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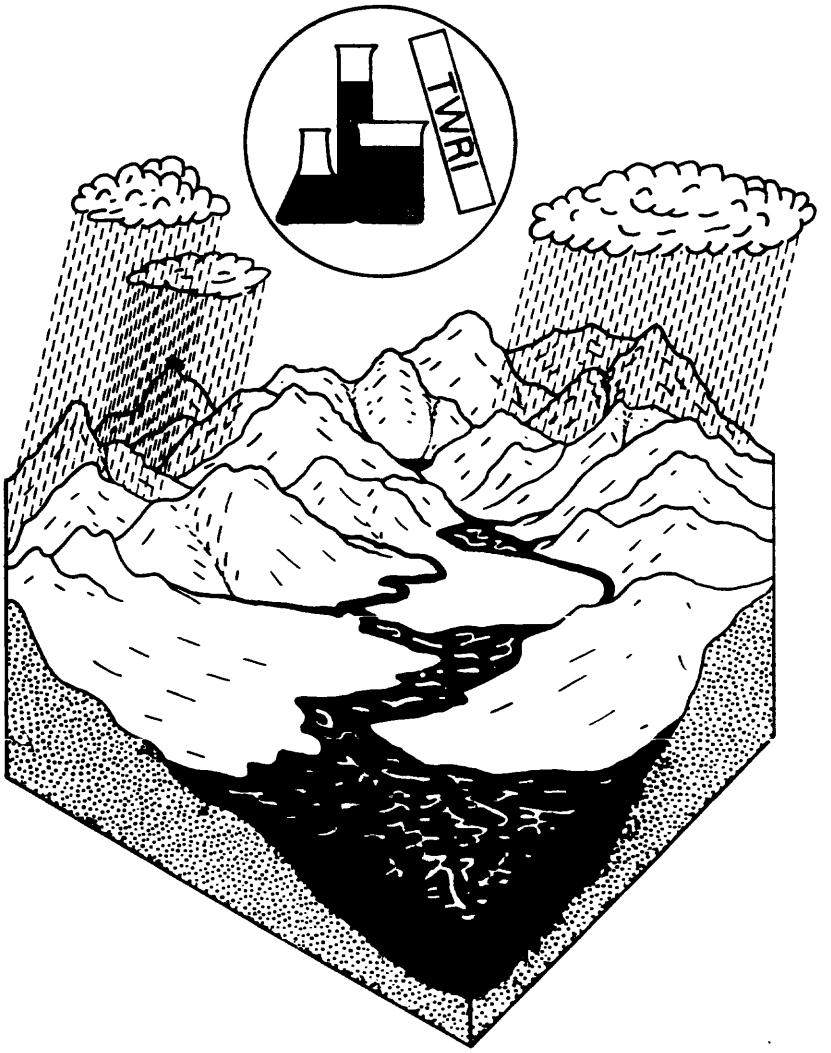
# 1990
# NATIONAL WATER QUALITY LABORATORY SERVICES CATALOG




U.S. GEOLOGICAL SURVEY
Open-File Report 89-386

United States Department of the Interior
GEOLOGICAL SURVEY
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DENVER, COLORADO 80225-0046

IN REPLY REFER TO:

November 15, 1989

BRANCH OF ANALYTICAL SERVICES TECHNICAL MEMORANDUM NO. 90.01

Subject: PROGRAMS AND PLANS--1990 National Water Quality Laboratory Services Catalog

Attached is a copy of the 1990 National Water Quality Laboratory Services Catalog. Please use it with your existing binder and dividers. If additional copies are needed, you may request them by EDOC to DENSUPPLY. Reasonable numbers are available at no charge.

Several changes will be evident in this catalog. The Method Codes have been added to the WATSTORE Codes, so that you can determine the methodology used for each analysis. The biological parameters have been combined with the organic parameters on Tables 4 and 5, eliminating Tables 4.3 and 5.3. Further modifications to clarify and simplify are anticipated for next year. We would be happy to receive your suggestions for improvement.

Rich

R. O. Hawkinson
Chief, Branch of Analytical Services

Attachment

# 1990
# NATIONAL WATER QUALITY LABORATORY
# SERVICES CATALOG

Jeffrey Pritt and Berwyn E. Jones, editors

Open-File Report 89-386

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Arvada, Colorado
October 1989

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, Jr., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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Catalogs may be obtained from the following offices:

National Water Quality Laboratory
U.S. Geological Survey
5293 Ward Road
Arvada, Colorado 80002

Office of Water Quality
U.S. Geological Survey
412 National Center
Reston, Virginia 22092

## PREFACE

This catalog provides information about analytical services available from the National Water Quality Laboratory (NWQL) to support programs of the Water Resources Division of the U.S. Geological Survey. To assist personnel in the selection of analytical services, the catalog lists cost, sample volume, applicable concentration range, detection level, precision of analysis, and preservation techniques for samples to be submitted for analysis. Prices for services reflect operational costs, the complexity of each analytical procedure, and the costs to ensure analytical quality control.

The catalog consists of five parts. Part 1 is a glossary of terminology; Part 2 lists the bottles, containers, solutions, and other materials that are available through the NWQL; Part 3 describes the field processing of samples to be submitted for analysis; Part 4 describes analytical services that are available; and Part 5 contains indices of analytical methodology and Chemical Abstract Services (CAS) numbers.

Nomenclature used in the catalog is consistent with WATSTORE and STORET. The user is provided with laboratory codes and schedules that consist of groupings of parameters which are measured together in the NWQL. In cases where more than one analytical range is offered for a single element or compound, different laboratory codes are given.

Book 5 of the series "Techniques of Water Resources Investigations of the U.S. Geological Survey" should be consulted for more information about the analytical procedures included in the tabulations.

This catalog supersedes U.S. Geological Survey Open-File Report 86-232 "1986-87-88 National Water Quality Laboratory Services Catalog", October 1985.

## ACKNOWLEDGEMENTS

The editors appreciate our colleagues at the National Water Quality Laboratory for assisting in the preparation of this catalog. We especially thank Ann Zepp for her patience and tireless efforts preparing the manuscript.

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## CONTENTS

# Part 1: Glossary

# GLOSSARY

Acid-extraction--A procedure in which organic compounds are extracted with methylene chloride under acidic conditions (pH 2).

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).

Bias--a persistent positive or negative deviation of the values generated by a specific method or procedure from the true value, expressed as the difference between the true value and the mean value obtained by repetitive testing of a homogeneous sample.

Base/neutral-extraction--A procedure in which organic compounds are extracted with methylene chloride under basic conditions (pH 11).

Brine--Water that contains dissolved matter at an approximate concentration of 30,000 mg/L or more.

CAS No.--The Chemical Abstract Services Registry number. This number is one of a series to uniquely identify every chemical substance of known composition and structure. First begun in American Chemical Society publications, the "CAS Registry No." is becoming more prevalent in technical articles, books, and government reports.

Chelation-extraction--A technique employed to complex metal constituents in an aqueous matrix which concentrates the complex in a smaller volume of solvent. Chelation is the reaction between an organic compound and a metal ion that forms a metal-ligand (ML) complex.

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

Cost--Water quality laboratory analytical cost, without Washington Office Technical Service Charge (WOTSC) to WRD users. A cost is associated with each parameter and/or schedule.

Custom analyses--Analyses involving constituents, sample matrices (for example, some biological materials), or concentration levels for which the laboratories have not previously established a procedure, dedicated instrumentation, or thoroughly tested prospective methods. Custom analyses would normally involve extensive methods adaptation, methods development in coordination with current research projects, or purchase of additional equipment to benefit from advances in technology. They will, by their pioneering nature, require a more intensive expenditure of manpower than other classes of service.

Procedures for acquiring "custom" analytical services will be more formal than those required for other types of analytical services. Requests for such analyses require prior written approval of the Organic or Inorganic Program Chief and the Chief, Branch of Analytical Services. All "custom" analyses will be arranged through written communication with the Branch Chief and will require written acceptance of the necessary conditions by both the requestor and the laboratory before further programming is done or sample collection is started. Requestors of "custom" analyses must describe the need for the service, intended use of the data, and specific needs for accuracy, precision, or sensitivity. Analytical results will normally be reported by formal memorandum from the analyst, documenting the method, the result, and all available QA data which characterize the precision and bias of the method, plus any available information on interferences.

Detection level (method detection limit)--The minimum concentration of a substance that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero.

The detection level for radioactivity is the quantity of radio-activity equal to twice the standard deviation in a blank (zero concentration).

Dissolved--Constituents of a whole water sample which pass through a 0.45-um membrane filter. This is a convenient operational definition used by Federal Agencies that are collecting water data. Determinations of "dissolved" constituents are made on measured portions of the filtrate. It is recognized that some types of water samples will contain colloidal material which passes through the 0.45-um filter.

Gravimetry--An analytical procedure in which the mass of a constituent is accurately measured on a calibrated analytical balance.

Hazardous material--Any material or substance, which, if improperly handled, can be damaging to the health and well-being of man. These materials include poisons, toxic agents such as drugs, chemicals, and natural or synthetic products that are harmful, ranging from those that cause skin irritations to those causing death.

Hydride generation--A chemical technique employed to form a gaseous hydride compound of an element of interest prior to determination of the constituent. By forming a gaseous compound, the constituent can be removed from an aqueous matrix which otherwise might interfere with the determination.

Internal Standard--A compound similar in physical and chemical properties to analytes in the sample which is added to the final extract just prior to instrumental analysis. Internal Standard (IS) responses are incorporated into quantitative analysis calculations serving to normalize all data to a known amount of a common reference. IS materials must be chosen carefully so that they exhibit proper chromatographic behavior and yet do not

occur either naturally or as a result of pollution. When using mass sensitive detectors, internal standards may be chosen from stable heavy isotope analogs of analytes of interest. Other types of gas and liquid chromatographic detectors require other kinds of compounds. An IS will correct for biases associated with the instrumental determinative step in an analytical procedure.

Ion chromatography--An analytical technique utilizing multiple modes of separation and detection for the routine quantitation of a selected ionic species in the ug/L to mg/L range.

Lab code--A four digit code in the catalog, always preceded by the letters "LC", and which uniquely represents the analytical method for the constituent measured.

Limited analysis--An analysis performed using an approved method but for which the laboratories can analyze only a limited number of samples per unit of time because of constraints imposed by manpower, time, space, or instruments. (Examples of "limited" analyses are nutrient determinations at 1 ug/L sensitivity and analysis for methylene chloride extractable organic compounds). To greatly increase the rate of analysis would require additional analysts, a long reaction time, preparation of additional space, and/or purchase of additional equipment. In all cases, a sample load exceeding the current limit of the laboratories would cause an increase in turn-around time for some of the "limited" samples already planned.

An arrangement for "limited" analytical services requires considerable advanced planning. When the laboratory limit is reached, no more requests for analyses will be honored unless previously requested "limited" services for the same type of analyses are decreased, or unless personnel can be diverted from another laboratory section. Annual estimates of the need for "limited" services will be required by the laboratories system to permit optimization of these services. New projects requiring "limited" class analyses should provide advance notice to the laboratories as soon as the need is apparent; that is, during early stages of programming.

Method blank--Extract from pure, organic-free reagent water. A method blank (reagent blank) is generated by subjecting a clean matrix (reagent blank) to the entire analytical procedure.

Method code--A letter code associated with a parameter code which uniquely identifies the analytical method used to determine a constituent. Method codes are now included in WATSTORE, and have been added to this Catalog for purposes of identification.

Method number--An alpha-numeric combination which is unique to each method described in U.S. Geological Survey TWRI, Book 5, Chapters A1-A5. The letter represents the type of parameter (B = Biological, I = Inorganic, O = Organic, P = Physical, R = Radiochemical) and the last two digits of the number represent the year of last revision.

Periphyton--Plants attached to surfaces in an aquatic environment.

Phase/treatment--See Table 1.1.

Phytoplankton--Floating plants in an aquatic environment.

Precision--The degree of agreement of repeated measurements by a specific method or procedure, expressed in terms of dispersion of the values generated about the mean value obtained by repetitive testing of a homogeneous sample. Precision values expressed as percent relative standard deviation are listed for low, medium, and high values in the method ranges (tables 5.2, 5.3 and 5.4). Percent relative standard deviation for total-recoverable, suspended-recoverable and measurements of constituents in bottom material will likely be greater than values reported for dissolved measurements.

In general, the detection limit has not been used in computing the low-end precision value because of possible distortion. Low end precision values are usually computed at 5 times the detection limit.

Priority analysis--The priority assigned to analysis of samples which will result in immediate analysis or the samples being added to the next set of samples to be analyzed for the constituent(s) requested. Assignment of this priority must be arranged with the Chief of the Organic or Inorganic Program prior to submitting samples. Requests for "Priority Analysis" must be made in writing and the Program Chief will confirm the request in writing. If a requested schedule cannot be established, the Chief, Branch of Analytical Services should be contacted to achieve reconciliation. If less than normal turnaround time is requested, a minimum surcharge of 50 percent over the catalog price will be added if the priority work cannot be accommodated without disrupting the normal flow of work.

Priority pollutants--A list of toxic chemicals prepared by the U.S. Environmental Protection Agency (EPA) in response to a June 7, 1978, court settlement involving the EPA and several environmentally concerned plaintiffs stemming from the mandate for publication of toxic pollutants in conformance with the Federal Water Pollution Control Act of 1972.

Range--The minimum and maximum values measured by the method, expressed in units with those reported for the parameter. Bottom-material ranges are ordinarily calculated by dividing the minimum concentration allowable in the sample extract (computed from the comparable water method) by the maximum weight of sample likely to be used, and by dividing the maximum concentration allowable by the likely minimum weight.

**Table 1.1.--Explanation and definition of phase and treatment**

| Treatment \ Phase | Dissolved (filtration through a 0.45um filter or its equivalent) | Suspended | Dissolved and suspended | Bottom material |
|---|---|---|---|---|
| Complete (<95%) extraction from solid phase (actual or calculated on basis of extraction efficiency) | -- | Total suspended | Total | Total in bottom material |
| Extraction from solid phase less than complete (on nonreproducible) | -- | Suspended recoverable | Total recoverable | Recoverable from bottom material |
| Filtered (0.45 um) | Dissolved | -- | -- | -- |

Recoverable from 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. Complete dissolution of all bottom material is not achieved by the digestion treatment employed, 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 must be used by all laboratories performing such analyses.

Regular analysis--An analysis which is performed routinely by the laboratory in which the concentration of the constituent of interest and the analytical interferences are within limits specified in approved methods for that constituent. "Regular" samples will be accepted by the NWQL without advance notification. Special requirements such as rapid completion time, a lower detection level than that specified in the method, or processing of unusual matrices (for example, sewage or industrial effluent), will place the sample in the "special" category which requires advance arrangements with the appropriate Program Chief before any program commitment can be made.

Reporting level--The lowest measured concentration of a constituent that may be reliably reported using a given analytical method. Due to unpredictable matrix effects on detection limits, the reporting limit is set somewhat higher than the detection limit.

Sample designation--Symbols which specify the type of container and pretreatment which the sample must receive. These symbols are required to be marked on the sample container.

Schedule number--A number preceded by the letters "SH" which represents a group of determinations. The laboratory will assume the responsibility for meeting any constraint specified in the schedule (e.g., detection level) and will select appropriate methodology.

Special analysis--An analysis not routinely performed in the NWQL. If an analytical method has been developed, the method is tabulated in the catalog; others will be announced by the NWQL as they are developed. Requests for this type of service should be submitted in writing to the Organic or Inorganic Program Chief. The technical approach and analytical cost must be accepted in writing by both requestor and laboratory. The difficulty of analysis, manpower required, and the number of samples to be analyzed will determine analytical cost.

Samples of grossly polluted or potentially contaminated water that could cause either health or analytical difficulties in the laboratory, special batches, or large numbers of analyses for which reduced costs are negotiated, and samples which require special preparation or faster-than-normal turnaround, all fall into the "special" category.

Spike--The addition of a known amount of one or more compounds of interest to the sample prior to analysis. Analysis yields accuracy data from a synthetic matrix or recovery data from an authentic matrix. Accuracy reflects the best results which can be expected and recovery reflects the degree of influence of matrix effects upon accuracy.

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. Surrogates should not occur naturally or be present in polluted water samples. The term "surrogate spike" is used synonymously with "surrogate."

Suspended, recoverable--The amount of a given constituent that is in solution after the material which is retained on a 0.45-um membrane filter has been digested by a method (usually with an acid or mixture of acids) that results in dissolution of readily soluble substances. More commonly, the difference between determinations of total recoverable and dissolved concentrations of the constituent is reported.

Suspended, total--That material which is retained on a 0.45-um membrane filter. Determinations of "suspended" constituents are made either by analyzing portions of the material collected on the filter, or calculated by the difference between total and dissolved concentrations of the constituents.

Titrimetry--an analytical procedure in which an accurately measured volume of solution of known concentration reacts with an exact equivalent amount of the substance being determined.

Total--The total amount of a given constituent (dissolved plus suspended) in a water-suspended sediment sample, regardless of its physical or chemical form. This term is used only when the analytical procedure assures the measurement of at least 95 percent of the constituent present in both phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total".

Total in bottom material--The total amount of a given constituent in a bottom material sample, regardless of its physical or chemical form. This term is used only when the analytical procedure assures the measurement of at least 95 percent of the constituent present in the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total".

Total recoverable--The amount of a given constituent that is in solution after a water-suspended sediment sample or bottom-material sample has been extracted or digested by a method that results in dissolution of readily soluble substances. Complete dissolution of all particulate matter is not achieved by the extraction or digestion treatment employed and there is reason to suspect that the determination actually represents something less than the "total" amount (95 percent) of the constituent sought in both phases of the sample.

Volume or weight needed--The volume or weight of sample necessary for analysis. When more than one determination is requested, the volume or weight needed may be different from the requirements for the number of individual determinations because of multiple constituent analysis capability. When supplying the required amount of sample is a problem, the laboratories should be consulted on the actual amount of sample needed for multi-constituent analysis.

WATSTORE code--Five digit parameter code (conforming to STORET code) used to permanently store and retrieve values in and from a computerized data management system. The WATSTORE code may correspond to more than one lab code.

# Part 2: Containers, Solutions, and Supplies

## Introduction

The containers, solutions, and supplies for use in collecting and processing samples for analysis by the NWQL are available from several different sources. The sources are identified as part of the order number by referring to the footnote on Table 2.2.

Generally, there is no charge for sample containers; however, bottles made from Teflon®, bottles used for sterile, buffered water, and the small bottles used for packaging the bacteriological media kits are accountable and returnable. Because Teflon® bottles are quite expensive, a charge of $35.00 will be made for each bottle requested, and a like amount will be credited when the bottles are returned to the laboratory.

## Introduction

The containers, solutions, and supplies for use in collecting and processing samples for analysis by the NWQL are available from either the NWQL (D) or the Ocala laboratory (Ø). Samples submitted to NWQL should utilize NWQL supplies and containers, in order to insure the integrity of NWQL analyses.

Because many District customers wish to use NWQL-prepared bottles for samples which are not analyzed in this laboratory, the cost of containers and preservatives is no longer included in the cost of NWQL analyses, but is separately billed. The prices quoted in the following table are computed to recover the cost of purchasing, cleaning (as needed) and quality assuring the item. Because Teflon® bottles are quite expensive, a cleaning charge of $15.00 will be made for each bottle requested. These Teflon® bottles remain the property of NWQL, and are to be used or returned promptly.

To order containers and supplies from NWQL, EDOC a message to DENSUPPLY:

(1) List each item ordered exactly as described in the following table.
(2) State the number of units ordered (e.g., 5 packs of 25).
(3) Give account number to be charged.
(4) Give name and address to which supplies should be shipped.

## Table 2.2.--Containers, Solutions, and Supplies

| Container or supplied item | Obtain from | Sample designation | Unit supplied | Price ($) |
|---|---|---|---|---|
| Ampule, $H_3PO_4/CuSO_4$ | Ø | LC0052 | 25/pack | 35.00 |
| Ampule, $HgCl_2$-NaCl, 1 mL (10 mg Hg) | D | FC, RC | 25/pack | 36.80 |
| Ampule, nitric acid, 1 mL | D | FA, RA, RAE, RAH | 25/pack | 43.65 |
| Ampule, nitric acid, 2 mL | D | FA, RA, | 25/pack | 43.65 |
| Ampule, nitric acid/potassium dichromate, 10 mL | D | FAM, RAM | 25/pack | 39.40 |
| Ampule, nitric acid, ultrapure 1 mL | D | FAB, RAB | 25/pack | 147.90 |
| Ampule, copper sulfate, 5%, 5 mL | D | LC0052 | 25/pack | 30.75 |
| Ampule, sodium hydroxide, 5 N, 5 mL | D | LC0880, LC0023 | 25/pack | 30.75 |
| Ampule, sulfuric acid, 50%, 4 mL | D | -- | 25/pack | 32.40 |
| Ampule, sulfuric acid, 1 mL | D | LC0076 | 25/pack | 28.60 |
| Ampule, sulfuric acid, 2 mL | D | LC0127 | 25/pack | 28.60 |
| Bag, Mesh, 14" x 16" | D | -- | 1 each | 0.55 |
| Bag, Mesh, 16" x 24" | D | -- | 1 each | 0.90 |
| Bag, Geo. Sample, Hubco, 6" x 10", w/tag | D | -- | 1 each | 0.25 |
| Bag, Bubble, 1 L, 6" x 9" | D | -- | 1 each | 0.15 |
| Bottle, glass, 125 mL | D | LC0489, LC300 | 24/case | 20.50 |
| Bottle, glass, baked, 125 mL | D | LC0019, LC0076, LC0113, LC0114, LC0306 | 24/case | 25.80 |
| Bottle, glass, acid rinsed, 250 mL | D | FAM, RAM | 24/case | 36.40 |
| Bottle, glass, pest., baked, 1 L | D | GCC, LC0052, LC0995, LC0881 LC1043, LC0460 | 12/case | 26.80 |
| Bottle, glass, Mayo, baked, 1 qt. | D | | 12/case | 30.10 |
| Bottle, glass, wide mouth, baked, 500 mL | D | BGC | 12/case | 35.50 |
| Bottle, glass, wide mouth, baked, 1 L | D | LC0440, LC0298, LC1199 | 12/case | 38.20 |
| Bottle, polyethylene, 125 mL (caps must be ordered separately) | D | RU, FU, LC0050, LC0068, LC0069 | 550/case | 83.00 |
| Bottle, polyethylene, 250 mL (caps must be ordered separately) | D | FU, RU, RCB, LC0023, LC0089, LC0880, LC0452 | 500/case | 106.25 |
| Bottle, polyethylene, 500 mL (caps must be ordered separately) | D | FU, RU, LC0169 | 256/case | 73.15 |
| Bottle, polyethylene, wide mouth, sediment, 500 mL | D | CC, CU | 1 each | 2.10 |
| Bottle, polyethylene, 1 L (caps must be ordered separately) | D | FU, RU | 108/case | 53.80 |
| Bottle, polyethylene, with handle, acid rinsed, 2 L | D | RUR, FAR | 4/case | 12.10 |
| Bottle, polyethylene, acid rinsed, 250 mL | D | FA, RA, RAE, RAH | 500/case | 285.60 |
| Bottle, polyethylene, acid rinsed, 500 mL | D | FA, RA | 256/case | 170.60 |
| Bottle, polyethylene, acid rinsed, 1 L | D | FAR, RUR | 108/case | 109.15 |
| Bottle, polyethylene, brown, 250 mL | D | FC, FCL, RC, RCL | 500/case | 115.25 |

(Obtain from: D, Denver laboratory.Ø, QW Service Unit, Ocala, Florida. Cost: (1) cleaning and QA charge. Bottle to be returned to laboratory; (2) information available from Ocala; (3) information available from HIF on Computerized Support System.)

Table 2.2.--Containers, Solutions, and Supplies--Continued

| Container or supplied item | Obtain from | Sample designation | Unit supplied | Price ($) |
|---|---|---|---|---|
| Bottle, polyethylene, brown, 1 L (caps must be ordered separately) | D | -- | 108/case | 59.15 |
| Bottle, teflon, acid rinsed, 250 mL | D | FAB, RAB | 1 each | 15.00 (1) |
| Bubbler, glass | D | LC0490 | 1 each | 125.00 |
| Caps, plastic, size 28-400, black | D | -- | 800/cs | 17.15 |
| Filters, silver and/or biological | Ø | -- | | |
| Kit, media, agar, fecal coliform | Ø | -- | 15/kit | (2) |
| Kit, media, agar, fecal strep | Ø | -- | 15/kit | (2) |
| Kit, media, agar, total coliform | Ø | -- | 15/kit | (2) |
| Kit, periphyton, chlorophyll and biomass | Ø | CHE | 1 kit | (2) |
| Kit, phytoplankton, chlorophyll | Ø | CHY | 1 kit | (2) |
| Packer, foam, universal, 1 L | D | -- | 1 each | 2.45 |
| pH buffers | Ø | LC0051 | 1 each | (2) |
| Sleeve, foam, 3" x 6" | D | -- | 1 each | 0.10 |
| Sleeve, foam, 5" x 7" | D | -- | 1 each | 0.15 |
| Sleeve, foam, 6" x 10" | D | -- | 1 each | 0.17 |
| Solution, phenyl arsine oxide, 0.02N | Ø | LC0025 | 1 L | (2) |
| Solution, specific conductance (10 to 20 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (40 to 60 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (80 to 120 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (200 to 250 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (300 to 450 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (500 to 750 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (800 to 1,100 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (1,800 to 2,100 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (2,500 to 3,000 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (4,000 to 5,000 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (7,500 to 8,500 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, specific conductance (10,500 to 11,500 umho/cm at 25°C) | H | LC0021 | 4 L | (3) |
| Solution, sulfuric acid, .0164N (approx.) | Ø | LC0002 | 1 L | (2) |
| Tablet, $HgCl_2$-NaCl (10 mg Hg) | D | LC0300, LC0440 | 100/card | 131.00 |
| Vial, glass, amber septum, 40 mL | D | GCV | 72/box | 100.45 |
| Water, dilution, buffered, sterile, bacteriological samples, 99 mL | Ø | -- | 12/box | (2) |
| Water, rinse, buffered, sterile, bacteriological samples, 250 mL | Ø | -- | 8/pack | (2) |
| Zinc acetate, 25 g | Ø | LC0089 | 1 jar | (2) |

(Obtain from: D, Denver laboratory; H, Hydrologic Instrumentation Facility; Ø, QW Service Unit, Ocala, Florida. Cost: (1) cleaning and QA charge. Bottle to be returned to laboratory; (2) information available from Ocala; (3) information available from HIF on Computerized Support System.)

# Part 3: Sample Processing

## Introduction

The quality of data produced by the NWQL is enhanced by proper sample collection, preservation, and expeditious shipment of samples to the laboratory. To insure the integrity of analyses, samples should be submitted to NWQL only using containers and preservatives supplied and quality-assured by NWQL.

Table 3.2 cross references the types of containers with sample treatment and preservation requirements. Most of the types of sample containers needed are listed in Table 2.2, "Containers, solutions, and supplies". The specific type of container for a particular determination is listed under the column heading "sample designation" in Tables 4.2, 4.3, and 4.4.

Special attention is directed to the bottles used for submitting "total oil and grease" and "total phenol" samples. The bottles should be used only as labeled. Bottles for oil and grease and the bottles for phenol are baked at 350°C prior to shipment to the user. Samples for the total phenol determination (LC0052) should be collected in glass bottles only and preserved by the addition of phosphoric acid and copper sulfate solution. To one liter of sample, add 2 mL of 8.5% phosphoric acid and mix. Determine pH, and if above 4, add phosphoric acid until it is below 4. Add 10 mL of copper sulfate solution (100 g/L) and mix. The sample should be protected from sunlight, chilled to 4°C, and shipped without delay. Temperature control should be ensured during transit.

Bottom-material samples submitted to the laboratories should be presieved through a 2.0-mm sieve using a minimum of native water. A charge of $49.00 will be made for samples requiring sieving by laboratory personnel. Samples will be sieved as time permits, and turnaround time will be longer than normal.

Table 3.2.--Sample designations, containers, and treatments

| Sample designation | Container | Size and type | Treatment and preservation | Remarks |
|---|---|---|---|---|
| **Inorganic determinations: water and water-sediment samples** | | | | |
| FA | 250 or 500 mL | Poly bottle, acid rinsed | Filter and acidify with $HNO_3$ to pH < 2. | A,B |
| FAB | 250 mL | Teflon bottle, acid rinsed | Filter and acidify with ultra pure $HNO_3$ to pH < 2. | B |
| FAM | 250 mL | Glass bottle, acid rinsed | Filter and acidify with 1 $HNO_3/K_2Cr_2O_7$ ampule | B |
| FAR | 1 or 2 L | Poly bottle, acid rinsed | Filter and acidify with $HNO_3$ to pH < 2. | B |
| FC | 250 mL | Brown poly bottle, field rinsed | Filter, add ampule $HgCl_2$ sol'n, chill and maintain at 4°C. | B, |
| FU | 250 or 500 mL | Poly bottle, field rinsed | Filter. | A,B |
| RA | 250 or 500 mL | Poly bottle, acid rinsed | Acidify with $HNO_3$ to pH < 2. | A |
| RAB | 250 mL | Teflon bottle, acid rinsed | Acidify with ultra pure $HNO_3$ to pH < 2. | |
| RAE | 250 mL | Poly bottle, acid rinsed | Acidify with $HNO_3$ to pH < 2. | |
| RAH | 250 mL | Poly bottle, acid rinsed | Acidify with $HNO_3$ to pH < 2. | |
| RAM | 250 ml | Glass bottle, acid rinsed | Add 1 $HNO_3/K_2Cr_2O_7$ ampule | |
| RC | 250 mL | Brown poly bottle, field rinsed | Add 1 ampule $HgCl_2$ sol'n, chill and maintain at 4°C. | |
| RCB | 250 mL | Poly bottle, field rinsed | Chill and maintain at 4°C. | |
| RU | 250 or 500 mL | Poly bottle, field rinsed | Untreated. | |
| RUR | 1 or 2 L | Poly bottle, acid rinsed | Untreated. | |
| LC0023 | 250 mL | Poly bottle, field rinsed | Add NaOH to pH > 12, chill and maintain at 4°C. | |
| LC0050 | 125 mL | Poly bottle | Untreated | |
| LC0076 | 125 mL | Glass bottle, baked at 350°C | Add $H_2SO_4$ to pH < 2; chill and maintain at 4°C. | |
| LC0089 | 250 mL | Poly bottle, field rinsed | Add 0.5 g zinc acetate. | |
| LC0169 | 500 mL | Poly bottle, field rinsed | Untreated. | |
| LC0298 | 1 L | Glass bottle, field rinsed | Contact Denver laboratory. | |
| LC0300 | 125 | Glass bottle, field rinsed | Filter, add 1 $HgCl_2$ tablet, seal with wax or plastic tape. | B |
| LC0440 | 500 mL | Glass bottle, field rinsed | Filter, add 1 $HgCl_2$ tablet, 50 mL ammoniacal $SrCl_2$, use Teflon coated or polyseal cap. | B |

(Remarks: A, Container size dependent on lab schedule; B, filter thru 0.45 micron filter).

Table 3.2.--Sample designations, containers, and treatments--Continued

| Sample Designation | Container | Size and type | Treatment and preservation | Remarks |
|---|---|---|---|---|
| **Inorganic determinations: water and water-sediment samples--Continued** | | | | |
| LC0452 | 250 mL | Poly bottle, field rinsed | Untreated. | |
| LC0460 | 1 L | Glass bottle, field rinsed | Untreated | |
| LC0489 | 125 mL | Glass bottle, field rinsed | Filter, add 1 $HgCl_2$ tablet, seal with wax or plastic tape. | B |
| LC0490 | 50 mL | Glass bubbler | Contact Denver laboratory. | |
| LC0880 | 250 mL | Poly bottle, field rinsed | Filter, add NaOH to pH > 12, chill and maintain at 4°C. | B |
| LC0995 | 1 L | Glass bottle, field rinsed | Contact Denver laboratory. | |
| LC1043 | 1 L | Glass bottle. field rinsed | Untreated | |
| LC1199 | 2 L | Glass bottle, field rinsed | Contact Denver laboratory | |
| **Inorganic determinations: bottom material samples** | | | | |
| CC | 1 pt | Poly bottle, wide mouth | Field sieve through 2 mm plastic sieve. | |
| CU | 1 pt | Poly bottle, wide mouth | " " " " " " | |
| **Organic determinations: water and water-sediment samples** | | | | |
| GCC | 1 L | Glass bottle | Bottle baked at 350°C by laboratory. Chill sample and maintain at 4°C. | |
| GCV | 40 mL | Glass septum vial | Exclude air bubbles by completely filling vial. If residual chlorine present, add sodium thiosulfate crystals. Protect sample from sunlight, chill and maintain at 4°C. | |
| RCB | 250 mL | Poly bottle | Chill and maintain at 4°C. | B |
| LC0019 | 125 mL | Glass bottle | Bottle baked at 350°C by laboratory. Chill sample and maintain at 4°C. | |

(Remarks: B, filter thru 0.45 micron filter.)

Table 3.2.--Sample designations, containers, and treatments--Continued

| Sample designation | Container | Size and type | Treatment and preservation | Remarks |
|---|---|---|---|---|
| **Organic determinations: water and water-sediment samples--Continued** | | | | |
| LC0052 | 1 L | Glass bottle | Bottle baked at 350°C by laboratory. Leave small air space in bottle. Add 2 mL 8.5% $H_3PO_4$ to 1 L (to pH 4) and 10 mL $CuSO_4$ (100 g/L), or add one ampule $H_3PO_4/CuSO_4$ Chill sample and maintain at 4° C. | |
| LC0113 | 125 mL | Glass bottle | Bottle baked at 350°C by laboratory. Filter sample using silver filter, chill and maintain at 4°C. Filter may be retained for LC0305. | |
| LC0114 | 125 mL | Glass bottle | Bottle baked at 350°C. Chill sample and maintain at 4°C. | |
| LC0127 | 1 L | O > G bottle | Bottle baked. Leave small air space. Add 2.0 mL $H_2SO_4$ to 1 L (to pH 2). Chill and maintain at 4°C. | |
| LC0305 | | Petri dish | Retain sample on silver filter, chill and maintain at 4°C. Record volume filtered on Log-Inv form, and on Petri dish. | |
| LC0306 | 125 mL | Glass bottle | Bottle baked at 350°C by laboratory. Chill and maintain at 4°C. | |
| **Organic determinations: bottom material samples** | | | | |
| BGC | 1 L | Wide mouth glass bottle | Bottle baked at 350°C by laboratory. Chill and maintain at 4°C. | |
| **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. | |

# Part 4: Analytical Services

## Introduction

Analytical Services available from the NWQL are presented in Table 4.2 which lists inorganic constituents, Table 4.3 which lists organic compounds and biological determinations. These tables contain information on sample classification (regular, limited, or special), cost, volume or weight of sample needed, sample designation, and detection level.

Quality assurance of organic substances data are enhanced by replicate analysis of approximately 10 percent of the samples submitted for analysis. Replicates are chosen at random from samples submitted for gross measures, polychlorinated biphenyls, reaeration constituents, and pesticides. In addition to providing assurance of values reported, replication provides the data necessary to establish analytical precision and recovery. The field effort is minimal, requiring only that a limited number of samples be submitted in duplicate.

Each analysis performed by GC/MS for the identification and quantification of purgeable, acid-extractable, base/neutral-extractable, and methylene chloride-extractable organic compounds includes the addition of four to six surrogates and a minimum of three internal standards. These efforts ensure compatibility of the NWQL data with protocols established by the U.S. Environmental Protection Agency for the analysis of "priority pollutants" and other substances that can be identified and quantitated by GC/MS.

## Requests for Services

All services available are listed so that when these services are needed they may be requested. However, not all services can be offered without limitations because of manpower constraints and availability of instrumentation.

Many "special" analyses are listed in the tables of determinations and schedules. If these analyses are requested, their availability must be discussed with the Organic or Inorganic Program Chief prior to submission of samples. The cost of special analyses may vary with the number of samples to be analyzed.

Procedures for acquiring "custom" analytical services are more formal than those required for other types of analytical services. Requests for these analyses require prior written approval of the Chief, Branch of Analytical Services. All "custom" analysis requests require the written acceptance of the necessary conditions by both the requestor and the NWQL before further programming is done or sample collection is started. Requestors of "custom" analyses must describe the need for the service, the intended use of the data, and specific needs for accuracy, precision and turnaround time. "Custom" analyses are applied research efforts and are more expensive due to equipment utilization or acquisition, and extra planning and analytical time required of laboratory personnel.

"Priority" analysis can be requested when circumstances warrant; however, a written request to the Organic or Inorganic Program Chief must be accepted and confirmed in writing to the requestor prior to collection and submission of samples. If agreement on conditions cannot be met, the Chief, Branch of Analytical Services will attempt to resolve the request, contacting the appropriate Regional Hydrologist if necessary. A surcharge of 50 percent or more will be added to the catalog price for these analyses if the work cannot be accomplished during regular work schedules.

"Limited" analysis refers to analyses for which the ability to respond is constrained by manpower, instruments, or other considerations. Work in this category must be scheduled with the Organic or Inorganic Program Chief prior to submitting samples unless the requestor expects no definite time for completion of the work.

## Selection of analyses

Analyses are requested by laboratory codes or schedules. The particular lab codes chosen should be selected based primarily on the detection levels desired. Laboratory personnel may opt to select a different analytical method than the one associated with the requested lab code if the detection limits are comparable. In other cases, an analyst may choose an alternate procedure in order to eliminate an interference or to measure a concentration higher than the upper limit of the method which was requested. Whenever an alternate procedure is selected, the laboratory codes on the laboratory analytical sheet will indicate the procedure actually used. However, if a procedure with a high detection level is requested and the concentration of the constituent being analyzed is below that detection level, the analyst will not select a more sensitive procedure without additional charge. The laboratory will assume responsibility for meeting any constraint specified in a schedule (e.g., detection level) and will select appropriate methodology.

The different classes of analyses, regular, limited, special, custom and priority should be considered when selecting an analysis. The glossary contains a definition of each of these classes which have been discussed on pages 4-2 and 4-3.

Precision should also be considered when choosing between two determinations. The precision data in Tables 5.2 and 5.3.1 should be consulted before a final selection is made. Precision data are discussed in the Introduction to Part 5.

## Laboratory Schedules

Only a limited number of schedules (multiparameter combinations) are listed in the tables of determinations. Whenever possible, these schedules should be used rather than listing individual parameters. Some determinations, particularly organic, can be requested only by using a schedule. In such cases, the determinations are associated only with a SH (schedule) number and a LC (lab code) number is not provided in the Catalog.

All schedules containing lab codes for dissolved major cations or major anions or dissolved solids require that laboratory measurements of pH and specific conductance also be made. This requirement has been added to increase quality control within the analytical sections and should result in an overall decrease in the time needed for completion of the analyses. In order to meet this requirement, an "RU (raw untreated) bottle must be provided to the laboratory if major cations (dissolved) are requested. However, an "FU" (filtered, untreated) bottle will be substituted if an "RU" bottle is unavailable when major anions or dissolved solids are requested.

Different schedules can be created upon request; however, there are certain restrictions designed to speed the completion of analyses and insure that time-critical determinations are completed within the required time period. Generally, an individual schedule should contain parameters from only one category of sample. These categories are: water, inorganic (WI); water, major nutrient (WN); water, organic (WO); water, radiochemical (WR); bottom material, inorganic (BI); bottom material, organic (BO); and biological (BL). The inclusion of organic "gross measures" is permitted in both WI and WN schedules. Calculated parameters <u>should</u> <u>not</u> be requested separately unless listed in the catalog, because (with the exception of those listed in the catalog) all calculated values which can be produced from the data are automatically computed and printed in the analytical report.

## Priority Pollutants

The Federal Water Pollution Control Act Amendments of 1972 mandated the publication of a list of toxic pollutants. These substances (known as "priority pollutants", "consent decree pollutants", or "toxic pollutants") were selected on the basis of their presence in effluents, drinking water, and fish; their known or suspected carcinogenic and mutagenic properties; their toxicity to aquatic organisms and those (humans included) which could feed on those organisms.

Currently, there are 126 priority pollutants: 28 purgeable, 47 base-neutral extractable, 11 acid extractable, and 15 inorganic substances plus 25 pesticide residues. Of the 126 priority pollutants, the Central Laboratories System routinely determines 116. The ten which are not included can be done upon request except, 2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin and asbestos.

SH 1383 contains the base-neutral and acid extractable compounds (see page 4-23). SH 1390 contains the volatile organic compounds (see pages 4-28 and 4-29). SH 1324, SH 1364, LC 806, LC 807 and LC 808 contain the pesticide residues (see pages 4-27 and 4-33). SH 700 contains the inorganic substances. This schedule is not listed in the catalog, but contains lab codes 23, 80, 118, 147, 227, 236, 242, 250, 257, 267, 286, 288, and 296 (see pages 4-15, 4-16, and 4-17).

### EPA List of 107 Organic Priority Pollutants
### 13 Acidic Compounds

4-Chloro-3-methylphenol
Phenol
2-Nitrophenol
4-Nitrophenol
2,4-Dinitrophenol
Pentachlorophenol
2-Chlorophenol
2,4-Dichlorophenol
2,4,6-Trichlorophenol
2,4-Dimethylphenol
4,6-Dinitro-2-methylphenol

## 40 Neutral Compounds

1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Hexachloroethane
Hexachlorobutadiene
Hexachlorobenzene
1,2,4-Trichlorobenzene
bis(2-Chloroethoxy)methane
Naphthalene
2-Chloronaphthalene
Isophorone
Nitrobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
4-Bromophenyl phenyl ether
bis(2-Ethylhexyl)phthalate
Di-n-octyl phthalate
Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Acenaphthylene
Acenaphthene
Butyl benzyl phthalate
Fluorene
Fluoranthene
Chrysene
Pyrene
Phenanthrene
Anthracene
Benz(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-c,d)pyrene
Dibenz(a,h)anthracene
Benzo(g,h,i) perylene
4-Chlorophenyl phenyl ether
bis(2-chloroethyl) ether
Hexachlorocyclopentadine
bis(2-Chlorisopropl)ether

## 6 Basic Compounds

3,3'-Dichlorobenzidine
Benzidine
1,2-Diphenylhydrazine
N-Nitrosodiphenylamine
N-Nitrosodimethylamine
N-Nitroso-n-propylamine

## 28 Purgeable Compounds

Acrolein
Acrylonitrile
Benzene
Toluene
Ethylbenzene
Carbon tetrachloride
Chlorobenzene
1,2-Dichloroethane
1,1,1-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,2,2-Trichloroethane
1,1,2,2-Tetrachloroethane
Chloroethane
2-Chloroethyl vinyl ether
Chloroform
1,2-Dichloropropane
1,3-Dichloropropene
Methylene chloride
Methyl chloride
Methyl bromide
Dichlorobromomethane
Chlorodibromomethane
Tetrachloroethylene
Trichlorethylene
Vinyl chloride
1,2-trans-Dichloroethylene
Bromoform

## 20 Pesticides/PCBs/TCDD

Endosulfan
Endosulfan sulfate
Aldrin
Dieldrin
4,4'-DDE
4,4'-DDD
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Chlordane
Toxaphene
Arochlor 1016
Arochlor 1221
Arochlor 1232
Arochlor 1242
Arochlor 1248
Arochlor 1254
Arochlor 1260
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)

## Computerized Schedule List

In order to obtain the current list of schedules or recent changes in schedules, the following procedure may be used:

**SPN procedure**

A list of schedule numbers may be retrieved over PRIME and a search of schedules best suited to requestor needs can be made using menu driven program.

Retrievals can be obtained by login to LCOARV (National Water Quality Laboratory) and entering the command "SPN." A "user-id" will be established for anyone making a request by MAIL to DENADP@LCOARV.

Comments and questions may be addressed directly to DENADP

## Table 4.2.--Inorganic Analyses

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **DISSOLVED** | | | | | | | | |
| **Inorganic constituents and physical properties** | | | | | | | | |
| LC0001 | Regular | 71825 A | Acidity (mg/L as H) | 10.07 | 100 mL | RU | 0.1 | |
| LC0070 | Regular | 90410 A | Alkalinity (mg/L as $CaCO_3$) | 8.87 | 100 mL | RU | 1 | |
| LC1284 | Regular | 01106 E | Aluminum (ug/L as Al) | 15.84 | 100 mL | FA | 10 | |
| LC0077 | Regular | 01095 A | Antimony (ug/L as Sb) | 20.40 | 50 mL | FA | 1 | |
| LC0112 | Regular | 01000 B | Arsenic (ug/L as As) | 20.40 | 50 mL | FA | 1 | |
| LC0007 | Regular | 01005 B | Barium (ug/L as Ba) | 12.45 | 25 mL | FA | 100 | |
| LC0170 | Regular | 01010 A | Beryllium (ug/L as Be) | 12.45 | 25 mL | FA | 10 | |
| LC1183 | Regular | 01020 B | Boron (ug/L as B) | 12.00 | 25 mL | FA, FU | 10 | |
| LC1246 | Regular | 71870 B | Bromide (mg/L as Br) | 8.75 | 25 mL | FU | .01 | |
| LC1258 | Limited | 71870 F | Bromide (mg/L as Br) | SH1101 | 50 mL | FCU | .01 | J |
| LC1554 | Regular | 01025 F | Cadmium (ug/L as Cd) | 18.54 | 50 mL | FA | 1 | A |
| LC0126 | Regular | 01025 A | Cadmium (ug/L as Cd) | 9.52 | 25 mL | FA | 10 | |
| LC1250 | Limited | 01025 E | Cadmium (ug/L as Cd) | 27.00 | 25 mL | FAB | .1 | |
| LC0012 | Regular | 00915 C | Calcium (mg/L as Ca) | 6.22 | 50 mL | FA | .1 | |
| LC0831 | Limited | 00915 B | Calcium (mg/L as Ca) | 10.89 | 50 mL | FA | .01 | |
| LC0015 | Regular | 00940 E | Chloride (mg/L as Cl) | 6.35 | 25 mL | FU | .1 | |
| LC1259 | Limited | 00940 I | Chloride (mg/L as Cl) | SH1101 | 50 mL | FCU | .01 | J |
| LC0727 | Regular | 01030 F | Chromium (ug/L as Cr) | 12.00 | 25 mL | FA | 1 | |
| LC1251 | Limited | 01030 D | Chromium (ug/L as Cr) | 27.00 | 25 mL | FAB | .5 | |
| LC0016 | Regular | 01032 A | Chromium, hexavalent (ug/L as Cr) | 20.08 | 200 mL | FA | 1 | |
| LC1556 | Regular | 01035 F | Cobalt (ug/L as Co) | 18.54 | 50 mL | FA | 1 | A |
| LC0148 | Regular | 01035 A | Cobalt (ug/L as Co) | 9.52 | 25 mL | FA | 50 | |
| LC1252 | Limited | 01035 E | Cobalt (ug/L as Co) | 27.00 | 25 mL | FAB | .5 | |
| LC1558 | Regular | 01040 F | Copper (ug/L as Cu) | 18.54 | 50 mL | FA | 1 | A |
| LC0151 | Regular | 01040 A | Copper (ug/L as Cu) | 9.52 | 25 mL | FA | 10 | |
| LC1253 | Limited | 01040 E | Copper (ug/L as Cu) | 27.00 | 25 mL | FAB | .5 | |
| LC0880 | Regular | 00723 A | Cyanide (mg/L as CN) | 23.05 | 50 mL | LC0880 | .01 | |
| LC0024 | Regular | 71820 A | Density (g/mL at 20°C) | 13.70 | 100 mL | FU | .990 | |
| LC0031 | Regular | 00950 B | Fluoride (mg/L as F) | 8.09 | 50 mL | FU | .1 | |

(Remarks: A, atomic absorption graphite furnace procedure replaces chelation-extraction procedure providing the same minimum reporting level with better precision. J, determined by ion chromatography, a single charge is made for the six lab codes.)

Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **DISSOLVED--Continued** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| LC1260 | Limited | 00950 D | Fluoride (mg/L as F) | SH1101 | 50 mL | FCU | .01 | J |
| LC1202 | Regular | 71865 D | Iodide (mg/L as I) | 21.78 | 50 mL | FU | .001 | |
| LC0172 | Regular | 01046 C | Iron (ug/L as Fe) | 5.17 | 25 mL | FA | 10 | |
| LC1560 | Regular | 01049 F | Lead (ug/L as Pb) | 18.54 | 50 mL | FA | 5 | A |
| LC0191 | Regular | 01049 A | Lead (ug/L as Pb) | 9.52 | 25 mL | FA | 100 | |
| LC1254 | Limited | 01049 E | Lead (ug/L as Pb) | 27.00 | 25 mL | FAB | .5 | |
| LC0039 | Regular | 01130 A | Lithium (ug/L as Li) | 5.78 | 25 mL | FA | 10 | |
| LC0040 | Regular | 00925 B | Magnesium (mg/L as Mg) | 6.93 | 50 mL | FA | .1 | |
| LC0832 | Regular | 00925 A | Magnesium (mg/L as Mg) | 10.89 | 50 mL | FA | .01 | |
| LC0042 | Regular | 01056 A | Manganese (ug/L as Mn) | 5.17 | 25 mL | FA | 10 | |
| LC1255 | Limited | 01056 D | Manganese (ug/L as Mn) | 27.00 | 25 mL | FAB | .2 | |
| LC0226 | Regular | 71890 B | Mercury (ug/L as Hg) | 20.40 | 200 mL | FAM | .1 | |
| LC0110 | Regular | 01060 B | Molybdenum (ug/L as Mo) | 19.35 | 200 mL | FA | 1 | |
| LC1562 | Regular | 01065 F | Nickel (ug/L as Ni) | 18.54 | 50 mL | FA | 1 | A |
| LC0197 | Regular | 01065 A | Nickel (ug/L as Ni) | 9.52 | 25 mL | FA | 100 | |
| LC1256 | Limited | 01065 D | Nickel (ug/L as Ni) | 27.00 | 25 mL | FAB | 1 | |
| LC0301 | Regular | 00608 B | Nitrogen, ammonia (mg/L as N) | 4.73 | 250 mL | FC | .01 | |
| LC0830 | Regular | 00608 A | Nitrogen, ammonia (mg/L as N) | 7.37 | 250 mL | FC | .002 | |
| LC0268 | Regular | 00623 A | Nitrogen, ammonia plus organic (mg/L as N) | 12.49 | 250 mL | FC | .2 | |
| LC1261 | Limited | 00618 D | Nitrogen, nitrate (mg/L as N) | SH1101 | 50 mL | FCU | .01 | J |
| LC0160 | Regular | 00613 B | Nitrogen, nitrite (mg/L as N) | 4.73 | 250 mL | FC | .01 | |
| LC0827 | Regular | 00613 A | Nitrogen, nitrite (mg/L as N) | 7.37 | 250 mL | FC | .001 | |
| LC0228 | Regular | 00631 B | Nitrogen, nitrite plus nitrate (mg/L as N) | 4.73 | 250 mL | FC | .1 | |
| LC0826 | Regular | 00631 A | Nitrogen, nitrite plus nitrate (mg/L as N) | 7.37 | 250 mL | FC | .01 | |
| LC0128 | Regular | 00666 B | Phosphorus (mg/L as P) | 13.25 | 250 mL | FC | .01 | |
| LC0829 | Regular | 00666 A | Phosphorus (mg/L as P) | 20.79 | 250 mL | FC | .001 | |
| LC0279 | Regular | 00677 A | Phosphorus, hydrolyzable plus orthophosphate (mg/L as P) | 12.05 | 250 mL | FC | .01 | |
| LC0162 | Regular | 00671 B | Phosphorus, orthophosphate (mg/L as P) | 4.73 | 250 mL | FC | .01 | |

(Remarks: A, atomic absorption graphite furnace procedure replaces chelation-extraction procedure providing the same minimum reporting level with better precision. J, determined by ion chromatography, a single charge is made for the six lab codes.)

Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **DISSOLVED--Continued** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| LC0828 | Regular | 00671 A | Phosphorus, orthophosphate (mg/L as P) | 7.37 | 250 mL | FC | .001 | |
| LC1262 | Limited | 00671 G | Phosphorus, orthophosphate (mg/L as P) | SH1101 | 50 mL | FCU | .01 | J |
| LC0054 | Regular | 00935 B | Potassium (mg/L as K) | 5.17 | 50 mL | FA | .1 | |
| LC0833 | Regular | 00935 A | Potassium (mg/L as K) | 8.14 | 50 mL | FA | .01 | |
| LC0087 | Regular | 01145 A | Selenium (ug/L as Se) | 20.40 | 50 mL | FA | 1 | |
| LC0056 | Regular | 00955 C | Silica (mg/L as $SiO_2$) | 5.17 | 25 mL | FU | .1 | |
| LC1552 | Regular | 01075 F | Silver (ug/L as Ag) | 18.54 | 50 mL | FA | 1 | A |
| LC0059 | Regular | 00930 B | Sodium (mg/L as Na) | 5.17 | 50 mL | FA | .1 | |
| LC0834 | Regular | 00930 A | Sodium (mg/L as Na) | 8.14 | 50 mL | FA | .01 | |
| LC0159 | Regular | 00515 B | Solids, residue at 105-110°C (mg/L) | 12.45 | 500 mL | FU | 1 | |
| LC0027 | Regular | 70300 A | Solids, residue on evaporation at 180°C (mg/L) | 12.45 | 500 mL | FU | 1 | |
| LC0229 | Regular | 00520 A | Solids, volatile on ignition (mg/L) | 12.45 | 500 mL | FU | 1 | |
| LC0062 | Regular | 01080 A | Strontium (ug/L as Sr) | 10.95 | 25 mL | FA | 10 | |
| LC1551 | Regular | 00945 F | Sulfate, background corrected (mg/L as $SO_4$) | 7.70 | 25 mL | FU | 1 | |
| LC1263 | Limited | 00945 E | Sulfate (mg/L as $SO_4$) | SH1101 | 50 mL | FCU | .01 | J |
| LC0492 | Limited | 01057 A | Thallium (ug/L as Tl) | 34.10 | 50 mL | FAB | 1 | |
| LC1210 | Regular | 01085 D | Vanadium (ug/L as V) | 20.40 | 50 mL | FU | 1 | |
| LC0067 | Regular | 01090 A | Zinc (ug/L as Zn) | 7.15 | 25 mL | FA | 10 | |
| SH1101 | Limited | | Anions, dissolved, Ion Chromatography, Low Ionic Strength | 53.00 | 250 mL | FU | | |
| | | 71870 F | Bromide (mg/L as Br) | | | | .01 | J |
| | | 00940 I | Chloride (mg/L as Cl) | | | | .01 | J |
| | | 00950 D | Fluoride (mg/L as F) | | | | .01 | J |
| | | 00618 D | Nitrogen, nitrate (mg/L as N) | | | | .01 | J |
| | | 00671 G | Phosphorus, orthophosphate (mg/L as P) | | | | .01 | J |
| | | 00945 E | Sulfate (mg/L as $SO_4$) | | | | .01 | J |
| | | 00403 B | pH low ionic (standard units) | | | | 0.1 | |
| | | 90095 B | Specific conductance low ionic, laboratory (umho/cm at 25°C) | | | | 0.1 | |

(Remarks: A, atomic absorption graphite furnace procedure replaces chelation-extraction procedure providing the same minimum reporting level with better precision. J, determined by ion chromatography, a single charge is made for the six lab codes. Specific conductance must be 100 uS/cm or less.)

## Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($\mu$) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **DISSOLVED--Continued** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| SH1102 | Regular | | Cations, dissolved, Inductively Coupled Plasma, Low Ionic Strength | 35.00 | 250 mL | FA | | |
| | | 00915 E | Calcium (mg/L as Ca) | | | | 0.02 | |
| | | 01046 E | Iron, LL (ug/L as Fe) | | | | 3 | |
| | | 00925 D | Magnesium (mg/L as Mg) | | | | .01 | |
| | | 01056 E | Manganese (ug/L as Mn) | | | | 1 | |
| | | 00403 A | pH, laboratory, reported to the nearest unit (standard units) | | | | 0.1 | |
| | | 00955 E | Silica (mg/L as $SiO_2$) | | | | 0.1 | |
| | | 00930 D | Sodium (mg/L as Na) | | | | .2 | |
| | | 90095 B | Specific conductance, laboratory (umho/cm at 25°C) | | | | 0.1 | |
| SH1106 | Regular | | Nutrients, dissolved, Low Ionic Strength samples only | 25.00 | 250 mL | FC | | |
| | | 00631 A | Nitrogen, nitrite plus nitrate (mg/L as N) | | | | .001 | |
| | | 00613 A | Nitrogen, nitrite (mg/L as N) | | | | .001 | |
| | | 00671 A | Phosphorus, orthophosphate (mg/L as P) | | | | .001 | |
| | | 00608 A | Nitrogen, ammonia (mg/L as N) | | | | .002 | |
| SH0146 | Regular | | Trace metals, dissolved, Inductively Coupled Plasma | 29.92 | 100 mL | FA | | |
| | | | Detection levels are improved if the specific conductance is low. The specific conductance of the sample must be less than 6,000 umho/cm if this schedule is requested. Reporting levels at 2,000 and 6,000 umho/cm are listed. | | | | Below 2,000 | 2,000 to 6,000 |
| | | 00915 D | Calcium (mg/L as Ca) | | | | .02 | .06 |
| | | 01046 D | Iron (ug/L as Fe) | | | | 3 | 9 |
| | | 00925 C | Magnesium (mg/L as Mg) | | | | .01 | .03 |
| | | 01056 C | Manganese (ug/L as Mn) | | | | 1 | 3 |
| | | 00403 A | pH, laboratory, reported to the nearest 0.1 unit (standard units) | | | | 0.1 | 0.1 |
| | | 00955 D | Silica (mg/L as $SiO_2$) | | | | .01 | .03 |
| | | 00930 C | Sodium (mg/L as Na) | | | | .2 | .6 |
| | | 90095 A | Specific conductance, laboratory (umho/cm at 25°C) | | | | 1 | 1 |

## Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **DISSOLVED--Continued** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| SH1043 | Regular | | Trace metals, dissolved, Inductively Coupled Plasma | 78.82 | 100 mL | FA | | |

Detection levels are improved if the specific conductance is low. The specific conductance of the sample must be less than 6,000 umho/cm if this schedule is requested. Reporting levels at 2,000 and 6,000 umho/cm are listed.

| | | | Below 2,000 | 2,000 to 6,000 |
|---|---|---|---|---|
| 01005 | C | Barium (ug/L as Ba) | 2 | 6 |
| 01010 | B | Beryllium (ug/L as Be) | .5 | 1.5 |
| 01025 | D | Cadmium (ug/L as Cd) | 1 | 3 |
| 00915 | D | Calcium (mg/L as Ca) | .02 | .06 |
| 01035 | C | Cobalt (ug/L as Co) | 3 | 9 |
| 01030 | E | Chromium (ug/L as Cr) | 5 | 15 |
| 01040 | C | Copper (ug/L as Cu) | 10 | 30 |
| 01046 | D | Iron (ug/L as Fe) | 3 | 9 |
| 01049 | C | Lead (ug/L as Pb) | 10 | 30 |
| 01130 | B | Lithium (ug/L as Li) | 4 | 12 |
| 00925 | C | Magnesium (mg/L as Mg) | .01 | .03 |
| 01065 | E | Nickel (ug/L as Ni) | 10 | 30 |
| 01056 | C | Manganese (ug/L as Mn) | 1 | 3 |
| 01060 | A | Molybdenum (ug/L as Mo) | 10 | 30 |
| 00403 | A | pH, laboratory (standard units) | 1 | 1 |
| 00955 | D | Silica (mg/L as $SiO_2$) | .01 | .03 |
| 00930 | C | Sodium (mg/L as Na) | .2 | .6 |
| 01075 | C | Silver (ug/L as Ag) | 1 | 3 |
| 90095 | A | Specific conductance, laboratory (umho/cm at 25°C) | 1 | 1 |
| 01080 | B | Strontium (ug/L as Sr) | 0.5 | 1.5 |
| 01085 | B | Vanadium (ug/L as V) | 6 | 18 |
| 01090 | B | Zinc (ug/L as Zn) | 3 | 9 |

Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **SUSPENDED** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| LC0169 | Regular | 00530 B | Solids, residue at 105-110°C (mg/L) | 13.70 | 500 mL | LC0169 | 1 | |
| LC0049 | Regular | 00535 A | Solids, volatile on ignition (mg/L) | 13.64 | 500 mL | LC0169 | 1 | |
| **TOTAL RECOVERABLE** | | | | | | | | |
| **Inorganic constituents and physical properties** | | | | | | | | |
| LC0654 | Regular | 00000 A | Digestion procedure, HCl water | 18.60 | 50 mL | RA | -- | B |
| LC0124 | Regular | 00000 A | Digestion procedure, EPA | 32.15 | 100 mL | RAE | -- | C |
| LC1283 | Regular | 01105 C | Aluminum (ug/L as Al) | 15.84 | 200 mL | RA | 10 | B |
| LC0234 | Regular | 01007 A | Barium (ug/L as Ba) | 12.45 | 50 mL | RA | 100 | B |
| LC0236 | Regular | 01012 A | Beryllium (ug/L as Be) | 12.45 | 50 mL | RA | 10 | B |
| LC1286 | Regular | 01022 B | Boron (ug/L as B) | 12.00 | 50 mL | RA | 10 | E |
| LC0131 | Regular | 01027 A | Cadmium (ug/L as Cd) | 9.52 | 50 mL | RA | 10 | E |
| LC1555 | Regular | 01027 F | Cadmium (ug/L as Cd) | 18.54 | 50 mL | RA | 1 | A,B |
| LC0244 | Regular | 00916 B | Calcium, USGS digestion procedure (mg/L as Ca) | 7.15 | 50 mL | RA | .1 | B |
| LC0324 | Regular | 00916 A | Calcium, EPA digestion procedure (mg/L as Ca) | 7.15 | 50 mL | RAE | .1 | C |
| LC0726 | Regular | 01034 D | Chromium (ug/L as Cr) | 12.00 | 50 mL | RA | 1 | B |
| LC0149 | Regular | 01037 A | Cobalt (ug/L as Co) | 9.52 | 50 mL | RA | 50 | B |
| LC1557 | Regular | 01037 F | Cobalt (ug/L as Co) | 18.54 | 50 mL | RA | 1 | A,B |
| LC0156 | Regular | 01042 A | Copper (ug/L as Cu) | 9.52 | 50 mL | RA | 10 | B |
| LC1559 | Regular | 01042 F | Copper (ug/L as Cu) | 18.54 | 50 mL | RA | 1 | A,B |
| LC0023 | Regular | 00720 A | Cyanide (mg/L as CN) | 23.05 | 50 mL | LC0023 | .01 | |
| LC0189 | Regular | 01045 B | Iron (ug/L as Fe) | 5.17 | 50 mL | RA | 10 | B |
| LC0192 | Regular | 01051 A | Lead (ug/L as Pb) | 9.52 | 50 mL | RA | 100 | B |
| LC1561 | Regular | 01051 F | Lead (ug/L as Pb) | 18.54 | 50 mL | RA | 5 | A,B |
| LC0277 | Regular | 01132 A | Lithium (ug/L as Li) | 5.17 | 50 mL | RA | 10 | B |
| LC0261 | Regular | 00927 B | Magnesium, USGS digestion procedure (mg/L as Mg) | 7.15 | 50 mL | RA | .1 | B |
| LC0325 | Regular | 00927 A | Magnesium, EPA digestion procedure (mg/L as Mg) | 7.15 | 50 mL | RAE | .1 | C |

(Remarks: A, atomic absorption graphite furnace procedure replaces chelation-extraction procedure providing the same minimum reporting level with better precision. B, LC0654 is automatically called in when any combination of total recoverable lab codes (except LC0323, 325, 327, and 929) is requested, and this one-time charge is added. C, LC0124 is automatically called in when any combination of EPA procedure lab codes (LC0324, 325, 327, and 929) is requested, and this one-time charge is added.)

## Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **TOTAL RECOVERABLE--Continued** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| LC0041 | Regular | 01055 A | Manganese (ug/L as Mn) | 5.17 | 50 mL | RA | 10 | B |
| LC0227 | Regular | 71900 B | Mercury (ug/L as Hg) | 27.50 | 200 mL | RAM | .1 | |
| LC0265 | Regular | 01062 A | Molybdenum (ug/L as Mo) | 19.35 | 200 mL | RA | 1 | B |
| LC0198 | Regular | 01067 A | Nickel (ug/L as Ni) | 9.52 | 50 mL | RA | 100 | B |
| LC1563 | Regular | 01067 F | Nickel (ug/L as Ni) | 18.54 | 50 mL | RA | 1 | A,B |
| LC0321 | Regular | 00937 B | Potassium, USGS digestion procedure (mg/L as K) | 5.17 | 50 mL | RA | .1 | B |
| LC0327 | Regular | 00937 A | Potassium, EPA digestion procedure (mg/L as K) | 5.17 | 50 mL | RAE | .1 | C |
| LC1553 | Regular | 01077 F | Silver (ug/L as Ag) | 18.54 | 50 mL | RA | 1 | A,B |
| LC0320 | Regular | 00929 B | Sodium, USGS digestion procedure (mg/L as Na) | 5.17 | 50 mL | RA | .1 | B |
| LC0326 | Regular | 00929 A | Sodium, EPA digestion procedure (mg/L as Na) | 5.17 | 50 mL | RAE | .1 | C |
| LC0290 | Regular | 01082 A | Strontium (ug/L as Sr) | 10.95 | 50 mL | RA | 10 | B |
| LC0296 | Regular | 01092 A | Zinc (ug/L as Zn) | 7.15 | 50 mL | RA | 10 | B |
| **TOTAL** | | | | | | | | |
| **Inorganic constituents and physical properties** | | | | | | | | |
| LC0001 | Regular | 71825 A | Acidity (mg/L as H) | 10.07 | 100 mL | RU | 0.1 | |
| LC1266 | Regular | 71825 B | Acidity, 2nd deriv., (mg/L as H) | 26.86 | 75 mL | RU | 0.01 | L |
| LC0070 | Regular | 90410 A | Alkalinity (mg/L as $CaCO_3$) | 8.87 | 100 mL | RU | 1 | |
| LC1270 | Regular | 90410 B | Alkalinity, 2nd deriv., (mg/L as $CaCO_3$) | 26.86 | 75 mL | RU | 0.5 | L |
| LC0080 | Regular | 01097 A | Antimony (ug/L as Sb) | 21.20 | 200 mL | RAH | 1 | |
| LC0118 | Regular | 01002 B | Arsenic (ug/L as As) | 21.20 | 50 mL | RAH | 1 | |
| LC0020 | Regular | 00080 A | Color (platinum-cobalt units) | 5.34 | 100 mL | RCB | 1 | |
| LC0123 | Regular | 00610 B | Nitrogen, ammonia (mg/L as N) | 4.73 | 250 mL | RC | .01 | |
| LC0836 | Regular | 00610 A | Nitrogen, ammonia (mg/L as N) | 7.37 | 250 mL | RC | .002 | |
| LC0084 | Regular | 00625 A | Nitrogen, ammonia plus organic (mg/L as N) | 12.49 | 250 mL | RC | .2 | |
| LC0302 | Regular | 00615 B | Nitrogen, nitrite (mg/L as N) | 4.73 | 250 mL | RC | .01 | |
| LC0840 | Regular | 00615 A | Nitrogen, nitrite (mg/L as N) | 7.37 | 250 mL | RC | .001 | |
| LC0304 | Regular | 00630 B | Nitrogen, nitrite plus nitrate (mg/L as N) | 4.73 | 250 mL | RC | .1 | |
| LC0839 | Regular | 00630 A | Nitrogen, nitrite plus nitrate (mg/L as N) | 7.37 | 250 mL | RC | .01 | |
| LC0076 | Regular | 00340 B | Oxygen demand, chemical, .25N $K_2Cr_2O_7$ (mg/L) | 14.58 | 100 mL | LC0076 | 10 | |

(Remarks: A, atomic absorption graphite furnace procedure replaces chelation-extraction procedure providing the same minimum reporting level with better precision. B, LC0654 is automatically called in when any combination of total recoverable lab codes (except LC0323, 325, 327, and 929) is requested, and this one-time charge is added. C, LC0124 is automatically called in when any combination of EPA procedure lab codes (LC0324, 325, 327, and 929) is requested, and this one-time charge is added. L, specific conductance must be 100 uS/cm or less.)

Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **TOTAL--Continued** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| LC0068 | Regular | 00403 A | pH, laboratory (standard units) | 2.92 | 25 mL | RU | .1 | |
| LC1286 | Regular | 00403 B | pH, laboratory, low ionic strength (standard units) | 5.50 | 75 mL | RU | .1 | |
| LC0129 | Regular | 00665 B | Phosphorus (mg/L as P) | 12.05 | 250 mL | RC | .01 | |
| LC0837 | Regular | 00665 A | Phosphorus (mg/L as P) | 20.79 | 250 mL | RC | .001 | |
| LC0282 | Regular | 00678 A | Phosphorus, hydrolyzable plus orthophosphate (mg/L as P) | 12.05 | 250 mL | RC | .01 | |
| LC0297 | Regular | 70507 A | Phosphorus, orthophosphate (mg/L as P) | 4.73 | 250 mL | RC | .01 | |
| LC0838 | Regular | 70507 B | Phosphorus, orthophosphate (mg/L as P) | 7.37 | 250 mL | RC | .001 | |
| LC0286 | Regular | 01147 A | Selenium (ug/L as Se) | 21.20 | 100 mL | RAH | 1 | |
| LC0165 | Regular | 00500 A | Solids, residue at 105-110°C (mg/L) | 12.45 | 500 mL | RU | 1 | |
| LC0085 | Regular | 00505 A | Solids, volatile on ignition (mg/L) | 13.69 | 500 mL | RU | 1 | |
| | | | | 5.50 | 50 mL | R | .1 | |
| LC0069 | Regular | 90095 A | Specific conductance, laboratory (umho/cm at 25°C) | 2.92 | 50 mL | RU | 1 | |
| LC1269 | Regular | 90095 B | Specific conductance, laboratory, low ionic strength (umho/cm at 25°C) | 5.50 | 50 mL | RU | .1 | |
| LC0089 | Regular | 00745 A | Sulfide (mg/L as S) | 12.45 | 250 mL | LC0089 | .5 | |
| LC0050 | Regular | 00076 A | Turbidity (nephelometric-turbidity units) | 5.34 | 50 mL | LC0050 | .1 | |
| SH1108 | Regular | Nutrients, total, Low Ionic Strength samples only | | 25.00 | 250 mL | RC | | |
| | | 00610 A | Nitrogen, ammonia (mg/L as N) | | | | .002 | |
| | | 70507 B | Phosphorus, orthophosphate (mg/L as P) | | | | .001 | |
| | | 00630 A | Nitrogen, nitrite plus nitrate (mg/L as N) | | | | .01 | |
| | | 00615 A | Nitrogen, nitrite (mg/L as N) | | | | .001 | |
| **BOTTOM MATERIAL-RECOVERABLE** | | | | | | | | |
| **Inorganic constituents and physical properties** | | | | | | | | |
| LC1184 | Regular | 00000 A | Preparation of bottom material | 18.46 | 10 g | CU | -- | D |
| LC0647 | Regular | 00000 A | Digestion procedure for bottom material | 36.80 | 10 g | CU | -- | E |
| LC1282 | Regular | 01108 C | Aluminum, dry wt. (ug/g as Al) | 15.84 | 10 g | CU | 10 | E |
| LC0521 | Regular | 01008 A | Barium, dry wt. (ug/g as Ba) | 19.80 | 10 g | CU | 10 | E |
| LC0522 | Regular | 01013 A | Beryllium, dry wt. (ug/g as Be) | 19.80 | 10 g | CU | 1 | E |
| LC1285 | Regular | 01023 C | Boron, dry wt. (ug/g as B) | 12.00 | 10 g | CU | 10 | E |
| LC0502 | Regular | 01028 B | Cadmium, dry wt. (ug/g as Cd) | 15.35 | 10 g | CU | 1 | E |
| LC0696 | Regular | 00917 A | Calcium, dry wt. (mg/kg as Ca) | 18.42 | 10 g | CU | 10 | E |
| LC0505 | Regular | 01029 B | Chromium, dry wt. (ug/g as Cr) | 19.80 | 10 g | CU | 1 | E |
| LC0506 | Regular | 01038 B | Cobalt, dry wt. (ug/g as Co) | 15.35 | 10 g | CU | 5 | E |

(Remarks: D, LC1184 is automatically called in for any combination of the following lab codes: LC0511, 515, 517, and 597, and this one-time charge is added. E, LC0647 is automatically called in for any combination of the following codes: LC0190, 502, 505, 506, 507, 510, 512, 518, 519, 521, 522, 523, 530, 541, 696, 697, 698, 699, 1282, and 1285, and this one-time charge is added.)

Table 4.2.--Inorganic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **BOTTOM MATERIAL-RECOVERABLE--Continued** | | | | | | | | |
| **Inorganic constituents and physical properties--Continued** | | | | | | | | |
| LC0507 | Regular | 01043 B | Copper, dry wt. (ug/g as Cu) | 15.35 | 10 g | CU | 1 | E |
| LC0190 | Regular | 01170 B | Iron, dry wt. (ug/g as Fe) | 15.35 | 10 g | CU | 1 | E |
| LC0510 | Regular | 01052 B | Lead, dry wt. (ug/g as Pb) | 15.35 | 10 g | CU | 10 | E |
| LC0541 | Regular | 01133 A | Lithium, dry wt. (ug/g as Li) | 15.35 | 10 g | CU | 1 | E |
| LC0697 | Regular | 00924 A | Magnesium, dry wt. (mg/kg as Mg) | 18.42 | 10 g | CU | 10 | E |
| LC0512 | Regular | 01053 A | Manganese, dry wt. (ug/g as Mn) | 15.35 | 10 g | CU | 1 | E |
| LC0511 | Regular | 71921 A | Mercury, dry wt. (ug/g as Hg) | 34.76 | 10 g | CU | .01 | D |
| LC0523 | Regular | 01063 A | Molybdenum, dry wt. (ug/g as Mo) | 20.46 | 10 g | CU | .1 | E |
| LC0519 | Regular | 01068 B | Nickel, dry wt. (ug/g as Ni) | 15.35 | 10 g | CU | 10 | E |
| LC0698 | Regular | 00938 A | Potassium, dry wt. (mg/kg as K) | 15.35 | 10 g | CU | 10 | E |
| LC0699 | Regular | 00934 A | Sodium, dry wt. (mg/kg as Na) | 15.35 | 10 g | CU | 10 | E |
| LC0530 | Regular | 01083 A | Strontium, dry wt. (ug/g as Sr) | 18.42 | 10 g | CU | 1 | E |
| LC0518 | Regular | 01093 A | Zinc, dry wt. (ug/g as Zn) | 15.35 | 10 g | CU | 1 | E |
| **BOTTOM MATERIAL-TOTAL** | | | | | | | | |
| **Inorganic constituents and physical properties** | | | | | | | | |
| LC0534 | Regular | 01098 A | Antimony, dry wt. (ug/g as Sb) | 34.76 | 10 g | CU | 1 | |
| LC0597 | Regular | 01003 C | Arsenic, dry wt. (ug/g as As) | 34.76 | 10 g | CU | 1 | D |
| LC0904 | Regular | ----- A | Moisture content (percent) | 16.72 | 10 g | CU | .1 | |
| LC0524 | Regular | 00611 A | Nitrogen, ammonia, dry wt. (mg/kg as N) | 21.89 | 10 g | CC | .4 | |
| LC0513 | Regular | 00633 A | Nitrogen, nitrite plus nitrate, dry wt. (mg/kg as N) | 21.89 | 10 g | CC | 2 | |
| LC0532 | Regular | 00339 A | Oxygen demand, chemical, dry wt. (mg/kg) | 32.18 | 10 g | CC | 100 | |
| LC0515 | Regular | 00668 B | Phosphorus, dry wt. (mg/kg as P) | 19.30 | 10 g | CC | 40 | D |
| LC0517 | Regular | 01148 A | Selenium, dry wt. (ug/g as Se) | 34.54 | 10 g | CU | 1 | D |
| LC0516 | Regular | 00496 A | Solids, volatile on ignition, dry wt. (mg/kg) | 23.00 | 10 g | CC or CU | 1 | |

(Remarks: D, LC1184 is automatically called in for any combination of the following lab codes: LC0511, 515, 517, and 597, and this one-time charge is added. E, LC0647 is automatically called in for any combination of the following codes: LC0190, 502, 505, 506, 507, 510, 512, 518, 519, 521, 522, 523, 530, 541, 696, 697, 698, 699, 1282, and 1285, and this one-time charge is added.

## Table 4.2.--Radiochemical analysis

| Schedule | Lab code | WATSTORE and Method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | 2 SPE code |
|---|---|---|---|---|---|---|---|---|
| **Gross alpha and gross beta** | | | | | | | | |
| SH0606 | LC0444 | 80030 A | Gross alpha, dissolved, ug/L (natural uranium) | 98.75 | 2 L | RUR | 0.4 | 852 |
| | LC1393 | | " " " pCi/L (thorium-230 | | | | 0.4 | 1394 |
| | LC0445 | 80050 A | Gross beta, dissolved, pCi/L (Sr-90/Y-90) | | | | 0.4 | 858 |
| | LC0455 | 03515 A | " " pCi/L (Cs-137) | | | | 0.4 | 856 |
| | LC0446 | 80040 A | Gross alpha, suspended, ug/L (natural uranium) | | | | 0.4 | 859 |
| | LC1395 | | " " " pCi/L (thorium-230) | | | | 0.4 | 1396 |
| | LC0447 | 80060 A | Gross beta, suspended, pCi/L (Sr-90/Y-90) | | | | 0.4 | 857 |
| | LC0456 | 03516 A | " " " pCi/L (Cs-137) | | | | 0.4 | 860 |
| | This schedule is to be used for waters with a TDS >250 ppm. The suspended analysis is the same regardless of TDS. | | | | | | | |
| SH0609 | LC1355 | 80030 C | Gross alpha, dissolved, ug/L (natural uranium) | 122.50 | 2 L | RUR | 0.4 | 1370 |
| | LC1399 | | " " " pCi/L (thorium-230) | | | | 0.4 | 1400 |
| | LC1356 | 80050 C | Gross beta, dissolved, pCi/L (Sr-90/Y-90) | | | | 0.4 | 1371 |
| | LC1357 | 03515 C | " " " pCi/L (Cs-137) | | | | 0.4 | 1372 |
| | LC0446 | 80040 A | Gross alpha, suspended, ug/L (natural uranium) | | | | 0.4 | 859 |
| | LC1395 | | " " " pCi/L (thorium-230) | | | | 0.4 | 1396 |
| | LC0447 | 80060 A | Gross beta, suspended, pCi/L (Sr-90/Y-90) | | | | 0.4 | 857 |
| | LC0456 | 03516 A | " " " pCi/L (Cs-137) | | | | 0.4 | 860 |
| SH0456 | LC0800 | 80030 B | Gross alpha, dissolved, ug/L (natural uranium) | 60.00 | 2 L | FAR | 0.4 | 853 |
| | LC1397 | | " " " pCi/L (thorium-230) | | | | 0.4 | 1398 |
| | LC0793 | 80050 B | Gross beta, dissolved, pCi/L (Sr-90/Y-90) | | | | 0.4 | 855 |
| | LC0798 | 03515 B | " " " pCi/L (Cs-137) | | | | 0.4 | 854 |
| | The following are to be used for waters with a TDS >250 ppm. | | | | | | | |
| SH0458 | LC1358 | 80030 D | Gross alpha, dissolved, ug/L (natural uranium) | 75.00 | 2 L | FAR | 0.4 | 1373 |
| | LC1445 | | " " " pCi/L (thorium-230) | | | | 0.4 | 1446 |
| | LC1359 | 80050 D | Gross beta, dissolved, pCi/L (Sr-90/Y-90) | | | | 0.4 | 1374 |
| | LC1360 | 03515 D | " " " pCi/L (Cs-137) | | | | 0.4 | 1375 |

Bottles - Acid rinsed polyethylene.

For samples requiring filtration and acidification, use 0.45 um filter and acidify to pH <2 using concentrated nitric acid (usually 3 mL of concentrated $HNO_3$/L are sufficient).

Remark: 2 SPE code is the 2 standard deviation value reported for the corresponding parameter.

Table 4.2.--Radiochemical analysis--Continued

| Schedule | Lab code | WATSTORE and Method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | 2 SPE code |
|---|---|---|---|---|---|---|---|---|
| **Gross alpha and gross beta--Continued** | | | | | | | | |
| SH1131 | LC1518 | ----- A | Gross alpha, bottom material, pCi/g | 68.75 | | CU | 6.0 | 1519 |
| | LC1520 | ----- | Gross alpha, bottom material, pCi/g (thorium-230) | | | | 6.0 | 1521 |
| | LC1522 | ----- | Gross beta, bottom material, pCi/g (Cs-137) | | | | 3.0 | 1523 |
| | LC1524 | ----- | Gross beta, bottom material, pCi/g (Sr-90) | | | | 3.0 | 1525 |
| **Gamma** | | | | | | | | |
| | LC0211 | 99450 A | Gross gamma scan, suspended, pCi/L | 100.00 | 7 L | RUR | Varies with nuclides | 874 |
| | LC0443 | 99452 A | Gross gamma scan, dissolved, pCi/L | 87.50 | 7 L | FAR | Varies with nuclides | 877 |
| | LC0212 | 99451 A | Gross gamma scan, bottom material, total, dry wt., pCi/g | 100.00 | 100 g | CU | Varies with nuclides | 875 |
| **Lead-210** | | | | | | | | |
| | LC1182 | 17507 B | Lead-210 (dating) by gamma, dry wt., pCi/g Cs-137 is also reported as pCi/g dry weight with a MRL of 0.02 pCi/g. | 197.50 | 100 g | CU | 0.1 | 876 |
| | LC1503 | 17503 B | Lead-210, dissolved, pCi/L | 98.75 | 1 L | FAR | 1.5 | 1504 |
| | LC1547 | ----- | Lead-210, suspended, pCi/g | 111.25 | 1 g | SU | -- | 1548 |
| | LC1549 | 17507 C | Lead-210, by gamma, bottom material, pCi/g | 87.50 | 100 g | CU | 2.0 | 1550 |
| **Polonium-210** | | | | | | | | |
| | LC1505 | 19503 A | Polonium-210, dissolved, pCi/L | 110.00 | 1 L | FAR | 1 | 1506 |
| | LC1543 | ----- | Polonium-210, suspended, pCi/g | 122.50 | 1 g | SU | 0.1 | 1544 |
| | LC1545 | 19507 A | Polonium-210, bottom material, pCi/g | 131.25 | 10 g | CU | 0.1 | 1546 |
| **Radium and radon** | | | | | | | | |
| | LC0449 | 09511 A | Radium-226 by de-emanation, dissolved, pCi/L | 166.25 | 1 L | RUR | 0.02 | 862 |
| | LC0794 | 09511 B | Radium-226 by de-emanation, dissolved, pCi/L | 153.75 | 1 L | FAR | 0.02 | 861 |
| | LC0458 | 09510 A | Radium-226 by precipitation, dissolved, pCi/L | 123.75 | 1 L | RUR | 0.4 | 863 |
| | LC0799 | 09510 B | Radium-226 by precipitation, dissolved, pCi/L | 111.25 | 1 L | FAR | 0.4 | 864 |
| | LC1531 | ----- | Radium-226, suspended, pCi/g | 157.50 | 1 g | SU | 0.1 | 1532 |

Bottles - Acid rinsed polyethylene.

For samples requiring filtration and acidification, use 0.45 um filter and acidify to pH <2 using concentrated nitric acid (usually 3 mL of concentrated HCl/L are sufficient).

Remark: 2 SPE code is the 2 standard deviation value reported for the corresponding parameter.

Table 4.2.--Radiochemical analysis--Continued

| Schedule | Lab code | WATSTORE and Method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | 2 SPE code |
|---|---|---|---|---|---|---|---|---|
| **Radium and radon--Continued** | | | | | | | | |
| | LC0850 | 81366 A | Radium-228 by gamma, dissolved, pCi/L | 105.00 | 7 L | FAR | 1.0 | 866 |
| | LC1363 | 81366 B | Radium-228 by separation, beta counting, dissolved, pCi/L | 118.75 | 2 L | RUR | 1.0 | 1378 |
| | LC1364 | 81366 C | Radium-228 by separation, beta counting, dissolved, pCi/L | 106.25 | 2 L | FAR | 1.0 | 1379 |
| | LC1533 | ----- | Radium-228, suspended, pCi/g | 118.75 | 1 g | SU | 0.1 | 1534 |
| SH1136 | LC1528 | 09507 B | Radium-226, by gamma, bottom material, pCi/g | 100.00 | 100 g | CU | 0.4 | 1529 |
| | LC1526 | ----- | Radium-228, by gamma, bottom material, pCi/g | | | | 0.8 | 1527 |
| | LC0490 | 82305 A | Radon-222 by emanation, pCi/L | 86.25 | -- | -- | 0.2 | 865 |
| | LC1369 | 82303 B | Radon-222 by liquid scintillation, pCi/L Vials with mineral based scintillation cocktail must be requested from NWQL. All samples are run in duplicate. | 16.50 | 10 mL | -- | 70 | 1384 |
| **Strontium-90** | | | | | | | | |
| | LC0450 | 13503 A | Strontium-90 by precipitation, dissolved, pCi/L | 122.50 | 1 L | RUR | 0.5 | 872 |
| | LC0795 | 13503 B | Strontium-90 by precipitation, dissolved, pCi/L | 110.00 | 1 L | FAR | 0.5 | 873 |
| **Thorium** | | | | | | | | |
| SH1139 | LC1472 | 26503 B | Thorium-230, dissolved, pCi/L | 110.00 | 1 L | FAR | 0.1 | 1473 |
| | LC1501 | ----- | Thorium-232, dissolved, pCi/g | | -- | | 0.1 | 1502 |
| SH1140 | LC1541 | ----- | Thorium-230, suspended, pCi/g | 122.50 | 1 g | SU | 0.1 | 1542 |
| | LC1539 | ----- | Thorium-232, suspended, pCi/g | | | | 0.1 | 1540 |
| SH1141 | LC1537 | 26507 A | Thorium-230, bottom material, pCi/g | 168.75 | 10 g | CU | 0.1 | 1538 |
| | LC1535 | 26631 A | Thorium-232, bottom material, pCi/g | | | | 0.1 | 1536 |

Bottles - Acid rinsed polyethylene.

For samples requiring filtration and acidification, use 0.45 um filter and acidify to pH <2 using concentrated nitric acid (usually 3 mL of concentrated $HNO_3$/L are sufficient).

Remark: 2 SPE code is the 2 standard deviation value reported for the corresponding parameter.

Table 4.2.--Radiochemical analysis--Continued

| Schedule | Lab code | WATSTORE and Method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | 2 SPE code |
|---|---|---|---|---|---|---|---|---|
| **Tritium** | | | | | | | | |
| | LC0452 | 7000 D | Tritium by liquid scintillation, direct, pCi/L | 250.00 | 25 mL | RUR | 26 | 879 |
| | LC0460 | 7000 A | Tritium by liquid scintillation, enriched, pCi/L | 250.00 | 250 mL | RUR | 5.7 | 882 |
| | LC0624 | 7000 E | Tritium by liquid scintillation, enriched, pCi/L | 250.00 | 500 mL | RUR | 2.6 | 1000 |
| | LC1565 | 7000 F | Tritium by liquid scintillation, enriched, pCi/L | 250.00 | 1 L | RUR | 1.0 | 1566 |
| | LC1043 | 7000 B | Tritium by gas counting, enriched, pCi/L | 350.00 | 1 L | RUR | 0.3 | 883 |
| | | | Polyethylene bottles are acceptable for most samples. However, for low-level samples, glass bottles are preferable. | | | | | |
| **Uranium** | | | | | | | | |
| | LC1365 | 28011 B | Uranium by fluorometric (total) ug/L | 37.50 | 1 L | RAR | 1.0 | 1447 |
| | LC1004 | 22703 G | Uranium by fluorometric, dissolved, ug/L | 56.25 | 1 L | RUR | 1.0 | 1005 |
| | LC1006 | 22703 H | Uranium by fluorometric, dissolved, ug/L | 43.75 | 1 L | FAR | 1.0 | 1007 |
| | LC1388 | 22703 F | Uranium by laser-induced phosphorimetry, extracted, dissolved, ug/L | 68.75 | 1 L | RUR | 0.01 | 1392 |
| | LC1386 | 22703 E | Uranium by laser-induced phosphorimetry, extracted dissolved, ug/L | 56.25 | 1 L | FAR | 0.01 | 1390 |
| | LC1387 | 22703 D | Uranium by laser-induced phosphorimetry, direct, dissolved, ug/L | 61.25 | 1 L | RUR | 0.4 | 1391 |
| | LC1385 | 22703C | Uranium by laser-induced phosphorimetry, direct, dissolved, ug/L | 48.75 | 1 L | FAR | 0.4 | 1389 |
| SH1130 | LC1366 | 22610 A | Uranium-234 (by alpha spec) dissolved, pCi/L | 80.50 | 1 L | FAR | 0.1 | 1381 |
| | LC1367 | 22620 A | Uranium-235 " " " " pCi/L | | | | 0.1 | 1382 |
| | LC1368 | 22603 A | Uranium-238 " " " " pCi/L | | | | 0.1 | 1383 |
| | | | Please note that these results are in pCi/L. | | | | | |
| SH1137 | LC1474 | ----- | Uranium-234, suspended, pCi/g | 128.75 | 1 g | SU | 0.1 | 1475 |
| | LC1476 | ----- | Uranium-235, suspended, pCi/g | | | | 0.1 | 1450 |
| | LC1507 | ----- | Uranium-238, suspended, pCi/g | | | | 0.1 | 1508 |
| SH1138 | LC1509 | 28014 A | Uranium-234, by gamma, bottom material, pCi/g | 168.75 | 100 g | CU | 1.0 | 1510 |
| | LC1515 | 22612 A | Uranium-235, by gamma, bottom material, pCi/g | | | | 1.0 | 1516 |
| | LC1511 | 28016 A | Uranium-238, by gamma, bottom material, pCi/g | | | | 1.0 | 1517 |

Bottles - Acid rinsed polyethylene.

For samples requiring filtration and acidification, use 0.45 um filter and acidify to pH <2 using concentrated nitric acid (usually 3 mL of concentrated $HNO_3$/L are sufficient).

Remark: 2 SPE code is the 2 standard deviation value reported for the corresponding parameter.

## Table 4.2.--Stable Isotopes

| Lab code | WATSTORE and method code | Parameter name and unit of measurement | Price ($) | Sample requirements: Preferred | Sample requirements: Absolute Minimum | Precision |
|---|---|---|---|---|---|---|
| LC1137 | 82337 A | Oxygen-18/oxygen-16, carbonate rock, permil relative to SMOW* | 56.40 | 1 g pure calcite | 4 mg pure calcite | +/- 0.2 |
| LC1243 | 99481 A | Oxygen-18/oxyen-16, high purity $CO_2$, aqueous, permil relative to SMOW<br>Use 6 or 9 mm O.D. pyrex tube | 19.20 | 100 u moles | 40 u moles | +/- 0.2 |
| LC0489 | 82085 A | Oxygen-18/oxygen-16, aqueous, permil relative to SMOW<br>Add one $HgCl_2$ tablet, if possible. Do not add aqueous $HgCL_2$. | 44.40 | 60 mL | 5 mL (no headspace) | +/- 0.15 |
| LC0300 | 82082 A | Deuterium/protium, aqueous, permil relative SMOW<br>Add one $HgCl_2$ tablet, if possible. Do not add aqueous $HgCL_2$. | 81.60 | 60 mL | 5 ml (no headspace) | +/- 1.5 |
| SH1142 | | Oxygen and hydrogen isotope ratios | 126.00 | 60 mL | | |
| | 82085 A | Oxygen-18/oxygen-16, aqueous, permil relative to SMOW | | | | |
| | 82082 A | Deuterium/protium, aqueous, permil relative to SMOW<br>Add one $HgCL_2$ tablet, possible. Do not add aqueous $HgCl_2$. | | | | |
| LC1204 | ----- | Nitrogen-15/nitrogen-14, solid organic, permil relative to air | 126.00 | 1 g N | 1 mg N | +/- 0.2 |
| LC0995 | 82084 A | Nitrogen-15/nitrogen-14, aqueous, permil relative to air<br>Filter through 0.45 um filter.<br>Preserve with bactericide (mercuric chloride).<br>Keep cool - Do not freeze.<br>Please provide concentration if possible. | 240.00 | >5 mg N in a 1-L bottle | 0.1 mg N/L in max vol of 2 L | +/- 0.2 |
| LC1138 | 82336 A | Sulfur-34/sulfur-32, solid samples, permil relative to CDT<br>Organic sulfur, sulfide rocks, total sulfur | 110.00 | 1 g S | 0.7 mg S | +/- 0.3 |
| LC0535 | ----- | Sulfur-34/sulfur-32, aqueous (sulfide precipitate), permil relative to CDT<br>Filter through 0.45 um filter.<br>Preserve with bactericide (mercuric chloride).<br>Please provide concentration if available. | 110.00 | >10 mg S in a 1-L bottle | 0.5 mg S/L in max vol of 2 L | +/- 0.3 |

Bottles - Gastight, inert polyethylene or glass with leak-free teflon or polyseal caps. Tape caps. For solids - any spill-proof container.

*If requested in conjunction with LC 1135, only one sample is required. Separate analyses can be performed on both the calcite and dolomite fractions of a carbonate rock (please provide percentages of each).

## Table 4.2.--Stable Isotopes--Continued

| Lab code | WATSTORE and method code | Parameter name and unit of measurement | Price ($) | Sample requirements | | Precision |
|---|---|---|---|---|---|---|
| | | | | Preferred | Absolute Minimum | |
| LC0298 | 82086 A | Sulfur-34/sulfur-32, aqueous (sulfate precipitate), permil relative to CDT<br>Filter through 0.45 um filter.<br>Preserve with bactericide (mercuric chloride).<br>Please provide concentration if available. | 110.00 | >10 mg S in a 1-L bottle | 0.5 mg S/L in max vol of 2 L | +/- 0.3 |
| LC1135 | 82339 A | Carbon-13/carbon-12, carbonate rock, permil relative to PDB* | 56.00 | 1 g pure calcite | 4 mg pure calcite | +/- 0.3 |
| LC1205 | ----- | Carbon-13/carbon-12, total organic, permil relative to PDB<br>Soil or rock material. | 69.00 | 1 g C | 0.5 mg C | +/- 0.3 |
| LC1244 | ----- | Carbon-13/carbon-12, high purity $CO_2$, permil relative to PDB<br>Use 6 or 9 mm O.D. pyrex tubes | 28.00 | 100 u moles | 40 u moles | +/- 0.3 |
| LC0440 | 82081 A | Carbon-13/carbon-12, aqueous (dissolved inorganic C), permil relative to PDB<br>Do Not Filter | 75.00 | 250 mg PPT | 100 mg PPT | +/- 0.3 |
| LC1199 | 82172 B | Carbon-14, carbonate precipitate, % modern carbon and years before present (1950)<br>Precipitate with carbon-free reagents | 316.25 | 5 g elemental C | 5 g elemental C | 0.7% modern carbon at the 40,000 yr range or better |
| LC1198 | 82172 A | Carbon-14, aqueous, % modern carbon and years before present (1950) | 316.25 | Sufficient sample to yield 2 g elemental C when PPT in contract lab | | 0.7% modern carbon at the 40,000 yr range or better |
| LC0640 | 99454 A | Carbon-14, percent error, given with both LC 1199 and LC 1198 | No cost | | | |

Bottles - Gastight, inert polyethylene or glass with leak-free teflon or polyseal caps. Tape caps. For solids - Any spill-proof container.

*If requested in conjunction with LC 1135, only one sample is required. Separate analyses can be performed on both the calcite and dolomite fractions of a carbonate rock (please provide percentages of each).

## Table 4.3.--Organic Analyses

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Biological compounds** | | | | | | | | |
| **Periphyton** | | | | | | | | |
| SH1507 | Limited | | Chlorophyll, periphyton | 32.37 | -- | CHE | .1 | |
| | | 70957 A | Chlorophyll-a ($mg/m^2$) | | | | | |
| | | 70958 A | Chlorophyll-b ($mg/m^2$) | | | | | |
| SH0671 | Limited | | Periphyton, biomass | 28.58 | -- | CHE | .001 | |
| | | 00573 A | Periphyton, dry weight ($g/m^2$) | | | | | |
| | | 00572 A | Periphyton, ash weight ($g/m^2$) | | | | | |
| **Phytoplankton** | | | | | | | | |
| SH1508 | Limited | | Chlorophyll, phytoplankton | 32.37 | -- | CHY | .1 | |
| | | 70953 A | Chlorophyll-a, phytoplankton (ug/L) | | | | | |
| | | 70954 A | Chlorophyll-b, phytoplankton (ug/L) | | | | | |
| SH0666 | Limited | | Phytoplankton, biomass | 28.58 | -- | CHY | 1 | |
| | | 81354 A | Phytoplankton, dry weight (mg/L) | | | | | |
| | | 81353 A | Phytoplankton, ash weight (mg/L) | | | | | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Gross measures** | | | | | | | | |
| LC0306 | Regular | 00691 A | Carbon, inorganic, dissolved (mg/L as C) | 22.08 | 100 mL | LC0306 | .1 | |
| LC0113 | Regular | 00681 A | Carbon, organic, dissolved (mg/L as C) | 22.08 | 100 mL | LC0113 | .1 | |
| LC0305 | Regular | 00689 A | Carbon, organic, suspended (mg/L as C) | 22.08 | -- | LC0305 | .1 | |
| LC0019 | Regular | 00685 A | Carbon, inorganic, total (mg/L as C) | 22.08 | 100 mL | LC0019 | .1 | |
| LC0114 | Regular | 00680 A | Carbon, organic, total (mg/L as C) | 22.08 | 100 mL | LC0114 | .1 | |
| LC0503 | Regular | 00686 C | Carbon, inorganic, total in bottom material, dry wt. (g/kg as C) | 38.06 | 10 g | CC | .1 | |
| LC0133 | Regular | 00693 A | Carbon, inorganic plus organic, total in bottom material, dry wt. (g/kg as C) | 38.06 | 10 g | CC | .1 | |
| LC0096 | Regular | 38260 A | Methylene blue active substances, total recoverable (mg/L as MBAS) | 27.83 | 250 mL | RCB | .01 | |
| LC0127 | Regular | 00556 A | Oil and grease, total recoverable (mg/L) | 39.33 | 1 L | LC0127 | 1 | |
| LC0531 | Regular | 00557 A | Oil and grease, rec from bottom material, dry wt. (mg/kg) | 55.78 | 10 g | CC | 1000 | |
| LC0052 | Regular | 32730 A | Phenols, total recoverable (ug/L as phenol) | 33.00 | 1 L | LC0052 | 1 | |
| LC0138 | Regular | 32240 A | Tannin and lignin, total recoverable (mg/L as tannic acid) | 26.00 | 100 mL | RCB | .1 | |
| **Industrial compounds** | | | | | | | | |
| **Methylene chloride-extractable compounds** | | | | | | | | |
| SH1383 | Limited | | GC/MS analysis of semi-volatile priority pollutants, base/neutral plus acid-extractable, total recoverable, total recoverable from water and suspended sediment. (ug/L) | 405.00 | 1 L | GCC | | |
| | | 34452 A | 4-Chloro-3-methylphenol (ug/L) | | | | 30.0 | |
| | | 34586 A | 2-Chlorophenol (ug/L) | | | | 5.0 | |
| | | 34601 A | 2,4-Dichlorophenol (ug/L) | | | | 5.0 | |
| | | 34606 A | 2,4-Dimethylphenol (ug/L) | | | | 5.0 | |
| | | 34616 A | 2,4-Dinitrophenol (ug/L) | | | | 20.0 | |
| | | 34657 A | 4,6-Dinitro-2-methylphenol (ug/L) | | | | 30.0 | |
| | | 34591 A | 2-Nitrophenol (ug/L) | | | | 5.0 | |
| | | 34646 A | 4-Nitrophenol (ug/L) | | | | 30.0 | |
| | | 39032 A | Pentachlorophenol (ug/L) | | | | 30.0 | |
| | | 34694 A | Phenol (ug/L) | | | | 5.0 | |
| | | 34621 A | 2,4,6-Trichlorophenol (ug/L) | | | | 20.0 | |

(Schedule continued on next page)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Methylene chloride-extractable compounds--Continued** | | | | | | | | |
| SH1383 | | 34205 | A Acenaphthene (ug/L) | | | | 5.0 | |
| | | 34200 | A Acenaphthylene (ug/L) | | | | 5.0 | |
| | | 34220 | A Anthr acene (ug/L) | | | | 5.0 | |
| | | 34526 | A Benzo (a) anthracene (ug/L) | | | | 10.0 | |
| | | 34230 | A Benzo (b) fluoranthene (ug/L) | | | | 10.0 | |
| | | 34242 | A Benzo (k) fluoranthene (ug/L) | | | | 10.0 | |
| | | 34521 | A Benzo (g,h,i) perylene (ug/L) | | | | 10.0 | |
| | | 34247 | A Benzo (a) pyrene (ug/L) | | | | 10.0 | |
| | | 34636 | A 4-Bromophenyl phenyl ether (ug/L) | | | | 5.0 | |
| | | 34292 | A Butyl benzyl phthalate (ug/L) | | | | 5.0 | |
| | | 34278 | A bis (2-Chloroethoxy) methane (ug/L) | | | | 5.0 | |
| | | 34273 | A bis (2-Chloroethyl) ether (ug/L) | | | | 5.0 | |
| | | 34283 | A bis (2-Chloroisopropyl) ether (ug/L) | | | | 5.0 | |
| | | 34581 | A 2-Chloronaphthalene (ug/L) | | | | 5.0 | |
| | | 34641 | B 4-Chlorophenyl phenyl ether (ug/L) | | | | 5.0 | |
| | | 34320 | A Chrysene (ug/L) | | | | 10.0 | |
| | | 34556 | A Dibenzo (a,h) anthracene (ug/L) | | | | 10.0 | |
| | | 34536 | A 1,2-Dichlorobenzene (ug/L) | | | | 5.0 | |
| | | 34566 | A 1,3-Dichlorobenzene (ug/L) | | | | 5.0 | |
| | | 34571 | A 1,4-Dichlorobenzene (ug/L) | | | | 5.0 | |
| | | 34336 | A Diethyl phthalate (ug/L) | | | | 5.0 | |
| | | 34341 | A Dimethyl phthalate (ug/L) | | | | 5.0 | |
| | | 39110 | A Di-n-butyl phthalate (ug/L) | | | | 5.0 | |
| | | 34611 | A 2,4-Dinitrotoluene (ug/L) | | | | 5.0 | |
| | | 34626 | A 2,6-Dinitrotoluene (ug/L) | | | | 5.0 | |
| | | 34596 | A Di-n-octylphthalate (ug/L) | | | | 10.0 | |
| | | 39100 | A bis (2-Ethylhexyl) phthalate (ug/L) | | | | 5.0 | |
| | | 34376 | A Fluoranthene (ug/L) | | | | 5.0 | |
| | | 34381 | A Fluorene (ug/L) | | | | 5.0 | |
| | | 39700 | A Hexachlorobenzene (ug/L) | | | | 5.0 | |

(Schedule continued on next page)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Methylene chloride-extractable compounds--Continued** | | | | | | | | |
| SH1383 | | 39702 A | Hexachlorobutadiene (ug/L) | | | | 5.0 | |
| | | 34386 A | Hexachlorocyclopentadiene (ug/L) | | | | 5.0 | |
| | | 34396 A | Hexachloroethane (ug/L) | | | | 5.0 | |
| | | 34403 A | Indeno (1,2,3-cd) pyrene (ug/L) | | | | 10.0 | |
| | | 34408 A | Isophorone (ug/L) | | | | 5.0 | |
| | | 34696 A | Naphthalene (ug/L) | | | | 5.0 | |
| | | 34447 A | Nitrobenzene (ug/L) | | | | 5.0 | |
| | | 34438 A | n-Nitrosodimethylamine (ug/L) | | | | 5.0 | |
| | | 34428 A | n-Nitrosodi-n-propylamine (ug/L) | | | | 5.0 | |
| | | 34433 A | n-Nitrosodiphenylamine (ug/L) | | | | 5.0 | |
| | | 34461 A | Phenanthrene (ug/L) | | | | 5.0 | |
| | | 34469 A | Pyrene (ug/L) | | | | 5.0 | |
| | | 34551 A | 1,2,4-Trichlorobenzene (ug/L) | | | | 5.0 | |
| SH1381 | Limited | | Organic compounds, methylene chloride-extractable, GC/FID scan, total recoverable from water and water-suspended sediment. Chromatogram and Data Summary are mailed to requestor. (ug/L) | 114.00 | 1 L | GCC | .1-100 | |
| SH1382 | Limited | | Organic compounds, methylene chloride-extractable, GC/FID scan, recoverable from bottom material. Chromatogram and Data Summary are mailed to requestor. (ug/kg) | 152.00 | 200 g | BGC | 4.0-4,000 | |

## Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Methylene chloride-extractable compounds--Continued** | | | | | | | | |
| SH1384 | Limited | | Organic compounds, GC/MS analysis of semi-volatile priority pollutants, recoverable from bottom material. (ug/kg) | 515.00 | 200 g | BGC | 200-600 | |
| | | 34455 A | 4-Chloro-3-methylphenol | | | | 600 | |
| | | 34589 A | 2-Chlorophenol | | | | 200 | |
| | | 34604 A | 2,4-Dichlorophenol | | | | 200 | |
| | | 34609 B | 2,4-Dimethylphenol | | | | 200 | |
| | | 34660 A | 4,6-Dinitro-2-methylphenol | | | | 600 | |
| | | 34619 A | 2,4-Dinitrophenol | | | | 600 | |
| | | 34594 A | 2-Nitrophenol | | | | 200 | |
| | | 34649 A | 4-Nitrophenol | | | | 600 | |
| | | 39061 A | Pentachlorophenol | | | | 600 | |
| | | 34695 A | Phenol | | | | 200 | |
| | | 34624 A | 2,4,6-Trichlorophenol | | | | 600 | |
| | | 34208 A | Acenaphthene | | | | 200 | |
| | | 34203 A | Acenaphthylene | | | | 200 | |
| | | 34223 A | Anthracene | | | | 200 | |
| | | 34529 A | Benzo (a) anthracene | | | | 400 | |
| | | 34233 A | Benzo (b) fluoranthene | | | | 400 | |
| | | 34245 A | Benzo (k) fluoranthene | | | | 400 | |
| | | 34524 A | Benzo (g,h,i) perylene | | | | 400 | |
| | | 34250 A | Benzo (a) pyrene | | | | 400 | |
| | | 34639 A | 4-Bromophenyl phenyl ether | | | | 200 | |
| | | 34295 A | Butyl benzyl phthalate | | | | 200 | |
| | | 34281 A | bis (2-Chloroethoxy) methane | | | | 200 | |
| | | 34276 A | bis (2-Chloroethyl) ether | | | | 200 | |
| | | 34286 A | bis (2-Chloroisopropyl) ether | | | | 200 | |
| | | 34584 A | 2-Chloronaphthalene | | | | 200 | |
| | | 34641 A | 4-Chlorophenyl phenyl ether | | | | 200 | |

(Schedule continued on next page)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Methylene chloride-extractable compounds--Continued** | | | | | | | | |
| SH1384 | | 34323 | A Chrysene | | | | 400 | |
| | | 34559 | A Dibenzo (a,h) anthracene | | | | 400 | |
| | | 34539 | A 1,2-Dichlorobenzene | | | | 200 | |
| | | 34569 | A 1,3-Dichlorobenzene | | | | 200 | |
| | | 34574 | A 1,4-Dichlorobenzene | | | | 200 | |
| | | 34339 | A Diethyl phthalate | | | | 200 | |
| | | 34344 | A Dimethyl phthalate | | | | 200 | |
| | | 39112 | A Di-n-butyl phthalate | | | | 200 | |
| | | 34614 | A 2,4-Dinitrotoluene | | | | 200 | |
| | | 34629 | A 2,6-Dinitrotoluene | | | | 200 | |
| | | 34599 | A Di-n-octylphthalate | | | | 400 | |
| | | 39102 | A bis (2-Ethylhexyl) phthalate | | | | 200 | |
| | | 34379 | A Fluoranthene | | | | 200 | |
| | | 34384 | A Fluorene | | | | 200 | |
| | | 39701 | A Hexachlorobenzene | | | | 200 | |
| | | 39705 | A Hexachlorobutadiene | | | | 200 | |
| | | 39389 | A Hexachlorocyclopentadiene | | | | 200 | |
| | | 34399 | A Hexachloroethane | | | | 200 | |
| | | 34406 | A Indeno (1,2,3-cd) pyrene | | | | 400 | |
| | | 34411 | A Isophorone | | | | 200 | |
| | | 34445 | A Naphthalene | | | | 200 | |
| | | 34450 | A Nitrobenzene | | | | 200 | |
| | | 34441 | A n-Nitrosodimethylamine | | | | 200 | |
| | | 34431 | A n-Nitrosodi-n-propylamine | | | | 200 | |
| | | 34436 | A n-Nitrosodiphenylamine | | | | 200 | |
| | | 34464 | A Phenanthrene | | | | 200 | |
| | | 34472 | A Pyrene | | | | 200 | |
| | | 34554 | A 1,2,4-Trichlorobenzene | | | | 200 | |

## Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample design-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Methylene chloride-extractable compounds--Continued** | | | | | | | | |
| SH1385 | Limited | | Organic compounds, base/neutral plus acid-extractable, semi-quantitative GC/MS analysis of semi-volatile, methylene chloride-extractable organic compounds, total recoverable from water and water-suspended sediment mixtures. Includes specific analysis for compounds listed in SH1383 and tentative identification of all other compounds possible with quantitation relative to the internal standard. Letter report sent to requestor. (ug/L) | 584.00 | 1 L | GCC | 5-30 | |
| SH1386 | Limited | | Organic compounds, recoverable from bottom material. Semi-quantitative GC/MS analysis of semi-volatile, methylene chloride extractable organic compounds. Includes specific analysis for compounds listed in SH1384 and tentative identification of all other compounds possible with quantitation relative to the internal standard. Letter report sent to requestor. (ug/kg) | 658.00 | 100 g | BGC | 200-600 | |
| **Munition products** | | | | | | | | |
| SH1300 | Limited | | Munition products, with picric acid, total recoverable | 448.00 | 800 mL | GCC | | |
| | | 82340 A | Picric acid (ug/L) | | | | 2.0 | D |
| | | 81364 B | RDX (ug/L) | | | | 2.0 | |
| | | 81360 C | TNT (ug/L) | | | | 2.0 | |

(Remarks: D, this schedule is available only through a contract laboratory.)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Polychlorinated biphenyls** | | | | | | | | |
| SH1361 | Regular | | Aroclors, dissolved | 160.00 | 800 mL | GCC | | |
| | | 34672 A | Aroclor 1016 (ug/L) | | | | .1 | |
| | | 34662 A | Aroclor 1221 (ug/L) | | | | .1 | |
| | | 34665 A | Aroclor 1232 (ug/L) | | | | .1 | |
| | | 34457 A | Aroclor 1242 (ug/L) | | | | .1 | |
| | | 39501 A | Aroclor 1248 (ug/L) | | | | .1 | |
| | | 39505 A | Aroclor 1254 (ug/L) | | | | .1 | |
| | | 39509 A | Aroclor 1260 (ug/L) | | | | .1 | |
| SH1362 | Regular | | Aroclors, suspended recoverable | 176.00 | 800 mL | GCC | | |
| | | 34673 A | Aroclor 1016 (ug/L) | | | | .1 | |
| | | 34663 A | Aroclor 1221 (ug/L) | | | | .1 | |
| | | 34666 A | Aroclor 1232 (ug/L) | | | | .1 | |
| | | 34458 A | Aroclor 1242 (ug/L) | | | | .1 | |
| | | 39502 A | Aroclor 1248 (ug/L) | | | | .1 | |
| | | 39506 A | Aroclor 1254 (ug/L) | | | | .1 | |
| | | 39510 A | Aroclor 1260 (ug/L) | | | | .1 | |
| SH1364 | Regular | | Aroclors, total recoverable | 159.00 | 800 mL | GCC | | |
| | | 34671 B | Aroclor 1016 (ug/L) | | | | .1 | |
| | | 39488 B | Aroclor 1221 (ug/L) | | | | .1 | |
| | | 39492 B | Aroclor 1232 (ug/L) | | | | .1 | |
| | | 39496 B | Aroclor 1242 (ug/L) | | | | .1 | |
| | | 39500 B | Aroclor 1248 (ug/L) | | | | .1 | |
| | | 39504 B | Aroclor 1254 (ug/L) | | | | .1 | |
| | | 39508 B | Aroclor 1260 (ug/L) | | | | .1 | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Polychlorinated biphenyls--Continued** | | | | | | | | |
| SH1397 | Regular | | Aroclors, recoverable from bottom material, dry wt. | 343.00 | 200 g | BGC | | |
| | | 39514 A | Aroclor 1016 (ug/kg) | | | | 1.0 | |
| | | 39491 A | Aroclor 1221 (ug/kg) | | | | 1.0 | |
| | | 39495 A | Aroclor 1232 (ug/kg) | | | | 1.0 | |
| | | 39499 A | Aroclor 1242 (ug/kg) | | | | 1.0 | |
| | | 39503 A | Aroclor 1248 (ug/kg) | | | | 1.0 | |
| | | 39507 A | Aroclor 1254 (ug/kg) | | | | 1.0 | |
| | | 39511 A | Aroclor 1260 (ug/kg) | | | | 1.0 | |
| **Reaeration** | | | | | | | | |
| SH0955 | Limited | | Reaeration coefficient, total recoverable | 52.00 | 40 mL | CL | | C |
| | | 82357 A | Ethylene (ug/L) | | | | .1 | |
| | | 82358 A | Propane (ug/L) | | | | .1 | |
| **Purgeable organic** | | | | | | | | |
| SH1390 | Limited | | Purgeable organic compounds, total recoverable. Identification includes compounds listed below. Analysis by GC-MS. (Conforms to EPA Method #624) (Triplicate sample required). | 250.00 | 3x40 mL | GCV | | |
| | | 34030 A | Benzene (ug/L) | | | | 3.0 | |
| | | 32104 A | Bromoform (ug/L) | | | | 3.0 | |
| | | 32102 A | Carbon tetrachloride (ug/L) | | | | 3.0 | |
| | | 34301 A | Chlorobenzene (ug/L) | | | | 3.0 | |
| | | 34311 A | Chloroethane (ug/L) | | | | 3.0 | |
| | | 34576 A | 2-Chloroethyl vinyl ether (ug/L) | | | | 3.0 | |
| | | 32106 A | Chloroform (ug/L) | | | | 3.0 | |
| | | 34418 A | Chloromethane (ug/L) | | | | 3.0 | |
| | | 32105 A | Dibromochloromethane (ug/L) | | | | 3.0 | |
| | | 32101 A | Dichlorobromomethane (ug/L) | | | | 3.0 | |

(Schedule continued on the next page)

(Remarks: C, analysis performed by Ocala Laboratory, contact Ocala for all arrangements.)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Industrial compounds--Continued** | | | | | | | | |
| **Purgeable organic--Continued** | | | | | | | | |
| SH1390 | | 34536 C | 1,2-Dichlorobenzene (ug/L) | | | | 3.0 | |
| | | 34566 C | 1,3-Dichlorobenzene (ug/L) | | | | 3.0 | |
| | | 34571 C | 1,4-Dichlorobenzene (ug/L) | | | | 3.0 | |
| | | 34668 A | Dichlorodifluromethane (ug/L) | | | | 3.0 | |
| | | 39082 | 1,2-Dibromoethylene; EDB (ug/L) | | | | 3.0 | |
| | | 34496 A | 1,1-Dichloroethane (ug/L) | | | | 3.0 | |
| | | 32103 A | 1,2-Dichloroethane (ug/L) | | | | 3.0 | |
| | | 34501 A | 1,1-Dichloroethylene (ug/L) | | | | 3.0 | |
| | | 34546 A | 1,2-trans-Dichloroethylene (ug/L) | | | | 3.0 | |
| | | 34541 A | 1,2-Dichloropropane (ug/L) | | | | 3.0 | |
| | | 34704 A | Cis-1,3-Dichloropropene | | | | | |
| | | 34699 A | Trans-1,3-Dichloropropene | | | | | |
| | | 34561 A | 1,3-Dichloropropene (ug/L) | | | | 3.0 | |
| | | 34371 A | Ethylbenzene (ug/L) | | | | 3.0 | |
| | | 34413 A | Methyl bromide (ug/L) | | | | 3.0 | |
| | | 77128 A | Styrene (ug/L) | | | | | |
| | | 34423 A | Methylene chloride (ug/L) | | | | 3.0 | |
| | | 34516 A | 1,1,2,2-Tetrachloroethane (ug/L) | | | | 3.0 | |
| | | 34475 A | Tetrachloroethylene; PCE (ug/L) | | | | 3.0 | |
| | | 34010 A | Toluene (ug/L) | | | | 3.0 | |
| | | 34506 A | 1,1,1-Trichloroethane (ug/L) | | | | 3.0 | |
| | | 34511 A | 1,1,2-Trichloroethane (ug/L) | | | | 3.0 | |
| | | 39180 A | Trichloroethylene; TCE (ug/L) | | | | 3.0 | |
| | | 39175 A | Vinyl chloride (ug/L) | | | | 1.0 | |
| | | 81551 A | Xylenes, mixed (ug/L) | | | | 3.0 | |
| SH1391 | Limited | | GC/MS analysis of purgeable organic compounds. Conforms to EPA Method #524. Includes all compounds listed in SH 1390. Triplicate sample required. (ug/L) | 288.00 | 3x40mL | GCV | .2 | |
| SH1392 | Limited | | GC/MS analysis of purgeable organic compounds. Conforms to EPA Method #524. Includes all compounds listed in SH 1390 and tentative identification of all other compounds. Quantitation relative to internal standard. Triplicate sample required. (ug/L) | 368.00 | 3x40mL | GCV | .2 | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample design-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides** | | | | | | | | |
| **Carbamate insecticides** | | | | | | | | |
| SH1359 | Limited | | Carbamate insecticides, total recoverable | 201.00 | 800 mL | GCC | | |
| | | ----- | C Aldicarb (ug/L) | | | | 0.5 | |
| | | ----- | C Aldicarb sulfoxide (ug/L) | | | | 0.5 | |
| | | ----- | C Aldicarb sulfone (ug/L) | | | | 0.5 | |
| | | ----- | C Carbofuran (ug/L) | | | | 0.5 | |
| | | ----- | A 3-Hydroxycarbofuran (ug/L) | | | | 0.5 | |
| | | 39051 | A Methomyl (ug/L) | | | | 0.5 | |
| | | ----- | A 1-Naphthol (ug/L) | | | | 0.5 | |
| | | ----- | C Oxamyl (ug/L) | | | | 0.5 | |
| | | 39052 | A Propham (ug/L) | | | | 0.5 | |
| | | 39750 | A Carbaryl (ug/L) | | | | 0.5 | |
| **Chlorophenoxy acid herbicides** | | | | | | | | |
| SH1301 | Regular | | Chlorophenoxy acid herbicides, dissolved | 268.00 | 800 mL | GCC | | |
| | | 39732 | A 2,4-D (ug/L) | | | | .01 | |
| | | 82356 | A 2,4-DP (ug/L) | | | | .01 | |
| | | 39762 | A Silvex (ug/L) | | | | .01 | |
| | | 39742 | A 2,4,5-T (ug/L) | | | | .01 | |
| SH1302 | Regular | | Chlorophenoxy acid herbicides, suspended recoverable | 300.00 | 800 mL | GCC | | |
| | | 39733 | A 2,4-D (ug/L) | | | | .01 | |
| | | 34608 | A 2,4-DP (ug/L) | | | | .01 | |
| | | 39763 | A Silvex (ug/L) | | | | .01 | |
| | | 39743 | A 2,4,5-T (ug/L) | | | | .01 | |
| SH1304 | Regular | | Chlorophenoxy acid herbicides, total recoverable | 251.00 | 800 mL | GCC | | |
| | | 39730 | B 2,4-D (ug/L) | | | | .01 | |
| | | 82183 | A 2,4-DP (ug/L) | | | | .01 | |
| | | 39760 | B Silvex (ug/L) | | | | .01 | |
| | | 39740 | B 2,4,5-T (ug/L) | | | | .01 | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| SH0079 | Limited | | Chlorophenoxy acid herbicides with dicamba and picloram, total recoverable | 273.00 | 800 mL | GCC | | |
| | | 39730 B | 2,4-D (ug/L) | | | | .01 | |
| | | 82052 A | Dicamba (ug/L) | | | | .01 | |
| | | 82183 A | 2,4-DP (ug/L) | | | | .01 | |
| | | 39720 A | Picloram (ug/L) | | | | .01 | |
| | | 39760 B | Silvex (ug/L) | | | | .01 | |
| | | 39740 B | 2,4,5-T (ug/L) | | | | .01 | |
| SH1305 | Regular | | Chlorophenoxy acid herbicides, recoverable from bottom material, dry wt. | 386.00 | 200 g | BGC | | |
| | | 39731 A | 2,4-D (ug/kg) | | | | .1 | |
| | | 34609 A | 2,4-DP (ug/kg) | | | | .1 | |
| | | 39761 A | Silvex (ug/kg) | | | | .1 | |
| | | 39741 A | 2,4,5-T (ug/kg) | | | | .1 | |
| SH0080 | Limited | | Chlorophenoxy acid herbicides with dicamba and picloram, recoverable from bottom material, dry wt. | 438.00 | 200 g | BGC | | |
| | | 39731 A | 2,4-D (ug/kg) | | | | .1 | |
| | | 38931 A | Dicamba (ug/kg) | | | | .1 | |
| | | 34609 A | 2,4-DP (ug/kg) | | | | .1 | |
| | | 38930 A | Picloram (ug/kg) | | | | .1 | |
| | | 39761 A | Silvex (ug/kg) | | | | .1 | |
| | | 39741 A | 2,4,5-T (ug/kg) | | | | .1 | |
| **Organochlorine compounds** | | | | | | | | |
| SH1321 | Regular | | Organochlorine insecticides with gross PCB, dissolved | 160.00 | 800 mL | GCC | | |
| | | 39331 A | Aldrin (ug/L) | | | | .01 | |
| | | 39352 A | Chlordane (ug/L) | | | | .1 | |
| | | 39361 A | DDD (ug/L) | | | | .01 | |
| | | 39366 A | DDE (ug/L) | | | | .01 | |
| | | 39371 A | DDT (ug/L) | | | | .01 | |

(Schedule continued on next page)

## Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| **Organochlorine compounds--Continued** | | | | | | | | |
| SH1321 | | 39381 A | Dieldrin (ug/L) | | | | .01 | |
| | | 82354 A | Endosulfan (ug/L) | | | | .01 | |
| | | 39391 A | Endrin (ug/L) | | | | .01 | |
| | | 39517 A | Gross polychlorinated biphenyls (ug/L as PCB) | | | | .1 | |
| | | 82360 A | Gross polychlorinated naphthalenes (ug/L as PCN) | | | | .1 | |
| | | 39411 A | Heptachlor (ug/L) | | | | .01 | |
| | | 39421 A | Heptachlor epoxide (ug/L) | | | | .01 | |
| | | 39341 A | Lindane (ug/L) | | | | .01 | |
| | | 82350 A | Methoxychlor (ug/L) | | | | .01 | |
| | | 39756 A | Mirex (ug/L) | | | | .01 | |
| | | 82348 A | Perthane (ug/L) | | | | .1 | |
| | | 39401 A | Toxaphene (ug/L) | | | | 1.0 | |
| SH1322 | Regular | | Organochlorine insecticides with gross PCB and gross PCN, suspended recoverable. | 176.00 | 800 mL | GCC | | |
| | | 39332 A | Aldrin (ug/L) | | | | .01 | |
| | | 39353 A | Chlordane (ug/L) | | | | .1 | |
| | | 39362 A | DDD (ug/L) | | | | .01 | |
| | | 39367 A | DDE (ug/L) | | | | .01 | |
| | | 39372 A | DDT (ug/L) | | | | .01 | |
| | | 39382 A | Dieldrin (ug/L) | | | | .01 | |
| | | 82355 A | Endosulfan (ug/L) | | | | .01 | |
| | | 39392 A | Endrin (ug/L) | | | | .01 | |
| | | 39518 A | Gross polychlorinated biphenyls (ug/L as PCB) | | | | .1 | |
| | | 82361 A | Gross polychlorinated naphthalenes (ug/L as PCN) | | | | .1 | |
| | | 39412 A | Heptachlor (ug/L) | | | | .01 | |
| | | 39422 A | Heptachlor epoxide (ug/L) | | | | .01 | |
| | | 39342 A | Lindane (ug/L) | | | | .01 | |
| | | 82351 A | Methoxychlor (ug/L) | | | | .01 | |
| | | 39757 A | Mirex (ug/L) | | | | .01 | |
| | | 82349 A | Perthane (ug/L) | | | | .1 | |
| | | 39402 A | Toxaphene (ug/L) | | | | 1.0 | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| **Organochlorine compounds--Continued** | | | | | | | | |
| LC0806 | Limited | 39337 A | alpha-BHC, total recoverable (ug/L) | 25.00 | 800 mL | GCC | .01 | A |
| LC0807 | Limited | 39338 A | beta-BHC, total recoverable (ug/L) | 25.00 | 800 mL | GCC | .01 | A |
| LC0808 | Limited | 34259 A | delta-BHC, total recoverable (ug/L) | 25.00 | 800 mL | GCC | .01 | A |
| SH1324 | Regular | | Organochlorine insecticides with gross PCB and PCN, total recoverable. | 159.00 | 800 mL | GCC | | |
| | | 39330 C | Aldrin (ug/L) | | | | .01 | |
| | | 39350 B | Chlordane (ug/L) | | | | .1 | |
| | | 39360 C | DDD (ug/L) | | | | .01 | |
| | | 39365 C | DDE (ug/L) | | | | .01 | |
| | | 39370 C | DDT (ug/L) | | | | .01 | |
| | | 39380 C | Dieldrin (ug/L) | | | | .01 | |
| | | 39388 C | Endosulfan (ug/L) | | | | .01 | |
| | | 39390 C | Endrin (ug/L) | | | | .01 | |
| | | 39516 B | Gross polychlorinated biphenyls (ug/L as PCB) | | | | .1 | |
| | | 39250 B | Gross polychlorinated naphthalenes (ug/L as PCN) | | | | .1 | |
| | | 39410 C | Heptachlor (ug/L) | | | | .01 | |
| | | 39420 C | Heptachlor epoxide (ug/L) | | | | .01 | |
| | | 39340 C | Lindane (ug/L) | | | | .01 | |
| | | 39480 B | Methoxychlor (ug/L) | | | | .01 | |
| | | 39755 B | Mirex (ug/L) | | | | .01 | |
| | | 39034 A | Perthane (ug/L) | | | | .1 | |
| | | 39400 B | Toxaphene (ug/L) | | | | 1.0 | |
| SH1325 | Regular | | Organochlorine compounds, recoverable from bottom material, dry wt. | 386.00 | 200 g | BGC | | |
| | | 39333 A | Aldrin (ug/kg) | | | | .1 | |
| | | 39351 A | Chlordane (ug/kg) | | | | 1.0 | |
| | | 39363 A | DDD (ug/kg) | | | | .1 | |
| | | 39368 A | DDE (ug/kg) | | | | .1 | |
| | | 39373 A | DDT (ug/kg) | | | | .1 | |

(Schedule continued on next page)



(Remarks: A, must be requested with appropriate schedule, e.g. SH1324.)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| **Organochlorine compounds--Continued** | | | | | | | | |
| SH1325 | | 39383 A | Dieldrin (ug/kg) | | | | .1 | |
| | | 39389 A | Endosulfan (ug/kg) | | | | .1 | |
| | | 39393 A | Endrin (ug/kg) | | | | .1 | |
| | | 39519 A | Gross polychlorinated biphenyls (ug/kg as PCB) | | | | 1.0 | |
| | | 39251 A | Gross polychlorinated naphthalenes (ug/kg as PCN) | | | | 1.0 | |
| | | 39413 A | Heptachlor (ug/kg) | | | | .1 | |
| | | 39423 A | Heptachlor epoxide (ug/kg) | | | | .1 | |
| | | 39343 A | Lindane (ug/kg) | | | | .1 | |
| | | 39481 A | Methoxychlor (ug/kg) | | | | .1 | |
| | | 39758 A | Mirex (ug/kg) | | | | .1 | |
| | | 81886 A | Perthane (ug/kg) | | | | 1.0 | |
| | | 39403 A | Toxaphene (ug/kg) | | | | 10 | |
| **Organophosphorus insecticides** | | | | | | | | |
| SH1316 | Regular | | Organophosphorus insecticides, dissolved | 150.00 | 800 mL | GCC | | |
| | | ----- | Chlorpyrifos (ug/L) | | | | .01 | |
| | | 39572 A | Diazinon (ug/L) | | | | .01 | |
| | | ----- | Disulfoton (ug/L) | | | | .01 | |
| | | 82346 A | Ethion (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | .01 | |
| | | 39532 A | Malathion (ug/L) | | | | .01 | |
| | | 39602 A | Methyl parathion (ug/L) | | | | .01 | |
| | | 82344 A | Methyl trithion (ug/L) | | | | .01 | |
| | | 39542 A | Parathion (ug/L) | | | | .01 | |
| | | ----- | Phorate (ug/L) | | | | .01 | |
| | | 82342 A | Trithion (ug/L) | | | | .01 | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| **Organophosphorus insecticides--Continued** | | | | | | | | |
| SH1317 | Regular | | Organophosphorus insecticides, suspended recoverable | 164.00 | 800 mL | GCC | | |
| | | ----- | Chlorpyrifos; Dursban (ug/L) | | | | .01 | |
| | | 39573 A | Diazinon (ug/L) | | | | .01 | |
| | | ----- | Disulfoton (ug/L) | | | | .01 | |
| | | 82347 A | Ethion (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | .01 | |
| | | 39533 A | Malathion (ug/L) | | | | .01 | |
| | | 39603 A | Methyl parathion (ug/L) | | | | .01 | |
| | | 82345 A | Methyl trithion (ug/L) | | | | .01 | |
| | | 39543 A | Parathion (ug/L) | | | | .01 | |
| | | ----- | Phorate (ug/L) | | | | | |
| | | 82343 A | Trithion (ug/L) | | | | .01 | |
| LC0802 | Limited | 39040 | DEF, total recoverable (ug/L) | 28.60 | 800 mL | GCC | .01 | B |
| LC0805 | Limited | 39580 | Azinphos-methyl, total recoverable (ug/L) | 28.60 | 800 mL | GCC | .1 | B |
| SH1319 | Regular | | Organophosphorus insecticides, total recoverable | 144.00 | 800 mL | GCC | | |
| | | ----- | Chlorpyrifos (ug/L) | | | | .01 | |
| | | 39570 B | Diazinon (ug/L) | | | | .01 | |
| | | ----- | Disulfoton (ug/L) | | | | | |
| | | 39398 B | Ethion (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | | |
| | | 39530 B | Malathion (ug/L) | | | | .01 | |
| | | 39600 B | Methyl parathion (ug/L) | | | | .01 | |
| | | 39790 B | Methyl trithion (ug/L) | | | | .01 | |
| | | 39540 B | Parathion (ug/L) | | | | .01 | |
| | | ----- | Phorate (ug/L) | | | | | |
| | | 39786 B | Trithion (ug/L) | | | | .01 | |

(Remarks: B, must be requested in conjunction with SH1319).

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| SH1320 | Regular | | Organophosphorus insecticides, recoverable from bottom material, dry wt. | 236.00 | 200 g | BGC | | |
| | | ----- | Chlorpyrifos; Dursban (ug/L) | | | | .1 | |
| | | 39571 A | Diazinon (ug/kg) | | | | .1 | |
| | | ----- | Disulfoton (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | | |
| | | 39399 A | Ethion (ug/kg) | | | | .1 | |
| | | 39531 A | Malathion (ug/kg) | | | | .1 | |
| | | 39601 A | Methyl parathion (ug/kg) | | | | .1 | |
| | | 39791 A | Methyl trithion (ug/kg) | | | | .1 | |
| | | 39541 A | Parathion (ug/kg) | | | | .1 | |
| | | ----- | Phorate (ug/L) | | | | | |
| | | 39787 A | Trithion (ug/kg) | | | | .1 | |
| **Organochlorine compounds and organophosphorus insecticides** | | | | | | | | |
| SH1331 | Regular | | Organochlorine compounds and organophosphorus insecticides with gross PCB and gross PCN, dissolved | 243.00 | 800 mL | GCC | | |
| | | 39331 A | Aldrin (ug/L) | | | | .01 | |
| | | 39352 A | Chlordane (ug/L) | | | | .1 | |
| | | ----- | Chlorpyrifos; Dursban (ug/L) | | | | .01 | |
| | | 39361 A | DDD (ug/L) | | | | .01 | |
| | | 39366 A | DDE (ug/L) | | | | .01 | |
| | | 39371 A | DDT (ug/L) | | | | .01 | |
| | | 39572 A | Diazinon (ug/L) | | | | .01 | |
| | | 39381 A | Dieldrin (ug/L) | | | | .01 | |
| | | ----- | Disulfoton (ug/L) | | | | .01 | |
| | | 82354 A | Endosulfan (ug/L) | | | | .01 | |
| | | 39391 A | Endrin (ug/L) | | | | .01 | |
| | | 82346 A | Ethion (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | .01 | |
| | | 39517 A | Gross polychlorinated biphenyls (ug/L as PCB) | | | | .1 | |
| | | 82360 A | Gross polychlorinated naphthalenes (ug/L as PCN) | | | | .1 | |

(Schedule continued on next page)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| SH1331 | | 39411 A | Heptachlor (ug/L) | | | | .01 | |
| | | 39421 A | Heptachlor epoxide (ug/L) | | | | .01 | |
| | | 39341 A | Lindane (ug/L) | | | | .01 | |
| | | 39532 A | Malathion (ug/L) | | | | .01 | |
| | | 82350 A | Methoxychlor (ug/L) | | | | .01 | |
| | | 39602 A | Methyl parathion (ug/L) | | | | .01 | |
| | | 82344 A | Methyl trithion (ug/L) | | | | .01 | |
| | | 39756 A | Mirex (ug/L) | | | | .01 | |
| | | 39542 A | Parathion (ug/L) | | | | .01 | |
| | | 82348 A | Perthane (ug/L) | | | | .1 | |
| | | ----- | Phorate (ug/L) | | | | .01 | |
| | | 39401 A | Toxaphene (ug/L) | | | | 1.0 | |
| | | 82342 A | Trithion (ug/L) | | | | .01 | |
| SH1332 | Regular | | Organochlorine compounds and organophosphorus insecticides with gross PCB and gross PCN, suspended recoverable | 260.00 | 800 mL | GCC | | |
| | | 39332 A | Aldrin (ug/L) | | | | .01 | |
| | | 39353 A | Chlordane (ug/L) | | | | .1 | |
| | | ----- | Chlorpyrifos; Dursban (ug/L) | | | | .01 | |
| | | 39362 A | DDD (ug/L) | | | | .01 | |
| | | 39367 A | DDE (ug/L) | | | | .01 | |
| | | 39372 A | DDT (ug/L) | | | | .01 | |
| | | 39573 A | Diazinon (ug/L) | | | | .01 | |
| | | 39382 A | Dieldrin (ug/L) | | | | .01 | |
| | | ----- | Disulfoton (ug/L) | | | | .01 | |
| | | 82355 A | Endosulfan (ug/L) | | | | .01 | |
| | | 39392 A | Endrin (ug/L) | | | | .01 | |
| | | 82347 A | Ethion (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | .01 | |
| | | 39518 A | Gross polychlorinated biphenyls (ug/L as PCB) | | | | .1 | |
| | | 82361 A | Gross polychlorinated naphthalenes (ug/L as PCN) | | | | .1 | |

(Schedule continued on next page)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| SH1332 | | 39412 A | Heptachlor (ug/L) | | | | .01 | |
| | | 39422 A | Heptachlor epoxide (ug/L) | | | | .01 | |
| | | 39342 A | Lindane (ug/L) | | | | .01 | |
| | | 39533 A | Malathion (ug/L) | | | | .01 | |
| | | 82351 A | Methoxychlor (ug/L) | | | | .01 | |
| | | 39603 A | Methyl parathion (ug/L) | | | | .01 | |
| | | 82345 A | Methyl trithion (ug/L) | | | | .01 | |
| | | 39757 A | Mirex (ug/L) | | | | .01 | |
| | | 39543 A | Parathion (ug/L) | | | | .01 | |
| | | 82349 A | Perthane (ug/L) | | | | .1 | |
| | | ----- | Phorate (ug/L) | | | | .01 | |
| | | 39402 A | Toxaphene (ug/L) | | | | 1.0 | |
| | | 82343 A | Trithion (ug/L) | | | | .01 | |
| SH1334 | Regular | | Organochlorine compounds and organophosphorus insecticides with gross PCB, gross PCN, and methoxychlor, total recoverable | 250.00 | 800 mL | GCC | | |
| | | 39330 C | Aldrin (ug/L) | | | | .01 | |
| | | 39350 B | Chlordane (ug/L) | | | | .1 | |
| | | ----- | Chlorpyrifos; Dursban (ug/L) | | | | .01 | |
| | | 39360 C | DDD (ug/L) | | | | .01 | |
| | | 39365 C | DDE (ug/L) | | | | .01 | |
| | | 39370 C | DDT (ug/L) | | | | .01 | |
| | | 39570 B | Diazinon (ug/L) | | | | .01 | |
| | | 39380 C | Dieldrin (ug/L) | | | | .01 | |
| | | ----- | Disulfoton (ug/L) | | | | .01 | |
| | | 39388 C | Endosulfan (ug/L) | | | | .01 | |
| | | 39390 C | Endrin (ug/L) | | | | .01 | |
| | | 39398 B | Ethion (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | .01 | |
| | | 39516 B | Gross polychlorinated biphenyls (ug/L as PCB) | | | | .1 | |
| | | 39250 B | Gross polychlorinated naphthalenes (ug/L as PCN) | | | | .1 | |

(Schedule continued on next page)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample designation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| **Organochlorine compounds and organophosphorus insecticides--Continued** | | | | | | | | |
| SH1334 | | 39410 C | Heptachlor (ug/L) | | | | .01 | |
| | | 39420 C | Heptachlor epoxide (ug/L) | | | | .01 | |
| | | 39340 C | Lindane (ug/L) | | | | .01 | |
| | | 39530 B | Malathion (ug/L) | | | | .01 | |
| | | 39480 B | Methoxychlor (ug/L) | | | | .01 | |
| | | 39600 B | Methyl parathion (ug/L) | | | | .01 | |
| | | 39790 B | Methyl trithion (ug/L) | | | | .01 | |
| | | 39755 B | Mirex (ug/L) | | | | .01 | |
| | | 39540 B | Parathion (ug/L) | | | | .01 | |
| | | 39034 A | Perthane (ug/L) | | | | .1 | |
| | | ----- | Phorate (ug/L) | | | | .01 | |
| | | 39400 B | Toxaphene (ug/L) | | | | 1.0 | |
| | | 39786 B | Trithion (ug/L) | | | | .01 | |
| SH1399 | Special | | Organochlorine compounds and organophosphorus insecticides with gross PCB, gross PCN, and methoxychlor, total recoverable | 290.00 | 800 mL | GCC | | |
| | | 39330 B | Aldrin (ug/L) | | | | .001 | |
| | | 39350 B | Chlordane (ug/L) | | | | .1 | |
| | | ----- | Chlorpyrifos; Dursban (ug/L) | | | | .01 | |
| | | 39360 B | DDD (ug/L) | | | | .001 | |
| | | 39365 B | DDE (ug/L) | | | | .001 | |
| | | 39370 B | DDT (ug/L) | | | | .001 | |
| | | 39570 B | Diazinon (ug/L) | | | | .01 | |
| | | 39380 B | Dieldrin (ug/L) | | | | .001 | |
| | | ----- | Disulfoton (ug/L) | | | | .01 | |
| | | 39388 B | Endosulfan (ug/L) | | | | .01 | |

(Schedule continued on next page)

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| **Organochlorine compounds and organophosphorus insecticides--Continued** | | | | | | | | |
| SH1399 | | 39390 | B Endrin (ug/L) | | | | .001 | |
| | | 39398 | B Ethion (ug/L) | | | | .01 | |
| | | ----- | Fonofos (ug/L) | | | | .01 | |
| | | 39516 | B Gross polychlorinated biphenyls (ug/L as PCB) | | | | .1 | |
| | | 39250 | B Gross polychlorinated naphthalenes (ug/L as PCN) | | | | .1 | |
| | | 39410 | B Heptachlor (ug/L) | | | | .001 | |
| | | 39420 | B Heptachlor epoxide (ug/L) | | | | .001 | |
| | | 39340 | B Lindane (ug/L) | | | | .001 | |
| | | 39530 | B Malathion (ug/L) | | | | .01 | |
| | | 39480 | B Methoxychlor (ug/L) | | | | .01 | |
| | | 39600 | B Methyl parathion (ug/L) | | | | .01 | |
| | | 39790 | B Methyl trithion (ug/L) | | | | .01 | |
| | | 39755 | B Mirex (ug/L) | | | | .01 | |
| | | 39540 | B Parathion (ug/L) | | | | .01 | |
| | | 39034 | A Perthane (ug/L) | | | | .1 | |
| | | ----- | Phorate (ug/L) | | | | .01 | |
| | | 39400 | B Toxaphene (ug/L) | | | | 1.0 | |
| | | 39786 | B Trithion (ug/L) | | | | .01 | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| **Organochlorine compounds and organophosphorus insecticides--Continued** | | | | | | | | |
| SH1335 | Regular | | Organochlorine compounds and organophosphorus insecticides, recoverable from bottom material, dry wt. | 457.00 | 200 g | BGC | | |
| | | 39333 A | Aldrin (ug/kg) | | | | .1 | |
| | | 39351 A | Chlordane (ug/kg) | | | | 1.0 | |
| | | ----- | Chlorpyrifos; Dursban (ug/L) | | | | .1 | |
| | | 39363 A | DDD (ug/kg) | | | | .1 | |
| | | 39368 A | DDE (ug/kg) | | | | .1 | |
| | | 39373 A | DDT (ug/kg) | | | | .1 | |
| | | 39571 A | Diazinon (ug/kg) | | | | .1 | |
| | | 39383 A | Dieldrin (ug/kg) | | | | .1 | |
| | | 39389 A | Endosulfan (ug/kg) | | | | .1 | |
| | | 39393 A | Endrin (ug/kg) | | | | .1 | |
| | | 39399 A | Ethion (ug/kg) | | | | .1 | |
| | | 39519 A | Gross polychlorinated biphenyls (ug/kg as PCB) | | | | 1.0 | |
| | | 39251 A | Gross polychlorinated naphthalenes (ug/kg as PCN) | | | | 1.0 | |
| | | 39413 A | Heptachlor (ug/kg) | | | | .1 | |
| | | 39423 A | Heptachlor epoxide (ug/kg) | | | | .1 | |
| | | 39343 A | Lindane (ug/kg) | | | | .1 | |
| | | 39531 A | Malathion (ug/kg) | | | | .1 | |
| | | 39481 A | Methoxychlor (ug/kg) | | | | .1 | |
| | | 39601 A | Methyl parathion (ug/kg) | | | | .1 | |
| | | 39791 A | Methyl trithion (ug/kg) | | | | .1 | |
| | | 39758 A | Mirex (ug/kg) | | | | .1 | |
| | | 39541 A | Parathion (ug/kg) | | | | .1 | |
| | | 81886 A | Perthane (ug/kg) | | | | 1.0 | |
| | | 39403 A | Toxaphene (ug/kg) | | | | 10 | |
| | | 39787 A | Trithion (ug/kg) | | | | .1 | |

Table 4.3.--Organic Analyses--Continued

| Lab code or schedule | Class | WATSTORE & method code | Parameter name and unit of measurement | Price ($) | Sample volume | Sample desig-nation | Reporting level | Remarks |
|---|---|---|---|---|---|---|---|---|
| **Pesticides--Continued** | | | | | | | | |
| SH1474 | Regular | | Organochlorine, organophosphorus, and phenoxy acid compounds, total recoverable. Includes specific analysis for compounds listed in SH1304, SH1319, and SH1324. | 460.00 | 1600 mL | GCC | | |
| **Triazines and other nitrogen-containing herbicides** | | | | | | | | |
| SH1389 | Regular | | Triazines and other nitrogen-containing herbicides, total recoverable | 230.00 | 800 mL | GCC | | |
| | | 77825 C | Alachlor (ug/L) | | | | .1 | |
| | | 82184 A | Ametryn (ug/L) | | | | .1 | |
| | | 39630 A | Atrazine (ug/L) | | | | .1 | |
| | | 81757 A | Cyanazine (ug/L) | | | | .1 | |
| | | 82612 C | Metolachlor (ug/L) | | | | .1 | |
| | | 82611 C | Metribuzin (ug/L) | | | | .1 | |
| | | 39056 A | Prometon (ug/L) | | | | .1 | |
| | | 39057 A | Prometryn (ug/L) | | | | .1 | |
| | | 39024 A | Propazine (ug/L) | | | | .1 | |
| | | 39055 A | Simazine (ug/L) | | | | .1 | |
| | | 39054 A | Simetryn (ug/L) | | | | .1 | |
| | | 39030 C | Trifluralin (ug/L) | | | | .1 | |

# Part 5: Indices of Analytical Methodology and Chemical Abstract Services (CAS) Numbers

## Introduction

The precision numbers shown in Tables 5.2 (Inorganic) and 5.3.1 (Organic) were computed as the relative standard deviation (coefficient of variation) of a set of determinations. Each number is associated with the low, medium, and high concentration of the analytical range. Not all of the precision values have the same degree of reliability because data of different types were used in arriving at values reported in these tables. Precision data based on multi-laboratory values are considered more reliable than values based on single-laboratory, multiple-operator data; similarly, values based on multiple-operator data are considered more reliable than values based on single-operator data. Furthermore, precision values based on analyses of natural waters are considered more reliable than values based on analyses of pure solutions prepared in the laboratory.

Precision values shown in the catalog are intended to be used as a guide in requesting analyses. An alpha-numeric code is associated with each set of precision values. The alpha character refers to the list on page 5-2, "Methods used to derive precision values" and the numeric value refers to the list on page 5-3, "Sources and references for precision data." The alpha-numeric code provides a rough means of identifying the type of sample on which the precision is based and gives a reference which should be consulted prior to any interpretation of the data.

It should be noted that total, total recoverable, and bottom material precision data in the catalog are generally estimates based on dissolved, multilab precision data. Also, in order to make a realistic comparison of one table value with another, single-operator precision values were multiplied by an arbitrary factor of three to avoid giving the requestors a false sense of confidence in the precision of the data they receive.

**Methods used to derive precision values**
(In order of decreasing confidence in the values used)

A. Multilaboratory, natural (or contaminated) water precision data available at or near the designated level. Data may be preliminary or may be based on results from a limited number of samples or concentration levels.

B. Multilaboratory, deionized water precision data available at or near the designated level. Where it is not clear whether multilaboratory data were obtained using natural or distilled water, this letter, "B", is used.

C. Single laboratory, multiple operator, natural water precision data available at or near the designated level. May be expected to be a smaller value than that of "A".

D. Single laboratory, multiple operator, deionized water precision data available at or near the designated level. May be expected to be a smaller value than that of "B".

E. Single operator, natural water precision data available at or near the designated level. The value is likely to be half or less than "A" type data; so that the data user will not feel a false confidence in the value, an arbitrary multiplication factor of three was used in calculating category "E" data.

F. Single operator, distilled water precision data available at or near the designated level. The value is likely to be half or less than "B" type data; so that the data user will not feel a false confidence in the value, an arbitrary multiplication factor of three was used in calculating category "F" data.

G. Estimate of total, total recoverable, and bottom material precision based on dissolved, multilaboratory precision data.

H. Estimate of total, total recoverable, and bottom material precision based on dissolved, single laboratory precision data.

I. Estimate of total, total recoverable, and bottom material precision based on dissolved, single operator precision data.

J. Estimate of precision based on precision data from a similar method. For example, data are available for a manual, but not for the automated procedure.

K. Completely unsupported estimate found in the literature. (For example "although no data are available, the precision should be . . . . ").

## Sources and references for precision data


1. American Public Health Association and others, 1985, Standard methods for the examination of water and wastewater (16th ed.): Washington, D.C., American Public Health Association, 1193 p.

2. Fishman, M. J., Bradford, W. L., 1982, Methods for the determination of inorganic substances in water and fluvial sediments: U.S. Geological Survey, Open-file report 82-272, 136 p.

3. Fishman, M. J., Pyen, G. 1979, Determination of selected anions in water by ion chromatography: U.S. Geological Survey, Lakewood, Colorado, Water-Resources Investigations 79-101,

4. Greeson, P. E., 1979, A supplement to methods for collection and analysis of aquatic biological and microbiological samples: U.S. Geological Survey, Open-file report 79-1279, 92 p.

5. McGirr, D. J., 1974, Specific conductance, pH, colour, and residue: Interlaboratory Quality Control Study No. 6, Report Series No. 28, Information Canada, 6 p.

6. Sherma, J. B., Morton, 1981, Manual of analytical quality control for pesticides and related compounds: U.S. Environmental Protection Agency, Research Triangle Park, N.C., 455 p.

7. Fishman, M. J., Friedman, L. C., 1989, Methods for the analyses of inorganic substances in water and fluvial sediment: U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 5, Chapter A1, 626 p.

8. Thatcher, L.L., Janzer, V.J., Edwards, K. W., 1977, Methods for determinations of radioactive substances in water and fluvial sediments: U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 5, Chapter A 5, 95 p.

9. U.S. Environmental Protection Agency, 1983, Methods for chemical analyses of water and wastes: U.S. Environmental Protection Agency, Cincinnati, Ohio.

10. U.S. Geological Survey, Unpublished data, on file in the National Water Quality Laboratory, Denver, Colorado.

11. Wershaw, R. L., Fishman, M. J., Grabbe, R.R., and Lowe, L.E., 1987 Methods for the determination of organic substances in water and fluvial sediments: U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 5, Chapter A 3, 80 p.

## Table 5.2.--Index of analytical methodology for inorganic analyses

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Acidity** | | | | | | | | | |
| total (mg/L as H) | | | | | | | | | |
| LC0001 | .1 to -- | 9 | -- | -- | B01 | 71825 A | I-1020-85 | Titrimetry, electrometric | 4-9 |
| LC1266 | .01 to -- | -- | -- | -- | -- | 71825 B | --------- | Titrimetry, electrometric, low ionic, auto | 4-15 |
| **Alkalinity** | | | | | | | | | |
| total (mg/L as $CaCO_3$) | | | | | | | | | |
| LC0070 | 1 to -- | 7 | 12 | -- | A05 | 90410 A | I-2030-85 | Titrimetry, electrometric, auto | 4-9 |
| LC1270 | .5 to -- | | | | -- | 90410 B | I-2034-86 | Titrimetry, electrometric, low ionic, auto | 4-15 |
| **Aluminum** | | | | | | | | | |
| dissolved (ug/L as Al) | | | | | | | | | |
| LC1284 | 10 to 1,000 | -- | -- | -- | C11 | 01106 E | I-1054-86 | Atomic emission, DC plasma | 4-9 |
| total recoverable (ug/L as Al) | | | | | | | | | |
| LC1283 | 10 to 1,000 | -- | -- | -- | C11 | 01105 C | I-3054-86 | Atomic emission, DC plasma | 4-14 |
| total in bottom material, dry wt. (ug/g as Al) | | | | | | | | | |
| LC1282 | 10 to -- | -- | -- | -- | C11 | 01108 C | I-5054-86 | Digest, atomic emission, DC plasma | 4-16 |
| **Antimony** | | | | | | | | | |
| dissolved (ug/L as Sb) | | | | | | | | | |
| LC0077 | 1 to 15 | 4 | 3 | -- | A05 | 01095 A | I-1055-85 | Atomic absorption, hydride | 4-9 |
| total (ug/L as Sb) | | | | | | | | | |
| LC0080 | 1 to 15 | > 4 | >3 | -- | G05 | 01097 A | I-3055-85 | Atomic absorption, hydride | 4-15 |
| total in bottom material, dry wt. (ug/g as Sb) | | | | | | | | | |
| LC0534 | 1 to 15 | > 4 | >3 | -- | G05 | 01098 A | I-5055-85 | Atomic absorption, hydride | 4-17 |
| **Arsenic** | | | | | | | | | |
| dissolved (ug/L as As) | | | | | | | | | |
| LC0112 | 1 to 15 | 5 | 5 | -- | A05 | 01000 B | I-2062-85 | Atomic absorption, hydride, auto | 4-9 |
| total (ug/L as As) | | | | | | | | | |
| LC0118 | 1 to 15 | > 5 | > 5 | -- | G05 | 01002 B | I-4062-85 | Atomic absorption, hydride, auto | 4-15 |
| total in bottom material, dry wt. (ug/g as As) | | | | | | | | | |
| LC0597 | 1 to 15 | > 5 | > 5 | -- | G05 | 01003 C | I-6062-85 | Atomic absorption, hydride, auto | 4-17 |
| **Barium** | | | | | | | | | |
| dissolved (ug/L as Ba) | | | | | | | | | |
| LC0007 | 100 to 5,000 | 38 | 16 | -- | A05 | 01005 B | I-1084-85 | Atomic absorption, direct | 4-9 |
| SH1043 | 2 to 10,000 | 9 | 7 | 5 | A07 | 01005 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Ba) | | | | | | | | | |
| LC0234 | 100 to 5,000 | > 38 | >16 | -- | G05 | 01007 A | I-3084-85 | Digest, atomic absorption, direct | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as Ba) | | | | | | | | | |
| LC0521 | 10 to -- | > 38 | -- | -- | G05 | 01008 A | I-5084-85 | Digest, atomic absorption, direct | 4-16 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Beryllium** | | | | | | | | | |
| dissolved (ug/L as Be) | | | | | | | | | |
| LC0170 | 10 to 200 | 19 | -- | -- | A05 | 01010 A | I-1095-85 | Atomic absorption, direct | 4-9 |
| SH1043 | 0.5 to 10,000 | 31 | 15 | -- | A07 | 01010 B | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Be) | | | | | | | | | |
| LC0236 | 10 to 200 | > 19 | -- | -- | G05 | 01012 A | I-3095-85 | Digest, atomic absorption, direct | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as Be) | | | | | | | | | |
| LC0522 | 1.0 to -- | > 19 | -- | -- | G05 | 01013 A | I-5095-85 | Digest, atomic absorption, direct | 4-16 |
| **Boron** | | | | | | | | | |
| dissolved (ug/L as B) | | | | | | | | | |
| LC1183 | 10 to 10,000 | > 6 | -- | > 3 | C11 | 01020 B | I-1114-86 | Atomic emission DC plasma, direct | 4-9 |
| total recoverable (ug/L as B) | | | | | | | | | |
| LC1286 | 10 to 1,000 | > 6 | -- | >3 | C11 | 01022 B | I-3114-86 | Atomic emission, DC plasma, direct | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as B) | | | | | | | | | |
| LC1285 | 10 to 10,000 | > 6 | -- | >3 | C11 | 01023 C | I-5114-86 | Atomic emission, DC plasma, direct | 4-16 |
| **Bromide** | | | | | | | | | |
| dissolved (mg/L as Br) | | | | | | | | | |
| LC1246 | .01 to .40 | 15 | 5 | 2 | E11 | 71870 E | I-2129-85 | Colorimetry, fluorescein, auto | 4-9 |
| SH1101 | .01 to .60 | -- | -- | -- | --- | 71870 F | I-2058-85 | Ion chromatography, auto | 4-11 |
| **Cadmium** | | | | | | | | | |
| dissolved (ug/L as Cd) | | | | | | | | | |
| LC1554 | 1 to 20 | | | | | 01025 F | I-1138-89 | Atomic absorption, graphite furnace | |
| LC0126 | 10 to 250 | 31 | -- | -- | A05 | 01025 A | I-1135-85 | Atomic absorption, direct | 4-9 |
| LC1250 | .1 to 3.0 | 23 | 4 | 2 | E11 | 01025 E | I-1137-85 | Atomic absorption, graphite furnance | 4-9 |
| SH1043 | 1 to 10,000 | 10 | -- | -- | A07 | 01025 D | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Cd) | | | | | | | | | |
| LC0131 | 10 to 250 | > 31 | -- | -- | G05 | 01027 A | I-3135-85 | Digest, atomic absorption, direct | 4-14 |
| LC1555 | 1 to 20 | | | | | 01027 F | I-3138-89 | Digest, atomic absorption, graphite furnace | |
| recoverable from bottom material, dry wt. (ug/g as Cd) | | | | | | | | | |
| LC0502 | 1 to -- | > 31 | -- | -- | G05 | 01028 B | I-5135-85 | Digest, atomic absorption, direct | 4-16 |
| **Calcium** | | | | | | | | | |
| dissolved (mg/L as Ca) | | | | | | | | | |
| LC0012 | .1 to 60 | 7 | -- | 8 | A05 | 00915 C | I-1152-85 | Atomic absorption, direct | 4-9 |
| LC0831 | .01 to 5.0 | 40 | 10 | 1 | A05 | 00915 B | I-1152-85 | Atomic absorption, direct | 4-9 |
| SH0146 | .02 to 1,000 | 7 | 4 | -- | A07 | 00915 D | I-1472-85 | Atomic emission, ICP, direct | 4-12 |
| SH1043 | .02 to 1,000 | 7 | 4 | -- | A07 | 00915 D | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| SH1102 | .02 to 100 | 7 | 4 | -- | A07 | 00915 E | I-1472-85 | Atomic emission, ICP, direct | 4-12 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Calcium--Continued | | | | | | | | | |
| total recoverable (mg/L as Ca) | | | | | | | | | |
| LC0244 | .1 to 60 | > 7 | -- | > 8 | G05 | 00916 B | I-3152-85 | Digest, atomic absorption, direct | 4-14 |
| LC0324 | .1 to 60 | > 7 | -- | > 8 | G05 | 00916 A | I-3153-85 | EPA digest, atomic absorption, direct | 4-14 |
| recoverable from bottom material, dry wt. (mg/kg as Ca) | | | | | | | | | |
| LC0696 | 10 to -- | > 7 | -- | >8 | G05 | 00917 A | I-5152-85 | Digest, atomic absorption, direct | 4-16 |
| Carbon-13/carbon-12 | | | | | | | | | |
| dissolved, ratio permil | | | | | | | | | |
| LC0440 | .15 to -- | -- | -- | -- | -- | 82081 A | --------- | Mass spectrometry | 4-15 |
| total in bottom material | | | | | | | | | |
| carbonate rock, ratio permil | | | | | | | | | |
| LC1135 | -.50 to | -- | -- | -- | -- | 82339 A | --------- | Mass spectrometry | 4-23 |
| high purity gaseous carbon dioxide, ratio permil | | | | | | | | | |
| LC1244 | .15 to | | | | | ----- | --------- | ---------- | 4-23 |
| total organic, soil or rock mat., ratio permil | | | | | | | | | |
| LC1205 | .15 to -- | | | | | ----- | --------- | ---------- | 4-23 |
| Carbon-14 | | | | | | | | | |
| dissolved | | | | | | | | | |
| percent modern, water sample | | | | | | | | | |
| LC1198 | .7 to -- | -- | -- | -- | -- | 82172 A | R-1100-76 | Liquid scintillation | 4-23 |
| percent modern, precip carbonate | | | | | | | | | |
| LC1199 | .7 to -- | -- | -- | -- | -- | 82172 B | R-1100-76 | Liquid scintillation | 4-23 |
| Chloride | | | | | | | | | |
| dissolved (mg/L as Cl) | | | | | | | | | |
| LC0015 | .1 to 100 | | | | | 00940 E | I-2187-85 | Colorimetry, thiocyanate, auto | 4-9 |
| SH1101 | .01 to 3.0 | 4 | -- | 3 | E11 | 00940 I | I-2058-85 | Ion chromatography, auto | 4-11 |
| Chromium | | | | | | | | | |
| dissolved (ug/L as Cr) | | | | | | | | | |
| LC0727 | 1 to 10,000 | | | | | 01030 F | I-1229-87 | DC plasma, direct | 4-9 |
| LC1251 | .5 to 12 | 2 | 1 | 1 | E11 | 01030 D | I-1235-85 | Atomic absorption, graphite furnace | 4-9 |
| SH1043 | 5 to 10,000 | -- | -- | -- | -- | 01030 E | I-1472-87 | Atomic emission, ICP, direct | 4-9 |
| total recoverable (ug/L as Cr) | | | | | | | | | |
| LC0726 | 1 to 10,000 | -- | -- | -- | -- | 01034 D | I-3229-87 | Digest, DC plasma, direct | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as Cr) | | | | | | | | | |
| LC0505 | 1 to | -- | > 27 | -- | G05 | 01029 B | I-5236-85 | Digest, atomic absorption, direct | 4-16 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Chromium, hexavalent | | | | | | | | | |
| dissolved (ug/L as Cr) | | | | | | | | | |
| LC0016 | 1 to 25 | 25 | -- | 82 | A05 | 01032 A | I-1232-85 | Atomic absorption, chel-ext | 4-9 |
| Cobalt | | | | | | | | | |
| dissolved (ug/L as Co) | | | | | | | | | |
| LC1556 | 1 to 100 | -- | -- | -- | -- | 01035 F | I-1243-89 | Atomic absorption, graphite furnace | 4-9 |
| LC0148 | 50 to 1,000 | 7 | 1 | 1 | C03 | 01035 A | I-1239-85 | Atomic absorption, direct | 4-9 |
| LC1252 | .5 to 65 | 4 | 1 | 1 | E11 | 01035 E | I-1241-85 | Atomic absorption, graphite furance | 4-9 |
| SH1043 | 3 to 10,000 | 88 | 20 | -- | A07 | 01035 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Co) | | | | | | | | | |
| LC0149 | 50 to 1,000 | >7 | > 1 | >1 | H03 | 01037 A | I-3239-85 | Digest, atomic absorption, direct | 4-14 |
| LC1557 | 1 to 100 | -- | -- | -- | -- | 01037 F | I-3243-89 | Digest, atomic absorption, graphite furnace | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as Co) | | | | | | | | | |
| LC0506 | 5 to -- | -- | -- | -- | -- | 01038 B | I-5239-85 | Digest, atomic absorption, direct | 4-16 |
| Color | | | | | | | | | |
| total (platinum-cobalt units) | | | | | | | | | |
| LC0020 | 1 to 70 | 25 | -- | -- | A02 | 00080 A | I-1250-85 | Electrometry, visual comparison | 4-15 |
| Copper | | | | | | | | | |
| dissolved (ug/L as Cu) | | | | | | | | | |
| LC1558 | 1 to 100 | -- | -- | -- | -- | 01040 F | I-1274-89 | Atomic absorption, graphite furnace | 4-9 |
| LC0151 | 10 to 1,000 | 15 | 9 | -- | A05 | 01040 A | I-1270-85 | Atomic absorption, direct | 4-9 |
| LC1253 | .5 to 35 | 14 | 2 | 3 | E11 | 01040 E | I-1272-85 | Atomic absorption, graphite furnace | 4-9 |
| SH1043 | 10 to 10,000 | -- | 14 | -- | A07 | 01040 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Cu) | | | | | | | | | |
| LC0156 | 10 to 1,000 | > 15 | > 9 | -- | G05 | 01042 A | I-3270-85 | Digest, atomic absorption, direct | 4-14 |
| LC1559 | 1 to 100 | -- | -- | -- | -- | 01042 F | I-3274-89 | Digest, atomic absorption, graphite furnace | |
| recoverable from bottom material, dry wt. (ug/g as Cu) | | | | | | | | | |
| LC0507 | 1 to -- | > 15 | >9 | -- | G05 | 01043 A | I-5270-85 | Digest, atomic absorption, direct | 4-17 |
| Cyanide | | | | | | | | | |
| dissolved (mg/L as CN) | | | | | | | | | |
| LC0880 | .01 to .30 | 2 | 1 | -- | E05 | 00723 A | I-2302-85 | Colorimetry, barbituric acid, auto | 4-9 |
| total recoverable (mg/L as CN) | | | | | | | | | |
| LC0023 | .01 to .30 | > 2 | >1 | -- | I05 | 00720 A | I-4302-85 | Colorimetry, barbituric acid, auto | 4-14 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Density | | | | | | | | | |
| dissolved (g/mL at 20 deg C) | | | | | | | | | |
| LC0024 | .990 to 1.500 | -- | -- | -- | -- | 71820 A | I-1312-85 | Gravimetry | 4-9 |
| Deuterium/protium (hydrogen-2/hydrogen-1) | | | | | | | | | |
| dissolved | | | | | | | | | |
| ratio permil | | | | | | | | | |
| LC0300 | 1.5 to -- | 1 | -- | -- | C11 | 82082 A | --------- | Mass spectrometry | 4-22 |
| Fluoride | | | | | | | | | |
| dissolved (mg/L as F) | | | | | | | | | |
| LC0031 | .1 to 3.0 | 12 | 8 | -- | A05 | 00950 B | I-2327-85 | Ion-selective electrode, auto | 4-9 |
| SH1101 | .01 to .50 | 8 | -- | -- | E11 | 00950 D | I-2058-85 | Ion chromatography, auto | 4-11 |
| Gamma scan | | | | | | | | | |
| total in bottom material, dry wt. (pCi/g) | | | | | | | | | |
| LC0212 | .4 to -- | -- | -- | -- | -- | 99451 A | --------- | Gamma spectrometry | 4-19 |
| Gross alpha radioactivity | | | | | | | | | |
| dissolved (ug/L as U natural) | | | | | | | | | |
| LC0444 | .4 to 500,000 | -- | 20 | -- | E09 | 80030 A | R-1120-76 | Residue procedure | 4-18 |
| LC0800 | .4 to 500,000 | -- | 20 | -- | E09 | 80030 B | R-1120-76 | Residue procedure | 4-18 |
| suspended (ug/g as U natural) | | | | | | | | | |
| LC0446 | .4 to 500,000 | -- | -- | -- | -- | 80040 A | R-7120-79 | Residue procedure | 4-18 |
| total in bottom material (ug/L as U natural) | | | | | | | | | |
| LC1518 | -- -- -- | -- | -- | -- | -- | ----- | --------- | | 4-19 |
| Gross beta radioactivity | | | | | | | | | |
| dissolved (pCi/L as Cs-137) | | | | | | | | | |
| LC0455 | .4 to 700,000 | -- | -- | -- | -- | 03515 A | R-1120-76 | Residue procedure | 4-18 |
| LC0798 | .4 to 700,000 | -- | -- | -- | -- | 03515 B | R-1120-76 | Residue procedure | 4-18 |
| dissolved (pCi/L as Sr-90/Y-90) | | | | | | | | | |
| LC0445 | .4 to 700,000 | -- | -- | -- | -- | 80050 A | R-1120-76 | Residue procedure | 4-18 |
| LC0793 | .4 to 700,000 | -- | -- | -- | -- | 80050 B | R-1120-76 | Residue procedure | 4-18 |
| suspended (pCi/g as Cs-137) | | | | | | | | | |
| LC0456 | .4 to 700,000 | -- | -- | -- | -- | 03516 A | R-7120-79 | Residue procedure | 4-18 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Gross beta radioactivity--Continued | | | | | | | | | |
| suspended (pCi/g as Sr-90/Y-90) | | | | | | | | | |
| LC0447 | .4 to 700,000 | -- | -- | -- | -- | 80060 A | R-1120-76 | Residue procedure | 4-18 |
| total in bottom material (pCi/g as Sr 90) | | | | | | | | | |
| LC15243 | -- -- | -- | -- | -- | -- | ----- A | --------- | | 4-19 |
| Gross gamma scan | | | | | | | | | |
| dissolved (pCi/L) | | | | | | | | | |
| LC0443 | .4 to -- | -- | -- | -- | -- | 99452 A | --------- | Gamma spectroscopy | 4-19 |
| suspended (pCi/g) | | | | | | | | | |
| LC0211 | .4 to -- | -- | -- | -- | -- | 99450 A | --------- | Gamma spectroscopy | 4-19 |
| total, dry weight (pCi/g) | | | | | | | | | |
| LC0212 | .4 to -- | -- | -- | -- | -- | 99451 A | --------- | Gamma spectroscopy | 4-19 |
| Iodide | | | | | | | | | |
| dissolved (mg/L as I) | | | | | | | | | |
| LC1202 | .001 to .06 | -- | -- | -- | -- | 71865 D | I-2371-85 | Colorimetry, ceric-arsenious oxid, auto | 4-10 |
| Iron | | | | | | | | | |
| dissolved (ug/L as Fe) | | | | | | | | | |
| LC0172 | 10 to 1,000 | 31 | 10 | -- | A05 | 01046 C | I-1381-85 | Atomic absorption, direct | 4-10 |
| SH0146 | 3 to 10,000 | -- | 10 | 6 | A07 | 01046 D | I-1472-85 | Atomic emission, ICP, direct | 4-12 |
| SH1043 | 3 to 10,000 | -- | 10 | 6 | A07 | 01046 D | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| SH1102 | 3 to 1,000 | 10 | 6 | -- | A07 | 1046 E | I-1472-85 | Atomic emission, ICP, direct | 4-12 |
| total recoverable (ug/L as Fe) | | | | | | | | | |
| LC0189 | 10 to 1,000 | > 31 | > 10 | -- | G05 | 01045 B | I-3381-85 | Digest, atomic absorption, direct | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as Fe) | | | | | | | | | |
| LC0190 | 1 to -- | > 31 | > 10 | -- | G05 | 01170 B | I-5381-85 | Digest, atomic absorption, direct | 4-17 |
| Lead | | | | | | | | | |
| dissolved (ug/L as Pb) | | | | | | | | | |
| LC1560 | 1 to 100 | -- | -- | -- | -- | 01049 F | I-1403-89 | Atomic absorption, graphite furnace | 4-10 |
| LC0191 | 100 to 4,000 | -- | 10 | 3 | B03 | 01049 A | I-1399-85 | Atomic absorption, direct | 4-10 |
| LC1254 | .5 to 50 | 12 | 3 | 2 | E11 | 01049 E | I-1401-85 | Atomic absorption, graphite furnace | 4-10 |
| SH1043 | 10 to 10,000 | -- | 53 | -- | A07 | 01049 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Pb) | | | | | | | | | |
| LC0192 | 100 to 4,000 | -- | >10 | >3 | G03 | 01051 A | I-3399-85 | Digest, atomic absorption, direct | 4-14 |
| LC1561 | 1 to 100 | -- | -- | -- | -- | 01051 F | I-3403-89 | Digest, atomic absorption, graphite furnace | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as Pb) | | | | | | | | | |
| LC0510 | 10 to -- | -- | >10 | >3 | G03 | 01052 | I-5399-85 | Digest, atomic absorption, direct | 4-17 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Lead-210** | | | | | | | | | |
| dissolved (pCi/L as Pb-210) | | | | | | | | | |
| LC1503 | 2 to 10,000 | 10 | 2 | -- | E09 | 17503 B | R-1130-76 | Chemical separation + precipitation | 4-19 |
| recoverable from bottom material, dry wt. (pCi/g) | | | | | | | | | |
| LC1182 | .2 to -- | -- | -- | -- | -- | 17507 B | --------- | Precipitation, separation, counting | 4-19 |
| suspended (pCi/g as Pb-210) | | | | | | | | | |
| LC1547 | .2 -- -- | -- | -- | -- | -- | ----- | --------- | Beta counting | 4-19 |
| **Lithium** | | | | | | | | | |
| dissolved (ug/L as Li) | | | | | | | | | |
| LC0039 | 10 to 1,000 | 9 | 5 | -- | A05 | 01130 A | I-1425-85 | Atomic absorption, direct | 4-10 |
| SH1043 | 4 to 10,000 | -- | 10 | 4 | A07 | 01130 B | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Li) | | | | | | | | | |
| LC0277 | 10 to 1,000 | > 9 | > 5 | -- | G05 | 01132 A | I-3425-85 | Digest, atomic absorption, direct | 4-14 |
| recoverable from bottom material, dry wt. (ug/g as Li) | | | | | | | | | |
| LC0541 | 1 to -- | > 9 | >5 | -- | G05 | 01133 A | I-5425-85 | Digest, atomic absorption, direct | 4-17 |
| **Magnesium** | | | | | | | | | |
| dissolved (mg/L as Mg) | | | | | | | | | |
| LC0040 | .1 to 50 | 9 | 5 | 17 | A05 | 00925 B | I-1447-85 | Atomic absorption, direct | 4-10 |
| LC0832 | .01 to 5.0 | 21 | 3 | 4 | A05 | 00925 A | I-1447-85 | Atomic absorption, direct | 4-10 |
| SH0146 | .01 to 100 | 7 | 4 | -- | A07 | 00925 C | I-1472-85 | Atomic emission, ICP, direct | 4-12 |
| SH1043 | .01 to 100 | 7 | 4 | -- | A07 | 00925 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| SH1102 | .01 to 100 | 7 | 4 | -- | A07 | 00925 D | I-1472-85 | Atomic emission, ICP, direct, low ionic | 4-12 |
| total recoverable (mg/L as Mg) | | | | | | | | | |
| LC0261 | .1 to 50 | > 9 | > 5 | >17 | G05 | 00927 B | I-3447-85 | Digest, atomic absorption, direct | 4-14 |
| LC0325 | .1 to 50 | > 9 | > 5 | >17 | G05 | 00927 A | I-3448-85 | EPA digest, atomic absorption, direct | 4-14 |
| recoverable from bottom material, dry wt. (mg/kg as Mg) | | | | | | | | | |
| LC0697 | 10 to -- | > 9 | >5 | -- | G05 | 00924 A | I-5447-85 | Digest, atomic absorption, direct | 4-17 |
| **Manganese** | | | | | | | | | |
| dissolved (ug/L as Mn) | | | | | | | | | |
| LC0042 | 10 to 1,000 | 20 | 9 | -- | A05 | 01056 A | I-1454-85 | Atomic absorption, direct | 4-10 |
| LC1255 | .2 to 20 | 14 | 6 | 5 | E11 | 01056 D | I-1455-85 | Atomic absorption, graphite furnace | 4-10 |
| SH0146 | 1 to 10,000 | -- | 11 | 2 | A07 | 01056 C | I-1472-85 | Atomic emission, ICP, direct | 4-12 |
| SH1043 | 1 to 10,000 | -- | 11 | 2 | A07 | 01056 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| SH1102 | 1 to 1,00 | 11 | 2 | -- | A07 | 01056 E | I-1477-85 | Atomic emission, ICP, direct, low ionic | 4-12 |
| total recoverable (ug/L as Mn) | | | | | | | | | |
| LC0041 | 10 to 1,000 | > 20 | > 9 | -- | G05 | 01055 A | I-3454-85 | Digest, atomic absorption, direct | 4-15 |
| recoverable from bottom material, dry wt. (ug/g as Mn) | | | | | | | | | |
| LC0512 | 1 to -- | > 20 | -- | -- | G05 | 01053 A | I-5454-85 | Digest, atomic absorption, direct | 4-17 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Mercury** | | | | | | | | | |
| dissolved (ug/L as Hg) | | | | | | | | | |
| LC0226 | .1 to 8.0 | 11 | 5 | 4 | E05 | 71890 B | I-2462-85 | Atomic absorption, flameless, auto | 4-10 |
| total recoverable (ug/L as Hg) | | | | | | | | | |
| LC0227 | .1 to 10 | >46 | >18 | -- | G05 | 71900 B | I-3462-85 | Atomic absorption, flameless | 4-15 |
| recoverable from bottom material, dry wt. (ug/g as Hg) | | | | | | | | | |
| LC0511 | .01 to 10 | > 46 | >18 | -- | G05 | 71921 A | I-5462-85 | Atomic absorption, flameless | 4-17 |
| **Moisture content (percent)** | | | | | | | | | |
| in bottom material | | | | | | | | | |
| LC0904 | .1 to 99.9 | | | | | | | Infrared drying | 4-17 |
| **Molybdenum** | | | | | | | | | |
| dissolved (ug/L as Mo) | | | | | | | | | |
| LC0110 | 1 to 50 | 36 | 11 | -- | A05 | 01060 B | I-1490-85 | Atomic absorption, chel-extraction | 4-10 |
| SH1043 | 10 to 10,000 | -- | 26 | -- | A07 | 01060 A | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Mo) | | | | | | | | | |
| LC0265 | 1 to 50 | > 36 | > 11 | -- | G05 | 01062 A | I-3490-85 | Digest, atomic absorption, chel-extract | 4-15 |
| recoverable from bottom material, dry wt. (ug/g as Mo) | | | | | | | | | |
| LC0523 | .1 to -- | > 36 | >11 | -- | G05 | 01063 A | I-5490-85 | Digest, atomic absorption, chel-extract | 4-17 |
| **Nickel** | | | | | | | | | |
| dissolved (ug/L as Ni) | | | | | | | | | |
| LC1562 | 1 to 100 | 1 | -- | -- | -- | 01065 F | I-1503-89 | Atomic absorption, graphite furnace | 4-10 |
| LC0197 | 100 to 1,000 | 6 | 2 | 1 | C03 | 01065 A | I-1499-85 | Atomic absorption, direct | 4-10 |
| LC1256 | 1 to 80 | 15 | 1 | 1 | E11 | 01065 D | I-1137-85 | Atomic absorption, graphite furnace | 4-10 |
| SH1043 | 10 to 10,000 | -- | -- | -- | -- | 01065 E | I-1472-88 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Ni) | | | | | | | | | |
| LC0198 | 100 to 1,000 | >6 | > 2 | >1 | H03 | 01067 A | I-3499-85 | Digest, atomic absorption, direct | 4-15 |
| LC1563 | 1 to 100 | 1 | -- | -- | -- | 01067 F | I-3503-89 | Digest, atomic absorption, graphite furnace | 4-15 |
| recoverable from bottom material, dry wt. (ug/g as Ni) | | | | | | | | | |
| LC0519 | 10 to -- | > 6 | >2 | >1 | G03 | 01068 B | I-5499-85 | Digest, atomic absorption, direct | 4-17 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, ammonia | | | | | | | | | |
| dissolved (mg/L as N) | | | | | | | | | |
| LC0301 | .01 to 1.5 | 13 | 3 | 2 | E11 | 00608 B | I-2522-85 | Colorimetry, auto | 4-10 |
| LC0830 | .002 to .30 | -- | -- | -- | -- | 00608 A | I-2525-89 | Colorimetry, auto | 4-10 |
| total (mg/L as N) | | | | | | | | | |
| LC0123 | .01 to 1.5 | > 13 | > 3 | >2 | I11 | 00610 B | I-4522-85 | Colorimetry, auto | 4-15 |
| LC0836 | .002 to .20 | -- | -- | -- | -- | 00610 A | I-4525-89 | Colorimetry, auto | 4-15 |
| total in bottom material, dry wt. (mg/kg as N) | | | | | | | | | |
| LC0524 | .4 to -- | > 13 | >3 | >2 | I11 | 00611 A | I-6522-86 | Colorimetry, auto | 4-17 |
| Nitrogen, ammonia plus organic | | | | | | | | | |
| dissolved (mg/L as N) | | | | | | | | | |
| LC0268 | .2 to 10 | 18 | 6 | -- | A05 | 00623 A | I-2552-85 | Block digest + colorimetry, auto | 4-10 |
| total (mg/L as N) | | | | | | | | | |
| LC0084 | .2 to 10 | >18 | >6 | -- | G05 | 00625 A | I-4552-85 | Block digest + colorimetry, auto | 4-15 |
| Nitrogen, nitrate | | | | | | | | | |
| dissolved (mg/L as N) | | | | | | | | | |
| SH1101 | .01 to .60 | 6 | 4 | -- | E11 | 00618 D | I-2058-85 | Ion chromatography, auto | 4-11 |
| Nitrogen, nitrite | | | | | | | | | |
| dissolved (mg/L as N) | | | | | | | | | |
| LC0160 | .01 to 1.0 | -- | -- | -- | -- | 00613 B | I-2540-85 | Colorimetry, diazotization, auto | 4-10 |
| LC0827 | .001 to .20 | -- | -- | -- | -- | 00613 A | I-2542-89 | Colorimetry, diazotization, auto | 4-10 |
| total (mg/L as N) | | | | | | | | | |
| LC0302 | .01 to 1.0 | -- | -- | -- | -- | 00615 B | I-4540-85 | Colorimetry, diazotization, auto | 4-15 |
| LC0840 | .001 to .30 | -- | -- | -- | -- | 00615 A | I-4542-89 | Colorimetry, diazotization, auto | 4-15 |
| Nitrogen, nitrite plus nitrate | | | | | | | | | |
| dissolved (mg/L as N) | | | | | | | | | |
| LC0228 | .1 to 5.0 | 14 | 8 | 11 | A07 | 00631 B | I-2545-85 | Colorimetry, Cd-reduction, auto | 4-10 |
| LC0826 | .005 to 1.0 | -- | -- | -- | -- | 00631 A | I-2546-89 | Colorimetry, Cd-reduction, auto | 4-10 |
| total (mg/L as N) | | | | | | | | | |
| LC0304 | .1 to 5.0 | >14 | -- | >11 | G07 | 00630 B | I-4545-85 | Colorimetry, Cd-reduction, auto | 4-15 |
| LC0839 | .01 to 1.0 | -- | -- | -- | -- | 00630 A | I-4546-89 | Colorimetry, Cd-reduction, auto | 4-15 |
| total in bottom material, dry wt. (mg/kg as N) | | | | | | | | | |
| LC0513 | 2.0 to -- | > 14 | -- | -- | G07 | 00633 A | I-6545-86 | Colorimetry, Cd-reduction, auto | 4-17 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Nitrogen-15/nitrogen-14 | | | | | | | | | |
| dissolved, ratio permil | | | | | | | | | |
| LC0995 | -20 to +20 | | | -- | -- | 82084 A | --------- | Mass spectrometry | 4-22 |
| total in bottom material, soil, or rock material, nitrate or ammonium, ratio permil | | | | | | | | | |
| LC1136 | .2 to -- | -- | -- | -- | -- | 82338 | --------- | Mass spectrometry | 4-19 |
| total in bottom material, soil or rock material, organic content, ratio permil | | | | | | | | | |
| LC1204 | .2 to -- | -- | -- | -- | -- | ----- | --------- | ---------- | 4-22 |
| Oxygen demand, chemical | | | | | | | | | |
| total, .25N $K_2Cr_2O_7$ (mg/L) | | | | | | | | | |
| LC0076 | 10 to 500 | 14 | -- | 2 | F05 | 00340 A | I-3561-85 | Colorimetry, $K_2Cr_2O_7$ oxidation | 4-15 |
| total in bottom material, dry wt. (mg/kg) | | | | | | | | | |
| LC0532 | 100 to -- | -- | -- | -- | -- | 00339 A | I-5560-85 | Titrimetry, 0.25N $K_2Cr_2O_7$ oxidation | 4-17 |
| Oxygen-18/oxygen-16 | | | | | | | | | |
| dissolved, ratio permil | | | | | | | | | |
| LC0489 | .15 to -- | -- | -- | -- | -- | 82085 A | --------- | Mass spectrometry | 4-22 |
| total in bottom material, carbonate rock, ratio permil | | | | | | | | | |
| LC1137 | .15 to -50 | -- | -- | -- | -- | 82337 A | --------- | Mass spectrometry | 4-22 |
| Oxygen-18/Oxygen-16 and Carbon-13/Carbon-12 | | | | | | | | | |
| total in bottom material, high purity gaseous carbon dioxide, ratio permil | | | | | | | | | |
| LC1243 | .15 to -- | -- | -- | -- | ----- | --------- | --------- | | 4-19 |
| pH, laboratory | | | | | | | | | |
| dissolved (standard units) | | | | | | | | | |
| SH0146 | 4.0 to 9.0 | -- | < 1 | -- | E07 | 00403 A | I-2587-85 | Electrometry, glass electrode, auto | 4-12 |
| SH1043 | 4.0 to 9.0 | -- | < 1 | -- | E07 | 00403 A | I-2587-85 | Electrometry, glass electrode, auto | 4-13 |
| total (standard units) | | | | | | | | | |
| LC0068 | 4.0 to 9.0 | -- | < 1 | -- | E07 | 00403 A | I-2587-85 | Electrometry, glass electrode, auto | 4-16 |
| pH <4.0 and > 9.0 is determined manually | | | | | | | | | |
| LC1268 | 4.0 to 9.0 | -- | -- | -- | -- | 00403 B | --------- | Electrometry, glass electrode, auto, low level | |
| SH1101 | 4.0 to 9.0 | -- | -- | -- | -- | 00493 B | --------- | Electrometry, glass electrode, auto, low level | |
| Phosphorus | | | | | | | | | |
| dissolved (mg/L as P) | | | | | | | | | |
| LC0128 | .01 to 1.0 | 12 | 3 | -- | F07 | 00666 B | I-2600-85 | Colorimetry, phosphomolybdate, auto | 4-10 |
| LC0829 | .001 to .20 | -- | -- | -- | -- | 00666 A | --------- | Colorimetry, phosphomolybdate, auto | 4-10 |
| total (mg/L as P) | | | | | | | | | |
| LC0129 | .01 to 1.0 | | > 12 | >3 | I07 | 00665 B | I-4600-85 | Colorimetry, phosphomolybdate, auto | 4-16 |
| LC0837 | .001 to .20 | -- | -- | -- | -- | 00665 A | --------- | Colorimetry, phosphomolybdate, auto | 4-16 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Phosphorus--Continued** | | | | | | | | | |
| total in bottom material, dry wt. (mg/kg as P) | | | | | | | | | |
| LC0515 | 40 to 80,000 | > 12 | -- | -- | I07 | 00668 A | I-6600-88 | Colorimetry, phosphomolybdate, auto | 4-17 |
| **Phosphorus, hydrolyzable plus orthophosphate** | | | | | | | | | |
| dissolved (mg/L as P) | | | | | | | | | |
| LC0279 | .01 to 1.0 | > 12 | -- | -- | I07 | 00677 A | I-2602-85 | Colorimetry, phosphomolybdate, auto | 4-10 |
| total (mg/L as P) | | | | | | | | | |
| LC0282 | .01 to 1.0 | > 12 | -- | -- | I07 | 00678 A | I-4602-85 | Colorimetry, phosphomolybdate, auto | 4-16 |
| **Phosphorus, orthophosphate** | | | | | | | | | |
| dissolved (mg/L as P) | | | | | | | | | |
| LC0162 | .01 to 1.0 | 20 | -- | -- | F07 | 00671 B | I-2601-86 | Colorimetry, phosphomolybdate, auto | 4-10 |
| LC0828 | .001 to .50 | -- | -- | -- | -- | 00671 A | I-2606-89 | Colorimetry, phosphomolybdate, auto | 4-11 |
| SH1101 | .01 to .60 | 9 | -- | -- | E11 | 00671 G | I-2058-85 | Ion chromatography, auto | 4-11 |
| total (mg/L as P) | | | | | | | | | |
| LC0297 | .01 to 1.0 | > 20 | -- | -- | I07 | 70507 A | I-4601-86 | Colorimetry, phosphomolybdate, auto | 4-16 |
| LC0838 | .001 to .50 | -- | -- | -- | -- | 70507 B | I-4609-89 | Colorimetry, phosphomolybdate, auto | 4-16 |
| **Polonium-210** | | | | | | | | | |
| dissolved, $H_2O$ (pCi/L as Po) | | | | | | | | | |
| LC1505 | 1 to -- | -- | -- | -- | -- | 19503 A | --------- | Alpha spectrometry | 4-19 |
| suspended (pCi/g as Po) | | | | | | | | | |
| LC1543 | .01 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-19 |
| recoverable from bottom material (pCi/g as Po) | | | | | | | | | |
| LC1545 | 0.1 to -- | -- | -- | -- | -- | 19507 A | --------- | Alpha spectrometry | 4-19 |
| **Potassium** | | | | | | | | | |
| dissolved (mg/L as K) | | | | | | | | | |
| LC0054 | .1 to 100 | 14 | -- | -- | A05 | 00935 B | I-1630-85 | Atomic absorption, direct | 4-11 |
| LC0833 | .01 to 1.0 | 39 | 2 | 4 | A05 | 00935 A | I-1630-85 | Atomic absorption, direct | 4-11 |
| total recoverable (mg/L as K) | | | | | | | | | |
| LC0321 | .1 to 100 | > 14 | -- | -- | G05 | 00937 B | I-3630-85 | Digest, atomic absorption, direct | 4-15 |
| LC0327 | .1 to 100 | > 14 | -- | -- | G05 | 00937 A | I-3631-85 | EPA digest, atomic absorption, direct | 4-15 |
| recoverable from bottom material, dry wt. (mg/kg as K) | | | | | | | | | |
| LC0698 | 10 to -- | > 14 | -- | -- | G05 | 00938 A | I-5630-85 | Digest, atomic absorption, direct | 4-17 |
| **Radium-226** | | | | | | | | | |
| dissolved (pCi/L as Ra-226) | | | | | | | | | |
| LC0449 | .01 to 1,000 | 20 | 10 | 10 | E09 | 09511 A | R-1141-76 | Radon emanation | 4-19 |
| LC0458 | .1 to 1,000 | -- | 20 | 20 | E09 | 09510 A | R-1140-76 | Precipitation, planchet counting | 4-19 |
| LC0794 | .01 to 1,000 | 20 | 10 | 10 | E09 | 09511 B | R-1141-76 | Radon emanation | 4-19 |
| LC0799 | .1 to 1,000 | -- | 20 | 20 | E09 | 09510 B | R-1140-76 | Precipitation, planchet counting | 4-19 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | | | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Radium-226--Continued | | | | | | | | | | | |
| suspended (pCi/g as Ra-226) | | | | | | | | | | | |
| LC1531 | 0.1 | to | -- | -- | -- | -- | -- | ----- | --------- | Radon emanation | 4-19 |
| recoverable from bottom material (pCi/g as Ra-226) | | | | | | | | | | | |
| LC1528 | 0.4 | to | -- | -- | -- | -- | -- | 09507 B | ---------- | Gamma counting | 4-20 |
| SH1136 | 0.4 | to | -- | -- | -- | -- | -- | 09507 B | | Gamma counting | 4-20 |
| Radium-228 | | | | | | | | | | | |
| dissolved (pCi/L as Ra-228) | | | | | | | | | | | |
| LC0850 | 2.0 | to | 1,000 | 20 | 10 | 10 | E09 | 81366 A | R-1142-76 | Separation + counting of Ac-228 | 4-20 |
| LC1363 | 1.0 | to | -- | -- | -- | -- | -- | 81366 B | --------- | Separation and beta counting | 4-20 |
| suspended (pCi/g as Ra-228) | | | | | | | | | | | |
| LC1533 | 0.1 | to | -- | -- | -- | -- | -- | ----- | --------- | Beta counting | 4-20 |
| recoverable from bottom material (pCi/g as Ra-228) | | | | | | | | | | | |
| LC1526 | 0.8 | to | -- | -- | -- | -- | -- | ----- | --------- | Gamma counting | 4-20 |
| SH1136 | 0.8 | to | -- | -- | -- | -- | -- | ----- | --------- | Gamma counting | 4-20 |
| Radon-222 | | | | | | | | | | | |
| dissolved (pCi/L as Rn-222) | | | | | | | | | | | |
| LC0490 | 2.0 | to | 10,000 | -- | -- | -- | -- | 82305 A | R-1146-79 | Radon emanation | 4-20 |
| LC1369 | 80 | to | -- | -- | -- | -- | -- | 82303 B | --------- | Liquid scintillatio | 4-20n |
| Selenium | | | | | | | | | | | |
| dissolved (ug/L as Se) | | | | | | | | | | | |
| LC0087 | 1 | to | 15 | 3 | 1 | -- | E07 | 01145 A | I-2667-85 | Atomic absorption, hydride, auto | 4-11 |
| total (ug/L as Se) | | | | | | | | | | | |
| LC0286 | 1 | to | 15 | 25 | 3 | 4 | E07 | 01147 A | I-4667-85 | Atomic absorption, hydride, auto | 4-16 |
| total in bottom material, dry wt. (ug/g as Se) | | | | | | | | | | | |
| LC0517 | 1 | to | -- | 21 | 3 | -- | E07 | 01148 A | I-6667-85 | Atomic absorption, hydride, auto | 4-17 |
| Silica | | | | | | | | | | | |
| dissolved (mg/L as $SiO_2$) | | | | | | | | | | | |
| LC0056 | .1 | to | 60 | 5 | 7 | -- | A05 | 00955 C | I-2700-85 | Colorimetry, molybdate blue, auto | 4-11 |
| SH0146 | .01 | to | 100 | -- | -- | -- | -- | 00955 D | I-1472-85 | Atomic emission, ICP, direct | 4-12 |
| SH1043 | .01 | to | 100 | -- | -- | -- | -- | 00955 D | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| SH1102 | .01 | to | 100 | -- | -- | -- | -- | 00955 E | I-1472-85 | Atomic emission, ICP, low ionic strength, direct | 4-12 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | | | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Silver | | | | | | | | | | | |
| dissolved (ug/L as Ag) | | | | | | | | | | | |
| LC1552 | 1 | to | 40 | -- | 31 | --12 | -- | 01075 F | I-1724-89 | Atomic absorption, graphite furnace | 4-11 |
| SH1043 | 1 | to | 10,000 | -- | -- | -- | -- | 01075 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Ag) | | | | | | | | | | | |
| LC1553 | 1 | to | 40 | -- | 31 | 12 | -- | 01077 F | I-3724-89 | Digest, atomic absorption, graphite furnace | 4-15 |
| Sodium | | | | | | | | | | | |
| dissolved (mg/L as Na) | | | | | | | | | | | |
| LC0059 | .1 | to | 80 | 9 | 4 | 4 | A05 | 00930 B | I-1735-85 | Atomic absorption, direct | 4-11 |
| LC0834 | .01 | to | 1.0 | 26 | 3 | 1 | A05 | 00930 A | I-1735-85 | Atomic absorption, direct | 4-11 |
| SH0146 | .2 | to | 1,000 | 17 | 6 | -- | A07 | 00930 C | I-1472-85 | Atomic emission, ICP, direct | 4-12 |
| SH1043 | .2 | to | 1,000 | 17 | 6 | -- | A07 | 00930 C | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| SH1102 | .2 | to | 100 | 17 | 6 | -- | A07 | 00930 D | I-1472-85 | Atomic emission, ICP, low ionic strength, direct | 4-12 |
| total recoverable (mg/L as Na) | | | | | | | | | | | |
| LC0320 | .1 | to | 80 | > 9 | -- | >4 | G05 | 00929 B | I-3735-85 | Digest, atomic absorption, direct | 4-15 |
| LC0326 | .1 | to | 80 | > 9 | -- | >4 | G05 | 00929 A | I-3736-85 | EPA digest, atomic absorption, direct | 4-15 |
| recoverable from bottom material, dry wt. (mg/kg as Na) | | | | | | | | | | | |
| LC0699 | 10 | to | | > 9 | -- | >4 | G05 | 00934 A | I-5735-85 | Digest, atomic absorption, direct | 4-17 |
| Solids, residue at 105-110°C | | | | | | | | | | | |
| dissolved (mg/L) | | | | | | | | | | | |
| LC0159 | 1 | to | -- | > 11 | >5 | -- | A05 | 00515 B | I-1749-85 | Gravimetry | 4-11 |
| suspended (mg/L) | | | | | | | | | | | |
| LC0169 | 1 | to | -- | -- | -- | -- | -- | 00530 B | I-3765-85 | Gravimetry | 4-14 |
| total (mg/L) | | | | | | | | | | | |
| LC0165 | 1 | to | -- | > 11 | > 5 | -- | A05 | 00500 A | I-3750-85 | Gravimetry | 4-16 |
| Solids, residue on evaporation at 180°C | | | | | | | | | | | |
| dissolved (mg/L) | | | | | | | | | | | |
| LC0027 | 1 | to | -- | 11 | 4 | 5 | A05 | 70300 A | I-1750-85 | Gravimetry | 4-11 |
| Solids, volatile on ignition | | | | | | | | | | | |
| dissolved (mg/L) | | | | | | | | | | | |
| LC0229 | 1 | to | -- | -- | -- | -- | -- | 00520 A | I-1753-85 | Gravimetry | 4-11 |
| suspended (mg/L) | | | | | | | | | | | |
| LC0049 | 1 | to | -- | -- | -- | -- | -- | 00535 A | I-3767-85 | Gravimetry | 4-14 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Solids, volatile on ignition--Continued | | | | | | | | | |
| total (mg/L) | | | | | | | | | |
| LC0085 | 1 to -- | -- | 6 | -- | A03 | 00505 A | I-3753-85 | Gravimetry | 4-16 |
| total in bottom material, dry wt. (mg/kg) | | | | | | | | | |
| LC0516 | 1 to-- | -- | -- | -- | -- | 00515 A | I-5753-85 | Gravimetry | 4-17 |
| Special sample preparation | | | | | | | | | |
| total in bottom material | | | | | | | | | |
| LC1184 | | | | | | | | Preparation | 4-16 |
| LC0647 | | | | | | | | Digestion | |
| Specific conductance, laboratory (umho/cm at 25°C) | | | | | | | | | |
| LC0069 | 1 to 17,000 | < 1 | < 1 | -- | E07 | 90095 A | I-2781-85 | Electrometry, automated | 4-16 |
| SH0146 | 1 to 17,000 | < 1 | < 1 | -- | E07 | 90095 A | I-2781-85 | Electrometry, automated | 4-12 |
| SH1043 | 1 to 17,000 | < 1 | < 1 | -- | E07 | 90095 A | I-2781-85 | Electrometry, automated | 4-13 |
| LC1269 | 0.1 to -- | -- | -- | -- | -- | 90095 B | I-1780-85 | Electrometry, manual, low ionic strength | 4-16 |
| Specific conductance >17,000 is determined manually | | | | | | | | | |
| Strontium | | | | | | | | | |
| dissolved (ug/L as Sr) | | | | | | | | | |
| LC0062 | 10 to 5,000 | 34 | -- | 9 | A05 | 01080 A | I-1800-85 | Atomic absorption, direct | 4-11 |
| SH1043 | .5 to 10,000 | -- | 10 | 12 | A07 | 01080 B | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Sr) | | | | | | | | | |
| LC0290 | 10 to 5,000 | > 34 | -- | >9 | G05 | 01082 A | I-3800-85 | Digest, atomic absorption, direct | 4-15 |
| recoverable from bottom material, dry wt. (ug/g as Sr) | | | | | | | | | |
| LC0530 | 1.0 to -- | > 34 | -- | >9 | G05 | 01083 A | I-5800-85 | Digest, atomic absorption, direct | 4-17 |
| Strontium-90 | | | | | | | | | |
| dissolved (pCi/L as Sr-90) | | | | | | | | | |
| LC0450 | .5 to 100,000 | -- | 10 | 10 | E09 | 13503 A | R-1160-76 | Chemical separation + precipitation | 4-20 |
| LC0795 | .5 to 100,000 | -- | 10 | 10 | E09 | 13503 B | R-1160-76 | Chemical separation + precipitation | 4-20 |
| Sulfate | | | | | | | | | |
| dissolved (mg/L as $SO_4$) | | | | | | | | | |
| LC1200 | 75 to 1,000 | 11 | 3 | 1 | E11 | 00945 D | I-2823-85 | Turbidimetry, auto | --- |
| LC1551 | 1 to 75 | -- | -- | -- | -- | 00945 F | --------- | Turbidimetry, auto, background corr. | 4-11 |
| LC1564 | 1 to 75 | -- | -- | -- | -- | 99890 A | --------- | Turbidimetry, auto, uncorrected | --- |
| SH1101 | .01 to 10.0 | 3 | 2 | 3 | E11 | 00945 E | I-2058-85 | Ion chromatography, auto | 4-11 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Sulfide | | | | | | | | | |
| total recoverable (mg/L as S) | | | | | | | | | |
| LC0089 | .5 to -- | -- | -- | -- | -- | 00745 A | I-3840-85 | Titrimetry, iodometric | 4-16 |
| Sulfur-34/sulfur-32 | | | | | | | | | |
| dissolved, ratio permil | | | | | | | | | |
| LC0298 | 1.0 to -- | .5 | -- | -- | C11 | 82086 A | --- | Mass spectrometry | 4-23 |
| total in bottom material, in sulfates, ratio permil | | | | | | | | | |
| LC1138 | .5 to -- | -- | -- | -- | -- | 82336 A | --- | Mass spectrometry | 4-22 |
| Thallium | | | | | | | | | |
| dissolved, (ug/L as Tl) | | | | | | | | | |
| LC0492 | 1.0 to -- | | 10 | 3 | E11 | 01057 A | I-1866-85 | Atomic absorption, graphite furnace | 4-11 |
| Thorium-230 | | | | | | | | | |
| dissolved (pCi/L) | | | | | | | | | |
| LC1472 | 1.0 to -- | -- | -- | -- | -- | 26503 B | --- | Alpha spectrometry | 4-20 |
| SH1139 | 1.0 to -- | -- | -- | -- | -- | 26503 B | --- | Alpha spectrometry | 4-20 |
| suspended (pCi/g) | | | | | | | | | |
| LC1541 | 0.1 to -- | -- | -- | -- | -- | ----- | --- | Alpha spectrometry | 4-20 |
| SH1140 | 0.1 to -- | -- | -- | -- | -- | ----- | --- | Alpha spectrometry | 4-20 |
| recoverable from bottom material (pCi/g) | | | | | | | | | |
| LC1537 | 0.1 to -- | -- | -- | -- | -- | 26507 A | --- | Alpha spectrometry | 4-20 |
| SH1141 | .01 to -- | -- | -- | -- | -- | 26507 A | --- | Alpha spectrometry | 4-20 |
| Thorium-232 | | | | | | | | | |
| dissolved (pCi/L) | | | | | | | | | |
| LC1501 | 1.0 to -- | -- | -- | -- | -- | ----- | --- | Alpha spectrometry | 4-20 |
| SH1139 | 1.0 to -- | -- | -- | -- | -- | ----- | --- | Alpha spectrometry | 4-20 |
| suspended (pCi/g) | | | | | | | | | |
| LC1539 | .01 to -- | -- | -- | -- | -- | ----- | --- | Alpha spectrometry | 4-20 |
| SH1140 | .01 to -- | -- | -- | -- | -- | ----- | --- | Alpha spectrometry | 4-20 |
| recoverable from bottom material (pCi/g) | | | | | | | | | |
| LC1535 | 0.1 to -- | -- | -- | -- | -- | 26631 A | --- | Alpha spectrometry | 4-20 |
| SH1141 | 0.1 to -- | -- | -- | -- | --- | 26631 A | --- | Alpha spectrometry | 4-20 |
| Tritium | | | | | | | | | |
| in water molecule (tritium units) | | | | | | | | | |
| LC0452 | 20 to 20,000 | | | | | 07000 D | R-1173-76 | Liquid scintillation counting | 4-21 |
| LC0460 | 2 to 1,000 | | | | | 07000 A | R-1174-76 | Electrolytic enrich, liq scin | 4-21 |
| LC1043 | .2 to 100 | | | | | 07000 B | R-1174-76 | Electrolytic enrich, gas counting | 4-13 |
| LC0624 | | | | | | 07000 E | | Enrich, liquid scintillation | 4-21 |
| LC1565 | 1 | | | | | 07000 F | | Enrich, liquid scintillation | 4-21 |

## Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Turbidity | | | | | | | | | |
| total (nephelometric-turbidity units) | | | | | | | | | |
| LC0050 | .1 to 40 | 2 | 2 | 3 | C03 | 00076 A | I-3860-85 | Nephelometry | 4-16 |
| Uranium | | | | | | | | | |
| dissolved (ug/L as U) | | | | | | | | | |
| LC1004 | 1.0 to -- | -- | -- | -- | -- | 22703 G | --------- | Fluorimetry, direct, LF | 4-21 |
| LC1006 | 1.0 to -- | -- | -- | -- | -- | 22703 H | --------- | Fluorimetry, direct, FF | 4-21 |
| LC1385 | 0.4 to -- | -- | -- | -- | -- | 22703 C | --------- | Direct, laser-induced phosphorimetry, FF | 4-21 |
| LC1387 | 0.4 to -- | -- | -- | -- | -- | 22703 D | --------- | Direct, laser-induced phosphorimetry, LF | 4-21 |
| LC1388 | 0.01 to -- | -- | -- | -- | -- | 22703 F | --------- | Extract, laser-induced phosphorimetry, LF | 4-21 |
| LC1386 | 0.01 to -- | -- | -- | -- | -- | 22703 E | --------- | Extract, laser-induced phosphorimetry, FF<br>Note: FF=field filtered, LF=lab filtered | 4-21 |
| total (ug/L as U) | | | | | | | | | |
| LC1365 | 1.0 to -- | -- | -- | -- | -- | 28011 B | --------- | Fluorimetry, direct | 4-21 |
| Uranium-234 | | | | | | | | | |
| dissolved (pCi/L) | | | | | | | | | |
| LC1366 | 0.1 to -- | -- | -- | -- | -- | 22610 A | --------- | Alpha spectrometry | 4-21 |
| SH1130 | 0.1 to -- | -- | -- | -- | -- | 22610 A | --------- | Alpha spectrometry | 4-21 |
| suspended (pCi/g) | | | | | | | | | |
| LC1474 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| SH1137 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| recoverable from bottom material (pCi/g) | | | | | | | | | |
| LC1509 | 1.0 to -- | -- | -- | -- | -- | 28014 A | --------- | Alpha spectrometry | 4-21 |
| SH1138 | 1.0 to -- | -- | -- | -- | -- | 28014 A | --------- | Alpha spectrometry | 4-21 |
| Uranium-235 | | | | | | | | | |
| dissolved (pCi/L) | | | | | | | | | |
| LC1367 | 0.1 to -- | -- | -- | -- | -- | 22703 F | --------- | Alpha spectrometry | 4-21 |
| SH1130 | 1.0 to -- | -- | -- | -- | -- | 22703 F | --------- | Alpha spectrometry | 4-21 |
| suspended (pCi/g) | | | | | | | | | |
| LC1476 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| SH1137 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| recoverable from bottom material (pCi/g) | | | | | | | | | |
| LC1515 | 1.0 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| SH1138 | 1.0 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |

Table 5.2.--Index of analytical methodology for inorganic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE and method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Uranium-238 | | | | | | | | | |
| dissolved (pCi/L) | | | | | | | | | |
| LC1368 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| SH1130 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| suspended (pCi/g) | | | | | | | | | |
| LC1507 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| SH1137 | 0.1 to -- | -- | -- | -- | -- | ----- | --------- | Alpha spectrometry | 4-21 |
| recoverable from bottom material (pCi/g) | | | | | | | | | |
| LC1511 | 1.0 to -- | -- | -- | -- | -- | ----- | -------- | Alpha spectrometry | 4-21 |
| SH1138 | 1.0 to -- | -- | -- | -- | -- | ----- | ------- | Alpha spectrometry | 4-21 |
| Vanadium | | | | | | | | | |
| dissolved (ug/L as V) | | | | | | | | | |
| LC1210 | 1 to 10 | 3 | -- | 1 | E11 | 01085 D | I-2880-875 | Colorimetry, catalytic oxid, auto | 4-11 |
| SH1043 | 6 to 10,000 | 31 | -- | -- | A07 | 01085 B | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| Zinc | | | | | | | | | |
| dissolved (ug/L as Zn) | | | | | | | | | |
| LC0067 | 10 to 500 | 35 | 14 | 7 | A05 | 01090 A | I-1900-85 | Atomic absorption, direct | 4-11 |
| SH1043 | 3 to 10,000 | -- | 4 | -- | A07 | 01090 B | I-1472-85 | Atomic emission, ICP, direct | 4-13 |
| total recoverable (ug/L as Zn) | | | | | | | | | |
| LC0296 | 10 to 500 | 35 | -- | 7 | G05 | 01092 A | I-3900-85 | Digest atomic absorption, direct | 4-15 |
| recoverable from bottom material, dry wt. (ug/g as Zn) | | | | | | | | | |
| LC0518 | 1.0 to -- | 35 | -- | 7 | G05 | 01093 A | I-5900-85 | Digest, atomic absorption, direct | 4-17 |

## Table 5.3.1.--Index of analytical methodology for organic analyses

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34205 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34205 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34208 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34208 A | 0-5116-83 | Extractable, GC-MS | 4-27 |
| Acenaphthylene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34200 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34200 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34203 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34203 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Alachlor | | | | | | | | | |
| total recoverable | | | | | | | | | |
| SH1389 | .1 to -- | -- | -- | -- | -- | 77825 C | 0-3106-83 | GC | 4-47 |
| Aldrin | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 17 | 14 | 5 | F08 | 39331 A | 0-1104-83 | GC | 4-36 |
| SH1331 | .01 to -- | 17 | 14 | 5 | F08 | 39331 A | 0-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 17 | 14 | 5 | I08 | 39332 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 17 | 14 | 5 | I08 | 39332 A | 0-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 17 | 14 | 5 | I08 | 39330 C | 0-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 17 | 14 | 5 | I08 | 39330 C | 0-3104-83 | GC | 4-43 |
| SH1399 | .001 to -- | -- | 14 | 5 | I08 | 39330 B | 0-3104-83 | GC | 4-44 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 17 | 14 | 5 | I08 | 39333 A | 0-5104-83 | GC | 4-38 |
| SH1335 | .1 to -- | 17 | 14 | 5 | I08 | 39333 A | 0-5104-83 | GC | 4-46 |
| Ametryn | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | 9 | 4 | 5 | E08 | 82184 A | 0-3106-83 | GC | 4-47 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Anthracene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 45 | -- | C08 | 34220 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 45 | -- | C08 | 34220 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 45 | -- | I08 | 34223 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | 45 | -- | I08 | 34223 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| Aroclor 1016 | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1361 | .1 to -- | -- | -- | -- | -- | 34672 A | O-1104-83 | GC | 4-32 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1362 | .1 to -- | -- | -- | -- | -- | 34673 A | O-7104-83 | GC | 4-32 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1364 | .1 to -- | -- | -- | -- | -- | 34671 B | O-3104-83 | GC | 4-32 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1397 | 1.0 to -- | -- | -- | -- | -- | 39514 A | O-5104-83 | GC | 4-33 |
| Aroclor 1221 | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1361 | .1 to -- | -- | -- | -- | -- | 34662 A | O-1104-83 | GC | 4-32 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1362 | .1 to -- | -- | -- | -- | -- | 34663 A | O-7104-83 | GC | 4-32 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1364 | .1 to -- | -- | -- | -- | -- | 39488 B | O-3104-83 | GC | 4-32 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1397 | 1.0 to -- | -- | -- | -- | -- | 39491 A | O-5104-83 | GC | 4-33 |
| Aroclor 1232 | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1361 | .1 to -- | -- | -- | -- | -- | 34665 A | O-1104-83 | GC | 4-32 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1362 | .1 to -- | -- | -- | -- | -- | 34666 A | O-7104-83 | GC | 4-32 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1364 | .1 to -- | -- | -- | -- | -- | 39492 B | O-3104-83 | GC | 4-32 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1397 | 1.0 to -- | -- | -- | -- | -- | 39495 A | O-5104-83 | GC | 4-33 |
| Aroclor 1242 | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1361 | .1 to -- | -- | -- | -- | -- | 34457 A | O-1104-83 | GC | 4-32 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1362 | .1 to -- | -- | -- | -- | -- | 34458 A | O-7104-83 | GC | 4-32 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1242--Continued | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1364 | .1 to -- | -- | -- | -- | -- | 39496 R | O 3104-83 | GC | 4-32 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1397 | 1.0 to -- | -- | -- | -- | -- | 39499 A | 0-5104-83 | GC | 4-33 |
| Aroclor 1248 | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1361 | .1 to -- | 13 | 23 | 9 | F08 | 39501 A | 0-1104-83 | GC | 4-32 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1362 | .1 to -- | 13 | 23 | 9 | I08 | 39502 A | 0-7104-83 | GC | 4-32 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1364 | .1 to -- | 13 | 23 | 9 | I08 | 39500 B | 0-3104-83 | GC | 4-32 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1397 | 1.0 to -- | 13 | 23 | 9 | I08 | 39503 A | 0-5104-83 | GC | 4-33 |
| Aroclor 1254 | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1361 | .1 to -- | 28 | 15 | 4 | F08 | 39505 A | 0-1104-83 | GC | 4-32 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1362 | .1 to -- | 28 | 15 | 4 | I08 | 39506 A | 0-7104-83 | GC | 4-32 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1364 | .1 to -- | 28 | 15 | 4 | I08 | 39504 B | 0-3104-83 | GC | 4-32 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1397 | 1.0 to -- | 28 | 15 | 4 | I08 | 39507 A | 0-5104-83 | GC | 4-33 |
| Aroclor 1260 | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1361 | .1 to -- | -- | 12 | 6 | D08 | 39509 A | 0-1104-83 | GC | 4-47 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1362 | .1 to -- | -- | 12 | 6 | I08 | 39510 A | 0-7104-83 | GC | 4-27 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1364 | .1 to -- | -- | 12 | 6 | I08 | 39508 B | 0-3104-83 | GC | 4-27 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1397 | 1.0 to -- | -- | 12 | 6 | I08 | 39511 A | 0-5104-83 | GC | 4-28 |
| Atratone | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | -- | -- | -- | -- | 82185 A | 0-3106-83 | GC | 4-41 |
| Atrazine | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | 8 | 2 | 6 | E08 | 39630 A | 0-3106-83 | GC | 4-41 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Benzo (a) anthracene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 23 | -- | C08 | 34526 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 23 | -- | C08 | 34526 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 23 | -- | I08 | 34529 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | 23 | -- | I08 | 34529 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Benzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34030 A | 0-3115-83 | Purge and trap, GC-MS | 4-33 |
| Benzo (b) fluoranthene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 10.0 to -- | -- | -- | -- | -- | 34230 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 10.0 to -- | -- | -- | -- | -- | 34230 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 400 to -- | -- | -- | -- | -- | 34233 A | 0-5116-83 | Extractable, GC-MS | 4-27 |
| SH1386 | 400 to -- | -- | -- | -- | -- | 34233 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Benzo (k) fluoranthene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 10.0 to -- | -- | -- | -- | -- | 34242 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-29 |
| SH1385 | 10.0 to -- | -- | -- | -- | -- | 34242 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 400 to -- | -- | -- | -- | -- | 34245 A | 0-5116-83 | Extractable, GC-MS | 4-27 |
| SH1386 | 400 to -- | -- | -- | -- | -- | 34245 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Benzo (g,h,i) perylene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 10.0 to -- | -- | -- | -- | -- | 34521 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-29 |
| SH1385 | 10.0 to -- | -- | -- | -- | -- | 34521 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 400 to -- | -- | -- | -- | -- | 34524 A | 0-5116-83 | Extractable, GC-MS | 4-24 |
| SH1386 | 400 to -- | -- | -- | -- | -- | 34524 A | 0-5116-83 | Extractable, GC-MS | 4-26 |
| Carbaryl | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1359 | 2.0 to -- | -- | -- | -- | -- | 39750 A | 0-3107-83 | High performance liquid chromatography | 4-35 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Benzo (a) pyrene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 10.0 to -- | -- | 22 | -- | C08 | 34247 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 10.0 to -- | -- | 22 | -- | C08 | 34247 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 400 to -- | -- | 22 | -- | I08 | 34250 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 400 to -- | -- | 22 | -- | I08 | 34250 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| alpha-BHC | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| LC0806 | .01 to -- | -- | -- | -- | -- | 39337 A | 0-3104-83 | GC | 4-38 |
| beta-BHC | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| LC0807 | .01 to -- | -- | 32 | -- | F04 | 39338 A | 0-3104-83 | GC | 4-38 |
| delta-BHC | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| LC0808 | .01 to -- | -- | -- | -- | -- | 34259 A | 0-3104-83 | GC | 4-38 |
| Bromoform | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 32104 A | 0-3115-83 | Purge and trap, GC-MS | 4-33 |
| 4-Bromophenyl phenyl ether | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 6 | -- | C08 | 34636 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 6 | -- | C08 | 34636 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 6 | -- | I08 | 34639 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | 6 | -- | I08 | 34639 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Butyl benzyl phthalate | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34292 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34292 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34295 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34295 A | 0-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, inorganic | | | | | | | | | |
| dissolved (mg/L as C) | | | | | | | | | |
| LC0306 | .1 to -- | -- | -- | -- | -- | 00691 A | 0-1100-83 | Calculation | 4-26 |
| total (mg/L as C) | | | | | | | | | |
| LC0019 | .1 to -- | -- | -- | -- | -- | 00685 A | 0-3100-83 | Calculation | 4-26 |
| total in bottom material, dry wt. (g/kg as C) | | | | | | | | | |
| LC0503 | .1 to 1,000 | -- | -- | -- | -- | 00686 C | 0-5102-83 | Modified Van Slyke procedure | 4-26 |
| Carbon, inorganic plus organic | | | | | | | | | |
| total in bottom material, dry wt. (g/kg as C) | | | | | | | | | |
| LC0133 | .1 to -- | 4 | 2 | 1 | F08 | 00693 A | 0-5101-83 | Dry wt, induction furnace | 4-26 |
| Carbon, organic | | | | | | | | | |
| dissolved (mg/L as C) | | | | | | | | | |
| LC0113 | .1 to -- | 6 | 1 | 4 | F08 | 00681 A | 0-1100-83 | Wet oxidation | 4-26 |
| suspended (mg/L as C) | | | | | | | | | |
| LC0305 | .1 to -- | 6 | 1 | 4 | I08 | 00689 A | 0-7100-83 | Wet oxidation | 4-26 |
| total (mg/L as C) | | | | | | | | | |
| LC0114 | .1 to -- | 6 | 1 | 4 | I08 | 00680 A | 0-3100-83 | Wet oxidation | 4-26 |
| total in bottom material | | | | | | | | | |
| LC0504 | .1 to -- | -- | -- | -- | -- | 00687 A | 0-5101-83 | Calculation | 4-26 |
| Carbon tetrachloride | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 32102 A | 0-3115-83 | Purge and trap, GC-MS | 4-33 |
| Chlordane | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .1 to -- | 13 | 30 | 13 | F08 | 39352 A | 0-1104-83 | GC | 4-36 |
| SH1331 | .1 to -- | 13 | 30 | 13 | F08 | 39352 A | 0-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .1 to -- | 13 | 30 | 13 | I08 | 39353 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .1 to -- | 13 | 30 | 13 | I08 | 39353 A | 0-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .1 to -- | 13 | 30 | 13 | I08 | 39350 B | 0-3104-83 | GC | 4-38 |
| SH1334 | .1 to -- | 13 | 30 | 13 | I08 | 39350 B | 0-3104-83 | GC | 4-43 |
| SH1399 | .1 to -- | 13 | 30 | 13 | I08 | 39350 B | 0-3104-83 | GC | 4-44 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | 1.0 to -- | 13 | 30 | 13 | I08 | 39351 A | 0-5104-83 | GC | 4-38 |
| SH1335 | 1.0 to -- | 13 | 30 | 13 | I08 | 39351 A | 0-5104-83 | GC | 4-60 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Chlorobenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34301 A | O-3115-83 | Purge and trap, GC-MS | 4-33 |
| Chloroethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34311 A | O-3115-83 | Purge and trap, GC-MS | 4-33 |
| Chlorophyll-a, periphyton | | | | | | | | | |
| chromatographic-fluorometric ($mg/m^2$) | | | | | | | | | |
| LC0588 | .1 to | > 5 | > 5 | > 5 | E 10 | 70957 A | B-6630-79 | Chromatography and fluorometry | 4-25 |
| SH1507 | .1 to | > 5 | > 5 | > 5 | E 10 | 70957 A | B-6630-79 | Chromatography and fluorometry | 4-25 |
| Chlorophyll-a, phytoplankton | | | | | | | | | |
| chromatographic-fluorometric (ug/L) | | | | | | | | | |
| LC0586 | .1 to | > 5 | > 5 | > 5 | E 10 | 70953 A | B-6530-79 | Chromatography and fluorometry | 4-25 |
| SH1508 | .1 to | > 5 | > 5 | > 5 | E 10 | 70953 A | B-6530-79 | Chromatography and fluorometry | 4-25 |
| Chlorophyll-b, periphyton | | | | | | | | | |
| chromatographic-fluorometric ($mg/m^2$) | | | | | | | | | |
| LC0589 | .1 to | > 5 | > 5 | > 5 | E 10 | 70958 A | B-6630-79 | Chromatography and fluorometry | 4-25 |
| SH1507 | .1 to | > 5 | > 5 | > 5 | E 10 | 70958 A | B-6630-79 | Chromatography and fluorometry | 4-25 |
| Chlorophyll-b, phytoplankton | | | | | | | | | |
| chromatographic-fluorometric (ug/L) | | | | | | | | | |
| LC0587 | -- | > 5 | > 5 | > 5 | E 10 | 70954 A | B-6530-79 | Chromatography and fluorometry | 4-25 |
| SH1508 | -- | > 5 | > 5 | > 5 | E 10 | 70954 A | B-6530-79 | Chromatography and fluorometry | 4-25 |
| bis (2-Chloroethoxy) methane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34278 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-26 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34278 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34281 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34281 A | O-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name / Phase and units / Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| bis (2-Chloroethyl) ether | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34273 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34273 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-21 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34276 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34276 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| 2-Chloroethylvinyl ether | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34576 A | 0-3115-83 | Purge and trap, GC-MS | 4-33 |
| Chloroform | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 32106 A | 0-3115-83 | Purge and trap, GC-MS | 4-33 |
| bis (2-Chloroisopropyl) ether | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | | | | | 34283 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | | | | | 34283 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34286 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34286 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Chloromethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34418 A | 0-3115-83 | Purge and trap, GC-MS | 4-33 |
| 4-Chloro-3-methylphenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 30.0 to -- | -- | 27 | -- | D08 | 34452 A | 0-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 30.0 to -- | -- | 27 | -- | D08 | 34452 A | 0-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 600 to -- | -- | 27 | -- | I08 | 34455 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 600 to -- | -- | 27 | -- | I08 | 34455 A | 0-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| 2-Chloronaphthalene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34581 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34581 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34584 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34584 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 2-Chlorophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 25 | -- | D08 | 34586 A | O-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 5.0 to -- | -- | 25 | -- | D08 | 34586 A | O-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 25 | -- | I08 | 34589 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | 25 | -- | I08 | 34589 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 4-Chlorophenyl phenyl ether | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34641 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | - | 34641 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34644 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34644 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| Chrysene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 10.0 to -- | -- | 46 | -- | C08 | 34320 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 10.0 to -- | -- | 46 | -- | C08 | 34320 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 400 to -- | -- | 46 | -- | I08 | 34323 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 400 to -- | -- | 46 | -- | I08 | 34323 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| Cyanazine | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | -- | -- | -- | -- | 81757 A | O-3106-83 | GC | 4-47 |
| Cyprazine | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | -- | -- | -- | -- | 82187 A | O-3106-83 | GC | 4-47 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name / Phase and units / Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| 2,4-D | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1301 | .01 to -- | 10 | 10 | 4 | F08 | 39732 A | 0-1105-83 | GC | 4-35 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1302 | .01 to -- | 10 | 10 | 4 | I08 | 39733 A | 0-7105-83 | GC | 4-35 |
| total recoverable (ug/L) | | | | | | | | | |
| SH0079 | .01 to -- | -- | 10 | 4 | I08 | 39730 B | 0-3105-83 | GC | 4-36 |
| SH1304 | .01 to -- | 10 | 10 | 4 | I08 | 39730 B | 0-3105-83 | GC | 4-35 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH0080 | .1 to -- | 10 | 10 | 10 | I08 | 39731 A | 0-5105-83 | GC | 4-36 |
| SH1305 | .1 to -- | 10 | 10 | 10 | I08 | 39731 A | 0-5105-83 | GC | 4-36 |
| DDD | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 13 | 10 | 6 | F08 | 39361 A | 0-1104-83 | GC | 4-36 |
| SH1331 | .01 to -- | 13 | 10 | 6 | F08 | 39361 A | 0-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 13 | 10 | 6 | I08 | 39362 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 13 | 10 | 6 | I08 | 39362 A | 0-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 13 | 10 | 6 | I08 | 39360 C | 0-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 13 | 10 | 6 | I08 | 39360 C | 0-3104-83 | GC | 4-43 |
| SH1399 | .001 to -- | 13 | 10 | 6 | I08 | 39360 B | 0-3104-83 | GC | 4-44 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 13 | 10 | 6 | I08 | 39363 A | 0-5104-83 | GC | 4-38 |
| SH1335 | .1 to -- | 13 | 10 | 6 | I08 | 39363 A | 0-5104-83 | GC | 4-46 |
| DDE | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 19 | 11 | 3 | F08 | 39366 A | 0-1104-83 | GC | 4-31 |
| SH1331 | .01 to -- | 19 | 11 | 3 | F08 | 39366 A | 0-1104-83 | GC | 4-36 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 19 | 11 | 3 | I08 | 39367 A | 0-7104-83 | GC | 4-32 |
| SH1332 | .01 to -- | 19 | 11 | 3 | I08 | 39367 A | 0-7104-83 | GC | 4-37 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 19 | 11 | 3 | I08 | 39365 C | 0-3104-83 | GC | 4-33 |
| SH1334 | .01 to -- | 19 | 11 | 3 | I08 | 39365 C | 0-3104-83 | GC | 4-38 |
| SH1399 | .001 to -- | 19 | 11 | 3 | I08 | 39365 B | 0-3104-83 | GC | 4-39 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 19 | 11 | 3 | I08 | 39368 A | 0-5104-83 | GC | 4-34 |
| SH1335 | .1 to -- | 19 | 11 | 3 | I08 | 39368 A | 0-5104-83 | GC | 4-40 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| DDT | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 13 | 10 | 7 | F08 | 39371 A | O-1104-83 | GC | 4-36 |
| SH1331 | .01 to -- | 13 | 10 | 7 | F08 | 39371 A | O-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 13 | 10 | 7 | I08 | 39372 A | O-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 13 | 10 | 7 | I08 | 39372 A | O-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 13 | 10 | 7 | I08 | 39370 C | O-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 13 | 10 | 7 | I08 | 39370 C | O-3104-83 | GC | 4-43 |
| SH1399 | .001 to -- | 13 | 10 | 7 | I08 | 39370 B | O-3104-83 | GC | 4-44 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 13 | 10 | 7 | I08 | 39373 A | O-5104-83 | GC | 4-38 |
| SH1335 | .1 to -- | 13 | 10 | 7 | I08 | 39373 A | O-5104-83 | GC | 4-46 |
| DEF | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| LC0802 | .01 to -- | -- | -- | -- | -- | 39040 A | O-3104-83 | GC | 4-40 |
| Diazinon | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1316 | .01 to -- | 11 | 5 | 19 | F08 | 39572 A | O-1104-83 | GC | 4-39 |
| SH1331 | .01 to -- | 11 | 5 | 19 | F08 | 39572 A | O-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1317 | .01 to -- | 11 | 5 | 19 | I08 | 39573 A | O-7104-83 | GC | 4-40 |
| SH1332 | .01 to -- | 11 | 5 | 19 | I08 | 39573 A | O-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1319 | .01 to -- | 11 | 5 | 19 | I08 | 39570 B | O-3104-83 | GC | 4-40 |
| SH1334 | .01 to -- | 11 | 5 | 19 | I08 | 39570 B | O-3104-83 | GC | 4-43 |
| SH1399 | .01 to -- | 11 | 5 | 19 | I08 | 39570 B | O-3104-83 | GC | 4-44 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1320 | .1 to -- | 11 | 5 | 19 | I08 | 39571 A | O-5104-83 | GC | 4-41 |
| SH1335 | .1 to -- | 11 | 5 | 19 | I08 | 39571 A | O-5104-83 | GC | 4-46 |
| Dibenzo (a,h) anthracene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 10.0 to -- | -- | -- | -- | -- | 34556 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-23 |
| SH1385 | 10.0 to -- | -- | -- | -- | -- | 34556 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-26 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 400 to -- | -- | -- | -- | -- | 34559 A | O-5116-83 | Extractable, GC-MS | 4-25 |
| SH1386 | 400 to -- | -- | -- | -- | -- | 34559 A | O-5116-83 | Extractable, GC-MS | 4-26 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Dibromochloromethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 32105 A | O-3115-83 | Purge and trap, GC-MS | 4-33 |
| Dicamba | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH0079 | .01 to -- | -- | -- | -- | -- | 82052 A | | GC | 4-36 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH0080 | .1 to -- | -- | -- | -- | -- | 38931 A | | GC | 4-36 |
| 1,2-Dichlorobenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 43 | -- | C08 | 34536 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 43 | -- | C08 | 34536 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 43 | -- | I08 | 34539 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 43 | -- | I08 | 34539 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 1,3-Dichlorobenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 30 | -- | C08 | 34566 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 30 | -- | C08 | 34566 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 30 | -- | I08 | 34569 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 30 | -- | I08 | 34569 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 1,4-Dichlorobenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34571 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34571 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34574 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34574 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| Dichlorobromomethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 32101 A | O-3115-83 | Purge and trap, GC-MS | 4-44 |
| 1,1-Dichloroethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34496 A | O-3115-83 | Purge and trap, GC-MS | 4-29 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 32103 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| 1,1-Dichloroethylene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34501 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| 1,2-trans-Dichloroethylene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34546 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| 2,4-Dichlorophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 21 | -- | D08 | 34601 A | 0-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 5.0 to -- | -- | 21 | -- | D08 | 34601 A | 0-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 21 | -- | I08 | 34604 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | 21 | -- | I08 | 34604 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| 1,2-Dichloropropane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34541 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| 1,3-Dichloropropene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34561 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| Dieldrin | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 5 | 17 | 22 | F01 | 39381 A | 0-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 5 | 17 | 22 | F01 | 39381 A | 0-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 5 | 17 | 22 | I01 | 39382 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 5 | 17 | 22 | I01 | 39382 A | 0-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 5 | 17 | 22 | I01 | 39380 C | 0-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 5 | 17 | 22 | I01 | 39380 C | 0-3104-83 | GC | 4-43 |
| SH1399 | .001 to -- | 5 | 17 | 22 | I01 | 39380 B | 0-3104-83 | GC | 4-44 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 5 | 17 | 22 | I01 | 39383 A | 0-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 5 | 17 | 22 | I01 | 39383 A | 0-5104-83 | GC | 4-46 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Diethyl phthalate | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 37 | -- | C08 | 34336 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 37 | -- | C08 | 34336 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 37 | -- | I08 | 34339 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 37 | -- | I08 | 34339 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| Dimethyl phthalate | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 42 | -- | C08 | 34341 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 42 | -- | C08 | 34341 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 42 | -- | I08 | 34344 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 42 | -- | I08 | 34344 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 2,4-Dimethylphenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 23 | -- | D08 | 34606 A | O-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 5.0 to -- | -- | 23 | -- | D08 | 34606 A | O-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 23 | -- | I08 | 34609 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | 23 | -- | I08 | 34609 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| Di-n-butyl phthalate | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 19 | -- | C08 | 39110 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-23 |
| SH1385 | 5.0 to -- | -- | 19 | -- | C08 | 39110 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 19 | -- | I08 | 39112 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 19 | -- | I08 | 39112 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 2,4-Dinitrophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 20.0 to -- | -- | 26 | -- | D08 | 34616 A | O-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 20.0 to -- | -- | 26 | -- | D08 | 34616 A | O-3116-86 | Acid-extraction, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dinitrophenol--Continued | | | | | | | | | |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 600 to -- | -- | 26 | -- | I08 | 34619 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 600 to -- | -- | 26 | -- | I08 | 34619 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| 2,4-Dinitrotoluene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 19 | -- | C08 | 34611 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 19 | -- | C08 | 34611 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 19 | -- | I08 | 34614 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 19 | -- | I08 | 34614 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| 2,6-Dinitrotoluene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34626 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34626 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34629 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34629 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Di-n-octylphthalate | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 10.0 to -- | | | | | 34596 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 10.0 to -- | | | | | 34596 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 400 to -- | -- | -- | -- | -- | 34599 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 400 to -- | -- | -- | -- | -- | 34599 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| 2,4-DP | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1301 | .01 to -- | -- | -- | -- | -- | 82356 A | 0-1105-83 | GC | 4-35 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1302 | .01 to -- | -- | -- | -- | -- | 34608 A | 0-7105-83 | GC | 4-35 |
| total recoverable (ug/L) | | | | | | | | | |
| SH0079 | .01 to -- | -- | -- | -- | -- | 82183 A | 0-3105-83 | GC | 4-36 |
| SH1304 | .01 to -- | -- | -- | -- | -- | 82183 A | 0-3105-83 | GC | 4-35 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH0080 | .1 to -- | -- | -- | -- | -- | 34609 A | 0-5105-83 | GC | 4-36 |
| SH1305 | .1 to -- | -- | -- | -- | -- | 34609 A | 0-5105-83 | GC | 4-36 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Endosulfan | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 9 | 5 | 7 | F08 | 82354 A | O-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 9 | 5 | 7 | F08 | 82354 A | O-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 9 | 5 | 7 | I08 | 82355 A | O-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 9 | 5 | 7 | I08 | 82355 A | O-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 9 | 5 | 7 | I08 | 39388 C | O-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 9 | 5 | 7 | I08 | 39388 C | O-3104-83 | GC | 4-43 |
| SH1399 | .001 to -- | 9 | 5 | 7 | I08 | 39388 B | O-3104-83 | GC | 4-44 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 9 | 5 | 7 | I08 | 39389 A | O-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 9 | 5 | 7 | I08 | 39389 A | O-5104-83 | GC | 4-46 |
| Endrin | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 11 | 6 | -- | F08 | 39391 A | O-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 11 | 6 | -- | F08 | 39391 A | O-1104-83 | GC | 4-36 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 11 | 6 | -- | I08 | 39392 A | O-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 11 | 6 | -- | I08 | 39392 A | O-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 11 | 6 | -- | I08 | 39390 C | O-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 11 | 6 | -- | I08 | 39390 C | O-3104-83 | GC | 4-44 |
| SH1399 | .001 to -- | 11 | 6 | -- | I08 | 39390 B | O-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 11 | 6 | -- | I08 | 39393 A | O-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 11 | 6 | -- | I08 | 39393 A | O-5104-83 | GC | 4-46 |
| Ethion | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1316 | .01 to -- | 33 | 2 | -- | F08 | 82346 A | O-1104-83 | GC | 4-39 |
| SH1331 | .01 to -- | 33 | 2 | -- | F08 | 82346 A | O-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1317 | .01 to -- | 33 | 2 | -- | I08 | 82347 A | O-7104-83 | GC | 4-40 |
| SH1332 | .01 to -- | 33 | 2 | -- | I08 | 82347 A | O-7104-83 | GC | 4-42 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1319 | .01 to -- | 33 | 2 | -- | I08 | 39398 B | O-3104-83 | GC | 4-40 |
| SH1334 | .01 to -- | 33 | 2 | -- | I08 | 39398 B | O-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 33 | 2 | -- | I08 | 39398 B | O-3104-83 | GC | 4-45 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Ethion--Continued | | | | | | | | | |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1320 | .1 to -- | 33 | 2 | -- | I08 | 39399 A | 0-5104-83 | GC | 4-41 |
| SH1335 | .1 to -- | 33 | 2 | -- | I08 | 39399 A | 0-5104-83 | GC | 4-46 |
| Ethylbenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34371 A | 0-3115-83 | Purge and trap, GC-MS | 4-44 |
| Ethylene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH0955 | .1 to -- | 3 | 3 | 2 | F08 | 82357 A | 0-3114-83 | Purge and trap, GC | 4-33 |
| bis (2-Ethylhexyl) phthalate | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 39100 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 39100 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 39102 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 39102 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Fluoranthene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34376 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34376 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34379 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34379 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Fluorene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 11 | -- | C08 | 34381 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | 11 | -- | C08 | 34381 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 11 | -- | I08 | 34384 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 11 | -- | I08 | 34384 A | 0-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Gross polychlorinated biphenyls | | | | | | | | | |
| dissolved (ug/L as PCB) | | | | | | | | | |
| SH1321 | .1 to -- | 26 | 11 | -- | D08 | 39517 A | O-1104-83 | GC | 4-37 |
| SH1331 | .1 to -- | 26 | 11 | -- | D08 | 39517 A | O-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L as PCB) | | | | | | | | | |
| SH1322 | .1 to -- | 26 | 11 | -- | I08 | 39518 A | O-7104-83 | GC | 4-37 |
| SH1332 | .1 to -- | 26 | 11 | -- | I08 | 39518 A | O-7104-83 | GC | 4-42 |
| total recoverable (ug/L as PCB) | | | | | | | | | |
| SH1324 | .1 to -- | 26 | 11 | -- | I08 | 39516 B | O-3104-83 | GC | 4-38 |
| SH1334 | .1 to -- | 26 | 11 | -- | I08 | 39516 B | O-3104-83 | GC | 4-44 |
| SH1399 | .1 to -- | 26 | 11 | -- | I08 | 39516 B | O-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg as PCB) | | | | | | | | | |
| SH1325 | 1.0 to -- | 26 | 11 | -- | I08 | 39519 A | O-5104-83 | GC | 4-39 |
| SH1335 | 1.0 to -- | 26 | 11 | -- | I08 | 39519 A | O-5104-83 | GC | 4-46 |
| Gross polychlorinated naphthalenes | | | | | | | | | |
| dissolved (ug/L as PCN) | | | | | | | | | |
| SH1321 | .1 to -- | -- | -- | -- | -- | 82360 A | O-1104-83 | GC | 4-37 |
| SH1331 | .1 to -- | -- | -- | -- | -- | 82360 A | O-1104-83 | GC | 4-41 |
| suspended recoverable (ug/L as PCN) | | | | | | | | | |
| SH1322 | .1 to -- | -- | -- | -- | -- | 82361 A | O-7104-83 | GC | 4-37 |
| SH1332 | .1 to -- | -- | -- | -- | -- | 82361 A | O-7104-83 | GC | 4-42 |
| total recoverable (ug/L as PCN) | | | | | | | | | |
| SH1324 | .1 to -- | -- | -- | -- | -- | 39250 B | O-3104-83 | GC | 4-38 |
| SH1334 | .1 to -- | -- | -- | -- | -- | 39250 B | O-3104-83 | GC | 4-44 |
| SH1399 | .1 to -- | -- | -- | -- | -- | 39250 B | O-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg as PCN) | | | | | | | | | |
| SH1325 | 1.0 to -- | -- | -- | -- | -- | 39251 A | O-5104-83 | GC | 4-39 |
| SH1335 | 1.0 to -- | -- | -- | -- | -- | 39251 A | O-5104-83 | GC | 4-46 |
| Guthion | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| LC0805 | .1 to -- | -- | 3 | -- | J03 | 39580 A | O-3104-83 | GC | 4-40 |
| Heptachlor | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 15 | 16 | 4 | F08 | 39411 A | O-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 15 | 16 | 4 | F08 | 39411 A | O-1104-83 | GC | 4-42 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Heptachlor--Continued | | | | | | | | | |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 15 | 16 | 4 | I08 | 39412 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 15 | 16 | 4 | I08 | 39412 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 15 | 16 | 4 | I08 | 39410 C | 0-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 15 | 16 | 4 | I08 | 39410 C | 0-3104-83 | GC | 4-44 |
| SH1399 | .001 to -- | 15 | 16 | 4 | I08 | 39410 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 15 | 16 | 4 | I08 | 39413 A | 0-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 15 | 16 | 4 | I08 | 39413 A | 0-5104-83 | GC | 4-46 |
| Heptachlor epoxide | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 8 | 5 | -- | F08 | 39421 A | 0-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 8 | 5 | -- | F08 | 39421 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 8 | 5 | -- | I08 | 39422 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 8 | 5 | -- | I08 | 39422 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 8 | 5 | -- | I08 | 39420 C | 0-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 8 | 5 | -- | I08 | 39420 C | 0-3104-83 | GC | 4-44 |
| SH1399 | .001 to -- | 8 | 5 | -- | I08 | 39420 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 8 | 5 | -- | I08 | 39423 A | 0-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 8 | 5 | -- | I08 | 39423 A | 0-5104-83 | GC | 4-46 |
| Hexachlorobenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 39700 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-27 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 39700 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 39701 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 39701 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Hexachlorobutadiene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 39702 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 39702 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene--Continued | | | | | | | | | |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 39705 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 39705 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Hexachlorocyclopentadiene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34386 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34386 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34389 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34389 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Hexachloroethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | - | 34396 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | - | 34396 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34399 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34399 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Indeno (1,2,3-cd) pyrene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34403 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34403 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34406 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34406 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Isophorone | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34408 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34408 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34411 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34411 A | 0-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Lindane | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 12 | 11 | 7 | F08 | 39341 A | 0-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 12 | 11 | 7 | F08 | 39341 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 12 | 11 | 7 | I08 | 39342 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 12 | 11 | 7 | I08 | 39342 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 12 | 11 | 7 | I08 | 39340 C | 0-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 12 | 11 | 7 | I08 | 39340 C | 0-3104-83 | GC | 4-44 |
| SH1399 | .001 to -- | 12 | 11 | 7 | I08 | 39340 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 12 | 11 | 7 | I08 | 39343 A | 0-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 12 | 11 | 7 | I08 | 39343 A | 0-5104-83 | GC | 4-46 |
| Malathion | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1316 | .01 to -- | 32 | 17 | 15 | F08 | 39532 A | 0-1104-83 | GC | 4-39 |
| SH1331 | .01 to -- | 32 | 17 | 15 | F08 | 39532 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1317 | .01 to -- | 32 | 17 | 15 | I08 | 39533 A | 0-7104-83 | GC | 4-40 |
| SH1332 | .01 to -- | 32 | 17 | 15 | I08 | 39533 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1319 | .01 to -- | 32 | 17 | 15 | I08 | 39530 B | 0-3104-83 | GC | 4-40 |
| SH1334 | .01 to -- | 32 | 17 | 15 | I08 | 39530 B | 0-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 32 | 17 | 15 | I08 | 39530 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1320 | .1 to -- | 32 | 17 | 15 | I08 | 39531 A | 0-5104-83 | GC | 4-41 |
| SH1335 | .1 to -- | 32 | 17 | 15 | I08 | 39531 A | 0-5104-83 | GC | 4-46 |
| Methomyl | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1359 | 2.0 to -- | 20 | 9 | 7 | E08 | 39051 A | 0-3107-83 | High performance liquid chromatography | 4-35 |
| Methoxychlor | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 9 | 8 | 5 | F08 | 82350 A | 0-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 9 | 8 | 5 | F08 | 82350 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 9 | 8 | 5 | I08 | 82351 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 9 | 8 | 5 | I08 | 82351 A | 0-7104-83 | GC | 4-43 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Methoxychlor--Continued | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 9 | 8 | 5 | I08 | 39480 B | 0-3104-83 | GC | 4-38 |
| SH1334 | .01 to -- | 9 | 8 | 5 | I08 | 39480 B | 0-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 9 | 8 | 5 | I08 | 39480 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 9 | 8 | 5 | I08 | 39481 A | 0-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 9 | 8 | 5 | I08 | 39481 A | 0-5104-83 | GC | 4-46 |
| Methylbromide | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34413 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| 2-Methyl-4,6-dinitrophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 30.0 to -- | -- | 33 | -- | D08 | 34657 A | 0-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 30.0 to -- | -- | 33 | -- | D08 | 34657 A | 0-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 600 to -- | -- | 33 | -- | I08 | 34660 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 600 to -- | -- | 33 | -- | I08 | 34660 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Methyl parathion | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1316 | .01 to -- | 9 | 9 | 3 | F08 | 39602 A | 0-1104-83 | GC | 4-39 |
| SH1331 | .01 to -- | 9 | 9 | 3 | F08 | 39602 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1317 | .01 to -- | 9 | 9 | 3 | I08 | 39603 A | 0-7104-83 | GC | 4-40 |
| SH1332 | .01 to -- | 9 | 9 | 3 | I08 | 39603 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1319 | .01 to -- | 9 | 9 | 3 | I08 | 39600 B | 0-3104-83 | GC | 4-40 |
| SH1334 | .01 to -- | 9 | 9 | 3 | I08 | 39600 B | 0-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 9 | 9 | 3 | I08 | 39600 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1320 | .1 to -- | 9 | -- | -- | I08 | 39601 A | 0-5104-83 | GC | 4-41 |
| SH1335 | .1 to -- | 9 | -- | -- | I08 | 39601 A | 0-5104-83 | GC | 4-46 |
| Methyl trithion | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1316 | .01 to -- | 12 | -- | -- | F08 | 82344 A | 0-1104-83 | GC | 4-39 |
| SH1331 | .01 to -- | 12 | -- | -- | F08 | 82344 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1317 | .01 to -- | 12 | -- | -- | I08 | 82345 A | 0-7104-83 | GC | 4-40 |
| SH1332 | .01 to -- | 12 | -- | -- | I08 | 82345 A | 0-7104-83 | GC | 4-43 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Methyl trithion--Continued | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1319 | .01 to -- | 12 | -- | -- | I08 | 39790 B | 0-3104-83 | GC | 4-40 |
| SH1334 | .01 to -- | 12 | -- | -- | I08 | 39790 B | 0-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 12 | -- | -- | I08 | 39790 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1320 | .1 to -- | 12 | -- | -- | I08 | 39791 A | 0-5104-83 | GC | 4-41 |
| SH1335 | .1 to -- | 12 | -- | -- | I08 | 39791 A | 0-5104-83 | GC | 4-46 |
| Methylene blue active substances | | | | | | | | | |
| total recoverable (mg/L as MBAS) | | | | | | | | | |
| LC0096 | .01 to -- | 10 | 10 | -- | F08 | 38260 A | 0-3111-83 | Colorimetry | 4-26 |
| Methylene chloride | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34423 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| Mirex | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .01 to -- | 34 | 21 | 5 | F08 | 39756 A | 0-1104-83 | GC | 4-37 |
| SH1331 | .01 to -- | 34 | 21 | 5 | F08 | 39756 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .01 to -- | 34 | 21 | 5 | I08 | 39757 A | 0-7104-83 | GC | 4-37 |
| SH1332 | .01 to -- | 34 | 21 | 5 | I08 | 39757 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .01 to -- | 34 | 21 | 5 | I08 | 39755 B | 0-3104-83 | GC | 4-33 |
| SH1334 | .01 to -- | 34 | 21 | 5 | I08 | 39755 B | 0-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 34 | 21 | 5 | I08 | 39755 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | .1 to -- | 34 | 21 | 5 | I08 | 39758 A | 0-5104-83 | GC | 4-39 |
| SH1335 | .1 to -- | 34 | 21 | 5 | I08 | 39758 A | 0-5104-83 | GC | 4-46 |
| Naphthalene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 17 | -- | C08 | 34696 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | 17 | -- | C08 | 34696 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 17 | -- | I08 | 34445 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 17 | -- | I08 | 34445 A | 0-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Nitrobenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34447 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34447 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34450 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34450 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 2-Nitrophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 32 | -- | D08 | 34591 A | O-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 5.0 to -- | -- | 32 | -- | D08 | 34591 A | O-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 32 | -- | I08 | 34594 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 200 to -- | -- | 32 | -- | I08 | 34594 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| 4-Nitrophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 30.0 to -- | -- | 44 | -- | D08 | 34646 A | O-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 30.0 to -- | -- | 44 | -- | D08 | 34646 A | O-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 600 to -- | -- | 44 | -- | I08 | 34649 A | O-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 600 to -- | -- | 44 | -- | I08 | 34649 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| n-Nitrosodimethylamine | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34438 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34438 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34441 A | O-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34441 A | O-5116-83 | Extractable, GC-MS | 4-31 |
| n-Nitrosodiphenylamine | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34433 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34433 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| n-Nitrosodiphenylamine--Continued | | | | | | | | | |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34436 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34436 A | 0-5116-83 | Extractable, GC-MS | 4-26 |
| n-Nitrosodi-n-propylamine | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34428 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34428 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-26 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34431 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34431 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| Oil and grease | | | | | | | | | |
| total recoverable (mg/L) | | | | | | | | | |
| LC0127 | 1 to -- | -- | 3 | -- | E03 | 00556 A | 0-3108-83 | Freon-extraction, gravimetry | 4-26 |
| recoverable from bottom material, dry wt. (mg/kg) | | | | | | | | | |
| LC0531 | 1000 to -- | -- | -- | -- | -- | 00557 A | 0-5108-83 | Freon-extraction, gravimetry | 4-26 |
| Parathion | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1316 | .01 to -- | 6 | 8 | 3 | F08 | 39542 A | 0-1104-83 | GC | 4-39 |
| SH1331 | .01 to -- | 6 | 8 | 3 | F08 | 39542 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1317 | .01 to -- | 6 | 8 | 3 | I08 | 39543 A | 0-7104-83 | GC | 4-40 |
| SH1332 | .01 to -- | 6 | 8 | 3 | I08 | 39543 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1319 | .01 to -- | 6 | 8 | 3 | I08 | 39540 B | 0-3104-83 | GC | 4-40 |
| SH1334 | .01 to -- | 6 | 8 | 3 | I08 | 39540 B | 0-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 6 | 8 | 3 | I08 | 39540 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. | | | | | | | | | |
| SH1320 | .1 to -- | 6 | 8 | 3 | I08 | 39541 A | 0-5104-83 | GC | 4-41 |
| SH1335 | .1 to -- | 6 | 8 | 3 | I08 | 39541 A | 0-5104-83 | GC | 4-46 |
| Pentachlorophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 30.0 to -- | -- | 31 | -- | D08 | 39032 A | 0-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 30.0 to -- | -- | 31 | -- | D08 | 39032 A | 0-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 600 to -- | -- | 31 | -- | I08 | 39061 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 600 to -- | -- | 31 | -- | I08 | 39061 A | 0-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Periphyton, biomass ash weight ($g/m^2$) | | | | | | | | | |
| LC0611 | .001 to | -- | -- | -- | -- | 00572 A | B-3520-79 | Gravimetry | 4-25 |
| SH0671 | .001 to | -- | -- | -- | -- | 00572 A | B-3520-79 | Gravimetry | 4-43 |
| Periphyton, biomass dry weight ($g/m^2$) | | | | | | | | | |
| LC0603 | .001 to | -- | -- | -- | -- | 00573 A | B-3520-79 | Gravimetry | 4-43 |
| SH0671 | .001 to | -- | -- | -- | -- | 00573 A | B-3520-79 | Gravimetry | 4-43 |
| Perthane | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | .1 to -- | 9 | 16 | 4 | F08 | 82348 A | O-1104-83 | GC | 4-32 |
| SH1331 | .1 to -- | 9 | 16 | 4 | F08 | 82348 A | O-1104-83 | GC | 4-36 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | .1 to -- | 9 | 16 | 4 | I08 | 82349 A | O-7104-83 | GC | 4-32 |
| SH1332 | .1 to -- | 9 | 16 | 4 | I08 | 82349 A | O-7104-83 | GC | 4-37 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | .1 to -- | 9 | 16 | 4 | I08 | 39034 A | O-3104-83 | GC | 4-33 |
| SH1334 | .1 to -- | 9 | 16 | 4 | I08 | 39034 A | O-3104-83 | GC | 4-38 |
| SH1399 | .1 to -- | 9 | 16 | 4 | I08 | 39034 A | O-3104-83 | GC | 4-39 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | 1.0 to -- | 9 | 16 | 4 | I08 | 81886 A | O-5104-83 | GC | 4-34 |
| SH1335 | 1.0 to -- | 9 | 16 | 4 | I08 | 81886 A | O-5104-83 | GC | 4-40 |
| Phenanthrene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | -- | -- | -- | 34461 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-23 |
| SH1385 | 5.0 to -- | -- | -- | -- | -- | 34461 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-26 |
| SH1394 | 5.0 to -- | -- | -- | -- | -- | 34461 A | O-3116-86 | Base/neutral-extraction, GC-MS | 4-23 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | -- | -- | -- | 34464 A | O-5116-83 | Extractable, GC-MS | 4-25 |
| SH1386 | 200 to -- | -- | -- | -- | -- | 34464 A | O-5116-83 | Extractable, GC-MS | 4-26 |
| Phenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 44 | -- | D08 | 34694 A | O-3116-86 | Acid-extraction, GC-MS | 4-23 |
| SH1385 | 5.0 to -- | -- | 44 | -- | D08 | 34694 A | O-3116-86 | Acid-extraction, GC-MS | 4-26 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 44 | -- | I08 | 34695 A | O-5116-83 | Extractable, GC-MS | 4-24 |
| SH1386 | 200 to -- | -- | 44 | -- | I08 | 34695 A | O-5116-83 | Extractable, GC-MS | 4-26 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name / Phase and units / Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Phenols** | | | | | | | | | |
| total recoverable (ug/L as phenol) | | | | | | | | | |
| LC0052 | 1 to -- | 12 | -- | 6 | F07 | 32730 A | 0-3110-83 | Colorimetry, 4-aminoantipyrine | 4-26 |
| **Phytoplankton, biomass** | | | | | | | | | |
| ash weight (mg/L) | | | | | | | | | |
| LC0621 | 1 to | -- | -- | -- | -- | 81353 A | B-6560-79 | Gravimetry | 4-25 |
| SH0666 | 1 to | -- | -- | -- | -- | 81353 A | B-6560-79 | Gravimetry | 4-25 |
| **Phytoplankton, biomass** | | | | | | | | | |
| dry weight (mg/L) | | | | | | | | | |
| LC0620 | 1 to | -- | -- | -- | -- | 81354 A | B-6560-79 | Gravimetry | 4-25 |
| SH0666 | 1 to | -- | -- | -- | -- | 81354 A | B-6560-79 | Gravimetry | 4-25 |
| **Picloram** | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH0079 | .01 to -- | -- | -- | -- | -- | 39720 A | 0-3105-83 | GC | 4-36 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH0080 | .1 to -- | -- | -- | -- | -- | 38930 A | 0-5105-83 | GC | 4-36 |
| **Picric acid** | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1300 | 2.0 to -- | 10 | 4 | 5 | E08 | 82340 A | 0-3112-83 | High performance liquid chromatography | 4-31 |
| **Prometon** | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | 6 | 2 | 5 | E08 | 39056 A | 0-3106-83 | GC | 4-47 |
| **Prometryn** | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | 5 | 2 | 5 | E08 | 39057 A | 0-3106-83 | GC | 4-47 |
| **Propane** | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH0955 | .1 to -- | 4 | 2 | 2 | F08 | 82358 A | 0-3114-83 | Purge and trap, GC | 4-23 |
| **Propazine** | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | 6 | 2 | 5 | E08 | 39024 A | 0-3106-83 | GC | 4-47 |
| **Propham** | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1359 | 2.0 to -- | 13 | 8 | 8 | E08 | 39052 A | 0-3107-83 | High performance liquid chromatography | 4-35 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Pyrene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 16 | -- | C08 | 34469 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | 16 | -- | C08 | 34469 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 16 | -- | I08 | 34472 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 16 | -- | I08 | 34472 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| RDX | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1300 | 2.0 to -- | 37 | 12 | 11 | E08 | 81364 A | 0-3112-83 | High performance liquid chromatography | 4-31 |
| Silvex | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1301 | .01 to -- | 10 | 9 | 16 | F08 | 39762 A | 0-1105-83 | GC | 4-35 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1302 | .01 to -- | 10 | 9 | 16 | I08 | 39763 A | 0-7105-83 | GC | 4-35 |
| total recoverable (ug/L) | | | | | | | | | |
| SH0079 | .01 to -- | 10 | 9 | 16 | I08 | 39760 B | 0-3105-83 | GC | 4-36 |
| SH1304 | .01 to -- | 10 | 9 | 16 | I08 | 39760 B | 0-3105-83 | GC | 4-35 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH0080 | .1 to -- | 10 | 9 | 16 | I08 | 39761 A | 0-5105-83 | GC | 4-36 |
| SH1305 | .1 to -- | 10 | 9 | 16 | I08 | 39761 A | 0-5105-83 | GC | 4-36 |
| Simazine | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | 5 | 5 | 9 | E08 | 39055 A | 0-3106-83 | GC | 4-47 |
| Simetone | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH 1389 | .1 to -- | -- | -- | -- | | 82188 A | 0-3106-83 | GC | 4-47 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Simetryn | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | 7 | 2 | 5 | E08 | 39054 A | 0-3106-83 | GC | 4-47 |
| 2,4,5-T | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1301 | .01 to -- | 10 | 9 | -- | F08 | 39742 A | 0-1105-83 | GC | 4-35 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1302 | .01 to -- | 10 | 9 | -- | I08 | 39743 A | 0-7105-83 | GC | 4-35 |
| total recoverable (ug/L) | | | | | | | | | |
| SH0079 | .01 to -- | 10 | 9 | -- | I08 | 39740 B | 0-3105-83 | GC | 4-36 |
| SH1304 | .01 to -- | 10 | 9 | -- | I08 | 39740 B | 0-3105-83 | GC | 4-35 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH0080 | .1 to -- | 10 | 9 | -- | I08 | 39741 A | 0-5105-83 | GC | 4-36 |
| SH1305 | .1 to -- | 10 | 9 | -- | I08 | 39741 A | 0-5105-83 | GC | 4-36 |
| Tannin and lignin | | | | | | | | | |
| total recoverable (mg/L as tannic acid) | | | | | | | | | |
| LC0138 | .1 to -- | -- | -- | -- | -- | 32240 A | --------- | Colorimetry | 4-26 |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34516 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| Tetrachloroethylene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34475 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| TNT | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1300 | 2.0 to -- | 23 | 10 | 11 | E08 | 81360 B | 0-3112-83 | High pressure liquid chromatography | 4-31 |
| Toluene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34010 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| Toxaphene | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1321 | 1.0 to -- | -- | 15 | 14 | D08 | 39401 A | 0-1104-83 | GC | 4-37 |
| SH1331 | 1.0 to -- | -- | 15 | 14 | D08 | 39401 A | 0-1104-83 | GC | 4-42 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene--Continued | | | | | | | | | |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1322 | 1.0 to -- | -- | 15 | 14 | I08 | 39402 A | 0-7104-83 | GC | 4-37 |
| SH1332 | 1.0 to -- | -- | 15 | 14 | I08 | 39402 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1324 | 1.0 to -- | -- | 15 | 14 | I08 | 39400 B | 0-3104-83 | GC | 4-38 |
| SH1334 | 1.0 to -- | -- | 15 | 14 | I08 | 39400 B | 0-3104-83 | GC | 4-44 |
| SH1399 | 1.0 to -- | -- | 15 | 14 | I08 | 39400 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1325 | 10 to -- | -- | 15 | 14 | I08 | 39403 A | 0-5104-83 | GC | 4-39 |
| SH1335 | 10 to -- | -- | 15 | 14 | I08 | 39403 A | 0-5104-83 | GC | 4-46 |
| 1,2,4-Trichlorobenzene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 5.0 to -- | -- | 24 | -- | C08 | 34551 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-28 |
| SH1385 | 5.0 to -- | -- | 24 | -- | C08 | 34551 A | 0-3116-86 | Base/neutral-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 200 to -- | -- | 24 | -- | I08 | 34554 A | 0-5116-83 | Extractable, GC-MS | 4-30 |
| SH1386 | 200 to -- | -- | 24 | -- | I08 | 34554 A | 0-5116-83 | Extractable, GC-MS | 4-31 |
| 1,1,1-Trichloroethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34506 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| 1,1,2-Trichloroethane | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 34511 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| Trichloroethylene | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 3.0 to -- | -- | -- | -- | -- | 39180 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |
| 2,4,6-Trichlorophenol | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1383 | 20.0 to -- | -- | 31 | -- | D08 | 34621 A | 0-3116-86 | Acid-extraction, GC-MS | 4-26 |
| SH1385 | 20.0 to -- | -- | 31 | -- | D08 | 34621 A | 0-3116-86 | Acid-extraction, GC-MS | 4-31 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1384 | 600 to -- | -- | 31 | -- | I08 | 34624 A | 0-5116-83 | Extractable, GC-MS | 4-29 |
| SH1386 | 600 to -- | -- | 31 | -- | I08 | 34624 A | 0-5116-83 | Extractable, GC-MS | 4-31 |

Table 5.3.1.--Index of analytical methodology for organic analyses--Continued

| Parameter name<br>Phase and units<br>Lab code | Applicable range | Precision (percent) Low | Med | Hi | Ref | WATSTORE & method code | Method number | Methodology | Page |
|---|---|---|---|---|---|---|---|---|---|
| Trifluralin | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1389 | .1 to -- | -- | -- | -- | --- | 39030 C | 0-3106-83 | GC | 4-47 |
| Trithion | | | | | | | | | |
| dissolved (ug/L) | | | | | | | | | |
| SH1316 | .01 to -- | 8 | -- | -- | F08 | 82342 A | 0-1104-83 | GC | 4-39 |
| SH1331 | .01 to -- | 8 | -- | -- | F08 | 82342 A | 0-1104-83 | GC | 4-42 |
| suspended recoverable (ug/L) | | | | | | | | | |
| SH1317 | .01 to -- | 8 | -- | -- | I08 | 82343 A | 0-7104-83 | GC | 4-40 |
| SH1332 | .01 to -- | 8 | -- | -- | I08 | 82343 A | 0-7104-83 | GC | 4-43 |
| total recoverable (ug/L) | | | | | | | | | |
| SH1319 | .01 to -- | 8 | -- | -- | I08 | 39786 B | 0-3104-83 | GC | 4-40 |
| SH1334 | .01 to -- | 8 | -- | -- | I08 | 39786 B | 0-3104-83 | GC | 4-44 |
| SH1399 | .01 to -- | 8 | -- | -- | I08 | 39786 B | 0-3104-83 | GC | 4-45 |
| recoverable from bottom material, dry wt. (ug/kg) | | | | | | | | | |
| SH1320 | .1 to -- | 8 | -- | -- | I08 | 39787 A | 0-5104-83 | GC | 4-41 |
| SH1335 | .1 to -- | 8 | -- | -- | I08 | 39787 A | 0-5104-83 | GC | 4-46 |
| Vinyl chloride | | | | | | | | | |
| total recoverable (ug/L) | | | | | | | | | |
| SH1390 | 1.0 to -- | -- | -- | -- | -- | 39175 A | 0-3115-83 | Purge and trap, GC-MS | 4-34 |