Acids in Soil.

1,4-Dioxane in Soil

CRM	PT	B	QR
Cat. #538	Cat. #461		Cat. #538QR

One 2 mL flame-sealed ampule requires spiking onto the provided ten grams of solid matrix before analysis. Use with modified versions of EPA method 8260, 1624 or other applicable methods.

1,4-Dioxane ..... 20–200 ug/kg

Gasoline Range Organics (GRO) in Soil

CRM	PT	Q	QR
Cat. #763	Cat. #630		Cat. #763QR

One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100–2000 mg/kg. Use with purge and trap and modified EPA 8015 GC/FID Methods, or other applicable methods. Also use to test for BTEX in gasoline.

Note: This standard is not compliant with the NELAC concentration ranges for the BTEX analytes. If a NELAC-compliant sample for these analytes is required, use Volatiles in Soil, Cat. #623 or BTEX & MTBE Soil, Cat. #633.

Volatiles (continued)

BTEX & MTBE in Soil

CRM	PT	Q	QR
Cat. #761	Cat. #633		Cat. #761QR

One 2 mL flame-sealed ampule requires spiking onto the ten grams of provided certified clean soil. Includes the anlaytes below at 20–200 µg/kg (40–400 µg/kg for total xylenes). Use with EPA Method 8021, or other applicable methods.

Benzene	Methyl tert-butyl ether (MTBE)	Xylenes, total
Ethylbenzene	Toluene	m&p Xylene
		o-Xylene

Ready-to-Use VOAs in Soil

CRM	PT	Q	QR
Cat. #924	Cat. #870		Cat. #924QR

One 20 mL flame-sealed ampule containing 10 g of soil and 10 mL of methanol is ready to analyze. Use with EPA Methods 8021, 8260, or other applicable methods. Includes a subset of the analytes listed below at 1000–20,000 µg/kg.

Acetone	1,2-Dibromoethane (EDB)	4-Methyl-2-pentanone (MIBK)
Acetonitrile	Dibromomethane	Methylene chloride
Acrolein	1,2-Dichlorobenzene	Naphthalene
Benzene	1,3-Dichlorobenzene	Nitrobenzene
Bromobenzene	1,4-Dichlorobenzene	n-Propylbenzene
Bromochloromethane	Dichlorodifluoromethane	Styrene
Bromodichloromethane	1,1-Dichloroethane	1,1,1,2-Tetrachloroethane
Bromoform	1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromomethane	1,1-Dichloroethene	Tetrachloroethene
2-Butanone (MEK)	cis-1,2-Dichloroethylene	Toluene
n-Butylbenzene	trans-1,2-Dichloroethylene	1,2,3-Trichlorobenzene
sec-Butylbenzene	1,2-Dichloropropane	1,2,4-Trichlorobenzene
tert-Butylbenzene	1,3-Dichloropropane	1,1,1-Trichloroethane
Carbon disulfide	2,2-Dichloropropane	1,1,2-Trichloroethane
Carbon tetrachloride	1,1-Dichloropropene	Trichloroethene
Chlorobenzene	cis-1,3-Dichloropropylene	Trichlorofluoromethane
Chlorodibromomethane	trans-1,3-Dichloropropylene	1,2,3-Trichlorobenzene
Chloroethane	Ethylbenzene	1,2,4-Trimethylbenzene
2-Chloroethyl vinyl ether	Hexachlorobutadiene	1,3,5-Trimethylbenzene
Chloroform	Hexachloroethane	Vinyl acetate
Chloromethane	2-Hexanone	Vinyl chloride
2-Chlorotoluene	Isopropylbenzene	m&p-Xylene
4-Chlorotoluene	p-Isopropyltoluene	o-Xylene
1,2-Dibromo-3-chloropropane (DBCP)	Methyl tert-butyl ether (MTBE)	Xylenes, total

Total Petroleum Hydrocarbons

Total Petroleum Hydrocarbons (TPH) in Soil #1

CRM	PT	Q	QR
Cat. #570	Cat. #632		Cat. #572QR

One screw-top bottle with 50 g of soil to be analyzed for TPH. Use with EPA IR or Gravimetric Methods 8440, 9071B.

Non-polar extractable material (TPH) (Gravimetric)	300–3000 mg/kg
Non-polar extractable material (TPH) (IR)	300–3000 mg/kg

Total Petroleum Hydrocarbons (TPH) in Soil #2

CRM	PT	Q	QR
Cat. #571	Cat. #632		Cat. #572QR

One screw-top bottle with 50 g of soil to be analyzed for TPH in the presence of interfering fatty acids. Use with EPA IR or Gravimetric Methods 8440, 9071B.

Non-polar extractable material (TPH) (Gravimetric)	300–3000 mg/kg
Non-polar extractable material (TPH) (IR)	300–3000 mg/kg

TCLP

TCLP Volatiles

CRM	PT	–	QR
Cat. #730	–		Cat. #730QR

One 2 mL flame-sealed ampule containing a subset of the analytes listed below, each at a concentration of 0.05–2.0 mg/L.

Benzene	Chloroform	Tetrachloroethylene
2-Butanone (MEK)	1,4-Dichlorobenzene	Trichloroethylene
Carbon tetrachloride	1,2-Dichloroethane	Vinyl chloride
Chlorobenzene	1,1-Dichloroethylene	

TCLP Semivolatiles

CRM	PT	–	QR
Cat. #737	–		Cat. #737QR

One 2 mL flame-sealed ampule containing a subset of the analytes listed below, each at a concentration of 0.1–2.0 mg/L after dilution. All unspiked analytes are certified at <0.5 mg/L.

1,4-Dichlorobenzene	Hexachloroethane	Pentachlorophenol
2,4-Dinitrotoluene	2-Methylphenol	Pyridine
Hexachlorobenzene	3 & 4-Methylphenol	2,4,5-Trichlorophenol
Hexachlorobutadiene	Nitrobenzene	2,4,6-Trichlorophenol

TCLP Organochlorine Pesticides

CRM	PT	–	QR
Cat. #732	–		Cat. #732QR

One 2 mL flame-sealed ampule containing a subset of the analytes listed below, each at a concentration of 0.01–0.2 mg/L after dilution. All unspiked analytes are certified at <0.1 mg/L.

Endrin	Heptachlor epoxide	Methoxychlor
Heptachlor	gamma-BHC (Lindane)	

Semivolatiles

Nitroaromatics & Nitramines in Soil

CRM	PT	Q	QR
Cat. #920	Cat. #871		Cat. #920QR

Two flame-sealed ampules each containing 30 g of soil are ready to analyze. Use for EPA Methods 8330, 8091, or other applicable methods. Includes a subset of the analytes listed below at 1500–15,000 µg/kg.

4-Amino-2,6-dinitrotoluene
2-Amino-4,6-dinitrotoluene
1,3-Dinitrobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
HMX
Nitrobenzene
2-Nitrotoluene
3-Nitrotoluene
4-Nitrotoluene
RDX
Tetryl
1,3,5-Trinitrobenzene
2,4,6-Trinitrotoluene

PFAS in Soil

CRM	PT	Q	QR
Cat. #603	Cat. #465		Cat. #603QR

One flame-sealed ampule containing 10 g of soil. The standard is certified for all analytes listed below. Each lot will be spiked with a minimum of 24 analytes. Design is suitable for methods analyzing these components with LC-MS/MS techniques.

Perfluorobutanoic acid, PFBA ..... 5–50 µg/kg
Perfluoropentanoic acid, PFPeA ..... 5–50 µg/kg
Perfluorohexanoic acid, PFHxA ..... 5–50 µg/kg
Perfluoroheptanoic acid, PFHpA ..... 5–50 µg/kg
Perfluorooctanoic acid, PFOA ..... 5–50 µg/kg
Perfluorononanoic acid, PFNA ..... 5–50 µg/kg
Perfluorodecanoic acid, PFDA ..... 5–50 µg/kg
Perfluoroundecanoic acid, PFUdA ..... 5–50 µg/kg
Perfluorododecanoic acid, PFDoA ..... 5–50 µg/kg
Perfluorotridecanoic acid, PFTrDA ..... 5–50 µg/kg
Perfluorotetradecanoic acid, PFTeDA ..... 5–50 µg/kg
Perfluorobutanesulfonic acid, PFBS ..... 5–50 µg/kg
Perfluoropentanesulfonic acid, PFPeS ..... 5–50 µg/kg
Perfluorohexanesulfonic acid, PFHxS ..... 5–50 µg/kg
Perfluoroheptanesulfonic acid, PFHpS ..... 5–50 µg/kg
Perfluorooctanesulfonic acid, PFOS ..... 5–50 µg/kg
Perfluorononanesulfonic acid, PFNS ..... 5–50 µg/kg
Perfluorodecanesulfonic acid, PFDS ..... 5–50 µg/kg
Perfluorododecanesulfonic acid, PFDoS ..... 5–50 µg/kg
4:2 fluorotelomersulfonic acid, 4:2 FTS ..... 5–50 µg/kg
6:2 fluorotelomersulfonic acid, 6:2 FTS ..... 5–50 µg/kg
8:2 fluorotelomersulfonic acid, 8:2 FTS ..... 5–50 µg/kg
Perfluorooctanesulfonamide, PFOSA ..... 5–50 µg/kg
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA ..... 5–50 µg/kg
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA ..... 5–50 µg/kg
N-ethyl perfluorooctanesulfonamide, NEtFOSA ..... 5–50 µg/kg
N-methyl perfluorooctanesulfonamide, NMeFOSA ..... 5–50 µg/kg
N-ethyl perfluorooctanesulfonamidoethanol, NEtFOSE ..... 5–50 µg/kg
N-methyl perfluorooctanesulfonamidoethanol, NMeFOSE ..... 5–50 µg/kg
3-Perfluoropropyl propanoic acid, 3:3 FTCA ..... 5–50 µg/kg
2H,2H,3H,3H-Perfluorooctanoic acid, 5:3 FTCA ..... 5–50 µg/kg
3-Perfluoroheptyl propanoic acid, 7:3 FTCA ..... 5–50 µg/kg
Hexafluoropropylene oxide dimer acid, HFPO-DA ..... 5–50 µg/kg
4,8-dioxa-3H-perfluorononanoic acid, ADONA ..... 5–50 µg/kg
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS ..... 5–50 µg/kg
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS ..... 5–50 µg/kg
Perfluoro-4-methoxybutanoic acid, PFMBA ..... 5–50 µg/kg
Perfluoro-3-methoxypropanoic acid, PFMPA ..... 5–50 µg/kg
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA ..... 5–50 µg/kg
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA ..... 5–50 µg/kg

Low-Level PAHs in Soil

CRM	PT	Q	QR
Cat. #722	Cat. #625		Cat. #722QR

Two flame-sealed ampules each containing 30 g are ready to analyze. Use for EPA HPLC Method 8310, 8270 SIM, or other applicable method. Includes a subset of the analytes listed below at 50–1000 µg/kg.

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(g,h,i)perylene
Benzo(a)pyrene
Chrysene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

Diesel Range Organics (DRO) in Soil

CRM	PT	Q	QR
Cat. #765	Cat. #631		Cat. #765QR

One flame-sealed ampule with 20 g of soil spiked with #2 Diesel Fuel in the range 300–3000 mg/kg. Use with modified EPA Method 8015, or other applicable GC/FID methods.

Diethylene glycol
Ethylene glycol
Propylene glycol
Tetraethylene glycol
Triethylene glycol

Glycols in Soil

CRM	PT	Q	QR
Cat. #928	Cat. #463		Cat. #928QR

Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA Methods 8015B, 8430, 1671, or other applicable method. Includes all the analytes listed below at 75–200 mg/kg.

Semivolatiles (continued)

Base/Neutrals & Acids in Soil

CRM	PT	Q	QR
Cat. #727	Cat. #467		Cat. #727QR

Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA Method 8270, or other applicable method. Includes a subset of the analytes listed below at 500–15,000 ug/kg.

Acenaphthene
Acenaphthylene
Acetophenone
2-Amino-1-methylbenzene (o-Toluidine)
Aniline
Anthracene
Atrazine
Benzaldehyde
Benzidine
Benzoic acid
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(g,h,i)perylene
Benzo(a)pyrene
Benzyl alcohol
Biphenyl
4-Bromophenyl phenyl ether
Butyl benzyl phthalate
Caprolactam
Carbazole
4-Chloroaniline
bis(2-Chloroethyl)ether
bis(2-Chloroethoxy) methane
4-Chloro-3-methylphenol
1-Chloronaphthalene
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
Dibenz(a,h)anthracene
Dibenzofuran
Di-n-butyl phthalate
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Diethyl phthalate
2,4-Dimethylphenol
Dimethyl phthalate
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
bis(2-Ethylhexyl)phthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-cd)pyrene
Isophorone
2-Methyl-4,6-dinitrophenol
2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
Naphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitroso-di-n-propylamine
2,2'-Oxybis(1-Chloropropane)
Pentachlorobenzene
Pentachlorophenol
Phenanthrene
Phenol
Pyrene
Pyridine
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

Herbicides

Chlorinated Acid Herbicides in Soil

CRM	PT	Q	QR
Cat. #723	Cat. #626		Cat. #723QR

Two flame-sealed ampules, each containing 30 g of soil are ready-to-use. Use with EPA Method 8151, or other applicable methods. Includes a subset of the analytes listed below at 100–1000 µg/kg (MCPA & MCPP 1000–10,000 µg/kg).

Acifluorfen
Bentazon
Chloramben
2,4-D
2,4-DB
Dacthal diacid (DCPA)
Dalapon
Dicamba
3,5-Dichlorobenzoic acid
Dichlorprop
Dinoseb
MCPA
MCPP
4-Nitrophenol
Pentachlorophenol
Picloram
2,4,5-T
2,4,5-TP (Silvex)

This standard is not compliant with the NELAC concentration for 4-Nitrophenol. If a NELAC compliant sample is required for this analyte, use Base/Neutrals and Acids in Soil.

PCBs

PCBs in Oil

CRM	PT	Q	QR
Cat. #563	Cat. #817		Cat. #563QR

One 10 mL flame-sealed ampule is ready to analyze. Contains a different Aroclor, randomly selected from the list below at 10–50 mg/kg.

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

PCBs in Oil Standards

PCBs in oil standards are sold individually in ready-to-use flame-sealed ampules with 5 g of oil. Use with EPA Methods 8082, EPA-600/4-81-045, Sept. 1982, or other applicable methods. LOW LEVEL standards contain an aroclor in the range 10–50 ppm. HIGH LEVEL standards contain an aroclor in the range 51–500 ppm.

CRM Cat. #	Concentration	Aroclor	Range
820	Low	1242	10–50 ppm
821	High	1242	51–500 ppm
826	Low	1248	10–50 ppm
827	High	1248	51–500 ppm
822	Low	1254	10–50 ppm
823	High	1254	51–500 ppm
824	Low	1260	10–50 ppm
825	High	1260	51–500 ppm

NEW!

PCB Congeners in Soil

CRM	PT	Q	QR
Cat. #5988	Cat. #2994		Cat. #5988QR

One flame-sealed ampule containing 10 g of soil. The standard is certified for 18 analytes spiked at 2–20 µg/kg. The sample is designed for GC/MS methods for analyzing soil, specifically EPA Method 1668 and EPA Method 1628.

2,4,4'-Trichlorobiphenyl (28)
2,2',5,5'-Tetrachlorobiphenyl (52)
3,3',4,4'-Tetrachlorobiphenyl (101)
3,4,4',5-Tetrachlorobiphenyl (81)
2,2',4,5,5'-Pentachlorobiphenyl (77)
2,3,3',4,4'-Pentachlorobiphenyl (123)
2,3,4,4',5-Pentachlorobiphenyl (118)
2,3',4,4',5-Pentachlorobiphenyl (114)
2,3',4,4',5'-Pentachlorobiphenyl (153)
3,3',4,4',5-Pentachlorobiphenyl (105)
2,2',3,4,4',5'-Hexachlorobiphenyl (138)
2,2',4,4',5,5'-Hexachlorobiphenyl (126)
2,3,3',4,4',5-Hexachlorobiphenyl (167)
2,3,3',4,4',5'-Hexachlorobiphenyl (156)
2,3',4,4',5,5'-Hexachlorobiphenyl (157)
3,3',4,4',5,5'-Hexachlorobiphenyl (180)
2,2',3,4,4',5,5'-Heptachlorobiphenyl (169)
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)

Learn more about Soil products

PCBs (continued)

PCBs in Soil

CRM	PT	Q	QR
Cat. #726	Cat. #624		Cat. #726QR

One screw-top bottle containing 50 grams of standard is ready to analyze. Use with EPA Method 8082, or other applicable methods. Each standard includes a different aroclor randomly selected from the list below at 1–50 mg/kg.

Aroclor 1016	Aroclor 1242	Aroclor 1254
Aroclor 1221	Aroclor 1248	Aroclor 1260
Aroclor 1232		

PCBs in Soil Standards

PCBs in soil standards are sold individually in screw-top bottles containing 50 g of soil. Use with EPA Methods 8082, 4020, or other applicable methods. LOW LEVEL standards contain an aroclor in the range 0.5–50 ppm. HIGH LEVEL standards contain an aroclor in the range 51–500 ppm.

CRM Cat. #	Concentration	Aroclor	Range
490	Low	1242	0.5–50 ppm
491	High	1242	51–500 ppm
496	Low	1248	0.5–50 ppm
497	High	1248	51–500 ppm
492	Low	1254	0.5–50 ppm
493	High	1254	51–500 ppm
494	Low	1260	0.5–50 ppm
495	High	1260	51–500 ppm

Pesticides

Organochlorine Pesticides in Soil

CRM	PT	Q	QR
Cat. #728	Cat. #468		Cat. #728QR

Two flame-sealed ampules each containing 30 g of soil are ready-to-use. Use with EPA Method 8081, or other applicable methods. Includes a subset of the analytes listed below at 50–500 µg/kg.

Aldrin	4,4′-DDD	Endrin
alpha-BHC	4,4′-DDE	Endrin aldehyde
beta-BHC	4,4′-DDT	Endrin ketone
delta-BHC	Dieldrin	Heptachlor
gamma-BHC (Lindane)	Endosulfan I	Heptachlor epoxide
alpha-Chlordane	Endosulfan II	Methoxychlor
trans-Chlordane	Endosulfan sulfate	

Chlordane in Soil

CRM	PT	Q	QR
Cat. #725	Cat. #628		Cat. #725QR

One screw-top bottle containing 50 g of soil is ready to analyze. Use with EPA Method 8081, or other applicable methods. The standard contains technical chlordane at 100–1000 µg/kg.

Toxaphene in Soil

CRM	PT	Q	QR
Cat. #724	Cat. #627		Cat. #724QR

One screw-top bottle containing 50 g of soil is ready to analyze. Use with EPA Method 8081, or other applicable methods. The standard contains toxaphene at 200–2000 µg/kg.

Carbamate Pesticides in Soil

CRM	PT	B	QR
Cat. #926	Cat. #879		Cat. #926QR

Two flame-sealed ampules, each containing 30 g of soil are ready to analyze. Use with EPA Methods 8318, 8321, or other applicable methods. Each standard contains a subset of the analytes listed below at 250–2500 µg/kg.

Aldicarb	Dioxacarb	Oxamyl
Aldicarb sulfone	Diuron	Promecarb
Aldicarb sulfoxide	3-Hydroxycarbofuran	Propham
Carbaryl	Methiocarb	Propoxur
Carbofuran	Methomyl	

Organophosphorus Pesticides (OPP) in Soil

CRM	PT	Q	QR
Cat. #925	Cat. #878		Cat. #925QR

Two flame-sealed ampules, each containing 30 g of soil are ready to analyze. Use with EPA Method 8141, or other applicable methods. Each standard contains a subset of the analytes listed below at 100–1000 µg/kg.

Azinphos-methyl (Guthion)	Dichlorvos (DDVP)	Phorate
Chlorpyrifos	Disulfoton	Ronnel
Demeton	Ethyl parathion (Parathion)	Stirophos (Tetrachlorovinphos)
Demeton O & S	Malathion	Terbufos
Diazinon	Methyl parathion	

Blank Soil

Metals & Cyanide Blank Sand

CRM	PT	–	QR
Cat. #058	–		–

One 40 g sand sample in a screw-cap bottle. The concentrations of all EPA/NELAC including the priority pollutant metal and cyanide analytes are below the CLP Required Detection Limits (CRDLs) except iron, which is <250 mg/kg.

Metals & Cyanide Blank Soil

CRM	PT	–	QR
Cat. #057	–		–

One 40 g soil sample in a screw-cap bottle. The concentrations of all of the following analytes are below the CLP CRDL's: antimony, arsenic, beryllium, cadmium, cobalt, mercury, nickel, selenium, silver, sodium, thallium, and cyanide. The concentrations of the following analytes are below 10x the CLP CRDL's: barium, chromium, copper, lead, magnesium, potassium, and vanadium. The concentrations of manganese and zinc are <750 mg/kg. The concentration range for aluminum, calcium, and iron is 3000–25,000 mg/kg.

PFAS Secondary Source Standard

Standard is suitable for various applications, including Internal Calibration Verification (ICV), Laboratory Control Sample (LCS), Matrix Spike (MS), and Limit of Quantitation (LOQ) studies.

NEW!

Wastewater/Solids

CRM
Cat. #PFAS10001

One 2 mL flame-sealed ampule with 1.5 mL of PFAS standard containing 44 analytes at 25–625 ng/mL. The standard is suitable for matrices to include, but not limited to, wastewater and solids and compatible with methods EPA 1633 and 1633A, EPA 8327, ASTM D8421-21, ASTM D7979, and other comparable methods.

Perfluorobutanoic acid, PFBA	100 ng/mL
Perfluoropentanoic acid, PFPeA	50 ng/mL
Perfluorohexanoic acid, PFHxA	25 ng/mL
Perfluoroheptanoic acid, PFHpA	25 ng/mL
Perfluorooctanoic acid, PFOA	25 ng/mL
Perfluorononanoic acid, PFNA	25 ng/mL
Perfluorodecanoic acid, PFDA	25 ng/mL
Perfluoroundecanoic acid, PFUdA	25 ng/mL
Perfluorododecanoic acid, PFDoA	25 ng/mL
Perfluorotridecanoic acid, PFTrDA	25 ng/mL
Perfluorotetradecanoic acid, PFTeDA	25 ng/mL
Perfluorobutanesulfonic acid, PFBS	25 ng/mL
Perfluoropentanesulfonic acid, PFPeS	25 ng/mL
Perfluorohexanesulfonic acid, PFHxS	25 ng/mL
Perfluoroheptanesulfonic acid, PFHpS	25 ng/mL
Perfluorooctanesulfonic acid, PFOS	25 ng/mL
Perfluorononanesulfonic acid, PFNS	25 ng/mL
Perfluorodecanesulfonic acid, PFDS	25 ng/mL
Perfluorododecanesulfonic acid, PFDoS	25 ng/mL
4:2 fluorotelomersulfonic acid, 4:2FTS	100 ng/mL
6:2 fluorotelomersulfonic acid, 6:2FTS	100 ng/mL
8:2 fluorotelomersulfonic acid, 8:2FTS	100 ng/mL
Perfluorooctanesulfonamide, PFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA	25 ng/mL
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA	25 ng/mL
N-ethyl perfluorooctanesulfonamide, NEtFOSA	25 ng/mL
N-methyl perfluorooctanesulfonamide, NMeFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoethanol, NEtFOSE	250 ng/mL
N-methyl perfluorooctanesulfonamidoethanol, NMeFOSE	250 ng/mL
3-Perfluoropropyl propanoic acid, 3:3FTCA	125 ng/mL
2H,2H,3H,3H-Perfluorooctanoic acid, 5:3FTCA	625 ng/mL
3-Perfluoroheptyl propanoic acid, 7:3FTCA	625 ng/mL
Hexafluoropropylene oxide dimer acid, HFPO-DA	100 ng/mL
4,8-dioxa-3H-perfluorononanoic acid, ADONA	100 ng/mL
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS	100 ng/mL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS	100 ng/mL
Perfluoro-4-methoxybutanoic acid, PFMBA	50 ng/mL
Perfluoro-3-methoxypropanoic acid, PFMPA	50 ng/mL
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA	50 ng/mL
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA	50 ng/mL
Pentafluoropropanoic acid, PFPrA	100 ng/mL
2H-perfluoro-2-octenoic acid, FHUEA	100 ng/mL
2H-perfluoro-2-decenoic acid, FOUEA	100 ng/mL
Bis(trifluoromethane)sulfonamide	100 ng/mL

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Underground Storage Tank

Our Underground Storage Tank (UST) products in water and soil matrices are purposefully designed to meet accreditation requirements for Petroleum Hydrocarbons analysis in various jurisdictions.

UST in Water PT Scheme Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	**WP 372**	Jan 20	Mar 6
Q	**WP 375**	Apr 20	Jun 4
Q	**WP 378**	Jul 20	Sep 3
Q	**WP 381**	Oct 16	Nov 30

2027 Schedule

	Scheme #	Opens	Closes
Q	**WP 384**	Jan 19	Mar 5
Q	**WP 387**	Apr 19	Jun 3
Q	**WP 390**	Jul 19	Sep 2
Q	**WP 393**	Oct 15	Nov 29

Soil (including UST in Soil) PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	**SOIL 133**	Jan 26	Mar 12
Q	**SOIL 134**	Apr 27	Jun 11
Q	**SOIL 135**	Jul 27	Sep 10
Q	**SOIL 136**	Oct 23	Dec 7

2027 Schedule

	Scheme #	Opens	Closes
Q	**SOIL 137**	Jan 25	Mar 11
Q	**SOIL 138**	Apr 26	Jun 10
Q	**SOIL 139**	Jul 26	Sep 9
Q	**SOIL 140**	Oct 22	Dec 6

Schedule subject to change – see Waters ERA's website at eraqc.com

For the latest products and information, please visit us online at eraqc.com

Contents

CRM Certified Reference Material
PT Proficiency Testing
QR QuiK Response
RM Reference Material

All Waters ERA UST PTs open quarterly (Q) or biannually (B), unless otherwise noted. Quarterly months are January, April, July, and October. Biannual months are January and July.

B Waters ERA NJ EPH in Soil PT opens in April and October.

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at eraqc.com/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

UST in Soil

BTEX & MTBE in Soil

CRM	PT	Q	QR
Cat. #761	Cat. #633		Cat. #761QR

One 2 mL flame-sealed ampule requires spiking onto the ten grams of provided certified clean soil. Includes all the BTEX compounds and MTBE at 20–200 µg/kg (40–400 µg/kg for total xylenes). Use with EPA Method 8021, or other applicable methods.

Gasoline Range Organics (GRO) in Soil

CRM	PT	Q	QR
Cat. #763	Cat. #630		Cat. #763QR

One flame-sealed ampule with 20 g of soil spiked with unleaded regular gasoline in the range 100–2000 mg/kg. Use with purge and trap and modified EPA Method 8015, or other applicable GC/FID methods. Also use to test for BTEX in gasoline.

Note: This standard is not compliant with the NELAC concentration ranges for the BTEX analytes. If a NELAC-compliant sample for these analytes is required, use Volatiles in Soil, Cat. #623 or BTEX & MTBE Soil, Cat. #633.

Diesel Range Organics (DRO) in Soil

CRM	PT	Q	QR
Cat. #765	Cat. #631		Cat. #765QR

One flame-sealed ampule with 20 g of soil spiked with #2 Diesel Fuel in the range 300–3000 mg/kg. Use with modified EPA Method 8015, or other applicable GC/FID methods.

Total Petroleum Hydrocarbons (TPH) in Soil #1

CRM	PT	Q	QR
Cat. #570	Cat. #632		Cat. #572QR

One screw-top bottle with 50 g of soil to be analyzed for total petroleum hydrocarbons (TPH). Use with EPA IR, Gravimetric Methods 8440 and 9071B.

Non-polar extractable material (TPH) (Gravimetric).....300–3000 mg/kg
Non-polar extractable material (TPH) (IR).....300–3000 mg/kg

Total Petroleum Hydrocarbons (TPH) in Soil #2

CRM	PT	Q	QR
Cat. #571	Cat. #632		Cat. #572QR

One screw-top bottle contains 50 g of soil with TPH in the presence of interfering fatty acids. Use with EPA Methods 8440, 9071B.

Non-polar extractable material (TPH) (Gravimetric).....300–3000 mg/kg
Non-polar extractable material (TPH) (IR).....300–3000 mg/kg

UST in Water

BTEX & MTBE in Water

CRM	PT	Q	QR
Cat. #760	Cat. #643		Cat. #760QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Use with EPA Methods 602, 8021, or other applicable methods. Includes all BTEX compounds and MTBE at 5–300 µg/L after dilution.

Gasoline Range Organics (GRO) in Water

CRM	PT	Q	QR
Cat. #762	Cat. #640		Cat. #762QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with both purge and trap, and modified EPA Method 8015, or other applicable GC/FID methods to test for GRO at 400–4000 µg/L. Also use to test for BTEX in gasoline.

Diesel Range Organics (DRO) in Water

CRM	PT	Q	QR
Cat. #764	Cat. #641		Cat. #764QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Use with modified EPA Method 8015, or other applicable GC/FID methods. Includes #2 Diesel Fuel at 800–6000 µg/L.

Total Petroleum Hydrocarbons (TPH) in Water #1

CRM	PT	Q	QR
Cat. #600	Cat. #642		Cat. #602QR

One liter whole-volume bottle is ready to analyze for total petroleum hydrocarbons (TPH) without interferring fatty acids. Use with EPA Methods 418.1, 1664, 5520.

Total petroleum hydrocarbons.....20–200 mg/L

Total Petroleum Hydrocarbons (TPH) in Water #2

CRM	PT	Q	QR
Cat. #601	Cat. #642		Cat. #602QR

One liter whole-volume bottle is ready to analyze for TPH in water in the presence of interfering fatty acids. Use with EPA Methods 418.1, 1664, 5520, 8440.

Total petroleum hydrocarbons.....20–200 mg/L

Learn more about Underground Storage products

Alaska UST in Water

Alaska GRO in Water

CRM	PT	–	QR
Cat. #645	–		Cat. #473QR

One 2 mL flame-sealed ampule. Use with method AK101 for unleaded regular gasoline at 100–500 µg/L after dilution.

Alaska DRO in Water

CRM	PT	–	QR
Cat. #647	–		Cat. #475QR

One 2 mL flame-sealed ampule. Use with method AK102 for #2 Diesel Fuel at 800–2300 µg/L after dilution.

Alaska BTEX in Water

CRM	PT	–	QR
Cat. #646	–		Cat. #474QR

One 2 mL flame-sealed ampule. Use with method AK101 for all BTEX analytes at 5–30 µg/L after dilution.

Alaska UST in Soil

Alaska GRO in Soil

CRM	PT	–	QR
Cat. #635	–		Cat. #469QR

One 20 mL flame-sealed ampule with 10 g of soil and 10 mL of methanol with unleaded regular gasoline at 30–1500 mg/kg. Use with method AK101.

Alaska DRO in Soil

CRM	PT	–	QR
Cat. #637	–		Cat. #471QR

One flame-sealed ampule with 20 g of soil spiked with #2 Diesel Fuel at 30–1500 mg/kg. Use with method AK102.

Alaska RRO in Soil

CRM	PT	–	QR
Cat. #638	–		Cat. #472QR

One flame-sealed ampule with 20 g of soil with Residual Range Organic fuels at 150–2000 mg/kg. Use with method AK103.

Alaska BTEX in Soil

CRM	PT	–	QR
Cat. #636	–		Cat. #470QR

One 2 mL flame-sealed ampule along with clean soil matrix for spiking. Use with method AK101 for all BTEX analytes at 5–100 mg/kg after spiking.

Arizona UST in Soil

Arizona TPH in Soil

CRM	PT	Q	QR
Cat. #798	Cat. #488		Cat. #798QR

One ready-to-use flame-sealed ampule with 30 g of soil with Oil Range Organics and #2 Diesel Fuel. Use with method 8015AZ for TPH in the range 300–400 mg/kg. Also includes two carbon ranges.

Texas TPH in Water

All Texas TPH PT standards are designed for use with TNRCC 1005 method. The standards meet the requirements of all states that accredit for these methods including Texas, Louisiana, and Oklahoma.

Texas Low-Level Fuels (TPH) in Water

CRM	PT	B	QR
Cat. #794	Cat. #476		Cat. #794QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains unleaded regular gasoline and #2 Diesel Fuel resulting in TPH in the range 5–10 mg/L.

Texas High-Level Fuels (TPH) in Water

CRM	PT	B	QR
Cat. #795	Cat. #477		Cat. #795QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains unleaded regular gasoline and #2 Diesel Fuel resulting in TPH in the range 20–100 mg/L.

Texas TPH in Soil

Texas Low-Level Fuels (TPH) in Soil

CRM	PT	Q	QR
Cat. #796	Cat. #478		Cat. #796QR

One ready-to-use flame-sealed ampule with 20 g of soil with unleaded gasoline and #2 Diesel Fuel for TPH in the range 50–100 mg/kg.

Texas High-Level Fuels (TPH) in Soil

CRM	PT	Q	QR
Cat. #797	Cat. #479		Cat. #797QR

One ready-to-use flame-sealed ampule with 20 g of soil with unleaded gasoline and #2 Diesel Fuel for TPH in the range 1000–20,000 mg/kg.

Wisconsin GRO/PVOC/DRO Method UST

All Wisconsin UST PT standards are designed for use with Wisconsin GRO/PVOC or DRO Methods. The standards meet the requirements of all states that accredit for these methods including Wisconsin and Minnesota.

Wisconsin Gasoline Range Organics (GRO/PVOC) in Water			
CRM	PT		QR
Cat. #773	Cat. #649	B	Cat. #773QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Includes ten gasoline range synthetic organic compounds as defined by Wisconsin. Use with Wisconsin GRO/PVOC Method.

Wisconsin Diesel Range Organics (DRO) in Water			
CRM	PT		QR
Cat. #772	Cat. #648	B	Cat. #772QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Includes ten diesel range synthetic organic compounds in the range 200–600 µg/L. Use with the Wisconsin DRO Method.

Washington HEM/SGT-HEM Method UST

The Washington UST PT standard is designed for use with EPA Method 1664 for HEM/SGT-HEM.

Washington HEM/SGT-HEM			
CRM	PT		QR
Cat. #519	Cat. #489	Q	Cat. #519QR

One 5 mL flame-sealed ampule yields up to 2 liters after dilution. Use with EPA Method 1664 to measure HEM/SGT-HEM at 5–100 mg/L.

New Jersey EPH

The New Jersey EPH in Soil standard is designed for use with the NJ Extractable Petroleum Hydrocarbons Method.

New Jersey EPH in Soil			
CRM	PT		QR
Cat. #564	Cat. #464	B	Cat. #564QR

One flame-sealed ampule with 20 g soil containing EPH in the range of 300–3000 mg/kg.

B The NJ EPH in Soil PT studies open in April and October.

Massachusetts Hydrocarbons in Water

All Massachusetts UST PT standards are designed for use with Massachusetts Volatile Petroleum Hydrocarbon or Extractable Petroleum Hydrocarbon Methods. The standards meet the requirements of all states that accredit for these methods including Massachusetts, North Carolina, and Washington when reporting the Massachusetts carbon ranges.

Massachusetts VPH in Water			
CRM	PT		QR
Cat. #566	Cat. #481	B	Cat. #566QR

One 2 mL flame-sealed ampule yields in excess of 200 mL after dilution. Contains volatile petroleum hydrocarbon fuels (VPH) in the range 400–4000 µg/L. Use with the Massachusetts Volatile Petroleum Hydrocarbon Method for multiple carbon ranges, BTEX compounds and MTBE.

Massachusetts EPH in Water			
CRM	PT		QR
Cat. #567	Cat. #482	Q	Cat. #567QR

One 2 mL flame-sealed ampule yields up to 2 liters after dilution. Contains extractable petroleum hydrocarbon fuels (EPH) in the range 800–6000 µg/L. Use with the Massachusetts Extractable Petroleum Hydrocarbon Method for multiple carbon ranges and PAH compounds.

Massachusetts Hydrocarbons in Soil

Massachusetts VPH in Soil			
CRM	PT		QR
Cat. #568	Cat. #483	Q	Cat. #568QR

One flame-sealed ampule with 20 g soil with VPH fuels. Contains volatile petroleum hydrocarbon fuels (VPH) in the range 100–2000 mg/kg. Use with the Massachusetts Volatile Petroleum Hydrocarbon Method for multiple carbon ranges, BTEX compounds and MTBE.

Massachusetts EPH in Soil			
CRM	PT		QR
Cat. #569	Cat. #484	Q	Cat. #569QR

One flame-sealed ampule with 20 g soil with EPH fuels. Contains extractable petroleum hydrocarbon fuels (EPH) in the range 300–3000 mg/kg. Use with the Massachusetts Extractable Petroleum Hydrocarbon Method for multiple carbon ranges and PAH compounds.

We focus on quality and service, so you can focus on your business.

Unmatched Technical Expertise

As your Partner in Quality, our goal is to help you maintain successful PT performance, solve routine analysis challenges, and improve corrective actions. Whether it's organic and/or inorganic chemistry, microbiology, analytical instrumentation or methods, our experts are ready to help you with:

- Method interpretations
- Prep and analytical questions
- Instrumentation troubleshooting
- Quality control issues
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Air and Emissions

Matrices consisting of organic, inorganic, and particulate matter for testing emissions and ambient air. Standards are designed to meet regulations of the United States Environmental Protection Clean Air Act and may be used to satisfy PT requirements worldwide.

Air & Emissions PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	**AE 75**	Jan 30	Mar 16
Q	**AE 76**	May 1	Jun 15
Q	**AE 77**	Jul 31	Sep 14
Q	**AE 78**	Oct 30	Dec 14

2027 Schedule

	Scheme #	Opens	Closes
Q	**AE 79**	Jan 29	Mar 15
Q	**AE 80**	Apr 30	Jun 14
Q	**AE 81**	Jul 30	Sep 13
Q	**AE 82**	Oct 29	Dec 13

Schedule subject to change – see Waters ERA's website at eraqc.com

Contents

CRM Certified Reference Material
PT Proficiency Testing
QR QuiK Response
RM Reference Material

All Waters ERA Air & Emissions PTs open quarterly (Q) or biannually (B), unless otherwise noted.

Quarterly months are January, April, July, and October. Biannual months are January and July.

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at eraqc.com/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

Volatiles

Volatiles in Gas Cylinder*

RM**	PT	Q	QR
Cat. #1100	Cat. #1000		Cat. #1100QR

One pressurized gas cylinder containing 87 L of gas at 1500 psig (103 bar) for use with EPA methods TO-14, TO-15, or other applicable methods. Contains at least 10 analytes, randomly selected from the list below, at 2–50 ppbv (4–100 ppbv) for Total Xylenes.

- Acetone
- Benzene
- Benzy chloride
- Bromodichloromethane
- Bromoform
- Bromomethane
- 1,3-Butadiene
- 2-Butanone (MEK)
- Methyl tert-butyl ether (MTBE)
- Carbon disulfide
- Carbon tetrachloride
- Chlorobenzene
- Chlorodibromomethane
- Chloroethane
- Chloroform
- Chloromethane
- Cyclohexane
- 1,2-Dibromoethane (EDB)
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Dichlorodifluoromethane (Freon 12)
- 1,1-Dichloropropene
- 1,2-Dibromo-3-chloropropane (DBCP)
- 1,2-Dibromoethane (EDB)
- Dibromomethane
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- Dichlorodifluoromethane (Freon 12)
- 1,1-Dichloroethane
- 1,2-Dichloroethane
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- trans-1,2-Dichloroethene
- 1,2-Dichloropropane
- cis-1,3-Dichloropropene
- trans-1,3-Dichloropropene
- Ethylbenzene
- Hexachlorobutadiene
- Hexachloroethane
- 2-Hexanone
- Isopropylbenzene
- 4-Isopropyltoluene
- Methyl tert-butyl ether (MTBE)
- Methylene chloride
- 4-Methyl-2-pentanone (MIBK)
- Naphthalene
- Nitrobenzene
- n-Propylbenzene
- Styrene
- 1,1,1,2-Tetrachloroethane
- 1,1,2,2-Tetrachloroethane
- Tetrachloroethene
- Toluene
- 1,2,3-Trichlorobenzene
- 1,2,4-Trichlorobenzene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethlyene
- Trichlorofluoromethane
- 1,2,3-Trichloropropane
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- Vinyl acetate
- Vinyl chloride
- Xylenes, total
- m&p-Xylene
- o-Xylene

*Volatiles in Gas Cylinder ships as dangerous goods.

** Reference Material (RM)

Volatiles on Sorbent

CRM	PT	Q	QR
Cat. #1101	Cat. #1001		Cat. #1101QR

One 2 mL flame-sealed ampule for spiking client-specific sorbent. Use with EPA Methods TO-17, 0030, 0031, or other applicable methods. Contains at least 24 analytes, randomly selected from the list below, at 50–2000 ng/sample (200–3000 ng/sample for Total Xylenes) after preparation.

- Acetone
- Acetonitrile
- Acrolein
- Acrylonitrile
- Benzene
- Bromobenzene
- Bromochloromethane
- Bromodichloromethane
- Bromoform
- Bromomethane
- 2-Butanone (MEK)
- n-Butylbenzene
- sec-Butylbenzene
- tert-Butylbenzene
- Carbon disulfide
- Carbon tetrachloride
- Chlorobenzene
- Chlorodibromomethane
- Chloroethane
- 2-Chloroethyl vinyl ether
- Chloroform
- Chloromethane
- 2-Chlorotoluene
- 4-Chlorotoluene
- 1,3-Dichloropropane
- 2,2-Dichloropropane
- 1,1-Dichloroethane
- 1,2-Dichloroethane
- 1,1-Dichloroethylene
- cis-1,2-Dichloroethylene
- trans-1,2-Dichloroethylene
- 1,2-Dichloropropane
- cis-1,3-Dichloropropylene
- trans-1,3-Dichloropropylene
- 1,2-Dichlorotetrafluoroethane (Freon 114)
- Ethyl acetate
- Ethylbenzene
- p-Ethyltoluene
- n-Heptane
- Hexachlorobutadiene
- n-Hexane
- 2-Hexanone
- Isopropyl alcohol
- Methylene chloride
- Methyl methacrylate
- 4-Methyl-2-pentanone (MIBK)
- Methyl tert-butyl ether (MTBE)
- Propylene
- Styrene
- 1,1,2,2-Tetrachloroethane
- Tetrachloroethylene
- Toluene
- Trichloroethene
- 1,2,4-Trichlorobenzene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichlorofluoromethane (Freon 11)
- Trichlorotrifluoromethane (Freon 113)
- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene
- Vinyl bromide
- Vinyl chloride
- Xylenes, total
- m&p-Xylene
- o-Xylene

Semivolatiles

Semivolatiles on Polyurethane Foam

CRM	PT		QR
Cat. #1110	Cat. #1010	B	Cat. #1110QR

Two 2 mL flame-sealed ampules plus one polyurethane foam. Use with EPA Method 0010, or other applicable methods. Contains at least 42 analytes, randomly selected from the list below, at 10–225 µg/sample (200–1000 µg/sample for Benzidine) after preparation.

- Acenaphthene
- Acenaphthylene
- Aniline
- Anthracene
- Benzidine
- Benzo(a)anthracene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(a)pyrene
- Benzyl alcohol
- 4-Bromophenyl phenyl ether
- Butyl benzyl phthalate
- Carbazole
- 4-Chloroaniline
- Bis(2-chloroethoxy) methane
- Bis(2-chloroethyl)ether
- Bis(2-ethylhexyl)phthalate
- 1-Chloronaphthalene
- 2-Chloronaphthalene
- 4-Chlorophenyl phenyl ether
- Chrysene
- Dibenz(a,h)anthracene
- Dibenzofuran
- Di-n-butyl phthalate
- 1,2-Dichlorobenzene
- 1,3-Dichlorobenzene
- 1,4-Dichlorobenzene
- 3,3′-Dichlorobenzidine
- Diethyl phthalate
- Dimethyl phthalate
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene
- Di-n-octyl phthalate
- Fluoranthene
- Fluorene
- Hexachlorobenzene
- Hexachlorobutadiene
- Hexachlorocyclopentadiene
- Hexachloroethane
- Indeno(1,2,3-cd)pyrene
- Isophorone
- 2-Methylnaphthalene
- Naphthalene
- 2-Nitroaniline
- 3-Nitroaniline
- 4-Nitroaniline
- Nitrobenzene
- N-Nitrosodiethylamine
- N-Nitrosodimethylamine (NDMA)
- N-Nitrosodiphenylamine
- N-Nitroso-di-n-propylamine
- 2,2′-Oxybis(1-chloropropane)
- Pentachlorobenzene
- Phenanthrene
- Pyrene
- Pyridine
- o-Toluidine
- 1,2,4,5-Tetrachlorobenzene
- 1,2,4-Trichlorobenzene
- Benzoic Acid
- 4-Chloro-3-methylphenol
- 2-Chlorophenol
- 2,4-Dichlorophenol
- 2,6-Dichlorophenol
- 2,4-Dimethylphenol
- 2,4-Dinitrophenol
- 2-Methyl-4,6-dinitrophenol
- 2-Methylphenol (o-Cresol)
- 4-Methylphenol (p-Cresol)
- 2-Nitrophenol
- 4-Nitrophenol
- Pentachlorophenol
- Phenol
- 2,3,4,6-Tetrachlorophenol
- 2,4,5-Trichlorophenol
- 2,4,6-Trichlorophenol

Organochlorine Pesticides on Polyurethane Foam

CRM	PT		QR
Cat. #1111	Cat. #1011	B	Cat. #1111QR

One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA Methods TO-04A, TO-10A, or other applicable methods. Contains at least 16 analytes, randomly selected from the list below, at 1–20 µg/sample after preparation.

- Aldrin
- alpha-BHC
- beta-BHC
- delta-BHC
- gamma-BHC (Lindane)
- alpha-Chlordane
- gamma-Chlordane
- 4,4′-DDD
- 4,4′-DDE
- 4,4′-DDT
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan sulfate
- Endrin
- Endrin aldehyde
- Endrin ketone
- Heptachlor
- Heptachlor epoxide (beta)
- Methoxychlor

PCBs on Polyurethane Foam

CRM	PT		QR
Cat. #1112	Cat. #1012	B	Cat. #1112QR

One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA Methods TO-04A, TO-10A, or other applicable methods. Contains one aroclor, randomly selected from the list below, at 2–10 µg/sample after preparation.

- Aroclor 1016
- Aroclor 1221
- Aroclor 1232
- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260

PAHs on Polyurethane Foam

CRM	PT		QR
Cat. #1113	Cat. #1013	Q	Cat. #1113QR

One 2 mL flame-sealed ampule plus one polyurethane foam. Use with EPA Method TO-13A, or other applicable methods. Contains at least 13 analytes, randomly selected from the list below, at 10–200 µg/sample after preparation.

- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(a)pyrene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Naphthalene
- Phenanthrene
- Pyrene

Aldehydes & Ketones on Sorbent

CRM	PT		QR
Cat. #1114	Cat. #1014	Q	Cat. #1114QR

One 2 mL flame-sealed ampule to be spiked onto sorbent. Use with EPA Method TO-11A, or other applicable methods. Contains at least four analytes, randomly selected from the list below, at 0.5–10 µg/sample after preparation.

- Acetaldehyde
- Acetone
- Benzaldehyde
- 2-Butanone (MEK)
- Butyraldehyde (Butanal)
- Crotonaldehyde
- 2,5-Dimethylbenzaldehyde
- Formaldehyde
- Hexaldehyde (Hexanal)
- Isovaleraldehyde
- Propionaldehyde (Propanal)
- o-Tolualdehyde
- m-Tolualdehyde
- p-Tolualdehyde
- Valeraldehyde (Pentanal)

Metals

Metals on Filter Paper

CRM	PT		QR
Cat. #1125	Cat. #1025	Q	Cat. #1125QR

One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter ready for use with EPA Method 29 or other applicable methods.

Antimony	25–250 µg/filter
Arsenic	20–250 µg/filter
Barium	20–250 µg/filter
Beryllium	10–250 µg/filter
Cadmium	10–250 µg/filter
Chromium	15–250 µg/filter
Cobalt	10–250 µg/filter
Copper	10–250 µg/filter
Lead	20–350 µg/filter
Manganese	10–250 µg/filter
Nickel	20–250 µg/filter
Phosphorus	10–250 µg/filter
Selenium	20–250 µg/filter
Silver	30–250 µg/filter
Thallium	30–250 µg/filter
Zinc	20–250 µg/filter

Metals in Impinger Solution

CRM	PT		QR
Cat. #1126	Cat. #1026	Q	Cat. #1126QR

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Method 29, or other applicable methods.

Antimony	0.25–20 µg/mL
Arsenic	0.2–20 µg/mL
Barium	0.15–25 µg/mL
Beryllium	0.05–20 µg/mL
Cadmium	0.1–20 µg/mL
Chromium	0.2–20 µg/mL
Cobalt	0.1–25 µg/mL
Copper	0.2–20 µg/mL
Lead	0.2–20 µg/mL
Manganese	0.1–20 µg/mL
Nickel	0.15–30 µg/mL
Phosphorus	0.15–25 µg/mL
Selenium	0.15–25 µg/mL
Silver	0.5–20 µg/mL
Thallium	0.15–25 µg/mL
Zinc	0.15–25 µg/mL

Mercury on Filter Paper

CRM	PT		QR
Cat. #1127	Cat. #1027	Q	Cat. #1127QR

One 2 mL flame-sealed ampule containing approximately 2 mL of standard concentrate and a 50 mm polystyrene petri dish containing a single 47 mm glass fiber filter. Sample is ready for use with EPA Method 29, or other applicable methods.

Mercury	1–75 µg/filter

Mercury in Impinger Solution

CRM	PT		QR
Cat. #1128	Cat. #1028	Q	Cat. #1128QR

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Methods 29, 101a, or other applicable methods.

Mercury	0.9–200 ng/mL

Lead on Filter Paper

CRM	PT		QR
Cat. #1129	Cat. #1029	Q	Cat. #1129QR

One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter spiked with lead ready-for-use with EPA Method 12 or other applicable methods.

Lead	20–350 µg/filter

Chromium on Filter Paper

CRM	PT		QR
Cat. #1131	Cat. #1031	Q	Cat. #1131QR

One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm fiber film filter for use with CARB Method 425, or other applicable methods.

Total chromium	1–20 µg/filter
Hexavalent chromium	1–20 µg/filter

Hexavalent Chromium in Impinger Solution

CRM	PT		QR
Cat. #1132	Cat. #1032	B	Cat. #1132QR

One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA Method 0061/7199, or other applicable methods.

Hexavalent chromium	45–880 µg/L

Inorganics

Hydrogen Halides & Halogens in Impinger Solution

CRM	PT	Q	QR
Cat. #1140	Cat. #1040		Cat. #1140QR

Two impinger solution samples packaged in 15 mL screw-top vials containing approximately 14 mL of standard concentrate for use with EPA Methods 26, 26a, or other applicable methods.

Total halides	10–1000 mg/L
Total halogens	10–200 mg/L
Hydrogen chloride	5–500 mg/L
Hydrogen fluoride	5–500 mg/L
Hydrogen bromide	5–100 mg/L
Bromine	5–100 mg/L
Chlorine	5–100 mg/L

Fluoride in Impinger Solution

CRM	PT	Q	QR
Cat. #1141	Cat. #1041		Cat. #1141QR

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Methods 13a, 13b, 14, or other applicable methods.

Fluoride	1–50 mg/dscm

Nitrogen Oxide in Impinger Solution

CRM	PT	Q	QR
Cat. #1142	Cat. #1042		Cat. #1142QR

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Method 7, or other applicable methods.

Oxides of nitrogen (NOx)	100–2000 mg/dscm

Sulfur Dioxide in Impinger Solution

CRM	PT	Q	QR
Cat. #1143	Cat. #1043		Cat. #1143QR

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA Method 6 and Method 8, or other applicable methods.

Sulfur dioxide	50–2000 mg/dscm

Sulfuric Acid & Sulfur Dioxide in Impinger Solution

CRM	PT	Q	QR
Cat. #1144	Cat. #1044		Cat. #1144QR

One impinger solution sample packaged in a 15 mL screw top vial containing approximately 14 mL of standard concentrate for use with EPA Method 8, or other applicable methods.

Sulfuric acid	5–150 mg/dscm

Ammonia in Impinger Solution

CRM	PT	Q	QR
Cat. #1145	Cat. #1045		Cat. #1145QR

One impinger solution sample packaged in a 15 mL screw-top vial containing approximately 14 mL of standard concentrate for use with EPA CTM 027, or other applicable methods.

Ammonium	0.1–10 mg/L

Particulate Matter on Filter Paper

CRM	PT	Q	QR
Cat. #1150	Cat. #1050		Cat. #1150QR

One filter paper sample packaged in a 50 mm polystyrene petri dish containing a single 47 mm tissue quartz filter ready for use with EPA Methods 5, 5A, 5B, 5D, 5F, or other applicable methods.

Particulate matter	50–600 mg/filter

Particulate Matter in Impinger Solution

CRM	PT	Q	QR
Cat. #1151	Cat. #1051		Cat. #1151QR

One impinger solution sample packaged in a 250 mL polyethylene bottle containing approximately 250 mL of standard ready for use with EPA Methods 5, 5A, 5B, 5D, 5F, or other applicable methods.

Particulate matter	140–675 mg/L

Learn more about
Air & Emissions products

Radiochemistry

Matrices in soil, vegetation, air filters, and water for monitoring of radiochemicals.

Radiochemistry PT Schedule

2026 Schedule

	Scheme #	Opens	Closes
Q	**RAD 144**	Jan 12	Feb 26
Q	**RAD 145**	Apr 13	May 28
Q	**RAD 146**	Jul 13	Aug 27
Q	**RAD 147**	Oct 9	Nov 23

2027 Schedule

	Scheme #	Opens	Closes
Q	**RAD 148**	Jan 11	Feb 25
Q	**RAD 149**	Apr 12	May 27
Q	**RAD 150**	Jul 12	Aug 26
Q	**RAD 151**	Oct 8	Nov 22

MRAD PT Schedule

2026 Schedule

Scheme #	Opens	Closes
MRAD 44	Mar 23	May 22
MRAD 45	Sep 21	Nov 20
2 schemes per year - Open for 60 days		

2027 Schedule

Scheme #	Opens	Closes
MRAD 46	Mar 22	May 21
MRAD 47	Sep 20	Nov 19
2 schemes per year - Open for 60 days		

Schedule subject to change – see Waters ERA's website at eraqc.com

Contents

CRM Certified Reference Material
PT Proficiency Testing
QR QuiK Response
RM Reference Material

Q All Waters ERA WS Radchem PTs open quarterly. Quarterly months are January, April, July, and October.

✱ All Waters ERA MRAD PTs open in March and September.

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at eraqc.com/Accreditations.

PT: A Proficiency Test (PT) is an analysis of what is often referred to as a blind sample or a sample with unknown concentrations of analytes for the purpose of evaluating a laboratory's analytical performance.

QR: Similar to a Proficiency Test, a QuiK Response (QR) is a sample with unknown concentrations. However, unlike a scheduled PT, QR is on-demand and available at any time. Plus, your results are returned within two business days. QuiK Response can be used as a bilateral PT as referenced in the IUPAC/CITAC guide: Selection and use of PT schemes for a limited number of participants – chemical analytical labs.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

WS Radchem

All Radchem standards are provided as convenient, easy-to-prepare concentrates except for tritium, which is provided as a whole-volume sample.

Gamma Emitters

CRM	PT	Q	QR
Cat. #758	Cat. #808		Cat. #758QR

One 12 mL screw-top vial yields up to 2 liters after dilution.

Barium-133	10–100 pCi/L
Cesium-134	10–100 pCi/L
Cesium-137	20–240 pCi/L
Cobalt-60	10–120 pCi/L
Zinc-65	30–360 pCi/L

Gross Alpha/Beta

CRM	PT	Q	QR
Cat. #759	Cat. #809		Cat. #759QR

One 12 mL screw-top vial yields up to 1 liter after dilution.

Gross alpha as thorium-230	7–75 pCi/L
Gross beta as cesium-137	8–75 pCi/L

Naturals

CRM	PT	Q	QR
Cat. #751	Cat. #811		Cat. #751QR

One 12 mL screw-top vial yields up to 8 liters after dilution.

Radium-226	1–20 pCi/L
Radium-228	2–20 pCi/L
Uranium (Nat)	2–70 pCi/L
Uranium (Nat) mass	3–104 µg/L

Learn more about Radiochemistry products

Tritium

CRM	PT	Q	QR
Cat. #752	Cat. #812		Cat. #752QR

One 250 mL whole-volume bottle is ready to analyze as received. Includes tritium at 1000–24000 pCi/L.

Iodine-131

CRM	PT	Q	QR
Cat. #750	Cat. #810		Cat. #750QR

One 12 mL screw-top vial yields up to 2 liters after dilution. Contains iodine-131 within the range 3–30 pCi/L. Due to short half-life, CRMs, PTs, and QRs are available only during January, April, July, and October.

Strontium-89/90

CRM	PT	Q	QR
Cat. #757	Cat. #807		Cat. #757QR

One 12 mL screw-top vial yields up to 2 liters after dilution.

Strontium-89	10–70 pCi/L
Strontium-90	3–45 pCi/L

Radchem Lab Control & Matrix Spiking (LCS/MS)

Radiochemistry LCS/MS standards are prepared according to your specifications at activity levels that enable you to directly fortify your batch laboratory control and matrix spike QC samples. These single-use spiking standards are verified, conveniently packaged in 2–20 mL glass vials, and very economical.

The direct benefits:

- **Easy-to-use** – LCS/MS spiking standards are ready-to-use – no dilutions are required.
- **Reliable and consistent** – Eliminate the possibility of errors from the contamination or repeated multiple dilutions of your primary stock standards.
- **Independently verified** – LCS/MS standards are analytically verified and traced to NIST SRMs where available.
- **Save money** – You no longer need to pay for microcuries of activity when you only need picocuries. You also eliminate the cost of activity loss for short-lived isotopes.
- **Reduce analytical cost** – You no longer need to spend valuable instrument time re-verifying standard stability. Order what you expect to use on a quarterly or annual basis – we'll do the verification.

The process is easy:

1. Select from any of the following carrier-free, single radionuclide standards.
2. Choose an activity up to the maximum listed in the table below.
3. Choose a convenient volume: 2 to 20 mL glass vials available.
4. For labs that analyze samples with more elevated activities, call for standard availability and pricing.

Single Radionuclide Spiking Standards

Cat. #	Radionuclide	Maximum Activity/Vial
AM241	Americium-241	40 pCi
BA133	Barium-133	400 pCi
CS134	Cesium-134	200 pCi
CS137	Cesium-137	400 pCi
CO60	Cobalt-60	200 pCi
GAB	Gross alpha/beta	30/40 pCi
GA	Gross alpha (Th-230)	30 pCi
GB	Gross beta (Cs-137)	40 pCi
PU238	Plutonium-238	40 pCi
PU239	Plutonium-239	40 pCi
RA226	Radium-226	20 pCi
RA228	Radium-228	Call
SR89	Strontium-89	200 pCi
SR90	Strontium-90	40 pCi
H3	Tritium	2000 pCi
UNAT	Uranium, natural	40 pCi
ZN65	Zinc-65	600 pCi

MRAD Solids

Soil Radionuclides

RM	PT		QR
Cat. #608	Cat. #802		Cat. #608QR

One 500 cc standard includes the alpha, beta, and gamma emitting radionuclides listed below.

Actinium-228	500–5000 pCi/kg
Americium-241	50–2000 pCi/kg
Bismuth-212	500–5000 pCi/kg
Bismuth-214	500–5000 pCi/kg
Cesium-134	1000–10,000 pCi/kg
Cesium-137	1000–10,000 pCi/kg
Cobalt-60	1000–10,000 pCi/kg
Lead-212	500–5000 pCi/kg
Lead-214	500–5000 pCi/kg
Plutonium-238	50–2000 pCi/kg
Plutonium-239	50–2000 pCi/kg
Potassium-40	5000–50,000 pCi/kg
Strontium-90	500–10,000 pCi/kg
Thorium-234	500–5000 pCi/kg
Uranium-234	500–5000 pCi/kg
Uranium-238	500–5000 pCi/kg
Uranium (Nat)	1000–10,000 pCi/kg
Uranium (Nat) mass	1500–15,000 µg/kg
Zinc-65	1000–10,00 pCi/kg

Vegetation Radionuclides

RM	PT		QR
Cat. #609	Cat. #803		Cat. #609QR

One 500 cc standard includes the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241	50–5000 pCi/kg
Cesium-134	300–3000 pCi/kg
Cesium-137	300–3000 pCi/kg
Cobalt-60	300–3000 pCi/kg
Curium-244	50–5000 pCi/kg
Plutonium-238	50–5000 pCi/kg
Plutonium-239	50–5000 pCi/kg
Potassium-40	5000–50,000 pCi/kg
Strontium-90	500–10,000 pCi/kg
Uranium-234	50–5000 pCi/kg
Uranium-238	50–5000 pCi/kg
Uranium (Nat)	100–10,000 pCi/kg
Uranium (Nat) mass	150–15,000 µg/kg
Zinc-65	300–3000 pCi/kg

MRAD Air Filter

Air Filter Radionuclides

RM	PT		QR
Cat. #606	Cat. #800		Cat. #606QR

One 47 mm diameter glass fiber filter contains the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241	2–80 pCi/filter
Cesium-134	50–1500 pCi/filter
Cesium-137	50–1500 pCi/filter
Cobalt-60	50–1500 pCi/filter
Iron-55	50–1500 pCi/filter
Plutonium-238	2–80 pCi/filter
Plutonium-239	2–80 pCi/filter
Strontium-90	5–200 pCi/filter
Uranium-234	2–80 pCi/filter
Uranium-238	2–80 pCi/filter
Uranium (Nat)	4–160 pCi/filter
Uranium (Nat) mass	6–240 µg/filter
Zinc-65	50–1500 pCi/filter

Air Filter Gross Alpha/Beta

RM	PT		QR
Cat. #607	Cat. #801		Cat. #607QR

One acrylic treated 47 mm diameter glass fiber filter contains the radionuclides listed below.

Gross alpha as thorium-230	5–100 pCi/filter
Gross beta as cesium-137	5–100 pCi/filter

MRAD Water

Water Radionuclides

RM	PT		QR
Cat. #617	Cat. #804		Cat. #617QR

One 12 mL screw-top vial yields up to 2 liters after dilution. Includes the alpha, beta, and gamma emitting radionuclides listed below.

Americium-241	10–200 pCi/L
Cesium-134	100–3000 pCi/L
Cesium-137	100–3000 pCi/L
Cobalt-60	100–3000 pCi/L
Iron-55	100–3000 pCi/L
Plutonium-238	10–200 pCi/L
Plutonium-239	10–200 pCi/L
Strontium-90	50–1000 pCi/L
Uranium-234	10–200 pCi/L
Uranium-238	10–200 pCi/L
Uranium (Nat)	20–400 pCi/L
Uranium (Nat) mass	30–600 µg/L
Zinc-65	100–3000 pCi/L

Water Gross Alpha/Beta

RM	PT		QR
Cat. #615	Cat. #805		Cat. #615QR

One 12 mL screw-top vial yields up to 2 liters after dilution. Includes the radionuclides below.

Gross alpha as thorium-230	10–200 pCi/L
Gross beta as cesium-137	10–200 pCi/L

Water Tritium

RM	PT		QR
Cat. #616	Cat. #806		Cat. #616QR

One 125 mL whole-volume bottle is ready to analyze as received.

Tritium	3000–30,000 pCi/L

Low-level CRMs

Synthetic drinking and wastewater matrices with low concentrations of analytes for testing water supply, drinking water, ground water, water pollution, or wastewater.

Save time diluting your standards or spending numerous hours producing them yourself with our low-level Certified Reference Materials (CRMs).

Our line of low-level CRMs are optimal for:

- ✓ Method development and validation
- ✓ System checks
- ✓ Evaluating limits of quantitation
- ✓ Minimum detection limit studies
- ✓ Detection verification
- ✓ Many other uses

Contents

CRM: A reference material characterized by a metrologically valid procedure for one or more specified properties, accompanied by a reference material certificate that provides the value of the specified property, its associated uncertainty, and a statement of metrological traceability.

Inorganics

Common Inorganics

CRM
Cat. #1249

One liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity	20–120 mg/L
Calcium	2–50 mg/L
Chloride	25–500 mg/L
Conductivity	80–1,000 µmhos/cm
Fluoride	0.25–5 mg/L
Magnesium	1–25 mg/L
pH	5–10 units
Potassium	2–50 mg/L
Sodium	5–100 mg/L
Sulfate	2–50 mg/L
Total dissolved solids	60–750 mg/L
Total hardness	9–250 mg/L

Common Inorganics in Soft Water

CRM
Cat. #1347

A 1 liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity	20–100 mg/L
Calcium	2–50 mg/L
Chloride	5–50 mg/L
Conductivity	25–300 µmhos/cm
Fluoride	0.2–2 mg/L
Magnesium	0.5–5 mg/L
pH	5–10 units
Potassium	1–10 mg/L
Sodium	5–50 mg/L
Sulfate	5–50 mg/L
Total dissolved solids	20–200 mg/L
Total hardness	5–75 mg/L

Demand

CRM
Cat. #1354

One 15 mL screw-cap vial yields up to 2 liters of sample.

5-day BOD	2–25 mg/L
COD	2–25 mg/L
DOC	1–10 mg/L
TOC	1–10 mg/L

Common Inorganics in Hard Water

CRM
Cat. #1346

One liter poly bottle whole-volume sample is ready to be analyzed.

Alkalinity	20–100 mg/L
Calcium	10–100 mg/L
Chloride	20–250 mg/L
Conductivity	130–1400 µmhos/cm
Fluoride	0.2–2 mg/L
Magnesium	2–10 mg/L
pH	5–10 units
Potassium	2–25 mg/L
Sodium	20–250 mg/L
Sulfate	20–250 mg/L
Total dissolved solids	100–1000 mg/L
Total hardness	30–300 mg/L

Metals

Metals

CRM
Cat. #1244

One 15 mL screw-cap vial spiking concentrate and one 24 mL screw-cap vial matrix concentrate yields up to 2 liters of sample.

Aluminum	200–4000 µg/L
Antimony	95–900 µg/L
Arsenic	70–900 µg/L
Barium	100–2500 µg/L
Beryllium	8–900 µg/L
Boron	800–2000 µg/L
Cadmium	8–750 µg/L
Chromium, total	17–1000 µg/L
Cobalt	28–1000 µg/L
Copper	40–900 µg/L
Iron	200–4000 µg/L
Lead	70–3000 µg/L
Manganese	70–4000 µg/L
Molybdenum	60–600 µg/L
Nickel	80–3000 µg/L
Selenium	90–2000 µg/L
Silver	26–600 µg/L
Strontium	30–300 µg/L
Thallium	60–900 µg/L
Vanadium	55–2000 µg/L
Zinc	100–2000 µg/L

Don't stess the test

We understand one of the biggest challenges you face in your laboratory is time. To help reduce laboratory stress, we provide you with final PT results in just two business days.

- Gain peace of mind knowing that you passed your PT quickly
- Identify the root cause of analysis problems faster
- Implement corrective actions sooner to improve the defensibility of results in less time

When Time Is Not On Your Side

A critical evaluation is just that – critical. Sometimes you need to quickly demonstrate corrective action or confirm a new method, meaning you can't wait for a regularly scheduled PT. Quik Response™ PTs are on-demand Proficiency Tests that return results within minutes of entering your study data. No waiting. No wondering. No worries. Just results for critical evaluations.

Ask your Waters ERA representative or an authorized sales partner about QuiK Response PTs.

For more information, **contact our customer service team at 800.372.0122 / +1.303.431.8454. or email era_info@waters.com.**

LEARN MORE AT
eraqc.com/quikresponse

* Two business day final report turnaround is not valid for the DMR-QA Study. PT results outside of the United States are generally available in 10 business days.

Custom Standards

Standards manufactured to unique specifications available with a range of analytes, concentrations, and matrices.

Experience. Speed. Reliability.

Did you know that our chemists have prepared more than 20,000 unique custom standards?

Custom projects cover a range of analytes, concentrations, and matrices. Whether it is one standard or one hundred, our chemists regularly prepare standards for a range of needs and situations including managed methodology studies, project or site-specific matrices, project or sample-specific limits, and ultra-trace to percent level concentrations.

Examples of custom standards prepared:

- 10,000 mg/kg total organic carbon in soil
- Organic mercury in fish tissue
- Pesticides in freeze-dried spinach
- XRF metals in soil
- Speciated metal standards
- Organometallic standards

Certification of Custom Standards

Three options for certification of custom standards:

- Gravimetric/volumetric
- Analytical
- ISO 17034 certified reference materials*

* Option is based on Waters ERA's ISO 17034 scope of accreditation.

From Simple to Complex and Everything in Between

A custom standard containing any analyte from the following programs can be supplied:

- Clean Water Act (CWA)
- Safe Drinking Water Act (SDWA)
- Resource Conservation and Recovery Act (RCRA)
- Superfund Contract Laboratory Program (CLP)
- Standards Council of Canada (SCC)
- Canadian Association for Laboratory Accreditation (CALA)
- Ontario Ministry of the Environment and Climate Change (MOECC) Safe Drinking Water Act (SDWA)

To request a custom quotation, please visit us online at eraqc.com/customstandards or email us at era_info@waters.com

Custom Standards

Performance Evaluation With Double-Blind Project

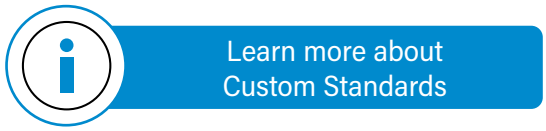
Gain a level of confidence with tangible evidence that your laboratory is meeting all quality objectives through a double-blind performance evaluation.

The key to evaluating the real performance of your laboratory is in finding the proper blend of realistic sample designs and accurate, stable analyte concentrations.

Here is how a performance evaluation program works:

1. Specify the matrices, analytes, and concentrations. If a stock standard is not available, we can design and prepare custom PE standards.
2. Send us your empty sample bottles, labels, chain-of-custody forms, and sample coolers.
3. We prepare, dilute (if necessary), and preserve the standards; fill your sample bottles; and, return the samples to you via overnight delivery service. You'll receive Waters ERA's certified values and performance acceptance limits (PALs) under separate sealed cover.
4. Integrate the standards into your sampling event or introduce them into your lab's routine sample load.
5. Your lab analyzes the blind PE standards along with routine samples.
6. Compare your lab's results to Waters ERA's certified values and performance acceptance limits.

We can help you design a double-blind project that matches your project-specific needs. Speak with a Waters ERA representative today to begin the process of understanding the real performance of your laboratory.



CUSTOM STANDARD QUOTATION REQUEST FORM

Waters™ | ERA

Contact Name:			Date:
Waters ERA Customer #:	Phone:	Fax:	
Company Name:		Email:	
Bill to:		Ship to:	

❍ (shipping address is the same as billing address) **Date Needed:**

Additional/Special Requirements (packaging, shipping, etc.):

	Analytes	CAS #	Concentrations	Units
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Sample Description (for label):

Matrix/Solvent:

Preservative:

Mass/Volume per Container: Number of Containers:

Intended Use (calibration, QC, etc.):

Prep/Analytical Method:

Select: Ready-to-use ❍ Concentrate ❍ Dilution Instructions:

Most custom standards are gravimetrically certified based on the manufacturing process.
Analytical verification may be available for your custom standard, depending upon the standard formulation. Contact Waters ERA to discuss pricing and availability.

- *A Waters ERA representative will contact you within two business days to discuss your request.*
- *Waters ERA provides blind standards to help you evaluate your laboratory's performance. Call and speak with an ERA representative to learn more.*

Email this form to era_info@waters.com or fax to 303.421.0159.

For immediate assistance with a customs quote, call Waters ERA at 800.372.0122 or 303.431.8454 and speak with a Waters ERA Customer Service Representative.

Calibration Standards

A variety of inorganic standards including metals, anions, pH, and other common inorganics that can be used for primary calibration or to prepare second source calibration standards.

Contents

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A complete listing of ERA's CRMs can be found on our Scope of Accreditation for general requirements for competence of reference material producers available at eraqc.com/Accreditations.

RM: A material, sufficiently homogeneous and stable with respect to one or more specified properties, which has been established to be fit for its intended use in a measurement process.

PFAS Secondary Source Standards

Standards are designed to enhance laboratory efficiency by improving the accuracy of routine quality control and streamlining processes. They are suitable for various applications, including Internal Calibration Verification (ICV), Laboratory Control Sample (LCS), Matrix Spike (MS), and Limit of Quantitation (LOQ) studies.

Wastewater/Solids

NEW!

CRM
Cat. #PFAS10001

One 2 mL flame-sealed ampule with 1.5 mL of PFAS standard containing 44 analytes at 25–625 ng/mL. The standard is suitable for matrices to include, but not limited to, wastewater and solids and compatible with methods EPA 1633 and 1633A, EPA 8327, ASTM D8421-21, ASTM D7979, and other comparable methods.

Perfluorobutanoic acid, PFBA	100 ng/mL
Perfluoropentanoic acid, PFPeA	50 ng/mL
Perfluorohexanoic acid, PFHxA	25 ng/mL
Perfluoroheptanoic acid, PFHpA	25 ng/mL
Perfluorooctanoic acid, PFOA	25 ng/mL
Perfluorononanoic acid, PFNA	25 ng/mL
Perfluorodecanoic acid, PFDA	25 ng/mL
Perfluoroundecanoic acid, PFUdA	25 ng/mL
Perfluorododecanoic acid, PFDoA	25 ng/mL
Perfluorotridecanoic acid, PFTrDA	25 ng/mL
Perfluorotetradecanoic acid, PFTeDA	25 ng/mL
Perfluorobutanesulfonic acid, PFBS	25 ng/mL
Perfluoropentanesulfonic acid, PFPeS	25 ng/mL
Perfluorohexanesulfonic acid, PFHxS	25 ng/mL
Perfluoroheptanesulfonic acid, PFHpS	25 ng/mL
Perfluorooctanesulfonic acid, PFOS	25 ng/mL
Perfluorononanesulfonic acid, PFNS	25 ng/mL
Perfluorodecanesulfonic acid, PFDS	25 ng/mL
Perfluorododecanesulfonic acid, PFDoS	25 ng/mL
4:2 fluorotelomersulfonic acid, 4:2FTS	100 ng/mL
6:2 fluorotelomersulfonic acid, 6:2FTS	100 ng/mL
8:2 fluorotelomersulfonic acid, 8:2FTS	100 ng/mL
Perfluorooctanesulfonamide, PFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA	25 ng/mL
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA	25 ng/mL
N-ethyl perfluorooctanesulfonamide, NEtFOSA	25 ng/mL
N-methyl perfluorooctanesulfonamide, NMeFOSA	25 ng/mL
N-ethyl perfluorooctanesulfonamidoethanol, NEtFOSE	250 ng/mL
N-methyl perfluorooctanesulfonamidoethanol, NMeFOSE	250 ng/mL
3-Perfluoropropyl propanoic acid, 3:3FTCA	125 ng/mL
2H,2H,3H,3H-Perfluorooctanoic acid, 5:3FTCA	625 ng/mL
3-Perfluoroheptyl propanoic acid, 7:3FTCA	625 ng/mL
Hexafluoropropylene oxide dimer acid, HFPO-DA	100 ng/mL
4,8-dioxa-3H-perfluorononanoic acid, ADONA	100 ng/mL
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS	100 ng/mL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS	100 ng/mL
Perfluoro-4-methoxybutanoic acid, PFMBA	50 ng/mL
Perfluoro-3-methoxypropanoic acid, PFMPA	50 ng/mL
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA	50 ng/mL
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA	50 ng/mL
Pentafluoropropanoic acid, PFPrA	100 ng/mL
2H-perfluoro-2-octenoic acid, FHUEA	100 ng/mL
2H-perfluoro-2-decenoic acid, FOUEA	100 ng/mL
Bis(trifluoromethane)sulfonamide	100 ng/mL

Drinking Water

NEW!

CRM
Cat. #PFAS10002

One 2 mL flame-sealed ampule with 1.5 mL of PFAS standard containing 29 analytes at 50 ng/mL. The standard is suitable for matrices to include, but not limited to, drinking water and compatible with methods EPA 533, EPA 537, EPA 537.1, and other comparable methods.

Perfluorobutanoic acid, PFBA	50 ng/mL
Perfluoropentanoic acid, PFPeA	50 ng/mL
Perfluorohexanoic acid, PFHxA	50 ng/mL
Perfluoroheptanoic acid, PFHpA	50 ng/mL
Perfluorooctanoic acid, PFOA	50 ng/mL
Perfluorononanoic acid, PFNA	50 ng/mL
Perfluorodecanoic acid, PFDA	50 ng/mL
Perfluoroundecanoic acid, PFUdA	50 ng/mL
Perfluorododecanoic acid, PFDoA	50 ng/mL
Perfluorotridecanoic acid, PFTrDA	50 ng/mL
Perfluorotetradecanoic acid, PFTeDA	50 ng/mL
Perfluorobutanesulfonic acid, PFBS	50 ng/mL
Perfluoropentanesulfonic acid, PFPeS	50 ng/mL
Perfluorohexanesulfonic acid, PFHxS	50 ng/mL
Perfluoroheptanesulfonic acid, PFHpS	50 ng/mL
Perfluorooctanesulfonic acid, PFOS	50 ng/mL
4:2 fluorotelomersulfonic acid, 4:2FTS	50 ng/mL
6:2 fluorotelomersulfonic acid, 6:2FTS	50 ng/mL
8:2 fluorotelomersulfonic acid, 8:2FTS	50 ng/mL
N-ethyl perfluorooctanesulfonamidoacetic acid, NEtFOSAA	50 ng/mL
N-methyl perfluorooctanesulfonamidoacetic acid, NMeFOSAA	50 ng/mL
Hexafluoropropylene oxide dimer acid, HFPO-DA	50 ng/mL
4,8-dioxa-3H-perfluorononanoic acid, ADONA	50 ng/mL
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid, 9Cl-PF3ONS	50 ng/mL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid, 11Cl-PF3OUdS	50 ng/mL
Perfluoro-4-methoxybutanoic acid, PFMBA	50 ng/mL
Perfluoro-3-methoxypropanoic acid, PFMPA	50 ng/mL
Perfluoro(2-ethoxyethane) sulfonic acid, PFEESA	50 ng/mL
Nonafluoro-3,6-dioxaheptanoic acid, NFDHA	50 ng/mL

1000 mg/L Standards

Standards can be used for primary calibration or to prepare second source calibration check standards. They are analytically traceable to NIST SRM's where available, and are guaranteed stable for one year. The certification documentation includes manufacturing uncertainties, traceability summaries and densities to aid in performing gravimetric dilutions. The documentation for metal standards includes impurities.

Inorganics – 1000 mg/L

Chemical Oxygen Demand (COD)

500 mL Bottle	125 mL Bottle
Cat. #974	Cat. #042

One 1000 mg/L standard preserved with H2SO4 in an amber glass bottle.

Total Kjeldahl Nitrogen (TKN)

500 mL Bottle	125 mL Bottle
Cat. #996	Cat. #043

One 1000 mg/L standard preserved with HCl in a poly bottle.

MBAS/LAS Surfactants

Cat. #975

One 15 mL screw-cap vial with LAS at 1000 mg/L preserved with H2SO4.

Total Organic Carbon (TOC)

Cat. #978

One 500 mL amber glass bottles with TOC at 1000 mg/L preserved with H2SO4.

Total Organic Halides (TOX)

Cat. #976

One 2 mL flame-sealed ampule with TOX at 1000 mg/L in methanol.

Phenol

Cat. #982

One 500 mL amber glass bottle with phenol at 1000 mg/L preserved with H2SO4.

Sulfide

Cat. #999

One 10 mL flame-sealed ampule containing 1000 mg/L sulfide preserved with NaOH and zinc acetate.

Ions – 1000 mg/L

Parameter	Matrix	500 mL Bottle	125 mL Bottle
Acetate	H_2O	–	Cat. #78202
Ammonia as NH3	H_2O	Cat. #986	Cat. #044
Ammonia as N	H_2O	Cat. #985	Cat. #045
Bromate	H_2O	–	Cat. #065
Bromide	H_2O	Cat. #987	Cat. #046
Chlorate	H_2O	–	Cat. #066
Chloride	H_2O	Cat. #988	Cat. #047
Chlorite	H_2O	–	Cat. #067
Complex cyanide*	NaOH	Cat. #998	Cat. #049
Cyanide (free)*	NaOH	Cat. #997	Cat. #048
Fluoride	H_2O	Cat. #989	Cat. #050
Iodide	H_2O	–	Cat. #78212
Nitrate as NO3	H_2O	Cat. #992	Cat. #051
Nitrate as N	H_2O	Cat. #991	Cat. #052
Nitrite as N	H_2O	Cat. #990	Cat. #053
Perchlorate	H_2O	–	Cat. #068
Phosphate as PO4	H_2O	Cat. #994	Cat. #060
Phosphate as P	H_2O	Cat. #993	Cat. #061
Sulfate	H_2O	Cat. #995	Cat. #062

*Dangerous good. Requires special shipping.

Cations by Ion Chromatography – 100 mg/L

Parameter	Matrix	125 mL Bottle
Ammonium as NH_4	H_2O	Cat. #78102
Ammonium as N	H_2O	Cat. #78104

Cations by Ion Chromatography – 1000 mg/L

Parameter	Matrix	125 mL Bottle
Calcium	H_2O	Cat. #K10
Magnesium	H_2O	Cat. #K11

Metals – 1000 mg/L

Parameter	Matrix		125 mL Bottle
Aluminum	HNO_3	DG	Cat. #011
Arsenic	HNO_3	DG	Cat. #013
Beryllium	HNO_3	DG	Cat. #015
Bismuth	HNO_3	DG	Cat. #K01
Calcium	HNO_3	DG	Cat. #018
Chromium	HNO_3	DG	Cat. #020
Chromium VI	H_2O	—	Cat. #019
Cobalt	HNO_3	DG	Cat. #021
Copper	HNO_3	DG	Cat. #022
Iron	HNO_3	DG	Cat. #023
Lead	HNO_3	DG	Cat. #024
Lithium	HNO_3	DG	Cat. #K04
Magnesium	HNO_3	DG	Cat. #025
Manganese	HNO_3	DG	Cat. #026
Mercury	HNO_3	DG	Cat. #027
Molybdenum	HNO_3	DG	Cat. #028
Nickel	HNO_3	DG	Cat. #029
Phosphorus	HNO_3	DG	Cat. #063
Potassium	HNO_3	DG	Cat. #030
Selenium	HNO_3	DG	Cat. #031
Silica	H_2O	—	Cat. #064
Silicon	HNO_3	DG	Cat. #032
Silver	HNO_3	DG	Cat. #033
Sodium	HNO_3	DG	Cat. #034
Strontium	HNO_3	DG	Cat. #035
Thallium	HNO_3	DG	Cat. #036
Tin	HCl	DG	Cat. #037
Titanium	HCl	DG	Cat. #038
Vanadium	HNO_3	DG	Cat. #039
Yttrium	HNO_3	DG	Cat. #K08
Zinc	HNO_3	DG	Cat. #040

DG – Dangerous good. Requires special shipping.

Other metals, concentrations, and volumes are also available.

Call Waters ERA Customer Service for more information.

ICP-MS Metals

These standards come with a Certificate of Traceability and Uncertainty. Use for initial as well as continuing calibration and tuning verification. Provided as convenient concentrates with densities allowing you to easily perform gravimetric dilutions.

ICP-MS Trace Metals

CRM
Cat. #TMS001*

One 125 mL screw-cap poly bottle preserved with HNO_3 and tartaric acid*.

Aluminum	10.0 mg/L	Manganese	10.0 mg/L
Antimony	10.0 mg/L	Molybdenum	10.0 mg/L
Arsenic	10.0 mg/L	Nickel	10.0 mg/L
Barium	10.0 mg/L	Selenium	10.0 mg/L
Beryllium	10.0 mg/L	Silver	10.0 mg/L
Cadmium	10.0 mg/L	Thallium	10.0 mg/L
Chromium	10.0 mg/L	Thorium	10.0 mg/L
Cobalt	10.0 mg/L	Uranium	10.0 mg/L
Copper	10.0 mg/L	Vanadium	10.0 mg/L
Iron	10.0 mg/L	Zinc	10.0 mg/L
Lead	10.0 mg/L		

*Dangerous good. Requires special shipping.

ICP-MS Major Cations

CRM
Cat. #TMS002*

One 125 mL screw-cap poly bottle preserved with HNO_3*.

Calcium	50.0 mg/L	Potassium	50.0 mg/L
Magnesium	50.0 mg/L	Sodium	50.0 mg/L

*Dangerous good. Requires special shipping.

Anions

Ion Chromatography

CRM
Cat. #981

One 15 mL screw-cap vial yields up to 200 mL after dilution. Designed to calibrate or verify IC calibrations.

Call for anion standards at lower levels.

Bromide	0.2–20 mg/L	Nitrate as N	0.2–20 mg/L
Chloride	0.2–20 mg/L	Phosphate as P	0.5–30 mg/L
Fluoride	0.1–10 mg/L	Sulfate	0.5–30 mg/L

Learn more about Calibration products

AA/ICP Metals

All metals standards come with a Certificate of Traceability. The ICP Trace Metals standard also includes uncertainties. Use as initial as well as continuing calibration verification.

Flame AA Trace Metals

CRM
Cat. #508

One 24 mL screw-cap vial, preserved with HNO_3, yields up to 500 mL after dilution. Designed for flame AA. Includes aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, silver, strontium, thallium, vanadium, and zinc.

Flame AA Cations

CRM
Cat. #530

One 15 mL screw-cap vial, preserved with HNO_3, yields up to 250 mL after dilution.

Use with ICP, IC, and AA methods.

Calcium	10–200 mg/L
Magnesium	10–200 mg/L
Potassium	5–100 mg/L
Sodium	10–250 mg/L

ICP Trace Metals

CRM
Cat. #524*

One 500 mL whole-volume standard, preserved with HNO_3 and HCl, is ready-to-use.*

Aluminum	10.0 mg/L
Antimony	1.0 mg/L
Arsenic	1.0 mg/L
Barium	1.0 mg/L
Beryllium	1.0 mg/L
Bismuth	1.0 mg/L
Boron	1.0 mg/L
Cadmium	1.0 mg/L
Calcium	10.0 mg/L
Chromium	1.0 mg/L
Cobalt	1.0 mg/L
Copper	1.0 mg/L
Iron	10.0 mg/L
Lanthanum	10.0 mg/L
Lead	10.0 mg/L
Magnesium	10.0 mg/L
Manganese	1.0 mg/L
Molybdenum	1.0 mg/L
Nickel	1.0 mg/L
Phosphorus	1.0 mg/L
Potassium	10.0 mg/L
Selenium	10.0 mg/L
Sodium	10.0 mg/L
Strontium	1.0 mg/L
Tin	1.0 mg/L
Titanium	1.0 mg/L
Vanadium	1.0 mg/L
Zinc	1.0 mg/L

*Dangerous good. Requires special shipping.

pH Buffers

Our pH Buffers are analytically traceable to NIST SRMs, mercury free, guaranteed stable for at least one year after your receipt, and are supplied with a full certificate of analysis. Choose single bottles or convenient six-bottle cases.

Value	Volume	Single Bottle Six-Bottle Case	Cat. #
pH 4.00	1 pint	Cat. #127	Cat. #128
pH 7.00	1 pint	Cat. #131	Cat. #132
pH 10.00	1 pint	Cat. #135	Cat. #136
Case of 2 ea.	Pints	—	Cat. #141

Chromatographic and sample cleanup products from Waters

Sample Preparation

Oasis Sample Extraction Products.

Sep-Pak SPE Cartridges.

Sample concentration and cleanup

Oasis Sample Extraction Products

Analysis of water samples often requires concentration and cleanup of "dirty" or complex matrices. Oasis™ Solid-Phase Extraction (SPE) Products allow for simple and rapid method development. With the Oasis product line, you can expect robust SPE methods that provide reproducible results and high recoveries, without having to be concerned with sorbent drying or pH limitations.

Key features/benefits

- Greater capacity.
- Excellent stability over entire pH range.
- Cleanest extracts.
- Elimination of matrix effects.
- Reduction of ion suppression.
- Superior recovery, reproducibility, retention, and selectivity for a wide variety of compounds.
- Available in cartridges or high throughput, 96-well plates.

Reduce interference and increase sensitivity for better quality results

Certified Sep-Pak SPE Cartridges

Sep-Pak™ SPE Cartridges are widely used by scientists for trace-level analysis in water samples. Manufactured using strict performance and cleanliness specifications and QC-tested for extractables and leachables, Certified Sep-Pak Sample Preparation Products reduce interference and increase sensitivity by eliminating contaminants introduced by the cartridge hardware and sorbents.

Key features/benefits

- Superior extracts for water sample residue analysis.
- Cleanliness and reproducibly needed for demanding sample preparation methods.
- Allows for accurate, high-quality water testing results.

Certified cleanliness for ultra-trace level analysis

Vials

Waters Certified Vials are manufactured to exacting standards, tested and certified to give you confidence that the peaks you observe are representative of your sample, not your vials.

Key features/benefits

- Prevent ghost peaks stemming from contaminants.
- Eliminate unexplained masses in MS.
- Eliminate potential of needle damage due to tight dimensional specifications.

Waters Certified Vials.

LC columns and consumables

UPLC, UHPLC, and HPLC Columns.

Waters Analytical Standards and Reagents.

Maximize efficiency, ruggedness, and throughput

LC Columns

Featured in methods to meet regulatory requirements throughout the world, Waters columns provide cutting-edge performance. In addition to our complete selection of UHPLC, UPLC,™ and HPLC column chemistries, Waters also provides application-specific columns for optimal specificity.

Key features/benefits

- Industry leading reliability and reproducibility.
- Wide range of general purpose and application specific columns.
- Uncompromised analytical performance.

Standardize and simplify workflows

Analytical Standards and Reagents

Waters understands that the quality of the standards and reagents you use directly correlates to the quality of your results. Our standards are precisely formulated to ensure data comparability and defensibility over time, and provide absolute traceability to meet your quality assurance requirements.

Key features/benefits

- Saves costly validation time of standards and reagents.
- Easy and convenient formulations and packaging ensure accuracy of LC and LC-MS results over time.
- Optimized kits to keep your system operating at peak performance.

Waters™

These and many more products are available for purchase directly from

waters.com, or call 800.252.HPLC (4752)

Purified Water

Products intended for use in industrial or municipal settings where water quality parameters are being monitored continuously (by in-line, on-line, or at-line instrumentation), or by frequent and routine collection of samples for laboratory analysis.

Products in this section include calibration, system suitability, and conductivity solutions and kits for TOC, Conductivity, and Turbidity devices for ultra-pure water analysis including pharmaceutical, power generation, and semiconductor manufacturing. We also offer reagents and other instrument consumables such as replacement lamps.

Contents

Beckman Coulter*

All of our Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation. CRMs for the PAT700 are formulated specifically for the unique technology inherent in that instrument and are packaged in ready-to-use RFID tagged bottles.

PAT700

System Suitability

Sets – USP / EP	Cat. #
USP Bulk Water System Suitability Set	18402
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 65 mL bottles.	

Calibration

Kits	Cat. #
Calibration Standards Kit	19202
Includes (1) Blank, (1) 0.250 mg/L C as Sucrose, (1) 0.500 mg/L C NIST Sucrose, and (1) 0.750 mg/L C as Sucrose in 65 mL bottles.	

Conductivity

Kits	Cat. #
Conductivity Solution Kit	02602
Includes (1) 100 µS/cm Potassium Chloride (KCl) Solution in a 65 mL bottle.	

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

* Beckman Coulter is transitioning away from the ANATEL brand; all future references will align with Beckman Coulter's unified product portfolio.

Validation

Kits	Cat. #
Validation Control Kit	19222
Includes (1) Blank, and (1) 0.500 mg/L C as Sucrose in 65 mL bottles.	
Validation Protocol Reagent Kit	19232
Includes (14) Blanks, (5) Conductivity Solutions, (1) Validation Control Kit, (2) Calibration Standards Kit, (1) System Suitability Set, (1) Excursion with Validation Kit, (1) 0.250 mg/L C as Sucrose, (1) 0.750 mg/L C as Sucrose, (1) USP Reagent Water Rw, (1) 0.500 mg/L C USP 1,4-Benzoquinone, and (2) Excursion Bottles (all bottles are 65 mL). Does not include NIST Traceable Resistor.	

Consumables

	Cat. #
Replacement UV Lamp	20037
65 mL Pre-cleaned HDPE Bottles – Natural (case of 50)	25056
Case of 50: 65 mL Low TOC HDPE bottles with septa cap and dust cover.	
Pre-Cleaned Caps w/Septa (100/pack)	25011

The following CRMs are used for calibration and validation of the A643 on-line TOC analyzer.

A643

System Suitability

Sets – USP / EP	Cat. #
USP/EP Bulk Water System Suitability Set	48400
Includes (2) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 65 mL bottles.	

Calibration

Kits	Cat. #
Calibration Standards Kit	49200
Includes (2) Blanks, (1) 0.250 mg/L C as Sucrose, (1) 0.500 mg/L C as Sucrose, and (1) 0.750 mg/L C as Sucrose in 65 mL bottles.	

Conductivity

Kits	Cat. #
Conductivity Solution Kit	02610
Includes (1) 100 µS/cm Potassium Chloride (KCl) Solution in a 65 mL bottle.	

Validation

Kits	Cat. #
Validation Control Kit	49220
Includes (2) Blanks, and (1) 0.500 mg/L C as Sucrose in 65 mL bottles.	
Validation Kit	49210
Includes (2) Blanks, and (1) 0.250 mg/L C as Sucrose, (1) 0.500 mg/L C as Sucrose, (1) 0.750 mg/L C as Sucrose, (1) 100 µS/cm Conductivity Solution Kit, and (1) USP System Suitability Set in 65 mL bottles.	

Consumables

	Cat. #
Replacement UV Lamp	20036A
65 mL Pre-cleaned HDPE Bottles – Natural (case of 50)	25056
Case of 50: 65 mL Low TOC HDPE bottles with septa cap and dust cover.	
Pre-Cleaned Caps w/Septa (100/pack)	25011

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

* Beckman Coulter is transitioning away from the ANATEL brand; all future references will align with Beckman Coulter's unified product portfolio.

The following CRMs are used for calibration and validation of the TOC600 TOC analyzer.

TOC600

System Suitability

Sets – USP / EP	Cat. #
USP/EP Bulk Water System Suitability Set	48036
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 125 mL bottles.	

Calibration

Kits	Cat. #
Calibration Standards Kit	49201
Includes (1) Blank, (1) 0.250 mg/L C as Sucrose, (1) 0.500 mg/L C as Sucrose, and (1) 0.750 mg/L C as Sucrose in 125 mL bottles.	

Conductivity

Kits	Cat. #
Conductivity Solution Kit	02601
Includes (1) 100 µS/cm Potassium Chloride (KCl) Solution in a 125 mL bottle.	

Validation

Kits	Cat. #
Validation Control Kit	49221
Includes (1) Blank, and (1) 0.500 mg/L C as Sucrose in 125 mL bottles.	
Validation Kit	19231
Includes (3) TOC600 Calibration Kits, (1) TOC600 100 µS/cm Conductivity Solution Kit, (2) TOC600 Validation Control Kits, and (4) TOC600 USP System Suitability Sets (all bottles are 125 mL).	

Consumables

	Cat. #
Replacement UV Lamp	20036A

The following CRMs are used for calibration and validation of the A-1000 TOC analyzer.

A-1000

System Suitability

Sets – USP / EP	Cat. #
USP/EP Bulk Water System Suitability Set	49030
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 1000 mL HDPE bottles.	

Veolia Sievers

All of our Sievers Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

Contact Waters ERA at era_info@waters.com (USA) or ERA_Europe_Sales@waters.com (Europe) for availability of Sievers 800 and 400 consumables.

Sievers 900, 5310 C, M9, and M5310 C

System Suitability

Sets – HCl Preserved	Cat. #
USP System Suitability Set - HCl Preserved	18004H
Includes (1) Reagent Water (Rw), (1) 0.500 mg/L C USP Sucrose (Rs) and (1) 0.500 mg/L C USP 1,4-Benzoquinone (Rss) in 40 mL vials.	

Sets – USP / EP	Cat. #
USP/EP Bulk Water System Suitability Set	18000
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 40 mL vials. Equivalent to Sievers STD 31004-01	

Sets – USP	Cat. #
USP Sterile Water System Suitability Set	18061
Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose, and (1) 8.0 mg/L USP 1,4-Benzoquinone in 40 mL vials.	

Sets – JP	Cat. #
JP System Suitability Set	18000J
Includes (1) Reagent Water, and (1) 0.500 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials. *Equivalent to Sievers STD 90039-01*	

Consumables

	Cat. #
60 Micron In-Line Stainless Filter	25035
40 mL Ultra-Low TOC Vials, 80/case	25025
300 mL - Replacement Sievers Acid Cartridge*	21012
150 mL - Replacement Sievers Acid Cartridge*	21011
300 mL - Replacement Sievers Oxidizer Cartridge	21008
150 mL - Replacement Sievers Oxidizer Cartridge	21007
Replacement Pump Tubing	20060
Replacement UV Lamp	20045

* Dangerous good. Requires special shipping.

Learn more about
Total Organic Carbon products

Veolia Sievers

Sievers 900, 5310 C, M9, and M5310 C

Calibration & Validation

Kits	Cat. #
Simple Precision & Accuracy Set	18009
Includes (1) Reagent Water (Rw) and (1) 0.500 mg/L C USP Sucrose (Rs) - HCl preserved in 40 mL vials	
Single Point Verification Set	19601
Includes (1) Blank, (1) 0.500 mg/L C as Sucrose, and (1) 0.500 mg/L IC as $NaHCO_3$ in 40 mL vials.	
Linearity Set	19515
Includes (1) Blank, (1) 0.250 mg/L C as Sucrose, (1) 0.500 mg/L C as Sucrose and (1) 0.750 mg/L C as Sucrose in 40 mL vials. *Equivalent to Sievers STD 31012-01*	
Calibration & Verification Set	19600
Includes (2) Blanks, (2) 1.0 mg/L IC as $NaHCO_3$, (1) 1.0 mg/L C as KHP, and (1) 1.0 mg/L C as Sucrose in 40 mL vials.	
Multi-Point Calibration Set	19610
Includes (1) Blank, (1) each of 1.0, 5.0, 10.0, 25.0 and 50.0 mg/L C as KHP, and (1) each of 1.0, 5.0, 10.0, 25.0 and 50.0 mg/L IC as $NaHCO_3$ in 40 mL vials. *Equivalent to Sievers STD 90000-01*	
Autoreagents Calibration Set	19611
Includes (1) Blank, (1) 25.0 mg/L C as KHP, (1) 25.0 mg/L IC as $NaHCO_3$, and (1) 50.0 mg/L C from Nicotinamide in 40 mL vials. *Equivalent to Sievers STD 90036*	
Autoreagents Calibration & Verification Set	19616
Includes (2) Blanks, (1) 25.0 mg/L C as KHP, (1) 25.0 mg/L IC as $NaHCO_3$, (1) 50.0 mg/L C from Nicotinamide, (1) 25.0 mg/L C as Sucrose, (1) 50.0 mg/L C as Sucrose, and (1) 50.0 mg/L IC $NaHCO_3$ in 40 mL vials.	
Specificity Verification Set	19615
Includes (1) Blank, (1) 0.500 mg/L C from Methanol, (1) 0.500 mg/L C from Nicotinamide, and (1) 0.500 mg/L C from KHP in 40 mL vials.	
Validation Set with Calibration & Verification	19617
Includes (28) 40 mL vials, (2) Blanks, (2) 1.0 mg/L C as KHP, (2) 1.0 mg/L IC $NaHCO_3$; (1) Blank, (1) 0.500 mg/L C as Sucrose, (1) 0.500 mg/L IC $NaHCO_3$; (2) Reagent Water Rw, (2) 0.500 mg/L C from USP Sucrose Rs and (2) 0.500 mg/L C from USP 1,4-Benzoquinone Rss; (1) Blank, (1) 0.250 mg/L C as Sucrose, (1) 0.500 mg/L C as Sucrose, (1) 0.750 mg/L C as Sucrose; (1) Reagent Water, (1) 0.500 mg/L C from USP Sucrose; (1) Blank; (1) 0.500 mg/L C from Methanol; (1) 0.500 mg/L C from Nicotinamide; (1) 0.500 mg/L C from as KHP; (1) Reagent Water Rw; (1) 0.500 mg/L C from USP Sucrose Rs; and (1) 0.500 mg/L C from USP 1,4-Benzoquinone Rss.	
Single Point Calibration Kit	19620
Includes (1) Blank, and (1) 1.0 mg/L IC as $NaHCO_3$, (1) 1.0 mg/L C as KHP in 40 mL vials. *Equivalent to Sievers STD 90001-01*	

Sievers 500 RL

The following CRMs are designed to use on Sievers 500 RL TOC instruments for calibration, validation, and to satisfy regulatory requirements.

Contact Waters ERA at era_info@waters.com (USA) or ERA_Europe_Sales@waters.com (Europe) for availability of Sievers 800 and 400 consumables.

System Suitability

Sets – USP / EP	Cat. #
USP/EP Bulk Water System Suitability Set	15105
Includes (2) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 40 mL vials. *Equivalent to Sievers STD 74403*	

Sets – USP	Cat. #
USP Sterile Water System Suitability Set	18061
Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	

Sets – JP	Cat. #
JP System Suitability Set	18000J
Includes (1) Reagent Water, and (1) 0.500 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials. *Equivalent to Sievers STD 90039-01*	

Consumables

	Cat. #
Replacement UV Lamp	20045
40 mL Ultra-Low TOC Vials, 80/case	25025
60 Micron In-Line Stainless Filter	25035

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Sievers 500 RL (continued)

Calibration & Validation
RL (Standard IOS) Single-Use CRMs

Kits	Cat. #
Single-Point Calibration Set	15100
Includes (2) Blanks, (1) 1.5 mg/L C as KHP in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL PPCO vial. *Equivalent to Sievers STD 74401*	
Single-Point Calibration/Verification Kit	15101
Includes (2) Blanks, (1) 1.5 mg/L C as KHP in 40 mL glass vials, (1) 25.0 µS/cm Conductivity standard in 30 mL PPCO vial, (1) Verification Blank, (1) 0.500 mg/L C as Sucrose in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL PPCO vial.	
Accuracy/Precision/Verification Set	15104
Includes (1) Verification Blank, (1) 0.500 mg/L C as Sucrose in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL PPCO vial. *Equivalent to Sievers STD 74402*	
Linearity Set	15106
Includes (1) Linearity Blank, (1) each 0.250 mg/L, 0.500 mg/L, and 0.750 mg/L C as KHP in 40 mL glass vials. *Equivalent to Sievers STD 74406*	
Single-Point Calibration Set – TOC Only	15109
Includes (2) Calibration Blanks and (1) 1.5 mg/L C as KHP in 40 mL glass vials. *Equivalent to Sievers STD 74405*	
Accuracy/Precision/Verification Set – TOC Only	15110
Includes (1) Verification Blank and (1) 0.500 mg/L C as Sucrose in 40 mL glass vials. Conductivity standard is not included in this set. *Equivalent to Sievers STD 74407*	
Single-Point Calibration/Verification Set – TOC Only	15111
Includes (2) Blanks, (1) 1.5 mg/L C as KHP, (1) Verification Blank, and (1) 0.500 mg/L C as Sucrose in 40 mL glass vials. Conductivity standards are not included in this set.	

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

Analytik Jena

All of our Analytik Jena Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Analytik Jena TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - HCl Preserved	Cat. #
USP System Suitability Set - HCl Preserved	18004H
Includes (1) Reagent Water (Rw), (1) 0.500 mg/L C USP Sucrose (Rs) and (1) 0.500 mg/L C USP 1,4-Benzoquinone (Rss) in 40 mL vials.	

Sets – USP/EP	Cat. #
USP/EP Bulk Water System Suitability Set	18000
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 40 mL vials. For use with AJ multi N/C pharma or UV HS and IL500.	

Sets – USP	Cat. #
USP Sterile Water System Suitability Set	18061
Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	

Sets – JP	Cat. #
JP System Suitability Set	18000J
Includes (1) Reagent Water, and (1) 0.500 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	

Calibration & Validation

Kits	Cat. #
Simple Precision & Accuracy Set	18009
Includes (1) Reagent Water (Rw) and (1) 0.500 mg/L C USP Sucrose (Rs) - HCl preserved in 40 mL vials.	
Single Point Verification Set	19601
Includes (1) Blank, (1) 0.500 mg/L C as Sucrose, and (1) 0.500 mg/L IC as $NaHCO_3$ in 40 mL vials.	
Cleaning Validation Kit	19900
Includes (1) Calibration Blank, (1) each 0.250 mg/L, 0.500 mg/L, 0.750 mg/L, and 1.0 mg/L C as Sucrose in 40 mL vials.	
Full TOC Calibration Kit	19970
Includes (1) Calibration Blank, (1) each 1.0 mg/L, 2.5 mg/L, 5.0 mg/L, 10.0 mg/L, 25.0 mg/L, 50.0 mg/L, and 100.0 mg/L C as KHP in 250 mL amber glass bottles.	

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Xylem OI Analytical

The Certified Reference Materials (CRMs) listed below are commonly purchased for use with OI Analytical TOC instruments, including the very popular Aurora® model. All Waters ERA Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on OI Analytical TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - HCl Preserved	Cat. #
USP System Suitability Set - HCl Preserved	18004H
Includes (1) Reagent Water (Rw), (1) 0.500 mg/L C USP Sucrose (Rs) and (1) 0.500 mg/L C USP 1,4-Benzoquinone (Rss) in 40 mL vials.	

Sets – USP/EP	Cat. #
USP/EP Bulk Water System Suitability Set	18000
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 40 mL vials. For use with AJ multi N/C pharma or UV HS and IL500.	

Sets – USP	Cat. #
USP Sterile Water System Suitability Set	18061
Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	

Sets – JP	Cat. #
JP System Suitability Set	18000J
Includes (1) Reagent Water, and (1) 0.500 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	

Calibration & Validation

Sets	Cat. #
Simple Precision & Accuracy Set	18009
Includes (1) Reagent Water (Rw) and (1) 0.500 mg/L C USP Sucrose (Rs) - HCl preserved in 40 mL vials.	
Single Point Verification Set	19601
Includes (1) Blank, (1) 0.500 mg/L C as Sucrose, and (1) 0.500 mg/L IC as $NaHCO_3$ in 40 mL vials.	
Validation Set – Aurora*	19007
Includes (6) Water Blanks, (1) 0.500 mg/L C as KHP, (3) 1.0 mg/L C as KHP, (1) 5.0 mg/L C as KHP, (1) 10.0 mg/L C as KHP, (1) 25.0 mg/L C as KHP, (1) 5.0 mg/L C as KHP/50.0 mg/L IC as $NaHCO_3$, (4) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	

Consumables

	Cat. #
Phosphoric Acid Reagent (1 Liter)*	21016
Persulfate Oxidizer Reagent (1 Liter)*	21017

* Dangerous good. Requires special shipping.

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

* Aurora is a registered trademark of Xylem, Incorporated.

Ultrapure Water Standards & Consumables

Ensure reliable ultrapure water analyses.

From Your Trusted TOC Partner.

In industries where product integrity and process reliability are paramount, ultrapure water is not just a requirement, it's a foundation. Pharmaceutical, biopharmaceutical, and semiconductor operations demand the highest standards of water purity to meet stringent regulatory and manufacturing specifications. Turbidity and Total Organic Carbon (TOC) are two of the most critical indicators of water quality.

LEARN MORE AT **eraqc.com/purifiedwater-products**

Shimadzu

Certified Reference Materials (CRMs) listed are commonly purchased for use with Shimadzu TOC instruments. ***Please specify at time of order whether you have a chemical or combustion Shimadzu TOC***. All of our Shimadzu Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Shimadzu TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - HCl Preserved	Cat. #
USP System Suitability Set - HCl Preserved	18004H
Includes (1) Reagent Water (Rw), (1) 0.500 mg/L C USP Sucrose (Rs) and (1) 0.500 mg/L C USP 1,4-Benzoquinone (Rss) in 40 mL vials.	

Sets – USP/EP	Cat. #
USP/EP Bulk Water System Suitability Set	18000
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 40 mL vials.	

Sets – USP	Cat. #
USP Sterile Water System Suitability Set	18061
Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	

Sets – JP	Cat. #
JP System Suitability Set	18000J
Includes (1) Reagent Water, and (1) 0.500 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	

Calibration & Validation

Kits/Sets	Cat. #
Simple Precision & Accuracy Set	18009
Includes (1) Reagent Water (Rw) and (1) 0.500 mg/L C USP Sucrose (Rs) - HCl preserved in 40 mL vials.	
Single Point Verification Set	19601
Includes (1) Blank, (1) 0.500 mg/L C as Sucrose, and (1) 0.500 mg/L IC as $NaHCO_3$ in 40 mL vials.	
TOC-V and TOC-L Validation Kit	11002
Includes (1) Water Blank, and (2) 100.0 mg/L C as KHP in 125 mL amber glass bottles.	
TOC-V and TOC-L HS Validation Kit	11003
Includes (1) Water Blank, and (2) 10.0 mg/L C as KHP in 125 mL amber glass bottles.	
TOC-V and TOC-L Multi Calibration Kit	11005
Includes (2) Calibration Blanks, (2) each 0.100 mg/L, 0.250 mg/L, 0.500 mg/L C as KHP, and (1) each 0.750 mg/L and 1.0 mg/L C as KHP in 40 mL vials.	

Consumables

	Cat. #
Phosphoric Acid Reagent (1 Liter)*	21016
Persulfate Oxidizer Reagent (1 Liter)*	21017

* Dangerous good. Requires special shipping.

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Teledyne Tekmar

All of our Teledyne Tekmar Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Teledyne Tekmar TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability

Sets - HCl Preserved	Cat. #
USP System Suitability Set - HCl Preserved	18004H
Includes (1) Reagent Water (Rw), (1) 0.500 mg/L C USP Sucrose (Rs) and (1) 0.500 mg/L C USP 1,4-Benzoquinone (Rss) in 40 mL vials.	

Sets – USP/EP	Cat. #
USP/EP Bulk Water System Suitability Set	18000
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 40 mL vials.	

Sets – USP	Cat. #
USP Sterile Water System Suitability Set	18061
Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	

Sets – JP	Cat. #
JP System Suitability Set	18000J
Includes (1) Reagent Water, and (1) 0.500 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	

Calibration & Validation

Kits	Cat. #
Simple Precision & Accuracy Set	18009
Includes (1) Reagent Water (Rw) and (1) 0.500 mg/L C USP Sucrose (Rs) - HCl preserved in 40 mL vials.	
Single Point Verification Set	19601
Includes (1) Blank, (1) 0.500 mg/L C as Sucrose, and (1) 0.500 mg/L IC as $NaHCO_3$ in 40 mL vials.	
Validation Set – Fusion*	19004
(4) TOC Blank, (3) 1.0 mg C/L as KHP, (1) 10.0 mg C/L as KHP, (1) 25.0 mg IC/L $NaHCO_3$, (1) Reagent Water Rw, (1) 0.500 mg/L C from USP Sucrose Rs, (1) 0.500 mg/L C from USP 1,4-Benzoquinone Rss, (1) Reagent Water Rw, (1) 8.0 mg/L C from USP Sucrose Rs, (1) 8.0 mg/L C from USP 1,4-Benzoquinone Rss, (1) 10.0 mg C/L as KHP - 125 mL, (1) 5.0 mg C/L as KHP - 125 mL	

Consumables

	Cat. #
Phosphoric Acid Reagent (1 Liter)*	21016
Persulfate Oxidizer Reagent (1 Liter)*	21017

* Dangerous good. Requires special shipping.

Other TOC Instruments

All of our Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on various brands of TOC instruments for calibration and to satisfy regulatory requirements.

If you do not see your brand of TOC instrument listed below, please contact us for availability.

Swan Analytical

System Suitability

Sets	Cat. #
Low-Level System Suitability Set	18059
Includes (1) Reagent Water, (1) 0.300 mg/L C USP Sucrose, and (1) 0.300 mg/L C USP 1,4-Benzoquinone in 250 mL HDPE containers.	

Calibration & Other

Kits	Cat. #
Swan Calibration Kit	10035S
Includes (1) Calibration Blank and (1) 1.0 mg/L C as Sucrose in 250 mL HDPE containers.	
Swan Function Test Kit	19700
Includes (1) 20.0 mg/L C Sucrose and (1) 20.0 mg/L C 1,4-Benzoquinone in 125 mL HDPE containers.	

MembraPure

System Suitability

Sets – USP/EP	Cat. #
USP/EP Bulk Water System Suitability Set	18140
Includes (1) Reagent Water Rw, (1) 0.500 mg/L C USP Sucrose, and (1) 0.500 mg/L USP 1,4-Benzoquinone in 500 mL HDPE containers.	

Calibration - Individual Standards (500 mL HDPE Container)

	Cat. #
USP Reagent Water (Rw)	18141
1.00 mg/L C as Sucrose	11300

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

*Fusion is a registered trademark of Teledyne Technologies Incorporated.

Consumables

Ever wonder what the USP means by: "Use labware and containers that have been scrupulously cleaned of organic residues"?

Just like the USP, we demand scrupulously cleaned vials for our TOC standards. All of our vials, whether glass or polymer, represent the most consistently clean sample vials available anywhere. They are the perfect vial for your purified water (PW) or water for injection (WFI) sample analysis.

We offer consumable products for various TOC instruments as detailed below.

Vials and Bottles

	Cat. #
40 mL Ultra-Low TOC Glass Vials (80/case)	25025
60 mL Low TOC HDPE Bottle – Natural (50/case)	25056

UV Lamps - Replacement UV Lamps for Beckman Coulter and Sievers models

	Cat. #
A643/TOC600	20036A
PAT700	20037
Sievers 400/800	20040
Sievers 500/900	20045

Reagent Cartridges for Sievers

	Cat. #
300 mL - Replacement Sievers Acid Cartridge*	21012
150 mL - Replacement Sievers Acid Cartridge*	21011
300 mL - Replacement Sievers Oxidizer Cartridge	21008
150 mL - Replacement Sievers Oxidizer Cartridge	21007

* Dangerous good. Requires special shipping.

Reagents

	Cat. #
Phosphoric Acid Reagent (1 Liter)*	21016
Persulfate Oxidizer Reagent (1 Liter)*	21017

* Dangerous good. Requires special shipping.

Tubing - Replacement Pump Tubing for Sievers models

	Cat. #
Sievers 900	20060
Sievers 800	20050
Sievers 400	20055

Filters

	Cat. #
60 Micron In-Line Stainless Filter	25035

United States Pharmacopeia Monographs, Chapter <643> - Total Organic Carbon.

Learn more about Consumables

Cleaning Validation

Waters ERA is the premier manufacturer of specialty cleaning validation products – coupons, certified clean sample vials and swabs for swab recovery studies as well as kits that can be customized to suit your laboratory, analyst and validation needs.

Sampling Kit with Vial and Swab

	Cat. #
Vial and Swab Sampling Kit – Large	CV10005TX
Includes (160) certified clean swabs and (80) certified clean vials.	

Swabbing Templates

Pre-cleaned Teflon® square swabbing templates are a simple way to ensure accuracy and precision in your cleaning validation sampling. Each pack comes with a Certificate of Analysis for residual HPLC and TOC levels. Swabbing templates can be custom made to your needs. Stainless steel templates are available upon request. Call for pricing, availability, and custom sizing.

	Cat. #
25 cm^2 (25/pack)	30029
100 cm^2 (25/pack)	30032

Swabs

Large polyester swabs with snap-off head for ultra-low interference levels.

	Cat. #
TOC Swabs (< 50.0 ppb TOC)	30033TX
Includes (20) swabs (1 total bag)	
TOC Swabs (< 50.0 ppb TOC)	30031TX
Includes (100) swabs (20/bag, 5 total bags)	

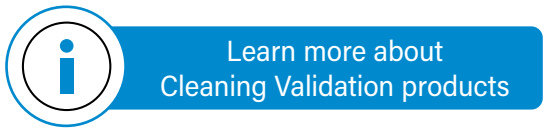
Custom Coupons

Waters ERA can accommodate your custom requests for coupons of just about any size, shape or material. Please use the general catalog numbers below and provide the information at the bottom to your customer service representative.

	Cat. #
Polymer	30024
Metal	30025
Glass	30027

Call 800.372.0122 or 303.431.8454 for a quote on your custom coupon needs in the U.S. contact your sales partner or e-mail your inquiry to ERA_Europe_Sales@waters.com in Ireland. Please have the following information available:

Material	Metal, plastic, rubber, or glass type (stainless steel, polyethylene, *etc.*).
Grade	Specific grade of material (*i.e.*, 316 stainless, HDPE or borosilicate glass).
Finish	Arguably the most important factor for metals. The finish refers to the surface roughness and is generally stated in units of "Ra". It is most often measured using a profilometer.
Coating	Some materials can be coated to offer desirable surface properties.
Etching	Some materials can be etched with serial numbers, swabbing areas or other information.
Dimensions	Size and shape of the coupon.
Quantity	The quantity of coupons needed.



Reference Standards

All of Waters ERA's Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

Inorganic Carbon

Inorganic Carbon (IC) is derived from non-living sources and it exists in pharmaceutical waters as carbonate, bicarbonate, and dissolved carbon dioxide (CO_2). Whether your instrument quantifies IC as part of a differential calculation or removes it as part of a "non-purgeable" method of TOC determination, your instrument's ability to remove and/or measure IC must be validated. Below are the most commonly requested IC concentrations for calibration and validation of TOC instrumentation.

Bulk sizes may be available for the Inorganic Carbon standards. Please contact your sales representative if you have questions about any products that are not listed in this publication.

Individual CRMs for Inorganic Carbon

	Volume	Cat. #
0.5 mg/L IC from $NaHCO_3$	40 mL	15990
1.0 mg/L IC from $NaHCO_3$	40 mL	16000
5.0 mg/L IC from $NaHCO_3$	40 mL	16300
10.0 mg/L IC from $NaHCO_3$	40 mL	16600
25.0 mg/L IC from $NaHCO_3$	40 mL	16900
50.0 mg/L IC from $NaHCO_3$	40 mL	17130

Turbidity

Turbidity products are designed specifically for pharmaceutical turbidimetric validation, calibration and monitoring applications including performing particle content/concentration testing, monitoring for fermentation progress, or filter break monitoring.

Custom turbidity products are available if you need a standard. Please contact us to inquire about custom turbidity reference materials.

High-Purity Water

Certified Low-TOC Water suitable for use with your TOC or liquid chromatography system. All of our waters are prepared with the highest level of care throughout the Ion-Exchange-Filtration-RO-UV purification process. Our water must pass a rigorous testing scheme and we guarantee the analysis of each bottle as well as your satisfaction.

USP Purified – Certified Low-TOC Water

	Cat. #
USP Purified Low-TOC Water – 4 Liter	PW10000
USP Purified Low-TOC Water – 4 x 4 Liter Case	PW10005

pH Buffers

Three color-coded pH Buffers that are prepared under our ISO 17034 accreditation. The buffers are mercury free, guaranteed stable for one year, and they are analytically traceable to NIST Standard Reference Materials (SRMs). Waters ERA pH Buffers are designed for routine calibration and/or verification of pH meters and they are supplied with a full certificate of analysis.

pH Buffer Products in 500 mL HDPE Containers

	Cat. #
pH 4 (Red) 1 Bottle	127
pH 4 (Red) Case of 6 Bottles	128
pH 7 (Yellow) 1 Bottle	131
pH 7 (Yellow) Case of 6 Bottles	132
pH 10 (Blue) 1 Bottle	135
pH 10 (Blue) Case of 6 Bottles	136
(2) Each of pH 4, pH 7, and pH 10	141

For other pH buffers please contact us at 800.372.0122 and inquire about our custom pH buffers or our line of environmental reagents.

All Sucrose, $NaHCO_3$, and KHP standards are manufactured from NIST materials unless otherwise stated.

Conductivity

Conductivity solutions and kits that support accurate, verifiable, and approved approaches to validating/verifying your conductivity sensors. Whether you are validating detection limits, determining accuracy and precision, or constructing a low-level linearity curve, Waters ERA has the conductivity products and services to support your efforts.

All Waters ERA Conductivity standards are manufactured in a water matrix, and are scrutinized under Waters ERA's ISO 17034 accreditation.

Low-Level Conductivity (in HDPE bottles)

Our Low-Level conductivity is an excellent verification solution once you have calibrated your system using our ASTM Solution D.

	Cat. #
25 µS/cm (500 mL)	01300
25 µS/cm (125 mL)	01400

Mid-Level Conductivity (in HDPE bottles)

Manufactured using NIST traceable materials and certified. This potassium chloride (KCl) solution is an excellent calibration or calibration verification solution. This solution is certified by analysis and it does not require the use of a reference blank for accurate calibration or validation.

	Cat. #
100 µS/cm (1 Liter)	02400
100 µS/cm in (500 mL)	02500
100 µS/cm (125 mL)	02600

Mid-Level Conductivity ASTM Solution D (in HDPE bottles)

ASTM Solution D is the lowest level solution that can be made following a NIST protocol for conductivity solution preparations. This standard makes an excellent calibration or verification solution together with our 25 µS/cm solution. All Solution D products include an associated Reference Blank.

	Cat. #
Solution D Test Kit (500 mL)	01600
Solution D at 146.93 µS/cm (500 mL)	01800
Solution D at 146.93 µS/cm (125 mL)	01900

Kit includes (1) Solution D, (1) Reference Blank, and (10) pre-cleaned 125 mL wide-mouth HDPE containers.

High-Level Conductivity (in HDPE bottles)

ASTM Solutions C are prepared prescriptively from KCl and offer superior accuracy at mid- to high-levels for conductivity sensor validation and verification.

	Cat. #
ASTM Solution C at 1408.8 µS/cm (125 mL)	01610
ASTM Solution C at 1408.8 µS/cm (1 Liter)	01620
1000 µS/cm (125 mL)	01410
1000 µS/cm (1 Liter)	01430
10,000 µS/cm (125 mL)	01630
10,000 µS/cm (1 Liter)	01640
100,000 µS/cm (125 mL)	01650
100,000 µS/cm (500 mL)	01655

Learn more about Conductivity products

Waters ERA global distributors and sales partners

Waters ERA currently serves customers in more than 80 countries through an extensive network of knowledgeable distributors and sales partners. Please visit **eraqc.com/globalpartners** to find the name of an authorized distributor in your area or country. Click on the Global Sales Partner link in the About Waters ERA pull down menu. You may also request distributor information by sending an e-mail to ERA_Europe_Sales@waters.com in Europe or era_info@waters.com in the U.S. and the rest of the world. See our website for all of our best-in-class partners across the world.

Waters ERA Subscription Services

We can setup subscription orders to meet your specific needs if your internal quality control program requires regularly scheduled analyses for compliance monitoring or routine instrument maintenance. Subscriptions eliminate the need to place recurring orders. Products are delivered on a regular schedule and they will always be available when you need them. Some of the benefits include:

- Subscriptions can be designed to match your specific needs (e.g., weekly, monthly, etc.)
- Billing occurs for each individual shipment regardless of how you normally pay for vendor supplied materials
- Changes can be made if necessary during the length of the subscription
- You will have the maximum amount of expiration period for your required reference materials
- Subscriptions can be designed for custom products
- Please contact Waters ERA to set up a subscription order or if you have any questions about these services.

Glossary

A – C

A	4-AAP	4 - Aminoantipyrene
	A2LA	American Association for Laboratory Accreditation
	AE	Air & emissions
B	BCH	Benzene hexachloride
	BOD	Biochemical oxygen demand
	BTEX	Benzene, toluene, ethylbenzene, and xylenes
C	CALA	Canadian Association for Laboratory Accreditation
	CFU	Colony-forming unit
	CLP	Contract laboratory program
	COD	Chemical oxygen demand
	CofA	Certificate of analysis
	CRDL	Contract required detection limit
	CRM	Certified reference material
	CVAFS	Cold vapor atomic fluorescence spectroscopy
	CVAA	Cold vapor atomic absorption
	CWA	Clean Water Act

D – F

D	DBCP	Dibromochloropropane
	DI	Deionized
E	EDB	Ethylene dibromide also known as 1,2-Dibromoethane
	EDD	Electronic data deliverable
	ELAP	Environmental Laboratory Accreditation Program
	EPA	Environmental Protection Agency
	EPTIS	European Proficiency Testing Information System
	ERA	Environmental Resource Associates
F	FAQ	Frequently asked question
	FID	Flame ionization detector
	FoPT	Field of Proficiency Testing

G – I

G	GC	Gas chromatography
H	HCH	Hexachlorocyclohexane
	HEM	Hexane extractable material
	HMX	Nitroamine high explosive
	HPC	Heterotrophic plate count
	HPLC	High performance liquid chromatography
I	IC	Ion chromatography
	ICP	Inductively coupled plasma
	IR	Infrared
	ISE	Ion selective electrode
	ISO	International Organization for Standardization

L – N

L	LAS	Linear alkylbenzene sulphonates
	LIMS	Laboratory information management system
M	MBAS	Methylene blue active substances
	MCPA	2-methyl-4-chlorophenoxyacetic acid
	MCPP	Mecoprop (chlorophenoxy herbicide)
	MEK	Methyl ethyl ketone
	MF	Membrane filtration
	mg	Milligrams
	mg/dscm	Milligrams per dry standard cubic meter
	MIBK	Methyl isobutyl ketone
	MOE	Ministry of the Environment (Ontario)
	MPN	Most probable number
	MRAD	Multi-media radiochemistry
	MTBE	Methyl tert-butyl ether
N	NELAC	National Environmental Laboratory Accreditation Conference
	NELAP	National Environmental Laboratory Accreditation Program
	NIST	National Institute of Standards and Technology (U.S.)
	NPDES	National Pollutant Discharge Elimination System
	NQA	National Quality Assurance
	NTU	Nephelometric turbidity unit

O – Q

O	OES	Optical emission spectrometry
P	PAH	Polycyclic aromatic hydrocarbons
	PC units	Platinum-cobalt
	PCB	Polychlorinated biphenyls
	pci/kg	Picocuries per kilogram
	PE	Performance evaluation
	PFAS	Per- and polyfluoroalkyl substances
	pg	Picogram
	PT	Proficiency test(ing)
	PUF	Polyurethane foam
Q	QC	Quality control
	QR	QuiK Response

R – T

R	RCRA	Resource Conservation and Recovery Act
	RDX	Research department explosive (an explosive nitroamine)
	RM	Reference material
	RTU	Ready-to-use
S	SCC	Standards Council of Canada
	SDWA	Safe Drinking Water Act
	SGTheM	Silica gel treated hexane extractable materials
	SI unit	International System of units
	SPE	Solid-phase extraction
	SU	Standard units
T	TCDD	Tetrachlorodibenzo-p-dioxin
	TCLP	Toxicity characteristic leaching procedure
	TCP	Trichloropropane
	TKN	Total Kjeldahl (kel'dahl) Nitrogen
	TNI	The NELAC Institute
	TOC	Total organic carbon
	TOX	Total organic halides
	TPH	Total petroleum hydrocarbons
	TSS	Total suspended solids

U – Z

U	UCMR	Unregulated contaminant monitoring rule
	UKAS	United Kingdom Accreditation Service
	µmhos	Micromhos (measure of electrical conductivity of a solution)
	UPLC	Ultra performance liquid chromatography
V	VOA	Volatile organic analysis
	VOC	Volatile organic compounds
W	WP	Water pollution
	WS	Water supply
	WWTP	Wastewater treatment plant
Z	Z-score	Statistical measurement of a score's relationship to the mean in a group of scores

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