NATIONAL WATER QUALITY LABORATORY

1994 SERVICES CATALOG

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U.S. GEOLOGICAL SURVEY

Open-File Report 94-304

Denver, Colorado
1994

U.S. DEPARTMENT OF THE INTERIOR

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CONTENTS

TABLES

CONVERSION FACTORS

Multiply	By	To obtain
micrometer (μm)	3.94×10^{-5}	inch
millimeter (mm)	0.03937	inch
liter (L)	0.265	gallon
microliter (μL)	2.64×10^{-7}	gallon
milliliter (mL)	2.64×10^{-4}	gallon
gram (g)	0.03527	ounce, avoirdupois
milligram (mg)	3.53×10^{-5}	ounce

Temperature in degrees Celsius (°C) can be converted to degrees Fahrenheit (°F) by using the following equation:

$$°F = 9/5\ (°C) + 32$$

ABSTRACT

This Services Catalog is intended for the internal use of U.S. Geological Survey personnel and contains information about field supplies and analytical services available from the National Water Quality Laboratory to Survey members of the Water Resources Division. To assist personnel in the selection of analytical services, this catalog lists sample volume, applicable concentration range, detection level, precision of analysis, and preservation requirements for samples.

INTRODUCTION

Three Water Resources DivisionTechnical Memoranda, 92.35--Use of Laboratories, 92.36--Use of Laboratories by National Water Quality Programs, and 92.37--Laboratory Methods, stated that all Water Resources Division (WRD) programs having national impact would use the services provided by the National Water Quality Laboratory (NWQL), whether in its own Laboratory, through contracted services, or by interagency agreements. Thus, all Districts and National Water-Quality Assessment (NAWQA) study units need to be familiar with the contents of this catalog.

This catalog is distributed annually but is continually updated to reflect new parameters, schedules, and analytical details. New methods of chemical analysis are constantly being researched, approved, and added at the NWQL. Parameters are deleted when they become obsolete. District owners of schedules might change their schedule contents, leaving users from other Districts with unwanted analytical work. To keep informed of these changes, readers of the catalog are urged to use a program on the NWQL partition of DCOLKA--Schedules, Parameters and Network (SPN). SPN contains the latest version of the information shown in this catalog, as well as historical information from the two previous fiscal years. SPN is a menu-driven search and display program, showing information about laboratory codes and schedule contents. However, no textual information is available in SPN.

The Services Catalog consists of three sections: the first section lists containers, solutions, and other materials that are available through the NWQL; the second section describes the field processing of samples submitted for analysis; and the third section includes available analytical services. In addition, a Glossary and an Index are provided.

Laboratory codes and schedules are grouped by parameters that are measured together in the NWQL. In cases where more than one analytical method is offered for a single element or compound, different laboratory codes are given.

For information about the methods used for the analytical services offered in this catalog, refer to the section entitled "Selected References."

For more detailed information or discussions, the reader is advised to contact the NWQL. Laboratory contacts are listed in table 1; abbreviations, classifications, and units for all tables are listed in table 2 in place of headnotes. This catalog supersedes the 1993 National Water Quality Laboratory Services Catalog (C.A. Watterson and A.T. Kashuba, U.S. Geological Survey, written commun., 1993, NWQL Technical Memorandum 93.04).

ACKNOWLEDGMENTS

Thanks are extended to the authors and editors of all previous editions of the National Water Quality Laboratory Services Catalog. Over the years, many people have devoted their time and knowledge toward making each succeeding catalog more comprehensive. Appreciation is extended to Steve Glodt for compiling the National Water-Quality Assessment Program (NAWQA) data for inclusion in the 1994 catalog.

Table 1.--National Water Quality Laboratory contacts

Contact	Title (EDOC address)
NWQL management staff	
Pete Rogerson	Chief, Branch of Analytical Services (ROGERSON)
Bob Williams	Assistant Branch Chief (BOBWILL)
Al Driscoll	Acting Chief, Quality Management Program (DRISCOLL)
Merle Shockey	Chief, Inorganic Program (MSHOCKEY)
Mark Burkhardt	Acting Chief, Organic Program (MRBURK)
Mark Sandstrom	Chief, Methods Research and Development Program (SANDSTRO)
Debbie Treseder	Chief, Administrative Services Unit (TRESEDER)
Carlos Arozarena	Safety Officer, NWQL and Central Region (CARLOS)
Linda Pratt	Chief, Laboratory Operations Program (LKPRATT)
Contacts for specific questions	
Department of Defense Environmental Contamination (DODEC)	Dorothy Walker (DMWALKER)
Computer Services Unit updates, communications, and reloads	DENADP
Bottles/ampules from NWQL	Will Lanier (WDLANIER or DENSUPPL)
Field quality-assurance/quality-control materials (blank water and spikes)	Bruce Darnel (BRDARNEL) Mark Sandstrom
Inorganic production and program activities	Merle Shockey (DENINORG)
Inorganic quality-control activities	Merle Shockey or DENQC
Laboratory catalog	Linda Pratt Pat Timme (PJTIMME)
Laboratory Automation Data System (LADS)	Sandy Turner (STURNER)
Log-in	Peggy O'Mara-Lopez (PGOMARA or DENLOG)
Methods development and special activities	Mark Sandstrom

Table 1.--National Water Quality Laboratory contacts--Continued

Contact	Title (EDOC address)
Contacts for specific questions	
National Water-Quality Assessment Program	Steve Glodt (SRGLODT) (NAWQADAT) Kim Pirkey (KDPIRKEY)
New schedules/parameter codes	Steve Glodt (SRGLODT)
Organic production and program activities	Mark Burkhardt (MRBURK or DENORG)
Priority and custom/ specific constituent	Merle Shockey--Inorganic Mark Burkhardt--Organic
Quality-control reanalysis requests for districts	DENQC
Radiochemical contracts	Ann Mullin (AHMULLIN)
Custom analysis	Mark Sandstrom
General assistance	Bob Williams (LABHELP)

Table 2.--Abbreviations, classifications, and units

Abbreviations	
2SPE	2 sigma precision estimate
AA	Atomic absorption
ASF	Automated-segmented flow, colorimetric
auto.	Automated
BNA	Base neutral acid
BTM	Bottom material
calc.	Calculated
CAS	Chemical Abstract Service
chel.	Chelation extraction
CL	Classifications
CVAA	Cold vapor atomic absorption
DCP	Direct-current plasma
DNAA	Delayed neutron activation analysis
DIC	Dissolved inorganic carbon
DIS	Dissolved
Div.	Division
elec.	Electrometric
USEPA	U.S. Environmental Protection Agency
ET	Electrometric titration
EXT	Extracted
FF	Field filtered
FY	Fiscal year
GC/ECD	Gas chromatography/electron capture detector
GC/FID	Gas chromatography/flame ionization detector
GC/FPD	Gas chromatography/flame photometric detector
GC/NPD	Gas chromatography/nitrogen phosphorus detector
GC/MS	Gas chromatography/mass spectrometric detector
GFAA	Graphite furnace atomic absorption
GR	Gravimetric analysis
HA	Hydride analysis
HDPE	High density polyethylene
HPLC	High-performance liquid chromatography
HS	Total dissolved solids greater than 250 mg/L
IC	Ion-exchange chromatography
ICP	Inductively coupled plasma
ICP/MS	Inductively coupled plasma/mass spectrometry
IR	Infrared
ISE	Ion selective electrode
lab.	Laboratory
LC	Laboratory code
LF	Laboratory filtered
LIS	Low-ionic strength
LL	Low-level analysis
LLD	Lower limit of determination
MBAS	Methylene blue active substances
MC	Method code
MN	Method number
MRL	Minimum-reporting level
N	Normal
NASQAN	National Stream Quality Accounting Network
NAWQA	National Water-Quality Assessment Program
No.	Number
NPD	Nitrogen-phosphorous detector

Abbreviations--Continued	
NPDES	National Pollution Discharge and Elimination System
NTU	Nephelometric turbidity unit
NWQL	National Water Quality Laboratory
O.D.	Outside diameter
oz.	ounce
PC	Parameter code
PCB	Polychlorinated biphenyl
PCN	Polychlorinated maphthalene
PDB	Pee Dee Belemnite
PPMB	Phosphomolybdate
RCRA	Resource Conservation & Recovery Act
Ref. No.	Reference number
SC	Schedule number
SDWA	Safe Drinking Wter Act
SMOW	Standard Mean Ocean Water
SPC	Specific conductance
SPE	Solid-phase extraction
SV&BT	Sample volume and bottle type
SUS	Suspended
TIC	Total inorganic carbon
TOT	Total
USGS	U.S. Geological Survey
VOC	Volatile organic compounds
VOI	Volatile-on-ignition
wt	Weight
WWR	Whole water, recoverable
YBP	Years before present

Table 2.--Abbreviations, classifications, and units--Continued

Signs and symbols	
--	Information not available
@	At
±	Plus or minus
>	Greater than
<	Less than
≥	Greater than or equal to
≤	Less than or equal to
Units of measurement	
%	percent
deg C	degree Celsius
g	gram
gal	gallon
g/kg	gram per kilogram
g/m^2	gram per square meter
g/mL	gram per milliliter
in.	inch
L	liter
mg	milligram
mg/kg	milligram per kilogram
mg/L	milligram per liter
mg/m^2	milligram per square meter
mL	milliliter
mm	millimeter
pt	pint
pCi/g	picocurie per gram
pCi/L	picocurie per liter
µg/g	microgram per gram
µg/kg	microgram per kilogram
µg/L	microgram per liter
µL	microliter
µm	micrometer
µmol	micromole
µS/cm	microsiemens per centimeter at 25 degrees Celsius

CONTAINERS, SOLUTIONS, AND MISCELLANEOUS ITEMS

Various containers, solutions, and supplies used in collecting, processing, and preserving samples for subsequent chemical analysis in the NWQL are available from both the NWQL and the Quality Water Service Unit (QWSU) in Ocala, Fla. Orders may be placed with the NWQL (DENSUPPL) or QWSU (OCALAMAN). These supplies need to be used to ensure the integrity of the sample when they are submitted for analysis to the NWQL. Considerable effort goes into ensuring the quality of the supplies though various quality-control (QC) steps in monitoring the contractors' products.

Many WRD customers wish to use these supplies for samples that will not be analyzed by the NWQL. The cost of supplies is not included in the price of the analysis since it would raise the overall cost for those requesting analyses from the Laboratory. Supply prices are based on the cost of purchase, cleaning, and quality assurance, and are billed upon ordering. Due to the high cost of Teflon[1] containers, they remain the property of the NWQL and are loaned to the requester. Field supplies available from the NWQL and QWSU are listed in table 3.

To order containers and supplies from the NWQL or the QWSU, send an EDOC message to DENSUPPL or OCALAMAN containing the following information:

1. List each item ordered exactly as described in table 3.
2. State the number of units ordered (for example, 5 packs of 25).
3. Give the account number to be charged.
4. Give the name and shipping address.

If this information is not complete, the order will be delayed while the information is gathered by return EDOC or telephone call. The order will be filled as quickly as possible. However, because of circumstances beyond the control of the NWQL and QWSU, some items may be temporarily out of stock, and partial orders may have to be shipped.

[1]Use of trade and brand names in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

Table 3.--Field supplies

[Obtain from: D, National Water Quality Laboratory, Denver, Colo.; O, Quality Water Service Unit, Ocala, Fla.]

Containers, solutions, and miscellaneous items	Obtain from	Bottle type/sample designation[1]	Unit supplied
Ampule, $H_3PO_4/CuSO_4$	O	LCO052	25 /pack
Ampule, $HgCl_2$-NaCl, 0.5 mL (13 mg $HgCl_2$, 100 mg NaCl)	O	FC, RC	24 /pack
Ampule, nitric acid, 1 mL	O	FA, RA, RAE, RAH	24 /pack
Ampule, nitric acid, 2 mL	O	FA, RA, FAR	25 /pack
Ampule, nitric acid, ultrapure, 1 mL	O	FAB, RAB	25 /pack
Ampule/vial, nitric acid, ultrapure, 1 mL packaged in 3 mL Teflon vial[2]	O	FAB, RAB	24 /pack
Ampule/vial, nitric acid, ultrapure, 1 mL packaged in 3 mL Teflon vial[2]	O	FAB, RAB	5 /pack
Ampule, nitric acid/potassium dichromate, 10 mL	O	FAM, RAM	25 /pack
Ampule, sodium hydroxide, 5*N*, 5 mL	O	LCO880, LCO023	24 /pack
Ampule, sulfuric acid, 1 mL	O	LCO076	25 /pack
Ampule, sulfuric acid, 2 mL	O	LCO127	25 /pack
Analytical service request forms (ASRs)	O	All codes	1 each
Ascorbic acid (vitamin C), 5 g	O		1 each
Ascorbic acid (VOC), 5 g, includes measuring scoop	D		1 each
Bag, bubble, 1 L 6 in. x 9 in.	O		1 each
Bag, mesh, 14 in. x 16 in.	O		1 each
Bag, mesh, 16 in. x 24 in.	O		1 each
Blank water, inorganic	O		1 gal
Blank water, pesticide	D		4 /case
Blank water, pesticide	D		1 gal
Blank water, VOC	D		1 gal
Blank water, VOC	D		4 /case
Bottle, glass, amber, 1 L, 33-mm neck, baked	D	GCC, LC0052, LC0127	12 /case
Bottle, glass, amber, 125 mL, 22-mm neck, raw (Poly-Seal caps need to be ordered separately)	D	LC1574, LC0489	24 /case

Table 3.--Field supplies--Continued

Containers, solutions, and miscellaneous items	Obtain from	Bottle type/sample designation[1]	Unit supplied
Bottle, glass, amber, 125 mL, 22-mm neck, baked, with caps	D	LC0019, LCO076, LC0113, LC0114, LC0306, SC1379	24 /case
Bottle, glass, amber, 1 L, 33-mm neck, raw (Poly-Seal caps need to be ordered separately)	D	LC1043, LC1565 LC0440, LC0298, LC1717, LC1718	12 /case
Bottle, glass, clear, 1 L, 53-mm neck, baked	D	Fits auto sampler	12 /case
Bottle, glass, clear, 1 L, 89-mm neck, baked	D	LC1199	12 /case
Bottle, glass, clear, 250 mL, 24-mm neck, acid-rinsed	O	FAM, RAM	24 /case
Bottle, glass, clear, 250 mL, 24-mm neck, baked	D	--	24 /case
Bottle, glass, clear, 500 mL, 89-mm neck, baked	D	BGC	12 /case
Bottle, glass, clear, 60 mL, 20-mm neck, raw (Poly-Seal cap included)	O	LC1574, LC0489	24 /case
Bottle, polyethylene, brown, 125 mL, 28-mm neck, raw (caps need to be ordered separately)	O	FC, RC	100 /repack
Bottle, polyethylene, brown, 125 mL, 28-mm neck, raw (caps need to be ordered separately)	O	FC, RC	660 /case
Bottle, polyethylene, natural, 1 L, 28-mm neck, acid rinsed with clear cap	O	FAR, RUR	144 /case
Bottle, polyethylene, natural, 1 L, 28-mm neck, raw	O	FU, RU	144 /case
Bottle, polyethylene, natural, 1 L, 28-mm neck, raw (tritium) (Poly-Seal cap included)	O	LC1043, LC1565	each
Bottle, polyethylene, natural, 125 mL, 28-mm neck, acid-rinsed with clear cap	O	--	660 /case

Table 3.--Field supplies--Continued

Containers, solutions, and miscellaneous items	Obtain from	Bottle type/sample designation[1]	Unit supplied
Bottle, polyethylene, natural, 125 mL, 28-mm neck, raw (caps need to be ordered separately)	O	--	100 /repack
Bottle, polyethylene, natural 125 mL, 28-mm neck, raw (black plastic caps need to be ordered separately)	O	LC0050, LC0452 (LC0452 must have Poly-Seal cap)	660 /case
Bottle, polyethylene, natural, 125 mL, 28-mm neck, raw (black plastic caps need to be ordered separately)	O	LC0050, LC0452 (LC0452 must have Poly-Seal cap)	660 /case
Bottle, polyethylene, natural, 250 mL, 28-mm neck, acid-rinsed with clear cap	O	FA, RA, RAE, RAH	15 /case (with Ziploc bag)
Bottle, polyethylene, natural, 250 mL, 28-mm neck, acid-rinsed with clear cap	O		225 /case (15 per Ziploc bag)
Bottle, polyethylene, natural, 250 mL, 28-mm neck, raw (caps need to be ordered separately)	O	FU, RCB, RU, LC0023 LC0089, LC0880, LC0460 (LC0460-must have Poly-Seal cap)	320 /case
Bottle, polyethylene, natural, 500 mL, 28-mm neck, acid-rinsed with clear cap	O	FA, RA	228 /case
Bottle, polyethylene, natural, 500 mL, 28-mm neck, raw (caps need to be ordered separately)	O	FU, RU, LC0169, LC0624	228 /case
Bottle, polypropylene, natural, 500 mL, 89-mm neck, acid-rinsed with clear cap		NAWQA	1 each
Bottle, polypropylene, natural, 500 mL, 89-mm neck, raw (caps need to be ordered separately)	O	CC, CU	1 each
Bottle, Teflon, natural, 250 mL, rental, usage and cleaning fee, acid-rinsed with cap (bottle is to be returned to laboratory	O	FAB, RAB	1 each

Table 3.--Field supplies--Continued

Containers, solutions, and miscellaneous items	Obtain from	Bottle type/sample designation[1]	Unit supplied
Caps, melamine, green, 89 mm	O	Bottle, polyethylene, wide-mouth sediment	12 /case
Caps, melamine, green, 89 mm	O	Bottle, polyethylene, wide-mouth sediment	1 each
Caps, metal, size 22	O	Bottle, glass 4 oz	1 each
Caps, metal, size 33	O	Bottle, glass 32 oz	1 each
Caps, metal, size 53	O	Bottle, glass 32 oz, wide-mouth packer	1 each
Caps, metal, size 89	O	Bottle, glass 16 oz	1 each
Caps, plastic, black, 28-mm	O	Bottle, polyethylene, raw	1,200 each
Caps, plastic, black, 28-mm	O	Bottle, polyethylene, raw	100 /repack
Caps, Poly-Seal cone insert, 22-mm	O	Bottle, glass, 125 mL	1 each
Caps, Poly-Seal cone insert, 28-mm	O	Bottle, polyethylene 4,8,16	1 each
Caps, Poly-Seal cone insert, 33-mm	O	Bottle, polyethylene 4,8,16	1 each
Cartridge, SPE, C-18	D	SC 2010	1 each
Cartridge, SPE, Carbopak-B	D	SC 2051	1 each
Cartridge, SPE, Adapter Kit	D	SC 2051	1 each
Cartridge, SPE, flow-control valve	D		1 each
Filters, silver or biological, or both	O	--	1 each
Hydrodhloric acid, concentrated, 30-ml Teflon bottle for NAWQA VOC preservation	D		1 each
Hydrochloric acid, diluted 1:4 with water, 30-ml Teflon bottle for acrolein/acrlonitril VOC preservation	D		1 each
Kit, media, agar, fecal coliform	O	--	15 /kit
Kit, media, agar, fecal streptococci	O	--	15 /kit
Kit, media, agar, total coliform	O	--	15 /kit
Kit, organic field spiking (mixtures extra)[3]	D		1 each
Kit, capillary glass bores, baked replacement, 100 µL	D	--	30 /kit

Table 3.--Field supplies--Continued

Containers, solutions, and miscellaneous items	Obtain from	Bottle type/sample designation[1]	Unit supplied
Kit, periphyton, chlorophyll and biomass	O	CHE	1 kit
Kit, phytoplankton, chlorophyll	O	CHY	1 kit
Labels, MRM (merchandise return mail) 1st or 4th class	D		25 /pack
Labels, SMS (sample management system)	D	--	5,000 /box
Packer, foam, universal, 1 L	O	--	1 each
pH Buffers (4.0, 7.0, 10.0), 1 L	O	--	1 each
pH Buffers (4.0, 7.0, 10.0), 5 gal	O	--	1 each
pH Buffers (low ionic), 1 L	O	--	1 each
Radon kits	D	--	1 each
Sleeve, foam, 5 in. x 8 in.	O	--	1 each
Sleeve, foam, 6 in. x 10 in.	O	--	1 each
Solution, field spike, NAWQA VOC	D	SC 2090	1 ampule
Solution, field spike, NAWQA SC 2001/2010	D	SC 2001/2010	1 ampule
Solution, field spike, NPDES BNA	D	SC 1383/1385	1 ampule
Solution, field spike, NPDES OCP	D	SC 1608	1 ampule
Solution, field spike, NPDES VOC	D	SC 1380	1 ampule
Solution, field spike (2050/2051)	D	SC 2050//2051	1 ampule
Solution, field spike, triazine (125 mL)	D	SC 1379	1 ampule
Solution, sodium thiosulfate, 0.025 *N*	O		1 L
Solution, specific conductance (10-20 µS/cm)	O		1 L
Solution, specific conductance (40-60 µS/cm)	O		1 L
Solution, specific conductance (80-120 µS/cm)	O		1 L
Solution, specific conductance (200/250 µS/cm)	O		1 L

Table 3.--Field supplies--Continued

Containers, solutions, and miscellaneous items	Obtain from	Bottle type/sample designation[1]	Unit supplied
Solution, specific conductance (300-450 µS/cm)	O		1 L
Solution, specific conductance (500-750) µS/cm)	O		1 L
Solution, specific conductance (800-1,100 µS/cm)	O		1 L
Solution, specific conductance (1,800-2,100 µS/cm)	O		1 L
Solution, specific conductance (2,500-3,000 µS/cm)	O		1 L
Solution, specific conductance (4,000-5,000 µS/cm)	O		1 L
Solution, specific conductance (7,500-8,500 µS/cm)	O		1 L
Solution, specific conductance (10,500-11,500 µS/cm)	O		1 L
Solution, sulfuric acid, 0.0164 *N* (approximate)	O		1 L
Surrogate mixture[4]	D	SC 2010	2 mL
Surrogate mixture[4]	D	SC 2051	3 mL
Trip blanks (VOC)	D	8 filled vials added to a case of ordered VOC vials	8 /case
Vial, glass, amber septum, 40 mL	O	VOC	72 /box
Water, dilution, buffered, sterile, bacteriological samples, 99 mL	O	--	12 /box
Water, rinse, buffered, sterile, bacteriological samples, 250 mL	O	--	8 /pack
Wrench set, plastic for 3 mL Teflon vial containing ultrapure nitric acid	O		1 set
Zinc acetate, 25 g	O	LC0089	1 jar

[1]See table 4.
[2]A $4.00 credit will be given upon return of each Teflon vial after the preservative is used.
[3]Return of kits will result in credit for account.
[4]Surrogate mixtures have a shelf-life of six months and should not be ordered more than two months prior to intended use.

SAMPLE PROCESSING

To ensure the quality of data produced by the NWQL, sampling protocols need to be followed, and samples need to be shipped as expeditiously as possible. In addition, samples for the requested analyses need to be appropriately preserved and stored in suitable containers. To ensure the integrity of the samples, they should be submitted using quality-assured containers and preservatives supplied by the NWQL or QWSU.

Containers available from the NWQL or QWSU, the recommended sample treatment prior to packing, and the preferred sample preservation technique are listed in table 4.

WRD personnel are urged to review Office of Water Quality (OWQ) Technical Memoranda 92.01, "Distilled/Deionized Water for District Operations," 92.02, "Field Preparation of Containers for Aqueous Samples," as well as table 4.

Any bottom-material samples received for inorganic analysis need to be presieved through a 2.0-mm sieve using minimal volume of native water. Unsieved samples will be sieved by the NWQL (using deionized water), and an additional $55.00 charge will be made by the Laboratory. Samples will be sieved as time permits; therefore, turnaround time will increase.

All samples submitted to the NWQL for analysis must be accompanied by an Analytical Services Request (ASR) form. To ensure correct processing of samples, all shipments should include ASR forms that refer only to the samples in that shipment. The ASR forms should be filled out completely, and must include information on project chief, current telephone numbers, and the number and type of bottles sent. To expedite data review, inorganic samples should also include information on pH, specific conductance, and, when available, field alkalinity. For more information on shipping to NWQL, WRD personnel are encouraged to review OWQ Memo 92.06, "Report of Committee on Sample Shipping Integrity and Cost."

NOTE: Protocols for a national program supersede these suggestions. For example, inorganic analysis of sediments for NAWQA require on-site sieving of the sample through 63-µm mesh.

Table 4.--Sample designations, containers, and treatments

Sample designation	Container size	Container type	Treatment and preservation
Biological determinations			
CHE		Glass jar, wide-mouth	Place strip in jar. Wrap jar in aluminum foil, freeze with dry ice, and ship expeditiously.
CHY		Glass vial	Collect on glass filter. Record volume filtered. Place filter in vial and wrap vial in aluminum foil. Freeze with dry ice and ship expeditiously.
Inorganic determinations: Water, water-sediment and bottom-material samples			
CC	1 pt	Polypropylene bottle, wide-mouth	Field sieve through 2-mm plastic sieve using native water.
CU	1 pt	Polyethylene bottle, wide-mouth	Field sieve through 2-mm plastic sieve using native water.
FA	250 or 500 mL	Polyethylene bottle, acid-rinsed	Filter through 0.45-µm filter; use filtered sample to rinse containers and acidify sample with HNO_3 to pH < 2;. container size dependent on laboratory schedule.
FAB	250 mL	Teflon bottle, acid-rinsed	Filter through 0.45-µm filter; use filtered sample to rinse containers and acidify collected sample with ultrapure HNO_3 to pH < 2.
FAM	250 mL	Glass bottle, acid-rinsed	Filter through 0.45-µm filter; use filtered sample to rinse containers and acidify collected sample with 1 ampule of $HNO_3/K_2Cr_2O_7$.
FC	125 mL	Brown polyethylene bottle, field-rinsed	Filter through 0.45-µm filter; use filtered sample to rinse containers, add ampule $HgCl_2$ solution to collected sample, chill and maintain at 4 deg C, ship as soon as possible.
FU	250 or 500 mL	Polyethylene bottle, field-rinsed	Filter through 0.45-µm filter; using filtered sample to rinse containers; container size dependent on laboratory schedule.
RA	250 or 500 mL	Polyethylene bottle, acid-rinsed	Use unfiltered sample to rinse bottles, then acidify collected sample with HNO_3 to pH < 2; container size dependent on laboratory schedule.
RAB	250 mL	Teflon bottle, acid-rinsed	Use unfiltered sample to rinse bottles, then acidify collected sample with ultrapure HNO_3 to pH < 2.
RAE	250 mL	Polyethylene bottle, acid-rinsed	Use unfiltered sample to rinse bottles, then acidify collected sample with HNO_3 to pH < 2.
RAH	250 mL	Polyethylene bottle, acid-rinsed	Use unfiltered sample to rinse bottles, then acidify collected sample with HNO_3 to pH < 2.
RAM	250 mL	Glass bottle, acid-rinsed	Use unfiltered sample to rinse bottles, then acidify collected sample with 1 ampule of $HNO_3/K_2Cr_2O_7$.
RC	125 mL	Brown polyethylene bottle, field-rinsed	Use unfiltered sample to rinse bottles, then add 1 ampule $HgCl_2$ solution to collected sample, chill and maintain at 4 deg C; ship as soon as possible.
RCB	250 mL	Polyethylene bottle, field-rinsed	Use unfiltered sample to rinse bottles, then chill collected sample and maintain at 4 deg C; ship as soon as possible.
RU	250 or 500 mL	Polyethylene bottle, field-rinsed	Use unfiltered sample to rinse bottles; container size dependent on laboratory schedule.
LC0023	250 mL	Polyethylene bottle, field-rinsed	Use unfiltered sample to rinse bottles; then add NaOH to pH>12 to collected sample, chill and maintain at 4 deg.
LC0050	125 mL	Polyethylene bottle, field-rinsed	Use unfiltered sample to rinse bottles.

Table 4.--Sample designations, containers, and treatments--Continued

Sample designation	Container size	Container type	Treatment and preservation
Inorganic determinations: Water, water-sediment and bottom-material samples--Continued			
LC0076	125 mL	Glass bottle	Bottle baked at 450 deg C by laboratory. Add H_2SO_4 to pH<2; chill and maintain at 4 deg C. DO NOT RINSE BOTTLE.
LC0089	250 mL	Polyethylene bottle, field-rinsed	Use unfiltered sample to rinse bottles; then add 0.5 g zinc acetate to the collected sample.
LC0169	500 mL	Polyethylene bottle, field-rinsed	Use unfiltered sample to rinse bottles.
LC0880	250 mL	Polyethylene bottle, field-rinsed	Filter through 0.45-µm filter; using filtered sample to rinse bottles; then add NaOH to pH>12 to collected sample, chill and maintain at 4 deg C; ship as soon as possible.
Organic determinations: Water, water-sediment and bottom-material samples			
CC	1 pt	Polyethylene bottle, wide-mouth	Field sieve through 2-mm plastic sieve using native water.
BGC	1 L	Glass bottle, wide-mouth	Bottle baked at 450 deg C by laboratory. DO NOT RINSE BOTTLE. Chill and maintain at 4 deg C; ship as soon as possible.
DOC	125 mL	Glass bottle, amber	Bottle baked at 450 deg C by laboratory. DO NOT RINSE BOTTLE BUT RINSE FILTER WITH ORGANIC FREE WATER. Filter sample using silver filter, chill and maintain at 4 deg C; ship as soon as possible. Filter may be retained for LC0305.
GCC	1 L	Glass bottle, amber	Bottle baked at 450 deg C by laboratory. DO NOT RINSE BOTTLE. Chill sample and maintain at 4 deg C; ship as soon as possible.
RCB	250 mL	Polyethylene bottle	Use unfiltered sample to rinse bottles, then chill collected sample and maintain at 4 deg C; ship as soon as possible.
SOC		Petri dish	RINSE FILTER WITH ORGANIC-FREE WATER. Retain sample on silver filter, chill and maintain at 4 deg C; ship as soon as possible. Record volume filtered on Analytical Services Request formand on Petri dish
TOC	125 mL	Glass bottle, amber	Bottle baked at 450 deg C by laboratory. DO NOT RINSE BOTTLE. Chill sample and maintain at 4 deg C; ship as soon as possible.
VOC	40 mL	Glass septum vial, amber	DO NOT RINSE BOTTLE. Exclude air bubbles by completely filling vial. Protect sample from sunlight, chill and maintain at 4 deg C; ship as soon as possible. For SC 1306 no preservative is required. For SC 1378 each vial is preserved to pH < 2 with two drops of 1:1 HCl:H_2O. NPDES sampling, preserve to pH < 2 with two drops of 1:1 HCl:H_2O in each vial. If free chlorine is present, add 25 mg of ascorbic acid to each vial in addition to the HCL (for drinking-water or wastewater treatment).
LC0019	125 mL	Glass bottle, amber	Bottle baked at 450 deg C by laboratory. DO NOT RINSE BOTTLE. Chill sample and maintain at 4 deg C; ship as soon as possible.

Table 4.--Sample designations, containers, and treatments--Continued

Sample designation	Container size	Container type	Treatment and preservation
Organic determinations: Water, water-sediment, and bottom-material samples--Continued			
LC0127	1 L	Oil and Grease bottle, amber	Bottle baked. DO NOT RINSE BOTTLE. Leave small air space. Add 2.0 mL H_2SO_4 to 1 L (to pH 2). Chill and maintain at 4 deg C; ship as soon as possible.
SC1379	125 mL	Glass bottle, amber	Bottle baked at 450 deg C by laboratory. DO NOT RINSE BOTTLE. Field filter through 0.7-µm disposable in-line filter. Chill and maintain at 4 deg C; ship as soon as possible.
Radiochemical: Water, water-sediment and bottom-material samples			
CUR	1 pt	Polyethylene bottle, wide-mouth	Untreated.
FAR	1 L	Polyethylene bottle, acid-rinsed	Filter through 0.45-µm filter and acidify with HNO_3 to pH < 2.
RAR	1 L	Polyethylene bottle, acid-rinsed	Acidify with HNO_3 to pH < 2.
RUR	1 L	Polyethylene bottle, acid-rinsed	Untreated.
SUR		Petri dish or centrifuge tube	Field filter or centrifuge until required sediment is achieved.
LC0452	125 mL	Polyethylene bottle; must have polyethylene seal cap	Untreated.
LC0460	250 mL	Polyethylene bottle; must have polyethylene seal cap	Untreated.
LC0490	50 mL	Glass bubbler	Contact NWQL.
LC0624	500 mL	Polyethylene bottle; must have polyethylene seal cap	Untreated.
LC1043	1 L	Glass or high density polyethylene bottle; must have polyethylene seal cap	Untreated
LC1565	1 L	Glass or high density polyethylene bottle; must have polyethylene seal cap	Untreated.
Stable isotope: Water, water-sediment and bottom-material samples			
LC0298	1 L	Glass bottle, narrow neck, field-rinsed; must have polyethylene seal cap	Contact NWQL.
LC1574	125 or 60 mL	Glass or polyethylene bottle, field-rinsed; must have polyethylene seal cap	Samples can be filtered or unfiltered. Headspace should be allowed to prevent problems if sample freezes. Seal with wax or plastic tape.
LC0440	1 L	Glass bottle, narrow neck, field-rinsed; must have polyethylene seal cap	Do not filter, add 50 mL $SrCl_2$, seal with tape.
LC0489	125 or 60 mL	Glass or Polyethylene bottle; must have polyethylene seal cap	Samples can be filtered or unfiltered. Headspace should be allowed to prevent problems if sample freezes. Seal with wax or plastic tape.
LC1199	1 L	Glass bottle, field-rinsed, Teflon coated or polyethylene seal cap	Contact NWQL.
LC1717	1 L	Glass bottle, narrow neck, field-rinsed; must have polyethylene seal cap	Preserve with 1 mL/L $HgCl_2$; chill and maintain at 4 deg C; ship as soon as possible.
LC1718	1 L	Glass bottle, narrow neck, field-rinsed; must have polyethylene seal cap	Preserve with 1 mL/L $HgCl_2$; chill and maintain at 4 deg C; ship as soon as possible.

ANALYTICAL SERVICES

The Analytical Services section of this catalog is divided into tables 5 through 16, listing the chemical and biological services offered at the NWQL. Tables 5 through 16, which are summarized as follows, appear at the back of this section. Note: All abbreviations, classifications, and units for these tables are listed in table 2; bottle types are defined in table 4.

Table 5. Biological determinations listed by laboratory schedule. Determinations are arranged into schedules pertaining to periphyton and phytoplankton in ascending order of schedule number. Chlorophyll a and chlorophyll b cannot be ordered separately.

Table 6. Inorganic determinations for sediment listed alphabetically. Includes those determinations found only in schedules.

Table 7. Inorganic determinations for water listed alphabetically. Includes those determinations found only in schedules.

Table 8. Inorganic determinations for sediment listed by laboratory schedule. Descriptive titles include limitations on the methods.

Table 9. Inorganic determinations for water listed by selected laboratory schedule. Descriptive titles include limitations on the methods.

Table 10. Inorganic determinations for tissue listed by laboratory schedule. Descriptive titles include limitations on the methods.

Table 11. Gross organic determinations listed alphabetically. A list of those organic parameters that can be requested individually. These characteristics also may be combined to form customized District schedules.

Table 12. Organic determinations for sediment listed by laboratory schedule. These schedules may not be broken into smaller schedules, combined with other laboratory codes to form customized District-owned schedules, or added to in any way except by requesting a custom analysis.

Table 13. Organic determinations for water listed by laboratory schedule. These schedules may not be broken into smaller schedules, combined with other laboratory codes into customized District-owned schedules, or added to in any way except by requesting a custom analysis.

Table 14. Organic determinations for tissue listed by laboratory schedule.

Table 15. Radiochemical determinations listed by laboratory code and schedule. Listed by radiochemical analysis type, and, within each type, determinations are listed numerically by laboratory code or schedule number. Schedule information includes the associated laboratory codes. The types of radiochemical services available are as follows: gamma scans, gross alpha and gross beta, lead, polonium, radium, radon, strontium, thorium, tritium, uranium, carbon-14 dating, and miscellaneous services.

Table 16. Stable isotope ratios listed by laboratory code and schedule. Ratios may be requested for Carbon-13/Carbon-12, Sulfur-34/Sulfur-32, Deuterium, Oxygen-18/Oxygen-16, and Nitrogen-15/ Nitrogen-14.

NOTE: Shaded laboratory codes in tables 15 and 16 may not be requested individually. They are only available as a unit in the indicated schedules because of the radiochemical techniques used. Unshaded laboratory codes may be requested individually.

Requests for Services

The services listed in this subsection are available to all WRD personnel requiring chemical or biological analyses of samples. However, not all services are available to the same extent or on the same turnaround time. The WRD has established the NWQL to serve the need for chemical and biological analyses. The NWQL has been designed to support the historical level of requests, plus additional expected needs. Each type of service requires equipment, trained analysts, and associated support (log-in, computer services, and warehousing). As a result, the capacity of the Laboratory is limited. Therefore, each analysis type can become overloaded, and other types with little historical precedent for large numbers of requests can be overloaded whenever more than a few requests are received at one time. Also, the Laboratory reflects WRD activity--it is busier at the end of the water year than at other times, so much so that 2.5 times more work arrives in August than in February.

Sometimes projects need detailed work. Additional analytes, low-detection limits, unusual matrices, or perhaps even a new analytical method characterize these needs. The NWQL welcomes these non-routine requests, but cannot promise as fast a response as that given routine work listed in this catalog. These requests can be handled by "custom" and "special" analyses. There are also occasional requests for priority handling in emergencies.

Moreover, regulatory samples are handled through the Laboratory. The NWQL's main assignment is analysis of samples from hydrologic investigations. This hydrologic work at the Laboratory is mainly at concentration levels far lower than those found during investigations for regulatory purposes. To avoid contamination of the laboratory environment, instrumentation, and staff, many regulatory samples are handled off-site by a contractor. Interested WRD personnel are invited to contact the NWQL to use this additional service.

Selection of Analyses

Analyses are requested by laboratory codes or schedules. The particular laboratory codes are to be chosen primarily on the basis of the minimum-reporting level desired, but precision should not be overlooked. However, Laboratory personnel might choose another code under several circumstances.

For example, if minimum-reporting levels are comparable, substitution of one laboratory code for another used on more productive equipment might be chosen to favor higher laboratory efficiency. Some codes represent methods that avoid interferences caused by the customer's particular chemical matrix. In other cases, upper ranges of the substituted code may be more in keeping with the customer's matrix. In a few cases, the method requested may have been developed for a higher purity water than the sample proves to be, and more appropriate methods might be substituted. In all cases, the laboratory code actually used will be shown in the results.

If a procedure with a high detection level is requested and the concentration of the constituent being determined is less than the detection level, a method with a lower detection limit (and usually greater cost) will not be substituted without the customer's specific authorization. The Laboratory will assume responsibility for meeting any constraint implied by the customer's choice of laboratory code or schedule, including the cost of the analysis.

Laboratory Schedules

A schedule is a collection of laboratory codes (parameters), which are associated because of one of two reasons: (1) convenience to the customer (for example, asking for the major cations schedule is more convenient than asking for the list of all 20 parameters), and (2) laboratory instrumentation (the instrument used to determine the seven Aroclors in SC 1364 is automated to produce only those seven determinations as a unit). Many more schedules exist for inorganic analyses, some created for the laboratory's convenience, others created for programs that are specific to individual Districts. They can be found by perusing the electronic version of the catalog by using the SPN program.

Schedules may be custom-made for individual use. There are restrictions for admissible inclusions of laboratory codes. Schedules should contain laboratory codes of only one type. Present types are as follows:

WI	Water, inorganic
WL	Water, low-level
WN	Water, major nutrient
WO	Water, organic
WR	Radiochemical or stable isotope ratios
BI	Bottom material, inorganic
BO	Bottom material, organic
BR	Bottom material, radiochemical
BL	Biological
BG	Geologic Division
TO	Tissue, organic
TI	Tissue, inorganic

Call the Laboratory or EDOC DENADP for assistance and schedule setup in the NWQL computer systems.

Calculated parameters should not be requested separately unless listed in this Services Catalog, since all calculated values that can be produced from the data (except for those listed in the catalog) are calculated during data retrieval and can be listed in the analytical report.

Provisional Methods

This catalog of analytical services contains a few new methods developed for the NAWQA program. These methods currently produce provisional data and should be treated as such. These provisional data may or may not be comparable to data produced by other methods. For information concerning data comparability, please contact the Organic Chemistry Program Chief at the NWQL. Provisional

data are defined as data produced by a method which currently does NOT have a citable reference (TWRI or OFR). Technical memoranda are not citable in reports. Current provisional methods are listed as follows:

Schedule 2001--Pesticides in filtered water, SPE by lab
Schedule 2010--Pesticides in filtered water, SPE by field
Schedule 2050--Pesticides in filtered water, SPE by lab
Schedule 2101--Organochlorine pesticides in biological samples (tissue)
Schedule 2501--Organochlorine pesticides in bed sediments
Schedule 2502--Base/neutral acid extractable compounds in bed sediments

Quality Control and Inorganic Data Review

Inorganic data review ensures the release of quality data by the NWQL. Once all of the inorganic analyses for a given subsample are completed, they are evaluated by a quality-control (QC) program that resides in the Laboratory Information Management System. The algorithms built into this program check and compare the data.

The following constituents are checked: USEPA Primary Drinking-Water Regulations, cation and anion balance, specific conductance (SPC)/100 (partial cation or anion sum) ratios, residue on evaporation (ROE at 180°C)/SPC ratio, pH, less than zero values, and fields with delete codes. The following constituents are compared: onsite and laboratory pH, onsite and laboratory specific conductance, and dissolved and total analyte concentration. If the results of any one of these checks or comparisons, or both, fall outside the prescribed limits for any given analysis, the sample is not approved by the QC program. The results are then passed to the data review chemist with a flag identifying the violation. Subsamples that are approved by the QC program are released to the District.

The data review chemist reviews the unapproved subsamples and makes decisions as mandated by two standard operating procedures (SOP)--the Data Review SOP and the Bottle Mix-up SOP. A historical data base is also used by the data review chemist and the District reanalysis program as an aide to pinpoint questionable analyses.

The Data Review SOP provides a format for evaluating unapproved inorganic samples, samples for reanalysis, and samples that can be released to the District with comments. Comments clarify questions arising from the data. The Data Review SOP also mandates when to refer to the Bottle Mix-up SOP.

The Bottle Mix-up SOP assists the data review chemist in determining if subsample bottles have been mixed-up. If a bottle mix-up is suspected, all bottles of the subsample are physically checked. Routine subsamples are visually checked by the data review chemist. Chain-of-custody subsamples are checked by the bottle warehouse custodian and the data review chemist. When a mix-up is identified, the bottles are relogged in most cases. In cases where information on the bottles does not match information on the Analytical Services Request form, appropriate action is taken to correct discrepancies.

The historical data base is an on-going collection of all the data for each District station. Listed under each station identification (ID) number are all the parameters that were analyzed for that corresponding station ID, the number of analyses for each corresponding parameter, the average of all the values for each parameter, the standard deviation of all the parameter values, and the high and low values of

each parameter. The District reanalysis program uses the historical data base in the same manner to justify the validity of District reanalysis requests.

In summary, inorganic subsamples that are brought into compliance with the NWQL's QC protocol are released to the District. A thorough effort is made to bring the subsamples that do not comply into agreement with the QC protocol before they are released.

The prescribed limits for evaluating sample analysis are listed as follows:

Constituent	Prescribed limit
USEPA Primary Drinking-Water Regulations	Inorganic analysis of all identified drinking-water samples, with the exception of NPDES samples exceeding the USEPA Primary Drinking-Water Regulations, are always reanalyzed (U.S. Environmental Protection Agency, 1993, p. 596).
Cation and anion balance	Refer to Friedman and Erdmann (1982, fig. 15, p. 104).
SPC/100 (cation or anion partial sum)	Must fall between 0.92 and 1.24.
ROE at 180°C/SPC	Must fall between 0.55 and 0.86.
pH	Must fall between 4.00 and 9.00.
Less than 0 values	Any negative value will fail the check.
Fields containing delete codes	All subsamples with fields containing delete codes fail the check. For further explanation of delete codes, refer to the Laboratory Delete Code list below.
Difference between lab and onsite pH	Must be less than 1 pH.
Difference between lab and onsite SPC	This difference must be less than 10 percent.
Dissolved and total analytes	Dissolved analytes must be less than or equal to the total analytes of the same element or compound
Filtered and whole water recoverable analytes	Filtered analytes must be less than or equal to whole water recoverable analytes of the same element or compound.

Delete Codes

"A"	The samples were analyzed by an alternate method
"B"	The sample was broken or spilled in shipment
"D"	A delete was requested by the District
"F"	An improper filter was used
"I"	The required sample type was not received
"M"	The results will be sent by a separate memo
"O"	There was an insufficient amount of water to complete the analysis
"P"	The sample was discarded because of improper preservation
"R"	The sample was ruined during analysis
"U"	The sample data were unable to be determined because of interference
"W"	The sample was warm when it was received. It was therefore discarded
"X"	Lab code 586 was reported as 0
"Z"	Lab code 588 was reported as 0

Table 5.--Biological determinations listed by laboratory schedule

Schedule number	Lab. code	Parameter code	MC	Parameter name	Unit of measurement	Sample volume and bottle designation (see table 4)	MRL
Periphyton							
671				Biomass, gravimetric		1 filter CHE	
	611	00572	A	Biomass, ash weight	g/m^2		0.001
	603	00573	A	Biomass, dry weight	g/m^2		.001
1507				Chlorophyll, chromatography and fluorometry		1 filter CHE	
	588	70957	A	Chlorophyll a	mg/m^2		.1
	589	70958	A	Chlorophyll b	mg/m^2		.1
1708				Combined biomass and chlorophyll		2 filters CHE	
	611	00572	A	Biomass, ash weight	g/m^2		.001
	603	00573	A	Biomass, dry weight	g/m^2		.001
	588	70957	A	Chlorophyll a	mg/m^2		.1
	589	70958	A	Chlorophyll b	mg/m^2		.1
Phytoplankton							
666				Biomass, gravimetric		1 filter CHY	
	621	81353	A	Biomass, ash weight	mg/L		.1
	620	81354	A	Biomass, dry weight	mg/L		.1
1508				Chlorophyll, chromatography and fluorometry		1 filter CHY	
	586	70953	A	Chlorophyll a	µg/L		.1
	587	70954	A	Chlorophyll b	µg/L		.1
1509				Combined biomass and chlorophyll		2 filters CHY	
	621	81353	A	Biomass, ash weight	mg/L		.1
	620	81354	A	Biomass, dry weight	mg/L		.1
	586	70953	A	Chlorophyll a	µg/L		.1
	587	70954	A	Chlorophyll b	µg/L		.1

Table 6.--Inorganic determinations for sediment listed alphabetically

Lab. code	Parameter code	Name, phase and method	Units	Volume needed	Sample designation[1]	MRL	Call in LC[2]
1282	01108 C	Aluminum, BTM, DCP	µg/g	10 g	CU	10	647, 1184
534	01098 A	Antimony, BTM, AA, hydride,	µg/g	10 g	CU	1	1184
597	01003 C	Arsenic, BTM, AA, hydride	µg/g	10 g	CU	1	1184
521	01008 A	Barium, BTM, AA	µg/g	10 g	CU	10	647, 1184
522	01013 A	Beryllium, BTM, AA	µg/g	10 g	CU	1	647, 1184
1285	01023 C	Boron, BTM, DCP	µg/g	10 g	CU	10	647, 1184
502	01028 B	Cadmium, BTM, AA	µg/g	10 g	CU	1	647,1184
696	00917 A	Calcium, BTM, AA	mg/kg	10 g	CU	10	647, 1184
505	01029 B	Chromium, BTM, AA	µg/g	10 g	CU	1	647, 1184
506	01038 B	Cobalt, BTM, AA	µg/g	10 g	CU	5	647, 1184
507	01043 B	Copper, BTM, AA	µg/g	10 g	CU	1	647, 1184
1235	00721 B	Cyanide, BTM, barbituric acid, ASF	mg/kg	10 g	CC	.5	1242
1242	99480 A	Digestion for cyanide, BTM	- -	10 g	CC	- -	
647	LC0654 A	Digestion for trace metals, BTM	- -	10 g	CU	- -	
190	01170 B	Iron, BTM, AA	µg/g	10 g	CU	1	647, 1184
510	01052 B	Lead, BTM, AA	µg/g	10 g	CU	10	
541	01133 A	Lithium, BTM, AA	µg/g	10 g	CU	1	647, 1184
697	00924 A	Magnesium, BTM, AA	mg/kg	10 g	CU	10	647, 1184
512	01053 A	Manganese, BTM, AA	µg/g	10 g	CU	.1	647, 1184
511	71921 A	Mercury, BTM, CVAA	µg/g	10 g	CU	.01	1184
523	01063 A	Molybdenum, BTM, AA	µg/g	10 g	CU	.1	647, 1184
524	00611 A	N, Ammonia as N, BTM, colorimetric, salicylate-hypochlorite, ASF	mg/kg	10 g	CC	.2	
1211	00626 C	N, Ammonia plus organic nitrogen as N, BTM, colorimetric, salicylate-hypochlorite, ASF	mg/kg	10 g	CC	20	
301	00608 B	N, Ammonia as N, DIS, colorimetric, salicylate-hypochlorite, ASF	mg/L	125 mL	FC	.01	
513	00633 A	N, Nitrite plus nitrate as N, BTM, cadmium reduction, diazotization, ASF	mg/kg	10 g	CC	2	
519	01068 B	Nickel, BTM, AA	µg/g	10 g	CU	10	647, 1184
532	00339 A	Oxygen demand, chemical, BTM, calc. on dry weight	mg/kg	10 g	CC		904
515	00668 B	P, Phosphorus as P, BTM, PPMB, ASF	mg/kg	10 g	CC	40	
698	00938 A	Potassium, BTM, AA	mg/kg	10 g	CU	10	647
1184	01184 A	Preparation for BTM	- -	10 g	CU		

Table 6.--Inorganic determinations for sediment listed alphabetically--Continued

Lab. code	Parameter code	Name, phase and method	Units	Volume needed	Sample designation[1]	MRL	Call in LC[2]
517	01148 A	Selenium, BTM, hydride	µg/g	10 g	CU	1	1184
699	00934 A	Sodium, BTM, AA	mg/kg	10 g	CU	10	647
516	00496 A	Solids, VOI, BTM, GR	mg/kg	10 g	CC	1	647
530	01083 A	Strontium, BTM, AA	µg/g	10 g	CU	1	647, 1184
518	01093 A	Zinc, BTM, AA	µg/g	10 g	CU	1	647, 1184

[1]See table 4.

[2]LC 647 (bottom material digestion) may be called in automatically, in addition to lab code 1184, for those bottom material analyses requiring a specific digestion prior to metals analysis.

LC 1184 (bottom material preparation) is required prior to any analyses requested for bottom material samples. It is called in automatically by those analyses. Only one bottom material preparation charge will be added since all bottom materials go through the same preparation step.

Table 7.--Inorganic determinations for water listed alphabetically

Lab. code	Parameter code	Name, phase, and method	Units	Volume needed (mL)	Sample designation[1]	MRL	Call in LC[2]
1266	71825 B	Acidity as H, lab., LIS, WWR, ET, 2nd derivative	mg/L	75	RU	0.01	
1	71825 A	Acidity as H, lab., WWR, ET	mg/L	50	RU	1	
1270	90410 B	Alkalinity as $CaCO_3$, lab., LIS, WWR, ET, 2nd derivative	mg/L	75	RU	.5	
70	90410 A	Alkalinity as $CaCO_3$, lab., WWR, ET	mg/L	100	RU	1	
1284	01106 E	Aluminum, DIS, DCP	µg/L	100	FA	10	
1283	01105 C	Aluminum, WWR, DCP	µg/L	100	RA	10	1735
77	01095 A	Antimony, DIS, AA, hydride	µg/L	50	FA	1	
80	01097 A	Antimony, WWR, AA, hydride	µg/L	50	RAH	1	
112	01000 B	Arsenic, DIS, AA, hydride	µg/L	50	FA	1	
118	01002 B	Arsenic, WWR, AA, hydride	µg/L	50	RAH	1	
1584	01002 C	Arsenic, WWR, GFAA, USEPA (drinking water only)	µg/L	250	RAH	1	1586
7	01005 B	Barium, DIS, AA	µg/L	50	FA	100	
641	01005 C	Barium, DIS, ICP	µg/L	100	FA	1	
234	01007 A	Barium, WWR, AA	µg/L	50	RA	100	1735
170	01010 A	Beryllium, DIS, AA	µg/L	25	FA	10	
655	01010 B	Beryllium, DIS, ICP	µg/L	100	FA	.5	
236	01012 A	Beryllium, WWR, AA	µg/L	50	RA	10	1735
1183	01020 B	Boron, DIS, DCP	µg/L	50	FU	10	
1286	01022 B	Boron, WWR, DCP	µg/L	250	RA	10	1735
1246	71870 E	Bromide, DIS, fluorescein, ASF	mg/L	250	FU	.01	
1258	71870 F	Bromide, LIS, DIS, IC	mg/L	50	FU	.01	
126	01025 A	Cadmium, DIS, AA	µg/L	25	FA	10	
1554	01025 F	Cadmium, DIS, GFAA	µg/L	50	FA	1	
673	01025 D	Cadmium, DIS, ICP	µg/L	100	FA	1	
1250	01025 E	Cadmium, LL, DIS, GFAA	µg/L	250	FAB	.1	
131	01027 A	Cadmium, WWR, AA	µg/L	50	RA	10	1735
1555	01027 F	Cadmium, WWR, GFAA	µg/L	50	RA	1	1735
12	0915 C	Calcium, DIS, AA	mg/L	50	FA	.1	
659	0915 D	Calcium, DIS, ICP	mg/L	100	FA	.02	
831	0915 B	Calcium, LIS, DIS, AA	mg/L	50	FA	.01	
1273	0915 E	Calcium, LIS, DIS, ICP	mg/L	100	FA	.02	
324	0916 A	Calcium, WWR, AA, USEPA	mg/L	50	RAE	1	124
244	0916 B	Calcium, WWR, AA, USGS	mg/L	50	RA	1	1735
1571	0940 J	Chloride, DIS, IC	mg/L	50	FU	1	
1259	0940 I	Chloride, LIS, DIS, IC	mg/L	50	FU	.01	

Table 7.--Inorganic determinations for water listed alphabetically--Continued

Lab. code	Parameter code	Name, phase, and method	Units	Volume needed (mL)	Sample designation[1]	MRL	Call in LC[2]
722	01030 E	Chromium, DIS, ICP	µg/L	100	FA	5	
16	01032 A	Chromium, hexavalent, DIS, chel., AA	µg/L	250	FA	1	
1251	01030 D	Chromium, LL, DIS, GFAA	µg/L	250	FAB	.5	
1936	01030 I	Chromium, DIS, GFAA	µg/L	50	FA	1	
1937	01034 E	Chromium, WWR, GFAA	µg/L	50	RA	1	1735
148	01035 A	Cobalt, DIS, AA	µg/L	25	FA	50	
1556	01035 F	Cobalt, DIS, GFAA	µg/L	50	FA	1	
644	01035 C	Cobalt, DIS, ICP	µg/L	100	FA	3	
1252	01035 E	Cobalt, LL, DIS, GFAA	µg/L	250	FAB	.5	
149	01037 A	Cobalt, WWR, AA	µg/L	50	RA	50	1735
1557	01037 F	Cobalt, WWR, GFAA	µg/L	50	RA	1	1735
20	00080 A	Color reported in Pt-Co units	Units	100	RCB	1	
151	01040 A	Copper, DIS,AA	µg/L	25	FA	10	
1558	01040 F	Copper, DIS, GFAA	µg/L	50	FA	1	
657	01040 C	Copper, DIS, ICP	µg/L	100	FA	10	
1253	01040 E	Copper, LL, DIS, GFAA	µg/L	250	FAB	.5	
156	01042 A	Copper, WWR, AA	µg/L	50	RA	10	1735
1559	01042 F	Copper, WWR, GFAA	µg/L	50	RA	1	1735
880	00723 A	Cyanide, DIS, barbituric acid, ASF	mg/L	100	LCO880	.01	
23	00720 A	Cyanide, WWR, barbituric acid, ASF	mg/L	50	LCO023	.01	
24	71820 A	Density @ 20 degrees C, filtered, GR	g/mL	100	FU	.99	
1586	-- B	Digestion for As and Se, USEPA	--	250	RAH	--	
124	99447 A	Digestion for trace metals, USEPA	--	250	RAE	--	
1735	99870 B	Digestion for trace metals, USGS	--	250	RA	--	
31	00950 B	Fluoride, DIS, ISE	mg/L	50	FU	.1	
1260	00950 D	Fluoride, LIS, DIS, IC	mg/L	50	FU	.01	
1202	71865 D	Iodide, DIS, ceric-arsenious oxidation, ASF	mg/L	50	FU	.001	
172	01046 C	Iron, DIS, AA	µg/L	25	FA	10	
645	01046 D	Iron, DIS, ICP	µg/L	100	FA	3	
1271	01046 E	Iron, LIS, DIS, ICP	µg/L	50	FA	3	
189	01045 B	Iron, WWR, AA	µg/L	50	RA	10	1735
191	01049 A	Lead, DIS, AA	µg/L	25	FA	100	
1560	01049 F	Lead, DIS, GFAA	µg/L	50	FA	1	
646	01049 C	Lead, DIS, ICP	µg/L	100	FA	10	
1254	01049 E	Lead, LL, DIS, GFAA	µg/L	250	FAB	.5	
192	01051 A	Lead, WWR, AA	µg/L	50	RA	100	1735
1561	01051 F	Lead, WWR, GFAA	µg/L	50	RA	1	1735
39	01130 A	Lithium, DIS, AA	µg/L	25	FA	10	
664	01130 B	Lithium, DIS, ICP	µg/L	100	FA	4	

Table 7.--Inorganic determinations for water listed alphabetically--Continued

Lab. code	Parameter code	Name, phase, and method	Units	Volume needed (mL)	Sample designation[1]	MRL	Call in LC[2]
277	01132 A	Lithium, WWR, AA	µg/L	50	RA	10	1735
40	00925 B	Magnesium, DIS, AA	mg/L	50	FA	.1	
663	00925 C	Magnesium, DIS, ICP	mg/L	100	FA	.01	
832	00925 A	Magnesium, LIS, DIS, AA	mg/L	50	FA	.01	
1274	00925 D	Magnesium, LIS, DIS, ICP	mg/L	100	FA	.01	
325	00927 A	Magnesium, WWR, USEPA, AA	mg/L	50	RAE	.1	124
261	00927 B	Magnesium, WWR, USGS, AA	mg/L	50	RA	.1	1735
42	01056 A	Manganese, DIS, AA	µg/L	25	FA	10	
648	01056 C	Manganese, DIS, ICP	µg/L	100	FA	1	
1272	01056 E	Manganese, LIS,DIS, ICP	µg/L	100	FA	1	
1255	01056 D	Manganese, LL,DIS, GFAA	µg/L	250	FAB	.2	
41	01055 A	Manganese, WWR, AA	µg/L	50	RA	10	1735
226	71890 B	Mercury, DIS, CVAA, auto.	µg/L	200	FAM	.1	
227	71900 B	Mercury, WWR, CVAA	µg/L	200	RAM	.1	
904	00495 B	Moisture content by weight	%	1 g	CU		
649	01060 A	Molybdenum, DIS, ICP	µg/L	100	FA	10	
110	01060 B	Molybdenum, DIS, chel., AA	µg/L	250	FA	1	
265	01062 A	Molybdenum, WWR, AA	µg/L	250	RA	1	1735
830	00608 A	N, Ammonia as N, LL, DIS, colorimetric, salicylate-hypochlorite, ASF	mg/L	125	FC	.002	
1278	00608 C	N, Ammonia as N, LL, DIS, colorimetric, salicylate-hypochlorite, ASF, unpreserved	mg/L	20	FU	.002	
1687	00623 C	N, Ammonia plus organicnitrogen as N, DIS, colorimetric, salicylate-hypochlorite, ASF	mg/L	125	FC	.2	
1688	00625 C	N, Ammonia plus organic nitrogen as N, WWR, colorimetric, salicylate-hypochlorite, ASF	mg/L	125	RC	.2	
1261	00618 D	N, Nitrate as N, LL, DIS, IC	mg/L	250	FU	.01	
160	00613 B	N, Nitrite as N, DIS, diazotization, ASF	mg/L	125	FC	.01	
827	00613 A	N, Nitrite as N, LL, DIS, diazotization, ASF	mg/L	125	FC	.001	
1578	00631 C	N, Nitrite plus Nitrate as N, DIS, cadmium reduction, diazotization, ASF, unpreserved	mg/L	25	FU	.05	
228	00631 B	N, Nitrite plus Nitrate as N, DIS, cadmium reduction, diazotization, ASF	mg/L	125	FC	.05	
826	00631 A	N, Nitrite plus Nitrate as N, LL, DIS, cadmium reduction, diazotization, ASF	mg/L	125	FC	.005	
1570	00602 B	N, Total nitrogen as N, DIS, Antek	mg/L	50	FC	.1	
197	01065 A	Nickel, DIS, AA	µg/L	25	FA	100	
1562	01065 F	Nickel, DIS, GFAA	µg/L	50	FA	1	

Table 7.--Inorganic determinations for water listed alphabetically--Continued

Lab. code	Parameter code	Name, phase, and method	Units	Volume needed (mL)	Sample designation[1]	MRL	Call in LC[2]
721	01065 E	Nickel, DIS, ICP	µg/L	100	FA	10	
1256	01065 D	Nickel, LL, DIS, GFAA	µg/L	250	FAB	1	
1563	01067 F	Nickel, WWR, GFAA	µg/L	50	RA	1	1735
198	01067 A	Nickel, WWR, AA	µg/L	50	RA	100	1735
76	00340 B	Oxygen demand, chemical, water	mg/L	100	LC0076	10	
162	00671 B	P, Phosphate as P, ortho, DIS, PPMB, ASF	mg/L	125	FC	.01	
1262	00671 G	P, Phosphate as P, ortho, LIS, IC	mg/L	50	FU	.01	
828	00671 A	P, Phosphate as P, ortho, LL, DIS, PPMB, ASF	mg/L	125	FC	.001	
1277	00671 D	P, Phosphate as P, ortho, LL, DIS, PPMB, ASF, unpreserved	mg/L	20	FU	.001	
279	00677 A	P, Phosphate, ortho plus hydrolizable as P, DIS, PPMB, ASF	mg/L	125	FC	.01	
282	00678 A	P, Phosphate, ortho plus hydrolizable as WWR, PPMB, ASF	mg/L	125	RC	.01	
1685	00666 C	P, Phosphorus as P, DIS, PPMB, ASF	mg/L	125	FC	.01	
829	00666 A	P, Phosphorus as P, LL, DIS, PPMB, ASF	mg/L	125	FC	.001	
837	00665 A	P, Phosphorus as P, LL, WWR, PPMB, ASF	mg/L	125	RC	.001	
1686	00665 C	P, Phosphorus as P, WWR, PPMB, ASF	mg/L	125	RC	.01	
68	00403 A	pH, lab., elec.	Units	50	RU	.1	
1268	00403 B	pH, lab., LIS, elec.	Units	75	RU	.1	
54	00935 B	Potassium, DIS, AA	mg/L	50	FA	.1	
833	00935 A	Potassium, LL, DIS, AA	mg/L	50	FA	.01	
327	00937 A	Potassium, WWR, USEPA, AA	mg/L	50	RAE	.1	124
321	00937 B	Potassium, WWR, USGS, AA	mg/L	50	RA	.1	1735
87	01145 A	Selenium, DIS, hydride, auto.	µg/L	50	FA	1	
1585	01147 B	Selenium, WWR, GFAA, USEPA (drinking water only)	µg/L	250	RAH	1	1586
286	01147 A	Selenium, WWR, hydride, auto.	µg/L	50	RAH	1	
667	00955 D	Silica as SiO_2, DIS, ICP	mg/L	100	FA	.01	
56	00955 C	Silica as SiO_2, DIS, molybdate blue, ASF	mg/L	25	FU	.1	
1275	00955 E	Silica as SiO_2, LIS, DIS, ICP	mg/L	100	FA	.01	
1552	01075 F	Silver, DIS, GFAA	µg/L	50	FA	1	
723	01075 C	Silver, DIS, ICP	µg/L	100	FA	1	
1553	01077 F	Silver, WWR, GFAA	µg/L	50	RA	1	1735
1276	00930 D	Sodium, DIS, LIS, ICP	mg/L	100	FA	.2	
59	00930 B	Sodium, DIS, AA	mg/L	50	FA	.1	
675	00930 C	Sodium, DIS, ICP	mg/L	100	FA	.2	

Table 7.--Inorganic determinations for water listed alphabetically--Continued

Lab. code	Parameter code	Name, phase, and method	Units	Volume needed (mL)	Sample designation[1]	MRL	Call in LC[2]
834	00930 A	Sodium, LIS, DIS, AA	mg/L	50	FA	0.01	
326	00929 A	Sodium, WWR, AA, USEPA	mg/L	50	RAE	.1	124
320	00929 B	Sodium, WWR, AA, USGS	mg/L	50	RA	.1	1735
159	00515 B	Solids, ROE @ 105 deg C, DIS, GR	mg/L	250	FU	1	
169	00530 B	Solids, ROE @ 105 deg C, SUS, GR	mg/L	250	LCO169	1	
165	00500 A	Solids, ROE @ 105 deg C, total, GR	mg/L	250	RU	1	
27	70300 A	Solids, ROE @ 180 deg C, DIS, GR	mg/L	500	FU	1	
229	00520 A	Solids, VOI, DIS, GR	mg/L	250	FU	1	
49	00535 A	Solids, VOI, SUS, GR	mg/L	500	LC0169	1	
85	00505 A	Solids, VOI, total, GR	mg/L	250	RU	1	
69	90095 A	Specific conductance, lab., elec.	µS/cm	25	RU	1	
1269	90095 B	Specific conductance, lab., LIS, elec.	µS/cm	50	RU	.5	
62	01080 A	Strontium, DIS, AA	µg/L	25	FA	10	
652	01080 B	Strontium, DIS, ICP	µg/L	100	FA	.5	
290	01082 A	Strontium, WWR, AA	µg/L	50	RA	10	1735
1572	00945 G	Sulfate, DIS, IC	mg/L	50	FU	.1	
1263	00945 E	Sulfate, LIS, DIS, IC	mg/L	50	FU	.01	
89	00745 A	Sulfide, WWR iodometric	mg/L	250	LC0089	.05	
492	01057 A	Thallium, DIS, GFAA	µg/L	50	FAB	.5	
50	00076 A	Turbidity as NTU, nephelometric	Units	100	LC0050	.1	
1210	01085 D	Vanadium, DIS, catalytic oxidation, ASF	µg/L	50	FU	1	
653	01085 B	Vanadium, DIS, ICP	µg/L	100	FA	6	
67	01090 A	Zinc, DIS, AA	µg/L	25	FA	10	
1257	01090 D	Zinc, DIS, GFAA	µg/L	250	FAB	.5	
671	01090 B	Zinc, DIS, ICP	µg/L	100	FA	3	
296	01092 A	Zinc, WWR, AA	µg/L	50	RA	10	1735

[1]See table 4.

[2]LC 1735, in-bottle digestion, is automatically called in for those samples requiring digestion prior to analysis for whole-water recoverable parameters.

LC 124, USEPA digestion, is automatically called in as a sample preparation for lab codes 324 (Ca total USEPA), 325 (Mg total USEPA), 326 (Na total USEPA), and 327 (K total USEPA). Only one digestion charge will be added, since all four labcodes use the same digested sample.

LC 1586, a specific digestion, is required prior to analysis of As or Se by GFAA for USEPA drinking water. This lab code is called in automatically by LC 1584 (As, USEPA total GFAA) and LC 1585 (Se, USEPA total GFAA).

Table 8.--Inorganic determinations for sediment listed by laboratory schedule

SCHEDULE 2400

Schedule Description: Trace elements in bed sediments by Geologic Division, Branch of Geochemistry, sieved to <63-µm

Sample Requirements: 40-g sample

Container Requirements: Carton

Lab. code	Parameter code	CAS number	Compound name	LLD (dry wt)
1736	34790 A	7429905	Aluminum, ICP	0.05 %
1737	43830 A	7440702	Calcium, ICP	.05 %
1738	34880 A	7439896	Iron, ICP	.05 %
1739	34940 A	7440097	Potassium, ICP	.05 %
1740	34900 A	7439954	Magnesium, ICP	.005 %
1741	34960 A	7440235	Sodium, ICP	.005 %
1742	34935 A	7723140	Phosphorus, ICP	.005 %
1743	00000 A	7440326	Titanium, ICP	.005 %
1744	34870 A	7440575	Gold, ICP	8 µg/g
1745	34850 A	7440508	Barium, ICP	1 µg/g
1746	34810 A	7440417	Beryllium, ICP	1 µg/g
1747	34816 A	7440699	Bismuth, ICP	10 µg/g
1748	34835 A	7440451	Cerium, ICP	4 µg/g
1749	34845 A	7440473	Cobalt, ICP	1 µg/g
1750	34840 A	7440484	Chromium, ICP	1 µg/g
1751	34850 B	7440508	Copper, ICP	1 µg/g
1752	34855 A	7440531	Europium, ICP	2 µg/g
1753	34860 A	7440553	Gallium, ICP	4 µg/g
1754	34875 A	7440600	Holmium, ICP	4 µg/g
1755	34855 B	7440531	Lanthanum, ICP	2 µg/g
1756	34895 A	7439932	Lithium, ICP	2 µg/g
1757	34905 A	7439965	Manganese, ICP	4 µg/g
1758	34915 A	7439987	Molybdenum, ICP	2 µg/g
1759	34930 A	7440031	Niobium, ICP	4 µg/g
1760	34920 A	7440008	Neodymium, ICP	4 µg/g
1761	34925 A	7440020	Nickel, ICP	2 µg/g
1762	34890 A	7439921	Lead, ICP	4 µg/g
1763	34945 A	7440202	Scandium, ICP	2 µg/g
1764	34985 A	7440315	Tin, ICP	10 µg/g
1765	34965 A	7440246	Strontium, ICP	2 µg/g
1766	34975 A	7440257	Tantalum, ICP	40 µg/g
1767	34980 A	7440291	Thorium, ICP	4 µg/g
1768	35005 A	7440622	Vanadium, ICP	2 µg/g
1769	35010 A	7440655	Yttrium, ICP	2 µg/g
1770	35015 A	7440644	Ytterbium, ICP	1 µg/g
1771	35020 A	7440666	Zinc, ICP	4 µg/g
1772	34955 B	7440224	Silver, GFAA	.1 µg/g
1773	34825 B	7440439	Cadmium, GFAA	.1 µg/g
1774	34910 C	7439976	Mercury, CVAA	.02 µg/g
1775	34800 D	7440382	Arsenic, HA	.1 µg/g
1776	34795 D	7440360	Antimony, HA	.1 µg/g
1777	34950 D	7782492	Selenium, HA	.1 µg/g
1778	35000 E	7440611	Uranium, DNAA	.05 µg/g
1779	34980 E	7440291	Thorium, DNAA	1 µg/g
1780	34970 F	7704349	Sulfur, IR	.05 %
1781	-- F	7440440	Carbon, total	.01 %
1782	-- G	7440440	Carbon, carbonate (inorganic)	.01 %
1783	-- G	7440440	Carbon, organic	.01 %

Table 9.--Inorganic determinations for water listed by selected laboratory schedule

SCHEDULE 146

Schedule Description: Major cations plus iron and manganese, inductively coupled plasma, abbreviated list. Speific conductance needs to be less than 6,000 µS/cm

Sample Requirements: 250 FA; 250 RU

Container Requirements: 250-mL polyethylene bottle, acid-rinsed; 250-mL polyethylene bottle, field-rinsed

Parameter code	Name, phase, and method	Units	MRL SPC ≤2,000	MRL SPC ≥2,000
915 D	Calcium, DIS, ICP	mg/L	0.02	0.06
1046 D	Iron, DIS, ICP	µg/L	3	9
925 C	Magnesium, DIS, ICP	mg/L	.01	.03
1056 C	Manganese, DIS, ICP	µg/L	1	3
403 A	pH lab.	Units	.1	.1
955 D	Silica as SiO_2, DIS, ICP	mg/L	.01	.03
930 C	Sodium, DIS, ICP	mg/L	.2	.6
90095 A	Specific conductance, lab.	µS/cm	1	

SCHEDULE 1043

Schedule Description: Major cations plus trace metals, inductively coupled plasma. Specific conductance needs to be less than 6,000 µS/cm

Sample Requirements: 250 FA; 250 RU

Container Requirements: 250-mL polyethylene bottle, acid-rinsed; 250-mL polyethylene bottle, field-rinsed

Parameter code	Name, phase, and method	Units	MRL SPC ≤2,000	MRL SPC ≥2,000
1005 C	Barium, DIS, ICP	µg/L	1	3
1010 B	Beryllium, DIS, ICP	µg/L	.5	1.5
1025 D	Cadmium, DIS, ICP	µg/L	1	3
915 D	Calcium, DIS, ICP	mg/L	.02	.06
1030 E	Chromium, DIS, ICP	µg/L	5	15
1035 C	Colbalt, DIS, ICP	µg/L	3	9
1040 C	Copper, DIS, ICP	µg/L	10	30
1046 D	Iron, DIS, ICP	µg/L	3	9
1049 C	Lead, DIS, ICP	µg/L	10	30
1130 B	Lithium, DIS, ICP	µg/L	4	12
925 C	Magnesium, DIS, ICP	mg/L	.01	.03
1056 C	Manganese, DIS, ICP	µg/L	1	3
1060 A	Molybdenum, DIS, ICP	µg/L	10	30
1065 E	Nickel, DIS, ICP	µg/L	10	30
403 A	pH lab., elec.	Units	.1	.1
955 D	Silica as SiO_2, DIS, ICP	mg/L	.01	.03
1075 C	Silver, DIS, ICP	µg/L	1	3
930 C	Sodium, DIS, ICP	mg/l	.2	.6
90095 A	Specific conductance, lab.	µS/cm	1	
1080 B	Strontium, DIS, ICP	µg/L	.5	1.5
1085 B	Vanadium, DIS, ICP	µg/L	6	18
1090 B	Zinc, DIS, ICP	µg/L	3	9

SCHEDULE 2701

Schedule Description: Major inorganics in surface water for NAWQA

Sample Requirements: 250 mL, filtered acidified (FA) with HNO_3 to pH <2
250 mL, unfiltered nonacidified (RU)
500 mL, filtered nonacidified (FU)

Container Requirements: 250-mL polyethylene bottle, acid-rinsed
500-mL polyethelene bottle, field-rinsed

Lab code	Parameter code	CAS number	Compound name	MRL
15	00940 E		Chloride, DIS	0.1 mg/L
27	70300 A		ROE DIS @ 180° C	1.0 mg/L
54	00935 A		Potassium, DIS	.1 mg/L
68	00403 A		pH, Laboratory	.1
69	90095 A		Specific Conductance, lab.	1.0 µS/cm
70	90410 A		Alkalinity, as $CaCO_3$, lab.	1.0 mg/L
645	01046 D		Iron, DIS	3.0 µg/L
648	01056 C		Manganese, DIS	1.0 µg/L
659	00915 D		Calcium, DIS	.02 mg/L
663	00925 C		Magnesium, DIS	.01 mg/L
667	00955 D		Silica, DIS	.01 mg/L
675	00930 C		Sodium, DIS	.2 mg/L
1572	00945 G		Sulfate, DIS	.1 mg/L
1573	00950 E		Fluoride, DIS	.1 mg/L

SCHEDULE 2702

Schedule Description: Nutrients in surface water for NAWQA

Sample Requirements: 125 mL water passed through 0.45-µm filter, chilled (FC) @ 4 deg. C (packed in ice), w/$HgCl_2$ ampule added, 125 mL unfiltered chilled (RC) @ 4 deg. C (packed in ice) w/$HgCl_2$ ampule added

Container Requirements: 125-mL brown polyethylene bottle, field-rinsed

Lab code	Parameter code	Compound name	MRL (mg/L)
160	00613 B	Nitrogen, nitrite, as N, DIS	0.01
162	00671 B	Phosphorus, orthophosphate, as P, DIS	.01
228	00631 B	Nitrogen, nitrate+nitrite, as N, DIS	.05
301	00608 B	Nitrogen, ammonia, as N, DIS	.01
1685	00666 C	Phosphorus, as P, DIS	.01
1687	00623 C	Nitrogen, ammonia+organic, as N, DIS	.20
1688	00625 C	Nitrogen, ammonia+organic, as N, total	.20
1686	00665 C	Phosphorus, as P, total	.01

Table 9.--Inorganic determinations for water listed by selected laboratory schedule--Continued

SCHEDULE 2703

Schedule Description: Trace elements in ground water filtered through a 0.45-µm filter for NAWQA (Protocol Memo 7-9-93, Ver 1.3)
Sample Requirements: 250 mL unfiltered ground water, nonacidified (RU)
250 mL, filtered (0.45-µm), acidified with nitric acid to pH of <2 (FA)
Container Requirements: 250-mL polyethylene bottle, field-rinsed, 250-mL polyethylene bottle, acid-rinsed

Lab-code	Parameter code		CAS number	Compound name	MRL	
0068	00403	A		pH, laboratory	0.1	
0069	90095	A		Specific conductance, lab.	1	µS/cm
0112	01000	B	7440382	Arsenic, DIS,	1	µg/L
1784	01106	G	7429905	Aluminum, DIS, ICP/MS	1	µg/L
1785	01095	G	7440360	Antimony, DIS, ICP/MS	1	µg/L
1786	01005	G	7440393	Barium, DIS, ICP/MS	1	µg/L
1787	01010	G	7440417	Beryllium, DIS, ICP/MS	1	µg/L
1788	01025	G	7440439	Cadmium, DIS, ICP/MS	1	µg/L
1789	01030	G	7440473	Chromium, DIS, ICP/MS	1	µg/L
1790	01035	G	7440484	Cobalt, DIS, ICP/MS	1	µg/L
1791	01040	G	7440508	Copper, DIS, ICP/MS	1	µg/L
1792	01049	G	7439921	Lead, DIS, ICP/MS	1	µg/L
1793	01056	G	7439965	Manganese, DIS, ICP/MS	1	µg/L
1794	01060	G	7439987	Molybdenum, DIS, ICP/MS	1	µg/L
1795	01065	G	7440020	Nickel, DIS, ICP/MS	1	µg/L
0087	01145	A	7782492	Selenium, DIS	1	µg/L
1796	01075	G	7440224	Silver, DIS, ICP/MS	1	µg/L
1797	22703	G	7440611	Uranium, DIS, ICP/MS	1	µg/L
1798	01090	G	7440666	Zinc, DIS, ICP/MS	1	µg/L

SCHEDULE 2750

Schedule Description: Major inorganics in ground water for NAWQA
Sample Requirements: 250 mL, filtered acidified (FA) w/HNO_3 to pH <2
250 mL, unfiltered nonacidified (RU)
500 mL, filtered nonacidified (FU)
Container Requirements: 250- and 500-mL polyethylene bottles, field-rinsed
250-mL polyethylene bottle, acid-rinsed

Lab-code	Parameter code		CAS number	Compound name	MRL	
15	00940	E		Chloride, DIS	0.1	mg/L
27	70300	A		ROE DIS @ 180°C	1	mg/L
54	00935	A		Potassium, DIS	.1	mg/L
68	00403	A		pH, laboratory	.1	
69	90095	A		Specific conductance, lab.	1	µS/cm
70	90410	A		Alkalinity, as $CaCO_3$, lab.	1	mg/L
645	01046	D		Iron, DIS	3	µg/L
648	01056	C		Manganese, DIS	1	µg/L
659	00915	D		Calcium, DIS	.02	mg/L
663	00925	C		Magnesium, DIS	.01	mg/L
667	00955	D		Silica, DIS	.01	mg/L
675	00930	C		Sodium, DIS	.20	mg/L
1246	71870	E		Bromide, DIS	.01	mg/L
1572	00945	G		Sulfate, DIS	.10	mg/L
1573	00950	E		Fluoride, DIS	.10	mg/L

SCHEDULE 2752

Schedule Description: Nutrients in ground water for NAWQA
Sample Requirements: 125 mL water passed through 0.45-µm filter, chilled, (FC) @ 4 deg. C (packed in ice), w/$HgCl_2$ ampule added
Container Requirements: 125-mL brown polyethylene bottle, field-rinsed

Lab-code	Parameter code		Compound name	MRL (mg/L)
160	00613	B	Nitrogen, nitrite, as N, DIS	0.01
162	00671	B	Phosphorus, orthophosphate, as P, DIS	.01
228	00631	B	Nitrogen, nitrate+nitrite, as N, DIS	.05
301	00608	B	Nitrogen, ammonia, as N, DIS	.01
1685	00666	C	Phosphorus, as P, DIS	.01
1687	00623	C	Nitrogen, ammonia+organic, as N, DIS	.20

Table 10.--Inorganic determinations for tissue listed by laboratory schedule

SCHEDULE 2200

Schedule Description: Trace elements in tissue samples (fish, liver, or corbicula)
Sample Requirements: 20 g of sample, frozen, shipped @ 4 deg. C (packed in ice)
Container Requirements: Ziploc bag

Lab. code	Parameter code		CAS number	Compound name	MRL (µg/g) dry
6000	--	A	--	Aluminum, ICP	1.0
6001	--	A	--	Barium, ICP	.1
6003	--	A	--	Boron, ICP	.2
6005	--	A	--	Chromium, ICP	.5
6007	--	A	--	Copper, ICP	.5
6008	--	A	--	Iron, ICP	1
6010	--	A	--	Manganese, ICP	.1
6014	--	A	--	Strontium, ICP	.1
6016	--	A	--	Zinc, ICP	.5
6018	--	B	--	Antimony, ICP/MS	.1
6019	--	B	--	Arsenic, ICP/MS	.1
6021	--	B	--	Beryllium, ICP/MS	.1
6023	--	B	--	Cadmium, ICP/MS	.1
6025	--	B	--	Cobalt, ICP/MS	.1
6028	--	B	--	Lead, ICP/MS	.1
6030	--	B	--	Molybdenum, ICP/MS	.1
6031	--	B	--	Nickel, ICP/MS	.1
6032	--	B	--	Selenium, ICP/MS	.1
6033	--	B	--	Silver, ICP/MS	.1
6036	--	B	--	Uranium, ICP/MS	.1
6037	--	B	--	Vanadium, ICP/MS	.1
6046	--	A	--	Mercury, CVAA	.1
6047	--	A	--	Water, percent	0

Table 11.--Gross organic determinations listed alphabetically

Lab. code	Parameter code	Name and phase	Units	Volume needed	Sample designation[1]	MRL
Sediment						
503	686 C	Carbon, inorganic, BTM, modified Van Slyke	g/kg	10 g	CC	0.1
133	693 A	Carbon, total, inorganic + organic, BTM, induction furnace	g/kg	10 g	CC	.1
531	557 A	Oil & grease, BTM, extraction gravimetric	mg/kg	10 g	CC	1,000
Water						
306	691 A	Carbon, inorganic, DIS	mg/L	100 mL	DIC	.1
19	685 A	Carbon, inorganic, total	mg/L	100 mL	TIC	.1
113	681 A	Carbon, organic, DIS	mg/L	100 mL	DOC	.1
305	689 A	Carbon, organic, SUS, wet oxidation	mg/L	1 Filter	SOC	.1
114	680 A	Carbon, organic, total, wet oxidation	mg/L	100 mL	TOC	.1
96	38260 A	MBAS, WWR, colorimetric	mg/L	250 mL	RCB	.01
127	556 A	Oil & grease, total, extraction gravimetric	mg/L	1 L	LC0127	1
52	32730 A	Phenols, total, colorimetric	µg/L	1 L	LC0052	1
138	32240 A	Tannin & lignin, recoverable, colorimetric	mg/L	100 mL	RCB	.1

[1]See table 4.

Table 12.--Organic determinations for sediment listed by laboratory schedule

SCHEDULE 80

Schedule Description: Organochlorine herbicides, recoverable from bed material analyzed by GC/ECD

Sample Requirements: 200 g, BGC, chilled & maintained @ 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
0375	39731 A	94757	2,4-D	0.1
0376	39741 A	93765	2,4,5-T	.1
0377	39761 A	93721	Silvex	.1
0403	34609 A	105679	2,4-DP	.1
0750	38930 A	918021	Picloram	.1
0751	38931 A	918009	Dicamba	.1

SCHEDULE 1305

Schedule Description: Chlorophenoxy acid herbicides, recoverable from bottom material, analyzed by GC/ECD

Sample Requirements: 200 g, BGC, chilled & maintained @ 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
0375	39731 A	94757	2,4-D	0.1
0376	39741 A	93765	2,4,5-T	.1
0377	39761 A	93721	Silvex	.1
0403	34609 A	105679	2,4-DP	.1

SCHEDULE 1320

Schedule Description: Organophosphate pesticides, recoverable from bottom material, analyzed by GC/FPD

Sample Requirements: 200 g, BGC, chilled & maintained @ 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
0385	39571 A	333415	Diazinon	0.1
0386	39399 A	563122	Ethion	.1
0387	39531 A	121755	Malathion	.1
0388	39601 A	298000	Methylparathion	.1
0390	39541 A	56382	Parathion	.1
0391	39787 A	786196	Trithion	.1

SCHEDULE 1325

Schedule Description: Organochlorine pesticides with PCB's and PCN's, recoverable from bottom material, analyzed by GC/ECD

Sample Requirements: 200 g, BGC, chilled & maintained at 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
0342	81886 A	72560	Perthane	1
0346	39389 A	15297	Endosulfan	.1
0361	39333 A	309002	Aldrin	.1
0362	39351 A	57749	Chlordane	1
0363	39363 A	72548	DDD	.1
0364	39368 A	72559	DDE	.1
0365	39373 A	50293	DDT	.1
0366	39383 A	60571	Dieldrin	.1
0367	39393 A	72208	Endrin	.1
0368	39413 A	76448	Heptachlor	.1
0369	39423 A	1024573	Haptachlor epoxide	.1
0370	39343 A	58899	Lindane	.1
0371	39403 A	8001352	Toxaphene	10
0394	39519 A	12767792	PCB's, gross	1
0395	39251 A	25104556	PCN's, gross	1
0401	39481 A	72435	Methoxychlor	.1
0545	39758 A	2385855	Mirex	.1

SCHEDULE 1335

Schedule Description: Organochlorine and organophosphate pestiides, with PLB's and PLN's recoverable from bottom material

Sample Requirements: 200 g, BGC, chilled & maintained @ 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
0342	81886 A	72560	Perthane	1
0346	39389 A	115297	Endosulfan	.1
0361	39333 A	309002	Aldrin	.1
0362	39351 A	57749	Chlordane	1
0363	39363 A	72548	DDD	.1
0364	39368 A	72559	DDE	.1
0365	39373 A	50293	DDT	.1
0366	39383 A	60571	Dieldrin	.1
0367	39393 A	72208	Endrin	.1
0368	39413 A	76448	Heptachlor	.1
0369	39423 A	1024573	Heptachlor epoxide	.1
0370	39343 A	58899	Lindane	.1
0371	39403 A	8001352	Toxaphene	10
0385	39571 A	333415	Diazinon	.1
0386	39399 A	563122	Ethion	.1
0387	39531 A	121755	Malathion	.1
0388	39601 A	298000	Methylparathion	.1
0390	39541 A	56382	Parathion	.1
0391	39787 A	786196	Trithion	.1
0394	39519 A	12767792	PCB's, gross	1
0395	39251 A	25104556	PCN's, gross	1
0401	39481 A	72435	Methoxychlor	.1
0545	39758 A	2385855	Mirex	.1

SCHEDULE 1382

Schedule Description: Organic compound profile, recoverable from bottom material, as determined from a methylene chloride extraction and analyzed by GC/FID

Sample Requirements: 200 g, BGC, chilled & maintained @ 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
1236	99475 A		BTM GC/FID profile	N/A

SCHEDULE 1384

Schedule Description: Organic compounds , acid and base/neutral, recoverable from bottom material using methylene chloride and GCMS technology

Sample Requirements: 200 g, BGC, chilled & maintained @ 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
1044	34455 A	59507	3-Chloro-3-methylphenol	600
1045	34589 A	95578	2-Chlorophenol	200
1046	34604 A	120832	2,4-Dichlorophenol	200
1047	34609 B	105679	2,4-Dimethylphenol	200
1048	34660 A	534521	2-Methyl-4,6-dinitrophenol	600
1049	34619 A	51285	2,4-Dinitrophenol	600
1050	34594 A	88755	2-Nitrophenol	200
1051	34649 A	100027	4-Nitrophenol	600
1052	39061 A	87865	Pentachlorophenol	600
1053	34695 A	108952	Phenol	200
1054	34624 A	88062	2,4,6-Trichlorophenol	600
1112	34208 A	83329	Acenaphthene	200
1113	34203 A	208968	Acenaphthylene	200
1114	34223 A	120127	Anthracene	200
1116	34529 A	56553	Benzo[a]anthracene	400
1117	34233 A	205992	Benzo[b]fluoranthene	400
1118	34245 A	207089	Benzo[k]fluoranthene	400
1119	34250 A	50328	Benzo[a]pyrene	400
1120	34524 A	191242	Benzo[g,h,i]perylene	400
1121	34295 A	85687	Butyl benzyl phthalate	200
1122	34281 A	111911	Bis(2-chloroethoxy)methane	200
1123	34276 A	111444	Bis(2-chloroethyl)ether	200
1124	34286 A	708601	Bis(2-chloroisopropyl)ether	200
1125	34639 A	101553	4-Bromophenylphenylether	200
1126	34584 A	91587	2-Chloronaphthalene	200
1127	34644 A	7005723	4-Chlorophenylphenylether	200
1128	34323 A	218019	Chrysene	400
1129	34559 A	53703	1,2,5,6-Dibenz[a,h]anthracene	400
1130	39112 A	84742	Di-n-butyl phthalate	200
1140	34539 A	95501	1,2-Dichlorobenzene	200
1141	34569 A	541731	1,3-Dichlorobenzene	200
1142	34574 A	106467	1,4-Dichlorobenzene	200
1144	34339 A	84662	Diethyl phthalate	200
1145	34344 A	131113	Dimethyl phthalate	200
1146	34614 A	121142	2,4-Dinitrotoluene	200
1147	34629 A	606202	2,6-Dinitrotoluene	200
1148	34599 A	117840	Di-n-octyl phthalate	400
1149	39102 A	117817	Bis(2-ethylhexyl)phthalate	200
1150	34384 A	86737	Fluorene	200

SCHEDULE 1384--Continued

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
1151	34379 A	206440	Fluoranthene	200
1152	39701 A	118741	Hexachlorobenzene	200
1153	39705 A	87683	Hexachlorobutadiene	200
1154	34389 A	77474	Hexachlorocyclopentadiene	200
1155	34399 A	67721	Hexachloroethane	200
1156	34406 A	193395	Indeno (1,2,3-cd) pyrene	400
1157	34411 A	78591	Isophorone	200
1158	34445 A	91203	Naphthalene	200
1159	34450 A	98953	Nitrobenzene	200
1160	34441 A	62759	N-Nitrosodimethylamine	200
1161	34436 A	86306	N-Nitrosodiphenylamine	200
1162	34431 A	621647	N-Nitrodi-n-propylamine	200
1163	34464 A	85018	Phenanthrene	200
1164	34472 A	129000	Pyrene	200
1166	34554 A	120821	1,2,4-Trichlorobenzene	200

SCHEDULE 1386

Schedule Description: Organic compounds , acid and base/neutral, recoverable from bottom material using methylene chloride and GC/MS technology with unknowns tentatively identified

Sample Requirements: 200 g, BGC, chilled & maintained @ 4 deg. C

Container Requirement: 1-L, amber, 33-mL neck, pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/kg)
1044	34455 A	59507	4-Chloro-3-methylphenol	600
1045	34589 A	95578	2-Chlorophenol	200
1046	34604 A	120832	2,4-Dichlorophenol	200
1047	34609 B	105679	2,4-Dimethylphenol	200
1048	34660 A	534521	2-Methyl-4,6-dinitrophenol	600
1049	34619 A	51285	2,4-Dinitrophenol	600
1050	34594 A	88755	2-Nitrophenol	200
1051	34649 A	100027	4-Nitrophenol	600
1052	39061 A	87865	Pentachlorophenol	600
1053	34695 A	108952	Phenol	200
1054	34624 A	88062	2,4,6-Trichlorophenol	600
1112	34208 A	83329	Acenaphthene	200
1113	34203 A	208968	Acenaphthylene	200
1114	34223 A	120127	Anthracene	200
1116	34529 A	56553	Benzo[a]anthracene	400
1117	34233 A	205992	Benzo[b]fluoranthene	400
1118	34245 A	207089	Benzo[k]fluoranthene	400
1119	34250 A	50328	Benzo[a]pyrene	400
1120	34524 A	191242	Benzo[g,h,i]perylene	400
1121	34295 A	85687	Butyl benzyl phthalate	200
1122	34281 A	111911	Bis(2-chloroethoxy)methane	200
1123	34276 A	111444	Bis(2-chloroethyl)ether	200
1124	34286 A	108601	Bis(2-chloroisopropyl)ether	200
1125	34639 A	101553	4-Bromophenylphenylether	200
1126	34584 A	91587	2-Chloronaphthalene	200
1127	34644 A	7005723	4-Chlorophenylphenylether	200
1128	34323 A	218019	Chrysene	400
1129	34559 A	53703	1,2,5,6-Dibenz[a,h]anthracene	400
1130	39112 A	84742	Di-n-butyl phthalate	200
1140	34539 A	95501	1,2-Dichlorobenzene	200
1141	34569 A	541731	1,3-Dichlorobenzene	200
1142	34574 A	106467	1,4-Dichlorobenzene	200
1144	34339 A	84662	Diethyl phthalate	200
1145	34344 A	131113	Dimethyl phthalate	200
1146	34614 A	121142	2,4-Dinitrotoluene	200
1147	34629 A	606202	2,6-Dinitrotoluene	200
1148	34599 A	117840	Di-n-octyl-phthalte	400
1149	39102 A	117817	Bis(2-ethylhexyl)phthalate	200
1150	34384 A	86737	Fluorene	200
1151	34379 A	206440	Fluoranthene	200
1152	39701 A	118741	Hexachlorobenzene	200
1153	39705 A	87683	Hexachlorobutadiene	200
1154	34389 A	77474	Hexachlorocyclopentadiene	200
1155	34399 A	67721	Hexachloroethane	200
1156	34406 A	193395	Indeno (1,2,3-cd) pyrene	400
1157	34411 A	78591	Isophorone	200
1158	34445 A	91203	Naphthalene	200
1159	34450 A	98953	Nitrobenzene	200
1160	34441 A	62759	N-Nitrosodimethylamine	200
1161	34436 A	86306	N-Nitrosodiphenylamine	200
1162	34431 A	621647	N-Nitrosodi-n-propylamine	200
1163	34464 A	85018	Phenanthrene	200
1164	34472 A	129000	Pyrene	200
1166	34554 A	120821	1,2,4-Trichlorobenzene	200

SCHEDULE 2501

Schedule Description: Chlorinated organic compounds in bed sediments analyzed by the NWQL using gas chromatography

Sample Requirements: 500 g of bed sediment chilled @ 4 deg. C (packed in ice), fill container no more than two-thirds full to minimize breakage

Container Requirements: 500-mL wide-mouth glass container

Lab. code	Para meter code	CAS number	Compound name	MRL (ug/kg)
5001	00000 B	--	Aldrin	1
5002	00000 B	--	Chlordane,cis-	1
5003	00000 B	--	Chlordane,trans-	1
5054	00000 B	--	Chloroneb	5
5036	00000 B	--	DCPA(Dacthal)	5
5008	00000 B	--	DDD,o,p'-	1
5009	00000 A	--	DDD,p,p'-	1
5010	00000 B	--	DDE,o,p'-	1
5011	00000 B	--	DDE,p,p'-	1
5012	00000 B	--	DDT,o,p'-	2
5013	00000 B	--	DDT,p,p'-	2
5014	00000 B	--	Dieldrin	1
5015	00000 B	--	Endosulfan I	1
5018	00000 B	--	Endrin	2
5026	00000 B	--	HCH, alpha-	1
5027	00000 B	--	HCH, beta-	1
5022	00000 B	--	HCH, gamma-(Lindane)	1
5020	00000 B	--	Heptachlor	1
5021	00000 B	--	Heptachlor epoxide	1
5006	00000 B	--	Hexachlorobenzene	1
5037	00000 B	--	Isodrin	1
5042	00000 B	--	Methoxychlor,o,p'-	5
5044	00000 B	--	Methoxychlor,p,p'-	5
5023	00000 B	--	Mirex	1
5041	00000 B	--	Nonachlor, cis-	1
5039	00000 B	--	Nonachlor, trans-	1
5038	00000 B	--	Oxychlordane	1
5024	00000 B	--	PCB's, total	50
5033	00000 B	--	Pentachloroanisole	1
5055	00000 B	--	Permethrin, cis-	5
5056	00000 B	--	Permethrin, trans-	5
5025	00000 B	--	Toxaphene	200
5032	00000 B	--	HCH,alpha,d6-surrogate%	
5034	00000 B	--	Biphenyl, 3,5-dichloro surrogate%	
5048	00000 B	--	Octachlorobiphenyl surrogate %	
5053	00000 B	--	Set number	
5057	00000 B	--	Sample weight	
5058	00000 B	--	Analytical reference number	

SCHEDULE 2502

Schedule Description: Base-Neutral-Acid (BNA) semivolatile organic compounds in bed sediment analyzed by NWQL using Gas Chromatography/Mass Spectrometry (GC/MS).

Sample Requirements: 500 g of bed sediment, chilled @ 4 deg. C (packed in ice)

Container Requirements: 500-mL wide-mouth glass container

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/Kg)
5212	00000 B	--	Acenaphthylene	50
5211	00000 B	--	Acenaphthene	50
5276	00000 B	--	Acridine	50
5245	00000 B	--	Amine, n-Nitroso-Di-n-Propyl-	50
5244	00000 B	--	Amine, n-Nitroso-Diphenyl-	50
5213	00000 B	--	Anthracene	50
5279	00000 B	--	Anthracene, 2-Methyl-	50
5217	00000 B	--	Benzo[a]anthracene	50
5232	00000 B	--	Dibenzo[a,h]anthracene	50
5283	00000 B	--	Anthraquinone	50
5201	00000 B	--	Benzene, 1,2,4-Trichloro-	50
5234	00000 B	--	Benzene, 1,2-Dichloro-	50
5222	00000 B	--	Benzene, 1,3-Dichloro-	50
5233	00000 B	--	Benzene, 1,4-Dichloro-	50
5272	00000 B	--	Azobenzene	50
5247	00000 B	--	Benzene, Nitro-	50
5228	00000 B	--	Benzene, pentachloro-	50
5226	00000 B	--	Benzene, Pentachloronitro-	50
5229	00000 B	--	Cyclobutadiene, Hexachloro-	M-Del
5278	00000 B	--	9H-Carbazole	50
5225	00000 B	--	Chrysene	50
5254	00000 B	--	p-Cresol	50
5275	00000 B	--	Dibenzothiophene	50
5231	00000 B	--	Ethane, hexachloro-	M-Del
5208	00000 B	--	Ether, 4-Bromophenylphenyl-	50
5209	00000 B	--	Ether, 4-Chlorophenylphenyl-	50
5215	00000 B	--	Ether, bis(2-Chloroethyl)-	50
5216	00000 B	--	Ether, bis(2-Chloroisopropyl)-	M-Del
5240	00000 B	--	Fluoranthene	50
5218	00000 B	--	Benzo[b]fluoranthene	50
5220	00000 B	--	Benzo[k]fluoranthene	50
5273	00000 B	--	9H-Fluorene, 1-Methyl-	50
5210	00000 B	--	9H-Fluorene	50
5230	00000 B	--	Pentadiene, hexachloro-cyclo	M-Del
5242	00000 B	--	Isophorone	50
5214	00000 B	--	Methane, bis(2-Chloroethoxy)-	50
5246	00000 B	--	Naphthalene	50
5207	00000 B	--	Naphthalene, 2-Chloro-	50
5267	00000 B	--	Naphthalene, 1,2-Dimethyl-	50
5266	00000 B	--	Naphthalene, 1,6-Dimethyl-	50
5265	00000 B	--	Naphthalene, 2,6-Dimethyl-	50
5264	00000 B	--	Naphthalene, 2-Ethyl-	50
5270	00000 B	--	Naphthalene, 2,3,6-Trimethyl-	50
5274	00000 B	--	Pentachloroanisole	50
5219	00000 B	--	Benzo[g,h,i]perylene-	50
5248	00000 B	--	Phenanthrene	50
5282	00000 B	--	Phenanthrene, 1-Methyl-	50
5281	00000 B	--	Phenanthrene, 4,5-Methylene-	50
5277	00000 B	--	Phenanthridine	50
5249	00000 B	--	Phenol	50

SCHEDULE 2502--Continued

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/Kg)
5268	00000 B	--	Phenol, 2,4-Dinitro-	M-Del
5271	00000 B	--	Phenol, 2-Methyl-4,6-Dinitro-	M-Del
5263	00000 B	--	Phenol, 2,3,5,6-Tetramethyl-	M-Del
5255	00000 B	--	Phenol, 2-Nitro-	M-Del
5269	00000 B	--	Phenol, 4-Nitro-	M-Del
5204	00000 B	--	Phenol, 2,4,6-Trichloro-	M-Del
5258	00000 B	--	Phenol, 3,5-Dimethyl-	50
5259	00000 B	--	Phenol, 2,4,6-Trimethyl-	M-Del
5262	00000 B	--	Phenol, 4-Chloro-3-Methyl-	50
5257	00000 B	--	Phenol, 2,4-Dichloro-	M-Del
5256	00000 B	--	Phenol, C8-Alkyl-	50
5227	00000 B	--	Phenol, Pentachloro-	M-Del
5223	00000 B	--	Phthalate, bis(2-Ethylhexyl)-	50
5224	00000 B	--	Phthalate, Butylbenzyl-	50
5235	00000 B	--	Phthalate, Di-n-Butyl-	50
5239	00000 B	--	Phthalate, Di-n-Octyl-	50
5237	00000 B	--	Phthalate, Diethyl-	50
5238	00000 B	--	Phthalate, Dimethyl-	50
5252	00000 B	--	Pyrene	50
5284	00000 B	--	Pyrene, 1-Methyl-	50
5221	00000 B	--	Benzo[a]pyrene	50
5241	00000 B	--	Indeno[1,2,3-cd]pyrene	50
5285	00000 B	--	2,2-Biquinoline	50
5260	00000 B	--	Quinoline	50
5280	00000 B	--	Benzo[c]quinoline	50
5261	00000 B	--	Isoquinoline	50
5203	00000 B	--	Toluene, 2,4-Dinitro-	50
5205	00000 B	--	Toluene, 2,6-Dinitro-	50
5286	00000 B	--	Terphenyl, d14-surrogate %	
5287	00000 B	--	Benzene, Nitro, d5-, surrogate %	
5288	00000 B	--	Biphenyl, 2-Fluoro- surrogate %	
5290	00000 B	--	Set number	

SCHEDULE 79

Schedule Description: Organochlorine herbicides recoverable from whole water by GC/ECD

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0372	39730 B	94757	2,4-D	0.01
0373	39740 B	93765	2,4,5-T	.01
0374	39760 B	93721	Silvex	.01
0402	82183 A	120365	2,4-DP	.01
0748	39720 A	1918021	Picloram	.01
0749	82052 A	1918009	Dicamba	.01
1803	99859 A		Sample volume, mL, SC 79	
1836	00000 A		Set number SC 79	

SCHEDULE 1301

Schedule Description: Chlorophenoxy acid herbicides, dissolved, recoverable from whole-water, analyzed by GC/ECD

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0477	39732 A	94757	2,4-D	0.01
0478	39742 A	93765	2 ,4,5-t	.01
0479	39762 A	93721	Silvex	.01
0487	82356 A	120365	2,4-DP	.01
1816	00000 A		Sample volume, mL, SC 1301	
1864	00000 A		Set number SC 1301	

SCHEDULE 1304

Schedule Description: Chlorophenoxy acid herbicides recoverable from whole-water, analyed by GC/ECD

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0372	39730 B	94757	2,4-D	0.01
0373	39740 B	93765	2,4,5-T	.01
0374	39760 B	93721	Silvex	.01
0402	82183 A	120365	2,4-DP	.01
1800	00000 A		Sample volume, mL, SC 1304	
1839	00000 A		Set number SC 1304	

SCHEDULE 1306

Schedule Description: DBCP & EDB recoverable from whole water using hexane, analyzed by GC/ECD

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1576	82625 D	96128	1,2-Dibromo-3-chloropropane	0.03
1577	77651 D	106934	1,2-Dibromoethane	.04

SCHEDULE 1307

Schedule Description: Regulatory volatile compounds, recoverable from whole-water, using the purge and trap tecqhnique and GC/MS

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1287	34030 B	71432	Benzene	0.2
1288	32104 B	75252	Bromoform	.2
1289	32102 B	56235	Carbontetrachloride	.2
1290	34301 B	108907	Chlorobenzene	.2
1291	32105 B	124481	Chlorodibromomethane	.2
1294	32106 B	7663	Chloroform	.2
1295	32101 B	75274	Dichlorobromomethane	.2
1296	34668 B	75718	Dichlorodifluoromethane	.2
1297	34496 B	75343	1,1-Dichloroethane	.2
1298	32103 B	107062	1,2-Dichloroethane	.2
1299	34501 B	75354	1,1-Dichlorethylene	.2
1300	34546 B	56605	1,2-Transdichloroethene	.2
1301	34541 B	78875	1,2-Dichloropropane	.2
1303	34371 B	100414	Ethylbenzene	.2
1305	34423 B	75092	Methylenechloride	.2
1307	34475 B	127184	Tetrachloroethylene	.2
1308	34010 B	108883	Toluene	.2
1309	34506 B	71556	1,1,1-Trichloroethane	.2
1311	39180 B	79016	Trichloroethylene	.2
1312	34488 B	75694	Trichlorofluoromethane	.2
1313	39175 B	75014	Vinyl chloride	.2
1314	34536 B	95501	1,2-Dichlorobenzene	.2
1315	34566 B	541731	1,3-Dichlorobenzene	.2
1316	34571 B	106467	1,4-Dichlorobenzene	.2
1328	77128 B	100425	Styrene	.2
1330	81551 B	1330207	Xylene	.2
1656	77093 A	156592	Cis-1,2-dichloroethene	.2
1681	77652 A	76131	Trichlorotrifluoroethane	.5

SCHEDULE 1316

Schedule Description:Organophosphate pesticides, dissolved, recoverable from filtered water, analyzed by GC/FPD

Sample Requirements: 800-1,000 mL, GCC, collected unfiltered, but filtered in the lab using precleaned glass-fiber filter, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0423	39572 A	333415	Diazinon	0.01
0424	82346 A	563122	Ethion	.01
0425	39532 A	121755	Malathion	.01
0426	39602 A	298000	Methylparathion	.01
0427	39542 A	56382	Parathion	.01
0428	82342 A	786196	Trithion	.01
1811	99867 A		Sample volume, mL, SC 1316	1
1866	00000 A		Set number SC 1316	

SCHEDULE 1317

Schedule Description: Organophosphate pesticides, suspended, recoverable from suspended material, analyzed by GC/FPD

Sample Requirements: 800-1,000 mL, GCC, collected unfiltered, but filtered in the lab using precleaned glass-fiber filter, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0417	39573 A	333415	Diazinon	0.01
0418	82347 A	563122	Ethion	.01
0419	39533 A	121755	Malathion	.01
0420	39603 A	298000	Methylparathion	.01
0421	39543 A	56382	Parathion	.01
0422	82343 A	786196	Trithion	.01
0485	82345 A	953173	Methyltrithion	.01

SCHEDULE 1319

Schedule Description: Organophosphate pesticides (total recoverable), where recoverable from whole water, analyzed by GC/FPD

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0378	39570 B	333415	Diazinon	0.01
0379	39398 B	563122	Ethion	.01
0380	39530 B	121755	Malathion	.01
0381	39600 B	298000	Methylparathion	.01
0383	39540 B	56382	Parathion	.01
0384	39786 B	786196	Trithion	.01
0592	39011 A	298044	Di-Syston (disulfoton)	.01
0593	39023 A	298022	Phorate	.01
0753	38932 A	2921882	Chlorpyrifos	.01
0802	39040 A	78488	DEF	.01
1336	82614 C	944229	Fonofos	.01
1812	99868 A		Sample volume, mL, SC 1319	1
1837	00000 A		Set number SC 1319	

SCHEDULE 1321

Schedule Description: Organochlorine pesticides with PCB's and PCN's, dissolved, recoverable from filtered water, analyzed by GC/ECD

Sample Requirements: 800-1,000 mL, GCC, collected unfiltered, but filtered in the lab using precleaned glass-fiber filter, chilled & maintained @ 4 deg. C)

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0344	82348 A	72560	Perthane	0.1
0345	82354 A	115297	Endosulfan	.01
0463	39331 A	309002	Aldrin	.01
0464	39352 A	57749	Chlordane	.1
0465	39361 A	72548	DDD	.01
0466	39366 A	72559	DDE	.01
0467	39371 A	50293	DDT	.01
0468	39381 A	60571	Dieldrin	.01
0469	39391 A	72208	Endrin	.01
0470	39411 A	76448	Heptachlor	.01
0471	39421 A	1024573	Heptachlor epoxide	.01
0472	39341 A	58899	Lindane	.01
0473	39401 A	8001352	Toxaphene	1
0474	39517 A	12767792	PCB's, gross	.1
0475	82360 A	25104556	PCN's, gross	.1
0476	82350 A	72435	Methoxychlor	.01
0542	39756 A	2385855	Mirex	.01
1810	99863 A		Sample volume, mL, SC 1321	1
1868	00000 A		Set number SC 1321	

SCHEDULE 1324

Schedule Description: Organochlorine pesticides with PCB's and PCN's, total recoverable, and recoverable from whole water, analyzed by GC/ECD

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0348	39034 A	72560	Perthane	0.1
0349	39388 C	115297	Endosulfan I	.01
0350	39330 C	309002	Aldrin	.01
0351	39350 B	57749	Chlordane	.1
0352	39360 C	72548	DDD	.01
0353	39365 C	72559	DDE	.01
0354	39370 C	50293	DDT	.01
0355	39380 C	60571	Dieldrin	.01
0356	39390 C	72208	Endrin	.01
0357	39410 C	76448	Heptachlor	.01
0358	39420 C	1024573	Heptachlor epoxide	.01
0359	39340 C	58899	Lindane	.01
0360	39400 B	8001352	Toxaphene	1
0392	39516 B	12767792	PCB's, gross	.1
0393	39250 B	25104556	PCN's, gross	.1
0400	39480 B	72435	Methoxychlor	.01
0544	39755 B	2385855	Mirex	.01
1808	99865 A		Sample volume, mL, SC 1324	1
1840	00000 A		Set number SC 1324	

SCHEDULE 1331

Schedule Description: Organochlorine pesticides with PCB's and PCN's, dissolved, recoverable from filtered water, analyzed by GC/ECD

Sample Requirements: 800-1,000 mL, GCC, collected unfiltered, but filtered in the lab using precleaned glass-fiber filter, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0344	82348 A	72560	Perthane	0.1
0345	82354 A	115297	Endosulfan	.01
0423	39572 A	333415	Diazinon	.01
0424	82346 A	563122	Ethion	.01
0425	39532 A	121755	Malathion	.01
0426	39602 A	298000	Methylparathion	.01
0427	39542 A	56382	Parathion	.01
0428	82342 A	786196	Trithion	.01
0463	39331 A	309002	Aldrin	.01
0464	39352 A	57749	Chlordane	.1
0465	39361 A	72548	DDD	.01
0466	39366 A	72559	DDE	.01
0467	39371 A	50293	DDT	.01
0468	39381 A	60571	Dieldrin	.01
0469	39391 A	72208	Endrin	.01
0470	39411 A	76448	Heptachlor	.01
0471	39421 A	1024573	Heptachlor epoxide	.01
0472	39341 A	58899	Lindane	.01
0473	39401 A	8001352	Toxaphene	1
0474	39517 A	12767792	PCB's, gross	.1
0475	82360 A	25104556	PCN's, gross	.1
0476	82350 A	72435	Methoxychlor	.01
0542	39756 A	2385855	Mirex	.01

SCHEDULE 1334

Schedule Description: Organochlorine and organophosphate pesticides, recoverable from whole water

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 2x1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0348	39034 A	72560	Perthane	0.10
0349	39388 C	115297	Endosulfan I	.01
0350	39330 C	309002	Aldrin	.01
0351	39350 B	57749	Chlordane	.10
0352	39360 C	72548	DDD	.01
0353	39365 C	72559	DDE	.01
0354	39370 C	50293	DDT	.01
0355	39380 C	60571	Dieldrin	.01
0356	39390 C	72208	Endrin	.01
0357	39410 C	76448	Heptachlor	.01
0358	39420 C	1024573	Heptachlor epoxide	.01
0359	39340 C	58899	Lindane	.01
0360	39400 B	8001352	Toxaphene	1
0378	39570 B	333415	Diazinon	.01
0379	39398 B	563122	Ethion	.01
0380	39530 B	121755	Malathion	.01
0381	39600 B	298000	Methylparathion	.01
0383	39540 B	56382	Parathion	.01
0384	39786 B	786196	Trithion	.01
0392	39516 B	12767792	PCB's, gross	.10
0393	39250 B	25104556	PCN's, gross	.10
0400	39480 B	72435	Methoxychlor	.01
0544	39755 B	2385855	Mirex	.01
0592	39011 A	298044	Di-syston (disulfoton)	.01
0593	39023 A	298022	Phorate	.01
0753	38932 A	2921882	Chlorpyrifos	.01
0802	39040 A	78488	DEF	.01
1336	82614 C	944229	Fonofos	.01

SCHEDULE 1359

Schedule Description: Carbamate pesticides, recoverable, whole water

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0636	39750 A	63252	Carbaryl	--
0637	39052 A	122429	Propham	--
0638	39051 A	16752775	Methomyl	--
1335	82613 C	23135220	Oxamyl	--
1337	82615 C	1563662	Carbofuran	--
1338	82619 C	116063	Aldicarb	--
1343	82586 C	1646873	Aldicarb Sulfoxide	--
1344	82587 C	1646884	Aldicarb Sulfone	--
1351	77441 A	90153	1-Naphthol	--
1353	82584 A	16655826	Hydroxycarbofuran	--
1448	30296 A	114261	Propoxur	--
1449	30282 A	2032657	Methiocarb	--
1813	99869 A		Sample volume, mL, SC 1359	--

SCHEDULE 1361

Schedule Description: Individual Aroclor PCB's, dissolved, recoverable from filtered water

Sample Requirements: 800-1,000 mL, GCC, collected unfiltered, but filtered in the lab using precleaned glass-fiber filter, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0763	39509 A	11096825	Aroclor 1260	0.1
0767	39505 A	11097691	Aroclor 1254	.1
0771	39501 A	12672296	Aroclor 1248	.1
0775	34457 A	53469219	Aroclor 1242	.1
0779	34665 A	11141165	Aroclor 1232	.1
0783	34662 A	11104282	Aroclor 1221	.1
0787	34672 A	12674112	Aroclor 1016	.1
1802	00000 A		Sample volume, mL, SC 1361	1

SCHEDULE 1364

Schedule Description: Individual Aroclor PCB's, total recoverable, whole water

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0809	34671 B	12674112	Aroclor 1016	0.1
0810	39488 B	11104282	Aroclor 1221	.1
0811	39492 B	11141165	Aroclor 1232	.1
0812	39496 B	53469219	Aroclor 1242	.1
0813	39500 B	12672296	Aroclor 1248	.1
0814	39504 B	11097691	Aroclor 1254	.1
0815	39508 B	11096825	Aroclor 1260	.1
1801	00000 A		Sample volume, mL, SC 1364	1
1871	00000 A		Set number SC 1364	

SCHEDULE 1378

Schedule Description: BETX compounds, recoverable from whole water

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1287	34030 B	71432	Benzene	0.2
1303	34371 B	100414	Ethylbenzene	.2
1308	34010 B	108883	Toluene	.2
1330	81551 B	1330207	Xylenes (O,M,P)	.2
1709	77135 B	95476	Xylene ortho	.2
1712	85795 B	108383	Xylene meta and para	.2

SCHEDULE 1379

Schedule Description: Organonitrogen pesticides, total recoverable, using SPE technology

Sample Requirements: 125 mL, GCC, filtered

Container Requirement: 1x125-mL amber, glass bottle from NWQL

Lab. code	Parameter code		CAS number	Compound name	MRL (ug/L)
1587	46342	A	15972608	Alachlor	0.05
1588	38401	A	834128	Ametryn	.05
1589	39632	A	1912249	Atrazine	.05
1590	04041	A	21725462	Cyanazine	.20
1591	04040	A	6190654	De-sethylatrazine	.05
1592	04038	A	1007289	De-sisopropylatrazine	.05
1593	39415	A	51218452	Metolachlor	.05
1594	82630	A	21087649	Metribuzin	.05
1595	38535	A	139402	Propazine	.05
1596	04035	A	122349	Simazine	.05
1597	04037	A	1610180	Prometon	.05
1598	04036	A	7287196	Prometryn	.05
1804	99860	A		Sample volume, mL, SC 1379	1
1841	00000	A		Set number SC 1379	0

SCHEDULE 1380

Schedule Description: VOC, total recoverable, using purge and trap and GC/MS

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code		CAS number	Compound name	MRL (ug/L)
1009	30217	B	74953	Dibromomethane	0.2
1287	34030	B	71432	Benzene	.2
1288	32104	B	75252	Bromoform	.2
1289	32102	B	56235	Carbontetrachloride	.2
1290	34301	B	108907	Chlorobenzene	.2
1291	32105	B	124481	Dibromochloromethane	.2
1292	34311	B	75003	Chloroethane	.2
1294	32106	B	67663	Chloroform	.2
1295	32101	B	75274	Bromodichloromethane	.2
1296	34668	B	75718	Dichlorodifluoromethane	.2
1297	34496	B	75343	1,1-Dichloroethane	.2
1298	32103	B	107062	1,2-Dichloroethane	.2
1299	34501	B	75354	1,1-Dichloroethene	.2
1300	34546	B	156605	Trans 1,2-dichloroethene	.2
1301	34541	B	78875	1,2-Dichloropropane	.2
1303	34371	B	100414	Ethylbenzene	.2
1304	34413	B	74839	Bromomethane	.2
1305	34423	B	75092	Methylene chloride	.2
1306	34516	B	79345	1,1,2,2-Tetrachloroethane	.2
1307	34475	B	127184	Tetrachloroethene	.2
1308	34010	B	108883	Toluene	.2
1309	34506	B	71556	1,1,1-Trichloroethane	.2
1310	34511	B	79005	1,1,2-Trichloroethane	.2
1311	39180	B	79016	Trichloroethene	.2
1312	34488	B	75694	Trichlorofluoromethane	.2
1313	39175	B	75014	Vinyl chloride	.2
1315	34566	B	541731	1,3-Dichlorobenzene	0.2
1316	34571	B	106467	1,4-Dichlorobenzene	.2

SCHEDULE 1380--Continued

Lab. code	Parameter code		CAS number	Compound name	MRL (ug/L)
131777651	B1069341,2-Dibromoethane.2				
1318	34418	B	74873	Chloromethane	.2
1320	34536	C	95501	1,2-Dichlorobenzene	.2
1326	34704	B	10061015	Cis-1,3-dichloropropene	.2
1327	34699	B	10061026	Trans 1,3-dichloropropene	.2
1328	77128	B	100425	Styrene	.2
1330	81551	B	1330207	Xylenes (O,M,P)	.2
1354	82625	B	96128	1,2-Dibromo-3-chloropropane	1
1478	77168	B	563586	1,1-Dichloropropene	.2
1479	77170	B	594207	2,2-Dichloropropane	.2
1480	77173	B	142289	1,3-Dichloropropane	.2
1481	77275	B	95498	2-Chlorotoluene	.2
1482	77277	B	106434	4-Chlorotoluene	.2
1483	77443	B	96184	1,2,3-Trichloropropane	.2
1484	77562	B	630206	1,1,1,2-Tetrachloroethane	.2
1650	34210	A	107028	Acrolein	20
1651	34215	A	107131	Acrylonitrile	20
1652	78032	A	1634044	Methyltertbutylether	1
1654	77297	A	74975	Bromochloromethane	.2
1656	77093	A	156592	Cis-1,2-dichloroethene	.2
1658	34576	C	110758	2-Chloroethylvinylether	1
1659	77223	A	98828	Isopropylbenzene	.2
1661	77224	A	103651	n-Propylbenzene	.2
1663	77353	A	98066	Tert-butylbenzene	.2
1665	77222	A	95636	1,2,4-Trimethylbenzene	.2
1667	77350	A	135988	Sec-butylbenzene	.2
1669	77356	A	99876	p-Isopropyltoluene	.2
1671	77342	A	104518	n-Butylbenzene	.2
1673	34551	C	120821	1,2,4-Trichlorobenzene	.2
1675	39702	C	87683	Hexachlorobutadiene	.2
1677	34696	C	91203	Naphthalene	.2
1679	77613	A	87616	1,2,3-Trichlorobenzene	.2
1681	77652	A	76131	1,1,2-Trichloro 1,2,2-trifluoro	.5
1683	77226	A	108678	1,3,5-Trimethylbenzene	.2
1698	81555	A	108861	Bromobenzene	.2

SCHEDULE 1381

Schedule Description: Organic compound profile, total recoverable, methylene chloride extraction, analyzed by GC/FID

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code		CAS number	Compound name	MRL (ug/L)
1240	99478	A		H_2O GC/FID profile	

SCHEDULE 1383

Schedule Description: Organic compounds, acid and base/neutral, total recoverable, whole water, methylene chloride and GC/MS

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1055	34452 A	59507	4-Chloro-3-methylphenol	30
1056	34586 A	95578	2-Chlorophenol	5
1057	34601 A	120832	2,4-Dichlorophenol	5
1058	34621 A	88062	2,4,6-Trichlorophenol	20
1059	34606 A	105679	2,4-Dimethylphenol	5
1060	34657 A	534521	4,6-Dinitro-2-methylphenol	30
1061	34616 A	51285	2,4-Dinitrophenol	20
1062	34591 A	88755	2-Nitrophenol	5
1063	34646 A	100027	4-Nitrophenol	30
1064	39032 A	87865	Pentachlorophenol	30
1065	34694 A	108952	Phenol	5
1066	34205 A	83329	Acenaphthene	5
1067	34200 A	208968	Acenaphthylene	5
1068	34220 A	120127	Anthracene	5
1069	39120 A	92875	Benzidine	40
1070	34526 A	56553	Benzo[a]anthracene	10
1071	34230 A	205992	Benzo[b]fluoranthene	10
1072	34242 A	207089	Benzo[k]fluoranthene	10
1073	34247 A	50328	Benzo[a]pyrene	10
1074	34521 A	191242	Benzo[g,h,i]perylene	10
1075	34292 A	85687	Butyl benzyl phthalate	5
1076	34278 A	111911	Bis (2-chloroethoxy)methane	5
1077	34273 A	111444	Bis (2-chlorethyl) ether	5
1078	34283 A	108601	Bis (2-chlorisopropyl) ether	5
1079	34636 A	101553	4-Bromophenylphenyether	5
1080	34581 A	91587	2-Chloronaphthalene	5
1081	34641 B	7005723	4-Chlorophenylphenyether	5
1082	34320 A	218019	Chrysene	10
1083	34556 A	53703	1,2,5,6-Dibenz[a,h]anthracene	10
1084	39110 A	84742	Di-n-butyl phthalate	5
1085	34536 A	95501	1,2-Dichlorobenzene	5
1086	34566 A	541731	1,3-Dichlorobenzene	5
1087	34571 A	106467	1,4-Dichlorobenzene	5
1088	34631 A	91941	3,3-Dichlorobenzidine	20
1089	34336 A	84662	Diethyl phthalate	5
1090	34341 A	131113	Dimethyl phthalate	5
1091	34611 A	121142	2,4-Dinitrotoluene	5
1092	34626 A	606202	2,6-Dinitrotoluene	5
1093	34596 A	117840	Di-n-octyl phthalate	10
1094	39100 A	117817	Bis (2-cthlyhexyl) phthalate	5
1095	34381 A	86737	Fluorene	5
1096	34376 A	206440	Fluoranthene	5
1097	39700 A	118741	Hexachlorobenzene	5
1098	34391 A	87683	Hexachlorobutadiene	5
1099	34386 A	77474	Hexachlorocyclopentadiene	5
1101	34403 A	193395	Indeno(1,2,3-cd) pyrene	10
1102	34408 A	78591	Isophorone	5
1103	34696 A	91203	Naphthalene	5
1104	34447 A	98953	Nitrobenzene	5
1105	34438 A	62759	n-Nitrosodimethlyamine	5
1106	34433 A	86306	n-Nitrosodiphenylamine	5
1107	34428 A	621647	n-Nitrosodi-n-propylamine	5
1108	34461 A	85018	Phenanthrene	5

SCHEDULE 1383--Continued

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1109	34469 A	129000	Pyrene	5
1111	34551 A	120821	1,2,4-Trichlorobenzene	5
1697	82626 A	122667	1 2-Diphenylhydrazine	5
1814	99855 A		Sample volume 1383/1385	1

SCHEDULE 1385

Schedule Description: Organic compounds, acid and base/neutral, total recoverable, whole water, methylene chloride and GC/MS, with unknowns tentatively identified

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1055	34452 A	59507	4-Chloro-3-methylphenol	30
1056	34586 A	95578	2-Chlorophenol	5
1057	34601 A	120832	2,4-Dichlorophenol	5
1058	34621 A	88062	2,4,6-Trichlorophenol	20
1059	34606 A	105679	2,4-Dimethylphenol	5
1060	34657 A	534521	4,6-Dinitro-2-methylphenol	30
1061	34616 A	51285	2,4-Dinitrophenol	20
1062	34591 A	88755	2-Nitrophenol	5
1063	34646 A	100027	4-Nitrophenol	30
1064	39032 A	87865	Pentachlorophenol	30
1065	34694 A	108952	Phenol	5
1066	34205 A	83329	Acenaphthene	5
1067	34200 A	208968	Acenaphthylene	5
1068	34220 A	120127	Anthracene	5
1069	39120 A	92875	Benzidine	40
1070	34526 A	56553	Benzo[a]anthracene	10
1071	34230 A	205992	Benzo[b]fluoranthene	10
1072	34242 A	207089	Benzo[k]fluoranthene	10
1073	34247 A	50328	Benzo[a]pyrene	10
1074	34521 A	191242	Benzo[g,h,i]perylene	10
1075	34292 A	85687	Butyl benzyl phthalate	5
1076	34278 A	111911	Bis (2-chloroethoxy) methane	5
1077	34273 A	111444	Bis (2-chlorethyl) ether	5
1078	34283 A	108601	Bis (2-chlorisopropyl) ether	5
1079	34636 A	101553	4-Bromophenylphenyether	5
1080	34581 A	91587	2-Chloronaphthalene	5
1081	34641 B	7005723	4-Chlorophenylphenyether	5
1082	34320 A	218019	Chrysene	10
1083	34556 A	53703	1,2,5,6-Dibenz[a,h]anthracene	10
1084	39110 A	84742	Di-n-butyl phthalate	5
1085	34536 A	95501	1,2-Dichlorobenzene	5
1086	34566 A	541731	1,3-Dichlorobenzene	5
1087	34571 A	106467	1,4-Dichlorobenzene	5
1088	34631 A	91941	3,3-Dichlorobenzidine	20
1089	34336 A	84662	Diethyl phthalate	5
1090	34341 A	131113	Dimethyl phthalate	5
1091	34611 A	121142	2,4-Dinitrotoluene	5
1092	34626 A	606202	2,6-Dinitrotoluene	5
1093	34596 A	117840	Di-n-octyl phthalate	10
1094	39100 A	117817	Bis (2-ethlyhexyl) phthalate	5
1095	34381 A	86737	Fluorene	5
1096	34376 A	206440	Fluoranthene	5
1097	39700 A	118741	Hexachlorobenzene	5
1098	34391 A	87683	Hexachlorobutadiene	5
1099	34386 A	77474	Hexachlorocyclopentadiene	5
1100	34396 A	67721	Hexachloroethane	5
1101	34403 A	193395	Indeno (1,2,3-cd) pyrene	10
1102	34408 A	78591	Isophorone	5
1103	34696 A	91203	Naphthalene	5
1104	34447 A	98953	Nitrobenzene	5
1105	34438 A	62759	n-Nitrosodimethlyamine	5
1106	34433 A	86306	n-Nitrosodiphenylamine	5

SCHEDULE 1385--Continued

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1107	34428 A	621647	n-Nitrosodi-n-propylamine	5
1108	34461 A	85018	Phenanthrene	5
1109	34469 A	129000	Pyrene	5
1111	34551 A	120821	1,2,4-Trichlorobenzene	5
1697	82626 A	122667	1 2-Diphenylhydrazine	5
1815	99858 A		Sample volume, mL, SC 1385	1

SCHEDULE 1387

Schedule Description: Limited VOC's, using purge and trap with GC/MS

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1287	34030 B	71432	Benzene	0.2
1288	32104 B	75252	Bromoform	.2
1291	32105 B	124481	Chlorodibromomethane	.2
1294	32106 B	67663	Chloroform	.2
1295	32101 B	75274	Dichlorobromomethane	.2
1303	34371 B	100414	Ethylbenzene	.2
1305	34423 B	75092	Methylenechloride	.2
1308	34010 B	108883	Toluene	.2
1311	39180 B	79016	Trichloroethylene	.2
1330	81551 B	1330207	Xylene	.2

SCHEDULE 1389

Schedule Description: Organonitrogen compounds, total recoverable, whole water, analyzed by GC/NPD

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0631	39057 A	7287196	Prometryne	0.1
0717	39630 A	1912249	Atrazine	.1
0718	39056 A	1610180	Prometone	.2
0719	39055 A	122349	Simazine	.1
0720	39054 A	1014706	Simetryn	.1
0844	39024 A	139402	Propazine	.1
0846	81757 A	21725462	Cyanazine	.2
0848	82184 A	834128	Ametryn	.1
1331	77825 C	15972608	Alachlor	.1
1332	39030 C	1582098	Trifluralin	.1
1333	82611 C	21087649	Metribuzin	.1
1334	82612 C	51218452	Metolachlor	.2
1462	30311 A	5902512	Terbacil	.2
1463	30234 A	314409	Bromacil	.2
1464	30245 A	5234684	Carboxin	.2
1465	30255 A	957517	Diphenamide	.1
1466	30264 A	51235042	Hexazinone	.2
1467	30324 A	1929777	Vernolate	.1
1468	30235 A	23184669	Butachlor	.1
1469	30254 A	1134232	Cycloate	.1
1470	30236 A	2008415	Butylate	.1
1471	30295 A	1918167	Propachlor	.1
1612	75981 A	6190654	De-ethylatrazine	.2
1613	75980 A	1007289	De-isopropylatrazine	.2
1805	99861 A		Sample volume, mL, SC 1389	1
1865	00000 A		Set number SC 1389	0

SCHEDULE 1390

Schedule Description: VOC's total recoverable, using purge and trap and GC/MS

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1011	34030 A	71432	Benzene	3
1012	32104 A	75252	Bromoform	3
1013	32102 A	56235	Carbontetrachloride	3
1014	34301 A	108907	Chlorobenzene	3
1015	32105 A	124481	Dibromochloromethane	3
1016	34311 A	75003	Chloroethane	3
1017	34576 A	110758	2-Chloroethylvinylether	3
1018	32106 A	67663	Chloroform	3
1019	32101 A	75274	Bromodichloromethane	3
1020	34668 A	75718	Dichlorodifluoromethane	3
1021	34496 A	75343	1,1-Dichloroethane	3
1022	32103 A	107062	1,2-Dichloroethane	3

SCHEDULE 1390--Continued

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1023	34501 A	75354	1,1-Dichloroethene	3
1024	34546 A	15660512	Trans 1,2-dichloroethene	3
1025	34541 A	78875	1,2-Dichloropropane	3
1027	34371 A	100414	Ethylbenzene	3
1028	34413 A	74839	Bromomethane	3
1029	34423 A	75092	Methylenechloride	3
1030	34516 A	79345	1,1,2,2-Tetrachloroethane	3
1031	34475 A	127184	Tetrachloroethene	3
1032	34010 A	108883	Toluene	3
1033	34506 A	71556	1,1,1-Trichloroethane	3
1034	34511 A	79005	1,1,2-Trichloroethane	3
1035	39180 A	79016	Trichloroethene	3
1036	34488 A	75694	Trichlorofluoromethane	3
1037	39175 A	75014	Vinylchloride	1
1281	34418 A	74873	Chloromethane	3
1319	77651 C	106934	1,2-Dibromoethane	3
1320	34536 C	95501	1,2-Dichlorobenzene	3
1321	34566 C	541731	1,3-Dichlorobenzene	3
1322	34571 C	106467	1,4-Dichlorobenzene	3
1323	34704 A	10061015	Cis-1,3-dichloropropene	3
1324	34699 A	10061026	Trans 1,3-dichloropropene	3
1325	77128 A	100425	Styrene	3
1329	81551 A	1330207	Xylenes (O,M,P)	3
1349	82625 A	96128	1,2-Dibromo-3-chloropropane	3
1485	81555 B	108861	Bromobenzene	3
1650	34210 A	107028	Acrolein	20
1651	34215 A	107131	Acrylonitrile	20
1653	78032 B	1634044	Methyltertbutylether	5
1655	77297 B	74975	Bromochloromethane	3
1657	77093 B	156592	Cis-1,2-dichloroethene	3
1660	77223 B	98828	Isopropylbenzene	3
1662	77224 B	103651	n-Propylbenzene	3
1664	77353 B	98066	Tert-butylbenzene	3
1666	77222 B	9563612	1,2,4-Trimethylbenzene	3
1668	77350 B	135988	Sec-butylbenzene	3
1670	77356 B	99876	p-Isopropyltoluene	3
1672	77342 B	104518	n-Butylbenzene	3
1674	34551 B	12082112	1,2,4-Trichlorobenzene	3
1676	39702 B	87683	Hexachlorobutadiene	3
1678	34696 B	91203	Naphthalene	3
1680	77613 B	8761612	1,2,3-Trichlorobenzene	3
1682	77652 B	76131	Trichlorotrifluoroethane	3
1684	77226 B	108678	1,3,5-Trimethylbenzene	3
1689	77168 A	563586	1,1-Dichloropropene	3
1690	30217 A	74953	Dibromomethane	3
1691	77170 A	59420722	2,2-Dichloropropane	3
1692	77173 A	14228913	1,3-Dichloropropane	3
1693	77562 A	630206	1,1,1,2-Tetrachloroethane	3
1694	77275 A	954982	1,2-Chlorotoluene	3
1695	77443 A	96184123	1,2,3-Trichloropropane	3
1696	77277 A	106434	1,4-Chlorotoluene	3

SCHEDULE 1392

Schedule Description: VOC, total recoverable, using purge and trap and GC/MS with unknowns tentatively identified

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1009	30217 B	74953	Dibromomethane	0.2
1287	34030 B	71432	Benzene	.2
1288	32104 B	75252	Bromoform	.2
1289	32102 B	56235	Carbontetrachloride	.2
1290	34301 B	108907	Chlorobenzene	.2
1291	32105 B	124481	Dibromochloromethane	.2
1292	34311 B	75003	Chloroethane	.2
1294	32106 B	67663	Chloroform	.2
1295	32101 B	75274	Bromodichloromethane	.2
1296	34668 B	75718	Dichlorodifluoromethane	.2
1297	34496 B	75343	1,1-Dichloroethane	.2
1298	32103 B	107062	1,2-Dichloroethane	.2
1299	34501 B	75354	1,1-Dichlorethene	.2
1300	34546 B	15660512	Trans 1,2-dichloroethene	.2
1301	34541 B	78875	1,2-Dichloropropane	.2
1303	34371 B	100414	Ethylbenzene	.2
1304	34413 B	74839	Bromomethane	.2
1305	34423 B	75092	Methylenechloride	.2
1306	34516 B	79345	1,1,2,2-Tetrchloroethane	.2
1307	34475 B	127184	Tetrachloroethene	.2
1308	34010 B	108883	Toluene	.2
1309	34506 B	71556	1,1,1-Trichloroethane	.2
1310	34511 B	79005	1,1,2-Trichloroethane	.2
1311	39180 B	79016	Trichloroethene	.2
1312	34488 B	75694	Trichlorofluoromethane	.2
1313	39175 B	75014	Vinylchloride	.2
1315	34566 B	541731	1,3-Dichlorobenzene	.2
1316	34571 B	106467	1,4-Dichlorobenzene	.2
1317	77651 B	106934	1,2-Dibromoethane	.2
1318	34418 B	74873	Chloromethane	.2
1320	34536 C	95501	1,2-Dichlorobenzene	.2
1326	34704 B	10061015	Cis-1,3-Dichloropropene	.2
1327	34699 B	10061026	Trans-1,3-Dichloropropene	.2
1328	77128 B	100425	Styrene	.2
1330	81551 B	1330207	Xylenes (O,M,P)	.2
1354	82625 B	96128	1,2-Dibromo-3-chloropropane	1
1478	77168 B	56358611	1,1-Dichloropropene	.2
1479	77170 B	59420722	2,2-Dichloropropane	.2
1480	77173 B	14228913	1,3-Dichloropropane	.2
1481	77275 B	9549812	2-Chlorotoluene	.2
1482	77277 B	10643414	4-Chlorotoluene	.2
1483	77443 B	96184123	1,2,3-Trichloropropane	.2
1484	77562 B	630206	1,1,1,2-Tetrachloroethane	.2
1650	34210 A	107028	Acrolein	20
1651	34215 A	107131	Acrylonitrile	20
1652	78032 A	1634044	Methyltertbutylether	1
1654	77297 A	74975	Bromochloromethane	.2
1656	77093 A	156592	Cis-1,2-dichloroethene	.2
1658	34576 C	1107582	Chloroethylvinylether	1
1659	77223 A	98828	Isopropylbenzene	.2
1661	77224 A	103651	n-Propylbenzene	.2

SCHEDULE 1392--continued

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1663	77353 A	98066	Tert-butylbenzene	0.2
1665	77222 A	9563612	1,2,4-Trimethylbenzene	.2
1667	77350 A	135988	Sec-butylbenzene	.2
1669	77356 A	99876	p-Isopropyltoluene	.2
1671	77342 A	104518	n-Butylbenzene	.2
1673	34551 C	12082112	1,2,4-Trichlorobenzene	.2
1675	39702 C	87683	Hexachlorobutadiene	.2
1677	34696 C	91203	Naphthalene	.2
1679	77613 A	8761612	1,2,3-Trichlorobenzene	.2
1681	77652 A	76131	1,1,2-Trichloro 1,2,2-trifluoro	.5
1683	77226 A	108678135	1,3,5-Trimethylbenzene	.2
1698	81555 A	108861	Bromobenzene	.2

SCHEDULE 1393

Schedule Description: Acid organic compounds, total recoverable from whole water, using methylene chloride and GC/MS

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1055	34452 A	59507	Chloro-methylphenol	30
1056	34586 A	95578	2-Chlorophenol	5
1057	34601 A	120832	2,4-Dichlorophenol	5
1058	34621 A	88062	2,4,6-Trichlorophenol	20
1059	34606 A	105679	2,4-Dimethylphenol	5
1060	34657 A	534521	1,6-Dinitro-2-methylphenol	30
1061	34616 A	51285	2,4-Dinitrophenol	20
1062	34591 A	88755	2-Nitrophenol	5
1063	34646 A	100027	4-Nitrophenol	30
1064	39032 A	87865	Pentachlorophenol	30
1065	34694 A	108952	Phenol	5

SCHEDULE 1394

Schedule Description: Base/neutral organic compounds, total recoverable from whole water, using methylene chloride and GC/MS

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1066	34205 A	83329	Acenaphthene	5
1067	34200 A	208968	Acenaphthylene	5
1068	34220 A	120127	Anthracene	5
1070	34526 A	56553	Benzo[a]anthracene	10
1071	34230 A	205992	Benzo[b]fluoranthene	10
1072	34242 A	207089	Benzo[k]fluoranthene	10
1073	34247 A	50328	Benzo[a]pyrene	10
1074	34521 A	191242	Benzo[g,h,i] perylene	10
1075	34292 A	85687	Butyl benzyl phthalate	5
1076	34278 A	111911	Bis (2-chloroethoxy) methane	5
1077	34273 A	111444	Bis (2-chlorethy) ether	5
1078	34283 A	108601	Bis (2-chlorisopropyl) ether	5
1079	34636 A	101553	4-Bromophenylphenyether	5
1080	34581 A	91587	2-Chloronaphthalene	5
1081	34641 B	7005723	4-Chlorophenylphenyether	5
1082	34320 A	218019	Chrysene	10
1083	34556 A	53703	1,2,5,6-Dibenz[a,h]anthracene	10
1084	39110 A	84742	Di-n-butyl phthalate	5
1085	34536 A	95501	1,2-Dichlorobenzene	5
1086	34566 A	541731	1,3-Dichlorobenzene	5
1087	34571 A	106467	1,4-Dichlorobenzene	5
1089	34336 A	84662	Diethyl phthalate	5
1090	34341 A	131113	Dimethyl phthalate	5
1091	34611 A	121142	2,4-Dinitrotoluene	5
1092	34626 A	606202	2,6-Dinitrotoluene	5
1093	34596 A	117840	Di-n-octyl phthalate	10
1094	39100 A	117817	Bis (2-ethlyhexyl) phthalate	5
1095	34381 A	86737	Fluorene	5
1096	34376 A	206440	Fluoranthene	5
1097	39700 A	118741	Hexachlorobenzene	5
1098	34391 A	87683	Hexachlorobutadiene	5
1099	34386 A	77474	Hexachlorocyclopentadiene	5
1100	34396 A	67721	Hexachloroethane	5
1101	34403 A	193395	Indeno(1,2,3-cd) pyrene	10
1102	34408 A	78591	Isophorone	5
1103	34696 A	91203	Naphthalene	5
1104	34447 A	98953	Nitrobenzene	5
1105	34438 A	62759	n-Nitrosodimethlyamine	5
1106	34433 A	86306	n-Nitrosodiphenylamine	5
1107	34428 A	621647	n-Nitrosodi-n-propylamine	5
1108	34461 A	85018	Phenanthrene	5
1109	34469 A	129000	Pyrene	5
1111	34551 A	120821	1,2,4-Trichlorobenzene	5

SCHEDULE 1398

Schedule Description: Organochloride pesticides with PCB's and PCN's, total recoverable from whole water

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0348	39034 A	72560	Perthane	0.1
0351	39350 B	57749	Chlordane	.1
0360	39400 B	8001352	Toxaphene	1
0392	39516 B	12767792	PCB's, gross	.1
0393	39250 B	25104556	PCN's, gross	.1
0400	39480 B	72435	Methoxychlor	.01
0544	39755 B	2385855	Mirex	.01
0737	39388 B	115297	Endosulfan I	.001
0738	39330 B	309002	Aldrin	.001
0739	39360 B	72548	DDD	.001
0740	39365 B	72559	DDE	.001
0741	39370 B	50293	DDT	.001
0742	39380 B	60571	Dieldrin	.001
0743	39390 B	72208	Endrin	.001
0744	39410 B	76448	Heptachlor	.001
0745	39420 B	1024573	Haptachlor epoxide	.001
0746	39340 B	58899	Lindane	.001
1807	99864 A		Sample volume, mL, SC 1398	1
1869	00000 A		Set number SC 1398	

SCHEDULE 1399

Schedule Description: Organochlorine and organophosphate pesticides with PCB's and PCN's, total recoverable from whole water

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0348	39034 A	72560	Perthane	0.1
0351	39350 B	57749	Chlordane	.1
0360	39400 B	8001352	Toxaphene	1
0378	39570 B	333415	Diazinon	.01
0379	39398 B	563122	Ethion	.01
0380	39530 B	121755	Malathion	.01
0381	39600 B	298000	Methylparathion	.01
0383	39540 B	56382	Parathion	.01
0384	39786 B	786196	Trithion	.01
0392	39516 B	12767792	PCB's, gross	.1
0393	39250 B	25104556	PCN's, gross	.1
0400	39480 B	72435	Methoxychlor	.01
0544	39755 B	2385855	Mirex	.01
0737	39388 B	115297	Endosulfan I	.001
0738	39330 B	309002	Aldrin	.001
0739	39360 B	72548	DDD	.001
0740	39365 B	72559	DDE	.001
0741	39370 B	50293	DDT	.001
0742	39380 B	60571	Dieldrin	.001
0743	39390 B	72208	Endrin	.001
0744	39410 B	76448	Heptachlor	.001
0745	39420 B	1024573	Heptachlor epoxide	.001
0746	39340 B	58899	Lindane	.001

SCHEDULE 1401

Schedule Description: Acrolein, acrylonitrile, and 2-chloroethylvinylether total recoverable, from whole water using purge and trap and GC/MS

Sample Requirements: 3x40-mL volatile organic vials (GCV), unfiltered, filled to top and capped without bubbles, put into "poly" sleeves or wrapped in bubble wrap, chilled & maintained @ 4 deg. C; pH adjusted between 4 to 5 with 1:4 HCl:water

Container Requirement: 3x40-mL VOA vials, with Teflon-lined caps, quality-control, checked and obtained from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1650	34210 A	107028	Acrolein	20
1651	34215 A	107131	Acrylonitrile	20
1658	34576 C	1107582	2-Chloroethylvinylether	1

SCHEDULE 1474

Schedule Description: Organochlorine and organophosphate pesticides with PCB's and PCN's, total recoverable from whole water, analyzed by GC/ECD

Sample Requirements: 1,650-2,000 mL, GCC, collected unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 2-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
0348	39034 A	72560	Perthane	0.1
0349	39388 C	115297	Endosulfan I	.01
0350	39330 C	309002	Aldrin	.01
0351	39350 B	57749	Chlordane	.1
0352	39360 C	72548	DDD	.01
0353	39365 C	72559	DDE	.01
0354	39370 C	50293	DDT	.01
0355	39380 C	60571	Dieldrin	.01
0356	39390 C	72208	Endrin	.01
0357	39410 C	76448	Heptachlor	.01
0358	39420 C	1024573	Heptachlor epoxide	.01
0359	39340 C	58899	Lindane	.01
0360	39400 B	8001352	Toxaphene	1
0372	39730 B	94757	2,4-D	.01
0373	39740 B	93765	2,4,5-T	.01
0374	39760 B	93721	Silvex	.01
0378	39570 B	333415	Diazinon	.01
0379	39398 B	563122	Ethion	.01
0380	39530 B	121755	Malathion	.01
0381	39600 B	298000	Methylparathion	.01
0383	39540 B	56382	Parathion	.01
0384	39786 B	786196	Trithion	.01
0392	39516 B	12767792	Gross PCB	.1
0393	39250 B	25104556	Gross PCN	.1
0400	39480 B	72435	Methoxychlor	.01
0402	82183 A	120365	2,4-DP	.01
0544	39755 B	2385855	Mirex	.01
0592	39011 A	298044	Di-Syston (disulfoton)	.01
0593	39023 A	298022	Phorate	.01
0753	38932 A	2921882	Chlorpyrifos	.01
0802	39040 A	78488	DEF	.01
1336	82614 C	944229	Fonofos	.01

SCHEDULE 1608

Schedule Description: Organochlorine pesticides with individual Aroclor PCB's (USEPA-608), total recoverable from whole water

Sample Requirements: 800-1,000 mL, GCC, unfiltered, chilled & maintained @ 4 deg. C

Container Requirement: 1-L amber, Boston-round pesticide glass bottle, cleaned and burned from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
1619	39337 D	319846	Alpha-BHC	0.03
1620	39338 D	319857	Beta-BHC	.03
1621	39340 D	58899	Gamma, BHC (lindane)	.03
1622	34259 D	319868	Delta-BHC	.09
1623	39410 D	76448	Heptachlor	.03
1624	39330 D	309002	Aldrin	.04
1625	39420 D	1024573	Heptachlor expoxide	.8
1626	39065 D	5103742	Chlordane-trans	.1
1627	34361 D	959988	Endosulfan I (alpha)	.1
1628	39062 D	5103719	Chlordane-cis	.1
1629	39380 D	60571	Dieldrin	.02
1630	39320 D	725594	4,4' DDE	.04
1641	34671 D		Aroclor 1016	.1
1639	39488 D		Aroclor 1221	.1
1640	39492 D		Aroclor 1232	.1
1642	39496 D		Aroclor 1242	.1
1643	39500 D		Aroclor 1248	.1
1644	39504 D		Aroclor 1254	.1
1645	39508 D		Aroclor 1260	.1

SCHEDULE 2001

Schedule Description: Pesticides in filtered water extracted by NWQL on C-18 SPE cartridge and analyzed by GC/MS

Sample Requirements: 1 L of water filtered through 0.7-µm glass fiber depth filter, chilled at 4 deg. C (packed in ice)

Container Requirements: 1-L baked amber glass bottle, GCC, from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
4001	46342 D	15972608	Alachlor	0.009
4002	04040 D	6190654	Atrazine,Desethyl-	.007
4003	39632 D	1912249	Atrazine	.017
4004	82686 D	86500	Azinphos,Methyl-	.038
4005	82673 D	1861401	Benfluralin	.013
4006	04028 D	2008415	Butylate	.008
4007	82680 D	63252	Carbaryl(Sevin)	.046
4008	82674 D	1563662	Carbofuran	.013
4009	38933 D	2921882	Chlorpyrifos	.005
4010	04041 D	21725462	Cyanazine	.013
4011	82682 D	1861321	DCPA(Dacthal)	.004
4012	34653 D	72559	DDE,p,p'-	.010
4013	39572 D	333415	Diazinon	.008
4015	39381 D	60571	Dieldrin	.008
4016	82660 D	579668	Diethylaniline	.006
4017	82662 D	60515	Dimethoate	.024
4018	82677 D	298044	Disulfoton	.028
4019	82668 D	759944	EPTC(Eptam)	.005
4020	82663 D	55283686	Ethalfluralin	.013
4021	82672 D	13194484	Ethoprop	.012
4022	04095 D	944229	Fonofos	.008
4023	34253 D	319846	HCH, alpha-	.007
4025	39341 D	58899	HCH, gamma-(Lindane)	.011
4026	82666 D	330552	Linuron	.039
4027	39532 D	21755	Malathion	.010
4029	39415 D	51218452	Metolachlor	.009
4030	82630 D	21087649	Metribuzin	.012
4031	82671 D	2212671	Molinate	.007
4032	82684 D	15299997	Napropamide	.010
4033	39542 D	56382	Parathion,Ethyl-	.022
4028	82667 D	298000	Parathion,Methyl-	.035
4034	82669 D	1114712	Pebulate	.009
4035	82683 D	40487421	Pendimethalin	.018
4036	82687 D	52645531	Permethrin,cis-	.019
4037	82664 D	298022	Phorate	.011
4038	82676 D	23950585	Pronamide	.009
4039	04037 D	1610180	Prometon	.008
4040	04024 D	1918167	Propachlor	.015
4041	82679 D	709988	Propanil	.016
4042	82685 D	2312358	Propargite	.006
4043	04035 D	122349	Simazine	.008
4044	82681 D	28249776	Thiobencarb	.008
4045	82670 D	34014181	Tebuthiuron	.015
4046	82665 D	5902512	Terbacil	.030
4047	82675 D	13071799	Terbufos	.012
4049	82678 D	2303175	Triallate	.008
4050	82661 D	1582098	Trifluralin	.012
4014	91063 D		Diazinon, d10-surrogate %	
4024	91065 D		HCH, alpha, d6-surrogate %	
4048	91064 D	5915413	Terbuthylazine surrogate %	
4051	99856 D		Sample volume in mL	
4052	00000 A		Set number SC 2001	

SCHEDULE 2010

Schedule Description: Pesticides in filtered water field extracted on C-18 SPE cartridge and analyzed by GC/MS

Sample Requirements: 1 C-18 SPE cartridge through which approximately 1 L of water filtered through a 0.7-µm glass fiber depth filter was processed, annotate actual volume on cartridge form, chilled @ 4 deg. C (packed in ice)

Container Requirements: 40-mL amber glass septum cap vial

Lab. code	Parameter code	CAS number	Compound name	MRL (ug/L)
4201	46342 E	15972608	Alachlor	0.009
4202	04040 E	6190654	Atrazine,Desethyl-	.007
4203	39632 E	1912249	Atrazine	.017
4204	82686 E	86500	Azinphos,Methyl-	.038
4205	82673 E	1861401	Benfluralin	.013
4206	04028 E	2008415	Butylate	.008
4207	82680 E	63252	Carbaryl(Sevin)	.046
4208	82674 E	1563662	Carbofuran	.013
4209	38933 E	2921882	Chlorpyrifos	.005
4210	04041 E	21725462	Cyanazine	.013
4211	82682 E	1861321	DCPA(Dathal)	.004
4212	34653 E	72559	DDE,p,p'-	.010
4213	39572 E	333415	Diazinon	.008
4215	39381 E	60571	Dieldrin	.008
4216	82660 E	579668	Diethylaniline	.006
4217	82662 E	60515	Dimethoate	.024
4218	82677 E	298044	Disulfoton	.028
4219	82668 E	759944	EPTC(Eptam)	.005
4220	82663 E	55283686	Ethalfluralin	.013
4221	82672 E	13194484	Ethoprop	.012
4222	04095 E	944229	Fonofos	.008
4223	34253 E	319846	HCH,alpha-	.007
4225	39341 E	58899	HCH,gamma-(Lindane)	.011
4226	82666 E	330552	Linuron	.039
4227	39532 E	121755	Malathion	.010
4229	39415 E	51218452	Metolachlor	.009
4230	82630 E	21087649	Metribuzin	.012
4231	82671 E	2212671	Molinate	.007
4232	82684 E	15299997	Napropamide	.010
4233	39542 E	56382	Parathion, Ethyl-	.022
4228	82667 E	298000	Parathion, Methyl-	.035
4234	82669 E	1114712	Pebulate	.009
4235	82683 E	40487421	Pendimethalin	.018
4236	82687 E	52645531	Permethrin,cis-	.019
4237	82664 E	298022	Phorate	.011
4238	04037 E	23950585	Pronamide	.009
4239	82676 E	1610180	Prometon	.008
4240	04024 E	1918167	Propachlor	.015
4241	82679 E	709988	Propanil	.016
4242	82685 E	2312358	Propargite	.006
4243	04035 E	122349	Simazine	.008
4244	82670 E	28249776	Thiobencarb	.008
4245	82665 E	34014181	Tebuthiuron	.015
4246	82675 E	5902512	Terbacil	.030
4248	82681 E	13071799	Terbufos	.012
4249	82678 E	2303175	Triallate	.008
4250	82661 E	1582098	Trifluralin	.012
4214	91063 E		Diazinon,d10- surrogate %	
4224	91065 E		HCH,alpha,d6-surrogate %	
4247	91064 E	5915413	Terbuthylazine surrogate %	
4251	99857 E		Sample volume in mL	
4252			Set number SC 2010	

SCHEDULE 2050

Schedule Description: Pesticides in filtered water extracted by NWQL on Carbopak B SPE cartridge and analyzed by HPLC

Sample Requirements: 1 L of water filtered through 0.7-µm glass fiber depth filter, chilled at 4 deg. C (packed in ice)

Container Requirements: 1-L baked amber glass bottle, GCC, from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (µg/L)
5409	39742 B	93765	2,4,5-T	0.05
5408	39732 B	94757	2,4-D	.05
5407	38746 A	94826	2,4-DB	.05
5410	00000 A	81335377	Acifluorfen (Scepter)	.05
5411	00000 A	116063	Aldicarb	.05
5413	00000 A	1646884	Aldicarb sulfone	.05
5412	00000 A		Aldicarb sulfoxide	.05
5414	38711 A	25057890	Bentazon	.05
5415	04029 A	314409	Bromacil	.05
5416	00000 A	1689992	Bromoxynil	.05
5417	00000 A	63252	Carbaryl(Sevin)	.05
5418	00000 A	1563662	Carbofuran	.05
5449	00000 A		Carbofuran, 3-hydroxy-	.05
5419	00000 A	133904	Chloramben (Amiben)	.05
5421	00000 A	1897456	Chlorothalonil	.05
5423	00000 A	57754855	Clopyralid	.05
5447	00000 A		Dacthal, Mono-Acid-	.05
5426	38442 A	1918009	Dicamba	.05
5404	00000 A	1194656	Dichlobenil	.05
5401	00000 A	120365	Dichlorprop (2,4-DP)	.05
5400	00000 A	88857	Dinoseb (DNBP)	.05
5427	00000 A	330541	Diuron	.05
5402	00000 A	534521	DNOC	.05
5429	00000 A	66230044	Esfenvalerate (Asana XL)	.05
5405	00000 A	101428	Fenuron	.05
5430	38811 A	2164172	Fluometuron	.05
5432	38478 A	330552	Linuron	.05
5433	38482 A	94746	MCPA	.05
5434	38487 A	94815	MCPB	.05
5436	38501 A	2032657	Methiocarb	.05
5437	00000 A	16752775	Methomyl	.05
5438	00000 A	90153	1-Naphthol	.05
5403	00000 A	555373	Neburon	.05
5439	00000 A	27314132	Norflurazon	.05
5440	00000 A	19044883	Oryzalin (Surflan)	.05
5441	38866 A	23135220	Oxamyl	.05
5442	00000 A	1918021	Picloram	.05
5443	00000 A	122429	Propham (IPC)	.05
5450	38538 A	114261	Propoxur	.05
5444	39762 B	93721	Silvex (2,4,5-TP)	.05
5446	00000 A	55335063	Triclopyr	.05
5451	00000		Set number	
5452			BDMC surrogate	
5453			Toluic acid surrogate	

SCHEDULE 2051

Schedule Description: Pesticides in filtered water extracted in field on Carbopak B SPE cartridge and analyzed by HPLC

Sample Requirements: 1 Carbopak B SPE cartridge through which approximately 1 L of water filtered through a 0.7-µm glass fiber depth filter was processed, annotate actual volume on cartridge form, chilled @ 4 deg. C (packed in ice)

Container Requirements: Original plastic container in which cartridge was shipped

Lab. code	Parameter code	CAS number	Compound name	MRL (µg/L)
5609	39742 B	93765	2,4,5-T	0.05
5608	39732 B	94757	2,4-D	.05
5607	38746 A	94826	2,4-DB	.05
5610	00000 A	81335377	Acifluorfen (Scepter)	.05
5611	00000 A	116063	Aldicarb	.05
5613	00000 A	1646884	Aldicarb sulfone	.05
5612	00000 A		Aldicarb sulfoxide	.05
5614	38711 A	25057890	Bentazon	.05
5615	04029 A	314409	Bromacil	.05
5616	00000 A	1689992	Bromoxynil	.05
5617	00000 A	63252	Carbaryl(Sevin)	.05
5618	00000 A	1563662	Carbofuran	.05
5649	00000 A		Carbofuran, 3-hydroxy-	.05
5619	00000 A	133904	Chloramben(Amiben)	.05
5621	00000 A	1897456	Chlorothalonil	.05
5623	00000 A	57756855	Clopyralid	.05
5647	00000 A		Dacthal, Mono-Acid-	.05
5626	38442 A	1918009	Dicamba	.05
5604	00000 A	1194656	Dichlobenil	.05
5601	00000 A	120365	Dichlorprop (2,4-DP)	.05
5600	00000 A	88857	Dinoseb (DNBP)	.05
5627	00000 A	330561	Diuron	.05
5602	00000 A	534521	DNOC	.05
5629	00000 A	66230044	Esfenvalerate (Asana XL)	.05
5605	00000 A	101428	Fenuron	.05
5630	38811 A	2164172	Fluometuron	.05
5632	38478 A	330552	Linuron	.05
5633	38482 A	94746	MCPA	.05
5634	38487 A	94815	MCPB	.05
5636	38501 A	2032657	Methiocarb	.05
5637	00000 A	16752775	Methomyl	.05
5638	00000 A	90153	1-Naphthol	.05
5603	00000 A	555373	Neburon	.05
5639	00000 A	27314132	Norflurazon	.05
5640	00000 A	19044883	Oryzalin (Surflan)	.05
5641	38866 A	23135220	Oxamyl	.05
5642	00000 A	1918021	Picloram	.05
5643	00000 A	122429	Propham(IPC)	.05
5650	38538 A	114261	Propoxur	.05
5644	39762 B	93721	Silvex (2,4,5-TP)	.05
5646	00000 A	55335063	Triclopyr	.05
5651			Set number	
5652			BDMC surrogate	
5653			Toluic acid surrogate	

SCHEDULE 2075

Schedule Description: Gross organics in surface water for NAWQA

Sample Requirements:100 mL, LC0113 and 1 filter, LC0305, chilled @ 4 deg. C (packed in ice)

Container Requirements: 125-mL amber glass bottle (LC0113), from NWQL. Petri dish (LC0305)

Lab. code	Parameter code	CAS number	Compound name	MRL (µg/L)
113	00681 A		Carbon, organic, dissolved (DOC)	0.10
305	00689 A		Carbon, organic, suspended (SOC)	.10

SCHEDULE 2085

Schedule Description: Gross organics in ground water for NAWQA

Sample Requirements: 100 mL, LC0113, chilled @ 4 deg. C (packed in ice)

Container Requirements: 125-mL amber glass bottle (LC0113), from NWQL

Lab. code	Parameter code	CAS number	Compound name	MRL (µg/L)
113	00681 A		Carbon, organic, dissolved (DOC)	0.10

SCHEDULE 2090

Schedule Description: Volatile organic compounds at .2 µg/L by purge and trap GC/MS plus library search of nontarget constituents

Sample Requirements: 3x40-mL vials completely filled to exclude air bubbles, acidified to pH <2 with 2 drops of 1:1 HCl per vial, and chilled at 4 deg. C (packed in ice). If free chlorine is present, add 25 mg of ascorbic acid to each vial in addition to the HCl.

Container Requirements: 40-mL amber glass septum cap vial (VOC)

Lab. code	Parameter code	CAS number	Compound name	MRL (µg/L)
5819	34030 C	71432	Benzene	0.2
5857	77613 C	87616	Benzene, 1,2,3-Trichloro-	.2
5854	34551 D	120821	Benzene, 1,2,4-Trichloro-	.2
5846	77222 C	95636	Benzene, 1,2,4-Trimethyl-	.2
5852	34536 D	95501	Benzene, 1,2-Dichloro-	.2
5860	77226 C	108678	Benzene, 1,3,5-Trimethyl-	.2
5849	34586 C	95578	Benzene, 1,3-Dichloro-	.2
5850	34571 D	106467	Benzene, 1,4-Dichloro-	.2
5844	77275 C	95498	Benzene, 1-Chloro-2-methyl-	.2
5858	77277 C	106434	Benzene, 1-Chloro-4-methyl-	.2
5839	77223 C	98828	Benzene, Isopropyl-	.2
5841	81555 C	108861	Benzene, Bromo-	.2
5833	34301 C	108907	Benzene, Chloro-	.2
5836	81551 C	1330207	Benzene, Dimethyl-(Xylene)	.2
5835	34371 C	100414	Benzene, Ethyl-	.2
5848	77356 B	99036	Benzene, 1-Methyl-4-isopropyl-	.2
5826	34010 C	108883	Benzene, Methyl-(Toluene)	.2
5851	77342 C	104518	Benzene, n-Butyl-	.2
5843	77224 C	103651	Benzene, n-Propyl-	.2
5847	77350 C	135988	Benzene, sec-Butyl-	.2
5845	77353 C	98066	Benzene, tert-Butyl-	.2
5834	77562 C	630206	Ethane, 1,1,1,2-Tetrachloro-	.2
5816	34506 C	71556	Ethane, 1,1,1-Trichloro-	.2
5840	34516 C	79345	Ethane, 1,1,2,2-Tetrachloro-	.2

SCHEDULE 2090--Continued

Lab. code	Parameter code	CAS number	Compound name	MRL (µg/L)
5828	34511 C	79005	Ethane, 1,1,2-Trichloro-	0.2
5811	34496 C	75343	Ethane, 1,1-Dichloro	.2
5832	77651 E	106934	Ethane, 1,2-Dibromo-(EDB)	.2
5820	32103 C	107062	Ethane, 1,2-Dichloro-	.2
5805	34311 C	75003	Ethane, Chloro-	.2
5859	77652 C	76131	Ethane, Trichlorotrifluoro-	.2
5807	34501 C	75354	Ethylene, 1,1-Dichloro	.2
5803	39175 C	75014	Ethylene, Chloro- (Vinyl Chloride)	.2
5814	77093 C	156592	Ethylene, cis-1,2-Dichloro-	.2
5829	34475 C	127184	Ethylene, Tetrachloro-	.2
5809	34546 C	156605	Ethylene, trans-1,2-Dichloro-	.2
5821	39180 C	79016	Ethylene, Trichloro-	.2
5855	39702 D	87683	Hexachlorobutadiene	.2
5804	34413 C	74839	Methane, Bromo	.2
5801	377297 C	74975	Methane, Bromochloro-	.2
5802	34418 C	74873	Methane, Chloro	.2
5824	30217 C	74953	Methane, Dibromo-	.2
5831	32105 C	124481	Methane, Dibromochloro-	.2
5808	34423 C	75092	Methane, Dichloro-	.2
5823	32101 C	75274	Methane, Dichlorobromo-	.2
5801	34668 C	75718	Methane, Dichlorodifluoro-	.2
5817	32102 C	56235	Methane, Tetrachloro-	.2
5838	32104 C	75252	Methane, Tribromo- (Bromoform)	.2
5815	32106 C	67663	Methane, Trichloro- (Chloroform)	.2
5806	34488 C	75694	Methane, Trichlorofluoro-	.2
5810	78032 C	1634044	Propene, 2-methoxy-2-methyl	.2
5856	34696 D	91203	Naphthalene	.2
5842	77443 C	96184	Propane, 1,2,3-Trichloro-	.2
5853	82625 C	96128	Propane, 1,2-Dibromo-3-chloro-(DBCP)	1
5822	34541 C	78875	Propane, 1,2-Dichloro-	.2
5830	77173 C	142289	Propane, 1,3-Dichloro-	.2
5812	77170 C	594207	Propane, 2,2-Dichloro-	.2
5818	77168 C	563586	Propene, 1,1-Dichloro-	.2
5825	34704 C	10061015	Propene, cis-1,3-Dichloro-	.2
5827	34699 C	10061026	Propene, trans-1,3-Dichloro-	.2
5837	77128 C	100425	Styrene	.2

Table 14.--Organic determinations for tissue listed by laboratory schedule

SCHEDULE 2101
Schedule Description: Organochlorine compounds in biological tissue
Sample Requirements: 500 g of frozen whole-body biological sample wrapped in aluminum foil and shipped @ 4 deg. C (packed in ice)
Container Requirements: Aluminum foil

Lab. code	Parameter code	CAS number	Compound name	MRL (µg/kg)
7001	00000 A	--	Chlordane-cis	5
7002	00000 A	--	Chlordane-trans	5
7003	00000 A	--	Dacthal (DCPA)	5
7004	00000 A	--	DDT,o,p'	5
7005	00000 A	--	DDT,p,p'	5
7006	00000 A	--	DDD,p,p'	5
7007	00000 A	--	DDD,o,p'	5
7008	00000 A	--	DDE,o,p'	5
7009	00000 A	--	DDE,p,p'	5
7010	00000 A	--	Dieldrin	5
7011	00000 A	--	Endrin	5
7012	00000 A	--	Heptachlor	5
7013	00000 A	--	Heptachlor epoxide	5
7014	00000 A	--	Hexachlorobenzene	5
7016	00000 A	--	Alpha-HCH	5
7017	00000 A	--	Beta-HCH	5
7018	00000 A	--	Delta-HCH	5
7019	00000 A	--	Gamma-HCH	5
7020	00000 A	--	Methoxychlor,o,p'-	5
7021	00000 A	--	Methoxychlor,p,p'-	5
7022	00000 A	--	Mirex	5
7023	00000 A	--	Nonachlor-cis	5
7024	00000 A	--	Nonachlor-trans	5
7025	00000 A	--	Oxychlordane	5
7027	00000 A	--	Pentachloroanisole	5
7028	00000 A	--	Toxaphene	5
7029	00000 A	--	PCB (total)	5
7030	00000 A	--	Aldrin	5
7031	00000 A	--	Lipids % in tissue	.500
7032	00000 A	--	Moisture % tissue	.500
7213	00000 A	--	Hexachlorobutadiene	5

Table 15.--Radiochemical determinations listed by laboratory code and schedule

LC[1]	Parameter code		Name, phase, and method	Units	Reported as	Volume needed	Sample desig-nation[2]	MRL	2SPE LC	2SPE PC	2SPE MC
Gamma scans (2)											
212	99451	A	Gamma scan, BTM, dry wt, gamma spectroscopy	pCi/g	--	100 g	CUR	--	875	--	--
443	99452	A	Gamma scan, DIS, gamma spectroscopy	pCi/L	--	7 L	FAR	--	877	--	--
1861	--		Gamma scan, SUS, gamma spectroscopy	pCi/g	--		Filter	--	1862	--	--
Gross alpha and gross beta											
Schedule 1131 - Gross alpha and gross beta, bottom material						1 g	CUR				
1518	--	A	Gross alpha, BTM, residue procedure	µg/g	Nat. U			6	1519	75965	A
1520	4125	A	Gross alpha, BTM, residue procedure	pCi/g	Th-230			6	1521	75955	A
1522	--	A	Gross beta, BTM, residue procedure	pCi/g	Cs-137			3	1523	--	
1524	4102	A	Gross beta, BTM, residue procedure	pCi/g	Sr-90/ Y-90			3	1525	75966	A
Schedule 456 - Gross alpha and gross beta, DIS, field filtered						2 L	FAR				
800	80030	B	Gross alpha, DIS, FF, residue procedure	µg/L	Nat. U			3	853	75986	B
1397	4126	B	Gross alpha, DIS, FF, residue procedure	pCi/L	Th-230			3	1398	75987	B
793	80050	B	Gross beta, DIS, FF, residue procedure	pCi/L	Sr-90/ Y-90			4	855	75988	B
798	3515	B	Gross beta, DIS, FF, residue procedure	pCi/L	Cs-137			4	854	75989	B
Schedule 458 - Gross alpha and gross beta, field filtered to be used if solids are higher than 250 mg/L						2 L	FAR				
1445	4126	D	Gross alpha, DIS, FF, HS, co-precipitation	pCi/L	Th-230			3	1466	75987	D
1358	80030	D	Gross alpha, DIS, FF, HS, co-precipitation	µg/L	Nat. U			3	1373	75986	D
1360	3515	D	Gross beta, DIS, FF, HS, co-precipitation	pCi/L	Cs-137			4	1375	75989	D
1359	80050	D	Gross beta, DIS, FF, HS, co-precipitation	pCi/L	Sr-90/ Y-90			4	1374	75988	D
Schedule 165 - Gross alpha and gross beta, suspended											
1852	--		Gross alpha, SUS, residue procedure	µg/g	Nat. U		Filter	6	1853	--	--
1854	--		Gross alpha, SUS, residue procedure	pCi/g	Th-230		Filter	6	1855	--	--
1856	--		Gross beta, SUS, residue procedure	pCi/g	Cs-137		Filter	3	1857	--	--
1858	--		Gross beta, SUS, residue procedure	pCi/g	Sr-89/90		Filter	3	1859	--	--
Lead											
1182	17507	B	Lead-210, BTM, gamma counting	pCi/g	Pb-210	100 g	CUR	.1	876	75868	B
1549	17507	C	Lead-210, BTM, gamma counting	pCi/g	Pb-210	100 g	CUR	2	1550	75968	C
1503	17503	B	Lead-210, DIS, beta counting	pCi/L	Pb-210	1 L	FAR	1.5	1504	75995	B
1547	75946	A	Lead-210, SUS, beta counting	pCi/g	Pb-210	1 g	SUR	.15	1548	75949	A
Polonium											
1545	19507	A	Polonium-210, BTM, alpha spectrometry	pCi/g	Po-210	10 g	CUR	.1	1546	4105	A
1505	19503	B	Polonium-210, DIS, alpha spectrometry	pCi/L	Po-210	1 L	FAR	1	1506	75998	A
1543	75938	A	Polonium-210, SUS, alpha spectrometry	pCi/g	Po-210	1 g	SUR	.1	1544	75945	A

Table 15.--Radiochemical determinations listed by laboratory code and schedule --Continued

LC[1]	Parameter code		Name, phase, and method	Units	Reported as	Volume needed	Sample designation[2]	MRL	2SPE LC	2SPE PC	2SPE MC
Radium											
1531	75944	A	Radium-226, SUS, radon emanation	pCi/g	Ra-226	1 g	SUR	0.1	1532	75943	A
794	9511	B	Radium-226, DIS, radon emanation	pCi/L	Ra-226	1 L	FAR	.02	861	76001	A
799	9510	B	Radium-226, DIS, precipitation, planchet counting	pCi/L	Ra-226	1 L	FAR	.4	864	76001	B
850	81366	A	Radium-228, DIS, gamma spectroscopy	pCi/L	Ra-228	7 L	FAR	1	866	76000	A
1364	81366	C	Radium-228, DIS, FF, radiochemical separation and beta counting	pCi/L	Ra-228	2 L	FAR	1	1379	76000	C
1533	75937	A	Radium-228, SUS, beta counting	pCi/g	Ra-228	1 g	SUR	.1	1534	75948	A
Schedule 1136 - Radium, bottom material					100 g	CUR					
1528	9507	B	Radium-226, BTM, gamma counting	pCi/g	Ra-226			.4	1529	4107	B
1526	75977	A	Radium-228, BTM, gamma counting	pCi/g	Ra-228			.8	1527	4106	A
Radon											
490	82305	A	Radon-222, DIS, radon emanation	pCi/L	Rn-222	50 mL	Bubbler	.2	865	76002	A
1369	82303	B	Radon-222, DIS, liquid scintillation	pCi/L	Rn-222		Call lab.	80	1384	76002	B
Strontium											
795	13503	B	Strontium-90, DIS, chemical separation and beta counting	pCi/L	Sr-90	1 L	FAR	.5	873	76003	B
Thorium											
Schedule 1141 - Thorium, bottom material						10 g	CUR				
1537	26507	A	Thorium-230, BTM, alpha spectrometry	pCi/g	Th-230			.1	1538	4108	A
1535	26631	A	Thorium-232, BTM, alpha spectrometry	pCi/g	Th-232			.1	1536	4110	A
Schedule 1139 - Thorium, dissolved						1 L	FAR				
1472	26503	B	Thorium-230, DIS, alpha spectrometry	pCi/L	Th-230			1	1473	75997	B
1501	75976	A	Thorium-232, DIS, alpha spectrometry	pCi/L	Th-232			1	1502	75999	A
Schedule 1140 - Thorium, suspended						1 g	SUR				
1541	75939	A	Thorium-230, SUS, alpha spectrometry	pCi/g	Th-230			.1	1542	75952	A
1539	75953	A	Thorium-232, SUS, alpha spectrometry	pCi/g	Th-232			.1	1540	75936	A
Tritium											
452	7000	D	Tritium,WWR, liquid scintillation	pCi/L	H-3	25 mL	LC0452	26	879	75985	D
460	7000	A	Tritium, WWR, electrolytic enrichment, liquid scintillation	pCi/L	H-3	250 mL	LC0460	5.7	882	75985	A
1043	7000	B	Tritium, WWR, electrolytic enrichment, gas counting	pCi/L	H-3	1 L	LC1043	.3	883	75985	B
624	7000	E	Tritium, WWR, electrolytic enrichment, gas counting	pCi/L	H-3	500 mL	LC0624	2.5	1000	75985	E
1565	7000	F	Tritium, WWR, electrolytic enrichment, liquid scintillation	pCi/L	H-3	1 L	LC1565	1	1566	75985	F
Uranium											
1006	22703	H	Uranium, DIS, FF, fluorometry	µg/L	U	1 L	FAR	1	1007	75900H	H
1386	22703	E	Uranium, DIS, FF, laser phosphorescence	µg/L	U	1 L	FAR	.01	1390	75990E	E
1385	22703	C	Uranium, DIS, FF, laser phosphorescence	µg/L	U	1 L	FAR	.4	1389	75990C	C

Table 15.--Radiochemical determinations listed by laboratory code and schedule --Continued

LC[1]	Parameter code		Name, phase, and method	Units	Reported as	Volume needed	Sample designation[2]	MRL	2SPE LC	2SPE PC	2SPE MC
Schedule 1138 - Uranium, BTM						100 g	CUR				
1509	28014	A	Uranium-234, BTM, alpha spectrometry	pCi/g	U-234			1	1510	4111	A
1515	22612	A	Uranium-235, BTM, alpha spectrometry	pCi/g	U-235				1516	4112	A
1511	28016	A	Uranium-238, BTM, alpha spectrometry	pCi/g	U-238			1	1516	75962	A
Schedule 1130 - Uranium, DIS, field filtered						2 L	FAR				
1366	22610	A	Uranium-234, DIS, alpha spectrometry	pCi/L	U-234			.1	1381	75992	A
1367	22620	A	Uranium-235, DIS, alpha spectrometry	pCi/L	U-235			.1	1382	75994	A
1368	22603	A	Uranium-238, DIS, alpha spectrometry	pCi/L	U-238			.1	1383	75991	A
Schedule 1137 - Uranium, suspended						1 g	SUR				
1474	75942	A	Uranium-234, SUS, alpha spectrometry	pCi/g	U-234			.1	1475	75941	A
1476	75975	A	Uranium-235, SUS, alpha spectrometry	pCi/g	U-235			.1	1450	75947	A
1507	75940	A	Uranium-238, SUS, alpha spectrometry	pCi/g	U-238			.1	1508	4113	A
Schedules containing various radiochemical determinations											
Schedule 473 - Radium-226 and Uranium, field filtered						1 g	SUR				
794	9511	B	Radium-226, DIS, FF, radon emanation	pCi/L	Ra-226			.02	861	76001	A
1385	22703	C	Uranium, DIS, FF, laser phosphorescence	µg/L	U			.4	1389	75990	C
Schedule 308 - Gross alpha and gross beta plus radium and uranium; DIS, field filtered						4 L	FAR				
800	80030	B	Gross alpha, DIS, FF, residue procedure	µg/L	Nat. U			3	853	75986B	B
1397	4126	B	Gross alpha, DIS, FF, residue procedure	pCi/L	Th-230			3	1398	75987B	B
793	80050	B	Gross beta, DIS, FF, residue procedure	pCi/L	Sr-90/ Y-90			4	854	75988B	B
798	3515	B	Gross beta, DIS, FF, residue procedure	pCi/L	Cs-137			4	854	75989B	B
794	9511	B	Radium-226, DIS, FF, radon emanation	pCi/L	Ra-226			.02	861	76001A	A
1386	22703	E	Uranium, DIS, FF, laser phophorescence	µg/L	U			.01	1390	75990E	E
Schedule 1703 - Radium-226 and Uranium, field filtered (NASQAN)						2 L	FAR				
794	9511	B	Radium-226, DIS, FF, radon emanation	pCi/L	Ra-226			.02	861	76001	A
1386	22703	E	Uranium, DIS, FF, laser phophorescence	µg/L	U			.01	1390	75990	E
Schedule 214 - Gross alpha and gross beta, field filtered; Radium and uranium, field filtered						4 L	FAR				
800	80030	B	Gross alpha, DIS, FF, residue procedure	µg/L	Nat. U			3	853	75986	B
1397	4126	B	Gross alpha, DIS, FF, residue procedure	pCi/L	Th-230			3	1398	75987	B
793	80050	B	Gross beta, DIS, FF, residue procedure	pCi/L	Sr-90/ Y-90			4	855	75988	B
798	3515	B	Gross beta, DIS, FF, residue procedure	pCi/L	Cs-137			4	854	75989	B
799	9510	B	Radium-226, DIS, FF, precipation, planchet counting	pCi/L	Ra-226			.4	864	76001	B
1006	22703	H	Uranium, DIS, FF, fluorometry	µg/L	U			1	1007	75900	H

Table 15.--Radiochemical determinations listed by laboratory code and schedule --Continued

LC[1]	Parameter code	Name, phase, and method	Units	Reported as	Volume needed	Sample desig-nation[2]	MRL	2SPE LC	2SPE PC	2SPE MC
Schedule 623 - Gross alpha, gross beta, and others, bottom material					325 g	CUR				
1518	-- A	Gross alpha, BTM, residue procedure	µg/g	Nat. U			6	1519	75965	A
1520	4125 A	Gross alpha, BTM, residue procedure	pCi/g	Th-230			6	1521	75955	A
1522	-- A	Gross beta, BTM, residue procedure	pCi/g	Cs-137			3	1523	-- A	A
1524	4102 A	Gross beta, BTM, residue procedure	pCi/g	Sr-90/ Y-90			3	1525	-- A	A
1549	17507 C	Lead-210, BTM, gamma spectroscopy	pCi/g	Pb-210			2	1550	75968	C
1545	19507 A	Polonium-210, BTM, alpha spectrometry	pCi/g	Po-210			.1	1546	4105	A
1528	9507 B	Radium-226, BTM, gamma counting	pCi/g	Ra-226			.4	1529	4107	B
1526	75977 A	Radium-228, BTM, gamma counting	pCi/g	Ra-228			.8	1527	4106	A
1537	26507 A	Thorium-230, BTM, alpha spectrometry	pCi/g	Th-230			.1	1538	4108	A
1535	26631 A	Thorium-232, BTM, alpha spectrometry	pCi/g	Th-232			.1	1536	4110	A
1509	28014 A	Uranium-234, BTM, alpha spectrometry	pCi/g	U-234			1	1510	4111	A
1515	22612 A	Uranium-235, BTM, alpha spectrometry	pCi/g	U-235			1	1516	4112	A
1511	28016 A	Uranium-238, BTM, alpha spectrometry	pCi/g	U-238			1	1517	75962	A
Schedule 617 - Various isotopes, field filtered					5 L	FAR				
1503	17503 B	Lead-210, DIS, beta counting	pCi/L	Pb-210			1.5	1504	75995	B
1505	19503 B	Polonium-210, DIS, alpha spectrometry	pCi/L	Po-210			1	1506	75998	A
794	9511 B	Radium-226, DIS, FF, radon emanation	pCi/L	Ra-226			.02	861	76001	A
1364	81366 C	Radium-228, DIS, FF, radiochemical separation and betta counting	pCi/L	Ra-228			1	1379	76000	C
1472	26503 B	Thorium-230, DIS, FF, alpha spectrometry	pCi/L	Th-230			1	1473	75997	B
1501	75976 A	Thorium-232, DIS, FF, alpha spectrometry	pCi/L	Th-232			1	1502	75999	A
1366	22610 A	Uranium-234, DIS, FF, alpha spectrometry	pCi/L	U-234			.1	1381	75992	A
1367	22620 A	Uranium-235, DIS, FF, alpha spectrometry	pCi/L	U-235			.1	1382	75994	A
1368	22603 A	Uranium-238, DIS, FF, alpha spectrometry	pCi/L	U-238			.1	1383	75991	A
Schedule 1810 - Radium-226 and uranium, field filtered					2 L	FAR				
799	9510 B	Radium-226, DIS, FF, precipitation, planchet counting	pCi/L	Ra-226			.4	864	76001	B
1385	22703 C	Uranium, DIS, FF, laser phosphorescence	µg/L	U			.4	1389	75990	C

[1]Shaded laboratory codes may not be ordered individually.
[2]See table 4.

Table 16.--Stable isotope ratios listed by laboratory code and schedule

Lab. code[1]	Parameter code		Compound name	Unit of measurement	Preferred sample requirements	Minimum sample requirements	Label sample	Precision ±
Carbon								
1243	99481	A	Carbon-13/Carbon-12 and Oxygen-18/Oxygen-16		100 µmol	40 µmol	LC1243	0.2
1135	82339	A	Carbon-13/Carbon-12, carbonate rock	Per mil relative to PDB	1 g pure calcite	4 mg pure calcite	LC1135	.3
1205	--	A	Carbon-13/Carbon-12, organic soil or rock material	Per mil relative to PDB	1 g carbon	0.5 mg carbon	LC1205	.3
440	82081	A	Carbon-13/Carbon-12, whole water, 1-L glass bottle	Per mil relative to PDB	250 mg of $SrCO_3$ precipitate	50 mg of $SrCO_3$ precipitate	LC440	.3
1244	--		Carbon-13/Carbon-12, gaseous CO_2. Use 6 or 9-mm O.D. Pyrex tubes	Per mil relative to PDB	100 µmol	40 µmol	LC1244	.3
1198	82172	A	Carbon-14, aqueous percent modern	Percent	220 L RUR (see table 4)	Sufficient sample to yield 2 g elemental C when precipitated	LC1198	--
1199	82172	B	Carbon-14 (Field precipitated with carbon free reagents)	Percent	5 g elemental C	2 g elemental C	LC1199	--
Deuterium								
1574	82082	B	Deuterium/protium, aqueous	Per mil relative to SMOW	60 mL	5 mL	LC1574	2
Nitrogen								
1717	82691	A	Nitrogen-15/Nitrogen-14 ratio, DIS as ammonia	Per mil relative to air	Sufficient sample to yield 1 g N	Sufficient sample to yield 1 mg N	LC1717	.2
1718	82690	A	Nitrogen-15/Nitrogen-14 ratio, DIS as nitrate	Per mil relative to air	Sufficient sample to yield 1 g N	Sufficient sample to yield 1 mg N	LC1718	
1719	82688	A	Nitrogen-15/Nitrogen-14 ratio, solid as nitrate	Per mil relative to air	Sufficient sample to yield 1 g N	Sufficient sample to yield 1 mg N	LC1719	
1720	82689	A	Nitrogen-15/Nitrogen-14 ratio, solid as ammonia	Per mil relative to air	Sufficient sample to yield 1 g N	Sufficient sample to yield 1 mg N	LC1720	
1921			Nitrogen-15/Nitrogen-14 ratio, DIS as nitrate and ammonia combined	Per mil relative to air	Sufficient sample to yield 1 g N	Sufficient sample to yield 1 mg N	LC1921	
Oxygen								
489	82085	A	Oxygen-18/Oxygen-16, aqueous	Per mil relative to SMOW	60 mL	5 mL	LC0489	.2
1137	82337	A	Oxygen-18/Oxygen-16, rock	Per mil relative to SMOW	1 g pure calcite	4 mg pure calcite	LC1137	. 2

Table 16.--Stable isotope ratios listed by laboratory code and schedule --Continued

Lab. code[1]	Parameter code	Compound name	Unit of measurement	Preferred sample requirements	Minimum sample requirements	Label sample	Precision ±
Sulfur							
1951	--	Sulfur-34/Sulfur-32, as sulfate, aqueous (high concentration)	Per mil	--	30 mg SO_4	--	0.5
1949	--	Sulfur-34/Sulfur-32, as sulfate, aqueous (low concentration)	Per mil	--	30 mg SO_4 on resin	--	.5
1948	--	Sulfur-34/Sulfur-32, as sulfide, aqueous	Per mil	--	30 mg Ag_2S	--	.5
1950	--	Sulfur-34/Sulfur-32, as sulfate, rock	Per mil	--	30 mg SO_4	--	.5
1947	--	Sulfur-34/Sulfur-32, as sulfide, rock	Per mil	--	30 mg Ag_2S	--	.5
Schedule 921							
1952	--	Sulfur-34/Sulfur-32, as sulfate, rock	Per mil	--	30 mg SO_4	--	.5
1953	--	Sulfur-34/Sulfur-32, as disulfide, rock	Per mil	--	30 mg Ag_2S	--	.5
1954	--	Sulfur-34/Sulfur-32, as monosulfide, rock	Per mil	--	30 mg Ag_2S	--	.5
Schedule 1142				60 mL	5 mL	SC1142	
489	82085 A	Oxygen-18/Oxygen-16 ratio, aqueous	Per mil relative to SMOW				.2
1574	82082 B	Deuterium/protium, aqueous	Per mil relative to SMOW				2

[1]Shaded laboratory codes may not be ordered individually.

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Districts and NAWQA study units are urged to have at least one of their members at each site maintain guest privileges on the NWQL partition in order to have access to the Schedules, Parameters, and Network (SPN) program. Guest privileges can be arranged by request to DENADP by means of EDOC.

SPN is invoked by typing "SPN" at the "OK" prompt on the Prime: OK, SPN

```
******Welcome to the SPN Menu******
Which year would you like to work in:
        1. 1992
        2. 1993
        3. 1994
        4. EXIT the SPN Menu
Please enter your selection:
```

Previous year's entries (1992 and 1993) offer a computer-accessible, historical record of the final disposition of the catalog's contents for those fiscal years. No addendum to the printed catalog will be offered to supply this information. The current fiscal year's entries are always up-to-date as to availability and price. Entering "3" brings up this screen:

```
    This will show the 1994 files
    Denver Central Lab File retrieval
Do you want to
    DISPLAY
1       Parameter records (Lab Codes)
2       Schedules
3       Network Records (NASQAN, BENCHMARK, etc.)
    PRINT
4       Parameter records (Lab Codes)[or METHOD list]
5       Schedules
6       Network Records (NASQAN, BENCHMARK, etc.)
Select one: ("return" to end)
```

Options 1 and 4, respectively, will display on the screen or print results of the following retrievals based on the options of the following screen:

```
        Denver Central Lab Parameter Code Dictionary
Do you want to retrieve by:
1       Lab Code
2       Watstore Code
3       Name Fragment
Select one: ("return" to end)
```

These retrievals will list short and long names, present price, WATSTORE (Water Data Storage and Retrieval System) code, reporting units, and minimum reporting limits. Also, method code, container and volume requirements, and other details are reported. Selecting option 4 will print to the Laboratory printer or to a file in a depot. Consult your local system manager for information on the use and retrieval of results from your local Prime depot.

NOTE: Custom analyses or schedules under development will appear as laboratory codes, usually in the 8000 series. Since a schedule is a collection of laboratory codes, most of the information (except price) will be blank or meaningless.

Options 2 or 5 will present information on laboratory schedules based on the following retrieval criteria:

```
                Denver Central Lab Schedule File
Do you want to retrieve by:
1.          Schedule number
2.          Schedule category (type)
3.          Owner of schedule
4.          Find a schedule with certain lab-codes ("best match")
5.          Schedule number--print only lab-codes
6.          Schedule number--print only bottle types
Select one: ("return" to end)
In the information about each schedule is listed an "owner". CL and WB sched-
ules belong to the laboratory, and will only have minor changes. NQ and BM
belong to NASQAN and BENCHMARK and will reflect program changes. All
Schedules may be used by anyone, but the possibility exists that a district-owned
schedule may be changed at any time by its owner.

***NOTE***A cost of 0.00 (ZERO) on a schedule does not mean that it is free--
it means that the cost has not been determined. Please call the laboratory for fur-
ther information.
```

Suboption 1, by following subsequent menus, will retrieve information about a specific schedule such as owner, cost, and the constituent laboratory codes along with WATSTORE codes and the long name of the parameters. A second "page" will list bottle types and sample volumes.

Suboption 2 will list schedule types, useful in shortening searches performed with suboption 3.

Suboption 3 will list all schedules "owned" by any District, using that District's number.

Suboption 4 will search each (or all) schedule types for schedules that best match with the entered laboratory codes. This search is useful in determining if a schedule already exists with the desired parameters. Suboption 4 will list all schedules using a "score" based on the number of parameters matched, minus those not matched, and minus those in the schedule not requested. Many lower scoring schedules should be examined for applicability to the user's hydrologic problems, especially if there are "not requested" parameters. The Laboratory often includes parameters it needs for quality-control procedures (pH, specific conductance), or will include "free" parameters from procedures determining a number of constituents together, as for example, many organic analyses and some inorganic procedures such as metals by inductively coupled plasma.

Options 3 or 6 will allow several retrievals by showing the following screen:

```
                Central Lab Network File
Do you want to retrieve by:
1.          Unique number
2.          Station-id
3.          Unique number--Bottle types only
Select one: ("return" to end)
```

GLOSSARY

2SPE. The two-sigma percision estimate of a radiochemical measurement.

Accuracy. A measure of the degree of conformity of the values generated by a specific method or procedure with the true value. The concept of accuracy includes both bias (systematic error) and precision (random error) (Fishman and Friedman, 1989, p. 5).

Acid extraction. A procedure in which organic compounds are extracted from water samples with a solvent under acidic conditions.

Atomic absorption (AA). A technique of chemical analysis used mainly for determination of metallic elements. A water sample is aspirated into a laminar-flow flame which dries, desolvates, and atomizes the analyte(s). Light from a hollow cathode lamp of the element of interest is simultaneously shone through the flame, and its absorption by the analyte's vapor is measured. A comparison is made to absorption by standards treated in the same manner, and concentration is calculated.

Automated (auto.). Use of mechanical or computer modules to replace manual steps in chemical analysis procedures.

Automated-segmented flow colorimetry (ASF). A type of colorimetric analysis in which sample handling, reagent additions, mixing, and the colorimetric measurement itself all take place in small diameter tubes. The flow of fluids in the tubes is maintained by a peristaltic pump, and the reacting samples' volume is segmented by periodic introduction of air bubbles.

Base/neutral acid extraction (BNA). A procedure in which organic compounds are extracted from water samples with methylene chloride under basic conditions for later analysis by gas chromatography using a mass spectrometer as a detector.

Bias. Systematic error that is manifested as a consistent positive or negative deviation from the known or true value. It differs from random error which shows no such deviation.

Brine. Water that contains dissolved solids at an approximate concentration of 30,000 mg/L or more (American Society for Testing and Materials, 1993, p. 5).

Chain-of-custody (COC). A system in which the person-to-person custody of samples is documented from the time of collection until the samples are introduced as evidence in legal proceedings. The NWQL offers two levels of COC (with added charges commensurate with the level of security), covering the time of receipt of the samples at NWQL to the time of their disposal. These two levels are routine (from residence in a secured facility to full COC in which the samples are kept under lock and key) with a completely documented paper trail of all contacts within the NWQL.

Chelation extraction (chel.). A preparation and preconcentration method used prior to determination of a metal by atomic absorption (AA). A chemical complex of the metal to be determined is formed in the sample by reacting it with a chelating agent. The complex then is extracted into a smaller volume of organic solvent which then is determined by AA.

Chemical waste. Unusable by-products from many chemical and metal-processing operations that often contain toxic or hazardous materials that may become environmental contaminants if disposed of improperly.

Cold vapor atomic absorption (CVAA). A variation of atomic absorption in which the vapor of mercury is produced by chemical reduction and introduced into the photoabsorption area by a room-temperature carrier gas.

Colorimetry. A technique of chemical analysis in which a sample of water is mixed with a reagent known to form a colored complex or reaction product with the analyte of interest. The light absorbed by the sample in a broad band near the wavelength of interest is measured and compared to standards, from which a concentration is calculated. Compared to spectrophotometry, detection limits are usually lower, but interferences are more pronounced.

Custom analysis (CA). An analysis involving constituents, sample matrices, or concentration levels for which the NWQL does not have established procedures or thoroughly tested prospective methods. Custom analyses normally would involve extensive methods adaptation, new method development, or purchase of new equipment of a type not in use at the NWQL. It will require, by its pioneering nature, a more intensive expenditure of personnel than routine service. Such work, if not disruptive of the routine operations of the NWQL, will be scheduled upon request to, and approval from, the NWQL Chief. Charges to the requester will be on a cost basis: $76 per hour for FY 1994, plus costs of any purchased equipment and supplies. Analytical results will be reported by formal memorandum from the analyst, documenting the method, the result, and all available quality-assurance data, which characterize the precision and accuracy of the method, plus any available information on interferences.

Direct current plasma (DCP). A technique for chemical analysis of the metallic elements in which a plasma of argon gas is generated by a direct current discharge. A sample is aspirated into the plasma, and a characteristic atomic emission is observed. The emission spectrum is compared to standards treated in the same manner, and concentrations are calculated.

Dissolved (DIS). Pertains to the constituents in a representative water sample that pass through a 0.45-micrometer membrane filter or a 0.7-micrometer glass fiber filter for organic analysis. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of dissolved constituents are made on subsamples of the filtrate. In many cases, the words "dissolved" and "filtered" are used interchangeably.

Electrometric (elec.). Measurement of a physical or chemical property by the flow of electricity (for example, specific conductance).

Electrometric titration (ET). Potentiometric titration performed on a water sample to a fixed end point or to a stoichiometric equivalence point using a standard solution as a titrant.

Gas chromatography (GC). A method of chemical analysis used for organic compounds. The sample, or an extract of it, is injected into a heated port through which a carrier gas flows. The volatilized sample is swept into a long heated tube coated with a material (the stationary phase) that has varied affinities for the compounds of interest. These compounds are retarded in their passage by characteristic times. The exiting carrier gas then is analyzed by detectors sensitive to various physical/chemical properties (electron capture - ECD, flame ionization - FID, flame photometry-FPD, the presence of nitrogen or phosphorus - NPD), and responses generated by standard materials are compared.

Gas chromatography/mass spectrometry (GC/MS). A combination chemical analysis technique in which a mass spectrometer is used as a detector for a GC.

Graphite furnace atomic absorption (GFAA). A variation on atomic absorption (AA) in which a sample is injected into an electrically heated graphite tube placed in the area of photon absorption. Desolvation and vaporization occur separately under controlled conditions, and many interferences can be differentially vaporized. GFAA usually results in lower detection limits than AA.

Gravimetric analysis (GR). A method of chemical analysis in which the mass of a constituent is measured on a calibrated analytical balance.

Hazardous analysis (HA). Any material requiring special handling that otherwise could damage the health or well-being of humans or the ecosystem. These materials include corrosives, flammables, and toxic agents such as drugs, chemicals and natural or synthetic products that are harmful, whose effects range from skin irritations to death. Arrangements with the NWQL must be made in advance for special laboratory handling techniques to be used.

High-performance liquid chromatography (HPLC). A technique of chemical analysis for determining organic compounds of too low a volatility or too high a thermal instability to use GC. The mobile phase is a mixture of solvents, sometimes dynamically varying throughout the analysis; the stationary phase resembles that of GC in having varying chemical affinities for the analytes; and detection is accomplished by a variety of techniques, including ultraviolet light absorption and fluorescence.

High solids (HS). A sample having dissolved solids greater than 250 mg/L. Used in distinguishing between radiochemical methods of analysis.

Hydride generation (hyd). A chemical technique that forms gaseous hydrides of an element prior to its determination by AA. By forming a gaseous compound, the constituent can be removed from an aqueous matrix that might otherwise interfere with its determination.

Inductively coupled plasma (ICP). A method of analysis for the metallic elements in which an 8,000 to 10,000°K plasma of argon gas is electronically maintained by an induction coil. A sample is aspirated into the plasma, and characteristic atomic emissions are observed. The emission spectrum is compared to standards treated in the same manner, and concentrations are calculated. At the NWQL, up to 20 elements can be determined simultaneously by this method.

Ion-exchange chromatography (IC). A technique for chemical analysis of inorganic ions. With reference to GC, the mobile phase is aqueous, the stationary phase is a special ion-exchange resin of very low-ionic capacity, and the detection system is usually based on specific conductance.

Laboratory code (LC). A 1- to 4-digit code in the Services Catalog, always preceded by the letters "LC," which uniquely represents a parameter determined by a particular method of chemical analysis. For example, iron by AA and iron by ICP have different LCs.

Limited analysis (L). An analysis performed using an approved method but for which the Laboratory has only a limited capacity because of staffing level, space, equipment, or other considerations. As demand increases, the NWQL will try to budget for the necessary expansion, but meanwhile, time delays in reporting results can be expected if demand exceeds capacity. An arrangement for more than a few limited analyses requires considerable advanced planning for removal of the constraints. Project Chiefs requiring unusual numbers of limited analyses need to provide advance notice to the appropriate Program Chief of the NWQL as soon as the need becomes apparent, that is, during the early stages of project planning. In the case of large national programs, this lead time has been in the 2- to 4-year range and has included funding for expansion.

Low-ionic strength (LIS). Sample with a low dissolved-salt content (less than 100 µS/cm specific conductance). This is a criterion for accepting requests for specialized inorganic analyses. The LIS samples undergo specialized determinations developed specifically for these relatively pure samples.

Low-level analysis (LL). A type of inorganic analysis characterized by low levels of dissolved analytes. The criterion for this type of analysis varies for each specific constituent. Samples for LL determinations need not be LIS samples.

Mass spectrometry (MS). A technique of chemical analysis usually determining trace elements. A sample or its extract is volatilized in a vacuum, and ions are produced. The analyte's ions usually break into smaller ions, and each mass is detected electronically. By the pattern of ions detected, the original (parent) compound's structure can be deduced. Alternately, the ions may come from the plasma of an ICP, and the analytically useful ones are atomic ions, which are determined without structural interpretation.

Method code (MC). A letter code associated with a parameter code that uniquely identifies the analytical method used to determine a constituent.

Methylene blue active substances (MBAS). A method of determining detergent-like compounds using colorimetry to detect their reaction product with methylene blue.

Minimum-reporting level (MRL). The smallest measured concentration of a constituent that may be reliably reported using a given analytical method.

Periphyton. The assemblage of microorganisms attached to and living upon submerged-solid surfaces.

Phytoplankton. The community of suspended or floating plants that drift passively with water currents.

Precision. The degree of similarity among independent measurements of the same quantity, without reference to the known or true value (V.R. Schneider, U.S. Geological Survey, written commun., 1990).

Priority analysis. The priority assigned to an analysis that will result in an expedited analysis. Arrangements for these priorities need to be made with the appropriate Program Chief(s) prior to submitting samples. Requests are submitted in writing, and confirmation from the Chief(s) will be in writing. If the requested turnaround time cannot be established, the Chief, NWQL, should be contacted to reconcile the request. If the priority work cannot be accommodated without disrupting the flow of work, a surcharge may be incurred.

Reanalysis. Reanalyzing a sample for the analyte in question. Reanalysis is requested when there is a discrepancy between the value in question and historical data, or when there is knowledge, such as site characteristics, that leads the project chief to believe the value is out of an expected range.

Recoverable bottom material. The amount of a given constituent that is in solution after a bottom-material sample has been extracted or digested by a method that results in dissolution of readily soluble substances. For inorganic determinations, digestions are performed in the original sample container to ensure digestion of material absorbed on the container walls. Complete dissolution of all bottom material is not commonly achieved by these treatments, and there is reason to believe that the determination represents less than the total amount (less than 95 percent) of the constituent sought in the sample. To ensure comparability of analytical data, equivalent digestion procedures (identical reagent strengths and volumes, identical digestion or extraction times, and identical temperatures) need to be used by all laboratories performing such analyses.

Regular analysis. An analysis that is performed routinely by the laboratory in which the concentration of the constituent of interest and the analytical interferences are within the limits specified in approved methods for that constituent, or need little additional work beyond simple dilution. Regular samples will be accepted by the NWQL without advance notice. Samples not meeting these criteria are classified as custom or special analyses.

Residue on evaporation (ROE). A gravimetric measure of volatile and nonvolatile substances in a water sample by evaporation and drying to 105°C, then weighing the remaining substances. ROE also may be performed at 180° and 550°C.

Sample designation. Symbols that specify the type of container and pre-treatment of the sample. These symbols must be marked on the sample container.

Schedule number (SC). A one- to four-digit number which denotes a group of laboratory codes determined as a unit. Schedules may be formulated by the NWQL, by a national program, or by a District . Schedules not formulated by the NWQL need to be submitted to the NWQL first to be checked for chemical rationality, length of parameter list, and price. Schedules must contain parameters of one type only (for example, "WO" organic may not be mixed with "WI" inorganic). Any non-NWQL owner may change or delete their schedule contents at any time.

Special analysis. An analysis not routinely performed in the NWQL. These analyses usually do not involve major efforts of development as do custom analyses, but may involve modifications for special matrix or concentration effects. However, they may involve timing or pricing considerations, such as request for a priority status, or special pricing for unusually large batches of samples. Requests for special analyses follow the form for custom analyses: a written request to, and reply from, the Chief, NWQL, an agreement on price and turnaround time, and an agreement on technical approach to the problem.

Spectrophotometry. A technique of chemical analysis in which a sample of water is mixed with a reagent known to form a colored complex or reaction product with the parameter of interest. The light absorbed by the sample at a specific wavelength is measured and compared to standards. Compared to colorimetry, this technique is less prone to interferences from other reaction products or from colored constituents in the sample.

Spike. An addition of a known quantity of one or more compounds of interest to the sample prior to analysis. This analysis yields data on the results that can be expected from a suite of similar samples (accuracy) when used with a synthetic matrix, and on the influence of matrix effects (recovery data) when used with the sample's matrix.

Surrogate. A compound similar in physical and chemical properties to the analytes of interest, which is added to the sample upon receipt in the laboratory (or ideally, at the time of field sampling). A surrogate is not used as an internal standard for quantitative measurement purposes. Surrogates may be added to every sample to provide quality control by monitoring for matrix effects and gross sample-processing errors. They should not occur naturally or be present in polluted samples. Also called "surrogate spike."

Suspended, recoverable. Pertains to the constituents extracted from the suspended sediment that is retained on a filter. Complete extraction generally is not achieved, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the suspended phase of the sample. To achieve comparability of analytical data, laboratories performing such analyses would have to use equivalent-extraction procedures because different extraction procedures are likely to produce different analytical results. Determination of "suspended, recoverable" constituents is made either by analyzing portions of the material collected on the filter or, more commonly, by computing the difference between (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total. Pertains to the constituents of the suspended materials that are retained on a filter. This term is used only when the analytical procedure ensures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as of the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by computing the difference between (1) dissolved and (2) total concentrations of the constituent.

Titrimetry. A technique of chemical analysis in which an accurately measured volume of solution of known concentration reacts with an exact quantity of the substance being determined.

Total. Pertains to the constituents in a representative water-suspended-sediment sample. This term is used only when the analytical procedure ensures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. Knowledge of the expected form of the constituent in the sample, as well as of the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating that the sample consists of a water-suspended-sediment mixture and that the analytical method determines all of the constituents in the sample.)

Total in bottom material. Pertains to constituents in a representative sample of bottom material. This term is used only when the analytical procedure ensures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as of the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Verification. Analysts verify analytical results by reviewing paperwork or computer files that reflect the analysis that the sample in question is a part of. Any discrepancies are corrected and the customer notified of results.

Volatile on ignition (VOI). A gravimetric measure of the matter leaving a sample between the temperatures of 105 and 600°C. Oxidation as well as true evaporation may be involved.

Volatile organic compounds (VOC). A compound having high-vapor pressure and low-water solubility. VOC are typically industrial solvents, constituents in petroleum-fuel products, or by-products produced by chlorination in water treatment.

Volume or weight needed. The volume or weight of sample necessary for analysis. When more than one determination is requested, it may be different from the sum of weights or volumes needed for each constituent because many NWQL techniques yield multiple determinations simultaneously. When sample amount is limited and a schedule is not used in the request for analytical services, the NWQL needs to be consulted about the actual quantity needed.

Whole water, recoverable (WWR). Pertains to the constituents in solution after a representative water-suspended-sediment sample is digested (usually using a dilute acid solution). Complete dissolution of particulate matter often is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. For inorganic determinations, digestions are performed in the original sample container to ensure digestion of material absorbed on the container walls. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

INDEX

Schedules in numerical order

INDEX
Schedules in numerical order--Continued

INDEX

Schedules in numerical order--Continued

Index
Schedules in alphabetical order

INDEX

Schedules in alphabetical order--Continued

INDEX

Schedules in alphabetical order--Continued

INDEX
Constituents in alphabetical order

☆ U.S. GOVERNMENT PRINTING OFFICE: 1994-575-509/05078