NOAA Technical Memorandum OMPA-6

ANALYSIS OF RESIDUAL CHLORINATED HYDROCARBONS, AROMATIC HYDROCARBONS AND RELATED COMPOUNDS IN SELECTED SOURCES, SINKS, AND BIOTA OF THE NEW YORK BIGHT

William D. MacLeod, Jr.
L. Scott Ramos
Andrew J. Friedman
Douglas G. Burrows
Patty G. Prohaska
David L. Fisher
Donald W. Brown

NOAA National Analytical Facility
Environmental Conservation Division
Northwest and Alaska Fisheries Center
National Marine Fisheries Service
2725 Montlake Boulevard East
Seattle, Washington 98112

Boulder, Colorado
May 1981

UNITED STATES DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
James P. Walsh, Acting Administrator

Office of Marine Pollution Assessment
R.L. Swanson, Director

Completion Report Submitted to
New York Bight Project
Marine Ecosystems Analysis Program
Office of Marine Pollution and Assessment

by

NORTHWEST AND ALASKA FISHERIES CENTER
NATIONAL MARINE FISHERIES SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
2725 MONTLAKE BOULEVARD EAST
SEATTLE, WASHINGTON 98112

This report presents results of chemical research and analysis performed by the NOAA National Analytical Facility from June 1977 to October 1979, under Research Units I.C.7 and I.E.1 of the New York Bight Project Technical Development Plan.

DISCLAIMER

ACKNOWLEDGMENTS

Former employees Lawrence C. Thomas, Rand G. Jenkins and Russell Dills made important contributions during the early research phase of this project. Orlando Maynes, Karen Culler, Kathy Kreps, Don Gennero and Theresa Federighi prepared substantial numbers of sample extracts for analysis. Karen Grams, Frank Morado, Theresa Federighi, and Julie Blakely were indispensable in massive data calculation and verification.

FOREWORD

The Marine Ecosystems Analysis (MESA) Program was begun in 1972 by the National Oceanic and Atmospheric Administration. The New York Bight was selected for the initial study because of the significance and urgency of its environmental problems. The Bight extends seaward over 39,000 km^2 (15,000 square miles) from Long Island and New Jersey to the edge of the continental shelf, some 150 - 180 km (80 - 100 nautical miles) offshore. It is the repository of wastes from over twenty million people and numerous industries. Annually, the Bight receives about nine million metric tons of sewage sludge and industrial waste, and five million tons of dredge spoil. Despite such heavy industrial use, the Bight is an important environmental resource. Rich and abundant commercial and recreational fisheries occupy these waters, and wildlife sanctuaries dot the less populated shores.

The New York Bight Project was initiated in 1973 to determine the condition of the ecosystem in the Bight and to determine where significant environmental problems are, or could develop in the future. The Project was not intended to solve all marine problems of the Bight, but to provide information and data upon which management and planning decisions could be based. The goals were to develop an extensive understanding of the ecosystem processes and to study pollutants and other man-related stresses on the New York Bight.

ABBREVIATIONS

C - Celsius
ca. - *circa* (approximately)
cm - centimeter(s)
dia - diameter
g - gram(s)
g - gravity
h - high, height
hr - hour(s)
id - inside diameter
L - liter(s)
l - long, length
min - minute(s)
µg - microgram(s)
µL - microliter(s)
mg - milligram(s)
mL - milliliter(s)
ng - nanogram(s)
nL - nanoliter(s)
rpm - revolutions per minute
sec - second(s)
temp - temperature
wt - weight

CONTENTS

Page

Acknowledgments-- ii

Foreword--- iii

Abbreviations-- iii

Introduction--- 1

Analytical Procedures

I. Materials--- 3

II. Water-- 5

III. Sewage Sludge--- 6

IV. Biota-- 7

V. Sediment-- 8

VI. Extract Filtration and Preliminary Clean-up-------------------- 10

VII. Liquid Chromatography--- 11

VIII. Gas Chromatography--- 14

IX. Gas Chromatography/Mass Spectrometry--------------------------- 15

Laboratory Studies--- 16

Analytical Results--- 18

References--- 21

Appendices--- 22

A. Target Compounds-- 23

B. Broad Search Compounds--- 120

INTRODUCTION

In 1976 the National Oceanic and Atmospheric Administration (NOAA) established the National Analytical Facility (NAF) to provide NOAA's environmental programs with detailed information on the types and amounts of trace chemical contaminants in the marine environment [1]. As in other NOAA environmental programs, the Marine Ecosystem Analysis (MESA) Program must contend with trace analyses of extremely complex mixtures of chemicals which are difficult to isolate, identify, and measure. These analyses require highly trained analytical chemists and advanced analytical instrumentation which are not readily available to NOAA either in academia or in the private sector. Hence, NAF developed analytical techniques and performed state-of-the-art trace analyses for MESA's New York Bight Project.

The overall goals of the New York Bight (NYB) Project are "to develop a comprehensive understanding of the processes and interrelationships of the ecosystem and to determine the fate and effects of pollutants and other man-related stresses on the New York Bight" [2]. For these purposes, the boundaries of the New York Bight are defined to extend from Cape May, New Jersey to Montauk Point, New York, and seaward to the 200 meter isobath (Fig. 1). Because of concentrated pollutant input, most of the effort has been concentrated in the Apex of the Bight. The portions of the New York Bight Project

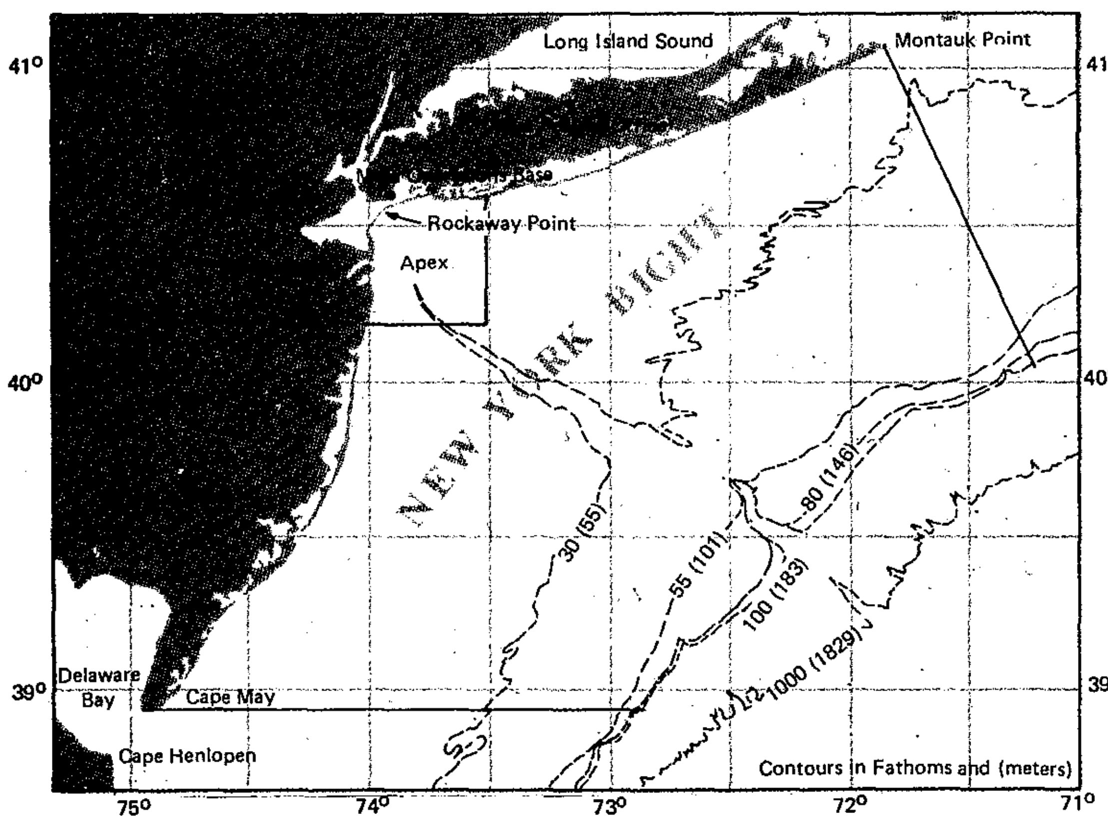

Figure 1. The New York Bight

addressed by NAF in this report are contained in work units I.C.7 and I.E.1 of the NYB Technical Development Plan [2]. The following sections are pertinent to this report:

UNIT I.C.7

"The range of compounds to be analyzed is to be severely restricted from FY 77 through the end of the Project. Aromatic petroleum hydrocarbons and chlorinated hydrocarbons have been selected as models of organic contaminants. Additional classes of compounds will be examined according to recommendations of the work unit detailing the most critical contaminants of the Bight."

"In 1977, a limited number of selected sediment samples from impacted and unimpacted areas will be scanned for a broad range of organics. This exercise will provide an additional check to assure that no major compounds are overlooked. Their concentrations will be measured in the most significant input sources to the Bight, in sediments, and in suspended particulates."

UNIT I.E.1

"The aim of this effort is to determine the concentrations of selected synthetic organic compounds (PCBs, petroleum hydrocarbons, chlorinated hydrocarbon pesticides and other artificial organic compounds) in food organisms (additional groups of compounds will be analyzed if recommended by the work unit on critical contaminants in the Bight)."

"In 1977, selected specimens of a wide variety of organisms will be scanned for a broad spectrum of organic contaminants. At a minimum, liver and muscle tissue (in fish) will be analyzed. The aim of this portion of the work unit is to assure that no important class of organic pollutant has been omitted from the routine analysis."

From these portions of work units I.C.7 and I.E.1, a single overall objective of NAF's role was derived, vis.: To determine the levels of arenes and PCBs and related compounds in samples of the marine environment and biota from the New York Bight for use by MESA and other agencies having interest in data on the level of these contaminants in the New York Bight.

In pursuit of this objective, the following general strategy was employed: samples of sources, environmental sinks, and biota would be forwarded on instruction by the MESA New York Bight office. The samples would be collected by NOAA's Northeast Fisheries Center (NEFC) personnel from Milford, CT and Sandy Hook, NJ. These samples would be collected in a NAF-approved manner that avoids incidental contamination of the samples. In general, sample contact would be confined to stainless steel, aluminum, glass, or Teflon surfaces which have been thoroughly pre-cleaned with laboratory detergent and rinsed with water, then rinsed sequentially with ultrapure acetone and methylene chloride (comparable in purity to Burdick and Jackson's "distilled in glass" grade or Mallinckrodt's "nano-grade" quality). Then the samples would be frozen and shipped via air freight to Seattle. Up to 300 samples were planned to be analyzed from May 1977 to April 1979. Distribution of sub-samples for intercalibration quality assurance would be arranged by NAF. The standard data reporting format of NODC/EDIS [3] would be followed in archiving the analytical results.

I. MATERIALS

A. Apparatus

Meat Grinder, hand operated.
Tissue Homogenizer - Tekmar Tissumizer with SDT motor and 182 EN shaft and generator.
Ball-Mill Tumblers, with frame, roller bars, and motor - Model 8-PA, Scott-Murray Manufacturing, 8511 Roosevelt Way NE, Seattle, WA 98115.
Drying Oven.
Centrifuge.
Water Bath.
Tube Heaters - Kontes No. K-720000, 6-tube model with aluminum inserts for heating from tip of tube.
Tube Inserts, custom made from 7/8" dia aluminum rod, 2" h, with hole same dia as tube tip, 7/8" deep at center of one end.
Aluminum Weighing Dish, disposable.
Spatulas.
Scalpels.
Hemostats.
Glass Wool.
Aluminum Foil.
Boiling Stones, Teflon - Bel-Art Products No. 41001.
Gas Chromatograph, microprocessor controlled, with automatic sampling and injection, FID and ECD - Hewlett-Packard, Model 5840A.
Mass Spectrometer, EI with data system - Finnigan 3200 Mass Spectrometer, INCOS NOVA 3 computer.
Ultraviolet Light - Mineralight

B. Glassware

Tumbler Bottles, 1-L glass bottle for tumbler - Wheaton No. 219180, equipped with solid Teflon cap custom-machined from 3.8 cm dia rod, 3.0 cm h.
Snyder Distilling Columns, 3-section, 24/40 STJ - Kontes No. K503000, size 121.
Concentrator Tubes, 25 mL, 19/22 STJ - Kontes No. K -570050, size 2525.
Chromatography Columns, 19 mm id, with reservoir and Teflon stopcock - Kontes No. K-420280, size 232.
Buchner Funnels, fritted disc., coarse porosity, 150 mL.
Beakers, 250, 400, 600, 1,000, and 2,000 mL.
Erlenmeyer Flasks, Pyrex, 24/40 STJ, 500 mL - Pyrex No. 5,000-500.
Erlenmeyer Flasks, wide-mouth, 500 mL.
Glass Capillary Columns, 30 m x 0.25mm id, coated with SE-54 - J & W Scientific.
Reflux Column, modified micro-Snyder - Kontes No. K-569251, 3-19, further modified by Vigreaux indentations.

Separatory Funnels, pear-shaped, with Teflon stopcock, 250 mL and 1 L.
Funnels, powder.
Funnels, long-stem.
Funnel, custom-made, ca. 170 mL capacity, stem: 10.5 mm id x 100 mm l, bent 45° in middle.
Funnels, 90-mm, curved-stem, bent 45° in middle.
Cylinders, graduated, 50 mL, 100 mL.
Pipets, disposable, Pasteur-type, 2 mL.
Wash Bottles, Teflon, 500 mL - Nalge, No. 2403-0500.
Centrifuge Tubes, with Teflon-lined screw-cap, 50 mL, 100 mL.
Glass Rods.
Syringes, 250 and 500 μL, 1 mL.
Vials, with Teflon-lined septa, screw caps - Varian, #96-000099-00

C. Solvents and Reagents

Acetonitrile.
Copper, fine granular - Mallinckrodt No. 4649.
Cyclohexane.
Dichloromethane (CH_2Cl_2)
Distilled Water, filtered, distilled in glass.
Florisil - 60-100/PR, activated at 1250°F.
Hexamethylbenzene
Hexane (C_6H_{14})
Hydrochloric Acid (HCl).
2-Propanol.
Methanol (CH_3OH).
Pentane (n-C_5H_{12}).
Perylene.
Sand, Ottawa, kiln-dried, 30-40 mesh.
Sephadex LH-20.
Silica Gel, grade 923 (Davison), 100-200 mesh (nominal).
Sodium Sulfate, anhydrous (Na_2SO_4).
Tecnazene (2,3,5,6-Tetrachloronitrobenzene)
1,3,5-Triisopropylbenzene.

D. Standards, blanks and spikes.

1. Recovery Internal Standard (R/I-Std). An aromatic R/I-Std is added to each sample to assess recovery efficiency: methanol solution containing ca. 50 ng/μL 1,3,5-triisopropylbenzene, the exact concentration of which is known.

2. Reagent Blank. Run a "reagent blank" analysis with each set of samples i.e., an analytical run with only sample omitted.

3. Reagent Blank with Added Standard Compounds (Reagent Spike). Run a reagent blank analysis (D.2.) with added standard compounds (reagent spike) with each set of samples. Reagent spike solution should contain all of the target compounds to be measured.

4. GC Internal Standard (GC/I-Std). The GC/I-Std contained 80 ng/μL hexamethylbenzene and 4 ng/μL tecnazene (2,3,5,6-tetrachloronitrobenzene) in hexane.

E. Preparation of Apparatus and Reagents

1. Solvent purity. Solvents must be of highest purity commercially obtainable. Check each for interfering contaminants. Sometimes, solvents must be repurified and redistilled.

2. Decontamination of apparatus. All materials contacting sample or reagents must be glass, Teflon, or metal. All surfaces that contact sample must be washed with CH_2Cl_2 before use.

3. Preparation of activated silica gel. Place silica gel in 150°C oven for 24 hr. Cool to room temp in desiccator prior to use.

4. Preparation of activated Florisil. Same as 3.

5. Preparation of sand. Wash sand with CH_2Cl_2 and let dry. Place sand in 150°C oven for 24 hr. Cool to room temp in desiccator prior to use.

6. Preparation of Na_2SO_4. Same as 5.

7. Preparation of activated copper. Cover copper granules with 12 N HCl and let stand ca. 3 min. Wash copper granules thoroughly with CH_3OH to remove HCl. Then wash thoroughly with CH_2Cl_2 to remove CH_3OH. Let dry at room temp. Prepare just prior to use.

8. Preparation of 2% NaCl. Dissolve 20 g CH_2Cl_2-washed NaCl in distilled water and make up to 1 L.

9. Perylene calibrating solution. 25 g/mL cyclohexane/2-propanol (2/1).

II. WATER

A. Sample extraction.

1. Measure sample volume in a 1-L graduated cylinder and pour into a 2-L separatory funnel.

2. Pour CH_2Cl_2 equaling 4% of the aqueous volume into the separatory funnel.

3. Stopper funnel and shake vigorously for 2 min, then allow the phases to separate.

4. Drain the lower (CH_2Cl_2) phase into a 500-mL Erlenmeyer flask, leaving any emulsion behind.

5. Add CH_2Cl_2 equal to 2% of the aqueous phase, and shake vigorously for 2 min, then allow the layers to separate.

6. Repeat steps 4. and 5., draining the lower phase into the same flask containing the first CH_2Cl_2 extract.

7. Drain the lower (CH_2Cl_2) phase into the flask containing the previous CH_2Cl_2 extracts, but this time carry along any emulsion layer.

8. Discard the aqueous phase and dry the combined CH_2Cl_2 extracts over Na_2SO_4.

B. Proceed to VI.

III. SEWAGE SLUDGE

A. Sample preparation.

1. Shake sample vigorously to mix solids with water, and immediately pour a 100-mL portion into a graduated cylinder.

2. Transfer the measured portion to a 100-mL centrifuge tube, add 200 µL of R/I-Std., and centrifuge at 3000 rpm for 5 min.

3. Decant supernatant layer into a 250-mL separatory funnel. Proceed to B. with solids (pellet).

B. Extraction of pellet.

1. Add 50-mL of 2/1 CH_2Cl_2/CH_3OH to the pellet remaining in the centrifuge tube, and homogenize the mixture with the Tissumizer for 30 sec.

2. Centrifuge the mixture for 5 min at 3000 rpm.

3. Decant the liquid into the 250-mL separatory funnel containing the aqueous portion from A.3.

4. Repeat steps B.1.-3.

C. Extraction of aqueous phase

1. Stopper the 250-mL separatory funnel containing the liquid phases from sections A. and B. above, invert it and swirl gently for 1 min.

2. Drain the lower (CH_2Cl_2) phase into a second 250-mL separatory funnel, leaving any emulsion behind.

3. Add 50 mL of CH_2Cl_2 to the aqueous phase in the first 250-mL separatory funnel. Stopper the funnel, invert it, and swirl gently for 1 min.

4. Drain the lower (CH_2Cl_2) phase into the 250-mL separatory funnel containing the first CH_2Cl_2 phase from C.2., carrying along my emulsion phase present.

5. Add 100 mL of 2% aqueous NaCl to the funnel containing the CH_2Cl_2 extracts, stopper funnel, invert it, and swirl for 1 min. Allow phases to separate, then repeat steps 2.-4., draining the CH_2Cl_2 extracts into a 500-mL Erlenmeyer flask.

D. Proceed to VI.

IV. BIOTA

A. Sample preparation.

1. Dissect tissue under contaminant-free conditions.

2. Compositing and weighing of samples.

a. Small samples: Mince tissue (ca. 3-4 cm deep) in 250-mL beaker, using scalpel.

Large Samples: Grind tissue in meat grinder, collecting in 1-L beaker.

b. Homogenize ca. 150 mL minced or ground tissue with Tissumizer, using speeds to medium or high (do not overheat).

c. Weigh 10 ± 0.5 g of homogenized tissue to nearest 0.01 g into tared 100-mL centrifuge tube.

d. Weigh separate sample for dry wt determination [4].

e. Prepared reserve sample. Fill 50-mL screw cap centrifuge tube with homogenized tissue (allow space for expansion) and store in freezer.

3. Homogenization of samples - Add 15 mL 2% aqueous NaCl to the 10 g of tissue in 100-mL centrifuge tube. Add 200 µL R/I-Std. Homogenize mixture with Tissumizer for 15-20 sec.

B. Solvent extract

1. Sample extraction

a. Add 50 mL 2/1 CH_2Cl_2/CH_3OH to homogenized tissue in 100 mL centrifuge tube from IV.A.3.

b. Mix for 1 min with Tissumizer at medium speed. Wash probe into tube with 2% aqueous NaCl. Centrifuge mixture for 10 min at 2,000 rpm.

c. Cautiously decant both aqueous and solvent phases into 250-mL separatory funnel, using a Pasteur pipet to tilt compacted residue.

d. Repeat a., b. (wash probe with 2/1 CH_2Cl_2/CH_3OH instead of NaCl solution), and c., using same separatory funnel.

2. Aqueous wash and back-extraction

a. Add 50 mL 2% aqueous NaCl to solvent extract in separatory funnel, stopper, and gently swirl for 1 min. Release pressure frequently. Let stand until liquid phases separate. Use Pasteur pipet to break up emulsion.

b. Drain the lower (CH_2Cl_2) phase into a second 250-mL separatory funnel. Add 10 mL CH_2Cl_2 to aqueous phase in first separatory funnel. Invert and swirl for 1 min. Let phases separate and drain CH_2Cl_2 phase into the second separatory funnel. Include emulsion layer. Discard aqueous fraction.

c. Add 100 mL 2% aqueous NaCl to separatory funnel containing the combined CH_2Cl_2 phases. Swirl for 1 min. Let phases separate and collect the lower (CH_2Cl_2) phase in a 500-mL Erlenmeyer flask.

d. Add 10 mL CH_2Cl_2 to the aqueous phase in the separatory funnel. Invert and swirl for 1 min. Let the phases separate, and drain the CH_2Cl_2 phase into the Erlenmeyer flask. Discard the aqueous layer.

C. Proceed to VI.

V. SEDIMENT

A. Sample preparation

1. Decant water from sediment. Mix sediment with spatula, discarding pebbles and non-sediment matter.

2. Using spatula and powder funnel, weigh 100 ± 5 g sediment to nearest 0.01 g into tared 1-L tumbler bottle. Also weigh separate sample for dry wt determination [4].

B. Solvent extract

1. Sample extraction

a. Add 50 mL CH_3OH to sediment in bottle.

b. Add 200 µL R/I-Std.

c. Swirl and let settle. Decant CH_3OH into 600-mL beaker.

d. Repeat a. and c., combining second CH_3OH extract with first. Cover beaker tightly with washed aluminum foil.

e. Add 100 mL 2/1 CH_2Cl_2/CH_3OH to bottle. Tightly cap bottle and tape bottle top to bottle. Roll bottles on tumbler at ca. 75 rpm for 16 hr.

f. Remove tape, place bottle on its side, and let settle. Decant extract into beaker containing CH_3OH extract. Wash sediment and inside of bottle with ca. 10 mL CH_2Cl_2 from wash bottle. Swirl and let mixture settle. Decant solvent into beaker and cover with foil.

g. Repeat e. and f., except tumble for 6 hr.

h. Repeat e. and f., except in final CH_2Cl_2 wash, also, decant any suspended sediment into beaker. Discard extracted sediment.

2. Aqueous wash and back extraction

a. Decant combined solvent extracts through fritted-disc Buchner funnel into 1-L separatory funnel. Wash any sediment in beaker into Buchner funnel. Wash beaker twice with ca. 5 mL CH_2Cl_2, pouring washings into Buchner funnel. Wash Buchner funnel twice with ca. 5 mL CH_2Cl_2 and drain into separatory funnel.

b. Add 500 mL 2% aqueous NaCl to separatory funnel.

c. Stopper funnel and swirl gently for 2 min. Let stand until layers separate.

d. Drain the lower (CH_2Cl_2) phase into Erlenmeyer flask. Leave emulsion layer in funnel.

e. Add 20 mL CH_2Cl_2 to separatory funnel

f. Repeat c. and d., except add any emulsion layer to the flask.

g. Discard aqueous phase. Pour CH_2Cl_2 extract back into separatory funnel. Rinse flask twice with ca. 5 mL CH_2Cl_2. Add washings to separatory funnel.

h. Repeat b.-f.

C. Proceed to VI.

VI. EXTRACT FILTRATION AND PRELIMINARY CLEAN UP

A. Filter-bed preparation

1. Wash a chromatography column with CH_2Cl_2. Fill column with CH_2Cl_2 until solvent level reaches base of reservoir.

2. Insert a 1-cm glass-wool plug into the column, using a glass rod. Pack glass wool uniformly.

3. Prepare a slurry of CH_2Cl_2 and silica gel as follows: Add 50 mL CH_2Cl_2 to 30 mL of dry, activated silica gel in a 250-mL beaker. Swirl mixture thoroughly and let stand 5 min until air bubbles dissipate. Swirl beaker again and pour slurry into column through a long-stem funnel. Wash remaining silica gel from the beaker into the column with CH_2Cl_2. After gel has settled, let filter-bed drain for 1 min and discard eluate.

4. Add 15 mL oven-dried Na_2SO_4 to column. Drain CH_2Cl_2 to packing level and close stopcock. In case of sediment extract, increase packing height 2-3 cm by adding freshly-activated copper.

B. Filtration of solvent extract

1. Drain washed CH_2Cl_2 solvent extract (from II - V) through a curved-stem funnel into the filter-bed column.

2. Filter CH_2Cl_2 phase through bed at _ca_. 5 mL/min into 500 mL STJ Erlenmeyer flask. Stop flow when solvent phase reaches top of packing. Wash columns twice with _ca_. 4 mL CH_2Cl_2, draining each wash to top of packing. Add 50 mL CH_2Cl_2 to column and filter into receiving flask. Let bed drain dry.

C. Concentration of sample

1. Add 3-4 boiling stones to filtrate in STJ Erlenmeyer flask and attach Snyder column. Concentrate solvent phase to _ca_. 15 mL.

2. Transfer mixture to concentrator tube. Wash flask twice with _ca_. 4 mL CH_2Cl_2 and add to concentrator tube. Add boiling stone and reflux column to tube. Caution: Always add a new boiling stone before placing tube in tube heater. Verify that boiling begins within 30 sec. Concentrate solvent mixture in tube heater to _ca_. 1 mL. For all except water sample, add 3 mL hexane and concentrate mixture to 2 mL, then proceed to liquid chromatography (VII). For water sample extracts, concentrate to 0.7-1.0 mL; record volume, transfer to a GC vial. Add 50 µL GC/I-STD., and cap. Water sample extracts are now ready to proceed to gas chromatography (VIII).

VII. LIQUID CHROMATOGRAPHY

A. Florisil Adsorption

1. Column preparation

a. Wash empty chromatographic column with CH_2Cl_2 and drain. Fill column to reservoir with CH_2Cl_2.

b. Insert glass-wool plug, using glass rod. Add sand to cover surface of glass wool (ca. 0.5 cm h). Tap to level surface. Drain solvent to top of sand. Wash down with n-pentane; drain column to dryness.

c. Slowly add 20.0 g activated Florisil to column. Exercise caution in adding Florisil to insure uniform and level distribution of packing.

d. Add 1 cm h Na_2SO_4 and 3 cm h activated copper.

e. With stopcock open, carefully wet entire packing with n-pentane. Close stopcock, add 50 mL n-pentane, and elute solvent to top of packing.

2. Application of extract concentrate (from VI)

a. Transfer concentrate from tube to column using Pasteur pipet. Elute liquid to top of packing. Wash concentrator tube with 0.5 mL n-pentane and add to packing. Repeat wash.

b. Let column stand ca. 2 min, then wash off stopcock tip with CH_2Cl_2. Place a clean 50 mL graduated cylinder under column.

3. Chromatogram development

a. Start collecting fraction F-1 by eluting washes to top of packing. Stop for 2 min, then add 30 mL n-pentane to column. Resume elution at <5 mL/min to top of packing.

b. Add 60 mL 5% CH_2Cl_2 in n-pentane to column and resume elution until 33 mL have collected (fraction F-1). Remove cylinder and cover with aluminum foil.

c. Continue elution into new 500-mL STJ Erlenmeyer flask until solvent surface reaches top of packing. Remove fraction F-2.

d. Add 200 mL 50% CH_2Cl_2 and 0.35% acetonitrile in n-pentane to column. Resume elution into a second clean 500-mL STJ Erlenmeyer flask until column is completely drained (fraction F-3).

4. Concentration of fractions

   a. Fraction F-1. Transfer solution from graduated cylinder to 500 mL STJ Erlenmeyer flask. Wash cylinder twice with ca. 2 mL of CH_2Cl_2 and add washings to flask. Attach Snyder column to flask and evaporate solvent on water bath (55°C) to ca. 15 mL. Transfer sample from flask to a concentrator tube. Rinse flask twice with ca. 4 mL CH_2Cl_2 and add rinses to tube. Concentrate to 1 mL and add 2 mL hexane. Reconcentrate to 0.7-1.0 mL; record volume. Transfer to a GC vial. Add 50 µL GC/I-Std., and cap. Proceed to VIII and IX.

   b. Fraction F-2. Prepare as in a.

   c. Fraction F-3. Concentrate as in a., except stop with 5 mL in concentrator tube. Add 3 mL 2/1 cyclohexane/2-propanol and reconcentrate fraction to 2 mL. Proceed to B.

B. Sephadex LH-20 gel permeation

1. Column preparation

   a. Add 30 g Sephadex LH-20 gel to 250 mL flask. Add 100 mL 2/1 cyclohexane/ 2-propanol. Swirl and cover with washed foil. Let gel swell overnight.

   b. Wash chromatography column with CH_2Cl_2 and drain dry. Fill column to reservoir with 2/1 cyclohexane/2-propanol. Insert glass wool plug, using glass rod. Add sand to cover glass wool (ca. 0.5 cm h). Tap to level surface. Drain solvent to 1 cm above sand.

   c. Decant excess solvent from gel until slurry becomes viscous but remains pourable. Rotate flask gently to remove air bubbles.

   d. Place wide-bore, curved-stem funnel atop column. Wet funnel and column walls with solvent mixture just before adding slurry to column. Drain excess solvent to 1-2 cm above sand. Verify that funnel and column walls are still wet, then pour slurry into funnel in one, continuous motion.

   e. Let gel settle, then open stopcock slightly to pack gel. When flow slows, open stopcock fully. When gel has settled, the surface should be 1.5 to 3 cm below reservoir. Remove excess gel by Pasteur pipet. When gel has fully settled, close stopcock and add ca. 0.5 cm h sand to packing and tap to level.

f. Calibrate gel column by adding 2 mL perylene calibrating solution. Elute solvent mixture and monitor the passage of perylene under ultraviolet light. Record eluate volume when perylene begins emerging and when it has completely eluted. These volumes help determine the analytical fraction volumes and provide a means of monitoring column deterioration. The specific analytical fraction volumes must be determined by chromatographing an actual sample and verifying the volume where interfering compounds cease eluting (Fraction L-1). The following fraction volume must be sufficient to completely elute perylene (Fraction L-2).

g. Pass 100 mL of solvent mixture through the column prior to reuse. Note: solvent must remain above surface of packing during entire procedure.

2. Application of extract concentrate F-3 from A.4.c.

a. Remove solvent above column packing using a Pasteur pipet. Do not disturb packing.

b. Cautiously add 10 mL of 2/1 cyclohexane/2-propanol and elute to top of packing.

c. Add 2 mL concentrate to column and elute to top of packing. Place a clean 50-mL graduated cylinder under column.

d. Wash concentrator tube with <u>ca</u>. 0.5 mL elution solvent and add to column. Elute to top of packing.

e. Repeat d.

3. Chromatogram development

a. Add <u>ca</u>. 200 mL of 2/1 cyclohexane/2-propanol to column. Collect the following fractions; the volumes are dependent on the perylene calibration.

Fraction L-1, <u>ca</u>. 40 mL (discard)
Fraction L-2, <u>ca</u>. 100 mL (retain)

b. Elute remaining solvent to purge column for reuse.

4. Concentrate L-2, as in A.4.a., except use a <u>ca</u>. 80°C water bath and add 6 mL hexane during final concentration. Proceed to VIII and IX.

VIII. GAS CHROMATOGRAPHY (GC)

A. Analysis is carried out using automatic sample injection, according to conditions listed in Table 1.

B. The GC sample injection port is modified for splitless injection as described by Ramos et al. [5].

C. GC samples in screw-capped vials with Teflon-lined septa are loaded into the automatic sampler. Then, the desired operating conditions are programmed into the microprocessor. A sample volume of 2 μL is injected per analysis and the temperature program begun.

D. Separated compounds are detected by the FID or ECD as they emerge from the GC column. The gas chromatogram is constructed by the microprocessor recording integrator, which prints retention times alongside each peak on a strip chart.

E. Peak areas are automatically computed, using baseline correction. Areas are printed in tabular form at the end of the GC run according to retention times.

F. The quantities of compounds represented by the peak areas are computed by ratio of the individual peak areas to the area of the known amount of internal standard peak, according to the following formula [6]:

$$[Y]_S = \frac{A_Y}{A_I}\frac{R_Y}{R_I}\frac{Q_I}{Q_S}$$

where, Y = Compound analyzed for
I = GC/I-Std
S = Sample
A = Area
Q = Amount
R = Response = Q/A, as determined by separate analysis of standard solution(s) of reference compounds
Q_S = Starting amount of sample for analysis, in either weight or volume.

Table 1. Gas chromatography conditions for FID[a]

COLUMN		Column	30 m x 0.25 mm id wall-coated glass capillary
		Liquid phase	SE-54
		Film thickness	4-5 x 10^{-4} mm
GASES	Inlet	Carrier gas	He
		Split ratio	20:1 (purge:column)
		Column flow	1.5 mL/min
		Purge flow	30 mL/min
	Detector	Makeup (N_2)	30 mL/min
		Air	240 mL/min
		Hydrogen	24 mL/min
TEMP		Initial temp	50°C, for 5 min
		Program rate	4°C/min
		Final temp	280°C
		Injector	280°C
		Detector	300°C

[a] Conditions are identical for ECD except that the detector gases are 5% methane in Argon (30mL/min), and the detector temperature is 320°C.

IX. GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

Confirm the identities of compounds detected and measured by GC by GC/MS analysis as necessary. The capillary column used is similar to that in GC analysis. The effluent from the GC column is fed directly into the ion source via a heated transfer line. Table 2 lists the analytical conditions. A 2-μL sample is injected into the GC, while the ion source filament and the electron multiplier voltage are turned off. The passage of the solvent peak from the GC into the MS is noted on the high vacuum gage as a transient rise and fall in pressure. Afterwards, the source filament and the multiplier voltage are restored and data acquisition by the computer is initiated for mass scans every sec. The chromatogram is reconstructed from the total ion current of each individual scan. Specific ion chromatograms, characteristic of a particular molecular aggregate, may be generated. Compounds present in GC/MS ion chromatograms are identified by comparing mass spectra (background subtracted) with reference spectra in the computer library.

Table 2. GC/MS analysis parameters

GC	Same as Table 1, except no detector gases	
GC/MS interface temp		280°
MS	Filament emission	500 µA
	Electron multiplier voltage	1,800 V
	Electron energy	70 eV
Data acquisition	Mass range 34-534 m/e	
	Scan time 1 sec	

LABORATORY STUDIES

Originally, the use of standard NAF analytical methods described in NOAA Technical Memo ERL MESA-8 [4] was planned for this Project. However, as interest in additional compounds developed following discussions with MESA/New York Bight Project staff, it became apparent that the scope of compounds to be analyzed would have to be enlarged. Moreover, certain steps which facilitate trace hydrocarbon analyses would have to be modified or replaced to accommodate such an expanded list of organic pollutants. For example, alkaline saponification, which is most valuable in simplifying complex organic extracts for hydrocarbon analyses, was discontinued because other organic pollutants, notably the phthalate esters and certain organohalides, could be decomposed. Instead, Giger and Schaffner's gel permeation procedure [7] was adapted to remove interferences by endogenous organics normally eliminated through saponification.

The resulting NYB Analytical Procedure was tailored for the analysis of target organic compounds of most interest to the New York Bight Project. These included polynuclear aromatic hydrocarbons (PAH), organohalides, such as the older pesticides (DDT, dieldrin, chlordane, etc.), and the polychlorinated biphenyls (PCB's). The gel permeation procedure was employed in conjunction with a Florisil adsorption chromatography procedure adapted from standard procedures used by EPA and FDA [8]. Sequential steps of the sample extraction and cleanup procedures are depicted in Figure 2.

The necessity for the relatively arduous sample extraction and cleanup procedures shown in Figure 2 was established after lengthy laboratory studies. When our work began in 1977, solvent extraction was the most promising way to isolate the target organic pollutants for this study from the various marine environmental samples. Most of these pollutants were comparatively nonvolatile and lipophilic. Under such circumstances, isolation by stripping with a stream of inert gas (sparging) at room temperature was inefficient for recovering many of the target compounds [4], and elevating the temperature risked several complications, including chemical alterations.

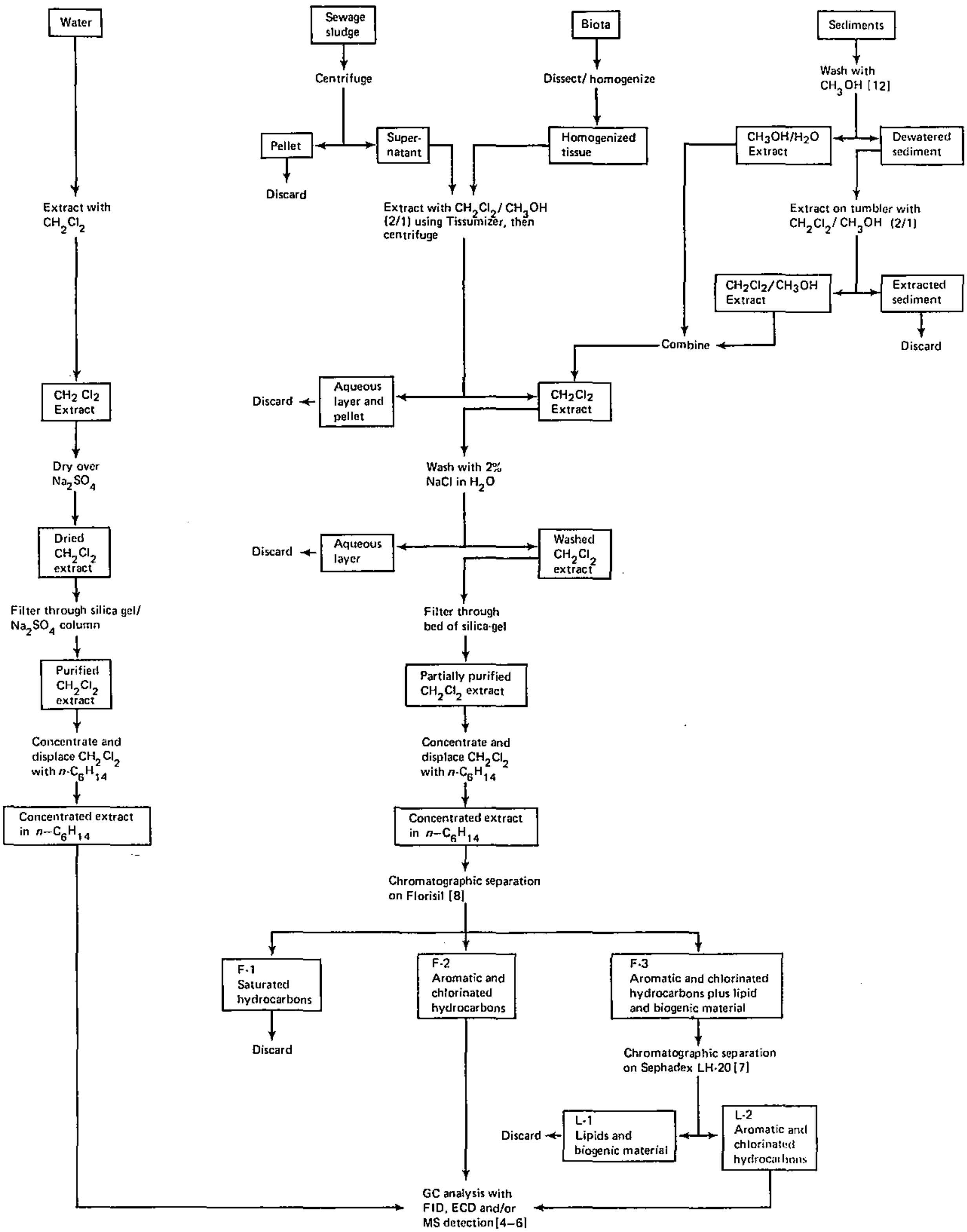

Figure 2. Analytical Scheme

One of the most respected procedures for harmlessly extracting nonvolatile lipophilic compounds from tissues was the Hanson and Olley modification of the Bligh and Dyer procedure [9]. Unfortunately, one of the solvents used was chloroform ($CHCl_3$) which had just been declared a carcinogen [10]. Thus, for safe laboratory practice, substitution of a similar, but safer, co-solvent was necessary. Fortunately, dichloromethane had not been declared a carcinogen. Moreover, it was available from several laboratory suppliers in sufficient quantity and purity for our needs. Extensive investigation of the use of dichloromethane with methanol as the co-solvent demonstrated that a 2/1 v/v solution of these solvents was satisfactory for extracting the target compounds from most types of samples encountered (e.g., tissues, sediments, and sludges).

In June 1979, when most of our analytical chemical investigations were concluded, "Chemical Pollutants of the New York Bight; Priorities for Research" [11] was published. Appendix C, "A Recommended Analytical Program for Detecting Halogenated Compounds in the Ocean," recommends that the concentrated extract containing the target pollutants be cleaned up by either adsorption chromatography on Florisil or by gel-permeation chromatography. However, our studies more than a year earlier had shown that neither cleanup procedure by itself was sufficient for extracts from samples taken for this project. In fact, a particular combination of Florisil adsorption chromatography and Sephadex gel-permeation/partition chromatography was necessary to clean up extracts from tissues, sediments and sludges satisfactorily. Otherwise, lipids and other natural lipophilic compounds seriously interfere with the subsequent analysis of the target pollutants.

ANALYTICAL RESULTS

More than 250 samples from the New York Bight were analyzed according to the Analytical Procedures described earlier, including representatives of 17 different substrates. Tables containing the results of analyses for the target list of compounds and the lower limits of measurement for those results appear in Appendix A. Selected samples, representing 10 substrates, were intensively analyzed by GC/MS for whatever additional compounds could be identified. The results of this broad search appear in the tables in Appendix B.

The precision of the overall analytical procedure (Fig. 2) was determined for both sediment and tissue. Table 3 contains analytical data previously published [12] for 17 selected nonpolar aromatic compounds found in a homogenized reference sediment by multiple replicate analysis. NOAA's Outer Continental Shelf Environmental Assessment Program (OCSEAP) obtained and homogenized the sediment. Since it was collected from the shore of an active harbor, the sediment represents a "real-world" type of contamination. The precision for typical tissue contaminants found in the New York Bight is shown in Table 4. Again, this sample (homogenized striped bass muscle) represents real-world contamination.

Table 3. Concentrations of Aromatic Hydrocarbons (ng/g dry wt) found in Homogenized Reference Sediment; x = Mean, RSD = Relative Standard Deviation of the Mean (100 SD/x), n = Number of Analyses.

Aromatic Hydrocarbon	$\bar{x}$ (n=11)	RSD
2-Methylnaphthalene	10 ng/g	33%
1-Methylnaphthalene	6	33
Biphenyl	2	39
2,6-Dimethylnaphthalene	8	26
2,3,5-Trimethylnaphthalene	6	58
Fluorene	30	28
Dibenzothiophene*	28	32
Phenanthrene	330	28
Anthracene	57	26
1-Methylphenanthrene	22	24
Fluoranthene	570	23
Pyrene	760	21
Benz[*a*]anthracene	440	23
Chrysene	270	20
Benzo[*e*]pyrene	150	26
Benzo[*a*]pyrene	170	33
Perylene	36	36

* A thia-aromatic (sulfur-substituted) hydrocarbon

Table 4. Concentrations of Chlorinated Hydrocarbons (ng/g dry wt) found in Homogenized Reference Tissue (Striped Bass); x = Mean, RSD = Relative Standard Deviation of the Mean (100 SD/x), n = Number of Analyses.

Chlorinated Hydrocarbon	$\bar{x}$	RSD	n
α-Chlordane	410 ng/g	15%	4
trans -Nonachlor	600	20	5
p,p'-DDE	2500	28	5
p,p'-DDD	1200	14	5
p,p'-DDT	420	13	5
Cl_3-Biphenyls	4300	17	5
Cl_4-Biphenyls	18000	24	4
Cl_5-Biphenyls	13000	19	5
Cl_6-Biphenyls	4400	20	5

As evident from Tables 3 and 4, relative standard deviations are commonly around 25 to 33 percent. Therefore, no more than two significant figures are warranted in the data tables. Moreover, differences between duplicate analyses as large as a factor of 2 are no cause for serious concern. As described under Analytical Procedures, a recovery internal standard is added prior to sample workup. Whenever recovery of the internal standard fell outside customary levels (ca. 60-90 percent), the analysis was repeated. Thus, the recovery internal standard was used to monitor the integrity of the sample extraction and analysis. It was not used to correct for sample losses since a 10-40 percent correction has little meaning with respect to the relative standard deviations determined experimentally (Tables 3 and 4).

The analytical methodology described under Analytical Procedures represents the state-of-the-art at the time these analyses were performed. Few commercial laboratories possess the combination of experienced staff, range of equipment, and time available to pursue even modest intercalibration exercises. Consequently, interlaboratory calibration of results using these methods has experienced numerous delays and restarts. It is the hope and intent of one prominent environmental laboratory to provide this service in the near future.

Although this methodology represented the state-of-the-art for organic contaminants in marine environmental samples during the term of this project, the state-of-the-art is dynamic rather than static. As a normal course of its research program, NAF is constantly alert to improvements in methodology and routinely revises its procedures as deemed warranted.

REFERENCES

1. MacLeod, W.D., Jr., D.W. Brown, and L.C. Thomas (1978). The NOAA National Analytical Facility--a status report. In: Marine Biological Effects of OCS Petroleum Development. NOAA Technical Memorandum ERL OCSEAP-1, National Oceanic and Atmospheric Administration, Boulder, Colo., pp. 226-237.

2. MESA (1977). Project Development Plan and Task Development Plan, MESA New York Bight Project. Mesa Special Report, National Oceanic and Atmospheric Administration, Boulder, Colo., 229 pp.

3. MESA Data Coordinator (1979). Hydrocarbons II Format 044. NOAA/EDIS/NODC, 2001 Wisconsin Ave. NW, Washington, D.C., 20235.

4. MacLeod, W.D., Jr., D.W. Brown, R.G. Jenkins, L.S. Ramos, and V.D. Henry (1976). A Pilot Study on the Design of a Petroleum Hydrocarbons Baseline Investigation for Northern Puget Sound and The Strait of Juan de Fuca. Technical Memorandum ERL MESA-8, National Oceanic and Atmospheric Administration, Boulder, Colo.

5. Ramos, L.S., D.W. Brown, R.G. Jenkins, and W.D. MacLeod, Jr. (1979). Modification of conventional gas chromatographic inlets for use of glass capillary columns. In: Trace Organic Analysis: A New Frontier in Analytical Chemistry. NBS Special Publ. 519, National Bureau of Standards, Washington, D.C., pp. 713-18.

6. Instrument Manual, 5840A Gas Chromatograph, (1975). Hewlett-Packard, Avondale, Pa., p. 2E-26.

7. Giger, W., and C. Schaffner (1978). Determination of polycyclic aromatic hydrocarbons in the environment by glass capillary gas chromatography. Anal. Chem., 50:243.

8. Pecticide Analytical Manual, Vol. 1 (1976). Food and Drug Administration. Washington, D.C., sec. 252.

9. Hanson, S.W.F., and J. Olley (1963). Application of the Bligh and Dyer method of lipid extraction to tissue homogenates. Biochem. J. 89:101.

10. Page, N.P., and V. Saffiotti (1976). Report on carcinogenesis bioassay of chloroform. Technical Report DHEW/PUB/NIH-76-1279. National Cancer Institute, Bethesda, Md., 61 pp.

11. O'Connor, J.S. and H.M. Stanford (1979). Chemical Pollutants of the New York Bight. Priorities for Research. National Oceanic and Atmospheric Administration, Boulder, Colo., 217 pp.

12. Brown, D.W., L.S. Ramos, M.Y. Uyeda, A.J. Friedman, and W.D. MacLeod, Jr. (in press). Ambient-temperature extraction of hydrocarbons from marine sediment-comparison with boiling solvent extractions. In: Advances in Chemistry Series No. 185, American Chemical Society, Washington, D.C.

APPENDICES

Page

A. Target Compounds--- 23

B. Broad Search Compounds--- 120

APPENDIX A

TARGET COMPOUNDS

Analytical data for the target list of aromatic and chlorinated hydrocarbons in 255 New York Bight samples are presented in Tables A1-22. Aromatic hydrocarbons were quantitated by GC/FID, chlorinated hydrocarbons by GC/ECD. Units are as indicated on a dry-weight basis. Lower limits of quantitation are listed in the Tables denoted by a subscript ℓ/ℓ following the table letter and number. Lower limit values are the smallest amount of a given compound that could be reliably measured in a given sample with the GC detector; such values were generally around 10/1 analytical signal/noise for that compound. Note that if no target compounds were found in an entire table, only the corresponding table of lower limit values appears. Sample origin (latitude longitude, and/or location name) and sampling dates are those specified by MESA field personnel. Dates are expressed as six consecutive digits, two each for day, month, and year. Sum (Σ) of polychlorinated biphenyls is based on and FDA format where the action level is 5 ppm wet weight. An asterisk (*) next to a value indicates that the compound was confirmed by mass spectral analysis of either that sample or another sample whose GC/FID elution pattern was visually similar. A dagger symbol (†) denotes that the sample was also analyzed in the broad search (See Appendix B). A less-than sign (<) indicates that the compound was not detected above the detectable limit.

Tables A23-A25 represent additional samples collected and analyzed during 1980. Identical sampling procedures to those described in the Introduction were employed. In Table A25, samples S-1, S-3 and S-8 are volume-averaged composites from the three largest New York City treatment plants. Samples S-6 and S-9 are untreated sewage composites from two Manhattan outfalls collected at the point of discharge into the Hudson River.

Table A1ℓ. Lower quantitation limits for target compounds in subsurface water samples, in μg/L.

Substrate	Subsurface Water (Annandale Cruise)														
Location	#5 Red				#2 Red	#3 Red	#4 Red	#8 Red	#9 Green	#9 Red	#10 Green	#10 Red	#11 Red	#5 Green	#13 Red
Latitude (°N) Longitude (°W)	40°30' 73°56'	40°30' 73°56'	40°30' 73°56'	40°30' 73°56'	39°30' 74°10'	39°41' 74° 0'	40°15' 73°40'	40°40' 72°41'	40°46' 72°15'	40°51' 71°56'	40°55' 71°35'	40°11' 72°00'	40° 0' 72°46'	40°12' 73°50'	38°55' 72°51'
Sample Size, liters	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Collection Date	130577	130577	130577	130577	120577	120577	130577	140577	140577	140577	140577	150577	150577	150577	160577
Naphthalene	.02	.02	.02	.02	.01	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
2-Methylnaphthalene	.02	.02	.02	.02	.01	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
1-Methylnaphthalene	.03	.03	.03	.03	.02	.03	.04	.04	.04	.03	.03	.03	.02	.03	.04
Biphenyl	.01	.01	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01
Dibenzothiophene	.01	.01	.01	.01	.01	.01	.01	.02	.02	.01	.01	.01	.01	.01	.01
Phenanthrene	.02	.02	.02	.02	.02	.04	.04	.04	.04	.02	.02	.02	.02	.04	.04
Anthracene	.02	.02	.02	.02	.02	.04	.04	.04	.04	.02	.02	.02	.02	.04	.04
1-Methylphenanthrene	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
Fluoranthene	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
Pyrene	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.03	.04	.04
Benz(*a*)anthracene	.05	.04	.05	.04	.02	.03	.03	.03	.03	.04	.05	.05	.04	.03	.03
Chrysene	.05	.04	.05	.04	.02	.03	.03	.03	.03	.04	.05	.05	.04	.03	.03
Benzo(*e*)pyrene	.04	.03	.04	.03	.02	.03	.04	.04	.04	.03	.04	.04	.03	.03	.03
Benzo(*a*)pyrene	.02	.02	.02	.02	.01	.03	.03	.03	.03	.02	.02	.02	.02	.03	.03
Perylene	.1	.1	.1	.1	.2	.3	.3	.3	.3	.1	.1	.1	.1	.3	.3

Table A1ℓ. Lower quantitation limits for target compounds in subsurface water samples, in µg/L (Cont.).

Substrate	Subsurface Water (Annandale Cruise)														
Location	#5 Red				#2 Red	#3 Red	#4 Red	#8 Red	#9 Green	#9 Red	#10 Green	#10 Red	#11 Red	#5 Green	#13 Green
Latitude (°N) Longitude (°W)	40°30' 73°56'	40°30' 73°56'	40°30' 73°56'	40°30' 73°56'	39°30' 74°10'	39°41' 74° 0'	40°15' 73°40'	40°40' 72°41'	40°46' 72°15'	40°51' 71°56'	40°55' 71°35'	40°11' 72°00'	40° 0' 72°46'	40°12' 73°50'	38°55' 72°51'
Sample Size , liters	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1,2-Dibromo-3-chloropropane	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
Hexachlorobenzene	.02	.02	.01	.02	.02	.04	.04	.04	.04	.02	.02	.02	.02	.04	.04
Lindane (γ-BHC)	.2	.2	.08	.2	.2	.3	.3	.3	.3	.2	.2	.2	.2	.3	.3
Heptachlor	.1	.1	.05	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
Aldrin	.08	.08	.04	.08	.08	.2	.2	.2	.2	.08	.08	.08	.08	.2	.2
o,p'-DDE	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
α-Chlordane	.06	.06	.03	.06	.06	.1	.1	.1	.1	.06	.06	.06	.06	.1	.1
trans-Nonachlor	.06	.06	.03	.06	.06	.1	.1	.1	.1	.06	.06	.06	.06	.1	.1
Dieldrin	.1	.1	.05	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
p,p'-DDE	.08	.08	.04	.08	.08	.2	.2	.2	.2	.08	.08	.08	.08	.2	.2
o,p'-DDD	.2	.2	.08	.2	.2	.3	.3	.3	.3	.2	.2	.2	.2	.3	.3
Endrin	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
m,p'-DDD	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
p,p'-DDD/o,p'-DDT	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
p,p'-DDT	.2	.2	.08	.2	.2	.3	.3	.3	.3	.2	.2	.2	.2	.3	.3
Mirex	.1	.1	.05	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
Chlorobiphenyls	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
Dichlorobiphenyls	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
Trichlorobiphenyls	.2	.2	.08	.2	.2	.3	.3	.3	.3	.2	.2	.2	.2	.3	.3
Tetrachlorobiphenyls	.08	.08	.04	.08	.08	.2	.2	.2	.2	.08	.08	.08	.08	.2	.2
Pentachlorobiphenyls	.1	.1	.06	.1	.1	.2	.2	.2	.2	.1	.1	.1	.1	.2	.2
Hexachlorobiphenyls	.08	.08	.04	.08	.08	.2	.2	.2	.2	.08	.08	.08	.08	.2	.2
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " (PPM,wet)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A2. Concentrations of target compounds in subsurface water samples, in μg/L .

Substrate (Cruise)	(Annandale)		(Dolphin) Subsurface Water							
Location	#1 Red	#6 Green	19	26	27	42	51	55	68	70
Latitude (°N)	38°45'	41°6'	39°30'	40°18'	40°25'	40°42'	40°55'	40°36'	40°25'	40°31'
Longitude (°W)	74°50'	71°11'	74°11'	73°38'	73°45'	72°43'	71°39'	72°12'	73°35'	73°53'
Sample Size, liters	1	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Collection Date	170577	140577	130578	140578	140578	180578	190578	190578	200578	200578
Naphthalene	<.02	<.02	<.003	<.003	<.003	.3	<.003	<.003	.02	<.003
2-Methylnaphthalene	<.02	<.02	<.003	<.003	<.001	<.003	<.003	<.003	<.003	<.003
1-Methylnaphthalene	<.04	<.04	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003
Biphenyl	<.02	<.01	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003
Dibenzothiophene	<.02	<.01	<.01	<.003	<.01	<.01	<.01	<.01	<.01	<.01
Phenanthrene	<.04	<.04	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003
Anthracene	<.04	<.04	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003
1-Methylphenanthrene	<.01	<.01	<.003	<.01	<.003	<.003	<.003	<.003	<.003	<.003
Fluoranthene	<.01	<.01	<.003	<.003	<.003	<.01	<.003	<.003	<.003	<.003
Pyrene	<.04	<.04	<.003	<.003	<.003	<.003	<.003	<.01	<.01	<.003
Benz(*a*)anthracene	<.04	<.03	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Chrysene	<.04	<.03	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
Benzo(*e*)pyrene	<.04	<.04	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003
Benzo(*a*)pyrene	<.03	<.03	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003
Perylene	<.3	<.3	<.003	<.003	<.003	<.003	<.003	<.003	<.003	<.003

Table A2. Concentrations of target compounds in subsurface water samples, in μg/L (Cont.).

Substrate (Cruise)	(Annandale)		(Dolphin) Subsurface Water							
Location	#1 Red	#6 Green	19	26	27	42	51	55	68	70
Latitude (°N) Longitude (°W)	38°45' 74°50'	41°6' 71°11'	39°30' 74°11'	40°18' 73°38'	40°25' 73°45'	40°42' 72°43'	40°55' 71°39'	40°36' 72°12'	40°25' 73°35'	40°31' 73°53'
Sample Size, liters	1	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
1,2-Dibromo-3-chloropropane	<.2	<.2	<.01	<.0003	<.0004	<.0005	<.0002	<.0003	<.0002	<.0002
Hexachlorobenzene	<.04	<.04	<.001	<.00007	<.00008	<.0001	<.00004	<.00007	<.00004	<.00004
Lindane (γ-BHC)	<.3	<.3	<.002	<.0001	<.0001	<.0002	<.00001	<.0001	<.00007	<.00008
Heptachlor	<.2	<.2	<.002	<.0001	<.0001	<.0002	<.00006	<.0001	<.00006	<.00006
Aldrin	<.2	<.2	<.001	<.00009	<.00009	<.0009	<.00005	<.00009	<.00005	<.00005
o,p'-DDE	<.2	<.2	<.004	<.0002	<.0002	<.0003	<.0001	<.0002	<.0001	<.0001
α-Chlordane	<.1	<.1	.001	<.0001	<.0001	<.0002	<.00001	<.0001	<.00008	<.00008
trans-Nonachlor	<.1	<.1	<.002	<.0001	<.0001	<.0002	<.00006	<.0001	<.00007	<.00007
Dieldrin	<.2	<.2	<.001	<.00004	<.0001	<.0001	<.00005	<.00009	<.00005	<.00006
p,p'-DDE	<.2	<.2	<.002	<.0001	<.0001	<.0002	<.00007	<.0001	<.00008	<.00008
o,p'-DDD	<.3	<.3	<.01	<.0003	<.0003	<.0004	<.0001	<.0003	<.0001	<.0001
Endrin	<.2	<.2	<.003	<.0001	<.0002	<.0003	<.00007	<.0002	<.0001	<.0001
m,p'-DDD	<.2	<.2	.01	<.0004	<.0005	.01	<.0002	<.0004	<.0002	<.0003
p,p'-DDD/o,p'-DDT	<.2	<.2	<.01	<.0004	<.0004	<.0006	<.0002	<.0004	<.0002	<.0002
p,p'-DDT	<.3	<.3	.01	<.0003	<.0003	<.0005	<.0002	<.0003	<.0002	<.0002
Mirex	<.2	<.2	<.004	<.0002	<.0002	<.0003	<.0001	<.0002	<.0001	<.0001
Chlorobiphenyls	<.2	<.2	1	.05	<.01	.4	.1	1	.02	<.01
Dichlorobiphenyls	<.2	<.2	.1	.01	.01	<.0002	.01	.01	.01	.01
Trichlorobiphenyls	<.3	<.3	.2	<.0003	<.0003	<.0005	<.0002	<.0003	.01	<.0002
Tetrachlorobiphenyls	<.2	<.2	.04	.1	.01	.04	<.0002	.02	.001	<.0003
Pentachlorobiphenyls	<.2	<.2	<.004	<.0002	<.0002	.01	<.0001	<.0002	<.0001	<.0001
Hexachlorobiphenyls	<.2	<.2	<.01	<.0003	<.0003	<.0004	<.0001	<.0003	<.0001	<.0002
ΣPolychlorinatedbiphenyls	-	-	1	.2	.02	.5	.1	1	.04	.01
" " (PPM, wet)	-	-	.001	.0002	.00002	.0005	.0001	.001	.00004	.00001

Table A2ℓ. Lower quantitation limits for target compounds in subsurface water samples, in μg/L .

Substrate (Cruise)	(Annandale)		(Dolphin)	Subsurface Water						
Location	#1 Red	#6 Green	19	26	27	42	51	55	68	70
Latitude (°N) Longitude (°W)	38°45' 74°50'	41°6' 71°11'	39°30' 74°11'	40°18' 73°38'	40°25' 73°45'	40°42' 72°43'	40°55' 71°39'	40°36' 72°12'	40°25' 73°35'	40°31' 73°53'
Sample Size, liters	1	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Collection Date	170577	140577	130578	140578	140578	180578	190578	190578	200578	200578
Naphthalene	.02	.02	.003	.003	.003	.003	.003	.003	.003	.003
2-Methylnaphthalene	.02	.02	.003	.003	.001	.003	.003	.003	.003	.003
1-Methylnaphthalene	.04	.04	.003	.003	.003	.003	.003	.003	.003	.003
Biphenyl	.02	.01	.003	.003	.003	.003	.003	.003	.003	.003
Dibenzothiophene	.02	.01	.01	.003	.01	.01	.01	.01	.01	.01
Phenanthrene	.04	.04	.003	.003	.003	.003	.003	.003	.003	.003
Anthracene	.04	.04	.003	.003	.003	.003	.003	.003	.003	.003
1-Methylphenanthrene	.01	.01	.003	.01	.003	.003	.003	.003	.003	.003
Fluoranthene	.01	.01	.003	.003	.003	.01	.003	.003	.003	.003
Pyrene	.04	.04	.003	.003	.003	.003	.003	.01	.01	.003
Benz(*a*)anthracene	.04	.03	.01	.01	.01	.01	.01	.01	.01	.01
Chrysene	.04	.03	.01	.01	.01	.01	.01	.01	.01	.01
Benzo(*e*)pyrene	.04	.04	.003	.003	.003	.003	.003	.003	.003	.003
Benzo(*a*)pyrene	.03	.03	.003	.003	.003	.003	.003	.003	.003	.003
Perylene	.3	.3	.003	.003	.003	.003	.003	.003	.003	.003

Table A2ℓ. Lower quantitation limits for target compounds in subsurface water samples, in μg/L (Cont.).

Substrate (Cruise)	(Annandale)		(Dolphin)		Subsurface Water					
Location	#1 Red	#6 Green	19	26	27	42	51	55	68	70
Latitude (°N) Longitude (°W)	38°45' 74°50'	41°6' 71°11'	39°30' 74°11'	40°18' 73°38'	40°25' 73°45'	40°42' 72°43'	40°55' 72°43'	40°36' 71°39'	40°25' 72°12'	40°31' 73°53'
Sample Size, liters	1	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
1,2-Dibromo-3-chloropropane	.2	.2	.01	.0003	.0004	.0005	.0002	.0003	.0002	.0002
Hexachlorobenzene	.04	.04	.001	.00007	.00008	.0001	.00004	.00007	.00004	.00004
Lindane (γ-BHC)	.3	.3	.002	.0001	.0001	.0002	.00007	.0001	.00007	.00008
Heptachlor	.2	.2	.002	.0001	.0001	.0002	.00006	.0001	.00006	.00006
Aldrin	.2	.2	.001	.00009	.00009	.0001	.00005	.00009	.00005	.00005
o,p'-DDE	.2	.2	.004	.0002	.0002	.0003	.0001	.0002	.0001	.0001
α-Chlordane	.1	.1	.002	.0001	.0001	.0002	.00007	.0001	.00008	.00008
trans-Nonachlor	.1	.1	.002	.0001	.0001	.0002	.00006	.0001	.00007	.00007
Dieldrin	.2	.2	.001	.00009	.0001	.0001	.00005	.00009	.00005	.00006
p,p'-DDE	.2	.2	.002	.0001	.0001	.0002	.00007	.0001	.00008	.00008
o,p'-DDD	.3	.3	.01	.0003	.0003	.0004	.0001	.0003	.0001	.0001
Endrin	.2	.2	.003	.0001	.0002	.0003	.00009	.0002	.0001	.0001
m,p'-DDD	.2	.2	.01	.0004	.0005	.0007	.0002	.0004	.0002	.0003
p,p'-DDD/o,p'-DDT	.2	.2	.01	.0004	.0004	.0006	.0002	.0004	.0002	.0002
p,p'-DDT	.3	.3	.01	.0003	.0003	.0005	.0002	.0003	.0002	.0002
Mirex	.2	.2	.004	.0002	.0002	.0003	.0001	.0002	.0001	.0001
Chlorobiphenyls	.2	.2	.2	.01	.01	.01	.005	.01	.005	.01
Dichlorobiphenyls	.2	.2	.02	.001	.001	.0002	.0006	.001	.0006	.0006
Trichlorobiphenyls	.3	.3	.01	.0003	.0003	.0005	.0002	.0003	.0002	.0002
Tetrachlorobiphenyls	.2	.2	.01	.0004	.0005	.0007	.0002	.0004	.0002	.0003
Pentachlorobiphenyls	.2	.2	.004	.0002	.0002	.0003	.0001	.0002	.0001	.0001
Hexachlorobiphenyls	.2	.2	.01	.0003	.0003	.0004	.0001	.0003	.0001	.0002
ΣPolychlorinatedbiphenyls										
" " (PPM, wet)										

Table A3ℓ. Lower quantitation limits for target compounds in surface microlayer samples, in µg/L .

Substrate	Surface Microlayer (Annandale Cruise)										
Location	#2 Red	#4 Red	#8 Red	#9 Red	#10 Red	#11 Red	#13 Red	#1 Red	#5 Red		
Latitude (°N) Longitude (°W)	39°30' 74°10'	40°15' 73°40'	40°40' 72°41'	40°51' 71°56'	40°11' 72° 0'	40° 0' 72°46'	38°55' 72°51'	38°45 74°50	40°30' 73°56'	40°30' 73°56'	40°30' 73°56'
Sample Size , liters	1	1	1	1	1	1	1	1	1	1	1
Collection Date	120577	130577	140577	140577	150577	150577	160577	170577	130577	130577	130577
Naphthalene	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
2-Methylnaphthalene	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
1-Methylnaphthalene	.03	.03	.04	.03	.04	.03	.03	.04	.03	.04	.04
Biphenyl	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
Dibenzothiophene	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
Phenanthrene	.03	.03	.04	.04	.04	.04	.04	.04	.04	.04	.04
Anthracene	.03	.03	.04	.04	.04	.04	.04	.04	.04	.04	.04
1-Methylphenanthrene	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
Fluoranthene	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
Pyrene	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
Benz(*a*)anthracene	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
Chrysene	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
Benzo(*e*)pyrene	.03	.03	.03	.03	.04	.03	.03	.03	.03	.03	.03
Benzo(*a*)pyrene	.03	.02	.03	.02	.03	.03	.03	.03	.03	.03	.03
Perylene	.03	.3	.3	.3	.3	.3	.3	.03	.03	.03	.03

Table A3ℓ. Lower quantitation limits for target compounds in surface microlayer samples, in µg/L (Cont.).

Substrate	Surface Microlayer (Annandale Cruise)										
Location	#2 Red	#4 Red	#8 Red	#9 Red	#10 Red	#11 Red	#13 Red	#1 Red	#5 Red		
Latitude (°N) Longitude (°W)	39°30' 74°10'	40°15' 73°40'	40°40' 72°41'	40°51' 71°56'	40°11' 72° 0'	40° 0' 72°46'	38°55' 72°51'	38°45' 74°50'	40°30' 73°56'	40°30' 73°56'	40°30' 73°56'
Sample Size, liters	1	1	1	1	1	1	1	1	1	1	1
1,2-Dibromo-3chloropropane	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Hexachlorobenzene	.03	.03	.04	.04	.04	.04	.04	.04	.04	.04	.04
Lindane (γ-BHC)	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3
Heptachlor	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Aldrin	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
o,p'-DDE	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
α-Clordane	.09	.09	.1	.1	.1	.1	.1	.1	.1	.1	.1
trans-Nonachlor	.09	.09	.1	.1	.1	.1	.1	.1	.1	.1	.1
Dieldrin	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
p,p'-DDE	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
o,p'DDD	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3
Endrin	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
m,p'-DDD	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
p,p'-DDD/o,p'-DDT	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
p,p'-DDT	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3
Mirex	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Chlorobiphenyls	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Dichlorobiphenyls	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Trichlorobiphenyls	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3
Tetrachlorobiphenyls	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
Pentachlorobiphenyls	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Hexachlorobiphenyls	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-	-	-

Table A4. Concentrations of target compounds in surface microlayer samples, in μg/L.

Substrate (Cruise)	(Annandale)			Surface Microlayer				(Dolphin)			
Location	#3 Red	#5 Red	#5 Green	19	23	26	42	51	55	68	70
Latitude (°N) Longitude (°W)	39°41' 74°0'	40°30' 73°56'	40°12' 73°50'	39°30' 74°11'	40°14' 73°54'	40°18' 73°38'	40°42' 72°43'	40°55' 71°39'	40°36' 72°12'	40°25' 73°35'	40°31' 73°53'
Sample Size, liters	1†	1†	1†	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Collection Date	120577	130577	150577	130578	130578	130578	180578	190578	190578	200578	200578
Naphthalene	.05	<.01	.03	<.004	<.003	<.004	.01	.01	<.01	.2	.1
2-Methylnaphthalene	<.01	<.01	<.01	<.004	<.003	<.004	<.004	<.003	<.01	.01	<.003
1- "	<.01	<.01	<.01	<.004	<.003	<.004	.01	<.003	<.01	.01	<.003
Biphenyl	<.01	<.01	<.01	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003
Dibenzothiophene	<.01	<.02	<.02	<.004	<.003	<.004	<.1	<.003	<.01	<.003	<.003
Phenanthrene	<.01	<.01	<.01	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003
Anthracene	<.01	.06	.05	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003
1-Methylphenanthrene	<.01	<.01	<.01	<.004	<.003	<.004	.4	<.003	<.01	<.003	<.003
Fluoranthene	.04	.06	<.01	<.004	<.003	<.004	.1	<.003	<.01	<.003	<.003
Pyrene	<.01	<.01	<.01	<.004	<.003	<.004	.02	<.003	<.01	<.003	<.003
Benz(*a*)anthracene	<.01	<.04	<.03	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003
Chrysene	<.01	.09	<.02	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003
Benzo(*e*)pyrene	<.01	<.03	<.03	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003
Benzo(*a*)pyrene	<.01	.3	<.03	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003
Perylene	<.01	2.	1.	<.004	<.003	<.004	<.004	<.003	<.01	<.003	<.003

Table A4. Concentrations of target compounds in surface microlayer samples, in μg/L (Cont.).

Substrate (Cruise)	(Annandale)			Surface Microlayer (Dolphin)							
Location	#3 Red	#5 Red	#5 Green	19	23	26	42	51	55	68	70
Latitude (°N)	39°41'	40°30'	40°12'	39°30'	40°14'	40°18'	40°42'	40°55'	40°36'	40°25'	40°31'
Longitude (°W)	74°0'	73°56'	73°50'	74°11'	73°54'	73°38'	72°43'	71°39'	72°12'	73°35'	73°53'
Sample Size, liters	1†	1†	1†	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
1,2-Dibromo-3-chloropropane	<.06	<.06	<.06	<.0009	<.0006	<.0009	<.001	<.0009	<.0008	<.0008	<.001
Hexachlorobenzene	<.01	<.01	<.01	.001	.0009	<.0002	<.0003	<.0002	<.0002	<.0002	<.0002
Lindane (γ-BHC)	<.08	<.08	<.08	.001	.001	.0007	.004	.001	<.0003	.006	.01
Heptachlor	<.05	<.05	<.05	<.0003	<.0002	<.0003	.001	<.0003	<.0003	.001	.01
Aldrin	<.04	<.04	<.04	<.0002	<.0002	<.0002	.006	<.0002	<.0002	<.0002	<.0003
o,p'-DDE	<.06	<.06	<.06	<.0006	<.0004	<.0006	<.0009	<.0006	<.0005	<.0005	<.0007
α-Chlordane	<.03	<.03	<.03	.002	.002	.002	.02	.002	.001	.002	.003
trans-Nonachlor	<.03	<.03	<.03	<.0003	.0007	.0003	.01	.0005	<.0003	.0005	.001
Dieldrin	<.05	<.05	<.05	<.0002	<.0002	<.0002	.005	<.0003	<.0002	.0007	.003
p,p'-DDE	<.04	<.04	<.04	.001	.001	.0007	.02	.003	.001	.002	.002
o,p'-DDD	<.2	<.2	<.2	<.0007	<.0005	<.0007	.03	.006	<.0006	<.0006	<.0008
Endrin	<.06	<.06	<.06	<.0005	<.0003	<.0004	.003	.0009	.0005	.0009	<.0005
m,p'-DDD	<.06	<.06	<.06	.004	.004	.001	.09	.004	.002	.004	.001
p,p'-DDD/o,p'-DDT	<.06	<.06	<.06	.002	.003	.001	.04	<.001	<.0009	<.0009	<.001
p,p'-DDT	<.08	<.08	<.08	<.0008	.004	<.0008	.06	<.0009	.005	.007	<.0009
Mirex	<.05	<.05	<.05	.003	<.0004	<.0006	<.0009	<.0006	<.0005	<.0005	<.0007
Chlorobiphenyls	<.06	<.06	<.06	.3	.3	.4	.04	.07	.05	.04	.05
Dichlorobiphenyls	<.06	<.06	<.06	.01	.01	.01	.02	.01	.01	.01	.02
Trichlorobiphenyls	<.08	<.08	<.08	.03	.02	.01	.02	<.0009	.01	.02	.06
Tetrachlorobiphenyls	<.04	<.04	<.04	.09	.05	.04	.3	<.001	.04	.03	.06
Pentachlorobiphenyls	<.06	<.06	<.06	.01	.01	.01	.2	.01	.01	.01	.01
Hexachlorobiphenyls	<.04	<.04	<.04	.01	.02	.02	.1	<.0007	.02	.003	<.0008
ΣPolychlorinatedbiphenyls				.4	.4	.5	.6	.1	.1	.1	.2
" " (PPM, wet)				.0005	.0004	.0005	.0006	.0001	.0001	.0001	.0002

Table A4ℓ. Lower quantitation limits for target compounds in surface microlayer samples, in μg/L .

Substrate (Cruise)	(Annandale)			Surface Microlayer				(Dolphin)			
Location	#3 Red	#5 Red	#5 Green	19	23	26	42	51	55	68	70
Latitude (°N)	39°41'	40°30'	40°12'	39°30'	40°14'	40°18'	40°42'	40°55'	40°36'	40°25'	40°31'
Longitude (°W)	74°0'	73°56'	73°50'	74°11'	73°54'	73°38'	72°43'	71°39'	72°12'	73°35'	73°53'
Sample Size, liters	1†	1†	1†	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Collection Date	120577	130577	150577	130578	130578	130578	180578	190578	190578	200578	200578
Naphthalene	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
2-Methylnaphthalene	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
1- "	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
Biphenyl	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
Dibenzothiophene	.01	.02	.02	.004	.003	.004	.01	.003	.01	.003	.003
Phenanthrene	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
Anthracene	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
1-Methylphenanthrene	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
Fluoranthene	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
Pyrene	.01	.01	.01	.004	.003	.004	.004	.003	.01	.003	.003
Benz(*a*)anthracene	.01	.04	.03	.004	.003	.004	.004	.003	.01	.003	.003
Chrysene	.01	.02	.02	.004	.003	.004	.004	.003	.01	.003	.003
Benzo(*e*)pyrene	.01	.03	.03	.004	.003	.004	.004	.003	.01	.003	.003
Benzo(*a*)pyrene	.01	.03	.03	.004	.003	.004	.004	.003	.01	.003	.003
Perylene	.01	.03	.03	.004	.003	.004	.004	.003	.01	.003	.003

Table A4ℓ. Lower quantitation limits for target compounds in surface microlayer samples, in µg/L (Cont.).

Substrate (Cruise)	(Annandale)			Surface Microlayer				(Dolphin)			
Location	#3 Red	#5 Red	#5 Green	19	23	26	42	51	55	68	70
Latitude (°N)	39°41'	40°30'	40°12'	39°30	40°14'	40°18'	40°42'	40°55'	40°36'	40°25'	40°31'
Longitude (°W)	74°0'	73°56'	73°50'	74°11'	73°54'	73°38'	72°43'	71°39'	72°12'	73°35'	73°53'
Sample Size, liters	1†	1†	1†	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
1,2-Dibromo-3-chloropropane	.06	.06	.06	.0009	.0006	.0009	.001	.0009	.0008	.0008	.001
Hexachlorobenzene	.01	.01	.01	.0002	.0001	.0002	.0003	.0002	.0002	.0002	.0002
Lindane (γ-BHC)	.08	.08	.08	.0003	.0002	.0003	.0005	.0004	.0003	.0003	.0004
Heptachlor	.05	.05	.05	.0003	.0002	.0003	.0005	.0003	.0003	.0003	.0003
Aldrin	.04	.04	.04	.0002	.0002	.0002	.0004	.0002	.0002	.0002	.0003
o,p'-DDE	.06	.06	.06	.0006	.0004	.0006	.0009	.0006	.0005	.0005	.0007
α-Chlordane	.03	.03	.03	.0004	.0003	.0004	.0006	.0004	.0003	.0003	.0004
trans-Nonachlor	.03	.03	.03	.0003	.0002	.0003	.0005	.0003	.0003	.0003	.0004
Dieldrin	.05	.05	.05	.0002	.0002	.0002	.0004	.0003	.0002	.0002	.0003
p,p'-DDE	.04	.04	.04	.0004	.0003	.0003	.0006	.0004	.0003	.0003	.0004
o,p'-DDD	.2	.2	.2	.0007	.0005	.0007	.001	.0007	.0006	.0006	.0008
Endrin	.06	.06	.06	.0005	.0003	.0004	.0007	.0005	.0004	.0004	.0005
m,p'-DDD	.06	.06	.06	.001	.0008	.001	.002	.001	.001	.001	.001
p,p'-DDD/o,p'-DDT	.06	.06	.06	.001	.0007	.001	.002	.001	.0009	.0009	.001
p,p'-DDT	.08	.08	.08	.0008	.0006	.0008	.001	.0009	.0008	.0008	.0009
Mirex	.05	.05	.05	.0006	.0004	.0006	.0009	.0006	.0005	.0005	.0007
Chlorobiphenyls	.06	.06	.06	.02	.02	.02	.04	.02	.02	.02	.03
Dichlorobiphenyls	.06	.06	.06	.003	.002	.003	.005	.001	.003	.003	.001
Trichlorobiphenyls	.08	.08	.08	.0009	.0006	.0008	.001	.0009	.0008	.0008	.001
Tetrachlorobiphenyls	.04	.04	.04	.001	.0008	.001	.002	.001	.001	.001	.001
Pentachlorobiphenyls	.06	.06	.06	.0006	.0004	.0005	.0009	.0006	.0005	.0005	.0006
Hexachlorobiphenyls	.04	.04	.04	.0007	.0005	.0007	.001	.0007	.0006	.0006	.0008
ΣPolychlorinatedbiphenyls											
" " (PPM, wet)											

Table A5. Concentrations of target compounds in plankton/egg samples, in ng/g.

Substrate	Plankton/Eggs (Annandale Cruise)															
Location	#5 Red			#8 Red	#9 Green	#9 Red	#10 Red	#11 Red	#5 Green				#13 Red	#1 Red	#6 Green
Latitude (°N)	40°30'	40°30'	40°30'	40°40'	40°46'	40°51'	40°11'	40° 0'	40°12'	40°12'	40°12'	40°12'	38°55'	38°45'	41°06'
Longitude (°W)	73°56'	73°56'	73°56'	72°41'	72°15'	71°56'	72°01'	72°46'	73°50'	73°50'	73°50'	73°50'	72°51'	74°50'	71°11'
Sample Size (wet), grams	11	10	10	10	10	11	10	6	10	10	10	10	10	10	10
Dry weight (%)	12	11	11	9	11	8	15	11	12	11	12	13	10	11	11
Collection Date	130577	130577	130577	140577	140577	140577	150577	150577	150577	150577	150577	150577	160577	170577	140577
Naphthalene	<20	<30	<20	<20	<20	<20	<20	<30	<20	<20	<20	<20	<30	<20	<20
2-Methylnaphthalene	200	<30	<20	<20	<20	<30	<30	<40	<20	<20	<20	<20	<30	<30	<30
1- "	300	<30	<20	<20	<20	<20	<20	<30	<20	<20	<20	<20	<30	<20	<20
Biphenyl	<20	<20	<20	50	<20	<20	<20	<30	<20	<10	<20	<10	<20	400	<20
Dibenzothiophene	<20	<20	<20	<10	<20	<20	<20	100	<20	<20	<20	<20	<20	<20	<20
Phenanthrene	<20	200	<20	<20	<20	<20	200	<30	<20	<20	<20	<20	<30	<20	<20
Anthracene	<50	<50	<50	<40	<50	<50	<20	<100	<50	<40	<50	<50	<50	<50	<50
1-Methylphenanthrene	<20	<20	<20	<10	<20	<20	300	<30	<20	<10	<20	<20	<20	<20	<20
Fluoranthene	200	<20	50	<10	<20	<20	300	<30	<20	<10	<20	<10	100	<20	<20
Pyrene	100	<20	<20	<10	<20	<20	200	<30	<20	<20	<20	<20	50	<20	<20
Benz(*a*)anthracene	<30	<40	<30	<20	<30	<30	<30	<50	<30	<20	<30	<30	<40	<30	<30
Chrysene	<40	<50	<40	<30	<50	<50	100	<50	<40	<40	<50	<40	<50	<50	<50
Benzo(*e*)pyrene	<20	<30	<20	<20	<30	<30	<30	<40	<20	<20	<30	<20	<30	<30	<30
Benzo(*a*)pyrene	<10	<20	<10	< 5	<10	<10	<10	<20	<10	<10	<10	<10	<20	<10	<10
Perylene	<40	<50	<40	<30	<50	<50	<50	<50	<40	<40	<50	<40	<50	<50	<50

Table A5. Concentrations of target compounds in plankton/egg samples, in ng/g (Cont.).

Substrate	Plankton/Eggs (Annandale Cruise)														
Location	#5 Red			#8 Red	#9 Green	#9 Red	#10 Red	#11 Red	#5 Green				#T3 Red	#1 Red	#6 Green
Latitude (°N)	40°30'	40°30'	40°30'	40°40'	40°46'	40°51'	40°11'	40° 0'	40°12'	40°12'	40°12'	40°12'	38°55'	38°45'	41°06'
Longitude (°W)	73°56'	73°56'	73°56'	72°41'	72°15'	71°56'	72°01'	72°46'	73°50'	73°50'	73°50'	73°50'	72°51'	74°50'	71°11'
Sample Size (wet), grams	11	10	10	10	10	11	10	6	10	10	10	10	10	10	10
Dry weight (%)	12	11	11	9	11	8	15	11	12	11	12	13	10	11	11
1,2-Dibromo-3-chloropropane	< 1	< 1	< 1	< 2	<.6	< 2	< 1	< 3	< 1	< 1	< 2	< 1	< 1	< 2	< 1
Hexachlorobenzene	3	.5	9	.5	.2	<.4	<.2	<.7	<.3	<.4	<.9	<.3	<.5	<.4	<.2
Lindane (γ-BHC)	<.5	<.5	<.5	<.6	<.3	<.8	.7	< 1	<.7	<.8	<.8	<.7	<.7	<.6	<.4
Heptachlor	<.4	<.4	<.4	<.6	<.2	<.7	<.4	< 1	<.5	<.6	<.6	<.5	<.6	<.6	<.3
Aldrin	<.6	<.5	<.6	<.9	<.3	<.1	<.6	< 1	<.8	<.9	<.9	<.8	<.8	<.9	<.5
o,p'-DDE	< 5	< 5	< 5	< 6	< 3	< 8	< 4	<10	< 3	< 4	< 4	< 3	< 7	< 6	< 4
α-Chlordane	8	10	40	10	10	10	3	20	10	7	8	8	4	5	.9
trans-Nonachlor	4	10	20	9	10	8	2	20	9	4	4	4	2	3	.4
Dieldrin	20	30	100	20	20	20	10	40	2	<.9	<.9	<.8	<10	7	< 4
p,p'-DDE	4	20	20	10	20	9	6	30	10	6	7	6	4	30	.4
o,p'-DDD	<.9	<.8	<.8	< 1	<.5	< 1	<.7	< 2	< 1	< 1	< 1	< 1	< 1	< 1	<.6
Endrin	<.6	<.6	<.6	<.8	<.4	< 1	<.5	< 2	<.7	<.8	<.9	<.7	<.9	<.8	<.5
m,p'-DDD	4	6	20	4	3	5	2	6	10	5	6	5	3	5	< 1
p,p'-DDD/o,p'-DDT	7	10	40	9	10	8	3	20	10	6	6	7	4	5	<.6
p,p'-DDT	< 1	< 1	< 1	5	<.7	3	3	< 3	2	< 3	< 3	< 3	< 2	< 2	< 1
Mirex	<.7	<.7	<.7	<.7	<.4	<.8	<.5	< 2	<.7	<.8	<.8	<.7	< 1	<.7	<.4
Chlorobiphenyls	< 4	5	8	200	< 2	400	300	<10	4	< 5	< 5	5	< 6	400	200
Dichlorobiphenyls	10	10	30	10	10	20	50	30	30	10	< 6	20	30	10	10
Trichlorobiphenyls	50	60	200	30	30	70	20	100	60	30	30	40	80	30	20
Tetrachlorobiphenyls	100	200	600	90	90	100	60	200	300	100	100	100	100	60	20
Pentachlorobiphenyls	200	300	700	100	200	100	50	400	200	80	90	100	100	70	9
Hexachlorobiphenyls	9	20	60	20	10	20	20	20	10	8	9	4	9	20	2
ΣPolychlorinatedbiphenyls	400	600	1600	500	300	700	500	700	600	200	200	300	300	600	300
" " (PPM, wet)	.05	.07	.2	.04	.03	.05	.08	.08	.07	.02	.02	.04	.03	.06	.03

Table A5ℓ. Lower quantitation limits for target compounds in plankton/egg samples, in ng/g.

Substrate	Plankton/Eggs (Annandale Cruise)														
Location	#5 Red			#8 Red	#9 Green	#9 Red	#10 Red	#11 Red	#5 Green				#13 Red	#1 Red	#6 Green
Latitude (°N)	40°30'	40°30'	40°30'	40°40'	40°46'	40°51'	40°11'	40° 0'	40°12'	40°12'	40°12'	40°12'	38°55'	38°45'	41°06'
Longitude (°W)	73°56'	73°56'	73°56'	72°41'	72°15'	71°56'	72°01'	72°46'	73°50'	73°50'	73°50'	73°50'	72°51'	74°50'	71°11'
Sample Size (wet), grams	11	10	10	10	10	11	10	6	10	10	10	10	10	10	10
Dry weight (%)	12	11	11	9	11	8	15	11	12	11	12	13	10	11	11
Collection Date	130577	130577	130577	140577	140577	140577	150577	150577	150577	150577	150577	150577	160577	170577	140577
Naphthalene	20	30	20	20	20	20	20	30	20	20	20	20	30	20	20
2-Methylnaphthalene	20	30	20	20	20	30	30	40	20	20	20	20	30	30	30
1- "	20	30	20	20	20	20	20	30	20	20	20	20	30	20	20
Biphenyl	20	20	20	10	20	20	20	30	20	10	20	10	20	20	20
Dibenzothiophene	20	20	20	10	20	20	20	30	20	20	20	20	20	20	20
Phenanthrene	20	30	20	20	20	20	20	30	20	20	20	20	30	20	20
Anthracene	50	50	50	40	50	50	50	100	50	40	50	50	50	50	50
1-Methylphenanthrene	20	20	20	10	20	20	20	30	20	10	20	20	20	20	20
Fluoranthene	20	20	20	10	20	20	20	30	20	10	20	10	20	20	20
Pyrene	20	20	20	10	20	20	20	30	20	20	20	20	20	20	20
Benz(*a*)anthracene	30	40	30	20	30	30	30	50	30	20	30	30	40	30	30
Chrysene	40	50	40	30	50	50	50	50	50	40	50	40	50	50	50
Benzo(*e*)pyrene	20	30	20	20	30	30	30	30	40	20	30	20	30	30	30
Benzo(*a*)pyrene	10	20	10	5	10	10	10	10	20	10	10	10	20	10	10
Perylene	40	50	40	30	50	50	50	50	50	40	50	40	50	50	50

Table A5ℓ. Lower quantitation limits for target compounds in plankton/egg samples, in ng/g (Cont.).

Substrate	Plankton/Eggs (Annandale Cruise)														
Location			#5 Red	#8 Red	#9 Green	#9 Red	#10 Red	#11 Red		#5 Green			#13 Red	#1 Red	#6 Green
Latitude (°N)	40°30'	40°30'	40°30'	40°40'	40°46'	40°51'	40°11'	40° 0'	40°12'	40°12'	40°12'	40°12'	38°55'	38°45'	41°06'
Longitude (°W)	73°56'	73°56'	73°56'	72°41'	72°15'	71°56'	72°01'	72°46'	73°50'	73°50'	73°50'	73°50'	72°51'	74°50'	71°11'
Sample Size (wet), grams	11	10	10	10	10	11	10	6	10	10	10	10	10	10	10
Dry weight (%)	12	11	11	9	11	8	15	11	12	11	12	13	10	11	11
1,2-Dibromo-3-chloropropane	1	1	1	2	.6	2	1	.3	1	1	2	1	1	2	1
Hexachlorobenzene	.3	.3	.3	.4	.2	.4	.2	.7	.3	.4	.9	.3	.5	.4	.2
Lindane (γ-BHC)	.5	.5	.5	.6	.3	.8	.4	1	.7	.8	.8	.7	.7	.6	.4
Heptachlor	.4	.4	.4	.6	.2	.7	.4	1	.5	.6	.6	.5	.6	.6	.3
Aldrin	.6	.5	.6	.9	.3	1	.6	1	.8	.9	.9	.8	.8	.9	.5
o,p'-DDE	5	5	5	6	3	8	4	10	3	.4	4	3	7	6	4
α-Chlordane	.6	.6	.6	.7	.3	.8	.4	1	.7	.8	.9	.7	.9	.7	.4
trans-Nonachlor	.5	.5	.5	.6	.3	.7	.4	1	.6	.7	.7	.6	.8	.6	.3
Dieldrin	9	8	8	6	5	7	4	20	.8	.9	.9	.8	10	6	4
p,p'-DDE	.4	.4	.4	.3	.2	.4	.2	1	.6	.7	.8	.6	.6	.3	.2
o,p'-DDD	.9	.8	.8	1	.5	1	.7	2	1	1	1	1	1	1	.6
Endrin	.6	.6	.6	.8	.4	1	.5	2	.7	.8	.9	.7	.9	.8	.5
m,p'-DDD	1	1	1	2	.8	2	1	4	3	4	4	3	2	2	1
p,p'-DDD/o,p'-DDT	1	1	1	1	.6	2	.9	3	1	2	2	1	2	1	.6
p,p'-DDT	1	1	1	2	.7	2	1	3	2	3	3	3	2	2	1
Mirex	.7	.7	.7	.7	.4	.8	.5	2	.7	.8	.8	.7	1	.7	.4
Chlorobiphenyls	4	4	4	100	2	100	80	10	4	5	5	4	6	100	80
Dichlorobiphenyls	4	4	4	5	2	6	4	10	5	6	6	5	6	5	3
Trichlorobiphenyls	1	1	1	1	.6	1	.8	3	1	1	1	1	2	1	.7
Tetrachlorobiphenyls	2	2	2	2	1	3	2	5	3	4	4	4	3	2	1
Pentachlorobiphenyls	6	5	5	3	3	4	2	10	5	6	6	5	8	3	2
Hexachlorobiphenyls	1	1	1	1	.6	1	.7	2	.8	.9	.9	.8	1	1	.7
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A6. Concentrations of target compounds in plankton/egg samples, in ng/g.

Substrate (Cruise)	(Annandale)				Plankton/Eggs (Dolphin)										
Location	#3 Red	#5 Red	#5 Green	#4 Red	Sta. 8 Tow 1	Sta.26 Tow 2	Sta.30 Tow 1	Sta.42 Tow 1	Sta.62 Tow 1	Sta.70 Tow 5	Sta.70 Tow 4	Sta.67 Tow 1	Sta.51 Tow 1	Sta.26 Tow 2	Sta.11 Tow 1
Latitude (°N)	39°41'	40°30'	40°12'	40°15'	37°30'	40°18'	40°31'	40°42'	40°26'	40°31'	40°31'	40°24'	40°55'	40°18'	38° 0'
Longitude (°W)	74° 0'	73°56'	73°50'	73°40'	74°50'	73°38'	73°41'	72°43'	73°26'	73°53'	73°53'	73°33'	71°39'	73°38'	74°32'
Sample Size (wet), grams	10†	10†	10†	10	4	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	9	10	12	8	9	9	10	9	10	10	9	7	7	8	10
Collection Date	120577	130577	150577	130577	120578	130578	140578	180578	190578	200578	200578	200578	190578	130578	120578
Naphthalene	200	90	20	<20	< 20	20	200	300	< 8	100	1000	300	400	<10	<10
2-Methylnaphthalene	100	200	20	<30	10000	70	8000	2000	< 10	800	6000	2000	2000	<10	<10
1- "	100	200	<10	<30	6000	30	3000	1000	< 7	300	3000	800	1000	<10	< 9
Biphenyl	200	200	60	<20	2000	80	6000	600	< 8	600	5000	2000	400	<10	<10
Dibenzothiophene	200	< 10	<20	<20	10000	80	800	6000	100	1000	8000	2000	6000	<20	<20
Phenanthrene	200	100	<10	<20	30000	< 8	3000	6000	< 8	1000	9000	3000	3000	<10	<10
Anthracene	100	30	<10	<50	1000	< 9	< 30	400	< 8	< 7	< 10	< 10	< 20	<10	<10
1-Methylphenanthrene	< 10	< 10	<10	<20	10000	< 9	800	4000	100	200	7000	2000	3000	<10	<10
Fluoranthene	100	< 10	<10	<20	200	70	100	2000	< 8	300	7000	400	< 20	<10	<10
Pyrene	< 10	< 10	<10	<20	8000	80	700	3000	70	200	9000	2000	< 20	<10	<10
Benz(a)anthracene	< 30	< 30	<30	<30	10000	300	< 100	2000	< 20	< 20	20000	900	< 60	<40	<30
Chrysene	< 20	< 10	20	<50	10000	< 10	< 60	1000	< 9	100	10000	200	< 30	<20	<20
Benzo(e)pyrene	< 20	< 20	<20	<30	< 200	< 10	< 70	2000	< 10	< 10	< 30	< 50	< 70	<40	<40
Benzo(a)pyrene	< 20	< 10	<10	<10	< 200	< 10	< 80	< 10	< 10	< 9	< 40	< 60	< 70	<40	<40
Perylene	< 20	< 10	<20	<50	< 200	< 10	< 90	< 10	< 10	< 10	< 50	< 70	< 90	<60	<50

Table A6. Concentrations of target compounds in plankton/egg samples; in ng/g (Cont.).

Substrate (Cruise)	(Annandale)				Plankton/Eggs (Dolphin)										
Location	#3 Red	#5 Red	#5 Green	#4 Red	Sta.8 Tow 1	Sta.26 Tow 2	Sta.30 Tow 1	Sta.42 Tow 1	Sta.62 Tow 1	Sta.70 Tow 5	Sta.70 Tow 4	Sta.67 Tow 1	Sta.51 Tow 1	Sta.26 Tow 2	Sta.11 Tow 1
Latitude (°N)	39°41'	40°30'	40°12'	40°15'	37°30'	40°18'	40°31'	40°42'	40°26'	40°31'	40°31'	40°24'	40°55'	40°18'	38° 0'
Longitude (°W)	74° 0'	73°56'	73°50'	73°40'	74°50'	73°38'	73°41'	72°43'	73°26'	73°53'	73°53'	73°33'	71°39'	73°38'	74°32'
Sample Size (wet), grams	10†	10†	10†	10	4	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	9	10	12	8	9	9	10	9	10	10	9	7	7	8	10
1,2-Dibromo-3-chloropropane	<10	<10	<9	< 1	< 6	< 2	<10	< 5	< 4	< 3	< 3	60	< 4	< 3	< 3
Hexachlorobenzene	< 2	< 2	<1	<.3	10	3	20	< 1	2	2	100	350	5	20	10
Lindane (γ-BHC)	< 6	< 6	<5	<.5	< 4	< 1	10	< 3	< 2	< 1	30	20	< 2	< 1	< 1
Heptachlor	< 5	< 5	<3	<.4	< 3	<.7	< 4	< 2	< 1	< 1	<.8	< 3	< 1	< 1	< 1
Aldrin	< 4	< 4	<3	<.6	< 3	<.8	< 4	< 2	< 2	< 1	<.9	< 4	< 1	< 1	< 1
o,p'-DDE	< 5	< 5	<4	< 5	< 5	< 1	< 7	10	< 2	< 2	<20	4000	<20	<10	800
α-Chlordane	< 3	< 3	<3	10	80	30	200	40	30	30	900	300	100	100	100
trans-Nonachlor	*30	< 3	<3	10	70	30	300	40	30	20	800	300	90	100	80
Dieldrin	< 3	< 3	<3	20	4000	20	100	30	30	10	300	200	70	70	300
p,p'-DDE	*70	< 2	<2	10	*5000	*20	*100	*30	*40	*20	300	200	80	90	400
o,p'-DDD	< 6	< 6	<5	<.8	<10	< 1	< 7	< 3	< 3	< 2	< 2	< 7	< 2	< 2	< 2
Endrin	< 6	< 6	<5	<.6	< 4	< 1	< 1	< 2	< 2	< 1	< 1	< 5	< 2	< 1	< 1
m,p'-DDD	<10	<10	<9	5	100	10	300	30	10	4	1300	100	< 5	50	10
p,p'-DDD/o,p'-DDT	< 9	< 9	<8	10	300	20	400	40	20	20	1100	300	50	100	50
p,p'-DDT	<10	<10	<9	5	< 7	20	400	80	20	< 2	2000	<10	< 4	100	110
Mirex	< 4	< 4	<4	<.5	< 4	<.9	< 5	< 2	< 2	< 1	< 1	< 5	< 2	< 1	< 1
Chlorobiphenyls	< 3	< 3	<3	500	<10	30	300	<80	<70	<40	<50	700	<80	300	<50
Dichlorobiphenyls	*20	<10	<9	20	40	20	50	< 7	20	10	200	200	70	80	70
Trichlorobiphenyls	*300	< 5	<5	50	100	70	200	50	80	60	1200	1400	100	300	90
Tetrachlorobiphenyls	< 6	< 5	<5	100	1000	200	1500	200	200	300	9000	3700	500	800	400
Pentachlorobiphenyls	< 4	< 4	<4	200	4500	100	2000	300	100	200	11000	1700	400	500	400
Hexachlorobiphenyls	< 5	< 5	<5	30	*500	*70	*1500	*300	*100	*90	800	600	100	300	200
ΣPolychlorinatedbiphenyls	300	-	-	900	6200	500	5500	900	500	500	22000	8300	1200	2300	1200
" " (PPM, wet)	.03	-	-	.1	.6	.05	.6	.08	.05	.05	2	.6	.08	.2	.1

Table A6$_{\ell}$. Lower quantitation limits for target compounds in plankton/egg samples, in ng/g.

Substrate (Cruise)	(Annandale)				Plankton/Eggs					(Dolphin)					
Location	#3 Red	#5 Red	#5 Green	#4 Red	Sta. 8 Tow 1	Sta. 26 Tow 2	Sta. 30 Tow 1	Sta. 42 Tow 1	Sta. 62 Tow 1	Sta. 70 Tow 5	Sta. 70 Tow 4	Sta. 67 Tow 1	Sta. 51 Tow 1	Sta. 26 Tow 2	Sta. 11 Tow 1
Latitude (°N)	39°41'	40°30'	40°12'	40°15'	37°30'	40°18'	40°31'	40°42'	40°26'	40°31'	40°31'	40°24'	40°55'	40°18'	38° 0'
Longitude (°W)	74° 0'	73°56'	73°50'	73°40'	74°50'	73°38'	73°41'	72°43'	73°26'	73°53'	73°53'	73°33'	71°39'	73°38'	74°32'
Sample Size (wet), grams	10†	10†	10†	10	4	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	9	10	12	8	9	9	10	9	10	10	9	7	7	8	10
Collection Date	120577	130577	150577	130577	120578	130578	140578	180578	190578	200578	200578	200578	190578	130578	120578
Naphthalene	10	10	10	20	20	9	30	8	8	7	9	10	20	10	10
2-Methylnaphthalene	10	10	10	30	80	9	30	8	10	7	10	10	20	10	10
1- "	10	10	10	30	70	7	30	7	7	6	8	10	20	10	9
Biphenyl	10	10	10	20	80	9	30	8	8	7	9	10	20	10	10
Dibenzothiophene	20	10	20	20	100	20	30	10	10	10	20	30	30	20	20
Phenanthrene	10	10	10	20	70	8	30	8	8	7	9	10	20	10	10
Anthracene	10	10	10	50	80	9	30	8	8	7	10	10	20	10	10
1-Methylphenanthrene	10	10	10	20	80	9	30	8	8	7	10	20	20	10	10
Fluoranthene	10	10	10	20	80	9	30	8	8	7	10	20	20	10	10
Pyrene	10	10	10	20	90	9	40	8	8	8	10	20	20	10	10
Benz(*a*)anthracene	30	30	30	30	300	20	100	20	20	20	30	50	60	40	30
Chrysene	20	10	10	50	100	10	60	9	9	8	20	20	30	20	20
Benzo(*e*)pyrene	20	20	20	30	200	10	70	10	10	10	30	50	70	40	40
Benzo(*a*)pyrene	20	10	10	10	200	10	80	10	10	9	40	60	70	40	40
Perylene	20	10	20	50	200	10	90	10	10	10	50	70	90	60	50

Table A6ℓ. Lower quantitation limits for target compounds in plankton/egg samples, in ng/g (Cont.).

Substrate (Cruise)	(Annandale)				Plankton/Eggs					(Dolphin)					
Location	#3 Red	#5 Red	#5 Green	#4 Red	Sta. 8 Tow 1	Sta.26 Tow 2	Sta.30 Tow 1	Sta.42 Tow 1	Sta.62 Tow 1	Sta.70 Tow 5	Sta.70 Tow 4	Sta.67 Tow 1	Sta.51 Tow 1	Sta.26 Tow 2	Sta.11 Tow 1
Latitude (°N) Longitude (°W)	39°41' 74° 0'	40°30' 73°56'	40°12' 73°50'	40°15' 73°40'	37°30' 74°50'	40°18' 73°38'	40°31' 73°41'	40°42' 72°43'	40°26' 73°26'	40°31' 73°53'	40°31' 73°53'	40°24' 73°33'	40°55' 71°39'	40°18' 73°38'	38° 0' 74°32'
Sample Size (wet), grams Dry weight (%)	10† 9	10† 10	10† 12	10 8	4 9	10 9	10 10	10 9	10 10	10 10	10 9	10 7	10 7	10 8	10 10
1,2-Dibromo-3-chloropropane	10	10	9	1	9	2	10	5	4	3	3	10	4	3	3
Hexachlorobenzene	2	2	1	.3	2	.5	3	1	1	.6	.6	2	.8	.6	.6
Lindane (γ-BHC)	6	6	5	.5	4	1	6	3	2	1	2	6	2	1	1
Heptachlor	5	5	3	.4	3	.7	4	2	1	.8	.8	3	1	.8	.8
Aldrin	4	4	3	.6	3	.8	4	2	2	1	.9	4	1	.9	.9
o,p'-DDE	5	5	4	5	5	1	7	3	2	1	20	60	20	10	10
α-Chlordane	3	3	3	.5	3	.7	4	2	1	.8	.8	3	1	.8	.8
trans-Nonachlor	3	3	3	.4	3	.7	4	2	1	.8	.8	3	1	.8	.8
Dieldrin	3	3	3	5	2	.5	3	1	1	.7	.7	3	.9	.7	.7
p,p'-DDE	2	2	2	.7	3	.7	4	.2	1	.8	.9	3	1	.8	.8
o,p'-DDD	6	6	5	.8	5	1	7	3	3	2	2	7	2	2	2
Endrin	6	6	5	.6	4	1	.5	2	2	1	1	5	2	1	1
m,p'-DDD	10	10	9	1	9	2	1	5	4	3	4	10	5	3	3
p,p'-DDD/o,p'-DDT	9	9	8	1	6	1	8	3	3	2	2	7	3	2	2
p,p'-DDT	10	10	9	1	7	2	9	4	3	2	3	9	4	3	3
Mirex	4	4	4	.5	4	.9	5	2	2	1	1	5	2	1	1
Chlorobiphenyls	3	3	3	90	10	30	200	80	70	40	50	200	70	50	50
Dichlorobiphenyls	10	10	9	4	10	3	20	7	6	4	4	20	5	4	4
Trichlorobiphenyls	5	5	5	.9	5	1	7	3	3	2	2	7	2	2	2
Tetrachlorobiphenyls	6	5	5	2	5	1	6	3	2	1	1	6	2	1	1
Pentachlorobiphenyls	4	4	4	2	4	1	6	2	2	1	1	5	2	1	1
Hexachlorobiphenyls	5	5	5	.8	5	1	6	3	2	2	1	6	2	1	1
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A7. Concentrations of target compounds in plankton/egg and zooplankton samples, in ng/g.

Substrate (Cruise)	Plankton/Eggs (Dolphin)			Zooplankton (Delaware)					
Location	Tow 1 Sta.19	Tow 1 Sta.27	Tow 1 Sta.29	Sta. 5	Sta.71	Sta.52	Sta.42	Sta.68	Sta.43
Latitude (°N)	39°30'	40°25'	40°36'	40°16'	40°28'	39°34'	39°14'	40°44'	39°19'
Longitude (°W)	74°11'	73°45'	73°17'	73°09'	73°13'	73°47'	74°26'	72°40'	74°13'
Sample Size (wet), grams	2	10	10	10	10	4	10	10	2
Dry weight (%)	11	15	14	15	17	10	7	18	13
Collection Date	130578	130578	140578	090279	050379	020379	020379	040379	020379
Naphthalene	800	80	400	100	30	< 40	50	20	300
2-Methylnaphthalene	4800	100	2900	100	40	< 50	<20	10	300
1- "	1600	< 9	900	< 9	< 8	< 40	<20	20	<50
Biphenyl	2500	200	1300	100	< 9	< 40	<20	< 7	300
Dibenzothiophene	2000	100	2800	300	<20	< 90	<50	50	<100
Phenanthrene	2800	200	2500	2500	<10	< 50	<30	< 5	700
Anthracene	1800	<10	800	500	< 9	< 40	<20	< 4	< 60
1-Methylphenanthrene	1000	60	1400	60	60	< 50	<30	< 5	< 70
Fluoranthene	500	200	700	1500	<10	< 50	<30	< 5	< 70
Pyrene	300	100	1200	1400	<10	< 60	<30	< 5	< 70
Benz(*a*)anthracene	100	<30	100	1000	300	<100	<70	<10	1200
Chrysene	400	200	200	600	<20	< 70	<40	< 7	< 90
Benzo(*e*)pyrene	<80	200	50	400	<20	< 90	<50	< 8	<100
Benzo(*a*)pyrene	500	300	100	400	<20	< 80	<40	< 7	<100
Perylene	1300	200	200	<20	<20	<100	<50	<10	<100

Table A7. Concentrations of target compounds in plankton/egg and zooplankton samples, in ng/g (Cont.).

Substrate (Cruise)	Plankton/Eggs (Dolphin)			Zooplankton (Delaware)					
Location	Tow 1 Sta.19	Tow 1 Sta.27	Tow 1 Sta.29	Sta. 5	Sta.71	Sta.52	Sta.42	Sta.68	Sta.43
Latitude (°N)	39°30'	40°25'	40°36'	40°16'	40°28'	39°34'	39°14'	40°44'	39°19'
Longitude (°W)	74°11'	73°45'	73°17'	73°09'	73°13'	73°47'	74°26'	72°40'	74°13'
Sample Size (wet), grams	2	10	10	10	10	4	10	10	2
Dry weight (%)	11	15	14	15	17	10	7	18	13
1,2-Dibromo-3-chloropropane	100	7	< 3	< 2	20	20	< .2	< 4	< 10
Hexachlorobenzene	< 1	3	8	1	2	< .9	<.03	<.5	2
Lindane (γ-BHC)	< 4	2	20	<.7	1	< 3	<.07	< 2	< 4
Heptachlor	< 4	< 1	< 1	<.6	<.3	< 2	<.06	< 1	< 3
Aldrin	< 2	<.8	<.7	<.4	<.2	< 2	<.05	< 1	< 2
o,p'-DDE	< 4	< 1	40	<.5	<.4	< 4	< .5	<10	200
α-Chlordane	30	90	70	10	10	10	5	7	20
trans-Nonachlor	20	60	50	9	10	8	4	7	20
Dieldrin	< 2	<.7	<.7	<.4	<.2	< 1	<.04	<.8	< 2
p,p'-DDE	10	50	60	20	10	20	2	20	< 2
o,p'-DDD	80	100	200	30	<.6	30	20	20	80
Endrin	< 8	< 2	< 2	< 1	<.6	< 5	< .1	< 3	< 7
m,p'-DDD	<20	100	300	10	40	< 10	< .3	< 5	< 10
p,p'-DDD/o,p'-DDT	40	200	200	20	30	< 5	5	< 3	30
p,p'-DDT	<20	100	300	40	50	40	20	< 4	30
Mirex	< 3	< 1	<.9	<.4	<.3	< 2	<.06	< 1	< 3
Chlorobiphenyls	<90	<30	<30	<20	< 8	<200	< 4	<90	<200
Dichlorobiphenyls	40	40	50	20	20	40	6	20	50
Trichlorobiphenyls	< 5	300	900	50	40	100	20	< 2	50
Tetrachlorobiphenyls	< 5	400	800	30	10	8	9	80	100
Pentachlorobiphenyls	500	400	200	60	100	20	10	10	80
Hexachlorobiphenyls	< 4	200	400	20	20	< 3	10	6	20
ΣPolychlorinatedbiphenyls	500	1300	2300	200	200	200	50	100	300
" " (PPM, wet)	.06	.20	.32	.03	.03	.02	.004	.02	.04

Table A7ℓ. Lower quantitation limits for target compounds in plankton/ egg and zooplankton samples, in ng/g.

Substrate (Cruise)	Plankton/Eggs (Dolphin)			Zooplankton (Delaware)					
Location	Tow 1 Sta.19	Tow 1 Sta.27	Tow 1 Sta.29	Sta. 5	Sta.71	Sta.52	Sta.42	Sta.68	Sta.43
Latitude (°N)	39°30'	40°25'	40°36'	40°16'	40°28'	39°34'	39°14'	40°44'	39°19'
Longitude (°W)	74°11'	73°45'	73°17'	73°09'	73°13'	73°47'	74°26'	72°40'	74°13'
Sample Size (wet), grams	2	10	10	10	10	4	10	10	2
Dry weight (%)	11	15	14	15	17	10	7	18	13
Collection Date	130578	130578	140578	090279	050379	020379	020379	040379	020379
Naphthalene	40	9	7	10	9	40	20	4	50
2-Methylnaphthalene	40	9	8	10	10	50	20	4	60
1- "	40	9	6	9	8	40	20	4	50
Biphenyl	40	9	8	10	9	40	20	7	60
Dibenzothiophene	90	20	20	20	20	90	50	9	100
Phenanthrene	50	10	9	10	10	50	30	5	60
Anthracene	40	10	8	10	9	40	20	4	60
1-Methylphenanthrene	50	10	9	10	10	50	30	5	70
Fluoranthene	60	10	10	10	10	50	30	5	70
Pyrene	60	10	10	10	10	60	30	5	70
Benz(*a*)anthracene	100	30	30	40	30	100	70	10	200
Chrysene	70	20	10	20	20	70	40	7	10
Benzo(*e*)pyrene	80	20	10	20	20	90	50	8	100
Benzo(*a*)pyrene	70	20	10	20	20	80	40	7	100
Perylene	100	20	20	20	20	100	50	10	100

Table A7ℓ. Lower quantitation limits for target compounds in plankton/ egg and zooplankton samples, in ng/g (Cont.).

Substrate (Cruise)	Plankton/Eggs (Dolphin)			Zooplankton (Delaware)					
Location	Tow 1 Sta.19	Tow 1 Sta.27	Tow 1 Sta.29	Sta. 5	Sta.71	Sta.52	Sta.42	Sta.68	Sta.43
Latitude (°N) Longitude (°W)	39°30' 74°11'	40°25' 73°45'	40°36' 73°17'	40°16' 73°09'	40°28' 73°13'	39°34' 73°47'	39°14' 74°26'	40°44' 72°40'	39°19' 74°13'
Sample Size (wet), grams Dry weight (%)	2 11	10 15	10 14	10 15	10 17	4 10	10 7	10 18	2 13
1,2-Dibromo-3-chloropropane	10	3	3	2	.9	7	.2	4	10
Hexachlorobenzene	1	.4	.4	.2	.1	.9	.03	.5	1
Lindane (γ-BHC)	4	1	1	.7	.4	3	.07	2	4
Heptachlor	4	1	1	.6	.3	2	.06	1	3
Aldrin	2	.8	.7	4	.2	2	.05	1	2
o,p'-DDE	4	1	1	.5	.4	4	.5	10	30
α-Chlordane	2	.7	.7	1	.2	2	.04	.9	2
trans-Nonachlor	2	.7	.7	.4	.2	2	.04	.9	2
Dieldrin	2	.7	.7	.4	.2	1	.04	.8	2
p,p'-DDE	3	.8	.8	.7	.2	2	.05	1	2
o,p'-DDD	7	2	2	.4	.6	4	.1	2	5
Endrin	8	2	2	1	.6	5	.1	3	7
m,p'-DDD	20	8	7	4	2	10	.3	5	10
p,p'-DDD/o,p'-DDT	10	4	4	2	1	5	.2	3	8
p,p'-DDT	20	7	7	2	2	8	.2	4	10
Mirex	3	1	.9	.4	.3	2	.06	1	3
Chlorobiphenyls	90	30	30	20	8	200	4	90	200
Dichlorobiphenyls	10	3	3	2	.9	8	.2	5	10
Trichlorobiphenyls	5	2	2	.9	.4	3	.09	2	5
Tetrachlorobiphenyls	5	1	1	.8	.4	3	.09	2	4
Pentachlorobiphenyls	4	1	1	.6	.3	3	.08	2	4
Hexachlorobiphenyls	4	1	1	.7	.4	3	.07	2	4
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-

Table A8. Concentrations of target compounds in mackerel samples, in ng/g.

Substrate	Mackerel Flesh					Roe						Liver
Location	N.Y. Bight Apex					N.Y. Bight Apex						NY Bight Apex
Latitude (°N) Longitude (°W)	40° 30' 73° 50'					40° 30' 73° 50'						40° 30' 73° 50'
Sample Size (wet), grams Dry weight (%)	10 24	10 24	10 25	10 23	10 24	10 21	10 24	10 18	10 21	11 23	10† 23	10† 24
Collection Date	210577	210577	210577	210577	210577	210577	210577	210577	210577	210577	210577	210577
Subsample no./means size[a]	2/4.1	2/3.8	2/4.2	2/3.9	2/4.0	2/4.1	2/3.8	2/4.2	2/3.9	2/4.0	5/3.8	3/3.8
Naphthalene	<10	<10	<10	<10	<10	<10	< 7	<10	<10	<10	< 4	40
2-Methylnaphthalene	<10	<10	<10	<10	<10	<10	< 7	<10	<10	<10	< 4	< 3
1- "	<10	<10	<10	<10	<10	<10	< 6	<10	< 9	<10	< 4	< 3
Biphenyl	<10	<10	<10	<10	<10	<10	< 7	<10	<10	<10	200	80
Dibenzothiophene	<20	<20	<20	<30	<20	<30	<10	<20	<20	<20	< 4	< 3
Phenanthrene	<10	<10	40	<30	<10	<10	< 7	<10	<10	<10	< 4	< 3
Anthracene	<10	<10	<10	<30	<10	<10	< 7	<10	<10	<10	< 4	< 3
1-Methylphenanthrene	<10	<10	<10	<20	<10	<20	< 7	<10	<10	<10	< 4	< 3
Fluoranthene	<10	<10	<10	<20	<10	<20	< 8	<10	<10	<10	< 4	< 3
Pyrene	<10	<10	<10	<20	<10	<20	< 8	<10	<10	<10	< 4	< 3
Benz(*a*)anthracene	<30	<30	<20	<40	<30	<30	<20	<30	<30	<30	< 4	< 3
Chrysene	<10	<20	<20	<20	<10	<20	< 9	<20	<10	<20	< 4	< 3
Benzo(*e*)pyrene	<20	<20	<20	<20	<20	<20	<10	<20	<20	<20	< 4	< 3
Benzo(*a*)pyrene	<10	<20	<20	<30	<10	<20	< 9	<20	<10	<20	< 4	< 3
Perylene	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	< 4	< 3

[a] in decimeters

Table A8. Concentrations of target compounds in mackerel samples, in ng/g (Cont.)

Substrate	Mackerel Flesh					Roe						Liver
Location	N.Y. Bight Apex					N.Y. Bight Apex						NY Bight Apex
Latitude (°N) Longitude (°W)	40° 30' 73° 50'					40° 30' 73° 50'						40° 30' 73° 50'
Sample Size (wet), grams Dry weight (%)	10 24	10 24	10 25	10 23	10 24	10 21	10 24	10 18	10 21	10 23	10† 23	10† 24
1,2-Dibromo-3-chloropropane	< 4	< 5	< 7	< 5	< 4	< 5	< 4	<10	< 6	< 7	<60	<60
Hexachlorobenzene	10	6	10	5	10	10	10	< 2	20	10	<10	<10
Lindane (γ-BHC)	< 3	< 3	< 4	< 4	< 3	< 4	< 3	< 7	10	< 5	<40	<30
Heptachlor	< 2	< 2	< 3	< 2	< 2	< 2	< 1	< 4	< 2	< 3	<20	<20
Aldrin	< 1	< 2	< 3	< 2	< 2	< 2	< 1	< 4	< 2	< 3	<20	<20
o,p'-DDE	< 2	< 2	< 3	< 3	< 2	< 3	< 2	< 5	< 3	< 4	<30	<30
α-Chlordane	60	30	80	30	40	100	50	100	110	60	<20	<20
trans-Nonachlor	40	20	50	20	20	70	40	90	80	50	*40	*30
Dieldrin	80	40	10	40	60	100	40	100	100	70	<10	<20
p,p'-DDE	*100	*50	*100	*40	*70	*100	*50	*100	*100	*90	*70	*40
o,p'-DDD	< 2	< 3	< 4	< 3	< 3	< 3	< 2	< 9	< 4	< 4	<30	<30
Endrin	< 3	< 3	< 5	< 4	< 3	< 4	< 3	< 7	< 5	< 6	<20	<30
m,p'-DDD	40	20	50	20	40	60	20	50	60	40	<60	<70
p,p'-DDD/o,p'-DDT	*50	*50	*200	*40	*60	*100	*90	*200	*200	*100	<40	<50
p,p'-DDT	80	< 8	100	< 9	< 7	80	60	200	100	100	<80	<80
Mirex	< 2	< 2	< 3	< 2	< 2	< 2	< 2	< 4	< 3	< 3	<20	<20
Chlorobiphenyls	50	50	<60	60	40	70	40	80	100	80	<80	<80
Dichlorobiphenyls	20	20	30	10	10	30	20	20	20	20	<80	<80
Trichlorobiphenyls	*100	*70	*100	*80	*70	*200	*90	*200	*200	*100	*100	<80
Tetrachlorobiphenyls	*400	*200	*400	*200	*300	*600	*300	*500	*600	*400	*500	*200
Pentachlorobiphenyls	*400	*200	*300	*100	*200	*400	*200	*400	*400	*300	*200	*100
Hexachlorobiphenyls	*300	*100	*200	*90	*100	*200	*100	*300	*300	*100	*400	*100
ΣPolychlorinatedbiphenyls	1300	600	1100	500	700	1500	700	1500	1600	1000	1200	400
" " (PPM, wet)	.3	.1	.3	.1	.2	.3	.2	.3	.3	.2	.3	.1

Table A8ℓ. Lower quantitation limits for target compounds in mackerel samples, in ng/g.

Substrate	Mackerel Flesh					Roe						Liver
Location	N.Y. Bight Apex					N.Y. Bight Apex						NY Bight Apex
Latitude (°N) Longitude (°W)	40° 30' 73° 50'					40° 30' 73° 50'						40° 30' 73° 50'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10†	10†
Dry weight (%)	24	24	25	23	24	21	24	18	21	23	23	24
Collection Date	210577	210577	210577	210577	210577	210577	210577	210577	210577	210577	210577	210577
Subsample no./mean size[a]	2/4.1	2/3.8	2/4.2	2/3.9	2/4.0	2/4.1	2/3.8	2/4.2	2/3.9	2/4.0	5/3.8	5/3.8
Naphthalene	10	10	10	10	10	10	7	10	10	10	4	3
2-Methylnaphthalene	10	10	10	10	10	10	7	10	10	10	4	3
1- "	10	10	10	10	10	10	6	10	9	10	4	3
Biphenyl	10	10	10	10	10	10	7	10	10	10	4	3
Dibenzothiophene	20	20	20	30	20	30	10	20	20	20	4	3
Phenanthrene	10	10	10	30	10	10	7	10	10	10	4	3
Anthracene	10	10	10	30	10	10	7	10	10	10	4	3
1-Methylphenanthrene	10	10	10	20	10	20	7	10	10	10	4	3
Fluoranthene	10	10	10	20	10	20	8	10	10	10	4	3
Pyrene	10	10	10	20	10	20	8	10	10	10	4	3
Benz(*a*)anthracene	30	30	20	40	30	30	20	30	30	30	4	3
Chrysene	10	20	20	20	10	20	9	20	10	20	4	3
Benzo(*e*)pyrene	20	20	20	20	20	20	10	20	20	20	4	3
Benzo(*a*)pyrene	10	20	20	20	10	20	9	20	10	20	4	3
Perylene	20	20	20	20	20	20	10	20	20	20	4	3

[a] in decimeters

Table A8ℓ. Lower quantitation limits for target compounds in mackerel samples, in ng/g (Cont.).

Substrate	Mackerel Flesh					Roe						Liver
Location	N.Y. Bight Apex					N.Y. Bight Apex						NY Bight Apex
Latitude (°N) Longitude (°W)	40° 30' 73° 50'					40° 30' 73° 50'						40° 30' 73° 50'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10†	10†
Dry weight (%)	24	24	25	23	24	21	24	18	21	23	23	24
1,2-Dibromo-3-chloropropane	4	5	7	5	4	5	4	10	6	7	60	60
Hexachlorobenzene	.7	.8	1	1	.8	1	.6	2	1	1	10	10
Lindane (γ-BHC)	3	3	4	4	3	4	3	7	4	5	40	30
Heptachlor	2	2	3	2	2	2	1	4	2	3	20	20
Aldrin	1	2	3	2	2	2	1	4	2	3	20	20
o,p'-DDE	2	2	3	3	2	3	2	5	3	4	30	30
α-Chlordane	1	1	2	2	1	2	1	3	2	2	20	20
trans-Nonachlor	1	1	2	2	1	2	1	3	2	2	20	20
Dieldrin	.9	1	2	1	1	1	.8	2	1	2	10	20
p,p'-DDE	1	1	2	1	1	1	1	3	2	2	30	30
o,p'-DDD	2	3	4	3	3	3	2	9	4	4	30	30
Endrin	3	3	5	4	3	4	3	7	5	6	20	30
m,p'-DDD	4	5	7	6	5	6	4	10	7	8	60	70
p,p'-DDD/o,p'-DDT	4	5	7	6	4	5	4	10	6	7	40	50
p,p'-DDT	7	8	10	9	7	9	6	20	10	10	80	80
Mirex	2	2	3	2	2	2	2	4	3	3	20	20
Chlorobiphenyls	30	40	60	50	40	40	30	80	50	60	80	80
Dichlorobiphenyls	5	5	8	6	5	6	4	10	7	9	80	80
Trichlorobiphenyls	2	2	4	3	2	3	2	5	3	4	60	60
Tetrachlorobiphenyls	2	2	3	3	2	3	2	5	3	4	60	60
Pentachlorobiphenyls	1	2	2	2	2	2	1	4	2	3	50	50
Hexachlorobiphenyls	2	2	3	3	2	2	2	5	3	3	50	50
ΣPolychlorinatedbiphenyls												
" " (PPM, wet)												

Table A9. Concentrations of target compounds in winter flounder samples, in ng/g.

Substrate	Winter Flounder Flesh										Liver	
Location	Station 18+20			Raritan Bay			Station 131		Station 164		Raritan Bay	
Latitude (°N) Longitude (°W)	40°25' 73°44'	40°25' 73°44'	40°25' 73°44'	40°28' 74° 3'	40°28' 74° 3'	40°28' 74° 3'	39°27' 74° 9'	39°27' 74° 9'	40°53' 72°16'	40°53' 72°16'	40°28' 74° 3'	40°28' 74° 3'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	20	20	20	20	20	20	23	21	20	21	26	29
Collection Date	090278	090278	090278	160977	160977	160977	060478	060478	080478	080478	160977	160977
Subsample no./mean size[a]	6/2.5	6/2.9	6/2.6	6/2.5	5/2.4	6/2.5	5/2.4	5/2.4	5/2.9	5/2.9	5/2.5	5/2.5
Naphthalene	10	< 3	20	30	10	10	30	< 3	9	< 3	500	40
2-Methylnaphthalene	< 3	< 3	< 3	< 4	< 3	10	< 4	< 3	< 5	< 4	1000	< 6
1- "	< 3	< 3	< 2	< 4	< 3	< 2	< 4	< 3	< 4	< 3	700	< 5
Biphenyl	30	10	10	< 5	< 3	< 2	< 4	< 3	< 4	< 3	200	30
Dibenzothiophene	< 6	< 6	< 6	< 8	< 9	< 6	< 8	< 6	< 9	< 7	< 4	20
Phenanthrene	< 3	< 3	< 3	< 4	< 5	5	< 5	< 3	< 5	< 4	< 4	< 6
Anthracene	< 4	< 3	< 3	< 4	< 3	< 3	< 4	< 3	< 5	< 4	< 4	< 6
1-Methylphenanthrene	< 4	< 3	< 3	< 5	< 5	< 3	< 5	< 3	< 5	< 4	< 4	< 7
Fluoranthene	< 4	< 3	< 3	< 5	30	20	< 5	< 3	< 5	< 4	< 4	< 7
Pyrene	< 4	< 3	< 3	< 5	< 5	5	< 5	< 3	< 5	< 4	< 4	< 7
Benz(*a*)anthracene	< 9	< 8	< 7	<10	<10	< 9	<10	< 7	<10	< 9	< 4	<10
Chrysene	< 4	< 4	< 4	< 5	< 8	< 5	< 5	< 4	< 6	< 5	< 4	< 8
Benzo(*e*)pyrene	< 5	< 5	< 5	< 6	<20	<10	< 6	< 5	< 7	< 6	< 4	< 9
Benzo(*a*)pyrene	< 5	< 4	< 4	< 6	<20	<10	< 6	< 5	< 6	< 5	< 4	< 8
Perylene	< 6	< 5	< 5	< 7	<20	<10	< 7	< 6	< 8	< 7	< 4	<10

[a]in decimeters

Table A9. Concentrations of target compounds in winter flounder samples, in ng/g (Cont.).

Substrate	Winter Flounder Flesh										Liver	
Location	Station 18+20			Raritan Bay			Station 131		Station 164		Raritan Bay	
Latitude (°N) Longitude (°W)	40°25' 73°44'	40°25' 73°44'	40°25' 73°44'	40°28' 74° 3'	40°28' 74° 3'	40°28' 74° 3'	39°27' 74° 9'	39°27' 74° 9'	40°53' 72°16'	40°53' 72°16'	40°28' 74° 3'	40°28' 74° 3'
Sample Size (wet), grams Dry weight (%)	10 20	10 20	10 20	10 20	10 20	10 20	10 23	10 21	10 20	10 21	10+ 26	10+ 29
1,2-Dibromo-3-chloropropane	< 4	< 5	< 4	< 6	<10	< 7	< 7	< 4	< 7	< 6	<200	<10
Hexachlorobenzene	6	5	< 3	< 4	< 5	3	< 5	< 3	< 5	< 4	< 30	< 1
Lindane (γ-BHC)	5	4	4	< 4	10	6	< 5	< 3	< 5	< 4	<100	< 4
Heptachlor	< 3	< 3	< 3	< 4	< 5	< 2	< 5	< 3	< 5	< 4	< 50	< 3
Aldrin	< 2	< 2	< 2	< 3	< 4	< 1	< 4	< 2	< 4	< 3	< 50	< 2
o,p'-DDE	< 3	< 3	< 3	< 3	< 4	< 2	< 4	< 3	< 4	8	<100	< 3
α-Chlordane	30	30	30	40	40	40	< 5	4	< 5	8	*50	*60
trans-Nonachlor	20	20	20	20	30	30	< 5	5	< 5	7	*1500	*70
Dieldrin	< 4	< 4	< 4	< 5	20	20	< 6	< 4	< 6	< 5	< 50	< 2
p,p'-DDE	50	50	50	50	20	5	*10	20	*10	< 5	*1900	< 2
o,p'-DDD	< 2	< 2	< 2	< 2	< 3	< 1	< 3	< 2	< 3	< 2	<100	< 4
Endrin	< 2	< 2	< 2	< 3	< 4	< 1	< 4	< 2	< 4	< 3	<100	< 4
m,p'-DDD	< 4	< 4	< 4	< 5	< 6	< 3	< 6	< 4	< 6	< 5	<200	< 9
p,p'-DDD/o,p'-DDT	40	40	30	30	10	20	< 5	< 3	< 5	< 4	<200	< 6
p,p'-DDT	10	10	10	< 7	20	20	< 9	< 5	< 9	< 7	<200	< 9
Mirex	< 6	< 6	< 6	< 8	<10	< 4	<10	< 6	<10	< 8	*70	< 3
Chlorobiphenyls	<50	<30	<60	50	<70	<40	<30	<70	<50	<70	<200	< 9
Dichlorobiphenyls	40	20	40	20	< 2	20	10	< 1	10	< 2	<200	< 9
Trichlorobiphenyls	100	60	50	50	100	80	*10	7	*10	6	*2300	*50
Tetrachlorobiphenyls	200	200	200	200	200	150	*10	20	*10	30	*8100	*500
Pentachlorobiphenyls	100	100	100	100	80	70	*10	30	*10	40	*8100	*500
Hexachlorobiphenyls	100	70	70	40	50	50	*20	30	*20	30	*10000	*400
ΣPolychlorinatedbiphenyls	500	500	500	500	400	400	60	90	90	100	28000	1400
" " (PPM, wet)	.1	.1	.1	.1	.08	.08	.01	.02	.02	.02	7	.4

Table A9$_{\ell}$. Lower quantitation limits for target compounds in winter flounder samples, in ng/g.

Substrate	Winter Flounder Flesh										Liver	
Location	Station 18+20			Raritan Bay			Station 131		Station 164		Raritan Bay	
Latitude (°N)	40°25'	40°25'	40°25'	40°28'	40°28'	40°28'	39°27'	39°27'	40°53'	40°53'	40°28'	40°28'
Longitude (°W)	73°44'	43°44'	73°44'	74° 3'	74° 3'	74° 3'	74° 9'	74° 9'	72°16'	74°16'	74° 3'	74° 3'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10†	10†
Dry weight (%)	20	20	20	20	20	20	23	21	20	21	26	29
Collection Date	090278	090278	090278	160977	160977	160977	060478	060478	080478	080478	160977	160977
Subsample no./means size[a]	6/2.5	6/2.9	6/2.6	6/2.5	5/2.4	6/2.5	5/2.4	5/2.4	5/2.9	5/2.9	5/2.5	5/2.5
Naphthalene	3	3	3	4	3	2	4	3	4	3	4	5
2-Methylnaphthalene	3	3	3	4	3	2	4	3	5	4	6	6
1- "	3	3	2	4	3	2	4	3	4	3	4	5
Biphenyl	3	3	3	5	3	2	4	3	4	3	4	5
Dibenzothiophene	6	6	6	8	9	6	8	6	9	7	4	5
Phenanthrene	3	3	3	4	5	2	5	3	5	4	4	6
Anthracene	4	3	3	4	3	3	4	3	5	4	4	6
1-Methylphenanthrene	4	3	3	5	5	3	5	3	5	4	4	7
Fluoranthene	4	3	3	5	4	2	5	3	5	4	4	7
Pyrene	4	3	3	5	5	2	5	3	5	4	4	7
Benz(a)anthracene	9	8	7	10	10	9	10	7	10	9	4	10
Chrysene	4	4	4	5	8	5	5	4	6	5	4	8
Benzo(e)pyrene	5	5	5	6	20	10	6	5	7	6	4	9
Benzo(a)pyrene	5	4	4	6	20	10	6	5	6	5	4	8
Perylene	6	5	5	7	20	10	7	6	8	7	4	10

[a]in decimeters

Table A9ℓ. Lower quantitation limits for target compounds in winter flounder samples, in ng/g (Cont.).

Substrate	Winter Flounder Flesh										Liver	
Location	Station 18+20			Raritan Bay			Station 131		Station 164		Raritan Bay	
Latitude (°N) Longitude (°W)	40°25' 73°44'	40°25' 73°44'	40°25' 73°44'	40°28' 74° 3'	40°28' 74° 3'	40°28' 74° 3'	39°27' 74° 9'	39°27' 74° 9'	40°53' 72°16'	40°53' 72°16'	40°28' 74° 3'	40°28' 74° 3'
Sample Size (wet), grams Dry weight (%)	10 20	10 20	10 20	10 20	10 20	10 20	10 23	10 21	10 20	10 21	10+ 26	10+ 29
1,2-Dibromo-3-chloropropane	4	4	4	6	7	3	7	4	7	6	200	10
Hexachlorobenzene	3	3	3	4	5	2	5	3	5	4	30	1
Lindane (γ-BHC)	3	3	3	4	5	2	5	3	5	4	100	4
Heptachlor	3	3	3	4	5	2	5	3	5	4	50	3
Aldrin	2	2	2	3	4	1	4	2	4	3	50	2
o,p'-DDE	3	3	3	3	4	2	4	3	4	3	100	3
α-Chlordane	3	3	3	4	5	2	5	3	5	4	40	2
trans-Nonachlor	3	3	3	4	5	2	5	3	5	4	40	2
Dieldrin	4	4	4	5	7	3	7	4	7	5	50	2
p,p'-DDE	4	4	4	5	6	3	10	4	10	5	40	2
o,p'-DDD	2	2	2	2	3	1	3	2	3	2	100	4
Endrin	2	2	2	3	4	1	4	2	4	3	100	4
m,p'-DDD	4	4	4	5	6	3	6	4	6	5	200	9
p,p'-DDD/o,p'-DDT	3	3	3	4	5	2	5	3	5	4	200	6
p,p'-DDT	5	5	5	7	9	4	9	5	9	7	200	9
Mirex	6	6	6	8	10	4	10	6	10	8	50	3
Chlorobiphenyls	50	30	60	30	70	40	30	70	50	70	200	9
Dichlorobiphenyls	1	1	1	2	2	2	2	1	2	2	200	9
Trichlorobiphenyls	2	2	2	2	3	2	3	2	3	2	100	5
Tetrachlorobiphenyls	2	2	2	3	3	2	3	2	3	3	100	5
Pentachlorobiphenyls	2	2	2	3	3	2	3	2	3	3	80	4
Hexachlorobiphenyls	2	2	2	3	4	2	4	2	4	3	80	4
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-	-	-	-

Table A10. Concentrations of target compounds in windowpane flounder samples, in ng/g.

Substrate	Windowpane Flounder											
Location	Station 1 1978		Raritan Bay			Station 18+20			Station 131		Station 164	
Latitude (°N)	40°24'	40°24'	40°28'	40°28'	40°28'	40°25'	40°25'	40°25'	39°27'	39°27'	40°53'	40°53'
Longitude (°W)	73°42'	73°42'	74° 3'	74° 3'	74° 3'	73°44'	73°44'	73°44'	74° 9'	74° 9'	72°16'	72°16'
Sample Size (wet), grams	10†	10†	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	19	19	20	19	21	21	21	20	20	21	22	23
Collection Date	061178	061178	160977	160977	160977	090278	090278	090278	060478	060478	080478	080478
Subsample no./means size[a]	5/--	5/--	6/2.6	9/2.6	9/2.6	6/2.9	6/2.6	6/2.3	5/2.5	5/2.5	5/2.6	5/2.6
Naphthalene	< 5	< 5	40	20	10	20	30	< 4	5	< 3	8	< 2
2-Methylnaphthalene	< 6	< 5	< 6	< 4	< 3	< 4	< 4	< 3	< 5	< 3	< 4	<10
1- "	< 5	< 5	< 5	< 2	< 2	< 3	< 3	< 3	< 4	< 3	< 3	< 2
Biphenyl	< 6	< 6	20	10	< 2	10	10	20	< 4	< 3	< 4	< 2
Dibenzothiophene	<10	<10	<10	< 7	< 6	< 7	< 8	< 6	< 9	< 6	< 8	< 5
Phenanthrene	< 7	< 6	< 6	6	9	< 4	< 4	< 3	< 6	< 3	< 5	< 2
Anthracene	< 6	< 5	< 6	< 3	< 2	< 4	< 4	< 4	< 5	< 3	< 4	< 2
1-Methylphenanthrene	< 7	< 7	< 6	< 4	< 3	< 4	< 4	< 4	< 5	< 3	< 4	< 3
Fluoranthene	< 7	< 7	< 6	40	40	< 4	< 4	< 4	< 5	< 3	< 4	< 3
Pyrene	< 8	< 7	< 6	< 3	5	< 4	< 4	< 4	< 5	< 3	< 4	< 3
Benz(*a*)anthracene	<20	<20	<10	<10	< 9	< 9	<10	< 9	<10	< 8	<10	< 6
Chrysene	<10	< 9	< 7	< 6	< 5	< 5	< 5	< 4	< 6	< 4	< 5	< 3
Benzo(*e*)pyrene	<10	<10	< 8	<10	<10	< 6	< 6	< 5	< 7	20	< 6	< 4
Benzo(*a*)pyrene	< 9	< 9	< 8	<10	<10	< 5	< 5	< 5	< 6	< 5	< 5	< 4
Perylene	<10	<10	<10	<20	<10	< 6	< 7	< 6	< 8	< 6	< 7	< 5

[a] in decimeters

Table A10. Concentrations of target compounds in windowpane flounder samples, in ng/g (Cont.).

Substrate	Windowpane Flounder											
Location	Station 1 1978		Raritan Bay			Station 18+20			Station 131		Station 164	
Latitude (°N) Longitude (°W)	40°24' 73°42'	40°24' 73°42'	40°28' 74° 3'	40°28' 74° 3'	40°28' 74° 3'	40°25' 73°44'	40°25' 73°44'	40°25' 73°44'	39°27' 74° 9'	39°27' 74° 9'	40°53' 72°16'	40°53' 72°16'
Sample Size (wet), grams	10†	10†	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	19	19	20	19	21	21	21	20	20	21	22	23
1,2-Dibromo-3-chloropropane	30	20	< 9	< 3	< 3	10	30	10	< 9	< 4	< 7	< 3
Hexachlorobenzene	1	1	< 6	2	2	4	< 4	< 3	< 6	< 3	< 5	< 2
Lindane (γ-BHC)	<.9	<.8	< 6	< 2	4	< 4	< 4	< 4	< 6	< 3	< 5	< 2
Heptachlor	<.9	<.8	< 6	< 2	< 2	< 4	< 4	< 3	< 6	< 3	< 5	< 2
Aldrin	<.7	<.6	< 4	< 1	< 1	< 3	< 4	< 2	< 4	< 2	< 4	< 1
o,p'-DDE	< 1	< 1	< 5	< 2	< 2	< 3	< 3	< 3	< 5	< 3	< 4	< 2
α-Chlordane	20	10	30	20	30	30	30	20	< 6	10	< 5	10
trans-Nonachlor	20	10	20	10	20	50	40	20	< 6	8	< 5	10
Dieldrin	5	3	< 8	20	20	10	10	< 4	< 8	< 4	< 6	< 3
p,p'-DDE	30	20	30	20	30	20	20	30	*20	10	*20	10
o,p'-DDD	< 1	< 1	< 4	< 1	< 1	< 2	< 2	< 2	< 4	< 2	< 3	< 1
Endrin	< 1	< 1	< 4	< 1	< 1	20	20	< 2	< 4	< 2	< 4	< 1
m,p'-DDD	4	3	< 8	9	10	30	30	10	< 8	10	< 6	10
p,p'-DDD/o,p'-DDT	20	9	50	20	30	30	20	30	< 9	5	< 7	7
p,p'-DDT	10	6	30	20	20	10	10	< 5	<10	8	< 9	7
Mirex	< 2	<.9	<10	< 4	< 4	< 8	< 8	< 6	<10	< 6	<10	< 4
Chlorobiphenyls	<20	<20	70	<30	<30	<30	<20	70	<30	<20	<30	<20
Dichlorobiphenyls	6	5	60	20	20	10	10	20	10	4	< 2	6
Trichlorobiphenyls	70	70	100	70	100	100	100	50	*10	10	*10	50
Tetrachlorobiphenyls	100	90	400	200	300	400	300	200	*30	50	*30	40
Pentachlorobiphenyls	100	80	200	70	100	500	500	1300	*30	60	*30	50
Hexachlorobiphenyls	60	50	70	40	50	400	300	50	*20	30	*20	30
ΣPolychlorinatedbiphenyls	300	300	800	400	600	1400	1200	1600	100	200	130	200
" " (PPM, wet)	.06	.06	.2	.08	.1	.3	.2	.3	.02	.04	.03	.05

Table A10ℓ. Lower quantitation limits for target compounds in windowpane flounder samples, in ng/g.

Substrate	Windowpane Flounder											
Location	Station 1 1978		Raritan Bay			Station 18+20			Station 131		Station 164	
Latitude (°N)	40°24'	40°24'	40°28'	40°28'	40°28'	40°25'	40°25'	40°25'	39°27'	39°27'	40°53'	40°53'
Longitude (°W)	73°42'	73°42'	74° 3'	74° 3'	74° 3'	73°44'	73°44'	73°44'	74° 9'	74° 9'	72°16'	72°16'
~~Sample Size (wet)~~, grams	10†	10†	10	10	10	10	10	10	10	10	10	10
Dry Weight (%)	19	19	20	19	21	21	21	20	20	21	22	23
Collection Date	061178	061178	160977	160977	160977	090278	090278	090278	060478	060478	080478	080478
Subsample no./means size[a]	5/--	5/--	6/2.6	9/2.6	9/2.6	6/2.9	6/2.6	6/2.3	5/2.5	5/2.5	5/2.6	5/2.6
Napthalene	5	5	6	3	2	4	4	4	5	3	4	2
2-Methylnaphthalene	6	5	6	4	3	4	4	3	5	3	4	10
1-Methylnaphthalene	5	5	5	2	2	3	3	3	4	3	3	2
Biphenyl	6	6	5	2	2	4	4	4	4	3	4	2
Dibenzothiophene	10	10	10	7	6	7	8	6	9	6	8	5
Phenanthrene	7	6	6	2	2	4	4	3	6	3	5	2
Anthracene	6	5	6	3	2	4	4	4	5	3	4	2
1-Methylphenanthrene	7	7	6	4	3	4	4	4	5	3	4	3
Fluoranthene	7	7	6	3	2	4	4	4	5	3	4	3
Pyrene	8	7	6	3	2	4	4	4	5	3	4	3
Benz(*a*)anthracene	20	20	10	10	9	9	10	9	10	8	10	6
Chrysene	10	9	7	6	5	5	5	4	6	4	5	3
Benzo(*e*)pyrene	10	10	8	10	10	6	6	5	7	5	6	4
Benzo(*a*)pyrene	9	9	8	10	10	5	5	5	6	5	5	4
Perylene	10	10	10	20	10	6	7	6	8	6	7	5

[a]in decimeters

Table A10ℓ. Lower quantitation limits for target compounds in windowpane flounder samples, in ng/g (Cont.).

Substrate	Windowpane Flounder											
Location	Station 1 1978		Raritan Bay			Station 18+20			Station 131		Station 164	
Latitude (°N) Longitude (°W)	40°24' 73°42'	40°24' 73°42'	40°28' 74° 3'	40°28' 74° 3'	40°28' 74° 3'	40°25' 73°44'	40°25' 73°44'	40°25' 73°44'	39°27' 74° 9'	39°27' 74° 9'	40°53' 72°16'	40°53' 72°16'
Sample Size (wet), grams Dry Weight (%)	10† 19	10† 19	10 20	10 19	10 21	10 21	10 21	10 20	10 20	10 21	10 22	10 23
1,2-Dibromo-3-chloropane	2	2	9	3	3	6	6	4	9	4	7	3
Hexachlorobenzene	.4	.4	6	2	2	4	4	3	6	3	5	2
Lindane (γ-BHC)	.9	.8	6	2	2	4	4	3	6	3	5	2
Heptachlor	.9	.8	6	2	2	4	4	3	6	3	5	2
Aldrin	.7	.6	4	1	1	3	3	2	4	2	4	1
o,p'-DDE	1	1	5	2	2	3	3	3	5	3	4	2
α-Chlordane	.7	.6	6	2	2	4	4	3	6	3	5	2
trans-Nonachlor	.7	.6	6	2	2	4	4	3	6	3	5	2
Dieldrin	.5	.4	8	3	3	5	5	4	8	4	6	3
p,p'-DDE	.8	.8	8	3	3	5	5	4	8	4	6	3
o,p-DDD	1	1	4	1	1	2	2	2	4	2	3	1
Endrin	1	1	4	1	1	3	3	2	4	2	4	1
m,p'-DDD	2	2	8	3	3	5	5	4	8	4	6	3
p,p'-DDD/o,p'-DDT	2	2	6	2	2	4	4	3	9	3	7	2
p,p'-DDT	2	2	10	4	4	7	7	5	10	5	9	4
Mirex	2	.9	10	4	4	8	8	6	10	6	10	4
Chlorobiphenyls	20	20	50	30	30	30	30	30	30	20	30	20
Dichlorobiphenyls	3	3	3	1	1	2	1	1	3	1	2	1
Trichlorobiphenyls	1	1	3	1	1	2	1	2	3	2	3	1
Tetrachlorobiphenyls	1	1	4	1	1	3	3	2	4	2	3	1
Pentachlorobiphenyls	1	.9	4	1	1	3	3	2	4	2	3	1
Hexachlorobiphenyls	1	1	5	2	2	3	3	2	5	2	4	2
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-	-	-
" " (PPM,wet)	-	-	-	-	-	-	-	-	-	-	-	-

Table A11. Concentrations of target compounds in striped bass samples, in ng/g.

Substrate	Striped Bass								
Location	S. of Montauk, LI		Pocomoke Sound	Orient Pt.			Hudson R.		
Latitude (°N) Longitude (°W)	41° 1' 71°57'	41° 1' 71°57'	37°50' 75°45'	41° 9' 72°13'	41° 9' 72°13'	41° 9' 72°13'	41° 0' 73°53'	41° 0' 73°53'	41° 0' 73°53'
Sample Size (wet), grams Dry weight (%)	10 24	10 25	10 24	10 24	10 24	10 24	10 22	10 22	10 23
Collection Date	1078	1078	020379	230977	230977	230977	010678	010678	13067[illegible]
Subsample no./mean size[a]	5/5.2	5/5.3	5/4.3	5/8.5	5/8.4	5/7.9	5/5.3	5/5.3	5/6.1
Naphthalene	30	< 5	20	< 4	30	< 4	20	< 4	< 4
2-Methylnaphthalene	20	20	30	< 4	< 4	< 4	< 3	< 3	< 3
1- "	30	40	30	< 3	< 4	< 3	< 3	< 3	< 2
Biphenyl	< 5	< 5	< 4	6	10	< 4	20	20	< 3
Dibenzothiophene	< 9	<10	< 9	< 8	< 8	< 7	< 6	< 6	< 5
Phenanthrene	< 5	< 6	< 5	< 5	< 6	< 4	< 3	< 3	< 3
Anthracene	< 4	< 5	< 4	< 4	< 5	< 4	< 3	< 4	< 3
1-Methylphenanthrene	< 5	< 6	< 5	< 4	< 5	< 4	< 3	< 4	< 3
Fluoranthene	< 6	< 7	< 6	< 4	< 5	< 4	< 3	< 4	< 3
Pyrene	< 6	< 7	< 6	< 5	< 5	< 4	< 3	< 4	< 3
Benz(*a*)anthracene	<10	<20	<10	<10	<10	< 9	< 7	< 8	< 7
Chrysene	< 8	< 9	< 7	< 5	< 5	< 5	< 4	< 4	< 3
Benzo(*e*)pyrene	< 8	<10	< 8	< 6	< 6	< 5	< 5	< 6	< 5
Benzo(*a*)pyrene	< 8	< 9	< 7	< 5	< 6	< 5	< 5	< 6	< 4
Perylene	<10	<10	<10	< 7	< 7	< 5	< 6	< 7	< 5

[a] in decimeters

Table A11. Concentrations of target compounds in striped bass samples, in ng/g (Cont.).

Substrate	Striped Bass								
Location	S. of Montauk, LI		Pocomoke Sound	Orient Pt.			Hudson R.		
Latitude (°N) Longitude (°W)	41° 1' 71°57'	41° 1' 71°57'	37°50' 75°45'	41° 9' 72°13'	41° 9' 72°13'	41° 9' 72°13'	41° 0' 73°53'	41° 0' 73°53'	41° 0' 73°53'
Sample Size (wet), grams Dry weight (%)	10 24	10 25	10 24	10 24	10 24	10 24	10 22	10 22	10 23
1,2-Dibromo-3-chloropropane	< 2	< 2	<.8	<30	<40	<20	<20	<20	<20
Hexachlorobenzene	3	6	2	< 5	< 6	< 4	< 3	< 3	< 3
Lindane (γ-BHC)	<.9	<.7	<.3	<20	<20	<20	<20	<20	<20
Heptachlor	<.9	<.7	<.3	<20	<20	<10	< 9	< 9	< 9
Aldrin	<.6	<.5	<.2	<10	<10	< 8	< 6	< 6	< 6
o,p'-DDE	*100	*8	<.4	<20	<20	<10	< 9	< 9	< 9
α-Chlordane	*40	*80	*40	500	900	600	*600	*600	*700
trans-Nonachlor	*70	*90	*40	*400	*700	*500	*800	*800	*600
Dieldrin	5	3	<.2	<10	<10	< 8	< 6	< 6	< 6
p,p'-DDE	*40	*400	*100	*1000	*2000	*1000	*2000	*2000	*1000
o,p'-DDD	200	9	<.5	<20	<20	<20	<10	2000	<10
Endrin	< 2	< 1	<.6	<20	<20	<20	<10	<10	<10
m,p'-DDD	60	80	10	<40	<40	<40	900	800	200
p,p'-DDD/o,p'-DDT	*20	*300	*50	*1000	*2000	*1000	*1000	*1000	*700
p,p'-DDT	*70	*90	*20	200	300	200	300	<30	200
Mirex	<.8	<.7	<.3	<20	<20	<10	< 9	< 9	< 9
Chlorobiphenyls	<70	<60	<30	<30	<40	<20	<20	<20	<20
Dichlorobiphenyls	*60	*40	*50	<40	<20	<20	*400	*60	*300
Trichlorobiphenyls	*500	*400	*4	*800	*1000	*600	*8000	*4000	*2000
Tetrachlorobiphenyls	*900	*1700	*80	*5000	*7000	*4000	*26000	*18000	*6000
Pentachlorobiphenyls	*700	*1600	*200	*3000	*4000	*3000	*16000	*11000	*4000
Hexachlorobiphenyls	*500	*900	*200	*2000	*3000	*2000	*4000	*4000	*1000
ΣPolychlorinatedbiphenyls	2700	4600	500	11000	15000	9600	54000	37000	13000
" " (PPM, wet)	.6	1	.1	3	4	2	10	8	3

Table A11ℓ. Lower quantitation limits for target compounds in striped bass samples, in ng/g.

Substrate	Striped Bass								
Location	S. of Montauk, LI		Pocomoke Sound	Orient Pt.			Hudson R.		
Latitude (°N) Longitude (°W)	41° 1' 71°57'	41° 1' 71°57'	37°50' 75°45'	41° 9' 72°13'	41° 9' 72°13'	41° 9' 72°13'	41° 0' 73°53'	41° 0' 73°53'	41° 0' 73°53'
Sample Size (wet), grams Dry weight (%)	10 24	10 25	10 24	10 24	10 24	10 24	10 22	10 22	10 23
Collection Date Subsample no./mean size[a]	1078 5/5.2	1078 5/5.3	020379 5/4.3	230977 5/8.5	230977 5/8.4	230977 5/7.9	010678 5/5.3	010678 5/5.3	130678 5/6.1
Naphthalene	4	5	4	4	4	4	4	4	4
2-Methylnaphthalene	4	5	4	4	4	4	3	3	3
1- "	4	5	4	3	4	3	3	3	2
Biphenyl	5	5	4	4	5	4	4	4	3
Dibenzothiophene	9	10	9	8	8	7	6	6	5
Phenanthrene	5	6	5	5	6	4	3	3	3
Anthracene	4	5	4	4	5	4	3	4	3
1-Methylphenanthrene	5	6	5	4	5	4	3	4	3
Fluoranthene	6	7	6	4	5	4	3	4	3
Pyrene	6	7	6	5	5	4	3	4	3
Benz(*a*)anthracene	10	20	10	10	10	9	7	8	7
Chrysene	8	9	7	5	5	5	4	4	3
Benzo(*e*)pyrene	8	10	8	6	6	5	5	6	5
Benzo(*a*)pyrene	8	9	7	5	6	5	5	6	4
Perylene	10	10	10	7	7	6	6	7	5

[a] in decimeters

Table A11ℓ. Lower quantitation limits for target compounds in striped bass samples, in ng/g (Cont.).

Substrate	Striped Bass								
Location	S. of Montauk, LI		Pocomoke Sound	Orient Pt.			Hudson R.		
Latitude (°N) Longitude (°W)	41° 1' 71°57'	41° 1' 71°57'	37°50' 75°45'	41° 9' 72°13'	41° 9' 72°13'	41° 9' 72°13'	41° 0' 73°53'	41° 0' 73°53'	41° 0' 73°53'
Sample Size (wet), grams Dry weight (%)	10 24	10 25	10 24	10 24	10 24	10 24	10 22	10 22	10 23
1,2-Dibromo-3-chloropropane	2	2	.8	30	40	20	20	20	20
Hexachlorobenzene	.4	.3	.1	5	6	4	3	3	3
Lindane (γ-BHC)	.9	.7	.3	20	20	20	20	20	20
Heptachlor	.9	.7	.3	20	20	10	9	9	9
Aldrin	.6	.5	.2	10	10	8	6	6	6
o,p'-DDE	1	1	.4	20	20	10	9	9	9
α-Chlordane	.6	.5	.2	10	10	9	6	6	6
trans-Nonachlor	.6	.5	.2	10	10	8	6	6	6
Dieldrin	.4	.4	.2	10	10	8	6	6	6
p,p'-DDE	1	.8	.4	10	10	8	6	6	6
o,p'-DDD	1	1	.5	20	20	20	10	10	10
Endrin	2	1	.6	20	20	20	10	10	10
m,p'-DDD	2	2	.8	40	40	40	30	30	30
p,p'-DDD/o,p'-DDT	2	2	.9	30	40	20	20	20	20
p,p'-DDT	2	2	.7	40	50	40	30	30	30
Mirex	.8	.7	.3	20	20	10	9	9	9
Chlorobiphenyls	70	60	30	30	40	20	20	20	20
Dichlorobiphenyls	3	2	1	30	40	20	20	20	20
Trichlorobiphenyls	1	1	.6	40	50	30	20	20	20
Tetrachlorobiphenyls	1	1	.4	20	20	20	20	20	20
Pentachlorobiphenyls	.9	.7	.3	30	40	20	10	10	10
Hexachlorobiphenyls	.1	.8	.4	20	20	20	10	10	10
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-

Table A12. Concentrations of target compounds in lobster samples, in ng/g.

Substrate	Lobster Flesh				Lobster Flesh		Lobster Digest. Glands		Lobster Flesh					
Location	Vicinity of Shelf Break			Ambrose Area	Raritan Bay				Tom's Canyon		Wilm. Canyon	Raritan Bay - Old Orchard Shoal		
Latitude (°N)	39°24'	39°24'	39°24'	40°27'	40°33'	40°33'	40°33'	40°33'	39°20'	39°20'	38°20'	40°31'	40°31'	40°31'
Longitude (°W)	72°37'	72°37'	72°37'	73°54'	74° 5'	74° 5'	74° 5'	74° 5'	72°25'	72°25'	73°37'	74° 7'	74° 7'	74° 7'
Sample Size (wet), grams	10	10	10	10	10†	10†	10†	10†	10	11	10	10	10	11
Dry weight (%)	18	19	18	21	16	17	18	24	22	19	21	23	22	23
Collection Date	201078	201078	201078	201278	060778	060778	060778	060778	0779	0779	0779	0579	0579	0579
Subsample no/mean size[a]	4/13	5/14	5/14	6/10	5/11	5/12	5/11	5/12	5/8.9	5/8.8	5/12	5/6.8	5/6.8	5/6.8
Naphthalene	40	40	40	30	< 4	< 4	70	60	< 4	50	30	30	30	40
2-Methylnaphthalene	< 8	< 8	<20	< 7	< 4	< 4	60	100	< 6	10	6	< 4	< 5	< 4
1- "	< 7	< 7	<10	< 6	<50	40	50	70	< 5	30	< 5	< 3	< 4	< 3
Biphenyl	< 8	< 8	<20	< 7	< 4	30	90	200	< 4	< 4	< 6	< 3	< 4	< 4
Dibenzothiophene	<20	<20	<30	<10	< 8	< 6	<10	<20	< 8	< 7	<10	< 6	< 8	< 7
Phenanthrene	< 8	< 9	<20	< 8	30	30	200	50	< 4	< 4	< 5	< 3	< 4	< 3
Anthracene	< 8	< 8	<20	< 7	< 4	< 3	100	<10	< 5	< 4	< 6	< 4	< 5	< 4
1-Methylphenanthrene	< 9	< 9	<20	< 8	< 5	< 4	60	<15	< 5	< 4	<10	< 4	< 5	< 4
Fluoranthene	< 9	<10	<20	< 9	20	20	200	400	< 5	< 4	< 6	100	< 5	40
Pyrene	<10	<10	<20	< 9	30	30	1400	1500	< 5	< 4	< 6	200	< 5	80
Benz(*a*)anthracene	<30	<30	<50	<20	<10	< 8	500	600	<10	<10	<10	< 9	<10	< 9
Chrysene	<10	<10	<30	<10	< 6	< 4	900	800	< 6	< 5	< 7	8	< 6	< 5
Benzo(*e*)pyrene	<20	<20	<30	<20	< 7	< 6	400	300	< 6	< 5	< 7	< 4	< 6	< 5
Benzo(*a*)pyrene	<10	<10	<30	<10	< 7	< 6	300	300	< 6	< 5	< 7	< 5	< 6	< 5
Perylene	<20	<20	<40	<20	< 8	< 7	100	100	< 8	< 7	< 9	< 6	< 8	< 6

[a]in centimeters

Table A12. Concentrations of target compounds in lobster samples, in ng/g (Cont.).

Substrate	Lobster Flesh				Lobster Flesh		Lobster Digest. Glands		Lobster Flesh					
Location	Vicinity of Shelf Break			Ambrose Area	Raritan Bay				Tom's Canyon		Wilm. Canyon	Raritan Bay - Old Orchard Shoal		
Latitude (°N)	39°24'	39°24'	39°24'	40°27'	40°33'	40°33'	40°33'	40°33'	39°20'	39°20'	38°20'	40°31'	40°31'	40°31'
Longitude (°W)	72°37'	72°37'	72°37'	73°54'	74° 5'	74° 5'	74° 5'	74° 5'	72°25'	72°25'	73°37'	74° 7'	74° 7'	74° 7'
Sample Size (wet), grams	10	10	10	10	10†	10†	10†	10†	10	11	10	10	10	11
Dry weight (%)	18	19	18	21	16	17	18	24	22	19	21	23	22	23
1,2-Dibromo-3-chloropropane	< 1	< 1	< 1	< 1	< 2	< 1	< 70	<200	< .2	< .3	< .5	< .3	<.4	< .3
Hexachlorobenzene	< .1	< .1	< .1	< .2	2	2	*200	*500	< .1	.4	.2	5	5	4
Lindane (γ-BHC)	< .4	< .4	< .5	< .4	< .1	< .1	< 50	*100	< .1	< .2	< .4	< .4	< 1	1
Heptachlor	< .4	< .4	< .5	< .4	5	4	*80	< 50	< .1	< .1	< .2	< .1	1	.6
Aldrin	< .2	< .2	< .2	< .4	< .6	< .5	< 30	<100	< .1	< .1	< .2	< .1	< .2	< .3
o,p'-DDE	< 1	10	< 1	< .4	< 1	< 1	< 50	<100	< .1	< .4	2	< .2	30	10
α-Chlordane	< .4	10	< .2	5	30	10	*1400	*2100	< .1	< .4	.5	10	5	5
trans-Nonachlor	2	3	1	10	20	20	*2200	*2900	< .1	< .2	.8	20	10	10
Dieldrin	< 1	< .5	< 1	< .4	40	30	*4000	*6900	< .1	< .2	< .2	< .1	10	10
p,p'-DDE	50	70	60	30	40	40	*700	*1200	1	20	20	50	30	30
o,p'-DDD	< 1	10	< 1	< .5	< 1	< 1	< 50	<100	1	20	10	50	40	40
Endrin	< 1	< 1	< 8	< 1	< 1	< 1	< 50	<100	< .1	< .4	< .3	< .2	< .5	< .4
m,p'-DDD	< 1	< 2	< 1	2	20	10	<100	<200	< .2	< 1	< .3	10	10	5
p,p'-DDD/o,p'-DDT	< 2	< 3	< 1	3	10	10	*600	*1200	< .1	< .2	< .2	10	2	3
p,p'-DDT	< 1	10	< 1	< 1	< 3	< 3	<100	<200	< .2	4	2	10	10	10
Mirex	< 1	< .4	< 1	< 1	< 1	< 1	< 20	< 50	< .1	< .2	< .3	< .2	< .2	< .2
Chlorobiphenyls	90	< 20	< 10	< 10	< 20	30	*50	*200	< 3	< 4	< 10	< 4	200	300
Dichlorobiphenyls	10	10	10	4	2	1	*500	*100	< 1	2	2	10	10	10
Trichlorobiphenyls	40	70	40	50	80	70	*2700	*4500	2	30	40	90	200	200
Tetrachlorobiphenyls	40	40	40	50	200	200	*8500	*11000	.2	10	20	300	200	200
Pentachlorobiphenyls	30	50	20	40	100	1700	*11000	*15000	1	20	30	200	200	100
Hexachlorobiphenyls	10	40	20	40	200	80	*800	*5200	2	30	30	300	200	100
ΣPolychlorinatedbiphenyls	200	200	100	200	600	2100	24000	36000	5	90	100	1000	1000	900
" " (PPM, wet)	.04	.04	.02	.04	.1	.4	4	9	.001	.02	.02	.2	.2	.2

Table A12ℓ. Lower quantitation limits for target compounds in lobster samples, in ng/g.

Substrate	Lobster Flesh				Lobster Flesh		Lobster Digest. Glands		Lobster Flesh					
Location	Vicinity of Shelf Break			Ambrose Area	Raritan Bay				Tom's Canyon		Wilm. Canyon	Raritan Bay - Old Orchard Shoal		
Latitude (°N) Longitude (°W)	39°24' 72°37'	39°24' 72°37'	39°24' 72°37'	40°27' 73°54'	40°33' 74° 5'	40°33' 74° 5'	40°33' 74° 5'	40°33' 74° 5'	39°20' 72°25'	39°20' 72°25'	38°20' 73°37'	40°31' 74° 7'	40°31' 74° 7'	40°31' 74° 7'
Sample Size (wet), grams Dry weight (%)	10 18	10 19	10 18	10 21	10† 16	10† 17	10† 18	10† 24	10 22	11 19	10 21	10 23	10 22	11 23
Collection Date	201078	201078	201078	201278	060778	060778	060778	060778	0779	0779	0779	0579	0579	0579
Subsample no/mean size[a]	4/13	5/14	5/14	6/10	5/11	5/12	5/11	5/12	5/8.9	5/8.8	5/12	5/6.8	5/6.8	5/6.8
Naphthalene	7	8	10	7	4	4	10	10	4	4	5	3	5	4
2-Methylnaphthalene	8	8	20	7	4	4	10	10	6	4	6	4	5	4
1- "	7	7	10	6	4	3	10	10	5	3	5	3	4	3
Biphenyl	8	8	20	7	4	4	10	10	4	4	6	3	4	4
Dibenzothiophene	20	20	30	10	8	6	10	20	8	7	10	6	8	7
Phenanthrene	8	9	20	8	4	3	10	10	4	4	5	3	4	3
Anthracene	8	8	20	7	4	3	10	10	5	4	6	4	5	4
1-Methylphenanthrene	9	9	20	8	5	4	10	15	5	4	10	4	5	4
Fluoranthene	9	10	20	9	5	4	10	10	5	4	6	4	5	4
Pyrene	10	10	20	9	5	4	10	10	5	4	6	4	5	4
Benz(*a*)anthracene	30	30	50	20	10	8	10	10	10	10	10	9	10	9
Chrysene	10	10	30	10	6	4	10	10	6	5	7	4	6	5
Benzo(*e*)pyrene	20	20	30	20	7	6	10	10	6	5	7	4	6	5
Benzo(*a*)pyrene	10	10	30	10	7	6	10	10	6	5	7	5	6	5
Perylene	20	20	40	20	8	7	10	10	8	7	9	6	8	6

[a]in centimeters

Table A12ℓ. Lower quantitation limits for target compounds in lobster samples, in ng/g (Cont.).

Substrate	Lobster Flesh				Lobster Flesh		Lobster Digest. Glands		Lobster Flesh					
Location	Vicinity of Shelf Break			Ambrose Area	Raritan Bay				Tom's Canyon		Wilm. Canyon	Raritan Bay - Old Orchard Shoal		
Latitude (°N)	39°24'	39°24'	39°24'	40°27'	40°33'	40°33'	40°33'	40°33'	39°20'	39°20'	38°20'	40°31'	40°31'	40°31'
Longitude (°W)	72°37'	72°37'	72°37'	73°54'	74° 5'	74° 5'	74° 5'	74° 5'	72°25'	72°25'	73°37'	74° 7'	74° 7'	74° 7'
Sample Size (wet), grams	10	10	10	10	10†	10†	10†	10†	10	11	10	10	10	11
Dry weight (%)	18	19	18	21	16	17	18	24	22	19	21	23	22	23
1,2-Dibromo-3-chloropropane	1	1	1	1	2	1	70	200	.2	.3	.5	.3	.4	.3
Hexachlorobenzene	.1	.1	.1	.2	.3	.3	10	20	.1	.1	.1	.1	.1	.1
Lindane (γ-BHC)	.4	.4	.5	.4	.1	.1	50	100	.1	.2	.4	.4	1	.2
Heptachlor	.4	.4	.5	.4	.5	.4	30	50	.1	.1	.2	.1	.1	.1
Aldrin	.2	.2	.2	.4	.6	.5	30	100	.1	.1	.2	.1	.2	.3
o,p'-DDE	1	.4	1	.4	1	1	50	100	.1	.4	.3	.2	.5	.4
α-Chlordane	.4	.2	.2	.4	.5	.4	40	80	.1	4	.2	.1	.3	.3
trans-Nonachlor	.5	.3	.3	.5	.5	.5	40	90	.1	.2	.2	.4	.3	.3
Dieldrin	1	.5	1	.4	.4	.4	40	80	.1	.2	.2	.1	.2	.2
p,p'-DDE	1	.6	1	.5	.5	.4	30	80	.1	.3	.2	.1	.2	.2
o,p'-DDD	1	1	1	.5	1	1	50	100	.5	.9	.7	.2	.6	.4
Endrin	1	1	8	1	1	1	50	100	.1	.4	.3	.2	.5	.4
m,p'-DDD	1	2	1	.7	3	2	100	200	.2	.7	.3	.5	.9	.8
p,p'-DDD/o,p'-DDT	2	3	1	.7	1	2	100	200	.1	.2	.2	.1	.2	.2
p,p'-DDT	1	1	1	1	3	3	100	200	.2	.4	.6	.4	1	1
Mirex	1	.4	1	1	1	1	20	50	.1	.2	.3	.2	.2	.2
Chlorobiphenyls	10	20	10	10	20	20	40	80	3	4	10	4	5	4
Dichlorobiphenyls	1	1	1	.6	2	1	40	80	1	.5	.7	.5	.9	.7
Trichlorobiphenyls	1	1	.4	.6	1	1	40	80	.2	.3	.4	.2	.6	.3
Tetrachlorobiphenyls	1	1	.3	.6	1	1	40	80	.1	.2	.3	.2	.5	.2
Pentachlorobiphenyls	.4	.5	.3	.4	1	1	30	70	.2	.2	.4	.2	.5	.4
Hexachlorobiphenyls	.5	1	.3	.5	1	1	30	80	.1	.5	.4	.2	.5	.5
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A13. Concentrations of target compounds in rock crab samples, in ng/g.

Substrate	Rock Crab								
Location	Sta. 1 1978	Sta. 2 1978	Sta. 1 1979	Sta. 4 1979	Sta. 6 1979B	Ambrose		Sta. 4 1978	Sta. 5 1978
Latitude (°N)	40°24'	39°45'	40°35'	40°36'	40°10'	40°27'	40°27'	39°41'	40°17'
Longitude (°W)	73°42'	73°30'	73°21'	73° 9'	73° 5'	73°54'	73°54'	73°11'	72°45'
Sample Size (wet), grams	11	10	10	11	11	10	10	10	10
Dry weight (%)	20	22	19	21	19	20	22	20	20
Collection Date	061178	200978	080279	090279	090279	201278	201278	071178	071178
Subsample no/mean size[a]	5/10	5/8.8	5/10	5/8.0	5/8.9	5/7.5	5/7.4	6/9.5	6/8.2
Naphthalene	< 6	< 5	< 7	< 5	< 7	< 7	< 5	< 5	< 4
2-Methylnaphthalene	< 7	< 5	< 8	< 6	< 6	< 7	10	< 5	< 4
1- "	< 6	< 4	< 5	< 5	< 5	< 6	< 4	< 4	< 4
Biphenyl	< 6	< 5	< 6	< 6	< 6	< 8	< 5	< 5	< 4
Dibenzothiophene	<10	<10	<10	<10	<10	<20	<10	<10	< 9
Phenanthrene	< 7	< 5	< 7	< 7	< 7	< 8	< 6	< 5	< 5
Anthracene	< 7	< 5	< 6	< 6	< 6	< 8	< 5	< 6	< 5
1-Methylphenanthrene	< 7	< 6	< 7	< 7	< 7	< 9	< 7	< 6	< 5
Fluoranthene	< 7	< 6	< 7	< 7	< 7	< 9	< 7	< 6	< 5
Pyrene	< 8	< 6	< 7	< 7	< 7	< 9	< 7	< 6	< 5
Benz(*a*)anthracene	<20	<10	<20	<20	<20	<20	<20	<10	<10
Chrysene	<10	< 7	< 9	< 9	< 9	<10	< 9	< 7	< 6
Benzo(*e*)pyrene	<10	< 9	<10	<10	<10	<10	<10	< 8	< 7
Benzo(*a*)pyrene	<10	< 8	<10	<10	<10	<10	< 9	< 8	< 7
Perylene	<10	<10	<10	<10	<10	<20	<10	< 9	< 8

[a]in centimeters

Table A13. Concentrations of target compounds in rock crab samples, in ng/g (Cont.).

Substrate	Rock Crab								
Location	Sta. 1 1978	Sta. 2 1978	Sta. 1 1979	Sta. 4 1979	Sta. 6 1979E	Ambrose		Sta. 4 1978	Sta. 5 1978
Latitude (°N) Longitude (°W)	40°24' 73°42'	39°45' 73°30'	40°35' 73°21'	40°36' 73° 9'	40°10' 73° 5'	40°27' 73°54'	40°27' 73°54'	39°41' 73°11'	40°17' 72°45'
Sample Size (wet), grams Dry weight (%)	11 20	10 22	10 19	11 21	11 19	10 20	10 22	10 20	10 20
1,2-Dibromo-3-chloropropane	< 3	< 2	9	< 1	5	< 2	< 1	< 4	< 2
Hexachlorobenzene	< 1	.5	<.2	.5	<.2	<.2	1	< 1	<.3
Lindane (γ-BHC)	< 1	<.3	<.4	<.4	<.4	<.5	<.3	< 1	< 1
Heptachlor	< 1	<.3	<.4	<.4	<.4	<.4	<.3	< 1	< 1
Aldrin	<.4	<.2	<.3	<.3	<.3	<.3	<.3	< 1	< 1
o,p'-DDE	< 1	<.4	<.5	<.5	4	< 1	<.4	< 2	< 1
α-Chlordane	9	5	4	5	3	<.3	4	< 1	< 1
trans-Nonachlor	30	20	20	20	20	10	9	*4	*4
Dieldrin	<.3	<.2	<.2	<.2	<.2	<.2	<.2	< 1	<.4
p,p'-DDE	70	30	30	30	30	40	30	*10	*6
o,p'-DDD	< 2	<.4	< 1	< 1	< 1	< 1	< 1	*7	*3
Endrin	< 1	<.4	< 1	< 1	< 1	< 1	< 1	< 3	< 2
m,p'-DDD	8	5	5	4	4	5	3	< 4	< 2
p,p'-DDD/o,p'-DDT	10	10	10	8	1	20	6	< 4	< 2
p,p'-DDT	6	6	6	5	< 1	8	< 1	< 4	< 2
Mirex	< 1	<.3	<.4	<.4	<.4	<.5	<.3	< 2	< 1
Chlorobiphenyls	<20	< 5	< 6	< 6	< 7	<10	< 9	100	<40
Dichlorobiphenyls	10	9	10	20	20	7	10	*8	< 2
Trichlorobiphenyls	30	20	20	20	20	30	30	*4	< 1
Tetrachlorobiphenyls	100	70	50	40	30	90	50	*8	< 1
Pentachlorobiphenyls	100	90	100	50	50	100	70	*4	*2
Hexachlorobiphenyls	100	70	90	60	70	90	40	< 2	< 1
ΣPolychlorinatedbiphenyls	300	300	300	200	200	300	200	100	2
" " (PPM, wet)	.03	.07	.06	.04	.04	.06	.04	.02	.0004

Table A13ℓ. Lower quantitation limits for target compounds in rock crab samples, in ng/g.

Substrate	Rock Crab								
Location	Sta. 1 1978	Sta. 2 1978	Sta. 1 1979	Sta. 4 1979	Sta. 6 1979B	Ambrose		Sta. 4 1978	Sta. 5 1978
Latitude (°N)	40°24'	39°45'	40°35'	40°36'	40°10'	40°27'	40°27'	39°41'	40°17'
Longitude (°W)	73°42'	73°30'	73°21'	73° 9'	73° 5'	73°54'	73°54'	73°11'	72°45'
Sample Size (wet), grams	11	10	10	11	11	10	10	10	10
Dry weight (%)	20	22	19	21	19	20	22	20	20
Collection Date	061178	200978	080279	090279	090279	201278	201278	071178	071178
Subsample no./mean size[a]	5/10	5/8.8	5/10	5/8.0	5/8.9	5/7.5	5/7.4	6/9.5	6/8.2
Naphthalene	6	5	7	5	7	7	5	5	4
2-Methylnaphthalene	7	5	8	6	6	7	5	5	4
1- "	6	4	5	5	5	6	4	4	4
Biphenyl	6	5	6	6	6	8	5	5	4
Dibenzothiophene	10	10	10	10	10	20	10	10	9
Phenanthrene	7	5	7	7	7	8	6	5	5
Anthracene	7	5	6	6	6	8	5	6	5
1-Methylphenanthrene	7	6	7	7	7	9	7	6	5
Fluoranthene	7	6	7	7	7	9	7	6	5
Pyrene	8	6	7	7	7	9	7	6	5
Benz(*a*)anthracene	20	10	20	20	20	20	20	10	10
Chrysene	10	7	9	9	9	10	9	7	6
Benzo(*e*)pyrene	10	9	10	10	10	10	10	8	7
Benzo(*a*)pyrene	10	8	10	10	10	10	9	8	7
Perylene	10	10	10	10	10	20	10	9	8

[a]in centimeters

Table A13ℓ. Lower quantitation limits for target compounds in rock crab samples, in ng/g (Cont.).

Substrate	Rock Crab								
Location	Sta. 1 1978	Sta. 2 1978	Sta. 1 1979	Sta. 4 1979	Sta. 6 1979B	Ambrose		Sta. 4 1978	Sta. 5 1978
Latitude (°N) Longitude (°W)	40°24' 73°42'	39°45' 73°30'	40°35' 73°21'	40°36' 73° 9'	40°10' 73° 5'	40°27' 73°54'	40°27' 73°54'	39°41' 73°11'	40°17' 72°45'
Sample Size (wet), grams Dry weight (%)	11 20	10 22	10 19	11 21	11 19	10 20	10 22	10 20	10 20
1,2-Dibromo-3-chloropropane	3	1	1	1	1	1	1	4	2
Hexachlorobenzene	1	.1	.2	.2	.2	.2	.1	1	.3
Lindane (γ-BHC)	1	.3	.4	.4	.4	.5	.3	1	1
Heptachlor	1	.3	.4	.4	.4	.4	.3	1	1
Aldrin	.4	.2	.3	.3	.3	.3	.3	1	1
o,p'-DDE	1	.4	.5	.5	.5	1	.4	2	1
α-Chlordane	1	.2	.3	.3	.3	.3	.3	1	1
trans-Nonachlor	1	.2	.3	.3	.3	.3	.3	1	1
Dieldrin	.3	.2	.2	.2	.2	.2	.2	1	.4
p,p'-DDE	1	.2	.3	.3	.3	.4	.3	1	1
o,p'-DDD	2	.4	1	1	1	1	1	2	1
Endrin	1	.4	1	1	1	1	1	3	2
m,p'-DDD	4	1	1	1	1	1	1	4	2
p,p'-DDD/o,p'-DDT	2	1	1	1	.5	1	2	4	2
p,p'-DDT	3	1	1	1	1	1	1	4	2
Mirex	1	.3	.4	.4	.4	.5	.3	2	1
Chlorobiphenyls	20	5	6	6	7	10	9	70	40
Dichlorobiphenyls	4	1	1	1	1	1	1	4	2
Trichlorobiphenyls	2	.4	.5	.5	1	1	.5	2	1
Tetrachlorobiphenyls	1	.4	.5	.5	1	1	.5	2	1
Pentachlorobiphenyls	1	.3	.4	.4	.4	.5	.4	2	1
Hexachlorobiphenyls	1	.4	.5	.5	.5	1	.5	2	1
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-

Table A14. Concentrations of target compounds in blue mussel samples, in ng/g.

Substrate	Blue Mussel									
Location	Corson's Inlet	Shark R. Inlet	Sandy Hook Bay	Sandy Hook Ocean	Sandy Hook Ocean	Shark R. Inlet	Pt. Lookout N.Y.	Sandy Hook N.Beach	Bayside SHL Bld.18	Pt. Lookout N.Y.
Latitude (°N)	39°13'	40°11'	40°25'	40°26'	40°26'†	40°11'†	40°35'	40°28'	40°27'	40°35'
Longitude (°W)	74°39'	74° 1'	73°59'	73°59'	73°59'	74° 1'	73°35'	74° 0'	74° 0'	73°35'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	15	18	13	15	17	19	15	15	13	14
Collection Date	201077	201077	201077	201077	120977	120977	020379	131078	131078	020379
Subsample no./mean size[a]	24/5.7	24/4.7	24/3.3	24/4.4	15/3.9	15/3.8	24/4.4	109/3.2	94/3.2	24/4.5
Naphthalene	30	10	50	20	10	100	< 6	< 6	30	< 6
2-Methylnaphthalene	< 4	< 3	< 5	< 5	60	30	400	600	400	400
1- "	< 4	< 3	< 4	< 5	< 5	10	200	90	300	500
Biphenyl	10	< 3	30	10	300	200	70	100	60	20
Dibenzothiophene	< 8	< 6	<10	<10	< 5	< 2	<10	<10	<10	<10
Phenanthrene	60	< 3	50	80	30	50	100	40	20	100
Anthracene	< 4	< 3	< 5	< 5	50	5	< 6	< 7	< 7	< 7
1-Methylphenanthrene	< 5	< 4	< 5	< 6	< 5	20	60	< 7	< 7	N
Fluoranthene	100	100	400	100	200	100	500	40	20	N
Pyrene	100	200	400	100	100	40	300	200	10	N
Benz(*a*)anthracene	<10	300	700	200	< 5	< 2	<20	<20	20	N
Chrysene	< 6	100	300	70	< 5	30	80	300	10	N
Benzo(*e*)pyrene	< 8	< 6	< 9	< 9	< 5	< 2	20	20	<10	N
Benzo(*a*)pyrene	< 7	< 5	< 8	< 9	< 5	< 2	< 8	70	< 9	N
Perylene	< 9	< 7	<10	<10	< 5	< 2	<10	<10	<10	<10

[a] in centimeters

Table A14. Concentrations of target compounds in blue mussel samples, in ng/g (Cont.).

Substrate	Blue Mussel									
Location	Corson's Inlet	Shark R. Inlet	Sandy Hook Bay	Sandy Hook Ocean		Shark R. Inlet	Pt. Lookout N.Y.	Sandy Hook N.Beach	Bayside SHL Bld. 18	Pt. Lookout N.Y.
Latitude (°N) Longitude (°W)	39°13' 74°39'	40°11' 74° 1'	40°25' 73°59'	40°26' 73°59'	40°26' 73°59'	40°11' 74° 1'	40°35' 73°35'	40°28' 74° 0'	40°27' 74° 0'	40°35' 73°35'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	15	18	13	15	17	19	15	15	13	14
1,2-Dibromo-3-chloropropane	< 1	< 1	< 3	< 2	< 90	< 80	< 2	20	< 3	< 3
Hexachlorobenzene	< .3	< .2	3	< .4	< 20	< 10	< .2	1	< .3	< .3
Lindane (γ-BHC)	< .7	< .7	< 2	< 1	< 50	< 40	< .4	< .9	< .7	< .8
Heptachlor	< .4	< .3	< .9	< .5	< 30	< 30	< .5	< 1	< .8	< .9
Aldrin	< .5	< .4	< 1	< .6	< 30	< 30	< .3	< .7	< .5	< .6
o,p'-DDE	< .8	< .8	< 2	< 1	< 40	< 40	< .6	< 1	20	< 1
α-Chlordane	*20	*50	*80	*40	< 30	< 20	*20	*70	*40	*30
trans-Nonachlor	*10	*30	*50	*30	< 30	< 80	*10	*50	*20	*20
Dieldrin	< .3	20	< .8	< .5	< 30	< 20	< .3	< .7	< .5	< .6
p,p'-DDE	*100	*30	*80	*50	< 30	*70	*30	*80	*60	*50
o,p'-DDD	20	80	100	50	< 50	< 40	*60	*50	*100	*100
Endrin	< .7	< .7	< 2	< 1	< 50	< 40	< 1	< 3	< 2	< 2
m,p'-DDD	4	30	40	20	<100	<100	< 1	3	< 2	< 2
p,p'-DDD/o,p'-DDT	*8	*100	*200	*30	< 70	< 60	*70	*100	*100	*100
p,p'-DDT	100	< 2	90	< 4	<100	<100	10	30	10	20
Mirex	< .7	< .6	< 2	< .9	< 30	< 30	< .5	< 1	< .7	< .8
Chlorobiphenyls	< 20	< 10	< 30	< 20	<100	<100	< 10	< 30	< 20	< 30
Dichlorobiphenyls	*10	*10	*10	*10	<100	<100	*5	*10	*10	*10
Trichlorobiphenyls	*20	*90	*100	*60	< 50	*200	*20	*100	*50	*20
Tetrachlorobiphenyls	*70	*400	*600	*200	*400	*700	*100	*500	*400	*200
Pentachlorobiphenyls	*100	*300	*300	*200	*400	*600	*40	*600	*300	*200
Hexachlorobiphenyls	*80	*200	*200	*100	*300	*500	*20	*200	*90	*100
ΣPolychlorinatedbiphenyls	300	1000	1200	600	1100	2000	200	1400	900	500
" " (PPM, wet)	.05	.2	.2	.09	.2	.4	.03	.2	.1	.07

Table A14ℓ. Lower quantitation limits for target compounds in blue mussel samples, in ng/g.

Substrate	Blue Mussel									
Location	Corson's Inlet	Shark R. Inlet	Sandy Hook Bay	Sandy Hook Ocean	Sandy Hook Ocean	Shark R. Inlet	Pt. Lookout N.Y.	Sandy Hook N.Beach	Bayside SHL Bld.18	Pt. Lookout N.Y.
Latitude (°N)	39°13'	40°11'	40°25'	40°26'	40°26'	40°11'	40°35'	40°28'	40°27'	40°35'
Longitude (°W)	74°39'	74° 1'	73°59'	73°59'	73°59'	74° 1'	73°35'	74° 0'	74° 0'	73°35'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	15	18	13	15	17	19	15	15	13	14
Collection Date	201077	201077	201077	201077	120977	120977	020379	131078	131078	020379
Subsample no./mean size[a]	24/5.7	24/4.7	24/3.3	24/4.4	15/3.9	15/3.8	24/4.4	109/3.2	94/3.2	24/4.5
Naphthalene	4	3	5	5	5	2	6	6	6	6
2-Methylnaphthalene	4	3	5	5	5	2	6	N	6	6
1- "	4	3	4	5	5	2	5	6	5	5
Biphenyl	10	3	5	5	5	2	6	6	6	6
Dibenzothiophene	8	6	10	10	5	2	10	10	10	10
Phenanthrene	5	3	5	6	5	2	10	7	7	6
Anthracene	4	3	5	5	5	2	6	7	7	7
1-Methylphenanthrene	5	4	5	6	5	2	6	7	7	N
Fluoranthene	5	4	5	6	5	2	6	8	9	N
Pyrene	5	4	6	6	5	2	7	7	7	N
Benz(*a*)anthracene	10	8	10	10	5	2	20	20	20	N
Chrysene	6	6	9	9	5	2	8	9	10	N
Benzo(*e*)pyrene	8	6	9	9	5	2	8	9	10	N
Benzo(*a*)pyrene	7	5	8	9	5	2	8	9	9	N
Perylene	9	7	10	10	5	2	10	10	10	10

[a] in centimeters

Table A14ℓ. Lower quantitation limits for target compounds in blue mussel samples, in ng/g (Cont.).

Substrate	Blue Mussel									
Location	Corson's Inlet	Shark R. Inlet	Sandy Hook Bay	Sandy Hook Ocean	Sandy Hook Ocean	Shark R. Inlet	Pt. Lookout N.Y.	Sandy Hook N.Beach	Bayside SHL Bld. 18	Pt. Lookout N.Y.
Latitude (°N) Longitude (°W)	39°13' 74°39'	40°11' 74° 1'	40°25' 73°59'	40°26' 73°59'	40°26' 73°59'	40°11' 74° 1'	40°35' 73°35'	40°28' 74° 0'	40°27' 74° 0'	40°35' 73°35'
Sample Size (wet), grams Dry weight (%)	10 15	10 18	10 13	10 15	10 17	10 19	10 15	10 15	10 13	10 14
1,2-Dibromo-3-chloropropane	1	1	3	2	90	80	2	3	3	3
Hexachlorobenzene	.3	.2	.6	.4	20	10	.2	.3	.3	.3
Lindane (γ-BHC)	.7	.7	2	1	50	40	.4	.9	.7	.8
Heptachlor	.4	.3	.9	.5	30	30	.5	1	.8	.9
Aldrin	.5	.4	1	.6	30	30	.3	.7	.5	.6
o,p'-DDE	.8	.8	2	1	40	40	.6	1	.9	1
α-Chlordane	.4	.4	1	.6	30	20	.3	.7	.5	.6
trans-Nonachlor	.4	.4	1	.6	30	20	.3	.7	.5	.6
Dieldrin	.3	.3	.8	.5	30	20	.3	.7	.5	.6
p,p'-DDE	.4	.4	1	.6	20	20	.4	.8	.6	.7
o,p'-DDD	1	1	2	1	50	40	.9	2	1	2
Endrin	.7	.7	2	1	50	40	1	3	2	2
m,p'-DDD	2	2	5	3	100	100	1	3	2	2
p,p'-DDD/o,p'-DDT	1	1	3	2	70	60	1	3	2	2
p,p'-DDT	3	2	6	4	100	100	.8	3	2	3
Mirex	.7	.6	2	.9	30	30	.5	1	.7	.8
Chlorobiphenyls	20	10	30	20	100	100	10	30	20	30
Dichlorobiphenyls	2	2	4	2	100	100	1	3	2	2
Trichlorobiphenyls	.8	.7	2	1	50	50	.6	1	.9	1
Tetrachlorobiphenyls	.7	.6	2	.9	50	50	.5	1	.8	.9
Pentachlorobiphenyls	.7	.6	2	.9	40	40	.4	.9	.7	.7
Hexachlorobiphenyls	.7	.7	2	.9	40	40	.5	1	.8	.8
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-	-	-

Table A15. Concentrations of target compounds in blue mussel samples, in ng/g.

Substrate	Blue Mussel							
Location	Shark R. Inlet	Bay Head N.J.	Staten Is.	Long Branch	Coney Is.	Rockaway Beach, L.I.	Atlantic Beach, L.I.	Surf City N.J.
Latitude (°N) Longitude (°W)	40°11' 74° 1'	40° 4' 74° 3'	40°33' 74° 7'	40°18' 73°59'	40°34' 73°59'	40°35' 73°49'	40°35' 73°43'	39°40' 74°10'
Sample Size (wet), grams Dry weight (%)	10 17	11 14	10 15	10 15	11 14	10 11	11 15	10 16
Collection Date	100479	100479	100479	100479	090479	100779	100779	110779
Subsample no./mean size[a]	76/33	98/30	101/29	97/36	115/30	108/31	118/35	102/35
Naphthalene	50	30	100	70	40	40	50	20
2-Methylnaphthalene	<10	<10	<10	<10	<10	<10	< 5	<10
1- "	< 5	<10	<10	<10	<10	<10	< 5	< 5
Biphenyl	< 5	<10	<10	<10	<10	<10	< 5	<10
Dibenzothiophene	<10	<10	<10	<10	<10	<20	<10	<10
Phenanthrene	1200	<10	<10	<10	<10	<10	< 5	<10
Anthracene	900	<10	<10	<10	<10	<10	< 5	<10
1-Methylphenanthrene	2000	<10	50	200	400	<10	< 5	<10
Fluoranthene	2700	400	300	500	1000	<10	< 5	100
Pyrene	6000	400	50	700	1100	<10	< 5	100
Benz(*a*)anthracene	<10	<20	<20	<20	<20	<20	<10	<20
Chrysene	90	<10	<10	<10	<10	<10	<10	<10
Benzo(*e*)pyrene	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(*a*)pyrene	<10	<10	<10	<10	<10	<10	<10	<10
Perylene	<10	<10	<10	<10	<10	<20	<10	<10

[a] in millimeters

Table A15. Concentrations of target compounds in blue mussel samples, in ng/g (Cont.).

Substrate	Blue Mussel							
Location	Shark R. Inlet	Bay Head N.J.	Staten Is.	Long Branch	Coney Is.	Rockaway Beach,L.I.	Atlantic Beach,L.I.	Surf City N.J.
Latitude (°N) Longitude (°W)	40°11' 74° 1'	40° 4' 74° 3'	40°33' 74° 7'	40°18' 73°59'	40°34' 73°59'	40°35' 73°49'	40°35' 73°43'	39°40' 74°10'
Sample Size (wet), grams Dry weight (%)	10 17	11 14	10 15	10 15	11 14	10 11	11 15	10 16
1,2-Dibromo-3-chloropropane	< 1	<.6	<.6	<.5	< 1	< 1	<.4	<.5
Hexachlorobenzene	10	1	2	3	3	1	1	.5
Lindane (γ-BHC)	<.4	<.4	<.4	< 1	< 1	<.5	<.3	< 1
Heptachlor	< 1	< 1	<.2	<.2	< 1	<.3	1	<.2
Aldrin	< 1	< 1	<.3	<.5	< 1	< 1	<.3	<.2
o,p'-DDE	100	60	60	80	80	30	30	30
α-Chlordane	70	20	30	30	40	20	10	10
trans-Nonachlor	60	20	20	30	30	20	10	10
Dieldrin	< 1	20	10	10	10	10	10	<.2
p,p'-DDE	100	40	50	60	60	30	30	20
o,p'-DDD	200	20	100	100	< 2	90	40	30
Endrin	< 2	< 1	< 1	< 1	< 2	<.5	< 1	<.4
m,p'-DDD	40	20	20	30	100	1	30	10
p,p'-DDD/o,p'-DDT	100	70	80	60	50	30	60	10
p,p'-DDT	60	20	30	40	20	30	< 1	10
Mirex	<.3	< 3	<.3	<.3	<.4	<.4	<.2	< 1
Chlorobiphenyls	<10	<10	<10	<10	<10	<10	<10	<10
Dichlorobiphenyls	50	10	20	10	20	10	10	10
Trichlorobiphenyls	1300	300	400	400	600	100	80	60
Tetrachlorobiphenyls	70	600	600	900	1100	400	300	300
Pentachlorobiphenyls	1700	700	700	700	900	200	400	300
Hexachlorobiphenyls	1500	500	800	1000	600	500	600	400
ΣPolychlorinatedbiphenyls	4600	2100	2500	3000	3200	1200	1400	1100
" " (PPM, wet)	.8	.3	.4	.4	.4	.1	.2	.2

Table A15ℓ. Lower quantitation limits for target compounds in blue mussel samples, in ng/g.

Substrate	Blue Mussel							
Location	Shark R. Inlet	Bay Head N.J.	Staten Is.	Long Branch	Coney Is.	Rockaway Beach,L.I.	Atlantic Beach,L.I.	Surf City N.J.
Latitude (°N) Longitude (°W)	40°11' 74° 1'	40° 4' 74° 3'	40°33' 74° 7'	40°18' 73°59'	40°34' 73°59'	40°35' 73°49'	40°35' 73°43'	39°40 74°10'
Sample Size (wet), grams Dry weight (%)	10 17	11 14	10 15	10 15	11 14	10 11	11 15	10 16
Collection Date	100479	100479	100479	100479	090479	100779	100779	110779
Subsample no./mean size[a]	76/33	98/30	101/29	97/36	115/30	108/31	118/35	102/35
Naphthalene	10	10	10	10	10	10	10	10
2-Methylnaphthalene	10	10	10	10	10	10	5	10
1- "	5	10	10	10	10	10	5	5
Biphenyl	5	10	10	10	10	10	5	10
Dibenzothiophene	10	10	10	10	10	20	10	10
Phenanthrene	5	10	10	10	10	10	5	10
Anthracene	10	10	10	10	10	10	5	10
1-Methylphenanthrene	10	10	10	10	10	10	5	10
Fluoranthene	10	10	10	10	10	10	5	10
Pyrene	10	10	10	10	10	10	5	10
Benz(*a*)anthracene	10	20	20	20	20	20	10	20
Chrysene	10	10	10	10	10	10	10	10
Benzo(*e*)pyrene	10	10	10	10	10	10	10	10
Benzo(*a*)pyrene	10	10	10	10	10	10	10	10
Perylene	10	10	10	10	10	20	10	10

[a] in millimeters

Table A15ℓ. Lower quantitation limits for target compounds in blue mussel samples, in ng/g (Cont.).

Substrate	Blue Mussel							
Location	Shark R. Inlet	Bay Head N.J.	Staten Is.	Long Branch	Coney Is.	Rockaway Beach,L.I.	Atlantic Beach,L.I.	Surf City N.J.
Latitude (°N) Longitude (°W)	40°11' 74° 1'	40° 4' 74° 3'	40°33' 74° 7'	40°18' 73°59'	40°34' 73°59'	40°35' 73°49'	40°35' 73°43'	39°40' 74°10'
Sample Size (wet), grams Dry weight (%)	10 17	11 14	10 15	10 15	11 14	10 11	11 15	10 16
1,2-Dibromo-3-chloropropane	1	.6	.6	.5	1	1	.4	.5
Hexachlorobenzene	.1	.6	.2	.1	.2	.4	.1	.7
Lindane (γ-BHC)	.4	.4	.4	1	1	.5	.3	1
Heptachlor	1	1	.2	.2	1	.3	.4	.2
Aldrin	1	1	.3	.5	1	1	.3	.2
o,p'-DDE	2	2	.6	.4	2	2	1	1
α-Chlordane	1	.7	2	.2	.8	1	.6	.6
trans-Nonachlor	1	.7	2	.2	.8	1	.6	.6
Dieldrin	1	.5	1	.2	.6	3	.5	.2
p,p'-DDE	1	.7	2	.4	1	1	.6	2
o,p'-DDD	2	.6	3	.4	2	2	1	.2
Endrin	2	1	1	1	2	.5	1	.4
m,p'-DDD	3	2	4	.6	2	.9	2	3
p,p'-DDD/o,p'-DDT	1	.6	1	.2	.7	.3	.5	.2
p,p'-DDT	3	2	5	.6	2	.9	1	.6
Mirex	.3	3	.3	.3	.4	.4	.2	1
Chlorobiphenyls	10	10	10	10	10	10	10	10
Dichlorobiphenyls	2	4	1	.9	1	3	2	2
Trichlorobiphenyls	2	.5	.5	.5	2	.7	.3	1
Tetrachlorobiphenyls	2	2	3	.5	2	1	1	.4
Pentachlorobiphenyls	2	1	.7	.3	2	1	1	.3
Hexachlorobiphenyls	2	1	.9	.4	2	.6	1	.4
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-

Table A16. Concentrations of target compounds in surf clam samples, in ng/g.

Substrate	Surf Clams													
Location	—		Barnegat	Atlantic Beach		Ocean Cy., Md.	Chincoteague Va	Rockaway Beach, L.I.					Shark River Inlet	
Latitude (°N)	39°38'	39°38'	39°46'	40°33'	40°33'	38°11'	37°54'	40°33'	40°33'	40°33'	40°32'	40°32'	40°11'	40°11'
Longitude (°W)	74°11'	74°11'	73°49'	73°43'	73°43'	74°44'	75° 1'	73°51'	73°51'	73°51'	73°53'	73°53'	74° 1'	74° 1'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	15	16	20	15	19	24	16	20	19	22	16	15	23	33
Collection Date	220878	220878	150279	010379	010379	270279	280279	060178	060178	060178	100779	100779	100479	100479
Subsample no/mean size[a]	5/13	5/14	5/14	5/11	5/11	5/12	5/12	6/12	6/12	6/12	20/6	20/6	5/11	5/11
Naphthalene	20	30	10	20	20	< 8	20	10	< 3	< 2	< 7	30	5	< 3
2-Methylnaphthalene	< 9	< 6	60	20	< 5	< 8	20	< 5	< 6	7	< 7	< 6	< 4	< 3
1-Methylnaphthalene	< 7	< 5	< 5	< 8	< 4	< 7	< 6	< 4	< 3	< 2	< 6	< 5	< 4	8
Biphenyl	< 9	< 6	< 5	<10	< 5	< 8	< 7	< 3	< 4	< 2	< 7	< 6	< 4	< 3
Dibenzothiophene	<20	<10	<10	<20	<10	<20	<20	<10	<10	< 5	<10	<10	< 8	< 6
Phenanthrene	<10	< 6	< 6	<10	< 6	<10	< 8	< 5	< 6	< 3	< 6	< 5	< 4	< 3
Anthracene	< 9	< 6	< 6	<10	< 5	< 8	< 7	< 5	< 4	< 2	< 7	< 6	< 4	< 3
1-Methylphenanthrene	<10	< 7	< 7	<10	< 6	<10	< 9	< 6	< 6	< 3	< 7	< 6	< 4	< 3
Fluoranthene	<10	< 7	30	<10	30	<10	< 9	20	50	10	< 7	< 6	10	9
Pyrene	<10	< 7	< 6	<10	< 6	<10	< 9	10	20	< 3	< 8	< 6	10	< 3
Benz(*a*)anthracene	<30	<20	<20	<30	<20	<30	<20	<10	30	< 6	<20	<10	<10	< 8
Chrysene	<10	< 9	< 8	<20	20	<20	<10	< 8	< 8	< 3	< 9	< 7	< 5	< 4
Benzo(*e*)pyrene	<20	<10	<10	<20	< 9	<20	<10	<20	<20	< 4	< 9	< 8	< 6	< 4
Benzo(*a*)pyrene	<10	< 9	< 8	<20	< 8	<20	<10	<20	<20	< 4	< 9	< 8	< 6	< 4
Perylene	<20	<10	<10	<20	<10	<20	<20	<20	<20	< 5	<10	<10	< 7	< 5

[a] in centimeters

Table A16. Concentrations of target compounds in surf clam samples, in ng/g (Cont.).

Substrate	Surf Clams													
Location	—		Barnegat	Atlantic Beach		Ocean Cy., Md.	Chincoteague Va	Rockaway Beach, L.I.					Shark River Inlet	
Latitude (°N)	39°38'	39°38'	39°46'	40°33'	40°33'	38°11'	37°54'	40°33'	40°33'	40°33'	40°32'	40°32'	40°11'	40°11'
Longitude (°W)	74°11'	74°11'	73°49'	73°43'	73°43'	74°44'	75° 1'	73°51'	73°51'	73°51'	73°53'	73°53'	74° 1'	74° 1'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	15	16	20	15	19	24	16	20	19	22	16	15	23	33
1,2-Dibromo-3-chloropropane	< 2	< 2	<.8	< 1	< 2	< 1	< 2	< 2	< 3	< 1	<.5	<.4	<.3	<.3
Hexachlorobenzene	<.4	<.3	.2	<.2	<.3	.4	<.3	.8	1	<.2	<.1	<.1	.1	.5
Lindane (γ-BHC)	<.8	<.6	<.3	<.5	<.7	<.6	<.8	3	< 2	<.07	<.4	<.3	<.2	<.2
Heptachlor	<.8	<.6	<.3	<.5	<.6	<.5	<.8	<.5	<.7	<.3	<.2	<.3	<.4	<.1
Aldrin	<.6	<.5	<.2	<.4	<.5	<.4	<.6	<.4	<.6	<.4	<.5	<.2	<.3	<.2
o,p'-DDE	< 1	<.9	<.4	10	10	<.8	< 1	<.7	< 1	<.7	3	<.3	<.5	<.3
α-Chlordane	*2	<.4	*.6	*2	*2	*2	<.6	5	6	4	1	3	4	2
t-Nonachlor	*3	*2	*2	*3	*2	*2	*2	3	4	4	1	3	5	2
Dieldrin	1	1	5	3	<.4	<.3	20	<.3	<.4	4	<.5	<.1	<.2	<.2
p,p'-DDE	*3	<.6	<.3	*3	*10	*10	<.9	10	10	5	3	3	10	4
o,p'-DDD	10	6	8	<.8	20	<.9	7	<.8	< 1	<.8	10	10	30	20
Endrin	< 1	< 1	<.5	<.9	< 1	< 1	< 1	<.8	< 1	<.6	< 1	<.3	<.5	<.4
m,p'-DDD	< 2	< 2	2	9	10	< 1	< 2	9	10	< 2	3	2	< 1	<.6
p,p'-DDD/o,p'-DDT	*5	< 2	*2	*4	*5	*7	< 2	40	50	10	2	<.1	10	10
p,p'-DDT	< 2	*2	*3	< 1	< 2	*7	< 2	10	20	< 2	4	3	3	2
Mirex	<.8	<.6	<.3	<.5	<.7	<.6	<.8	<.5	<.7	<.5	<.3	<.2	<.2	<.1
Chlorobiphenyls	<50	<30	<20	<30	<40	<30	<70	<10	<10	10	<20	<10	<10	< 4
Dichlorobiphenyls	*8	< 2	< 1	< 2	< 2	*8	< 3	< 2	< 3	< 1	< 1	10	10	4
Trichlorobiphenyls	*30	*20	*20	*30	*30	*10	*300	10	40	10	20	40	70	50
Tetrachlorobiphenyls	*40	*10	* 6	*50	*70	*20	*20	60	100	60	40	50	100	70
Pentachlorobiphenyls	*30	*10	*10	*40	*40	*20	*8	20	40	60	20	20	70	40
Hexachlorobiphenyls	*20	*4	*6	*20	*30	*4	*5	30	30	20	50	50	100	40
ΣPolychlorinated biphenyls	100	40	40	100	200	60	300	100	200	200	100	200	300	200
" " " (*PPM, wet*)	.02	.01	.01	.02	.04	.01	.05	.02	.04	.04	.02	.03	.07	.07

Table A16ℓ. Lower quantitation limits for target compounds in surf clam samples, in ng/g.

Substrate	Surf Clams													
Location	–		Barne-gat	Atlantic Beach		Ocean Cy., Md.	Chinco-teague Va	Rockaway Beach, L.I.					Shark River Inlet	
Latitude (°N)	39°38'	39°38'	39°46'	40°33'	40°33'	38°11'	37°54'	40°33'	40°33'	40°33'	40°32'	40°32'	40°11'	40°11'
Longitude (°W)	74°11'	74°11'	73°49'	73°43'	73°43'	74°44'	75° 1'	73°51'	73°51'	73°51'	73°53'	73°53'	74° 1'	74° 1'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	15	16	20	15	19	24	16	20	19	22	16	15	23	33
Collection Date	220878	220878	150279	010379	010379	270279	280279	060178	060178	060178	100779	100779	100479	100479
Subsample No./mean size[a]	5/13	5/14	5/14	5/11	5/11	5/12	5/12	6/12	6/12	6/12	20/6	20/6	5/11	5/11
Naphthalene	8	5	5	9	5	8	7	3	3	2	7	7	4	3
2-Methylnaphthalene	9	6	5	9	5	8	7	5	6	3	7	8	4	3
1-Methylnaphthalene	7	5	5	8	4	7	6	4	3	2	6	5	4	3
Biphenyl	9	6	5	10	5	8	7	3	4	2	7	6	4	3
Dibenzothiophene	20	10	10	20	10	20	20	10	10	5	10	10	8	6
Phenanthrene	10	6	6	10	6	10	8	5	6	3	6	5	4	3
Anthracene	9	6	6	10	5	8	7	5	4	2	7	6	4	3
1-Methylphenanthrene	10	7	7	10	6	10	9	6	6	3	7	6	4	3
Fluoranthene	10	7	6	10	6	10	9	4	4	3	7	6	4	3
Pyrene	10	7	6	10	6	10	9	4	4	3	8	6	4	3
Benz(*a*)anthracene	30	20	20	30	20	30	20	10	10	6	20	10	10	8
Chrysene	10	9	8	20	8	20	10	8	8	3	9	7	5	4
Benzo(*e*)pyrene	20	10	10	20	9	20	10	20	20	4	9	8	6	4
Benzo(*a*)pyrene	10	9	8	20	8	20	10	20	20	4	9	8	6	4
Perylene	20	10	10	20	10	20	20	20	20	5	10	10	7	5

[a] in centimeters

Table A16ℓ. Lower quantitation limits for target compounds in surf clam samples, in ng/g (Cont.).

Substrate	Surf Clams													
Location	—		Barnegat	Atlantic Beach		Ocean Cy., Md.	Chincoteague Va	Rockaway Beach, L.I.					Shark River Inlet	
Latitude (°N)	39°38'	39°38'	39°46'	40°33'	40°33'	38°11'	37°54'	40°33'	40°33'	40°33'	40°32'	40°32'	40°11'	40°11'
Longitude (°W)	74°11'	74°11'	73°49'	73°43'	73°43'	74°44'	75° 1'	73°51'	73°51'	73°51'	73°53'	73°53'	74° 1'	74° 1'
Sample Size (wet), grams	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dry weight (%)	15	16	20	15	19	24	16	20	19	22	16	15	23	33
1,2-Dibromo-3-chloropropane	2	2	.8	1	2	1	2	2	3	1	.5	.4	.3	.3
Hexachlorobenzene	.4	.3	.1	.2	.3	.2	.3	.2	.3	.2	.1	.1	.01	.1
Lindane (γ-BHC)	.8	.6	.3	.5	.7	.6	.8	1	2	.07	.4	.3	.2	.2
Heptachlor	.8	.6	.3	.5	.6	.5	.8	.5	.7	.3	.2	.3	.4	.1
Aldrin	.6	.5	.2	.4	.5	.4	.6	.4	.6	.4	.5	.2	.3	.2
o,p'-DDE	1	.9	.4	.7	.9	.8	1	.7	1	.7	.3	.3	.5	.3
a-Chlordane	.6	.4	.2	.4	.5	.4	.6	.4	.6	.4	.2	.2	.3	.05
t-Nonachlor	.6	.5	.2	.4	.5	.4	.6	.4	.6	.3	.2	.2	.3	.04
Dieldrin	.4	.3	.2	.3	.4	.3	.4	.3	.4	.3	.5	.1	.2	.2
p,p'-DDE	.8	.6	.3	.5	.6	.4	.9	.4	.5	.3	.3	.4	.4	.1
o,p'-DDD	1	1	.5	.8	1	.9	1	.8	1	.8	.4	.3	.5	.2
Endrin	1	1	.5	.9	1	1	1	.8	1	.6	1	.3	.5	.4
m,p'-DDD	2	2	.8	1	2	1	2	2	3	2	.7	.4	1	.6
p,p'-DDD/o,p'-DDT	2	2	.8	1	2	2	2	1	1	.8	.2	.1	.4	.1
p,p'-DDT	2	1	.7	1	2	1	2	2	3	2	.6	.4	.8	.3
Mirex	.8	.6	.3	.5	.7	.6	.8	.5	.7	.5	.3	.2	.2	.1
Chlorobiphenyls	50	30	20	30	40	30	70	10	10	10	20	10	10	4
Dichlorobiphenyls	3	2	1	2	2	2	3	2	3	1	1	.5	1	.04
Trichlorobiphenyls	1	.9	.5	.7	2	.8	1	.8	1	.6	.4	.4	.3	.2
Tetrachlorobiphenyls	1	.8	.4	.6	.9	.7	1	.8	1	.6	1	4	.5	.4
Pentachlorobiphenyls	.8	.6	.3	.5	.7	.5	.8	.4	.6	.5	.3	.3	.4	.3
Hexachlorobiphenyls	.9	.7	.4	.6	.8	.6	.9	.5	.7	.6	.4	.3	.5	.2

Table A17. Concentrations of target compounds in sea scallop and polychaete samples, in ng/g.

Substrate	Sea Scallops						Polychaete
Location	Sta.2A	Sta.3A	Sta. 5 1979A	Sta. 6 1979B	Ocean City		Sta. W
Latitude (°N) Longitude (°W)	40°36' 72°14'	40°26' 72°46'	40°00' 73°12'	40°10' 73°05'	38°00' 74°28'	38°00' 74°28'	40°29' 73°48'
Sample Size Dry Weight (%)	10 16	10 18	10 19	10 17	10 24	10 27	10 18
Collection Date	230179	230179	240179	090279	020379	020379	090278
Subsample no/mean size[a]	7/12	5/6.2	4/10	5/13	5/12	5/13	--
Naphthalene	30	20	20	20	30	20	< 7
2-Methylnaphthalene	<10	< 8	< 9	< 7	< 6	< 5	< 7
1- "	< 9	< 7	< 7	< 6	< 5	< 5	< 6
Biphenyl	<10	< 8	< 9	< 7	< 6	< 5	< 7
Dibenzothiophene	<20	<20	<20	<20	<10	<10	<10
Phenanthrene	<10	< 9	<10	< 8	< 7	< 7	< 7
Anthracene	<10	< 8	< 8	< 7	< 6	< 5	< 7
1-Methylphenanthrene	<10	< 9	<10	< 9	< 8	< 7	< 8
Fluoranthene	<10	< 9	<10	< 9	< 8	< 7	< 8
Pyrene	<10	<10	<10	<10	< 8	< 8	< 8
Benz(*a*)anthracene	<30	<30	<30	<30	<20	<20	100
Chrysene	<20	<10	<20	<10	<10	<10	<10
Benzo(*e*)pyrene	<20	<20	<20	<20	<10	<10	<30
Benzo(*a*)pyrene	<20	<10	<20	<10	<10	<10	<30
Perylene	<20	<20	<20	<20	<20	<10	<40

[a]in centimeters

Table A17. Concentrations of target compounds in sea scallop and polychaete samples, in ng/g (Cont.).

Substrate	Sea Scallops						Polychaete
Location	Sta.2A	Sta.3A	Sta. 5 1979A	Sta. 6 1979B	Ocean City		Sta. W
Latitude (°N) Longitude (°W)	40°36' 72°14'	40°26' 72°46'	40°00' 73°12'	40°10' 73°05'	38°00' 74°28'	38°00' 74°28'	40°29' 73°48'
Sample Size Dry Weight (%)	10 16	10 18	10 19	10 17	10 24	10 27	10 18
1,2-Dibromo-3-chloropropane	<10	< 7	< 7	< 6	<.7	<.5	80
Hexachlorobenzene	< 1	< 1	< 1	< 1	.3	<.1	1
Lindane	< 3	< 4	< 3	< 3	3	<.3	2
Heptachlor	< 3	< 3	< 3	< 2	2	<.2	< 1
Aldrin	< 1	< 2	< 2	< 2	< 1	<.4	< 1
o,p'-DDE	< 2	< 4	< 4	< 5	< 1	4	<10
α-Chlordane	5	5	< 2	3	3	20	20
trans-Nonachlor	10	7	< 2	4	< 1	1	10
Dieldrin	< 3	< 4	< 2	<.5	2	2	9
p,p'-DDE	< 3	*20	*4	*30	*40	*40	10
o,p'-DDD	20	< 5	< 5	< 1	< 1	< 1	< 1
Endrin	< 4	< 6	< 6	< 1	< 1	< 1	< 1
m,p'-DDD	< 5	20	< 7	20	10	< 2	20
p,p'-DDD/o,p'-DDT	< 4	10	<10	< 8	6	< 1	2
p,p'-DDT	40	< 6	< 6	< 2	10	10	< 2
Mirex	< 2	< 3	< 3	< 1	< 1	<.9	< 1
Chlorobiphenyls	<50	<70	<80	<60	<100	<50	<30
Dichlorobiphenyls	9	10	10	20	10	6	*20
Trichlorobiphenyls	30	40	30	20	20	10	500
Tetrachlorobiphenyls	50	50	20	30	30	30	300
Pentachlorobiphenyls	60	40	7	20	50	70	100
Hexachlorobiphenyls	10	< 3	< 3	< 3	< 1	6	100
ΣPolychlorinatedbiphenyls	200	100	70	90	100	200	1000
" " (PPM, wet)	.03	.02	.01	.02	.02	.05	.2

Table A17ℓ. Lower quantitation limits for target compounds in sea scallop and polycheate samples, in ng/g.

Substrate	Sea Scallops						Poly-chaete
Location	Sta.2A	Sta.3A	Sta. 5 1979A	Sta. 6 1979B	Ocean City		Sta. W
Latitude (°N) / Longitude (°W)	40°36' 72°14'	40°26' 72°46'	40°00' 73°12'	40°10' 73 05'	38°00' 74°28'	38°00' 74°28'	40°29' 73°48'
Sample Size	10	10	10	10	10	10	10
Dry Weight (%)	16	18	19	17	24	27	18
Collection Date	230179	230179	240179	090279	020379	020379	090278
Subsample no/mean size[a]	7/12	5/6.2	4/10	5/13	5/12	5/13	--
Naphthalene	10	7	8	6	5	5	7
2-Methylnaphthalene	10	8	9	7	6	5	7
1- "	9	7	7	6	5	5	6
Biphenyl	10	8	9	7	6	5	7
Dibenzothiophene	20	20	20	20	10	10	10
Phenanthrene	10	9	10	8	7	7	7
Anthracene	10	8	8	7	6	5	7
1-Methylphenanthrene	10	9	10	9	8	7	8
Fluoranthene	10	9	10	9	8	7	8
Pyrene	10	10	10	10	8	8	8
Benz(*a*)anthracene	30	30	30	30	20	20	20
Chrysene	20	10	20	10	10	10	10
Benzo(*e*)pyrene	20	20	20	20	10	10	30
Benzo(*a*)pyrene	20	10	20	10	10	10	30
Perylene	20	20	20	20	20	10	40

[a] in centimeters

Table A17ℓ. Lower quantitation limits for target compounds in sea scallop and polycheate samples, in ng/g (Cont.).

Substrate	Sea Scallops						Poly-chaete
Location	Sta.2A	Sta.3A	Sta. 5 1979A	Sta. 6 1979B	Ocean City		Sta. W
Latitude (°N) Longitude (°W)	40°36' 72°14'	40°26' 72°46'	40°00' 73°12'	40°10' 73°05'	38°00' 74°28'	38°00' 74°28'	40°29' 73°48'
Sample Size Dry Weight (%)	10 16	10 18	10 19	10 17	10 24	10 27	10 18
1,2-Dibromo-3-chloropropane	10	7	7	6	5	.5	2
Hexachlorobenzene	1	1	1	1	.3	.1	.4
Lindane	3	4	3	3	1	.3	1
Heptachlor	3	3	3	2	1	.2	1
Aldrin	1	2	2	2	1	.4	1
o,p'-DDE	2	4	4	5	1	1	10
α-Chlordane	1	2	2	1	1	.5	.5
trans-Nonachlor	2	2	2	1	1	.5	.5
Dieldrin	3	4	2	.5	1	.5	.5
p,p'-DDE	3	5	2	1	1	.5	1
o,p'-DDD	3	5	5	1	1	2	1
Endrin	4	6	6	1	1	1	1
m,p'-DDD	5	7	7	5	2	2	2
p,p'-DDD/o,p'-DDT	4	8	10	10	2	1	1
p,p'-DDT	4	6	6	2	2	1	2
Mirex	2	3	3	1	1	.9	1
Chlorobiphenyls	50	70	80	60	40	50	30
Dichlorobiphenyls	4	10	5	6	2	2	3
Trichlorobiphenyls	2	3	2	3	1	1	1
Tetrachlorobiphenyls	2	3	2	2	2	1	1
Pentachlorobiphenyls	1	2	1	2	3	1	1
Hexachlorobiphenyls	2	3	3	3	1	1	1
ΣPolychlorinatedbiphenyls	--	--	--	--	--	--	--
" " (PPM, wet)	--	--	--	--	--	--	--

Table A18. Concentrations of target compounds in bottom sediment samples, in ng/g.

Substrate	Sediments												
Location	Lower Bay	Christ. Basin	Outer Bight	Sta.7 1978	Sta.8 1978	Sta. 1 1978		Grab 7 Sta.4 1978		Grab 8 Sta. 5 1978		Grab 1 Marm.H.	
Latitude (°N) Longitude (°W)	40°28' 74° 2'	40°25' 73°48'	39° 0' 72°55'	40°13' 72°48'	39°39' 73°23'	40°25' 73°41'	40°25' 73°41'	39°40' 73° 9'	39°40' 73° 9'	40°18' 72°44'	40°18' 72°44'	40°57' 73°44'	40°57' 73°44'
Sample Size Dry weight (%)	100† 46	98† 54	109† 83	102 79	98 83	101 75	101 73	101 81	103 81	99 79	100 80	103 37	102 39
Collection Date	290877	290877	290877	080278	080278	061178	061178	071178	071178	071178	071178	170878	170878
Naphthalene	100	100	<.5	2	2	5	7	<.1	<.1	<.1	<.1	100	100
2-Methylnaphthalene	20	100	<.5	<.2	<.3	7	10	<.1	<.1	.6	.4	70	90
1-Methylnaphthalene	5	40	<.5	<.2	<.2	2	3	<.1	<.1	.4	.3	40	40
Biphenyl	40	50	20	<.2	<.3	2	3	<.1	<.1	<.1	<.1	40	60
Dibenzothiophene	40	50	<.5	< 3	<.4	<.2	<.2	<.2	<.2	<.2	.2	40	100
Phenanthrene	300	300	2	7	<.2	5	9	<.1	<.1	.8	1	700	900
Anthracene	100	50	5	<.2	<.2	1	2	<.1	<.1	<.1	<.1	100	500
1-Methylphenanthrene	50	40	<.5	<.2	<.2	.9	1	<.1	<.1	<.1	<.1	40	100
Fluoranthene	500	400	4	10	<.2	9	20	<.1	.4	2	10	1300	1900
Pyrene	500	400	3	10	<.2	10	20	<.1	<.1	.9	1	1400	2300
Benz(*a*)anthracene	500	500	<.5	40	<.6	4	10	<.3	<.2	<.3	<.3	1000	1700
Chrysene	400	300	<.5	20	<.3	8	7	<.1	<.1	.4	.5	700	1200
Benzo(*e*)pyrene	200	200	<.5	<.4	<.6	7	5	<.2	<.1	<.2	<.1	500	800
Benzo(*a*)pyrene	200	200	<.5	<.4	<.5	2	5	<.1	<.1	<.1	<.1	500	800
Perylene	100	50	<.5	<.5	<.6	<.2	5	<.2	<.1	<.2	<.2	200	400

Table A18. Concentrations of target compounds in bottom sediment samples, in ng/g (Cont.).

Substrate	Sediments												
Location	Lower Bay	Christ.	Outer Bight	Sta.7 1978	Sta.8 1978	Sta. 1 1978		Grab 7 Sta.4 1978		Grab 8 Sta.5 1978		Grab 1 Marm.H.	
Latitude (°N) / Longitude (°W)	40°28' 74° 2'	40°25' 73°48'	39° 0' 72°55'	40°13' 72°48'	39°39' 73°23'	40°25' 73°41'	40°25' 73°41'	39°40' 73° 9'	39°40' 73° 9'	40°18' 72°44'	40°18' 72°44'	40°57' 73°44'	40°57' 73°44'
Sample Size / Dry weight (%)	100† 46	98† 54	109† 83	102 79	98 83	101 75	101 73	101 81	103 81	99 79	100 80	103 37	102 39
1,2-Dibromo-3-chloropropane	<30	< 30	< .3	< .1	< .2	<.3	<.3	< .3	< .2	< .2	<.3	< 4	< 8
Hexachlorobenzene	< 5	< 5	<.06	<.01	<.02	.2	.4	<.04	<.04	<.03	<.1	< .7	< 1
Lindane (γ-BHC)	<20	< 20	< .2	<.05	<.06	<.1	.1	< .1	< .1	< .1	<.1	< 2	< 3
Heptachlor	<10	< 10	< .1	<.02	<.02	.2	<.1	< .1	< .1	<.04	<.1	2	< 2
Aldrin	<10	< 10	< .1	<.03	<.03	<.1	<.2	< .1	< .1	<.04	<.1	< 1	< 2
o,p'-DDE	<10	< 10	< .2	<.04	<.05	.1	<.4	< .1	< .1	< .1	<.1	< 2	< 4
α-Chlordane	<10	< 10	< .1	<.02	<.03	*1	*2	<.07	<.07	<.05	<.1	*20	*20
t-Nonachlor	<10	< 10	< .1	<.02	<.03	*.7	*1	< .1	<.1	<.04	<.1	*10	*10
Dieldrin	<10	< 10	<.08	<.02	<.02	<.1	<.2	<.06	<.1	<.04	<.1	< 1	5
p,p'-DDE	*20	*20	<.08	<.02	<.03	.5	1	<.04	<.1	<.03	<.1	<.06	20
o,p'-DDD	<20	< 20	< .2	<.05	<.07	<.3	*1	< .1	<.1	< .1	<.2	*10	< 8
Endrin	<10	< 10	< .2	<.04	<.05	.4	.9	< .1	<.1	< .1	<.1	< 2	< 4
m,p'-DDD	<40	< 30	< .4	< .2	< .2	*4	< 1	< .3	<.3	< .2	<.2	*50	< 10
p,p'-DDD/o,p'-DDT	<30	*80	< .3	<.07	<.09	*2	*5	< .2	<.2	< .1	<.2	*20	*30
p,p'-DDT	<40	< 40	< .5	< .1	< .2	*2	<.5	< .3	<.3	< .2	<.3	< 9	< 10
Mirex	<10	*40	< .1	<.04	<.04	<.2	<.1	< .1	<.1	< .1	<.1	< 2	< 3
Chlorobiphenyls	<40	< 20	< .4	< .5	< .7	< 4	< 3	< 3	< 3	< 2	< 4	< 50	<400
Dichlorobiphenyls	<40	< 20	< .4	<.09	< .1	<.6	<.5	< .4	<.5	< .3	<.6	< 9	< 20
Trichlorobiphenyls	*200	*200	*3	<.04	<.05	4	7	< .2	<.2	< .1	<.2	30	30
Tetrachlorobiphenyls	*300	*500	*2	*.08	<.04	10	20	< .2	<.2	< .1	<.5	200	100
Pentachlorobiphenyls	*100	*300	*0.6	*.04	<.04	6	30	< .1	<.1	< .1	<.1	200	100
Hexachlorobiphenyls	*100	*300	*0.7	< .3	<.04	*20	*20	< .1	<.1	< .1	<.2	200	200
ΣPolychlorinated biphenyls	700	1300	6	—	—	40	80	—	—	—	—	500	400
" " " *(PPM, wet)*	.3	.7	.005	—	—	.03	.06	—	—	—	—	.2	.1

Table A18ℓ. Lower quantitation limits for target compounds in bottom sediment samples, in ng/g.

Substrate	Sediments												
Location	Lower Bay	Christ. Basin	Outer Bight	Sta.7 1978	Sta.8 1978	Sta. 1 1978		Grab 7 Sta.4 1978		Grab 8 Sta.5 1978		Grab 1 Marm.H.	
Latitude (°N) / Longitude (°W)	40°28' 74° 2'	40°25' 73°48'	39° 0' 72°55'	40°13' 72°48'	39°39' 73°23'	40°25' 73°41'	40°25' 73°41'	39°40' 73° 9'	39°40' 73° 9'	40°18' 72°44'	40°18' 72°44'	40°57' 73°44'	40°57' 73°44'
Sample Size / Dry weight (%)	100† 46	98† 54	109† 83	102 79	98 83	101 75	101 73	101 81	103 81	99 79	100 80	103 37	102 39
Collection Date	290877	290877	290877	080278	080278	061178	061178	071178	071178	071178	071178	170878	170878
Naphthalene	3	3	.5	.2	.2	.1	.1	.1	.1	.1	.1	.3	.4
2-Methylnaphthalene	3	3	.5	.2	.3	.1	.1	.1	.1	.1	.4	.3	.4
1-Methylnaphthalene	3	3	.5	.2	.2	.1	.1	.1	.1	.1	.1	.3	.3
Biphenyl	3	3	.5	.2	.3	.1	.1	.1	.1	.1	.1	.3	.4
Dibenzothiophene	3	3	.5	.3	.4	.2	.2	.2	.2	.2	.2	.3	.5
Phenanthrene	3	3	.5	.2	.2	.1	.1	.1	.1	.1	.1	.4	.4
Anthracene	3	3	.5	.2	.2	.1	.1	.1	.1	.1	.1	.4	.4
1-Methylphenanthrene	3	3	.6	.2	.2	.1	.1	.1	.1	.1	.1	.3	.4
Fluoranthene	3	3	.5	.2	.2	.1	.1	.1	.1	.1	.1	.3	.4
Pyrene	3	3	.5	.2	.2	.1	.1	.1	.1	.1	.1	.3	.4
Benz(*a*)anthracene	3	3	.5	.6	.6	.3	.2	.3	.2	.3	.3	.4	.7
Chrysene	3	3	.5	.2	.3	.1	.1	.1	.1	.1	.1	.4	.4
Benzo(*e*)pyrene	3	3	.5	.4	.6	.2	.1	.2	.1	.2	.1	.4	.5
Benzo(*a*)pyrene	3	3	.5	.4	.5	.1	.1	.1	.1	.1	.1	.4	.4
Perylene	3	3	.5	.5	.6	.2	.2	.2	.1	.2	.2	.3	.5

Table A18ℓ. Lower quantitation limits for target compounds in bottom sediment samples, in ng/g (Cont.).

Substrate	Sediments												
Location	Lower Bay	Christ. Basin	Outer Bight	Sta.7 1978	Sta.8 1978	Sta. 1 1978		Grab 7 Sta.4	Grab 7 1978	Grab 8 Sta.5	Grab 8 1978	Grab 1 Marm.H.	
Latitude (°N) Longitude (°W)	40°28' 74° 2'	40°25' 73°48'	39° 0' 72°55'	40°13' 72°48'	39°39' 73°23'	40°25' 73°41'	40°25' 73°41'	39°40' 73° 9'	39°40' 73° 9'	40°18' 72°44'	40°18' 72°44'	40°57' 73°44'	40°57' 73°44'
Sample Size	100†	98†	109†	102	98	101	101	101	103	99	100	103	102
Dry weight (%)	46	54	83	79	83	75	73	81	81	79	80	37	39
1,2-Dibromo-3-chloropropane	30	30	.3	.1	.2	.02	.01	.02	.01	.02	.02	.2	1
Hexachlorobenzene	5	5	.06	.01	.02	.004	.002	.003	.002	.003	.004	.03	.2
Lindane (γ-BHC)	20	20	.2	.05	.06	.008	.01	.007	.005	.007	.008	.07	.4
Heptachlor	10	10	.1	.02	.02	.007	.004	.005	.003	.006	.007	.05	.3
Aldrin	10	10	.1	.03	.03	.006	.003	.005	.004	.006	.006	.04	.2
o,p'-DDE	10	10	.2	.04	.05	.01	.006	.009	.006	.009	.01	.09	.5
α-Chlordane	10	10	.1	.02	.03	.007	.004	.006	.004	.006	.007	.06	.3
t-Nonachlor	10	10	.1	.02	.03	.006	.004	.006	.004	.006	.007	.05	.3
Dieldrin	10	10	.06	.02	.02	.006	.004	.005	.004	.005	.006	.05	.3
p,p'-DDE	10	10	.06	.02	.03	.005	.003	.004	.002	.004	.005	.04	.2
o,p'-DDD	20	20	.2	.05	.07	.01	.008	.01	.007	.01	.01	.1	.5
Endrin	10	10	.2	.04	.05	.01	.006	.008	.005	.008	.01	.08	.4
m,p'-DDD	40	40	.4	.2	.2	.03	.02	.03	.02	.03	.03	.3	1
p,p'-DDD/o,p'-DDT	30	20	.3	.07	.09	.02	.01	.01	.01	.01	.02	.1	.7
p,p'-DDT	40	40	.5	.1	.2	.03	.02	.02	.02	.02	.03	.2	
Mirex	10	10	.1	.04	.04	.009	.006	.008	.005	.008	.009	.08	.4
Chlorobiphenyls	40	20	.4	.5	.7	.3	.2	.2	.2	.2	.3	2	10
Dichlorobiphenyls	40	20	.4	.09	.1	.05	.03	.04	.03	.04	.05	.4	2
Trichlorobiphenyls	40	20	.4	.04	.05	.02	.01	.01	.009	.01	.02	.1	.7
Tetrachlorobiphenyls	20	20	.4	.03	.04	.02	.01	.02	.01	.02	.02	.2	.8
Pentachlorobiphenyls	20	20	.3	.03	.04	.01	.007	.009	.005	.01	.01	.09	.5
Hexachlorobiphenyls	20	20	.4	.03	.04	.01	.008	.01	.007	.01	.01	.1	.6

Table A19. Concentrations of target compounds in bottom sediment samples, in ng/g.

Substrate	Sediment															
Location	Station X	Christ. Basin	Lower Bay	Bight Apex		Hudson Shelf Valley	Lower Bay	Outer Bight	Bight Apex	Outer Bight		Cholera Bank	Lower Bay	Acid Waste Area	E. of Ambrose Lt.
Latitude (°N)	40°29'	40°25'	40°29'	40°23'	40°25'	40°13'	40°32'	39°58'	40°25'	39°56'	40°14'	40°25'	40°35'	40°19'	40°27'
Longitude (°W)	73°48'	73°46'	74°03'	73°52'	73°50'	73°44'	74°01'	73°35'	73°54'	73°11'	73°20'	73°40'	74°02'	73°38'	73°48'
Sample Size (wet), grams	100	104	101	102	101	99	101	99	99	99	97	99	100	103	103
Dry weight (%)	73	66	67	60	73	60	81	81	86	64	74	71	50	78	60
Collection Date	090278	201077	201077	201077	201077	201077	201077	201077	201077	211077	211077	211077	211077	211077	211077
Naphthalene	8	60	50	800	80	80	.6	2	30	5	.6	1	100	1	100
2-Methylnaphthalene	7	200	30	200	30	30	<.1	.7	20	<.2	<.3	<.2	70	<.2	90
1- "	3	<.2	9	<.1	10	10	<.1	<.1	<.1	1	<.2	5	30	<.3	50
Biphenyl	2	80	5	60	7	7	<.1	<.1	5	2	<.3	1	30	.8	50
Dibenzothiophene	20	200	10	300	20	20	<.2	<.2	70	2	<1	<.4	60	<.4	300
Phenanthrene	20	500	70	500	70	70	1	2	500	8	2	3	600	2	400
Anthracene	20	300	40	300	40	40	.4	.4	100	1	<.2	<.2	300	<.2	100
1-Methylphenanthrene	20	200	10	100	20	20	<.1	<.1	30	2	<.2	<.2	100	<.2	200
Fluoranthene	50	700	100	800	100	100	1	2	400	20	4	4	1000	3	500
Pyrene	90	1000	200	900	200	200	1	1	500	20	4	5	2000	3	500
Benz(*a*)anthracene	<1	900	200	1000	200	200	<.3	<.3	400	50	3	4	2000	30	1000
Chrysene	100	400	90	500	100	100	<.1	<.1	200	30	3	3	1000	20	1000
Benzo(*e*)pyrene	<1	300	80	200	70	70	<.2	<.2	100	5	<1	<.4	1000	<.4	700
Benzo(*a*)pyrene	<1	300	60	200	80	80	<.2	<.2	100	8	<1	<1	900	<.4	400
Perylene	20	200	40	100	40	40	<.2	<.2	60	<.5	<1	<1	700	<1	1000

Table A19. Concentrations of target compounds in bottom sediment samples, in ng/g (Cont.).

Substrate	Sediment														
Location	Station X	Christ. Basin	Lower Bay	Bight Apex		Hudson Shelf Valley	Lower Bay	Outer Bight	Bight Apex	Outer Bight		Cholera Bank	Lower Bay	Acid Waste Area	E. of Ambrose Lt.
Latitude (°N)	40°29'	40°25'	40°29'	40°23'	40°25'	40°13'	40°32'	39°58'	40°25'	39°56'	40°14'	40°25'	40°35'	40°19'	40°27'
Longitude (°W)	73°48'	73°46'	74°03'	73°52'	73°50'	73°44'	74°01'	73°35'	73°54'	73°11'	73°20'	73°40'	74°02'	73°38'	73°48'
Sample Size(wet),grams	100	104	101	102	101	99	101	99	99	99	97	99	100	103	103
Dry weight (%)	73	66	67	60	73	60	81	81	86	64	74	71	50	78	60
1,2-Dibromo-3-chloropropane	<.2	<.3	<.3	<.1	<.1	<.1	<.1	<.1	<.1	<.3	<.3	<.3	<1	<.3	<.3
Hexachlorobenzene	.04	7	<.2	2	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<1	<.2	<.2
Lindane	.05	<.2	<.2	<.1	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<1	<.2	<.2
Heptachlor	.02	<.2	<.2	<.1	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<1	<.2	<.1
Aldrin	<.1	<.1	<.1	<.04	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<1	<.1	<.2
o,p'-DDE	<.2	<.2	<.2	<.1	<.1	<.1	<.1	<.1	<.1	<.2	<.2	<.2	<1	<.2	<.2
α-Chlordane	*.5	*60	*5	*10	*2	*2	<.1	<.1	*.4	<.2	<.2	<.2	3	<.2	6
trans-Nonachlor	*.4	*30	*5	*7	*1	* .1	*.02	<.1	*.3	<.2	<.2	<.2	<1	<.2	4
Dieldrin	.3	20	3	7	2	1	<.1	<.1	.3	<.3	<.3	<.3	<1	<.3	3
p,p'-DDE	.3	30	3	10	2	2	<.1	<.1	.4	<.4	<.3	<.3	*2	<.3	*4
o,p'-DDD	<.1	<.1	<.1	60	10	<.1	<.1	<.1	<.1	<.1	<.1	<.1	*5	<.1	<.1
Endrin	<.1	<.1	<.1	<.04	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<1	<.1	<.1
m,p'-DDD	1	70	4	20	3	2	<.1	<.1	<.1	<.3	<.3	.5	<1	<.3	10
p,p'-DDD/o,p'-DDT	2	100	7	40	30	3	<.1	<.1	<.1	<.2	<.2	<.2	20	<.2	10
p,p'-DDT	<.4	100	3	40	4	2	<.1	<.1	.7	<.4	<.4	<.4	6	<.4	40
Mirex	<.4	<.4	<.4	<.1	<.2	<.2	<.2	<.2	<.2	<.4	<.4	<.4	<2	<.4	<.4
Chlorobiphenyls	.03	20	<2	<3	<2	<2	<1	<1	<2	.1	<.1	<.1	<.3	<.1	<.1
Dichlorobiphenyls	.3	30	3	20	<.1	<.1	<.04	<.04	<.1	*1	<.1	<.1	*3	<.1	*4
Trichlorobiphenyls	*2	*200	*30	*90	<.1	*7	*.2	*.2	*6	*.2	<.1	*1	*10	<.1	*20
Tetrachlorobiphenyls	*6	*800	*80	*400	*20	*20	*.8	*.5	*20	*.4	*.2	*2	*30	*.2	*80
Pentachlorobiphenyls	*5	*400	*30	*200	*10	*20	*.4	*.6	*9	*.4	*.1	*1	*10	*.2	*50
Hexachlorobiphenyls	*3	*100	*10	*40	<.1	*10	<.1	*.2	*2	*.2	<2	*1	*10	*.01	*20
ΣPolychlorinatedbiphenyls	20	1500	90	750	30	60	1	1	40	3	*.4	5	60	.4	170
" " (PPM, wet)	.01	1	.06	.4	.02	.04	.001	.001	.03	.002	.0003	.004	.08	.0003	.1

Table A19ℓ. Lower quantitation limits for target compounds in bottom sediment samples, in ng/g.

Substrate	Sediment														
Location	Station X	Christ. Basin	Lower Bay	Bight Apex		Hudson Shelf Valley	Lower Bay	Outer Bight	Bight Apex	Outer Bight		Cholera Bank	Lower Bay	Acid Waste Area	E. of Ambrose Lt.
Latitude (°N)	40°29'	40°25'	40°29'	40°23'	40°25'	40°13'	40°32'	39°58'	40°25'	39°56'	40°14'	40°25'	40°35'	40°19'	40°27'
Longitude (°W)	73°48'	73°46'	74°03'	73°52'	73°50'	73°44'	74°01'	73°35'	73°54'	73°11'	73°20'	73°40'	74°02'	73°38'	73°48'
Sample Size(wet), grams	100	104	101	102	101	99	101	99	99	99	97	99	100	103	103
Dry weight (%)	73	66	67	60	73	60	81	81	86	64	74	71	50	78	60
Naphthalene	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.1	.2	1	.2	.2
2-Methylnaphthalene	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.3	.2	.9	.2	.2
1- "	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	.9	.2	.2
Biphenyl	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.3	.2	.8	.2	.2
Dibenzothiophene	.4	.4	.3	.2	.2	.2	.2	.2	.3	.4	.5	.4	1	.4	.3
Phenanthrene	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	.7	.2	.2
Anthracene	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	.8	.2	.2
1-Methylphenanthrene	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	.4	.2	.2
Fluoranthene	.3	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	.4	.2	.2
Pyrene	.3	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	.8	.2	.2
Benz(*a*)anthracene	1	.5	.4	.2	.3	.3	.3	.3	.3	.5	.6	.5	.9	.5	.5
Chrysene	1	.2	.2	.1	.1	.1	.1	.1	.2	.3	.3	.3	.5	.3	.2
Benzo(*e*)pyrene	1	.3	.3	.1	.2	.2	.2	.2	.2	.5	.6	.4	.8	.4	.4
Benzo(*a*)pyrene	1	.3	.2	.1	.2	.2	.2	.2	.2	.4	.5	.5	.7	.4	.4
Perylene	1	.3	.3	.1	.2	.2	.2	.2	.2	.5	.6	.5	.9	.5	.5

Table A19ℓ. Lower quantitation limits for target compounds in bottom sediment samples, in ng/g (Cont.).

Substrate	Sediment														
Location	Station X	Christ. Basin	Lower Bay	Bight Apex		Hudson Shelf Valley	Lower Bay	Outer Bight	Bight Apex	Outer Bight		Cholera Bank	Lower Bay	Acid Waste Area	E. of Ambrose Lt.
Latitude (°N) Longitude (°W)	40°29' 73°48'	40°25' 73°46'	40°29' 74°03'	40°23' 73°52'	40°25' 73°50'	40°13' 73°44'	40°32' 74°01'	39°58' 73°35'	40°25' 73°54'	39°56' 73°11'	40°14' 73°20'	40°25' 73°40'	40°35' 74°02'	40°19' 73°38'	40°27' 73°48'
Sample Size(wet), grams Dry weight (%)	100 73	104 66	101 67	102 60	101 73	99 60	101 81	99 81	99 86	99 64	97 74	99 71	100 50	103 78	103 60
1,2-Dibromo-3-chloropropane	.2	.3	.3	.1	.1	.1	.1	.1	.1	.3	.3	.3	1	.3	.3
Hexachlorobenzene	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	1	.2	.2
Lindane	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	1	.2	.2
Heptachlor	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	1	.2	.2
Aldrin	.1	.1	.1	.04	.1	.1	.1	.1	.1	.1	.1	.1	1	.1	.1
o,p'-DDE	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	1	.2	.2
α-Chlordane	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	1	.2	.2
trans-Nonachlor	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2		.2	.2
Dieldrin	.3	.3	.3	.1	.1	.1	.1	.1	.1	.3	.3	.3	1	.3	.3
p,p'-DDE	.3	.3	.3	.1	.1	.1	.1	.1	.1	.4	.3	.3	1	.3	.3
o,p'-DDD	.1	.1	.1	.04	.1	.1	.1	.1	.1	.1	.1	.1	1	.1	.1
Endrin	.1	.1	.1	.04	.1	.1	.1	.1	.1	.1	.1	.1	1	.1	.1
m,p'-DDD	.3	.3	.3	.1	.1	.1	.1	.1	.1	.3	.3	.3	1	.3	.3
p,p'-DDD/o,p'-DDT	.2	.2	.2	.1	.1	.1	.1	.1	.1	.2	.2	.2	1	.2	.2
p,p'-DDT	.4	.4	.4	.1	.2	.2	.1	.1	.2	.4	.4	.4	1	.4	.4
Mirex	.4	.4	.4	.1	.2	.2	.2	.2	.2	.4	.4	.4	2	.4	.4
Chlorobiphenyls	2	2	2	3	2	2	1	1	2	10	2	2	2	2	2
Dichlorobiphenyls	.1	.1	.1	.03	.1	.1	.04	.04	.1	1	.1	.1	.4	.1	.1
Trichlorobiphenyls	.1	.1	.1	.03	.1	.1	.1	.1	.1	1	.1	.1	1	.1	.1
Tetrachlorobiphenyls	.1	.1	.1	.03	.1	.1	.1	.1	.1	1	.1	.1	1	.1	.1
Pentachlorobiphenyls	.1	.1	.1	.04	.1	.1	.1	.1	.1	.3	.1	.1	1	.1	.1
Hexachlorobiphenyls	.2	.2	.2	.04	.1	.1	.1	.1	.1	.2	.2	.1	1	.2	10
ΣPolychlorinatedbiphenyls															
" " (PPM, wet)															

Table A20. Concentrations of target compounds in bottom sediment samples, in ng/g.

Substrate	Sediments														
Location	Sta.24 1978	Sta.2A	Sta.5 1979A	Sta.6 1979A	Sta.1 1979	Sta.4 1979	Sta.5 1979B	Sta.6 1979B	Pt. L. N.Y.	Sta.12 1978	Sta.15 1978	Sta.18 1978	Sta.20 1978	Sta.21 1978	Sta.22 1978
Latitude (°N)	40°29'	40°31'	40° 0'	39°47'	40°35'	40°36'	40°15'	40° 8'	40°35'	39°42'	40°32'	40°25'	40°22'	40°22'	40°10'
Longitude (°W)	73°59'	72°16'	73°18'	73°34'	73°21'	73° 9'	73° 8'	73° 4'	73°35'	73° 0'	73° 3'	73°44'	73°45'	73°56'	73°58'
Sample Size, grams	100	99	100	100	101	100	100	99	100	105	100	104	100	103	99
Dry weight (%)	82	80	80	81	79	84	82	80	83	84	73	79	78	78	76
Collection Date	090278	230179	240179	240179	080279	090279	090279	090279	020379	080278	090278	090278	090278	090278	100278
Naphthalene	5	20	5	2	6	3	3	3	2	<.2	70	8	3	3	20
2-Methylnaphthalene	2	10	2	<.1	3	.4	<.1	1	<.1	<.2	50	9	3	2	9
1-Methylnaphthalene	2	20	1	<.1	1	1	1	1	<.1	.3	20	6	2	1	5
Biphenyl	1	3	1	1	2	1	<.1	.3	.3	<.2	20	7	<.2	<.2	3
Dibenzothiophene	2	< 1	<.2	<.2	1	<.1	<.2	<.2	<.2	<.4	100	50	3	1	20
Phenanthrene	20	10	3	.3	7	2	1	3	<.1	.7	200	50	30	10	30
Anthracene	4	< 1	<.1	<.1	1	<.1	<.1	<.1	<.1	<.2	100	30	7	4	20
1-Methylphenanthrene	1	< 1	<.1	<.1	1	<.1	<.1	.2	<.1	<.2	100	30	2	4	10
Fluoranthene	20	20	4	<.1	20	6	10	40	.3	1	500	80	30	20	70
Pyrene	20	9	3	<.1	10	2	1	3	<.1	2	700	100	30	20	100
Benz(*a*)anthracene	10	< 2	1	<.3	7	1	<.3	<.3	<.2	< 1	1000	200	30	20	200
Chrysene	6	5	1	<.2	6	1	1	2	<.1	<.4	600	100	9	10	90
Benzo(*e*)pyrene	5	< 1	2	<.2	5	1	1	10	<.1	< 1	800	9	< 1	5	30
Benzo(*a*)pyrene	6	40	6	<.1	4	1	1	1	<.1	< 1	1000	< 1	< 1	< 1	40
Perylene	3	< 1	.2	<.2	3	<.1	<.2	9	1	< 1	700	< 1	< 2	< 1	10

Table A20. Concentrations of target compounds in bottom sediment samples, in ng/g (Cont.).

Substrate	Sediments														
Location	Sta.24 1978	Sta.2A	Sta.5 1979A	Sta.6 1979A	Sta.1 1979	Sta.4 1979	Sta.5 1979B	Sta.6 1979B	Pt. L. N.Y.	Sta.12 1979	Sta.15 1978	Sta.18 1978	Sta.20 1978	Sta.21 1978	Sta.22 1978
Latitude (°N)	40°29'	40°31'	40° 0'	39°47'	40°35'	40°36'	40°15'	40° 8'	40°35'	39°42'	40°32'	40°25'	40°22'	40°22'	40°10'
Longitude (°W)	73°59'	72°16'	73°18'	73°34'	73°21'	73° 9'	73° 8'	73° 4'	73°35'	73° 0'	73° 3'	73°44'	73°45'	73°56'	73°58'
Sample Size, grams	100	99	100	100	101	100	100	99	100	105	100	104	100	103	99
Dry weight (%)	82	80	80	81	79	84	82	80	83	84	73	79	78	78	76
1,2-Dibromo-3-chloropropane	.08	<.06	.2	<.03	<.04	<.02	<.03	.2	.2	<.02	<.2	<.05	<.05	<.03	<.05
Hexqchlorobenzene	.01	<.01	.01	<.003	<.003	<.002	<.004	<.004	<.003	<.004	.2	.1	<.02	<.01	.01
Lindane (γ-BHC)	.01	<.02	.01	<.01	<.01	.01	<.01	.01	<.01	<.01	.1	.1	.04	.03	.05
Heptachlor	<.01	<.03	<.01	<.01	.1	.03	<.01	<.01	<.01	<.01	<.04	<.01	<.01	<.01	.02
Aldrin	<.004	<.01	<.005	<.004	<.01	<.003	<.01	<.01	<.004	<.01	.1	.03	<.02	<.01	.01
o,p'-DDE	<.01	<.02	<.01	<.01	<.01	.07	.07	<.01	<.01	<.01	1	<.02	<.02	<.02	.2
α-Chlordane	.03	<.01	.01	<.004	<.01	<.003	.01	.02	<.004	<.01	1	.3	.1	.4	.1
t-Nonachlor	.03	.02	.02	.01	.02	<.003	.01	.02	<.004	.04	1	.3	.08	.02	.1
Dieldrin	.02	<.01	.01	.01	.01	<.003	<.004	.01	.01	<.004	1	.1	.03	.01	.2
p,p'-DDE	<.01	.04	<.01	.06	.1	<.01	.01	.06	<.004	<.01	1	.1	.04	.02	.2
o,p'-DDD	<.01	<.03	<.02	<.02	.02	<.01	<.01	.1	<.01	<.01	2	<.03	<.03	<.02	<.03
Endrin	.06	.04	.07	.03	.2	.08	.02	<.02	.01	<.01	<.07	.05	<.02	<.01	<.02
m,p'-DDD	.2	< .1	.2	<.05	<.07	<.04	<.02	.03	<.01	<.03	4	.3	.2	<.04	.5
p,p'-DDD/o,p'-DDT	1	.5	.5	.2	<.09	.1	.01	.3	<.01	<.01	4	1	.3	<.02	.2
p,p'-DDT	.03	<.08	<.04	<.04	<.05	.1	.01	.08	<.01	<.02	< .2	<.03	<.05	<.03	1
Mirex	<.01	<.01	<.01	<.01	<.01	<.004	<.01	<.01	<.01	<.01	<.06	<.02	<.02	<.01	<.02
Chlorobiphenyls	< .1	< .3	< .2	< .2	< .2	< .1	< .2	< .2	< .2	<.04	< .3	.1	<.08	<.05	<.08
Dichlorobiphenyls	.2	.2	.1	<.02	<.02	<.01	.05	.2	.2	.04	.5	.2	.1	.06	.2
Trichlorobiphenyls	.7	.3	.7	.06	<.01	<.01	.3	<.02	.5	.05	7	1	.4	.2	2
Tetrachlorobiphenyls	.9	.8	.6	.1	<.01	.2	.3	.6	.3	.2	20	4	1	.6	4
Pentachlorobiphenyls	.6	.5	.6	.04	<.01	<.01	.04	.2	.1	.1	10	2	.1	.5	2
Hexachlorobiphenyls	.07	.1	.2	.08	<.01	.06	<.01	<.01	<.01	.02	6	2	.2	.3	1
ΣPolychlorinatedbiphenyls	4	3	3	1	.5	.4	1	2	1	.5	60	10	4	2	10
" " " (*PPM, wet*)	.003	.002	.003	.0005	.0004	.0003	.0007	.001	.001	.0004	.04	.01	.003	.001	.01

Table A20ℓ. Lower quantitation limits for target compounds in bottom sediment samples, in ng/g.

Substrate	Sediments														
Location	Sta.24 1978	Sta.2A	Sta.5 1979A	Sta.6 1979A	Sta.1 1979	Sta.4 1979	Sta.5 1979B	Sta.6 1979B	Pt. L. N.Y.	Sta.12 1978	Sta.15 1978	Sta.18 1978	Sta.20 1978	Sta.21 1978	Sta.22 1978
Latitude (°N) Longitude (°W)	40°29' 73°59'	40°31' 72°16'	40° 0' 73°18'	39°47' 73°34'	40°35' 73°21'	40°36' 73° 9'	40°15' 73° 8'	40° 8' 73° 4'	40°35' 73°35'	39°42' 73° 0'	40°32' 73° 3'	40°25' 73°44'	40°22' 73°45'	40°22' 73°56'	40°10' 73°58'
Sample Size, grams Dry weight (%)	100 82	99 80	100 80	100 81	101 79	100 84	100 82	99 80	100 83	105 84	100 73	104 79	100 78	103 78	99 76
Collection Date	090278	230179	240179	240179	080279	090279	090279	090279	020379	080278	090278	090278	090278	090278	100278
Naphthalene	.1	1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.3	.2	.2
2-Methylnaphthalene	.1	1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2
1-Methylnaphthalene	.1	1	.1	.1	.1	.1	.1	.1	.1	.3	.2	.1	.2	.2	.2
Biphenyl	.1	1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2
Dibenzothiophene	.2	1	.2	.2	.2	.1	.2	.2	.2	.4	.4	.3	1	.4	.4
Phenanthrene	.1	1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.3	.2	.2
Anthracene	.1	1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.3	.2	.2
1-Methylphenanthrene	.1	1	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.3	.2	.3
Fluoranthene	.1	1	.1	.1	.1	6	.1	.1	.1	.2	.2	.2	.3	.2	.3
Pyrene	.1	1	.1	.1	.1	.1	.1	.1	.1	.3	.2	.2	.3	.3	1
Benz(*a*)anthracene	.2	2	.2	.3	.3	.2	.3	.3	.2	1	1	1	1	1	1
Chrysene	.1	1	.1	.2	.2	.1	.1	.1	.1	.4	.4	.4	1	.4	1
Benzo(*e*)pyrene	.1	1	.2	.2	.2	.1	.2	.2	.1	1	1	1	1	1	1
Benzo(*a*)pyrene	.1	1	.1	.1	.2	.1	.1	.1	.1	1	1	1	1	1	1
Perylene	.2	1	.2	.2	.2	.1	.2	.2	.1	1	1	1	2	1	1

Table A20ℓ. Lower quantitation limits for target compounds in bottom sediment samples, in ng/g (Cont.).

Substrate	Sediments														
Location	Sta.24 1978	Sta.2A	Sta.5 1979A	Sta.6 1979A	Sta.1 1979	Sta.4 1979	Sta.5 1979B	Sta.6 1979B	Pt. L. N.Y.	Sta.12 1978	Sta.15 1978	Sta.18 1978	Sta.20 1978	Sta.21 1978	Sta.22 1978
Latitude (°N)	40°29'	40°31'	40° 0'	39°47'	40°35'	40°36'	40°15'	40° 8'	40°35'	39°42'	40°32'	40°25'	40°22'	40°22'	40°10'
Longitude (°W)	73°59'	72°16'	73°18'	73°34'	73°21'	73° 9'	73° 8'	73° 4'	73°35'	73° 0'	73° 3'	73°44'	73°45'	73°56'	73°58'
Sample Size, grams	100	99	100	100	101	100	100	99	100	105	100	104	100	103	99
Dry weight (%)	82	80	80	81	79	84	82	80	83	84	73	79	78	78	76
1,2-Dibromo-3-chloropropane	.03	.06	.03	.03	.04	.02	.03	.03	.02	.02	.15	.05	.05	.03	.05
Hexachlorobenzene	.002	.01	.003	.003	.003	.002	.004	.004	.003	.004	.03	.01	.01	.01	.01
Lindane (γ-BHC)	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.08	.02	.02	.02	.03
Heptachlor	.01	.03	.01	.01	.02	.01	.01	.01	.01	.01	.04	.01	.01	.01	.01
Aldrin	.004	.01	.005	.004	.01	.003	.01	.01	.004	.01	.05	.02	.02	.01	.02
o,p'-DDE	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.08	.02	.02	.02	.03
a-Chlordane	.004	.01	.005	.004	.01	.003	.01	.01	.004	.01	.05	.01	.01	.01	.01
t-Nonachlor	.004	.01	.005	.004	.01	.003	.01	.01	.004	.01	.04	.01	.01	.01	.01
Dieldrin	.003	.01	.004	.004	.005	.003	.004	.01	.003	.004	.03	.01	.01	.01	.01
p,p'-DDE	.01	.02	.01	.01	.01	.01	.01	.01	.004	.01	.04	.01	.01	.01	.01
o,p'-DDD	.01	.03	.02	.02	.02	.0o	.01	.01	.01	.01	.09	.03	.03	.02	.03
Endrin	.02	.04	.02	.02	.02	.01	.02	.02	.01	.01	.07	.02	.02	.01	.02
m,p'-DDD	.05	.1	.06	.05	.07	.04	.02	.02	.01	.03	.2	.06	.06	.04	.06
p,p'-DDD/o,p'-DDT	.07	.2	.08	.07	.09	.05	.02	.02	.01	.01	.10	.03	.03	.02	.03
p,p'-DDT	.03	.08	.04	.04	.05	.02	.01	.02	.01	.02	.2	.05	.05	.03	.05
Mirex	.01	.01	.01	.01	.01	.004	.01	.01	.01	.01	.06	.02	.02	.01	.02
Chlorobiphenyls	.1	.3	.2	.2	.2	.1	.2	.2	.2	.04	.3	.08	.08	.05	.08
Dichlorobiphenyls	.02	.04	.02	.02	.02	.01	.03	.03	.02	.03	.2	.06	.06	.04	.06
Trichlorobiphenyls	.01	.02	.01	.01	.01	.01	.01	.02	.01	.01	.08	.03	.03	.02	.03
Tetrachlorobiphenyls	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.07	.02	.02	.02	.02
Pentachlorobiphenyls	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.06	.02	.02	.01	.02
Hexachlorobiphenyls	.01	.02	.01	.01	.01	.005	.01	.01	.01	.01	.07	.02	.02	.02	.02

Table A21. Concentrations of target compounds in dredged material samples, in ng/g.

Substrate	Dredge Spoils										
Location	Hudson R.	Shooters Island	Sta.1 1977	Sta.2 1977	Sta.4 1977	Sta.5 1977	Sta.7 1977	Sta.10 1978	Newtown Creek	Gowanus Canal	Pierhd. Channel
Latitude (°N) Longitude (°W)	40°46' 74° 0'	40°38' 74°10'	40°30' 73°57'	40°39' 74° 2'	40°29' 74° 6'	40°28' 74° 2'	40°30' 74°19'	40°50' 73°51'	40°44' 73°56'	40°40' 74° 1'	40°40' 74° 9'
Sample Size Dry weight (%)	100 52	103 36	22 79	28 41	21 54	22 72	28 38	21 38	108† 47	98† 43	105† 54
Collection Date	121078	121078	081277	061277	081277	081277	081277	120178	120178	061277	081277
Naphthalene	60	50	< 1	300	90	70	200	700	120000	100	200
2-Methylnaphthalene	40	60	< 1	200	50	40	90	900	2300	500	200
1-Methylnaphthalene	20	30	<.9	100	30	30	70	300	1800	200	100
Biphenyl	20	70	< 1	100	20	9	100	60	700	300	200
Dibenzothiophene	30	200	< 2	800	70	40	40	1100	2700	1000	100
Phenanthrene	100	1200	< 1	400	80	200	200	1900	14000	1000	300
Anthracene	60	700	< 1	200	30	50	50	500	9600	500	200
1-Methylphenanthrene	10	200	< 1	300	20	20	70	200	1500	1000	100
Fluoranthene	300	2500	< 1	1000	200	300	400	3600	10000	2000	50
Pyrene	400	2000	< 1	1200	200	300	600	4100	7200	3000	500
Benz(*a*)anthracene	300	2100	< 5	2300	200	700	200	3700	5600	3000	500
Chrysene	100	1300	< 3	900	200	300	200	3200	3000	2000	400
Benzo(*e*)pyrene	100	900	< 8	300	100	40	200	1900	1000	1000	200
Benzo(*a*)pyrene	100	900	< 7	300	100	50	200	1600	1300	500	100
Perylene	300	500	<10	200	400	< 9	<10	300	400	300	50

Table A21. Concentrations of target compounds in dredged material samples, in ng/g (Cont.).

Substrate	Dredge Spoils										
Location	Hudson R.	Shooters Island	Sta.1 1977	Sta.2 1977	Sta.4 1977	Sta.5 1977	Sta.7 1977	Sta.10 1978	Newtown Creek	Gowanus Canal	Pierhd. Channel
Latitude (°N) Longitude (°W)	40°46' 74° 0'	40°38' 74°10'	40°30' 73°57'	40°39' 74° 2'	40°29' 74° 6'	40°28' 74° 2'	40°30' 74°19'	40°50' 73°51'	40°44' 73°56'	40°40' 74° 1'	40°40' 74° 9'
Sample Size	100	103	22	28	21	22	28	21	108†	98†	105†
Dry weight (%)	52	36	79	41	54	72	38	38	47	43	54
1,2-Dibromo-3-chloropropane	<.05	<.7	<.6	< 5	< .6	< 1	< 7	< 1	<60	<40	<30
Hexachlorobenzene	<.008	30	<.1	2	<.08	<.2	7	<.2	<10	< 6	< 5
Lindane (γ-BHC)	<.02	10	<.3	4	< .2	<.7	< 4	<.7	<30	<30	<20
Heptachlor	<.01	40	<.2	< 1	< .2	<.3	< 2	<.6	<20	<10	<10
Aldrin	<.01	<.2	<.2	< 1	< .1	<.3	< 2	<.3	<20	<10	<10
o,p'-DDE	<.02	<.3	<.3	< 2	< .2	<.6	< 3	<.6	<30	<20	<10
α-Chlordane	*1	*90	<.2	40	2	1	70	<.3	<20	<10	<10
t-Nonachlor	*3	*60	<.2	30	2	1	50	<.3	<20	*30	*20
Dieldrin	1	6	<.1	10	1	.5	30	<.3	<10	<10	<10
p,p'-DDE	<.01	2	<.1	20	4	.7	40	<.4	<10	<20	40
o,p'-DDD	*2	*100	<.3	< 3	< .3	<.6	< 4	< 1	<30	<20	<20
Endrin	4	<.3	<.2	< 2	< .4	<.5	< 3	< 1	<20	<20	<10
m,p'-DDD	<.06	< 1	<.7	80	5	2	300	50	<60	<40	<30
p,p'-DDD/o,p'-DDT	*5	*80	<.7	*90	*8	2	*300	*6	<40	<30	<20
p,p'-DDT	*2	*20	<.7	40	6	<.8	100	30	<80	<50	<40
Mirex	<.02	<.3	<.2	< 1	< .2	<.4	< 2	<.4	<20	<10	<10
Chlorobiphenyls	3	40	<10	<90	< 5	<20	<100	<10	<70	<40	<30
Dichlorobiphenyls	6	60	<.6	20	< .6	< 1	40	< 4	<70	<40	<30
Trichlorobiphenyls	200	900	2	200	30	9	200	100	*100	*500	*300
Tetrachlorobiphenyls	200	800	2	300	50	10	500	300	*300	*700	*400
Pentachlorobiphenyls	90	1100	2	300	40	10	400	400	<20	*500	*300
Hexachlorobiphenyls	*5	*600	<.3	100	10	3	200	200	<30	<20	100
Polychlorinatedbiphenyls	500	3500	6	900	100	30	1300	1000	400	1700	1100
" " " (*PPM,wet*)	.3	1	.005	.4	.05	.02	.5	.3	.2	.7	.6

Table A21ℓ. Lower quantitation limits for target compounds in dredged material samples, in ng/g.

Substrate	Dredge Spoils										
Location	Hudson R.	Shooters Island	Sta.1 1977	Sta.2 1977	Sta.4 1977	Sta.5 1977	Sta.7 1977	Sta.10 1978	Newtown Creek	Gowanus Canal	Pierhd. Channel
Latitude (°N)	40°46'	40°38'	40°30'	40°39'	40°29'	40°28'	40°30'	40°50'	40°44'	40°40'	40°40'
Longitude (°W)	74° 0'	74°10'	73°57'	74° 2'	74° 6'	74° 2'	74°19'	73°51'	73°56'	74° 1'	74° 9'
Sample Size	100	103	22	28	21	22	28	21	108†	98†	105†
Dry weight (%)	52	36	79	41	54	72	38	38	47	43	54
Collection Date	121078	121078	081277	061277	081277	081277	081277	120178	120178	061277	081277
Naphthalene	.2	.3	1	1	1	1	1	1	50	10	10
2-Methylnaphthalene	.2	.3	1	1	1	1	1	1	50	10	10
1-Methylnaphthalene	.2	.3	.9	1	1	1	1	1	50	10	10
Biphenyl	.2	.3	1	1	1	1	3	1	50	10	10
Dibenzothiophene	.4	.6	2	2	1	2	6	2	80	20	20
Phenanthrene	.2	.4	1	1	1	1	3	1	50	10	10
Anthracene	.2	.4	1	1	1	1	3	1	50	10	10
1-Methylphenanthrene	.2	.3	1	1	1	1	4	1	50	10	10
Fluoranthene	.2	.3	1	1	1	1	4	1	50	10	10
Pyrene	.2	.3	1	1	1	1	4	1	50	10	10
Benz(*a*)anthracene	.5	.7	5	4	2	2	10	5	80	20	10
Chrysene	.2	.4	3	2	1	2	5	5	70	10	10
Benzo(*e*)pyrene	.3	10	8	4	2	2	10	8	70	10	10
Benzo(*a*)pyrene	.2	.4	7	3	2	1	8	7	70	10	10
Perylene	.3	20	10	4	2	9	10	10	70	10	10

Table A21ℓ. Lower quantitation limits for target compounds in dredged material samples, in ng/g (Cont.).

Substrate	Dredge Spoils										
Location	Hudson R.	Shooters Island	Sta.1 1977	Sta.2 1977	Sta.4 1977	Sta.5 1977	Sta.7 1977	Sta.10 1978	Newtown Creek	Gowanus Canal	Pierhd. Channel
Latitude (°N)	40°46'	40°38'	40°30'	40°39'	40°29'	40°28'	40°30'	40°50'	40°44'	40°40'	40°40'
Longitude (°W)	74° 0'	74°10'	73°57'	74° 2'	74° 6'	74° 2'	74°19'	73°51'	73°56'	74° 1'	74° 9'
Sample Size	100	103	22	28	21	22	28	21	108†	98†	105†
Dry weight (%)	52	36	79	41	54	72	38	38	47	43	54
1,2-Dibromo-3-chloropropane	.05	.7	.6	5	.6	.1	7	2	60	40	30
Hexachlorobenzene	.008	.1	.1	.9	.08	.2	1	.2	10	6	5
Lindane (γ-BHC)	.02	.3	.3	3	.2	.1	4	.7	30	20	30
Heptachlor	.01	.2	.2	1	.2	.3	2	.6	20	10	10
Aldrin	.01	.2	.2	1	.1	.3	2	.3	20	10	10
o,p'-DDE	.02	.3	.3	2	.2	.6	3	.6	30	20	10
α-Chlordane	.01	.2	.2	1	.1	.3	2	.3	20	10	10
t-Nonachlor	.01	.2	.2	1	.1	.3	2	.3	20	10	10
Dieldrin	.01	.2	.1	.9	.1	.2	.3	.3	10	10	10
p,p'-DDE	.01	.2	.1	1	.1	.3	2	.4	10	20	10
o,p'-DDD	.03	.4	.3	3	.3	.6	4	1	30	20	20
Endrin	.02	.3	.2	.2	.4	.5	3	1	20	20	10
m,p'-DDD	.06	1	.8	6	.4	2	9	3	60	40	30
p,p'-DDD/o,p'-DDT	.04	.5	.7	4	.4	.8	4	1	40	30	20
p,p'-DDT	.05	.8	.7	5	.3	.8	8	2	80	50	40
Mirex	.02	.3	.2	1	.2	.4	2	.4	20	10	10
Chlorobiphenyls	.6	9	10	90	5	20	100	10	70	40	30
Dichlorobiphenyls	.1	2	.6	5	.6	1	7	4	70	40	30
Trichlorobiphenyls	.03	.5	.2	2	.3	.5	3	1	70	40	30
Tetrachlorobiphenyls	.04	.6	.3	2	.2	.5	3	1	20	20	10
Pentachlorobiphenyls	.02	.3	.2	2	.2	.5	3	.6	20	10	10
Hexachlorobiphenyls	.03	.4	.3	2	.2	.5	3	.6	30	10	10

Table A22. Concentrations of target compounds in sewage sludge samples, in μg/L .

Substrate	Sewage Sludge							
Location	Ward's Is.		Hunt's Pt.		Newtown Cr.		Composite of 3 Sites	
Latitude (°N) Longitude (°W)	40 73		40 73		40 73		40 73	
Sample Size (wet), liters	0.1		0.1		0.1		† 0.1 †	
Collection Date	150977	150977	160977	160977	150977	150977	150977	150977
Naphthalene	50	40	20	60	20	40	100	100
2-Methylnaphthalene	20	40	30	90	50	60	100	200
1- "	20	10	20	50	20	40	50	50
Biphenyl	3	2	10	20	20	10	50	100
Dibenzothiophene	10	10	5	<1	30	<.4	50	100
Phenanthrene	20	20	30	100	60	80	200	200
Anthracene	<.1	<.1	<.1	<.5	<.3	<.2	50	30
1-Methylphenanthrene	10	20	20	80	60	90	50	100
Fluoranthene	30	30	40	200	70	100	100	50
Pyrene	30	40	50	200	100	200	100	200
Benz(*a*)anthracene	< 1	<.5	< 1	< 2	< 1	< 1	50	50
Chrysene	<.3	<.3	<.3	< 1	< 1	< 1	30	50
Benzo(*e*)pyrene	< 1	< 1	< 1	< 5	< 3	< 2	<.5	20
Benzo(*a*)pyrene	< 1	< 1	< 1	< 1	< 3	< 2	<.5	10
Perylene	< 1	< 1	< 1	< 5	< 3	< 3	<.5	<.5

Table A22. Concentrations of target compounds in sewage sludge samples, in μg/L (Cont.).

Substrate	Sewage Sludge							
Location	Ward's Is.		Hunt's Pt.		Newtown Cr.		Composite of 3 Sites	
Latitude (°N) Longitude (°W)	40 73		40 73		40 73		40 73	
Sample Size (wet), liters	0.1		0.1		0.1		† 0.1 †	
1,2-Dibromo-3-chloropropane	<.1	<.1	<.09	<.2	<.6	<.3	<30	<30
Hexachlorobenzene	<.02	<.03	<.02	.4	1	1	< 6	< 6
Lindane (γ-BHC)	<.06	<.07	<.05	<.1	<.3	<.2	<20	<20
Heptachlor	<.04	<.04	<.03	<.06	<.2	<.1	<10	<10
Aldrin	<.04	<.05	<.03	<.07	<.2	<.1	<10	<10
o,p'-DDE	.4	<.09	<.05	<.1	<.2	<.2	<20	<20
α-Chlordane	2	2	3	10	30	30	<10	<10
trans-Nonachlor	2	2	2	10	20	20	*50	*20
Dieldrin	.8	1	.4	2	2	2	<10	<10
p,p'-DDE	* 1	* 1	*.5	* 3	* 2	* 3	*50	*20
o,p'-DDD	.7	<.08	<.06	<.1	2	3	<20	<20
Endrin	<.05	<.06	<.04	<.09	<.3	<.2	<20	<20
m,p'-DDD	<.1	<.1	.2	1	<.6	<.4	<40	<40
p,p'-DDD/o,p'-DDT	6	5	1	1	10	10	<30	<30
p,p'-DDT	2	2	.3	3	3	<.4	<40	<40
Mirex	<.05	<.06	<.04	<.08	<.3	<.2	<10	<10
Chlorobiphenyls	< 1	< 1	< 1	< 2	< 7	4	<40	<40
Dichlorobiphenyls	<.2	<.2	<.1	<.3	<.8	3	<40	<40
Trichlorobiphenyls	1	10	4	20	40	40	*50	*80
Tetrachlorobiphenyls	4	20	5	30	50	50	*100	*100
Pentachlorobiphenyls	*10	*10	* 4	*20	*30	*30	*200	*200
Hexachlorobiphenyls	10	10	5	10	80	80	*50	<20
ΣPolychlorinatedbiphenyls	20	50	20	100	200	200	400	400
" " (PPM, wet)	.02	.05	.02	.10	.20	.20	.40	.40

Table A22ℓ. Lower quantitation limits for target compounds in sewage sludge samples, in µg/L .

Substrate	Sewage Sludge							
Location	Ward's Is.		Hunt's Pt.		Newtown Cr.		Composite of 3 Sites	
Latitude (°N) Longitude (°W)	40 73		40 73		40 73		40 73	
Sample Size (wet), liters	0.1		0.1		0.1		† 0.1 †	
Collection Date	150977	150977	160977	160977	150977	150977	150977	150977
Naphthalene	.1	.1	.1	.5	.3	.2	.5	.5
2-Methylnaphthalene	.1	.1	.1	.4	.3	.3	.5	.5
1- "	.1	.1	.1	.4	.3	.2	.5	.5
Biphenyl	.4	.1	.1	.4	.3	.2	.5	.5
Dibenzothiophene	.2	.2	.2	1	1	.4	.5	.5
Phenanthrene	.1	.1	.1	.5	.3	.2	.5	.5
Anthracene	.1	.1	.1	.5	.3	.2	.5	.5
1-Methylphenanthrene	.1	.1	.1	1	.3	.2	.5	.5
Fluoranthene	.1	.1	.1	1	.4	.3	.5	.5
Pyrene	.2	.1	.2	1	.4	.3	.5	.5
Benz(*a*)anthracene	1	.5	1	2	1	1	.5	.5
Chrysene	.3	.3	.3	1	1	1	.5	.5
Benzo(*e*)pyrene	1	1	1	5	3	2	.5	.5
Benzo(*a*)pyrene	1	1	1	1	3	2	.5	.5
Perylene	1	1	1	5	3	3	.5	.5

Table A22ℓ. Lower quantitation limits for target compounds in sewage sludge samples, in µg/L (Cont.).

Substrate	Sewage Sludge							
Location	Ward's Is.		Hunt's Pt.		Newtown Cr.		Composite of 3 Sites	
Latitude (°N) Longitude (°W)	40 73		40 73		40 73		40 73	
Sample Size (wet), liters	0.1		0.1		0.1		† 0.1 †	
1,2-Dibromo-3-chloropropane	.1	.1	.09	.2	.6	.3	30	30
Hexachlorobenzene	.02	.03	.02	.04	.1	.08	6	6
Lindane (γ-BHC)	.06	.07	.05	.1	.3	.2	20	20
Heptachlor	.04	.04	.03	.06	.2	.1	10	10
Aldrin	.04	.05	.03	.07	.2	.1	10	10
o,p'-DDE	.06	.07	.05	.1	.2	.2	20	20
α-Chlordane	.04	.04	.03	.06	.2	.1	10	10
trans-Nonachlor	.04	.04	.03	.06	.2	.1	10	10
Dieldrin	.03	.03	.02	.05	.2	.09	10	10
p,p'-DDE	.03	.04	.03	.06	.2	.1	10	10
o,p'-DDD	.07	.08	.06	.1	.4	.2	20	20
Endrin	.05	.06	.04	.09	.3	.2	20	20
m,p'-DDD	.1	.1	.1	.2	.6	.4	40	40
p,p'-DDD/o,p'-DDT	.1	.09	.07	.1	.5	.3	30	30
p,p'-DDT	.1	.1	.1	.2	.7	.4	40	40
Mirex	.05	.06	.04	.08	.3	.2	10	10
Chlorobiphenyls	1	1	1	2	7	4	40	40
Dichlorobiphenyls	.2	.2	.1	.3	.8	.5	40	40
Trichlorobiphenyls	.07	.08	.06	.1	.4	.2	40	40
Tetrachlorobiphenyls	.06	.07	.05	.1	.3	.2	30	30
Pentachlorobiphenyls	.05	.06	.04	.09	.3	.2	30	30
Hexachlorobiphenyls	.06	.07	.05	.1	.3	.2	30	30
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-	-	-	-

A23. Concentrations of target compounds in sediments, in ng/g.

Substrate	Sediment						
Location	Fresh Kills Reach	Mouth of Eliz. R.	Hud. R. N.of Yonk.	Grassy Bay	Ch. N. of Shoot. Is.	Port Eliz. Pierhd.Ch.	Upper Bay
Latitude (°N)	40° 34.7'	40° 38.7'	40° 57.0'	40° 38.4'	40° 38.9'	40° 39.5'	40° 38.4'
Longitude (°W)	74° 12.3'	74° 11.1'	73° 54.0'	74° 49.0'	74° 09.9'	74° 08.6'	74° 03.0'
Sample Size (wet), grams	100	99	100	97	100	100	100
Dry weight (%)	29	44	61	24	34	45	72
Collection Date	200580	200580	220580	230580	200580	200580	220580
Naphthalene	680	220	8.7	73	130	130	44
2-Methylnaphthalene	200	160	5.5	88	130	82	32
1- "	75	78	2.2	40	53	30	12
Biphenyl	84	71	<1.3	72	110	68	8.6
Dibenzothiophene	330	150	1.8	89	290	150	21
Phenanthrene	630	590	15	270	630	330	140
Anthracene	170	530	3.2	54	200	220	38
1-Methylphenanthrene	220	210	3.9	100	380	120	33
Fluoranthene	1600	1400	38	460	970	1100	300
Pyrene	1500	1300	41	440	890	930	320
Benz(*a*)anthracene	1400	1600	26	380	1000	680	390
Chrysene	1400	1100	24	330	820	550	230
Benzo(*e*)pyrene	830	710	12	240	300	380	140
Benzo(*a*)pyrene	930	940	13	250	360	470	210
Perylene	480	310	100	120	160	250	93

A23. Concentrations of target compounds in sediments, in ng/g (Cont.).

Substrate	Sediment						
Location	Fresh Kills Reach	Mouth of Eliz R.	Hud. R. N.of Yonk.	Grassy Bay	Ch.N.of Shoot. Is.	Port Eliz. Pierhd. Ch.	Upper Bay
Latitude (°N)	40° 34.7'	40° 38.7'	40° 57.0'	40° 38.4'	40° 38.9'	40° 39.5'	40° 38.4'
Longitude (°W)	74° 12.3'	74° 11.1'	73° 54.0'	74° 49.0'	74° 09.9'	74° 08.6'	74° 03.0'
Sample Size (wet), grams	100	99	100	97	100	100	100
Dry weight (%)	29	44	61	24	34	45	72
1,2-Dibromo-3-chloropropane	<1.2	<.59	<.07	<1.3	<2.2	<.81	<.11
Hexachlorobenzene	< .25	<.14	<.04	<.29	<.50	<.18	<.04
Lindane	< .47	<.25	<.04	<.52	<.88	<.34	<.04
Heptachlor	<2.8	<1.5	<.06	<3.1	<5.3	<2.0	<.06
Aldrin	<3.0	<1.5	<.06	<3.4	<5.6	<2.1	<.06
o,p'-DDE	<10.	32	<.09	<11	68	<7.0	<.18
-Chlordane	22	12	.28	10	20	7.0	.92
trans-Nonachlor	30	14	.74	14	32	9.0	1.5
Dieldrin	2.3	<1.1	<.09	<2.5	<4.3	<1.6	<.09
p,p'-DDE	190	75	.64	16	180	32	2.7
o,p'-DDD	100	73	1.5	17	100	36	3.0
Endrin	<5.3	<2.8	<.09	<5.9	<9.8	<3.8	<.18
m,p'-DDD	<15	<3.8	<.18	<17	<28	<10	<.27
p,p'-DDD/o,p'-DDT	430	350	1.6	25	410	74	3.8
p,p'-DDT	660	500	.91	<12	180	83	5.5
Mirex	<7.0	<1.8	<.13	<7.8	<13	<5.0	<.13
Chlorobiphenyls	49	<7.6	<7.6	<28	<28	<10	<.63
Dichlorobiphenyls	73	100	3.1	71	200	41	.38
Trichlorobiphenyls	330	170	17	120	520	200	24
Tetrachlorobiphenyls	750	380	22	540	960	370	43
Pentachlorobiphenyls	320	140	10	88	430	180	25
Hexachlorobiphenyls	500	190	9.4	120	1100	150	33
Polychlorinatedbiphiphenyls	2000	980	62	940	3200	940	130
" " (PPM, wet)	.59	.43	.038	.23	1.1	.42	.94

A23ℓ. Lower quantitation limits for target compounds in sediments, in ng/g.

Substrate	Sediment						
Location	Fresh Kills Reach	Mouth of Eliz. R.	Hud. R. N.of Yonk.	Grassy Bay	Ch. N. of Shoot. Is.	Port Eliz. Pierhd Ch.	Upper Bay
Latitude (°N)	40° 34.7'	40° 38.7'	40° 57.0'	40° 38.4'	40° 38.9'	40° 39.5'	40° 38.4'
Longitude (°W)	74° 12.3'	74° 11.1'	73° 54.0'	74° 49.0'	74° 09.9'	74° 08.6'	74° 03.0'
Sample Size (wet), grams	100	99	100	97	100	100	100
Dry weight (%)	29	44	61	24	34	45	72
Collection Date	200580	200580	220580	230580	200580	200580	220580
Napthalene	3.6	1.5	1.3	1.4	9.0	1.7	1.6
2-Methylnaphthalene	3.6	4.0	1.4	8.1	10	1.8	1.7
1- "	3.1	3.4	1.1	6.9	8.0	1.4	1.4
Biphenyl	3.4	3.6	1.3	7.8	18	8.4	1.6
Dibenzothiophene	28	20	1.6	35	47	50	8.1
Phenanthrene	26	18	1.4	31	43	28	6.9
Anthracene	12	8.0	.66	14	20	13	3.3
1-Methylphenanthrene	28	19	1.6	33	47	27	7.5
Fluoranthene	28	20	1.6	34	47	27	13
Pyrene	28	20	1.6	34	47	28	13
Benz(*a*)anthracene	74	50	6.4	83	123	36	19
Chrysene	36	25	3.1	40	60	17	9.3
Benzo(*e*)pyrene	24	17	3.4	25	24	24	11
Benzo(*a*)pyrene	30	21	4.1	29	30	27	13
Perylene	28	20	3.6	28	28	27	13

A23ℓ. Lower quantitation limits for target compounds in sediments, in ng/g (Cont.).

Substrate	Sediment						
Location	Fresh Kills Reach	Mouth of Eliz. R.	Hud. R. N.of Yonk	Grassy Bay	Ch. N. of Shoot. Is.	Port Eliz. Pierhd Ch.	Upper Bay
Latitude (°N)	40° 34.7'	40° 38.7'	40° 57.0'	40° 38.4'	40° 38.9'	40° 39.5'	40 °38.4'
Longitude (°W)	74° 12.3'	74° 11.1'	73° 54.0'	74° 49.0'	74° 09.9'	74° 08.6'	74° 03.0'
Sample Size, grams	100	99	100	97	100	100	100
Dry Weight (%)	29	44	61	24	34	45	72
1,2-Dibromo-3-chloropropane	1.2	.59	.07	1.3	2.2	.81	.11
Hexachlorobenzene	.25	.14	.04	.29	.50	.18	.04
Lindane	.47	.25	.04	.52	.88	.34	.04
Heptachlor	2.8	1.5	.06	3.1	5.3	2.0	.06
Aldrin	3.0	1.5	.06	3.4	5.6	2.1	.06
o,p'-DDE	10.	2.6	.09	11	19	7.0	.18
α-Chlordane	2.8	1.5	.09	3.1	5.3	2.0	.09
trans-Nonachlor	2.8	1.4	.09	3.0	5.1	1.9	.09
Dieldrin	2.3	1.1	.09	2.5	4.3	1.6	.09
p,p'-DDE	6.5	1.6	.09	7.3	12	4.5	.09
o,p'-DDD	11	2.9	.09	13	21	8.0	.18
Endrin	5.3	2.8	.09	5.9	9.8	3.8	.18
m,p'-DDD	15	3.8	.18	17	28	10	.27
p,p-DDD/o,p'-DDT	23	5.8	.18	25	42	16	.27
p,p'-DDT	11	2.6	.09	12	20	7.3	.09
Mirex	7.0	1.8	13	7.8	13	5.0	.13
Chlorobiphenyls	15	7.6	.53	16	28	10	.63
Dichlorobiphenyls	3.6	1.9	.28	4.0	6.7	2.5	.42
Trichlorobiphenyls	27	14	.21	30	50	19	.32
Tetrachlorobiphenyls	34	18	.68	38	64	24	1.0
Pentachlorobiphenyls	26	13	.54	29	48	18	.36
Hexachlorobiphenyls	26	13	.36	29	48	18	.54
ΣPolychlorinatedbiphenyls	-	-	-	-	-	-	-
" " (PPM,wet)	-	-	-	-	-	-	-

A24. Concentrations of target compounds in grass shrimp and mussels, in ng/g.

Substrate	Grass Shrimp		Mussels
Location	Raritan Bay	Raritan Bay	Raritan Bay
Latitude (°N) Longitude (°W)	40° 29.8' 74° 06.7'	40° 29.8' 74° 15.2'	40° 29.8' 74° 06.7'
Sample Size (wet), grams Dry weight (%)	10 17	10 18	10 13
Collection Date Subsample no/mean size[a]	200580	200580	200580 5/6.0
Naphthalene	<14	<18	<21
2-Methylnaphthalene	<14	<19	<22
1- "	<12	<16	<19
Biphenyl	<13	<17	<21
Dibenzothiophene	<18	<24	<28
Phenanthrene	<16	77	<25
Anthracene	< 6.9	< 8.8	<11
1-Methylphenanthrene	<18	<23	<28
Fluoranthene	28	170	320
Pyrene	200	280	590
Benz(α)anthracene	<46	170	<70
Chrysene	<24	140	240
Benzo(*e*)pyrene	<23	<30	67
Benzo(α)pyrene	<23	<30	<35
Perylene	<27	<35	<43

[a] in centimeters

A24. Concentrations of target compounds in grass shrimp and mussels, in ng/g (Cont.).

Substrate	Grass Shrimp		Mussels
Location	Raritan Bay	Raritan Bay	Raritan Bay
Latitude (°N)	40° 29.8'	40° 29.8'	40° 29.8'
Longitude (°W)	74° 06.7'	74° 15.2'	74° 06.7'
Sample Size (wet), grams	10	10	10
Dry weight (%)	17	18	13
1,2-Dibromo-3-chloropropane	<1.1	<1.3	<1.9
Hexachlorobenzene	5.1	5.7	4.0
Lindane	<1.2	<1.4	<2.1
Heptachlor	<1.3	<1.6	<2.3
Aldrin	<2.4	<3.0	<4.3
o,p'-DDE	18	16	72
α-Chlordane	13	12	41
trans-Nonachlor	40	34	56
Dieldrin	<2.4	<2.9	<4.2
p,p'-DDE	42	44	33
o,p'-DDD	12	7.7	48
Endrin	<5.6	<7.0	<16
m,p'-DDD	<7.6	<9.2	<13
p,p'-DDD/o,p'-DDT	22	25	93
p,p'-DDT	<5.5	<6.7	<9.5
Mirex	<3.7	<4.7	<6.5
Chlorobiphenyls	<18	<22	<31
Dichlorobiphenyls	17	21	46
Trichlorobiphenyls	160	190	430
Tetrachlorobiphenyls	390	350	920
Pentachlorobiphenyls	310	290	630
Hexachlorobiphenyls	250	230	410
ΣPolychlorinatedbiphenyls	1100	1100	2400
" " (PPM, wet)	0.19	0.19	0.32

A24$_\ell$. Lower quantitation limits for target compounds in grass shrimp and mussels, in ng/g.

Substrate	Grass Shrimp		Mussels
Location	Raritan Bay	Raritan Bay	Raritan Bay
Latitude (°N)	40° 29.8'	40° 29.8'	40° 29.8'
Longitude (°W)	74° 06.7'	74° 15.2'	74° 06.7'
Sample Size (wet), grams	10	10	10
Dry weight (%)	17	18	13
Collection Date	200580	200580	200580
Subsample no./mean size[a]			5/6.0
Naphthalene	14	18	21
2-Methylnaphthalene	14	19	22
1- "	12	16	19
Biphenyl	13	17	21
Dibenzothiophene	18	24	28
Phenanthrene	16	21	25
Anthracene	6.9	8.8	11
1-Methylphenanthrene	18	23	28
Fluoranthene	19	24	28
Pyrene	19	24	30
Benz(α)anthracene	46	60	70
Chrysene	24	30	38
Benzo(e)pyrene	23	30	35
Benzo(α)pyrene	23	30	35
Perylene	27	35	43

A24$_{\ell}$. Lower quantitation limits for target compounds in grass shrimp and mussels, in ng/g.

Substrate	Grass Shrimp		Mussels
Location	Raritan Bay	Raritan Bay	Raritan Bay
Latitude (°N) Longitude (°W)	40° 29.8' 74° 06.7'	40° 29.8' 74° 15.2'	40° 29.8' 74° 06.7'
Sample Size (wet), grams Dry weight (%)	10 17	10 18	10 13
1,2-Dibromo-3-chloropropane	1.1	1.3	1.9
Hexachlorobenzene	.80	1.0	1.4
Lindane	1.2	1.4	2.1
Heptachlor	1.3	1.6	2.3
Aldrin	2.4	3.0	4.3
o,p'-DDE	5.6	6.7	9.8
α-Chlordane	3.1	3.8	5.3
trans-Nonachlor	3.1	3.8	5.3
Dieldrin	2.4	2.9	4.2
p,p'-DDE	3.5	4.3	6.1
o,p'-DDD	5.7	7.3	9.7
Endrin	5.6	7.0	16
m,p'-DDD	7.6	9.2	13
p,p'-DDD/o,p'-DDT	11	14	20
p,p'-DDT	5.5	6.7	9.5
Mirex	3.8	4.7	6.5
Chlorobiphenyls	18	22	31
Dichlorobiphenyls	6.5	8.0	11
Trichlorobiphenyls	9.3	12	17
Tetrachlorobiphenyls	18	23	33
Pentachlorobiphenyls	26	31	45
Hexachlorobiphenyls	17	20	29
ΣPolychlorinatedbiphenyls	-	-	-
" " (PPM, wet)	-	-	-

A25. Concentrations of target compounds in sewage effluent, in µg/L.

Substrate	Sewage Material				
Sample No.	S-1	S-3	S-6	S-8	S-9
Latitude (°N) Longitude (°W)	a	b	c	d	e
Sample Size, liters	1.0	1.0	0.5	1.0	1.0
Collection Date	190580	200580	200580	230580	230580
Naphthalene	2.2	2.1	1.6	1.5	1.4
2-Methylnaphthalene	3.4	3.1	.86	2.8	6.9
1- "	2.0	1.7	.26	1.5	.66
Biphenyl	1.0	1.2	< .06	.89	.09
Dibenzothiophene	< .08	< .08	< .08	< .08	< .06
Phenanthrene	.35	.36	.11	.33	.16
Anthracene	< .04	< .04	< .04	< .04	< .03
1-Methylphenanthrene	.12	.09	< .06	< .08	< .06
Fluoranthene	.08	.17	.21	< .08	< .08
Pyrene	.10	.13	< .08	< .08	< .06
Benz(*a*)anthracene	< .16	< .16	< .18	< .16	< .12
Chrysene	< .08	< .08	< .08	< .08	< .06
Benzo(*e*)pyrene	< .08	< .12	< .12	< .12	< .09
Benzo(*a*)pyrene	< .12	< .12	< .14	< .12	< .09
Perylene	< .12	< .12	< .12	< .08	< .09

a. Treatment Plant Effluent Composite:
 500mL Owl's Head
 750mL Ward's Is.
 750mL Newton Crk.

b. Treatment Plant Effluent Composite:
 500mL Owl's Head
 750mL Newton Crk.
 750mL Ward's Is.

c. Untreated Sewage Composite:
 250mL Regulator N-16 (Dykman Ave. and Hudson R.)
 250mL Regulator N-18 (172nd St. and Hudson R.)

d. Treatment Plant Effluent Composite:
 500mL Owl's Head
 750mL Newton Crk.
 750mL Ward's Is.

e. Untreated Sewage Composite:
 500mL Regulator N-16 (Dykman Ave. and Hudson R.)
 500mL Regulator N-18 (172nd St. and Hudson R.)

A25. Concentrations of target compounds in sewage effluent, in µg/L (Cont.).

Substrate	Sewage Material				
Sample No.	S-1	S-3	S-6	S-8	S-9
Latitude (°N) Longitude (°W)	a	b	c	d	e
Sample Size, liters	1.0	1.0	0.50	1.0	1.0
1,2-Dibromo-3-chloropropane	< .005	< .005	< .008	< .004	< .004
Hexachlorobenzene	< .001	< .001	< .003	< .001	< .001
Lindane	< .001	< .001	< .003	< .001	< .001
Heptachlor	< .002	< .002	< .003	< .002	< .002
Aldrin	< .002	< .002	< .003	< .002	< .002
o,p'-DDE	< .005	< .005	< .009	< .005	< .004
α-Chlordane	.01	.01	.01	.01	.01
trans-Nonachlor	.01	< .003	.01	.01	.01
Dieldrin	< .002	< .002	< .004	< .002	< .002
p,p'-DDE	.01	< .003	.01	< .003	.02
o,p'-DDD	< .004	< .004	< .007	< .003	< .003
Endrin	< .004	< .004	< .006	< .003	< .003
m,p'-DDD	< .005	< .005	< .007	< .004	< .003
p,p'-DDD/o,p'-DDT	.01	< .008	.01	.01	.01
p,p'-DDT	< .003	< .004	< .005	< .003	< .002
Mirex	< .002	< .003	< .005	< .002	< .002
Chlorobiphenyls	< .02	< .01	.05	< .03	< .02
Dichlorobiphenyls	.02	.02	.03	.02	.02
Trichlorobiphenyls	.04	.03	.17	.03	.14
Tetrachlorobiphenyls	.16	.15	.49	.12	.49
Pentachlorobiphenyls	.08	.06	.20	.08	.15
Hexachlorobiphenyls	.02	.03	.12	.04	.12
ΣPolychlorinatedbiphenyls	.32	.29	1.01	.29	.92
" " (PPM,wet)	-	-	-	-	-

a. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Ward's Is.
750mL Newton Crk.

b. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Newton Crk.
750mL Ward's Is.

c. Untreated Sewage Composite:
250mL Regulator N-16 (Dykman Ave. and Hudson R.)
250mL Regulator N-18 (172nd St. and Hudson R.)

d. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Newton Crk.
750mL Ward's Is.

e. Untreated Sewage Composite:
500mL Regulator N-16 (Dykman Ave. and Hudson R.)
500mL Regulator N-18 (172nd St. and Hudson R.)

A25$_{\ell}$. Lower quantitation limits for target compounds in sewage effluent, in µg/L.

Substrate	Sewage Material				
Sample No.	S-1	S-3	S-6	S-8	S-9
Latitude (°N) Longitude (°W)	a	b	c	d	e
Sample Size, liters	1.0	1.0	0.5	1.0	1.0
Collection Date	190580	200580	200580	230580	230580
Naphthalene	.04	.04	.06	.04	.03
2-Methylnaphthalene	.04	.04	.06	.04	.03
1- "	.04	.04	.06	.04	.03
Biphenyl	.04	.04	.06	.04	.03
Dibenzothiophene	.08	.08	.08	.04	.06
Phenanthrene	.04	.08	.06	.04	.06
Anthracene	.04	.04	.04	.04	.03
1-Methylphenanthrene	.08	.08	.06	.08	.06
Fluoranthene	.08	.08	.08	.08	.06
Pyrene	.08	.08	.08	.08	.06
Benz(*a*)anthracene	.16	.16	.18	.16	.12
Chrysene	.08	.08	.08	.08	.06
Benzo(*e*)pyrene	.08	.12	.12	.12	.09
Benzo(*a*)pyrene	.12	.12	.14	.12	.09
Perylene	.12	.12	.12	.08	.09

a. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Ward's Is.
750mL Newton Crk.

b. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Newton Crk.
750mL Ward's Is.

c. Untreated Sewage Composite:
250mL Regulator N-16 (Dykman Ave. and Hudson R.)
250mL Regulator N-18 (172nd St. and Hudson R.)

d. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Newton Crk.
750mL Ward's Is.

e. Untreated Sewage Composite:
500mL Regulator N-16 (Dykman Ave. and Hudson R.)
500mL Regulator N-18 (172nd St. and Hudson R.)

A25$_{\ell}$. Lower quantitation limits for target compounds in sewage effluent, in μg/L (Cont.).

Substrate	Sewage Material				
Sample No.	S-1	S-3	S-6	S-8	S-9
Latitude (°N) Longitude (°W)	a	b	c	d	e
Sample Size, liters	1.0	1.0	0.50	1.0	1.0
1,2-Dibromo-3-chloropropane	.005	.005	.008	.004	.004
Hexachlorobenzene	.001	.001	.003	.001	.001
Lindane	.001	.001	.003	.001	.001
Heptachlor	.002	.002	.003	.002	.002
Aldrin	.002	.002	.003	.002	.002
o,p'-DDE	.005	.005	.009	.005	.004
α-Chlordane	.003	.003	.005	.002	.002
trans-Nonachlor	.003	.003	.005	.002	.002
Dieldrin	.002	.002	.004	.002	.002
p,p'-DDE	.003	.003	.005	.003	.002
o,p'-DDD	.004	.004	.007	.003	.003
Endrin	.004	.004	.006	.003	.003
m,p'-DDD	.005	.005	.007	.004	.003
p,p'-DDD/o,p'-DDT	.008	.008	.012	.006	.006
p,p'-DDT	.003	.003	.005	.003	.002
Mirex	.002	.003	.005	.002	.002
Chlorobiphenyls	.018	.014	.050	.025	.023
Dichlorobiphenyls	.014	.014	.030	.014	.013
Trichlorobiphenyls	.007	.008	.015	.008	.007
Tetrachlorobiphenyls	.004	.005	.009	.005	.004
Pentachlorobiphenyls	.013	.013	.024	.012	.011
Hexachlorobiphenyls	.011	.012	.024	.012	.011
ΣPolychlorinatedbiphenyls	-	-	-	-	-
" " (PPM, wet)	-	-	-	-	-

a. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Ward's Is.
750mL Newton Crk.

b. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Newton Crk.
750mL Ward's Is.

c. Untreated Sewage Composite:
250mL Regulator N-16 (Dykman Ave. and Hudson R.)
250mL Regulator N-18 (172nd St. and Hudson R.)

d. Treatment Plant Effluent Composite:
500mL Owl's Head
750mL Newton Crk.
750mL Ward's Is.

e. Untreated Sewage Composite:
500mL Regulator N-16 (Dykman Ave. and Hudson R.)
500mL Regulator N-18 (172nd St. and Hudson R.)

APPENDIX B

BROAD SEARCH COMPOUNDS

Of the 255 New York Bight samples analyzed, 26 were selected by the MESA/New York Bight Project for a more extensive screening for organic pollutants ("Broad Search"). Tables B1-B2 list compounds detected in addition to the Target Compounds (Appendix A), using gas chromatography/mass spectrometry. Because reference standards were not generally on hand for compounds found in the Broad Search, quantitations are only approximate to the first significant figure. Units are as indicated, on a dry-weight basis.

Table B1. Concentrations of broad search compounds in selected surface microlayer (µg/L), plankton, mackerel, and flounder samples (ng/g).

Substrate	Surface Microlayer			Plankton			Mackerel Liver	Mackerel Roe	Winterflounder Liver		Windowpane Flounder	
Location	#3 Red	#5 Red	#5 Green	#3 Red	#5 Red	#5 Green	N.Y. Bight Apex		Raritan Bay		Station 1 1978	
Latitude (°N)	39°41'	40°30'	40°12'	39°41'	40°30'	40°12'	40°30'	40°30'	40°28'	40°28'	40°24'	40°24'
Longitude (°W)	74° 0'	73°56'	73°50'	74° 0'	73°56'	73°50'	73°50'	73°50'	74° 3'	74° 3'	73°42'	73°42'
Sample Size (wet)	1L	1L	1L	10g	10g	10g	10g	10g	10g	10g	10g	10g
Dry Weight (%)	--	--	--	9	10	12	24	23	26	29	19	19
C_3-Benzenes	-	-	-	1000	200	800	60	60	600	600	-	-
C_4- "	-	-	-	600	400	300	-	60	-	200	-	-
C_5- "	-	-	-	200	600	30	-	-	-	200	-	-
C_6- "	-	-	-	-	-	-	-	-	-	-	-	-
C_7- "	-	-	-	-	-	-	-	-	-	-	-	-
C_8- "	-	100	60	100	-	-	-	-	-	-	-	-
C_9- "	70	70	-	60	300	-	-	-	-	-	-	-
C_{10}- "	-	-	-	-	-	80	-	-	-	-	-	-
C_{11}- "	-	-	-	-	90	300	-	-	-	-	-	-
C_{12}- "	-	-	-	60	200	400	-	-	-	-	-	-
C_3-Cyclohexanes	-	-	-	-	-	-	-	-	200	-	-	-
Limonene	-	-	-	-	-	-	-	-	-	-	-	-
Methyl styrenes	-	400	70	-	-	-	-	-	-	-	-	-
Indan	-	80	-	-	-	-	-	-	-	-	-	-
C_2-Indans	-	-	-	-	-	-	-	-	-	-	-	-
C_3- "	-	-	-	-	-	-	-	-	-	-	-	-
C_4- "	-	-	-	-	-	-	-	-	-	-	-	-
C_5- "	-	-	-	-	-	-	-	-	-	-	-	-
Decalin	-	-	-	-	-	-	-	-	-	-	-	-
C_2-Decalins	-	-	-	-	-	-	-	-	-	-	-	-
Tetralin	-	-	-	-	-	-	-	-	-	-	-	-
C_2-Tetralins	-	-	-	-	-	-	-	-	1000	-	-	-
C_4- "	-	-	-	-	-	-	-	-	-	-	-	-
C_3-Dihydronaphthalenes	-	-	-	-	-	-	200	-	-	-	-	-

Table B1. Concentrations of broad search compounds in selected surface microlayer (µg/L), plankton, mackerel, and flounder samples (ng/g) (Cont.).

Substrate	Surface Microlayer			Plankton			Mackerel Liver	Mackerel Roe	Winterflounder Liver		Windowpane Flounder	
Location	#3 Red	#5 Red	#5 Green	#3 Red	#5 Red	#5 Green	N.Y. Bight Apex		Raritan Bay		Station 1 1978	
Latitude (°N) Longitude (°W)	39°41' 74° 0'	40°30' 73°56'	40°12' 73°50'	39°41' 74° 0'	40°30' 73°56'	40°12' 73°50'	40°30' 73°50'	40°30' 73°50'	40°28' 74° 3'	40°28' 74° 3'	40°24' 73°42'	40°24' 73°42'
Sample Size (wet) Dry Weight (%)	1L --	1L --	1L --	10g 9	10g 10	10g 12	10g 24	10g 23	10g 26	10g 29	10g 19	10g 19
C_2-Naphthalenes	-	200	70	400	200	-	-	-	-	-	-	-
C_3- "	-	-	-	800	200	-	-	-	-	-	-	-
C_4- "	-	-	-	400	-	100	-	-	-	-	-	-
C_5- "	-	-	-	60	-	-	-	-	-	-	-	-
Methylbiphenyls	-	-	-	100	100	100	50	200	200	50	-	-
C_2-Biphenyls	-	-	-	100	-	-	-	-	-	-	-	-
C_3- "	-	-	-	300	-	50	-	-	-	-	-	-
C_4- "	-	-	-	-	-	-	20	-	-	-	-	-
C_5- "	-	-	-	-	-	-	20	-	-	-	-	-
C_6- "	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	-	-	-	-	-	100	-	-	-	-	-	-
Methylacenaphthenes	-	-	-	-	-	-	-	-	-	-	-	-
C_2-Acenaphthenes	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	-	-	-	-	-	-	-	-	-	-	-	-
Methylfluorenes	-	-	-	-	20	-	-	-	-	-	-	-
C_2-Fluorenes	-	-	-	-	-	-	-	-	-	-	-	-
C_3- "	-	-	-	-	-	-	-	-	-	-	-	-
C_4- "	-	-	-	-	-	-	-	-	-	-	-	-
Methylenephenanthrene	-	-	-	200	100	-	20	-	-	-	-	-
Methylphen./anthracenes	-	-	-	-	100	30	-	-	-	-	-	-
C_2-Phen./anthracenes	-	-	-	100	70	-	-	-	-	-	-	-
C_3- "	-	-	-	800	-	-	-	-	-	-	-	-
C_4- "	-	-	-	-	-	-	-	-	-	-	-	-
C_5- "	-	-	-	-	-	-	-	-	-	-	-	-

Table B1. Concentrations of broad search compounds in selected surface microlayer (μg/L), plankton, mackerel, and flounder samples (ng/g) (Cont.).

Substrate	Surface Microlayer			Plankton			Mackerel Liver	Mackerel Roe	Winterflounder Liver		Windowpane Flounder	
Location	#3 Red	#5 Red	#5 Green	#3 Red	#5 Red	#5 Green	N.Y. Bight Apex		Raritan Bay		Station I 1978	
Latitude (°N)	39°41'	40°30'	40°12'	39°41'	40°30'	40°12'	40°30'	40°30'	40°28'	40°28'	40°24'	40°24'
Longitude (°W)	74° 0'	73°56'	73°50'	74° 0'	73°56'	73°50'	73°50'	73°50'	74° 3'	74° 3'	73°42'	73°42'
Sample Size (wet)	1L	1L	1L	10g	10g	10g	10g	10g	10g	10g	10g	10g
Dry Weight (%)	--	--	--	9	10	12	24	23	26	29	19	19
Dibenzoheptafulvene	-	-	-	-	-	-	-	-	-	-	-	-
Phenylnaphthalenes	-	-	-	-	-	-	-	-	-	-	-	-
Benzylnaphthalenes	-	-	-	-	-	-	-	-	-	-	-	-
Methylfluoran./pyrenes	-	-	-	-	-	-	-	-	-	-	-	-
C_2-Fluoran./pyrenes	-	-	-	-	-	-	-	-	-	-	-	-
C_3- "	-	-	-	-	-	-	-	-	-	-	-	-
C_4- "	-	-	-	-	-	-	-	-	-	-	-	-
Benzofluorenes	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(c)phenanthrene	-	-	-	-	-	-	-	-	-	-	-	-
Triphenylene	-	-	-	-	-	-	-	-	-	-	-	-
Methylbenzanth./chrysenes	-	-	-	-	-	-	-	-	-	-	-	-
C_2-Benzanth./chrysenes	-	-	-	-	-	-	-	-	-	-	-	-
Terphenyl	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b) "	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(j) "	-	-	-	-	-	-	-	-	-	-	-	-
Binaphthyl	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(c)chrysene	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-c,d)pyrene	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-	-	-

Table B1. Concentrations of broad search compounds in selected surface microlayer (μg/L), plankton, mackerel, and flounder samples (ng/g) (Cont.).

Substrate	Surface Microlayer			Plankton			Mackerel Liver	Mackerel Roe	Winterflounder Liver		Windowpane Flounder	
Location	#3 Red	#5 Red	#5 Green	#3 Red	#5 Red	#5 Green	N.Y. Bight Apex		Raritan Bay		Station 1 1978	
Latitude (°N)	39°41'	40°30'	40°12'	39°41'	40°30'	40°12'	40°30'	40°30'	40°28'	40°28'	40°24'	40°24'
Longitude (°W)	74° 0'	73°56'	73°50'	74° 0'	73°56'	73°50'	73°50'	73°50'	74° 3'	74° 3'	73°42'	73°42'
Sample Size (wet)	1L	1L	1L	10g	10g	10g	10g	10g	10g	10g	10g	10g
Dry Weight (%)	--	--	--	9	10	12	24	23	26	29	19	19
Benzothiophene	-	-	-	-	-	-	-	-	-	-	-	-
Methyldibenzothiophenes	-	-	-	-	-	-	-	-	-	-	-	-
C_2-Dibenzothiophenes	-	-	-	-	-	-	-	-	-	-	-	-
C_3- "	-	-	-	-	-	-	-	-	-	-	-	-
Naphthobenzothiophenes	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthobenzothio.	-	-	-	-	-	-	-	-	-	-	-	-
C_{14}-Methylesters	-	-	-	-	-	-	-	-	500	-	-	-
C_{15}- "	-	-	-	-	-	-	-	-	400	-	-	-
Camphor	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	-	-	-	-	-	-	-
Methyldibenzofurans	-	-	-	-	-	-	-	-	-	-	-	-
Xanthene	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthroquinone	-	-	-	-	-	-	-	-	-	-	-	-
Phthalates	1000	1000	1000	100	100	200	60	800	-	-	-	-
Phenol	-	-	-	-	-	-	20	-	-	-	-	-
BHT	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzenes	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzenes	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorotoluenes	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorotoluenes	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachlorotoluenes	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorotoluenes	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlorobiphenyls	-	-	-	-	-	-	-	-	-	-	-	-
γ-Chlordane	-	-	-	-	-	-	-	-	-	-	-	-
γ-Chlordene	-	-	-	-	-	-	-	-	-	-	-	-

Table B2. Concentrations of broad search compounds in selected lobster, mussel, sediment, dredge (ng/g), and sewage sludge samples (µg/L).

Substrate	Lobster Digest. Glands		Lobster Tissue		Blue Mussel		Bottom Sediments			Dredged Material			Sewage Sludge	
Location	Raritan Bay				Sandy Hook	Shark R Inlet	Lower Bay	Christ. Basin	Outer Bight	Newtown Creek	Gowanus Canal	Pierhd Channel	Composite 3 Stations	
Latitude (°N)	40°33'	40°33'	40°33'	40°33'	40°26'	40°11'	40°28'	40°25'	39° 0'	40°44'	40°40'	40°40'	(Ward's Is., Hunt'	
Longitude (°W)	74° 5'	74° 5'	74° 5'	74° 5'	73°59'	74° 1'	74° 2'	73°48'	72°55'	73°56'	74° 1'	74° 9'	Pt., Newton Cr.)	
Sample Size (wet)	10g	10g	10g	10g	10g	10g	100g	98g	109g	108g	98g	98g	0.1L	0.1L
Dry Weight (%)	18	24	16	17	17	19	46	54	83	47	43	54	--	--
C_3-Benzenes	4	-	9	8	500	200	-	200	3	-	400	100	100	200
C_4- "	-	1	-	-	-	100	-	20	-	-	100	100	70	600
C_5- "	-	-	-	-	-	-	-	-	-	-	50	60	300	200
C_6- "	3	-	-	-	-	-	-	-	-	-	100	-	100	40
C_7- "	-	-	-	-	-	-	-	-	-	-	-	-	-	30
C_8- "	-	-	-	-	-	-	-	-	-	-	-	60	30	-
C_9- "	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C_{10}- "	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C_{11}- "	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C_{12}- "	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C_3-Cyclohexanes	-	-	-	-	-	100	-	-	-	-	-	-	-	20
Limonene	-	-	-	-	-	-	-	70	-	-	-	-	-	70
Methyl styrenes	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Indan	-	2	-	-	40	20	-	9	0.4	-	10	60	-	-
C_2-Indans	-	-	-	-	-	-	-	-	-	-	-	-	80	70
C_3- "	-	-	-	-	-	-	-	-	-	-	100	40	20	100
C_4- "	-	-	-	-	-	-	-	-	-	-	30	-	5	-
C_5- "	-	-	-	-	-	10	-	-	-	-	-	100	5	-
Decalin	-	-	-	-	-	-	-	-	-	-	-	-	50	50
C_2-Decalins	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetralin	-	-	-	-	-	-	-	-	-	-	-	-	-	20
C_2-Tetralins	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C_4- "	10	-	1	-	-	-	-	-	-	-	-	-	-	-
C_3-Dihydronaphthalenes	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table B2. Concentrations of broad search compounds in selected lobster, mussel, sediment, dredge (ng/g), and sewage sludge samples (µg/L) (Cont.).

Substrate	Lobster Digest. Glands		Lobster Tissue		Blue Mussel		Bottom Sediments			Dredged Material			Sewage Sludge	
Location	Raritan Bay				Sandy Hook	Shark R Inlet	Lower Bay	Christ. Basin	Outer Bight	Newtown Creek	Gowanus Canal	Pierhd Channel	Composite 3 Stations	
Latitude (°N) Longitude (°W)	40°33' 74° 5'	40°33' 74° 5'	40°33' 74° 5'	40°33' 74° 5'	40°26' 73°59'	40°11' 74° 1'	40°28' 74° 2'	40°25' 73°48'	39° 0' 72°55'	40°44' 73°56'	40°40' 74° 1'	40°40' 74° 9'	(Ward's Is., Hunt's Pt., Newton Cr.)	
Sample Size (wet) Dry Weight (%)	10g 18	10g 24	10g 16	10g 17	10g 17	10g 19	100g 46	98g 54	109g 83	108g 47	98g 43	98g 54	0.1L --	0.1L --
C_2-Naphthalenes	5	-	-	-	-	40	5	200	-	600	1000	400	400	600
C_3- "	6	20	-	-	-	20	10	100	-	400	3000	600	600	800
C_4- "	20	7	2	-	-	-	-	9	-	400	4000	600	300	500
C_5- "	-	-	-	-	-	-	-	-	-	100	800	500	50	80
Methylbiphenyls	7	-	4	4	-	300	2	20	1	30	1000	100	50	200
C_2-Biphenyls	10	10	-	-	-	-	-	40	-	-	4000	80	30	80
C_3- "	20	5	-	-	-	-	-	-	-	60	700	80	90	100
C_4- "	90	-	-	-	-	-	-	-	-	90	200	400	-	30
C_5- "	100	-	-	-	-	-	-	-	-	-	100	30	-	-
C_6- "	-	-	-	-	-	-	-	-	-	-	-	50	-	-
Acenaphthene	-	-	-	-	-	-	-	40	-	500	500	80	-	-
Methylacenaphthenes	-	-	-	-	-	-	-	-	-	-	-	-	-	70
C_2-Acenaphthenes	-	-	-	-	-	-	-	-	-	-	200	-	-	60
Acenaphthylene	4	7	-	-	-	-	-	20	-	30	-	-	-	-
Fluorene	8	5	-	-	-	10	-	40	0.4	400	300	40	30	30
Methylfluorenes	-	-	-	-	-	-	-	-	-	200	700	40	30	200
C_2-Fluorenes	-	-	-	-	-	-	1	-	-	80	2000	100	70	200
C_3- "	-	-	-	-	-	-	10	-	-	-	700	500	30	30
C_4- "	-	-	-	-	-	-	-	-	0.4	-	-	50	-	-
Methylenephenanthrene	-	30	-	-	-	10	10	-	-	-	2000	200	-	-
Me-Phen./anthracenes	-	-	-	-	-	100	1	300	0.3	800	200	500	200	300
C_2- " "	50	60	-	-	40	-	2	100	-	500	3000	800	200	300
C_3- " "	30	-	-	-	-	-	2	-	-	200	1000	400	50	90
C_4- " "	-	-	-	-	-	-	-	20	-	-	300	100	20	20
C_5- " "	-	-	-	-	-	-	-	-	-	-	-	-	5	-

Table B2. Concentrations of broad search compounds in selected lobster, mussel, sediment, dredge (ng/g), and sewage sludge samples (μg/L) (Cont.).

Substrate	Lobster Digest. Glands		Lobster Tissue		Blue Mussel		Bottom Sediments			Dredged Material			Sewage Sludge	
Location	Raritan Bay				Sandy Hook	Shark R Inlet	Lower Bay	Christ. Basin	Outer Bight	Newtown Creek	Gowanus Canal	Pierhd Channel	Composite 3 Stations	
Latitude (°N)	40°33'	40°33'	40°33'	40°33'	40°26'	40°11'	40°28'	40°25'	39° 0'	40°44'	40°40'	40°40'	(Ward's Is., Hunt's	
Longitude (°W)	74° 5'	74° 5'	74° 5'	74° 5'	73°59'	74° 1'	74° 2'	73°48'	72°55'	73°56'	74° 1'	74° 9'	Pt., Newton Cr.)	
Sample Size (wet)	10g	10g	10g	10g	10g	10g	100g	98g	109g	108g	98g	98g	0.1L	0.1L
Dry Weight (%)	18	24	16	17	17	19	46	54	83	47	43	54	--	--
Dibenzoheptafulvene	-	-	-	-	-	-	1	20	-	100	400	60	-	10
Phenylnaphthalenes	-	-	-	-	-	-	-	-	-	80	-	-	20	-
Benzylnaphthalenes	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Me-Fluoranth./pyrenes	30	30	-	-	-	-	10	100	-	200	1000	400	10	5
C_2- " "	-	-	-	-	-	-	2	70	-	-	400	40	3	-
C_3- " "	-	-	-	-	-	-	-	-	-	-	40	-	3	-
C_4- " "	-	-	-	-	-	-	-	-	-	-	10	30	-	-
Benzofluorenes	-	-	-	-	-	-	-	20	-	100	-	50	-	-
Benzo(g,h,i)fluoranthene	-	-	-	-	-	-	3	-	-	-	-	40	-	20
Benzo(c)phenanthrene	-	-	-	-	-	-	-	20	-	-	100	-	-	-
Triphenylene	-	-	-	-	-	-	-	-	-	40	40	60	-	-
Me-Benzanthr./chrysenes	20	-	-	-	-	-	2	-	-	30	300	100	8	20
C_2- " "	-	-	-	-	-	-	-	-	-	-	50	-	8	-
Terphenyl	10	10	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k) fluoranthene	5	30	-	-	-	-	6	50	0.2	-	60	70	5	20
Benzo(b) "	-	10	-	-	-	-	8	50	0.2	40	60	80	5	20
Benzo(j) "	30	-	-	-	-	-	1	-	-	-	10	20	-	-
Binaphthyl	-	-	-	-	-	-	-	-	-	-	30	-	-	-
Benzo(c)chrysene	-	-	-	-	-	-	-	5	-	-	6	5	-	-
Dibenz(a,h)anthracene	-	-	-	-	-	-	-	9	-	-	-	5	-	-
Indeno(1,2,3-c,d)pyrene	-	-	-	-	-	-	2	9	-	-	-	20	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	2	9	-	-	-	10	-	-

Table B2. Concentrations of broad search compounds in selected lobster, mussel, sediment, dredge (ng/g), and sewage sludge samples (µg/L) (Cont.)

Substrate	Lobster Digest. Glands		Lobster Tissue		Blue Mussel		Bottom Sediments			Dredged Material			Sewage Sludge	
Location	Raritan Bay				Sandy Hook	Shark R Inlet	Lower Bay	Christ. Basin	Outer Bight	Newtown Creek	Gowanus Canal	Pierhd Channel	Composite 3 Stations	
Latitude (°N) Longitude (°W)	40°33' 74° 5'	40°33' 74° 5'	40°33' 74° 5'	40°33' 74° 5'	40°28' 73°59'	40°11' 74° 1'	40°28' 74° 2'	40°25' 73°48'	39° 0' 72°55'	40°44' 73°56'	40°40' 74° 1'	40°40' 74° 9'	(Ward's Is., Hunt's Pt., Newton Cr.)	
Sample Size (wet)	10g	10g	10g	10g	10g	10g	100g	98g	109g	108g	98g	98g	0.1L	0.1L
Dry Weight (%)	18	24	16	17	17	19	46	54	83	47	43	54	--	--
Benzothiophene	-	-	-	-	-	-	-	-	-	100	-	-	-	-
Me-Dibenzothiophenes	-	-	-	-	-	-	1	30	-	100	400	60	20	4
C_2- " "	-	-	-	-	-	-	1	20	-	50	800	80	30	10
C_3- " "	-	-	-	-	-	-	1	20	-	-	-	-	-	-
Naphthobenzothiophenes	-	-	-	-	-	-	2	20	-	-	-	-	-	-
Me-Naphthobenzothiophenes	-	-	-	-	-	-	-	-	-	-	90	-	-	-
C_{14}-Methylesters	-	-	-	-	-	-	-	-	-	-	80	-	-	-
C_{15}- "	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Camphor	-	-	-	-	-	100	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	-	-	9	-	300	-	60	-	-
Methyldibenzofurans	-	-	-	-	-	-	-	-	-	300	-	-	-	-
Xanthene	-	-	-	-	-	-	-	-	-	-	200	70	-	-
Phenanthroquinone	-	-	-	-	-	-	-	20	-	-	-	-	-	-
Phthalates	10	-	-	-	-	1000	50	400	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	1	30	-	-	-	-	-	-
BHT	-	-	-	-	-	100	5	80	-	-	-	10	-	6
Dichlorobenzenes	-	2	-	-	-	40	3	100	0.4	-	30	100	70	9
Trichlorobenzenes	-	2	-	-	-	-	-	-	-	-	60	100	10	2
Dichlorotoluenes	-	-	1	-	-	-	1	60	-	-	-	-	-	-
Trichlorotoluenes	-	30	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachlorotoluenes	-	10	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorotoluenes	-	6	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlorobiphenyls	30	70	-	-	-	-	-	90	-	-	-	-	-	-
γ-Chlordane	6	10	-	-	-	20	-	-	-	-	-	-	-	-
γ-Chlordene	-	20	-	-	-	-	-	-	-	-	-	-	-	-

☆ U. S. GOVERNMENT PRINTING OFFICE 1981 - 576-001/1205 Reg. 8