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Analysis of organic pollutants in sediments and blue crab (Callinectes sapidus) tissues : final report to Virginia State Water Control Board

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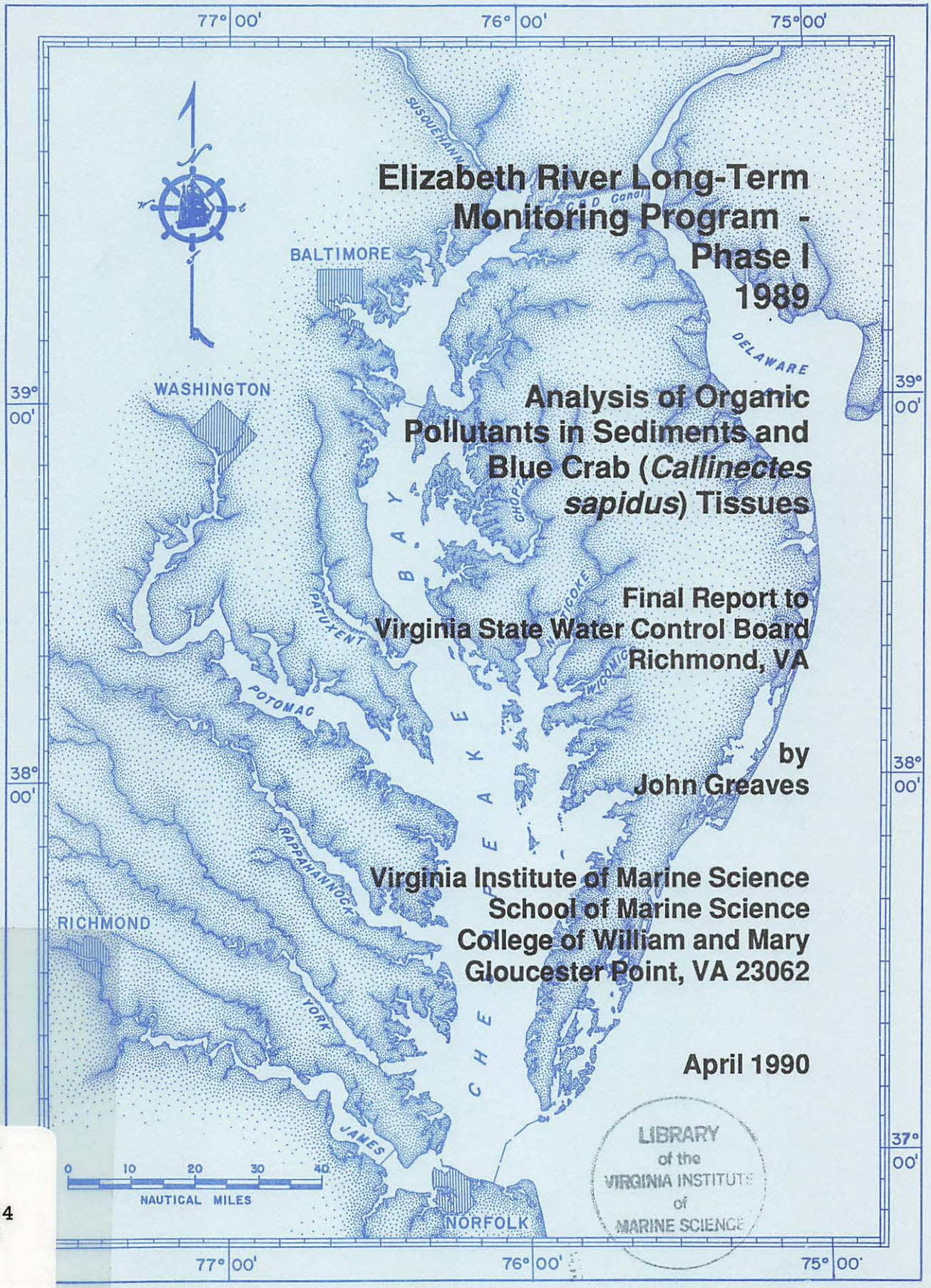

Elizabeth River Long-Term Monitoring Program - Phase I 1989

Analysis of Organic Pollutants in Sediments and Blue Crab (*Callinectes sapidus*) Tissues

Final Report to
Virginia State Water Control Board
Richmond, VA

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Acknowledgements

The author wishes to thank the many individuals who contributed to the current report. In the process of undertaking this type of work each person in the process is vital -- from those who head a section of the project to those who keep the glassware clean. I have therefore chosen to list the contributors alphabetically.

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Rob Hale

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Robert Huggett

Robby Mothershead

Harold Slone

Craig Smith

Shirley Sterling

Ellen Travelstead

George Vadas

To all, my thanks.

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Introduction

The Elizabeth River is a highly industrialized waterway that divides the cities of Norfolk and Portsmouth at its confluence with the lower Chesapeake Bay. It is home to the largest Naval base on the East Coast, numerous ship repair facilities, bulk and containerized cargo facilities, industrial and urban activities and wood creosoting (preserving) operations (all except one have been abandoned). This degree of industrialization has resulted in the pollution of the river, with high concentrations of polynuclear aromatic hydrocarbons (PAH, Bieri et al., 1986). A major contributor to the pollution problem has been the wood processing industry which, due to industrial accidents and spillage, allowed creosote to enter the river.

In FY89 the Virginia Water Control Board (VWCB) began an Elizabeth River Long-term Monitoring Program (ERLMP) to monitor the state of the river and the efficacy of efforts to improve the quality of the waterway. The ERLMP encompassed work conducted by Old Dominion University (ODU) and the Virginia Institute of Marine Science (VIMS), College of William and Mary. The work undertaken by VIMS is contained within this report and covers the following items:

a) Analysis of subfractions from sediments obtained by ODU (for bioassays) for organic contaminants including PAH, polar organics, organochlorines and tributyltin (TBT).

b) Analysis of muscle and hepatopancreas tissues from blue crabs (Callinectes sapidus) for PAH and organochlorines to determine the presence of bioaccumulated compounds.

The analytical techniques used were based on solvent extraction of the samples, followed by liquid chromatographic cleanup and fractionation. High resolution gas chromatography (GC), in concert with flame ionization, electrolytic conductivity and mass spectrometric detection, was used to provide qualitative and quantitative information. The GC techniques used are capable of detecting hundreds of compounds in a single sample. As a consequence, massive amounts of information are accumulated. This requires the use of computers to record, manipulate and provide access to the data. Data systems are available to handle the output from GC and to provide limited data manipulation, with the aid of specialized software. Data must also be accessible to investigators and regulators not intimately connected with the analyses and organized such that it can be searched efficiently by parameters such as compound type, industry, geographical area and date of the analysis. Such a data base, the Virginia Toxics Database, was created between 1985 and 1988. The current data has been entered into that database as per the contract.

Although many of the GC resolved compounds may be identified by their mass spectra and retention times, a large number remain unidentified due to a lack of adequate spectra, available reference standards or library spectra. An Aromatic Retention Index (ARI) system has been applied to the analysis of the environmental samples to aid in the identification process. This system allows the tracking of both identified and unidentified compounds, and is a prominent feature of the database retrieval system. Researchers may re-examine previously collected data and update compound

identities as new data becomes available. The ARI system has been implemented for the nonpolar aromatic fraction, where its success has resulted in interest in expanding its application to the polar fractions. Compounds present in the polar fractions have not been as completely characterized as those in the nonpolar fractions. Halogenated compounds detected in the samples were primarily polychlorinated biphenyls (PCB). These compounds were compared to Aroclor standards and quantifications were based on Aroclor equivalents and entered in the database as such.

The sites examined are listed in Table 1 (sediments) and Table 2 (blue crabs). The locations of the sites in the Elizabeth River system are indicated on the accompanying map (Figure 1).

Table 1
Elizabeth R. Long-Term Monitoring Project
Sediment Stations, June 1989

Station	Sample Date	Latitude	Longitude	Comments
ELI1	06/08/1989	36/57/01	76/20/13	
ELI2	06/05/1989	36/52/54	76/20/10	
ELI3	06/08/1989	36/61/34	76/18/55	
LAF1	06/08/1989	36/54/19	76/18/20	
WBE1	06/05/1989	36/50/38	76/21/39	
EBE1	06/05/1989	36/50/26	76/17/14	
EBE2	06/05/1989	36/50/20	76/16/31	
SBE1C	06/05/1989	36/50/05	76/17/37	
SBE1L	06/05/1989	36/50/05	76/17/35	Estimated position
SBE1R	06/05/1989	36/50/05	76/17/39	Estimated position
SBE2C	06/05/1989	36/48/45	76/17/27	
SBE2L	06/05/1989	36/48/45	76/17/25	Estimated position
SBE2R	06/05/1989	36/48/45	76/17/29	Estimated position
SBE3C	06/08/1989	36/47/22	76/18/08	
SBE3L	06/08/1989	36/47/22	76/18/03	
SBE3R	06/08/1989	36/47/24	76/18/10	
SBE4C	06/08/1989	36/46/33	76/17/58	
SBE4L	06/08/1989	36/46/35	76/18/02	
SBE4R	06/08/1989	36/46/32	76/18/01	
SBE5C	06/08/1989	36/46/10	76/17/48	
SBE5L	06/08/1989	36/46/10	76/17/46	
SBE5R	06/08/1989	36/46/11	76/17/50	
NR87	06/08/1989	36/53/19	76/28/12	
TSI	06/08/1989	36/59/44	76/10/11	

Station Descriptions

ELI1 - Eliz. R., off Norfolk Naval Shipyard
ELI2 - Eliz. R., off SE corner of Craney Island
EL13 - Eliz. R., off Portsmouth International Terminal
LAF1 - Lafayette R., west side Hampton Blvd. Bridge
WBE1 - Eliz. R., W Br., north side Hwy. 17 Bridge
EBE1 - Eliz. R., E.Br., west side Berkley Bridge
EBE2 - Eliz. R., E. Br., wet side Compostella Bridge
SBE1C - Eliz. R., S. Br., mid-channel off Norshipco Berkley
SBE1L - Eliz. R., S Br., across from Norshipco Berkley
SBE1R - Eliz. R., S Br., off Norshipco Berkley Plant
SBE2C - Eliz. R., S Br., mid-channel at Atlantic Wood
SBE2L - Eliz. R., S Br., across channel from Atlantic Wood
SBE2R - Eliz. R., S Br., off Atlantic Wood
SBE3C - Eliz. R., S Br., mid-channel off Eppinger & Russel
SBE3L - Eliz. R., S Br., off Eppiner & Russel
SBE3R - Eliz. R., S Br., across channel from Eppiner & Russel
SBE4C - Eliz. R., S Br., mid-channel N. of Gilmerton Bridge
SBE4L - Eliz. R., S Br., E. of channel, N.of Gilmerton Bridge

Table 1 (continued)

SBE4R - Eliz. R., S Br., W. of channel, N. of Gilmerton Bridge
SBE5C - Eliz. R., S Br., mid-channel off Virginia Power
SBE5L - Eliz. R., S Br., E. of channel, off Virginia Power
SBE5R - Eliz. R., S Br., W. of channel, off Virginia Power
NR87 - Nansemond R.
TS1 -Thimble Shoals

Table 2

Elizabeth R. Long-Term Monitoring Project
Tissue (Blue Crab), Stations, June 1989

Station	Sample Date	Latitude	Longitude	Comments
ELI2	06/02/1989	36/53/06	76/21/00	Muscle tissue
ELI2	06/02/1989	36/53/06	76/21/00	Hepatopancreas
WBE1	06/02/1989	36/50/38	76/21/39	Muscle tissue
WBE1	06/02/1989	36/50/38	76/21/39	Hepatopancreas
EBE1	06/02/1989	36/50/27	76/17/16	Muscle tissue
EBE1	06/02/1989	36/50/27	76/17/16	Hepatopancreas
SBE2R	06/02/1989	36/48/45	76/17/27	Muscle tissue
SBE2R	06/02/1989	36/48/45	76/17/27	Hepatopancreas
SBE3R	06/02/1989	36/47/25	76/18/15	Muscle tissue
SBE3R	06/02/1989	36/47/25	76/18/15	Hepatopancreas
SBE5R	06/02/1989	36/46/25	76/17/50	Muscle tissue
SBE5R	06/02/1989	36/46/25	76/17/50	Hepatopancreas
NR87	06/02/1989	36/50/27	76/17/16	Muscle tissue
NR87	06/02/1989	36/50/27	76/17/16	Hepatopancreas

Sampling Stations

ELI2 - Eliz. R., off SE corner of Craney Island
WBE1 - Eliz. R., W Br., North side Hwy. 17 Bridge
EBE1 - Eliz. R., E Br., West side Berkley Bridge
SBE2R - Eliz. R., S Br., off Atlantic Wood
SBE3R - Eliz. R., S Br., across channel from Eppinger & Russel
SBE5R - Eliz. R., S Br., W. of channel, off Virginia Power
NR87 - Nansemond R.

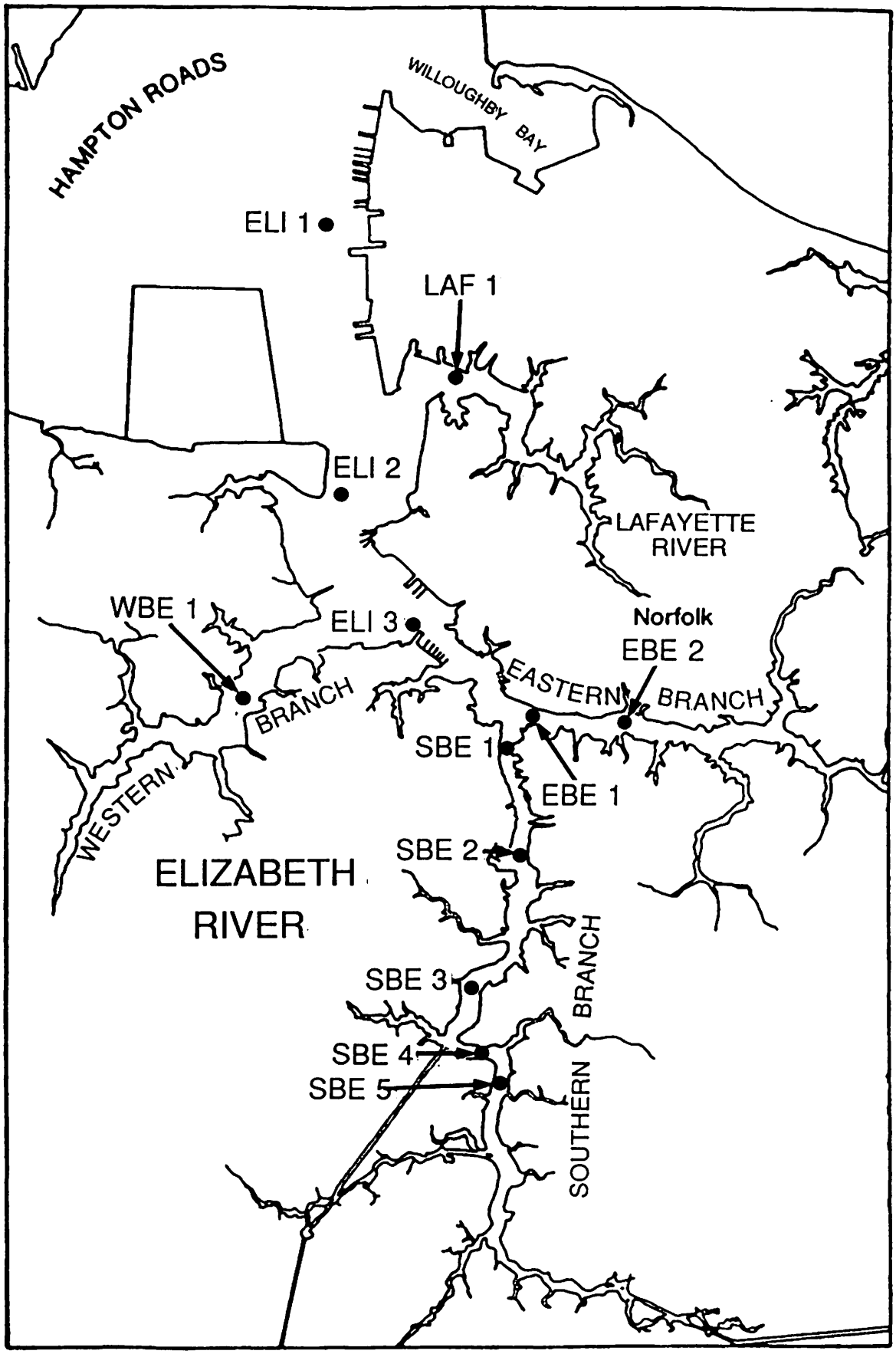

Figure 1. Map of Elizabeth River showing sampling station sites.

Analytical Methods

Organics: Sediment and tissue (Blue-crab)

A detailed description of the analytical methodology was provided in the report by deFur and Smith (1987); however some modifications have been made. Flow diagrams in Figures 1, 2 and 3 depict the procedures used for the sample preparation. All solvents used were Burdick and Jackson "Distilled in Glass" grade.

Sediment extraction

Frozen sediment samples were lyophilized in a FTS Systems freeze drier. Shelf temperature was 15°C. Chamber pressure was maintained at 400 microns of mercury with a nitrogen bleed system designed to eliminate pump oil backstreaming. Drying required 24 to 48 hours. Following lyophilization, each sample was thoroughly mixed, transferred to a glass soxhlet thimble and weighed. Tared thimbles were filled with dried material and weighed. The dried sediment was spiked with an internal standard containing 1,1'-binaphthyl, perinaphthenone and decachlorobiphenyl. Soxhlet extraction with dichbromethane (DCM) was continued for 48 hours. The resulting extract was reduced in volume on a rotary evaporator and then adjusted to 6.0 ml in preparation for additional sample cleanup.

Tissue (Blue-crab) extraction

Blue-crabs (5-10 male crabs for each station) were dissected and muscle and hepatopancreas tissue obtained. The tissues from individual crabs were pooled to give composite samples of muscle and hepatopancreas tissue for each site. Samples were then frozen and lyophilized in a manner analogous

Sediment and Tissue Extraction

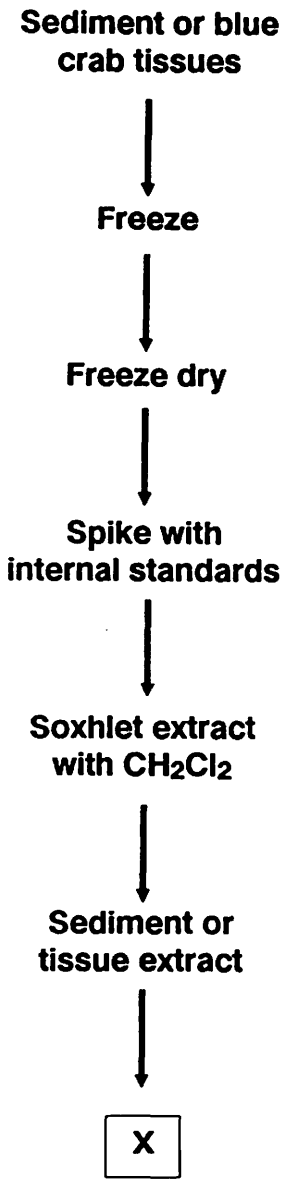

Figure 2. Flow diagram of sediment and tissue extraction methodology.

Fractionation and Analysis of Sediment Extracts

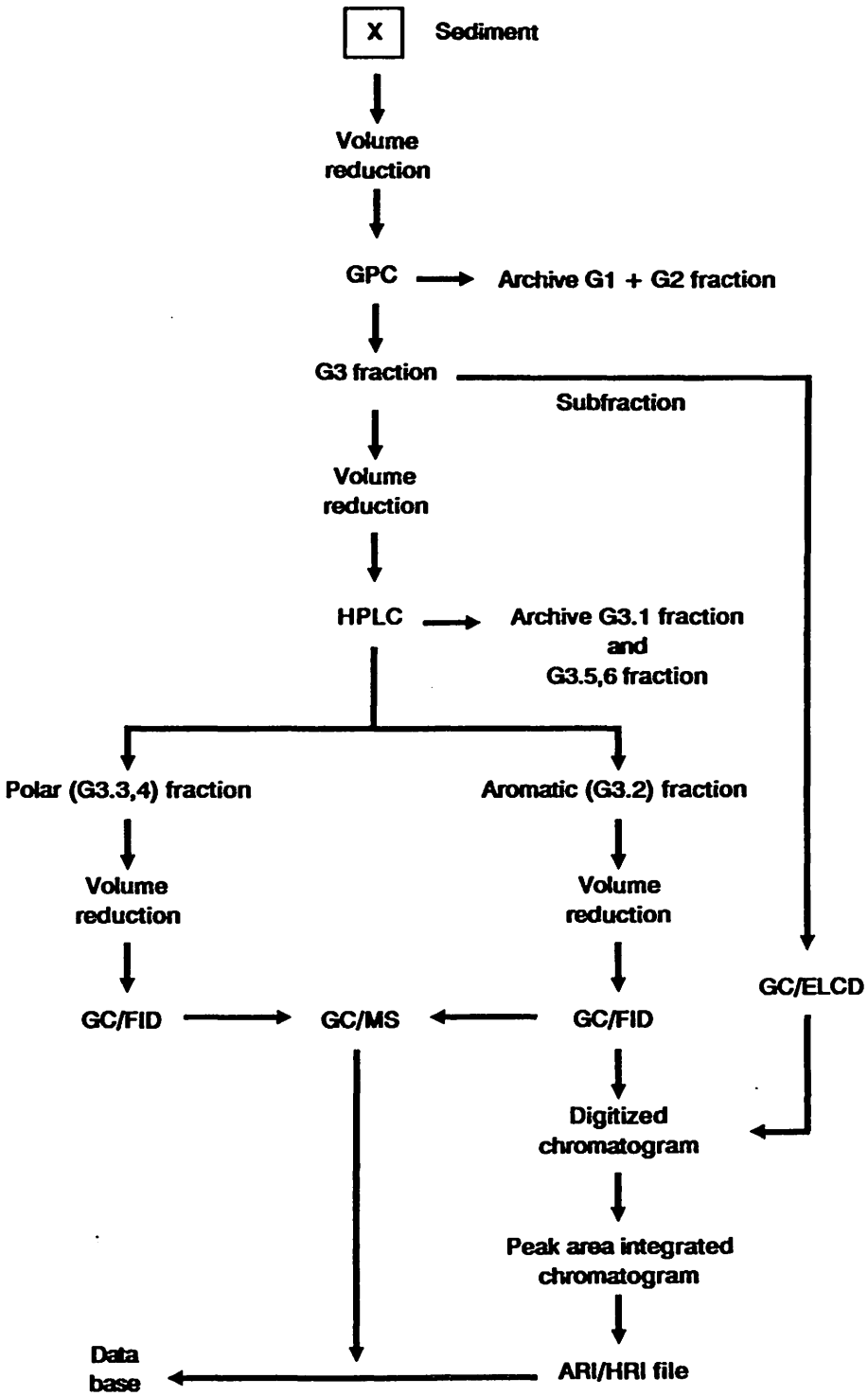

Figure 3. Flow diagram of fractionation and analysis of sediment extracts.

Fractionation and Analysis of Tissue Extracts

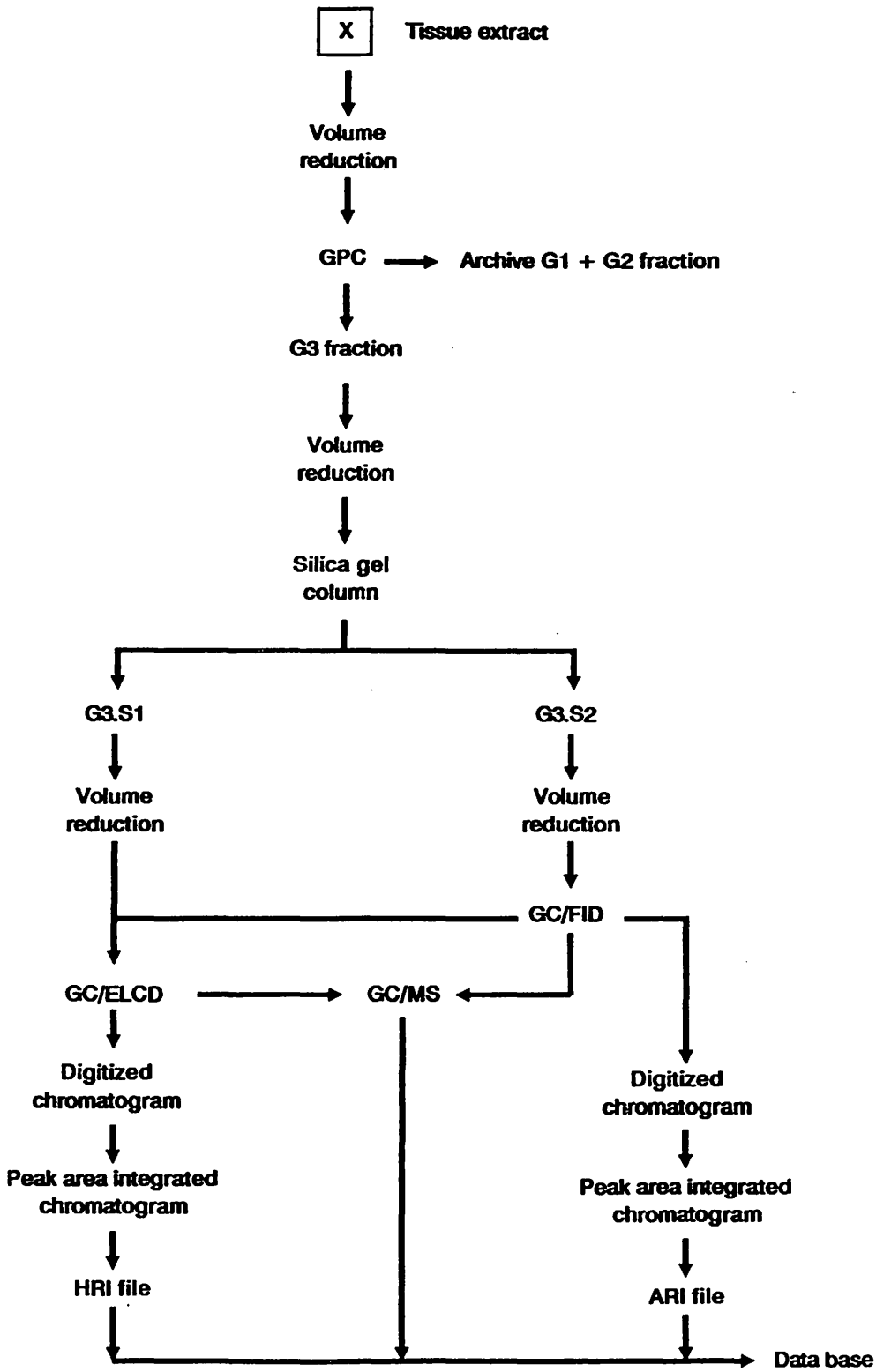

Figure 4. Flow diagram of fractionation and analysis of tissue extracts.

to that described for sediments. The lyophylized tissue was homogenized, transferred to a soxhlet thimble, weighed and spiked with the internal standards (1;1'binaphthyl and decachlorobiphenyl). Samples were extracted in soxhlets with DCM for 48 hrs. The resulting extracts were reduced in volume on a rotary evaporator. Because of the amount of lipid material that was present in the hepatopancreas it was not possible to reduce the sample to 6.0 ml for gel permeation chromatography (see section on cleanup and fractionation-tissue extracts).

Cleanup and fractionation - sediment extracts

Initial cleanup of the extracts was accomplished by gel permeation chromatography (GPC). The instrument employed was an ABC Laboratories Autoprep 1001. GPC separated large biogenic molecules from the lower molecular weight anthropogenics. A more detailed description of the theory is available in the report by deFur and Smith (1987). The resin used in this system was BioBeads SX-8, a polystyrene divinylbenzene copolymer. The column was 2.5 cm by 65 cm and was packed with 100 g of resin. The eluting solvent was DCM and the flow rate was 7.0 ml min^{-1}. A six port sample injection valve with a 5.3 ml sample loop controlled the sample introduction. Six ml of extract were injected for each sample. Elution volumes were calibrated by injecting a standard containing a range of target compounds and collecting and analyzing column effluent in small aliquots. It was determined from these calibration runs that the first 140 ml of effluent contained mostly biogenic compounds. This material was labeled the G1,2 fraction and archived. The following 70 ml fraction contained the majority of the toxic anthropogenic compounds of interest and was labeled the G3 fraction.

After GPC, the G3 fractions from the sediment extracts were reduced in volume to 0.2 ml. Further fractionation of the sediment extracts was based on polarity considerations. This step was accomplished with a Waters high performance liquid chromatograph (HPLC). A Waters semi-preparative normal phase column (cyano-amino bonded to silica) was installed in the HPLC. An Alltech Applied Science guard column was directly connected to the semi-preparative column. A solvent gradient program was used to separate the components of the extracts into polarity classes. Hexane was used initially to separate the extremely non-polar constituents, e.g. aliphatics, from the more toxicologically important aromatics. This early eluting aliquot was labeled the G3.1 fraction. The addition of DCM (programing from 0% to 15% DCM) resulted in the elution of a slightly polar fraction (G3.2) containing the majority of the aromatic compounds of interest. For simplicity this will be designated as the aromatic fraction. A more polar fraction or G3.3/3.4 fraction, was collected during solvent programing from 15% to 100% DCM. This fraction will be designated the polar fraction during subsequent discussion of results. A highly polar fraction (G3.5/3.6) was also collected using methanol and acetonitrile as eluting solvents. The G3.5/3.6 fraction was dominated by fatty acids and other polar biogenic material and was not routinely analyzed. Compound classes which elute in the two HPLC fractions of interest are listed below:

Fraction	Compound Class
Aromatic	Polycyclic aromatic hydrocarbons (PAHs)
	Polychlorinated biphenyls (PCBs)
	DDT, DDE and DDD
	Mononitro PAHs
Polar	Cyano PAHs
	Ketones
	Amines
	Carbazoles
	Aldehydes
	Hydroxy PAHs
	Azaarenes
	Phenols

These two fractions were reduced to an appropriate volume and analyzed by GC.

Clean-up and fractionation - tissue extracts

Tissue extracts were subject to the same GPC cleanup procedure with the exception that, in the case of the hepatopancreas samples because of their high lipid content, a 1 g sample was used in order to avoid overloading the GPC column. The column was eluted in the same way as for the sediments and the G3 fraction retained. This fraction was reduced by rotoevaporation and further fractionated on a silica gel column. Silica gel chromatography column contained 10 g of silica gel which was slurry pecked with hexane. An additional 10 ml hexane were passed through the column to settle the column bed. The sample (final volume 1.0 ml) was placed on the column, along with an additional 0.5 ml hexane that was used to rinse the sample tube. The column was eluted with 25 ml hexane (S1 fraction), followed by 40 ml of 80:20 (v/v) hexane: dichloromethane (S2 fraction). The S2 fraction contained the aromatic compounds of interest. The fractions were reduced in volume to one ml by rotoevaporation and concentrated to an appropriate volume with a stream of nitrogen. For analysis of organochlorine content the S1 and S2 fractions were recombined.

Gas chromatography

The aromatic and polar fractions of the extracts were analyzed by GC using flame ionization detection (FID). The carrier gas used was helium. This work was performed on a Varian 3700 instrument under the following conditions:

injector temperature	300°C
detector temperature	300°C
initial column temperature	75°C
final column temperature	300°C
program rate	6°C min^{-1}
final hold time	5 min

Samples were coinjected with a toluene plug in the splitless mode. An initial isothermal hold was employed until elution of the solvent began, at which time temperature programing was initiated and the split was opened. Fused silica capillary columns were used for the analysis. Crosslinked 5% phenyl-95% methyl silicone (DB-5 J&W Scientific) was used as the stationary phase. Chromatographic data were recorded and analyzed on a Hewlett Packard 3350A Laboratory Automation System.

An aromatic retention index (ARI) system (Bieri et al., 1978) was applied to the chromatographic analysis of the aromatic fractions. This approach allows the comparison of data obtained by different researchers over time. Basically, the retention time of each individual chromatographic peak is compared to those of two standards, the retention times of which encompass that of the compound of interest. The ARI value of the compound of interest is then determined by interpolation. The markers chosen encompass a range of molecular weights and are commonly found in extracts of sediment samples, precluding the necessity for coinjection. If particular marker compounds are not present in an individual sample, their retention times may be inferred from a standard mixture routinely injected at the beginning of each work day. The markers and the ARI scale utilized are given below.

Marker	Molecular Weight	ARI
naphthalene	128	1000
biphenyl	154	2000
phenanthrene	178	3000
pyrene	202	4000
chrysene	228	5000
perylene	252	6000
benzo(ghi)perylene	276	7000

The formula used to calculate the ARI values is given below:

$$ARI_x = \frac{T_x - T_{mp}}{T_{mf} - T_{mp}} \times 1000 + ARI_{mp}$$

ARI_x = ARI of peak x

T_x = retention time of peak x

T_{mp} = retention time of the last marker preceeding peak x

T_{mf} = retention time of the next marker following peak x

ARI_{mp} = ARI defined for the last marker preceeding x

Samples were analyzed using the following system of standards. For the aromatic fraction, 1,1'-binaphthyl was the internal standard. Perinaphthenone was chosen as the internal standard for the polar fraction. All determinations of xenobiotics in sediment and biota were expressed on a dry weight basis.

Analysis of the extracts for halogenated compounds was conducted with an OIC Electrolytic Conductivity Detector (ELCD) interfaced to a Varian 3300 GC. The GC contained a capillary column similar to that described previously. A halogenated compound retention index (HRI) system was devised for the identification of the compounds detected. The HRI standard consisted of the following markers:

Marker	Molecular Weight	HRI
2-chloronaphthalene	163	1000
alpha-BHC	291	2000
o,p'-DDD	320	3000
decachlorobiphenyl	499	4000

The theory behind the HRI is similar to that for the ARI system discussed previously. The HECD was operated in the halogen-selective mode and its sensitivity to these type of compounds is much greater than electron-impact MS. However, negative chemical ionization MS offers better sensitivity and was used for confirmation of some of the halogenated compounds present. Injections were made in the splitless mode. Decachlorobiphenyl was added to the samples prior to extraction and was used to monitor recovery of the chlorinated compounds during analysis. Pentachlorobenzene, coinjected with the extracts, was used as the internal standard for all ELCD determinations. The carrier gas used for the ELCD analyses was helium and GC conditions were as follows:

injector temperature	310°C
detector reaction temperature	950°C
initial column temperature	90°C
initial hold time	4 min
final column temperature	315°C
program rate	4°C min^{-1}
final hold time	12 min

As previously mentioned, internal standards were added to all the samples prior to extraction. Therefore general sample losses, such as the 0.7 ml of extract lost during GPC injection, were taken into account automatically. Losses of compounds possessing dissimilar physical properties (e.g. the volatile xylenes and naphthalene) could not be compensated for without the inclusion of multiple internal standards, which would increase the complexity of the analyses. The response of the FID is a function of the carbon content of the molecule in question. As a consequence, differences in relative response will be greater for heterocyclic compounds. Therefore, quantitation of polar compounds should be considered as semi-quantitative. However, responses of nonpolar aromatic hydrocarbons, such as those present in the aromatic fraction, are quite similar. Use of "ideal" internal standards, i.e. standards possessing response factors and chemical properties identical to the sample analytes would still result in discrepancies between actual environmental concentrations and calculated values. This effect would be due in part to differences in extraction efficiency between unbound or weakly bound standards, spiked into the sample, and more tightly bound matrix associated environmental contaminants.

A computerized ARI file, consisting of ARI values and corresponding peak identities, has been established. Data has been assembled from the analysis of authentic standards, as well as hundreds of actual environmental samples. The ARI system has only been extended to the aromatic fraction, but extension of the system to the polar fraction is under consideration.

Mass Spectrometry

Selected samples were also analyzed by GC/MS. A Varian 3300 was coupled to a DuPont 492B double focusing magnetic sector mass spectrometer using an open interface maintained at 350°C. This interface allows the detector end of the GC column to remain at atmospheric pressure and maintains the validity of the ARI system. The instrument was operated in the electron impact mode with an ionization energy of 70 eV and a source temperature of 300°C. Scan speed was 1 second per decade with a 1.5 sec reset, allowing one scan each 2.5 sec over the mass range from 45 to 450 amu. After collecting data on the GC/MS data system, the calibration of the instrument was verified by examining the spectrum of the internal standard in each run. If this was judged satisfactory, the spectra could be examined in detail. Mass spectra alone generally do not provide sufficient information to establish the position of substituent functional groups. Reference standards for all possible isomers are often not available. Therefore, the use of generic descriptors, e.g. C3-naphthalene (where C3- refers to three carbons in the alkyl substituent), were sometimes necessary. Compounds, such as aliphatic acids, exhibit significant fragmentation. As a consequence, information such as molecular weight could not always be determined due to the absence of a molecular ion.

Halogenated compounds were confirmed by analysis of selected samples on an Extrel ELQ 400-2 quadrupole GC/MS system. The instrument was operated in the negative chemical ionization mode, with methane as the moderator gas. When operated in this mode, the instrument is highly sensitive to electron capturing material and, in particular, halogenated compounds. The instrument was scanned from m/z 100-700 at 500 a.m.u/second. Identification of compounds was made by comparison with standards. (Library information is not available for negative chemical ionization spectra.)

TBT: Sediment extraction

A 10 g wet sediment subsample was placed in a clean quart glass jar (scrubbed with Contrad, rinsed with distilled water, dilute HCl, acetone and hexane). In addition, a second subsample was taken and oven dried at 100°C overnight to determine total moisture of the sample. Prior to desiccation, a known amount of tripentyltin chloride was added to the sediment as an internal standard. The exact amount of internal standard added depended upon the expected sediment concentration and should be within a factor of ten of the actual TBT concentration to reduce analytical error.

The sediment samples were dried with three parts desiccant to one part sediment. The desiccant mixture consisted of 10% by weight QUSO G35 (precipitated silica, DeGussa Corporation) and 90% by weight anhydrous granulated sodium sulfate (Fisher Scientific Co.). QUSO G35 was blended in first, followed by sodium sulfate. The sample was then frozen for one hour or more to complete the moisture removal from the sediment.

The sample was blended to a consistency of fine powder using a blender head screwed onto the jar. The sample was then added to a coarsely fritted glass soxhlet thimble in which glass wool had been previously placed. The

glass wool layer prevented frit clogging. Glass wool was also added to the top of the sample to reduce sample splattering and carry over into the solvent reservoir.

The samples were soxhlet extracted for 48h with 400ml of n-hexane (American Burdick and Jackson). Shorter extraction time resulted in incomplete removal of tributyltin. The extract was reduced to 5ml by roto-evaporation at 40°C and transferred to a 50ml centrifuge tube. The original flask was rinsed three times with 5ml aliquots of hexane (final sample volume of the centrifuge tube was 20ml). The sample was subsequently derivatized with 0.5ml of 2.0M n-hexylmagnesium bromide for 30 minutes. During this time the sample was agitated every five minutes. Following the reaction, which converted tributyltin and tripentyltin to hexyltributyltin and hexyltripentyltin, respectively 2ml of concentrated HCl were added to remove excess Grignard reagent from the sample. All precipitate was dissolved in order to free any derivatized TBT that may have been trapped by the particles. The resulting aqueous phase was discarded and the organic phase was reduced to 1ml under dry nitrogen at 40°C. The sample was then purified by passing it through a 22mm i.d. chromatographic column packed with 25g of activated Florisil^{R} (100-200 mesh, Fisher Scientific Co.) topped with 2g of anhydrous sodium sulfate (Fisher Scientific Co.). The sample was eluted with 300ml of n-hexane and roto-evaporated to 5ml. It was transferred to a 50ml centrifuge tube and reduced under dry nitrogen to a volume suitable for GC analysis.

TBT: Gas Chromatographic Analysis

Analysis of the sample was performed on a Varian model 3300 gas chromatograph with a dual flame photometric detector >600nm band pass

filter. The column was a 30 m fused silica capillary 0.32 mm i.d., coated with DB-5. The injector and detector were held at 275°C, and the column temperature was programmed from 120°C to 280°C at 10°C/min. Helium was used as the carrier gas, with a flow of 4 ml/min; hydrogen and air flow rates to the detector were 138 ml/min and 250 ml/min, respectively. Detector output was collected on a HP 3350A Laboratory Automation System which integrated the butyltin peaks and quantified them relative to the internal standard peak.

Results

Results of the chemical determinations performed on the various fractions of sediments and biota are presented in the succeeding tables. Table 3 summarizes the total concentration of resolved compounds detected in the aromatic and polar fractions of the sediment extracts. Contributions due to standards, extraneous contaminants and biogenic material have been removed. Table 3 also includes the results for the TBT analysis of the same sediment samples and Table 4 presents the results of the analyses of the blue crabs. These tables are followed by summary tables for each sampling site and extended tables with compound identifications where available. The summary tables include numbers of peaks and total concentrations in the different matrices and fractions, plus the ten most common compounds (with concentrations) for the sediment (aromatic and polar fractions) and the blue crab tissues (muscle and hepatopancreas) for the sites where blue crabs were obtained. The extended tables for the aromatic and polar fractions contain the ARIs, concentrations and probable compound identities. The level of confidence for the identifications are rated on a scale of 0-3. The confidence scale is defined as follows:

0) Compound identity unknown.

1) Compound identity inferred by virtue of coincidence of its ARI with that of a known compound, or by interpretation of mass spectrum, or by partial match with the library mass spectrum of a compound. Compounds whose identities are strongly indicated, but for which the positions of the constituents are not known, are included in this category.

2) Compound mass spectrum closely matches library spectrum, or actual spectrum of a known compound, and isomeric composition is known.

3) Compound has a mass spectrum and ARI identical to an authentic standard.

Several steps were taken to ensure the accuracy and quality of the data generated. Quality control features included the consistent use of high quality solvents, exhaustive glassware cleaning procedures, daily standard mixture analysis, internal standard usage and frequent blank runs. Quality assessment techniques included: the determination of surrogate/internal standard recoveries and the analysis of spiked blanks and samples.

Minimal problems were encountered in regards to contamination during the analyses. Blanks were generally free of extraneous peaks. The exception was the polar fraction. A series of peaks was observed and determined to be due to the combination of hexane and DCM used during the HPLC fractionation step. This problem was mentioned in a previous report to the VWCD by Hale and Smith (1988). For this reason the compounds reported on the polar fraction have ARI values between 2500 and 7500. This excludes the area in which these unknown compounds occurred.

As previously mentioned, internal standards were spiked into the samples, prior to extraction, to compensate for general analyte losses during sample workup. In addition, terphenyl was spiked into the fractionated extracts just prior to GC injection and the recoveries of the original internal standards evaluated. In this latter capacity the internal standards functioned as surrogate standards. Recoveries of the 1,1'-binaphthyl for the sediment samples had a mean of 75% and standard deviation of 13. The range was 54-118%. This was considered to be well within expectations. Recoveries on the blue crab tissues could not be calculated

effectively because of difficulties caused by the inexpectedly high levels of PCB are of which co-eluted with the recovery standard. However estimations were made and indicated that the recoveries were in the 70-90% range, again, as far as can be judged, within acceptable limits.

Table 3

Organic Compounds in Sediment

Station	% Moisture	Aromatic fraction ppb (dry wt.)	Polar fraction ppb (dry wt.)	PCB ppb (dry wt.)	TBT ppb (dry wt.)
ELI 1	52	3,100	<10	lost	32
ELI 2	60	5,400	320	24	99 (99, rep.)
ELI 3	54	6,700	110	120	38
SBE 1 LS	60	15,000	600	680	1,600
C	57	20,000	720	2,400	1,100
RS	65	22,000	1,200	560	1,900
SBE 2 LS	67	33,000	1,600	260	2,800
C	66	51,000	1,700	1,300	2,100
RS	67	59,000	3,700	1,000	590
SBE 3 LS	64	82,000	7,800	290	940
C	66	68,000	3,400	270	970
RS	67	30,000	1,100	19	100
RS(R)	52	32,000	1,100	20	-- (rep.)
SBE 4 LS	52	42,000	4,800	250	560
C	54	48,000	1,900	150	350
RS	45	46,000	3,100	160	43
SBE 5 LS	59	68,000	3,200	204	190
C	51	61,000	3,600	250	320
RS	68	36,000	4,400	270	700
EBE 1	63	31,000	1,700	660	1,100 (1,100 rep.)
EBE 2	44	60,000	5,500	400	220
WBE 1	59	6,100	230	240	19
LAF 1	57	1,400	<10	91	15
1 B(R)	--	1,400	110	56	-- (rep.)
TS	27	410	300	34	8.8
NR	58	2,500	<10	13	8.9

Table 4

Blue crab tissue analysis (dry wt. basis).

Station.

Muscle

	Aromatic fraction ppb.	PCB ppb.	4,4-DDE ppb.	% Moisture	% Lipid (dry wt. basis)
ElI 2	1300	23	16	81	5
SBE 2	2900	29	17	79	6
SBE 3	1800	67	32	80	6
SBE 5	1300	20	15	83	6
EBE 1	520	22	10	79	4
WBE 1	1500	16	9.1	80	5
NR	710	8.7	13	80	5

Hepatopancreas

	Aromatic fraction ppb.	PCB ppb.	4,4-DDE ppb.	% Moisture	% Lipid (dry wt. basis)
ELI 2	4900	1200	440	81	43
SBE 2	12000	3100	520	71	42
SBE 3	5200	2600	530	71	49
SBE 5	5600	2700	640	81	50
EBE 1	3000	2300	390	71	48
WBE 1	14000	2000	530	72	44
NR	1500	1200	200	76	60

Table 5

Site: ELI1 - Elizabeth River 1, off Norfolk Naval Shipyard

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (52% moisture)			
Aromatic fraction	135	59	3,100
Polar fraction	--	--	--
Organochlorines	--	--	Lost
TBT	--	--	32

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	119.487	
Fluoranthene	114.378	
Benzofluoranthene	102.063	
Naphthalene,2-methyl-	95.558	
Naphthalene	87.951	
Phenanthrene	86.486	
Chrysene	81.687	
--	65.069	
Benzo(b)fluorene	59.781	
Benzo(a)fluorene	58.509	
	870.969	(870 to 2 sf)
% of fraction	28%	

Station: ELI1
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	87.951	1	Naphthalene
1043	8.512	1	Benzothiophene
1534	95.558	1	2-Methylnaphthalene
1620	34.575	1	1-Methylnaphthalene
1673	6.648	0	
2000	26.295	1	Biphenyl
2035	21.230	1	Ethylnaphthalene
2061	49.996	1	C2-Naphthalene
2099	26.863	1	C2-Naphthalene
2106	38.591	1	C2-Naphthalene
2149	22.886	1	C2-Naphthalene
2189	6.443	1	Hexamethylbenzene
2204	3.829	1	
2246	1.447	0	
2262	14.455	1	Acenaphthene
2281	18.689	1	4-Methylbiphenyl
2304	10.441	1	3-Methylbiphenyl
2325	19.098	1	C3-Naphthalene
2346	27.784	1	Dibenzofuran
2381	14.792	0	
2392	19.496	1	C3-Naphthalene
2440	40.057	1	C3-Naphthalene
2476	22.740	1	C3-Naphthalene
2518	33.266	1	Fluorene
2535	6.816	0	
2566	4.811	1	Methylbiphenyl
2584	5.392	0	
2602	2.088	0	
2622	17.461	1	Methyldibenzofuran
2654	24.049	0	
2680	11.300	0	
2701	10.135	0	
2726	14.606	0	
2753	8.749	0	
2780	1.543	0	
2792	1.716	0	
2814	27.652	1	Methylfluorene
2828	28.649	0	
2849	31.773	0	
2908	43.927	0	
2919	18.808	0	
2937	37.768	1	Dibenzothiophene
2965	6.495	0	
2976	8.534	0	
3000	86.486	1	Phenanthrene
3033	19.522	1	Anthracene
3088	14.662	0	
3129	28.506	0	
3154	34.730	0	
3170	35.640	0	
3206	18.023	0	
3238	17.018	1	Methyldibenzothiophene
3264	11.237	0	

3280	16.135	0	
3303	15.040	1	Methyldibenzothiophene
3343	3.213	0	
3371	44.985	1	3-Methylphenanthrene
3387	65.069	0	2-Methylphenanthrene
3411	12.786	0	
3428	15.152	1	4-H Cyclopenta(def)phenanthrene
3444	32.509	1	Methylphenanthrene
3458	29.878	1	Methylphenanthrene
3500	6.559	0	
3520	6.848	0	
3534	8.282	0	
3554	12.837	0	
3618	58.259	1	2-Phenylnaphthalene
3649	6.554	0	
3667	7.385	0	
3691	7.067	0	
3721	28.366	0	
3742	20.742	1	C2-Phenanthrene
3752	19.472	0	
3794	38.461	1	C2-178
3813	26.341	0	
3828	18.703	0	
3856	114.378	1	Fluoranthene
3901	13.270	0	
3953	23.908	0	
3975	23.764	0	
4000	119.487	1	Pyrene
4040	37.579	1	Methyl-phenylnaphthalene
4067	11.268	0	
4094	13.627	0	
4136	14.879	1	Methyl-phenylnaphthalene
4156	27.090	0	
4190	6.456	0	
4208	12.573	0	
4230	15.502	0	
4251	15.584	0	
4311	58.509	1	Benzo(a)fluorene
4345	13.726	1	Retene
4365	59.781	1	Benzo(b)fluorene
4407	9.137	0	
4438	27.532	1	Methyl-202
4461	20.856	0	
4522	5.507	0	
4670	39.949	0	
4724	49.036	0	
4780	12.922	1	Benzo(b)naphtho(2,1-d)thiophene
4864	4.894	0	
4973	38.543	1	Benz(a)anthracene
5000	81.687	1	Chrysene
5047	7.467	1	Tetramethyloctahydrochrysene
5066	5.413	1	Tetramethyloctahydrochrysene
5128	12.902	1	Methyl-228
5155	4.441	0	
5199	4.636	0	
5282	1.468	0	
5307	29.130	1	Methyl-228
5331	15.268	0	
5349	7.022	0	
5376	17.272	0	

5397	17.448	1	1-Phenylphenanthrene
5458	8.910	1	Trimethyltetrahydrochrysene
5492	3.423	0	
5601	7.015	0	
5628	1.486	0	
5650	3.671	0	
5679	2.525	0	
5747	102.063	1	Benzofluoranthene
5816	7.324	1	Benzo(a)fluoranthene
5913	41.640	1	Benzo(e)pyrene
5944	37.956	1	Benzo(a)pyrene
6000	45.726	1	Perylene
6073	10.373	0	
6112	10.126	0	
6188	12.668	0	
6248	3.137	0	
6353	7.000	0	
6675	2.929	0	
6787	6.856	0	
6831	23.626	1	Indeno(1,2,3-cd)pyrene
6882	4.710	1	Dibenz(a,h)anthracene
7000	23.789	1	Benzo(ghi)perylene

Station: ELI1
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound

No compounds > 5.0 ppb

Table 6

Site: ELI2 - Elizabeth River 2, off SE corner of Craney Island

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (60% moisture)			
Aromatic fraction	123	68	5,400
Polar fraction	15	12	320
Organochlorines	--	--	24
TBT	--	--	99
			(replicate = 99)
Blue Crabs			
Muscle (81% moisture) (5% lipid, dry wt. basis)			
Aromatic fraction	85	53	1,300
PCB	--	--	23
4,4'DDE	--	--	16
Hepatopancreas (81% of moisture) (43% lipid, dry wt. basis)			
Aromatic fraction	129	71	4,900
PCB	--	--	1,200
4,4'DDE	--	--	440

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Fluoranthene	333.275	
Pyrene	282.133	
Benzofluoranthene	265.419	
Phenanthrene	171.703	
Chrysene	152.438	
Benzo(e)pyrene	118.151	
Perylene	111.336	
Benzo(a)pyrene	106.418	
Naphthalene,phenyl-methyl-	96.739	
Benz(a)anthracene	91.053	
	1728,665	(1700 to 2 sf)
% of Fraction	31%	

Site EL12 (continued)

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole	68.670	
Dibenzocarbazole,methyl-	52.945	
Dibenzocarbazole	48.824	
Indenylanthracenone	44.529	
Carbazole, 9H-	13.778	
Benzocarbazole	13.596	
--	13.342	
Carbazole, SH-,C2HS-	11.536	
Carbazole,SH-,methyl-	11.370	
--	10.545	
	289.135	(290 to 2 sf)
% of Fraction	91%	

Blue crab (Aromatic fraction)

Muscle

Compound	Concentration (ppb)	
Naphthalene,C4H9-	56.358	
Phenanthrene	43.523	
Naphthalene,C5H11-	42.034	
--	36.268	
--	33.200	
Benzo(a)fluoranthene	32.529	
--	31.087	
Fluorene,methyl-	30.851	
Naphthalene,C4H9-	30.707	
--	28.596	
	365.165	(370 to 2 sf)
% of Fraction	28%	

Site EL12 (continued)

Hepatopancreas

Compound	Concentration (ppb)	
--	301.310	
--	139.647	
Naphthalene, C4H9-	138.658	
Naphthalene,C5H11-	114.661	
Phenanthrene	106.487	
--	91.818	
Naphthalene,C4H9-	87.519	
Naphthalene,C4H9-	84.656	
Fluoroene,methyl	79,983	
--	75.149	
	1218.858	(1200 to 2 sf)
% of Fraction	30%	

Station: ELI2
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	78.008	1	Naphthalene
1070	5.524	0	
1096	2.924	0	
1473	3.455	0	
1535	52.426	1	2-Methylnaphthalene
1620	22.120	1	1-Methylnaphthalene
1672	5.581	0	
1770	2.147	0	
2000	12.155	1	Biphenyl
2034	13.436	1	Ethylnaphthalene
2061	47.441	1	C2-Naphthalene
2098	25.004	1	C2-Naphthalene
2107	39.354	1	C2-Naphthalene
2148	26.037	1	C2-Naphthalene
2188	9.522	1	Hexamethylbenzene
2205	6.945	1	
2226	3.737	0	
2262	26.426	1	Acenaphthene
2282	18.223	1	4-Methylbiphenyl
2303	9.533	1	3-Methylbiphenyl
2325	19.083	1	C3-Naphthalene
2346	35.175	1	Dibenzofuran
2381	19.314	0	
2392	32.476	1	C3-Naphthalene
2440	51.973	1	C3-Naphthalene
2453	11.362	1	C3-Naphthalene
2477	38.647	1	C3-Naphthalene
2518	42.778	1	Fluorene
2535	16.131	0	
2583	34.586	0	
2621	30.402	1	Methyldibenzofuran
2654	41.799	0	
2679	15.583	0	
2700	15.251	0	
2726	9.720	0	
2753	18.832	0	
2780	7.680	0	
2792	17.857	0	
2802	18.946	1	Methylfluorene
2814	33.893	1	Methylfluorene
2829	41.770	0	
2849	89.030	0	
2906	81.298	0	
2919	31.113	0	
2937	45.307	1	Dibenzothiophene
2951	25.503	0	
2975	27.122	0	
3000	171.703	1	Phenanthrene
3032	51.963	1	Anthracene
3092	20.171	0	
3130	20.745	0	
3153	28.076	0	
3170	39.125	0	

3206	30.806	0	
3238	23.604	1	Methyldibenzothiophene
3262	19.451	0	
3281	27.764	0	
3303	20.192	1	Methyldibenzothiophene
3343	9.981	0	
3372	51.297	1	3-Methylphenanthrene
3387	65.462	0	2-Methylphenanthrene
3414	20.113	0	
3429	47.099	1	4-H Cyclopenta(def)phenanthrene
3444	43.713	1	Methylphenanthrene
3458	51.540	1	Methylphenanthrene
3497	11.503	0	
3532	20.746	0	
3554	27.310	0	
3620	83.072	1	2-Phenylnaphthalene
3667	6.433	0	
3693	9.774	0	
3720	24.668	0	
3742	46.995	1	C2-Phenanthrene
3777	9.547	1	C2-178
3794	62.928	1	C2-178
3813	42.383	0	
3830	39.040	0	
3857	333.275	1	Fluoranthene
3900	27.908	0	
3952	33.912	0	
3974	18.968	0	
4000	282.133	1	Pyrene
4038	96.739	1	Methyl-phenylnaphthalene
4091	23.132	0	
4137	26.391	1	Methyl-phenylnaphthalene
4154	29.758	0	
4188	7.093	0	
4205	14.601	0	
4227	20.658	0	
4247	23.291	0	
4309	52.099	1	Benzo(a)fluorene
4342	4.568	1	Retene
4366	69.970	1	Benzo(b)fluorene
4406	9.022	0	
4437	41.885	1	Methyl-202
4459	32.084	1	Methyl-202
4517	15.511	0	
4670	45.279	0	
4722	90.150	0	
4779	38.184	1	Benzo(b)naphtho(2,1-d)thiophene
4804	32.573	1	Benzo(ghi)fluoranthene
4817	24.108	1	Benzo(c)phenanthrene
4852	6.156	0	
4915	6.899	1	Benzonaphthothiophene
4944	2.118	0	
4973	91.053	1	Benz(a)anthracene
5000	152.438	1	Chrysene
5047	25.625	1	Tetramethyloctahydrochrysene
5066	12.991	1	Tetramethyloctahydrochrysene
5094	17.060	1	Tetramethyloctahydrochrysene
5130	20.083	1	Methyl-228
5154	12.690	0	
5200	8.536	0	

5281	21.639	0	
5307	48.953	1	Methyl-228
5331	23.441	0	
5349	20.208	0	
5374	31.769	0	
5397	43.856	1	1-Phenylphenanthrene
5464	19.874	1	Trimethyltetrahydrochrysene
5491	7.159	0	
5519	7.237	0	
5603	10.436	0	
5651	11.639	0	
5679	15.621	0	
5749	265.419	1	Benzofluoranthene
5816	20.683	1	Benzo(a)fluoranthene
5914	118.151	1	Benzo(e)pyrene
5945	106.418	1	Benzo(a)pyrene
6000	111.336	1	Perylene
6069	36.954	1	MW-252
6115	17.909	0	
6179	25.592	0	
6246	11.486	0	
6265	9.980	0	
6352	23.150	0	
6674	8.553	0	
6782	25.122	0	
6830	68.605	1	Indeno(1,2,3-cd)pyrene
6880	25.701	1	Dibenz(a,h)anthracene
6949	7.332	0	
6972	9.229	0	
7000	61.843	1	Benzo(ghi)perylene

Station: ELI2
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
3226	13.778	1	9 H-Carbazole
3463	11.370	1	Methyl-9 H-carbazole
3901	11.536	1	C2-Carbazole
3944	10.155	0	
5048	13.596	1	Benzocarbazole
5222	6.275	1	Benzocarbazole
6249	10.545	0	
6641	48.824	1	Dibenzocarbazole
6752	68.670	1	Dibenzocarbazole
6881	13.342	0	
6960	5.295	1	Dibenzocarbazole
7044	44.529	1	Indenylanthracenone
7137	5.336	1	Dibenzocarbazole
7182	6.376	1	Dibenzocarbazole
7315	52.945	1	Methyldibenzocarbazole

Station: ELI2 Crab Muscle Tissue
Neutral Extract 63.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	5.568	1	Naphthalene
1554	5.748	0	
2058	12.684	1	Naphthalene,C2H5-
2273	9.628	1	Acenaphthene
2357	18.360	1	Naphthalene,C3H7-
2373	6.229	1	Bibenzyl
2384	6.570	0	
2396	8.513	1	Naphthalene,C3H7-
2438	6.940	1	Naphthalene,C3H7-
2444	9.104	1	Naphthalene,C3H7-
2478	10.192	1	Naphthalene,C3H7-
2485	13.434	1	Naphthalene,C3H7-
2526	19.139	1	Fluorene
2541	16.880	1	Naphthalene,C3H7-
2575	14.506	1	Naphthalene,C3H7-
2583	5.564	1	Naphthalene,C3H7-
2593	7.581	1	Biphenyl,methyl-/Acenaphthene,methyl-
2626	6.983	1	Naphthalene,C4H9-
2681	10.169	1	Naphthalene,C4H9-
2696	13.244	1	Naphthalene,C4H9-
2716	5.657	1	Naphthalene,C4H9-
2735	6.186	1	Naphthalene,C4H9-
2748	20.383	1	Naphthalene,C4H9-
2769	42.034	1	Naphthalene,C5H11-
2787	28.070	0	
2798	30.707	1	Naphthalene,C4H9-
2812	22.949	1	Fluorene,methyl-
2828	30.851	1	Fluorene,methyl-
2838	20.086	0	
2849	9.991	0	
2858	18.008	1	Fluorene,methyl-/Naphthalene,C5H11-
2868	12.537	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2880	9.321	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2899	56.358	1	Naphthalene,C4H9-
2911	10.747	0	
2936	8.997	0	
2967	11.763	0	
3000	43.523	1	Phenanthrene
3032	9.516	1	Anthracene/Naphthalene,C5H11-
3070	8.051	0	
3086	5.760	1	Naphthalene,C7H15-
3120	16.103	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3136	9.064	0	
3145	16.618	1	Acenaphthene,C4H9-
3161	17.080	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3201	11.293	1	Acenaphthene,C3H7-
3210	10.640	1	Acenaphthene,C3H7-
3241	17.642	1	Acenaphthene,C4H9-
3261	11.290	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3283	8.952	0	
3331	13.091	1	Naphthalene,C5H11-
3346	5.375	0	
3367	19.455	1	Phenanthrene,3-methyl-

3384	13.409	1	Phenanthrene,2-methyl-
3400	14.651	0	
3443	22.803	1	Phenanthrene,methyl-
3457	10.769	1	Phenanthrene,methyl-
3479	7.255	0	
3503	5.576	0	
3523	9.786	0	
3547	7.216	0	
3583	5.149	0	
3599	6.816	1	Anthraquinone
3616	7.354	0	
3938	5.146	0	
4000	6.101	1	Pyrene
4273	9.128	0	
4302	6.651	1	Benzo(a)fluorene
4483	5.377	0	
4564	20.357	1	C16-PCB
4839	25.166	1	C17-PCB
5099	23.249	1	Benzanthracene/MW 202,C4H9-
5219	9.358	0	
5341	27.514	0	
5575	28.596	0	
5801	32.529	1	Benzo(a)fluoranthene
5871	6.412	0	
6024	33.200	0	
6199	10.927	0	
6235	18.253	1	Base-neutral,methyl-252
6301	31.087	0	
6571	36.268	0	
6677	10.909	0	
6835	22.693	1	Indeno(1,2,3-cd)pyrene
7000	16.406	1	Benzo(ghi)perylene

Station: ELI2 Crab Hepatopancreas
Neutral Extract 63.52 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	12.949	1	Naphthalene
1037	21.322	0	
1553	13.218	0	
1641	7.019	0	
1671	7.077	0	
1975	11.138	0	
2057	38.714	1	Naphthalene,C2H5-
2103	10.998	1	Naphthalene,C2H5-
2155	10.207	1	Naphthalene,C2H5-
2272	37.532	1	Acenaphthene
2306	7.485	1	Biphenyl,3-methyl-
2355	14.864	1	Dibenzofuran
2372	45.358	1	Bibenzyl
2385	21.987	0	
2397	29.520	1	Naphthalene,C3H7-
2423	5.983	0	
2438	21.480	1	Naphthalene,C3H7-
2444	17.846	1	Naphthalene,C3H7-
2477	24.754	1	Naphthalene,C3H7-
2485	37.298	1	Naphthalene,C3H7-
2527	35.504	1	Fluorene
2541	42.690	1	Naphthalene,C3H7-
2576	33.258	1	Naphthalene,C3H7-
2593	13.975	1	Biphenyl,methyl-/Acenaphthene,methyl-
2616	14.240	1	Dibenzofuran,methyl-
2627	21.013	1	Naphthalene,C4H9-
2637	15.215	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2646	20.525	0	
2656	11.027	0	
2680	28.166	1	Naphthalene,C4H9-
2696	29.239	1	Naphthalene,C4H9-
2749	87.519	1	Naphthalene,C4H9-
2769	114.661	1	Naphthalene,C5H11-
2788	75.149	0	
2798	84.656	1	Naphthalene,C4H9-
2811	42.540	1	Fluorene,methyl-
2827	79.983	1	Fluorene,methyl-
2836	59.772	0	
2848	19.096	0	
2854	57.422	0	
2868	21.119	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2879	19.316	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2887	8.489	0	
2899	138.658	1	Naphthalene,C4H9-
2932	39.927	0	
2949	22.199	0	
2959	12.953	0	
2969	55.600	0	
3000	106.487	1	Phenanthrene
3022	24.368	1	Anthracene/Naphthalene,C5H11-
3031	12.085	1	Anthracene/Naphthalene,C5H11-
3036	10.557	1	Anthracene/Naphthalene,C5H11-
3051	17.329	0	

3067	19.827	0	
3089	26.649	1	Naphthalene,C7H15-
3103	8.263	1	Naphthalene,C7H15-
3118	48.044	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3137	32.962	0	
3147	41.610	1	Acenaphthene,C4H9-
3162	38.077	0	
3182	11.734	0	
3197	34.263	1	Acenaphthene,C3H7-
3209	30.685	1	Acenaphthene,C3H7-
3241	39.597	1	Acenaphthene,C4H9-
3258	12.320	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3279	20.435	0	
3286	8.450	0	
3330	25.303	1	Naphthalene,C5H11-
3358	14.693	1	Phenanthrene,methyl-
3365	22.488	1	Phenanthrene,3-methyl-
3385	10.977	1	Phenanthrene,2-methyl-
3402	6.869	0	
3409	8.218	0	
3422	7.597	1	Cyclopenta(def)phenanthrene,4H-
3443	26.143	1	Phenanthrene,methyl-
3457	10.393	1	Phenanthrene,methyl-
3470	5.702	0	
3477	9.177	0	
3504	11.627	0	
3524	64.410	0	
3544	21.348	0	
3565	19.242	0	
3581	139.647	0	
3616	32.105	1	Anthraquinone
3640	8.357	0	
3646	6.825	0	
3653	7.356	0	
3661	9.671	0	
3667	7.745	0	
3676	12.229	0	
3753	6.669	0	
3783	10.814	1	Base-neutral,MW 178,C2H5-
3853	54.708	1	Fluoranthene
3900	36.556	0	
3946	22.308	0	
3952	6.980	0	
3967	18.087	0	
3984	18.005	0	
4000	72.275	1	Pyrene
4027	19.308	0	
4044	9.241	0	
4076	27.273	0	
4096	22.034	0	
4111	57.353	0	
4143	46.408	0	
4173	7.984	1	Phenanthrene,C3H7-
4229	278.221	1	DDE,4,4'-
4272	7.082	0	
4430	25.533	1	C15-PCB
4484	72.530	0	
4499	24.944	1	Cyclopentaphenanthrene,C4H9-
4570	11.934	1	C16-PCB
4590	27.943	0	

4604	6.413	0	
4897	26.490	1	C17-PCB
5000	15.577	1	Chrysene
5063	34.619	1	Benzanthracene/MW 202,C4H9-
5139	28.918	1	C17-PCB
5214	11.562	0	
5288	10.496	1	Base-neutral,methyl-228/C17-PCB
5616	8.460	0	
5734	6.517	1	Benzofluoranthene
5745	5.377	1	Benzofluoranthene
5849	52.808	0	
6000	17.304	1	Perylene
6061	27.070	1	Base-neutral,methyl-252
6636	301.310	0	
6892	24.029	1	Dibenz(a,h)anthracene
7000	5.911	1	Benzo(ghi)perylene

Table 7

Site: ELI3 - Elizabeth River, off Portsmouth International Terminal

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (54% moisture)			
Aromatic fraction	156	71	6700
Polar fraction	8	6	110
Organochlorines	--	--	120
TBT	--	--	39

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	457.136	
Benzofluoranthene	405.653	
Fluoranthene	389.461	
Chrysene	223.468	
Phenanthrene	195.817	
Benzo(a)pyrene	174.996	
Benzo(a)pyrene	151.105	
Benz(a)anthracene	149.765	
--	138.000	
Naphthalene,phenyl-,methyl-	109.912	
	2395.313	(2400 to 2 sf)
% of Fraction	36%	

Compound	Concentration (ppb)	
Benzocarbazole	20.006	
Benzanthrone/Benzofluorenone	15.011	
Carbazole,9H-	17.402	
Cyclopenta(def)chrysen-4-one	16,595	
Benzocarbazole	12.540	
--	9.264	
--	7.563	
Aza-252	7.155	
	289.135	(290 to 2 sf)
% of Fraction	91%	

Station: ELI3
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	72.709	1	Naphthalene
1535	54.201	1	2-Methylnaphthalene
1620	25.356	1	1-Methylnaphthalene
1673	4.566	0	
2000	12.020	1	Biphenyl
2035	13.562	1	Ethylnaphthalene
2061	43.906	1	C2-Naphthalene
2099	24.707	1	C2-Naphthalene
2107	36.326	1	C2-Naphthalene
2149	24.865	1	C2-Naphthalene
2169	7.010	1	Acenaphthylene
2189	9.390	1	Hexamethylbenzene
2206	3.387	0	
2226	5.235	0	
2262	26.156	1	Acenaphthene
2281	16.846	1	4-Methylbiphenyl
2303	10.764	1	3-Methylbiphenyl
2325	17.178	1	C3-Naphthalene
2346	37.359	1	Dibenzofuran
2381	14.023	0	
2392	19.971	1	C3-Naphthalene
2440	36.107	1	C3-Naphthalene
2452	13.215	1	C3-Naphthalene
2477	30.131	1	C3-Naphthalene
2517	48.887	1	Fluorene
2534	16.672	0	
2565	31.015	1	Methylbiphenyl
2583	37.905	0	
2601	8.585	0	
2621	34.276	1	Methyldibenzofuran
2653	49.742	0	
2679	16.880	0	
2700	15.537	0	
2725	6.366	0	
2753	13.744	0	
2813	46.773	1	Methylfluorene
2828	26.019	0	
2851	40.777	0	
2907	31.500	0	
2919	20.377	0	
2935	33.830	1	Dibenzothiophene
2951	17.131	0	
2966	6.018	0	
2976	7.401	0	
3000	195.817	1	Phenanthrene
3032	55.316	1	Anthracene
3089	8.515	0	
3130	15.338	0	
3155	22.404	0	
3170	22.209	0	
3206	15.517	0	
3237	17.708	1	Methyldibenzothiophene
3261	14.463	0	

3277	23.788	0	
3301	17.331	1	Methyldibenzothiophene
3342	5.999	0	
3370	51.535	1	3-Methylphenanthrene
3386	58.959	0	2-Methylphenanthrene
3427	73.376	1	4-H Cyclopenta(def)phenanthrene
3443	40.753	1	Methylphenanthrene
3456	39.802	1	Methylphenanthrene
3497	3.772	0	
3531	11.004	0	
3552	15.170	0	
3616	96.948	1	2-Phenylnaphthalene
3648	4.242	0	
3663	17.396	0	
3689	12.666	0	
3716	27.196	0	
3739	26.769	1	C2-Phenanthrene
3750	21.712	1	C2-Phenanthrene
3792	80.262	1	C2-178
3811	43.424	0	
3830	62.352	0	
3856	389.461	1	Fluoranthene
3898	17.602	0	
3926	8.263	0	
3950	40.286	0	
3973	57.445	0	
4000	457.136	1	Pyrene
4036	109.912	1	Methyl-phenylnaphthalene
4089	28.488	0	
4136	34.948	1	Methyl-phenylnaphthalene
4151	27.466	0	
4202	26.722	0	
4227	36.792	0	
4244	24.391	0	
4308	74.077	1	Benzo(a)fluorene
4340	2.973	1	Retene
4368	105.595	1	Benzo(b)fluorene
4405	12.394	0	
4436	78.108	1	Methyl-202
4458	46.828	1	Methyl-202
4485	4.656	0	
4517	12.960	0	
4541	4.595	0	
4586	9.103	0	
4615	4.672	0	
4669	94.871	0	
4719	138.000	0	
4778	66.929	1	Benzo(b)naphtho(2,1-d)thiophene
4803	71.777	1	Benzo(ghi)fluoranthene
4815	50.168	1	Benzo(c)phenanthrene
4850	35.118	0	
4878	35.643	0	
4912	16.890	1	Benzonaphthothiophene
4942	33.335	0	
4972	149.765	1	Benz(a)anthracene
5000	223.468	1	Chrysene
5046	64.974	1	Tetramethyloctahydrochrysene
5064	30.571	1	Tetramethyloctahydrochrysene
5089	33.507	1	Tetramethyloctahydrochrysene
5128	46.648	1	Methyl-228

5152	33.245	0	
5198	29.895	0	
5226	7.180	0	
5244	10.177	0	
5258	14.221	0	
5278	18.083	0	
5305	75.365	1	Methyl-228
5329	37.208	1	Methyl-228
5348	27.064	0	
5372	57.578	0	
5393	76.493	1	1-Phenylphenanthrene
5451	18.297	1	Trimethyltetrahydrochrysene
5462	13.396	1	Trimethyltetrahydrochrysene
5488	12.319	0	
5515	11.881	0	
5555	4.394	0	
5597	22.026	0	
5649	35.294	0	
5677	24.373	0	
5695	34.935	0	
5751	405.653	1	Benzofluoranthene
5815	52.404	1	Benzo(a)fluoranthene
5914	174.996	1	Benzo(e)pyrene
5945	151.105	1	Benzo(a)pyrene
6000	90.895	1	Perylene
6070	48.551	1	MW-252
6111	36.168	0	
6175	60.227	0	
6244	21.174	0	
6260	15.072	0	
6311	7.647	0	
6348	19.457	0	
6533	2.034	0	
6563	2.883	0	
6605	2.034	0	
6672	7.801	0	
6718	6.989	0	
6783	26.616	0	
6830	72.816	1	Indeno(1,2,3-cd)pyrene
6877	19.238	1	Dibenz(a,h)anthracene
6947	8.512	0	
6969	10.221	0	
7000	62.709	1	Benzo(ghi)perylene

Station: ELI3
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
3225	17.402	1	9 H-Carbazole
3942	7.563	0	
5044	20.006	1	Benzocarbazole
5110	19.011	1	Benzanthrone/Benzofluorenone
5218	12.540	1	Benzocarbazole
5682	7.155	1	Aza-252
5969	16.595	1	Cyclopenta(def)chrysen-4-one
6771	9.264	0	

Table 8

Site: LAF1 (A) - Lafayette River

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (57% moisture)			
Aromatic fraction	104	54	1,400
Polar fraction	1	--	5.9
Organochlorines	--	--	91
TBT	--	--	15

Most Abundant Peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Fluoranthene	114.903	
Benzofluoranthene	102.324	
Pyrene	102.265	
Chrysene	63.236	
Benz(a)anthracene	44.743	
Benzo(e)pyrene	43.684	
Perylene	42.358	
Phenanthrene	40.620	
--	40.015	
Benzo(b)fluorene	37.146	
	631.294	(630 to 2 sf)
% of fraction	45%	

Polar Fraction

Compound	Concentration (ppb)	
--	5.871	
	5.871	(5.9 to 2 sf)
% of fraction	100%	

Station: LAF1(A)
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	6.685	1	Naphthalene
1535	4.342	1	2-Methylnaphthalene
1618	2.722	1	1-Methylnaphthalene
1875	2.729	0	
2000	4.238	1	Biphenyl
2061	5.532	1	C2-Naphthalene
2105	8.441	1	C2-Naphthalene
2123	3.807	0	
2261	2.416	1	Acenaphthene
2347	1.923	1	Dibenzofuran
2391	2.126	1	C3-Naphthalene
2439	8.729	1	C3-Naphthalene
2476	5.226	1	C3-Naphthalene
2518	5.881	1	Fluorene
2534	2.896	0	
2622	4.226	1	Methyldibenzofuran
2654	4.078	0	
2680	2.034	0	
2699	1.456	0	
2725	11.424	0	
2752	2.854	0	
2779	2.268	0	
2800	2.298	1	Methylfluorene
2814	2.152	1	Methylfluorene
2828	3.905	0	
2916	28.843	0	
2938	6.490	1	Dibenzothiophene
2951	2.406	0	
3000	40.620	1	Phenanthrene
3034	11.120	1	Anthracene
3131	1.793	0	
3170	9.741	0	
3206	3.070	0	
3240	1.788	1	Methyldibenzothiophene
3263	3.115	0	
3280	3.810	0	
3302	1.344	1	Methyldibenzothiophene
3342	3.124	0	
3372	11.857	1	3-Methylphenanthrene
3388	17.093	0	2-Methylphenanthrene
3428	16.612	1	4-H Cyclopenta(def)phenanthrene
3445	10.909	1	Methylphenanthrene
3459	12.007	1	Methylphenanthrene
3553	4.111	0	
3619	16.514	1	2-Phenylnaphthalene
3644	3.686	0	
3689	1.531	0	
3720	3.820	0	
3794	13.712	1	C2-178
3814	10.409	0	
3828	7.475	0	
3856	114.903	1	Fluoranthene
3901	4.267	0	

3929	1.426	0	
3954	5.106	0	
4000	102.265	1	Pyrene
4041	19.687	1	Methyl-phenylnaphthalene
4094	4.894	0	
4144	14.874	0	
4207	6.864	0	
4230	11.825	0	
4311	33.274	1	Benzo(a)fluorene
4343	8.166	1	Retene
4366	37.146	1	Benzo(b)fluorene
4438	19.393	1	Methyl-202
4461	8.472	0	
4670	9.039	0	
4724	27.033	0	
4781	13.996	1	Benzo(b)naphtho(2,1-d)thiophene
4805	14.135	1	Benzo(ghi)fluoranthene
4818	10.947	1	Benzo(c)phenanthrene
4915	2.711	1	Benzonaphthothiophene
4973	44.743	1	Benz(a)anthracene
5000	63.236	1	Chrysene
5047	13.361	1	Tetramethyloctahydrochrysene
5090	3.827	1	Tetramethyloctahydrochrysene
5131	5.378	1	Methyl-228
5154	3.973	0	
5201	2.900	0	
5282	3.700	0	
5307	22.007	1	Methyl-228
5331	7.301	0	
5351	40.015	0	
5374	9.115	0	
5395	13.667	1	1-Phenylphenanthrene
5466	7.164	1	Trimethyltetrahydrochrysene
5493	1.919	0	
5679	2.107	0	
5748	102.324	1	Benzofluoranthene
5814	8.382	1	Benzo(a)fluoranthene
5913	43.684	1	Benzo(e)pyrene
5944	35.809	1	Benzo(a)pyrene
5973	6.919	0	
6000	42.358	1	Perylene
6074	6.185	0	
6112	21.520	0	
6182	7.167	0	
6251	12.090	0	
6353	6.614	0	
6676	1.959	0	
6787	11.898	0	
6832	21.738	1	Indeno(1,2,3-cd)pyrene
6880	4.340	1	Dibenz(a,h)anthracene
7000	17.995	1	Benzo(ghi)perylene

Station: LAF1(A)
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
3652	5.871	0	

Station: LAF1(B)
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	3.055	1	Naphthalene
1534	2.304	1	2-Methylnaphthalene
1616	1.456	1	1-Methylnaphthalene
1877	.827	0	
2000	2.082	1	Biphenyl
2061	3.933	1	C2-Naphthalene
2104	4.455	1	C2-Naphthalene
2260	1.806	1	Acenaphthene
2346	1.470	1	Dibenzofuran
2390	4.329	1	C3-Naphthalene
2438	6.506	1	C3-Naphthalene
2475	5.302	1	C3-Naphthalene
2517	3.903	1	Fluorene
2533	2.781	1	
2581	2.126	0	
2620	3.937	1	Methyldibenzofuran
2653	5.354	0	
2679	2.666	0	
2699	2.471	0	
2725	6.384	0	
2751	4.043	0	
2778	4.806	0	
2799	6.908	0	
2813	3.942	1	Methylfluorene
2827	5.018	0	
2846	2.980	0	
2903	17.116	0	
2918	5.382	0	
2937	5.552	1	Dibenzothiophene
2951	2.756	0	
3000	35.904	1	Phenanthrene
3034	9.208	1	Anthracene
3089	2.294	0	
3131	5.520	0	
3154	7.544	0	
3170	10.303	0	
3207	6.462	0	
3239	2.927	1	Methyldibenzothiophene
3263	4.879	0	
3280	6.569	0	
3302	4.104	1	Methyldibenzothiophene
3344	3.546	0	
3372	12.257	1	3-Methylphenanthrene
3389	17.218	0	2-Methylphenanthrene
3413	6.112	0	
3428	10.923	1	4-H Cyclopenta(def)phenanthrene
3444	12.492	1	Methylphenanthrene
3459	15.153	1	Methylphenanthrene
3531	1.627	0	
3554	1.903	0	
3619	16.891	1	2-Phenylnaphthalene
3645	4.677	0	
3692	1.568	0	

3720	4.324	0	
3741	5.481	1	C2-Phenanthrene
3794	13.235	1	C2-178
3814	10.459	0	
3829	7.081	0	
3857	91.758	1	Fluoranthene
3901	3.725	0	
3953	8.152	0	
3977	3.644	0	
4000	91.339	1	Pyrene
4040	22.316	1	Methyl-phenylnaphthalene
4068	3.982	0	
4094	6.333	0	
4141	2.074	0	
4206	6.366	0	
4249	31.562	0	
4312	26.840	1	Benzo(a)fluorene
4344	8.476	1	Retene
4366	31.502	1	Benzo(b)fluorene
4438	16.508	1	Methyl-202
4460	7.486	1	Methyl-202
4640	1.660	0	
4671	6.195	0	
4723	46.073	0	
4781	10.908	1	Benzo(b)naphtho(2,1-d)thiophene
4806	12.024	1	Benzo(ghi)fluoranthene
4817	8.600	1	Benzo(c)phenanthrene
4851	.820	0	
4915	.984	1	Benzonaphthothiophene
4973	36.115	1	Benz(a)anthracene
5000	54.420	1	Chrysene
5046	9.127	1	Tetramethyloctahydrochrysene
5065	3.107	1	Tetramethyloctahydrochrysene
5089	2.898	1	Tetramethyloctahydrochrysene
5129	3.783	1	Methyl-228
5155	2.850	0	
5200	2.562	0	
5260	1.725	0	
5281	1.130	0	
5307	21.318	1	Methyl-228
5331	6.051	0	
5351	30.772	0	
5374	7.600	0	
5397	12.127	1	1-Phenylphenanthrene
5466	7.450	1	Trimethyltetrahydrochrysene
5492	1.836	0	
5602	2.609	0	
5649	.962	0	
5678	1.198	0	
5748	97.432	1	Benzofluoranthene
5814	8.688	1	Benzo(a)fluoranthene
5912	37.249	1	Benzo(e)pyrene
5944	34.116	1	Benzo(a)pyrene
5974	2.463	0	
6000	55.819	1	Perylene
6071	7.408	0	
6110	17.623	0	
6180	7.354	0	
6249	12.227	0	
6349	8.166	0	

6673	2.255	0	
6718	1.918	0	
6765	4.315	0	
6785	6.458	0	
6830	31.314	1	Indeno(1,2,3-cd)pyrene
6878	8.806	1	Dibenz(a,h)anthracene
6948	1.515	0	
6971	1.227	0	
7000	28.487	1	Benzo(ghi)perylene

Station: LAF1(B)
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
3101	5.347	0	
3659	14.323	0	
3726	32.172	0	
4401	10.663	0	
4972	8.304	0	
5316	14.090	0	
6739	12.832	1	Dibenzocarbazole
7279	16.760	0	

Table 9

Site: LAF1 (B) - Lafayette River (replicate)

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment			
Aromatic fraction	122	56	1400
Polar fraction	8	1	110
Organochlorines	--	--	56
TBT	--	--	not analyzed

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	97.432	
Fluoranthene	91.758	
Pyrene	91.339	
Perylene	55.819	
Chrysene	54.420	
--	46.073	
Benzo(e)pyrene	37.249	
Benz(a)anthracene	36.115	
Phenanthrene	35.904	
Benzo(a)pyrene	34.116	
	580.225	(580 to 2 sf)
% of Fraction	41%	

Polar Fraction

Compound	Concentration (ppb)	
--	32.172	
--	16.760	
--	14.323	
--	14.090	
Dibenzocarbazole	12.832	
--	10.663	
--	8.304	(110 to 2 sf)
	109.145	
% of fraction	100%	

Table 10

Site: WBE1 - Western Branch, Hwy 17 bridge

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (59% moisture)			
Aromatic fraction	160	82	6100
Polar fraction	16	11	230
Organochlorines	--	--	240
TBT	--	--	19
Blue Crab			
Muscle (80% moisture) (5% lipid, dry wt. basis)			
Aromatic fraction	79	46	1,500
PCB	--	--	16
4,4-DDE	--	--	9.1
Hepatopancreas (72% moisture) (44% lipid, dry wt. basis)			
Aromatic fraction	145	78	14,000
PCB	--	--	2,000
4,4-DDE	--	--	530

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	433.381	
Pyrene	396.572	
Fluoranthene	375.421	
Chrysene	195.946	
Benzo(e)pyrene	174.387	
Phenanthrene	170.184	
Benzo(a)pyrene	161.387	
Benz(a)anthracene	142.887	
Indeno(1,2,3-cd)pyrene	138.809	
Benzo(ghi)perylene	122.720	
	2311.694	(2300 to 2 sf)
% of Fraction	38%	

Site WBE1 (continued)

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole	31.087	
Dibenzocarbazole,methyl-	30.985	
---	30.115	
Benzanthrone/Benzofluorenone	19.406	
Benzocarbazole	18.453	
Cyclopenta(def)chrysen-4-one	16.045	
Indenylanthracenone	13.926	
Carbazole,9H-	12.265	
Benzocarbazole	11.870	
--	9,882	
	210.192	(210 to 2 sf)
% of Fraction	91%	

Blue Crab (aromatic fraction)

Muscle

Compound	Concentration (ppb)	
Naphthalene,C4H9-	78.220	
Phenanthrene	63.946	
Acenaphthene,C3H7-/Fluorene,C2H5-	44.755	
Naphthalene,C5H11-	42.452	
Acenaphthene,C4H9-	39.211	
Fluorene,methyl-	36.677	
Naphthalene,C4H9-	36.098	
Acenaphthene,C3H7-/Fluorene,C2H5-	35.172	
Naphthalene,C5H11-	35.158	
Acenaphthene,C4H9-/Biphenyl,C4H9-	33.958	
	445.647	(450 to 2 sf)
% of Fraction	30%	

Site WBE1 (continued)

Hepatopancreas

Compound	Concentration (ppb)	
Methyl-252	2835.533	
--	685.607	
Naphthalene,C4H9-	644.740	
Naphthalene,C5H11-	485.319	
--	343.471	
Naphthalene,C4H9	341.018	
Fluorene,methyl-	339.995	
Phenanthrene	309.115	
--	302.718	
Acenaphthene,C3H7-	266.858	
	6554.374	(6600 to 2 sf)
% of Fraction	47%	

Station: WBE1
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	32.658	1	Naphthalene
1069	1.169	0	
1096	2.014	0	
1189	3.491	0	
1535	28.982	1	2-Methylnaphthalene
1620	16.088	1	1-Methylnaphthalene
1672	2.902	0	
1771	1.520	0	
2000	9.018	1	Biphenyl
2035	9.055	1	Ethylnaphthalene
2062	34.482	1	C2-Naphthalene
2100	19.110	1	C2-Naphthalene
2108	31.976	1	C2-Naphthalene
2148	17.077	1	C2-Naphthalene
2169	3.815	1	Acenaphthylene
2188	5.228	1	Hexamethylbenzene
2206	4.743	0	
2226	4.155	0	
2262	15.611	1	Acenaphthene
2281	12.103	1	4-Methylbiphenyl
2302	7.443	1	3-Methylbiphenyl
2325	10.085	1	C3-Naphthalene
2346	29.322	1	Dibenzofuran
2381	12.462	0	
2392	16.883	1	C3-Naphthalene
2439	36.353	1	C3-Naphthalene
2452	13.040	1	C3-Naphthalene
2478	26.203	1	C3-Naphthalene
2517	32.314	1	Fluorene
2535	9.198	1	C3-Naphthalene
2565	2.251	1	Methylbiphenyl
2582	8.573	0	
2620	17.595	1	Methyldibenzofuran
2652	31.741	1	Methyldibenzofuran
2677	10.071	1	Methyldibenzofuran
2699	7.166	0	
2724	7.252	0	
2751	12.516	1	C4-Naphthalene
2779	8.757	0	
2812	50.916	1	Methylfluorene
2827	27.209	1	C4-Naphthalene
2846	43.444	1	Methylfluorene
2904	52.675	1	C4-Naphthalene
2917	19.961	1	C3-154
2935	26.356	1	Dibenzothiophene
2950	11.746	0	
2965	.901	0	
2982	11.158	0	
3000	170.184	1	Phenanthrene
3031	43.242	1	Anthracene
3087	11.081	0	
3104	1.370	0	
3128	17.646	0	

3147	26.130	1	C2-Fluorene
3168	24.778	0	
3205	7.139	0	
3235	7.239	1	C4-154
3259	12.172	1	1-Phenylnaphthalene
3275	16.461	0	
3299	13.538	1	Methyldibenzothiophene
3341	16.404	0	
3368	57.283	1	3-Methylphenanthrene
3384	71.414	1	2-Methylphenanthrene
3425	87.997	1	4-H Cyclopenta(def)phenanthrene
3442	43.414	1	Methylphenanthrene
3453	43.258	1	Methylphenanthrene
3496	7.044	0	
3525	13.803	0	
3550	13.686	0	
3613	81.636	1	2-Phenylnaphthalene
3646	2.299	0	
3689	6.865	0	
3710	18.945	0	
3738	45.401	1	C2-Phenanthrene
3771	28.571	0	
3790	64.530	1	C2-178
3824	122.420	0	
3856	375.421	1	Fluoranthene
3893	12.775	0	
3919	9.446	0	
3947	45.908	1	Methyl-phenylnaphthalene
3966	56.469	1	Methyl-phenylnaphthalene
4000	396.572	1	Pyrene
4033	82.066	1	Methyl-phenylnaphthalene
4056	9.395	0	
4085	26.004	0	
4131	29.050	1	Methyl-phenylnaphthalene
4149	18.666	0	
4198	23.173	0	
4220	56.853	0	
4305	80.184	1	Benzo(a)fluorene
4323	8.809	1	Retene
4362	81.652	1	Benzo(b)fluorene
4399	7.614	0	
4433	59.027	1	Methyl-202
4454	33.954	1	Methyl-202
4480	3.140	0	
4514	10.205	0	
4534	4.354	0	
4579	6.162	0	
4664	91.974	1	Methyl-202
4711	85.287	0	
4777	45.438	1	Benzo(b)naphtho(2,1-d)thiophene
4803	92.825	1	Benzo(ghi)fluoranthene
4845	14.540	0	
4858	11.107	0	
4874	24.571	0	
4908	26.677	1	Benzonaphthothiophene
4971	142.887	1	Benz(a)anthracene
5000	195.946	1	Chrysene
5043	50.315	1	MW-228
5082	7.340	1	Tetramethyloctahydrochrysene
5125	22.936	1	Methyl-228

5148	16.867	0	
5195	14.762	0	
5221	10.571	0	
5243	2.511	0	
5274	4.164	0	
5302	60.306	1	Methyl-228
5325	28.233	1	Methyl-228
5343	20.063	0	
5370	39.346	0	
5390	54.113	1	1-Phenylphenanthrene
5444	12.491	1	Trimethyltetrahydrochrysene
5458	10.959	1	Trimethyltetrahydrochrysene
5482	9.967	0	
5507	10.869	0	
5550	4.552	0	
5595	19.388	0	
5619	4.329	0	
5640	13.904	0	
5671	8.555	0	
5691	.689	0	
5708	2.100	0	
5756	433.381	1	Benzofluoranthene
5811	35.837	1	Benzo(a)fluoranthene
5842	1.291	0	
5873	2.193	0	
5916	174.387	1	Benzo(e)pyrene
5947	161.387	1	Benzo(a)pyrene
6000	99.602	1	Perylene
6064	41.972	1	MW-252
6113	66.419	1	MW-252
6166	63.896	0	
6239	61.606	0	
6302	1.196	0	
6342	16.465	0	
6393	4.067	0	
6518	29.456	0	
6658	16.364	0	
6705	7.794	0	
6759	57.532	0	
6829	138.809	1	Indeno(1,2,3-cd)pyrene
6866	47.537	1	Dibenz(a,h)anthracene
6936	18.526	0	
6961	20.659	0	
7000	122.720	1	Benzo(ghi)perylene

Station: WBE1
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
3102	7.503	0	
3222	11.870	1	9 H-Carbazole
3896	5.402	1	C2-Carbazole
4249	31.087	0	
5047	16.045	1	Benzocarbazole
5112	18.453	1	Benzanthrone/Benzofluorenone
5218	9.882	1	Benzocarbazole
5595	5.549	0	
5677	8.612	1	Aza-252
5961	13.926	1	Cyclopenta(def)chrysen-4-one
6193	5.345	0	
6635	5.491	1	Dibenzocarbazole
6762	30.985	1	Dibenzocarbazole
7007	19.406	0	
7036	12.265	1	Indenylanthracenone
7302	30.115	1	Methyldibenzocarbazole

Station: WBE1 Crab Muscle Tissue
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2051	8.682	1	Naphthalene,C2H5-
2368	7.125	1	Naphthalene,C3H7-
2380	5.528	1	Bibenzyl
2392	7.579	1	Naphthalene,C3H7-
2434	6.129	1	Naphthalene,C3H7-
2441	5.487	1	Naphthalene,C3H7-
2524	10.141	1	Fluorene
2537	13.845	1	Naphthalene,C3H7-
2572	9.925	1	Naphthalene,C3H7-
2625	5.441	1	Naphthalene,C4H9-
2643	6.082	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2679	12.633	1	Naphthalene,C4H9-
2695	13.112	1	Naphthalene,C4H9-
2711	8.333	1	Naphthalene,C4H9-
2747	17.196	1	Naphthalene,C4H9-
2766	42.452	1	Naphthalene,C5H11-
2786	29.141	0	
2795	36.098	1	Naphthalene,C4H9-
2809	19.790	1	Fluorene,methyl-
2826	36.677	1	Fluorene,methyl-
2836	25.768	0	
2846	19.268	0	
2856	23.140	1	Fluorene,methyl-/Naphthalene,C5H11-
2866	14.007	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2879	15.650	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2886	10.038	0	
2899	78.220	1	Naphthalene,C4H9-
2913	29.546	0	
2931	28.537	0	
2938	30.005	0	
2960	20.970	0	
2969	32.421	0	
2984	13.247	0	
3000	63.946	1	Phenanthrene
3017	18.877	0	
3032	26.125	1	Anthracene/Naphthalene,C5H11-
3049	8.427	0	
3069	26.769	0	
3078	8.487	0	
3089	24.931	1	Naphthalene,C7H15-
3120	44.755	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3141	27.943	0	
3147	24.694	1	Acenaphthene,C4H9-
3163	35.172	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3179	7.314	0	
3185	7.026	0	
3192	13.087	1	Acenaphthene,C3H7-
3200	14.297	1	Acenaphthene,C3H7-
3207	10.959	1	Acenaphthene,C3H7-
3213	16.219	0	
3242	39.211	1	Acenaphthene,C4H9-
3258	33.958	1	Acenaphthene,C4H9-
3280	9.171	0	

3287	11.886	0	
3301	20.779	0	
3330	35.158	1	Naphthalene,C5H11-
3344	9.329	0	
3358	11.280	1	Phenanthrene,3-methyl-
3367	25.067	1	Phenanthrene,3-methyl-
3383	20.549	1	Phenanthrene,2-methyl-
3403	30.617	0	
3418	13.529	1	Cyclopenta(def)phenanthrene,4H-
3441	31.624	1	Phenanthrene,methyl-
3457	18.266	1	Phenanthrene,methyl-
3475	10.361	0	
3504	9.404	0	
3525	14.339	0	
3549	10.750	0	
3585	5.423	0	
3609	8.211	1	Anthraquinone
3668	10.639	0	
3726	7.354	0	
3747	8.558	1	Phenanthrene,C2H5-
3782	10.194	1	Base-neutral,MW 178,C2H5-
3801	5.989	1	Base-neutral,MW 178,C2H5-
3947	6.575	0	
4000	5.579	1	Pyrene
5695	18.151	0	
5879	6.704	0	

Station: WBE1 Crab Hepatopancreas
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	32.201	1	Naphthalene
1038	22.454	0	
1104	5.912	0	
1184	9.999	0	
1552	23.223	1	Naphthalene,2-methyl-
1573	11.603	0	
1638	21.237	1	Naphthalene,1-methyl-
1750	6.177	0	
1971	20.061	0	
2006	6.647	0	
2031	13.281	1	Naphthalene,ethyl-
2056	125.774	1	Naphthalene,C2H5-
2100	33.724	1	Naphthalene,C2H5-
2109	15.936	1	Naphthalene,C2H5-
2152	16.249	1	Naphthalene,C2H5-
2161	11.512	1	Acenaphthylene
2194	13.008	1	Benzene,hexamethyl-
2247	11.773	0	
2271	170.973	1	Acenaphthene
2286	11.815	1	Biphenyl,4-methyl-
2305	16.611	1	Biphenyl,3-methyl-
2326	19.678	1	Naphthalene,C3H7-
2345	10.831	0	
2354	39.362	1	Dibenzofuran
2372	76.697	1	Bibenzyl
2383	71.391	0	
2395	103.014	1	Naphthalene,C3H7-
2412	12.191	0	
2423	20.934	0	
2437	105.914	1	Naphthalene,C3H7-
2442	90.755	1	Naphthalene,C3H7-
2462	21.851	1	Naphthalene,C3H7-
2478	130.025	1	Naphthalene,C3H7-
2484	137.651	1	Naphthalene,C3H7-
2498	8.954	0	
2525	150.489	1	Fluorene
2540	207.912	1	Naphthalene,C3H7-
2549	42.105	1	Naphthalene,C3H7-
2558	50.854	1	Naphthalene,C3H7-
2571	156.560	1	Naphthalene,C3H7-
2582	62.375	1	Naphthalene,C3H7-
2591	105.242	1	Biphenyl,methyl-/Acenaphthene,methyl-
2614	80.750	1	Dibenzofuran,methyl-
2626	99.426	1	Naphthalene,C4H9-
2636	63.163	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2646	85.882	0	
2656	80.365	0	
2680	135.466	1	Naphthalene,C4H9-
2695	137.883	1	Naphthalene,C4H9-
2705	9.059	1	Naphthalene,C4H9-
2714	29.395	1	Naphthalene,C4H9-
2737	71.725	1	Naphthalene,C4H9-
2747	250.657	1	Naphthalene,C4H9-

2769	485.319	1	Naphthalene,C5H11-
2786	302.718	0	
2797	341.018	1	Naphthalene,C4H9-
2809	177.235	1	Fluorene,methyl-
2827	339.995	1	Fluorene,methyl-
2837	235.129	0	
2848	107.621	0	
2853	71.147	0	
2859	139.026	1	Fluorene,methyl-/Naphthalene,C5H11-
2868	84.750	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2880	69.170	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2886	57.182	0	
2899	644.740	1	Naphthalene,C4H9-
2912	141.077	0	
2923	20.104	0	
2932	107.212	0	
2936	43.287	0	
2946	72.433	0	
2967	124.714	0	
3000	309.115	1	Phenanthrene
3020	44.886	1	Naphthalene,C5H11-
3032	87.571	1	Anthracene
3045	9.187	0	
3052	10.698	0	
3067	74.767	0	
3090	75.169	1	Naphthalene,C7H15-
3104	30.133	1	Naphthalene,C7H15-
3119	180.768	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3138	136.543	0	
3146	139.917	1	Acenaphthene,C4H9-
3161	184.307	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3198	266.858	1	Acenaphthene,C3H7-
3223	18.691	0	
3242	129.693	1	Acenaphthene,C4H9-
3259	98.685	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3280	37.737	0	
3299	31.767	0	
3316	18.651	0	
3331	108.191	1	Naphthalene,C5H11-
3345	8.152	0	
3356	20.680	1	Phenanthrene,methyl-
3367	80.399	1	Phenanthrene,3-methyl-
3384	64.227	1	Phenanthrene,2-methyl-
3403	78.829	0	
3419	10.677	0	
3435	12.541	1	Cyclopenta(def)phenanthrene,4H-
3443	104.784	1	Phenanthrene,methyl-
3457	57.086	1	Phenanthrene,methyl-
3468	8.231	0	
3477	11.659	0	
3490	12.071	0	
3505	35.156	0	
3523	62.961	0	
3548	28.354	0	
3563	28.474	0	
3582	40.022	0	
3603	33.641	1	Anthraquinone
3611	24.446	0	
3616	34.079	0	
3638	32.036	0	

3659	27.368	0	
3673	54.041	0	
3701	11.199	0	
3728	22.365	0	
3753	19.780	0	
3784	44.056	1	Base-neutral,MW 178,C2H5-
3803	16.718	1	Base-neutral,MW 178,C2H5-
3818	21.474	0	
3850	48.061	1	Fluoranthene
3896	26.942	0	
3948	25.443	0	
3965	8.527	0	
4000	48.134	1	Pyrene
4029	12.908	0	
4077	14.810	0	
4113	25.781	0	
4141	24.447	0	
4171	6.381	1	Phenanthrene,C3H7-
4229	174.679	1	DDE,4,4'-
4326	9.922	1	Retene
4430	20.027	1	C15-PCB
4485	40.351	1	Cyclopentaphenanthrene,C4H9-
4498	18.389	1	Cyclopentaphenanthrene,C4H9-
4592	22.623	0	
4899	18.719	1	C17-PCB
5067	9.589	0	
5148	12.769	0	
5227	8.012	0	
5892	74.551	1	Benzo(e)pyrene
6048	685.607	0	
6148	2835.533	1	Base-neutral,methyl-252
6467	50.490	0	

Table 11

Site: EBE1 - Eastern Branch, Berkley Bridge

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (63% moisture)			
Aromatic fraction	122	60	31,000
Polar fraction	52	25	1700
Organochlorines	--	--	660
TBT	--	--	1,100 (replicate=1,100)
Blue crabs			
Muscle (79% moisture) (4% lipid, dry wt. basis)			
Aromatic fraction	50	38	520
PCB	--	--	22
44'DDE	--	--	90
Hepatopancreas (71% moisture) (48% lipid, dry wt. basis)			
Aromatic fraction	147	80	3,000
PCB	--	--	2300
44'DDE	--	--	390

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	2577.150	
Fluoranthene	2401.389	
Benzofluoranthene	2346.229	
Chrysene	1153.783	
Benzo(a)pyrene	906.187	
Phenanthrene	891.621	
Benzo(e)pyrene	889.791	
Benzo(b)fluorene	866.284	
Benz(a)anthracene	735.143	
Naphthalene,phenyl-,methyl-	721.828	
	13489.405	(13000 to 2 sf)
% of Fraction	42%	

Site EBE 1 (continued)

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	160.837	
--	127.432	
Carbazole,9H-	104.578	
Indenylanthracenone	91.984	
Aza-252	89.710	
--	81.517	
Benzocarbazole	74.743	
Cyclopenta(def)chrysen-4-one	60.147	
Benzanthrone/Benzofluorenone	57.811	
Dibenzocarbazole	56.895	
	905.654	(910 to 2 sf)
% of Fraction	54%	

Blue Crab (aromatic fraction)

Muscle

Compound	Concentration (ppb)	
Naphthalene,C4H9-	42.891	
Naphthalene,C5H11-	28.659	
Phenanthrene	27.992	
Naphthalene,C4H9-	21.046	
--	18.784	
Naphthalene,C4H9-	18.482	
Naphthalene,C3H7-	16.329	
Naphthalene,C2H5-	14.969	
--	14.818	
Fluorene,methyl-	14.813	
	218.483	(220 to 2 sf)
% of Fraction	42%	

Site EBE 1 (contiued)

Compound	Hepatopancreas Concentration (ppb)	
Naphthalene,C4H9-	116.309	
Naphthalene,C5H11-	89.543	
--	68.223	
Naphthalene,C4H9-	66.317	
Fluorene,methyl-	64.182	
Binaphthyl,1,1'-(ISTD)/C16-PCB	61.187	
Pyrene	58.482	
Fluoranthene	53.092	
Phenanthrene	52.315	
--	52.175	
	681.825	(680 to 2 sf)
% of Fraction	23%	

Station: EBE1
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	150.886	1	Naphthalene
1539	87.380	1	2-Methylnaphthalene
1622	50.106	1	1-Methylnaphthalene
2037	26.947	1	Ethylnaphthalene
2063	106.735	1	C2-Naphthalene
2108	182.946	1	C2-Naphthalene
2150	54.415	1	C2-Naphthalene
2206	43.996	0	
2226	36.898	0	
2262	135.382	1	Acenaphthene
2283	33.795	1	4-Methylbiphenyl
2304	25.575	1	3-Methylbiphenyl
2326	33.670	1	C3-Naphthalene
2347	112.337	1	Dibenzofuran
2392	29.698	1	C3-Naphthalene
2441	146.020	1	C3-Naphthalene
2452	107.071	1	C3-Naphthalene
2477	123.062	1	C3-Naphthalene
2518	186.339	1	Fluorene
2535	39.816	0	
2583	152.103	0	
2622	101.278	1	Methyldibenzofuran
2654	175.436	0	
2680	46.823	0	
2701	48.478	0	
2752	62.784	0	
2814	156.887	1	Methylfluorene
2829	69.290	0	
2849	92.246	0	
2906	97.880	0	
2919	74.611	0	
2936	169.779	1	Dibenzothiophene
2975	33.388	0	
3000	891.621	1	Phenanthrene
3033	309.616	1	Anthracene
3092	57.122	0	
3132	69.555	0	
3172	205.644	0	
3208	101.281	0	
3237	90.238	1	Methyldibenzothiophene
3261	58.279	0	
3281	130.043	0	
3302	85.445	1	Methyldibenzothiophene
3342	30.843	0	
3370	195.253	1	3-Methylphenanthrene
3386	255.270	0	2-Methylphenanthrene
3426	588.444	1	4-H Cyclopenta(def)phenanthrene
3456	232.156	1	Methylphenanthrene
3497	21.653	0	
3532	29.860	0	
3553	71.140	0	
3617	424.779	1	2-Phenylnaphthalene
3667	39.633	0	

3688	52.274	0	
3718	85.797	0	
3742	211.146	1	C2-Phenanthrene
3794	355.561	1	C2-178
3813	188.362	0	
3831	199.639	0	
3857	2401.389	1	Fluoranthene
3900	133.759	0	
3953	202.388	0	
3976	114.943	0	
4000	2577.150	1	Pyrene
4039	721.828	1	Methyl-phenylnaphthalene
4092	190.707	0	
4139	238.108	1	Methyl-phenylnaphthalene
4153	212.666	0	
4204	210.647	0	
4226	373.886	0	
4308	643.753	1	Benzo(a)fluorene
4342	174.080	1	Retene
4367	866.284	1	Benzo(b)fluorene
4405	176.285	0	
4437	494.760	1	Methyl-202
4459	344.978	1	Methyl-202
4519	54.216	0	
4670	303.099	0	
4723	407.620	0	
4778	304.190	1	Benzo(b)naphtho(2,1-d)thiophene
4804	537.153	1	Benzo(ghi)fluoranthene
4850	63.541	0	
4945	23.512	0	
4973	735.143	1	Benz(a)anthracene
5000	1153.783	1	Chrysene
5047	331.518	1	Tetramethyloctahydrochrysene
5095	44.172	1	Tetramethyloctahydrochrysene
5129	105.378	1	Methyl-228
5158	74.282	0	
5201	80.328	0	
5259	41.659	0	
5280	34.946	0	
5306	326.570	1	Methyl-228
5330	144.102	1	Methyl-228
5348	109.154	0	
5373	283.927	0	
5393	356.645	1	1-Phenylphenanthrene
5453	96.856	1	Trimethyltetrahydrochrysene
5490	46.807	0	
5515	53.463	0	
5597	22.538	0	
5651	55.599	0	
5678	29.734	0	
5749	2346.229	1	Benzofluoranthene
5814	209.092	1	Benzo(a)fluoranthene
5912	889.791	1	Benzo(e)pyrene
5943	906.187	1	Benzo(a)pyrene
6000	299.102	1	Perylene
6070	179.722	1	MW-252
6114	78.055	0	
6178	240.599	0	
6245	76.657	0	
6263	70.749	0	

6316	24.367	0	
6349	86.845	0	
6674	44.440	0	
6785	166.372	0	
6831	520.401	1	Indeno(1,2,3-cd)pyrene
6879	150.731	1	Dibenz(a,h)anthracene
6949	16.592	0	
6971	20.448	0	
7000	404.588	1	Benzo(ghi)perylene

Station: EBE1
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2716	5.453	0	
2737	14.163	0	
2843	5.168	0	
2924	12.340	0	
3016	8.467	0	
3042	16.878	0	
3156	5.240	0	
3214	104.578	1	9 H-Carbazole
3363	81.517	0	
3449	29.742	0	
3485	6.843	1	Methyl-9 H-carbazole
3546	9.749	0	
3560	21.984	0	
3598	14.453	0	
3780	10.002	0	
3816	9.092	0	
3889	28.458	1	C2-Carbazole
3912	28.480	1	C2-Carbazole
3930	53.113	1	Aza-202
3970	10.905	1	Aza-202
4129	6.623	0	
4243	127.432	0	
4595	10.406	0	
4726	8.775	0	
4834	10.854	0	
5030	160.837	1	Benzocarbazole
5098	57.811	1	Benzanthrone/Benzofluorenone
5166	48.902	1	Benzocarbazole
5203	74.743	1	Benzocarbazole
5338	24.127	0	
5408	25.088	0	
5460	21.289	0	
5504	14.884	0	
5587	27.522	0	
5674	89.710	1	Aza-252
5742	16.555	1	Aza-252
5917	16.116	1	C2-Benzacridine
5941	7.858	1	Cyclopenta(def)chrysen-4-one
5965	60.147	1	Cyclopenta(def)chrysen-4-one
6078	9.097	1	C2-Benzacridine
6124	16.744	1	C2-Benzacridine
6199	11.337	0	
6339	13.491	0	
6451	10.951	0	
6639	30.258	1	Dibenzocarbazole
6757	56.895	1	Dibenzocarbazole
7014	91.984	1	Indenylanthracenone
7038	42.368	1	Indenylanthracenone
7102	11.355	1	Dibenzocarbazole
7150	19.720	1	Dibenzocarbazole
7187	14.132	1	Dibenzocarbazole
7311	34.460	1	Methyldibenzocarbazole
7495	18.261	0	

Station: EBE1 Crab Muscle Tissue
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2055	14.969	1	Naphthalene,C2H5-
2371	7.033	1	Bibenzyl
2382	6.904	0	
2394	9.371	1	Naphthalene,C3H7-
2436	8.342	1	Naphthalene,C3H7-
2442	7.936	1	Naphthalene,C3H7-
2475	8.263	1	Naphthalene,C3H7-
2483	13.296	1	Naphthalene,C3H7-
2524	11.840	1	Fluorene
2539	16.329	1	Naphthalene,C3H7-
2573	13.589	1	Naphthalene,C3H7-
2590	5.250	1	Biphenyl,methyl-/Acenaphthene,methyl-
2627	5.353	1	Dibenzofuran,methyl-
2680	5.813	1	Naphthalene,C4H9-
2696	9.148	1	Naphthalene,C4H9-
2737	5.163	1	Naphthalene,C4H9-
2747	18.482	1	Naphthalene,C4H9-
2769	28.659	1	Naphthalene,C5H11-
2786	18.784	0	
2797	21.046	1	Naphthalene,C4H9-
2811	6.501	1	Fluorene,methyl-
2828	14.813	1	Fluorene,methyl-
2837	7.322	0	
2900	42.891	1	Naphthalene,C4H9-
2913	8.368	0	
2932	11.840	0	
2944	5.621	0	
2967	9.924	0	
3000	27.992	1	Phenanthrene
3033	6.369	1	Anthracene/Naphthalene,C5H11-
3070	5.001	0	
3119	6.445	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3149	6.983	1	Acenaphthene,C4H9-
3163	8.305	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3199	8.024	1	Acenaphthene,C3H7-
3208	6.223	1	Acenaphthene,C3H7-
3243	10.115	1	Acenaphthene,C4H9-
3264	5.468	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3284	6.412	0	
3298	6.425	0	
3331	7.625	1	Naphthalene,C5H11-
3363	8.855	1	Phenanthrene,3-methyl-
3383	7.179	1	Phenanthrene,2-methyl-
3402	7.794	0	
3442	11.647	1	Phenanthrene,methyl-
3456	5.181	1	Phenanthrene,methyl-
4000	5.509	1	Pyrene
4229	10.298	1	DDE,4,4'-
5895	6.686	1	Benzo(e)pyrene
6961	14.818	0	

Station: EBE1 Crab Hepatopancreas
Neutral Extract 63.52 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	10.433	1	Naphthalene
1037	8.597	0	
1266	5.088	0	
1552	6.130	0	
1639	6.454	1	Naphthalene,1-methyl-
1973	7.843	0	
2007	12.534	0	
2030	13.501	1	Naphthalene,ethyl-
2057	28.425	1	Naphthalene,C2H5-
2102	6.361	1	Naphthalene,C2H5-
2272	31.927	1	Acenaphthene
2306	5.649	1	Biphenyl,3-methyl-
2355	6.375	1	Dibenzofuran
2371	25.893	1	Bibenzyl
2384	16.005	0	
2396	21.733	1	Naphthalene,C3H7-
2423	6.871	0	
2438	35.536	1	Naphthalene,C3H7-
2464	5.700	1	Naphthalene,C3H7-
2480	25.627	1	Naphthalene,C3H7-
2485	18.511	1	Naphthalene,C3H7-
2525	31.794	1	Fluorene
2541	30.862	1	Naphthalene,C3H7-
2550	7.693	1	Naphthalene,C3H7-
2558	9.765	1	Naphthalene,C3H7-
2574	21.199	1	Naphthalene,C3H7-
2592	6.107	1	Biphenyl,methyl-/Acenaphthene,methyl-
2615	8.934	1	Dibenzofuran,methyl-
2627	13.497	1	Naphthalene,C4H9-
2637	11.148	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2646	14.333	0	
2656	10.192	0	
2674	9.637	0	
2680	13.926	1	Naphthalene,C4H9-
2697	27.697	1	Naphthalene,C4H9-
2714	19.880	1	Naphthalene,C4H9-
2740	12.391	1	Naphthalene,C4H9-
2749	43.018	1	Naphthalene,C4H9-
2770	89.543	1	Naphthalene,C5H11-
2788	52.175	0	
2798	66.317	1	Naphthalene,C4H9-
2813	30.826	1	Fluorene,methyl-
2829	64.182	1	Fluorene,methyl-
2837	41.656	0	
2847	11.279	0	
2853	13.999	0	
2858	29.506	1	Fluorene,methyl-/Naphthalene,C5H11-
2869	17.952	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2886	25.428	0	
2900	116.309	1	Naphthalene,C4H9-
2913	26.994	0	
2931	32.992	0	
2945	8.681	0	

2960	12.241	0	
2969	22.559	0	
3000	52.315	1	Phenanthrene
3016	5.923	0	
3034	22.326	1	Anthracene/Naphthalene,C5H11-
3053	12.476	0	
3070	18.504	0	
3092	22.759	1	Naphthalene,C7H15-
3121	44.850	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3135	19.776	0	
3149	37.462	1	Acenaphthene,C4H9-
3164	31.122	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3194	9.339	1	Acenaphthene,C3H7-
3208	8.852	1	Acenaphthene,C3H7-
3244	35.652	1	Acenaphthene,C4H9-
3263	26.552	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3282	25.965	0	
3297	13.892	0	
3311	11.765	0	
3331	26.115	1	Naphthalene,C5H11-
3343	7.642	0	
3364	24.735	1	Phenanthrene,methyl-
3370	10.503	1	Phenanthrene,3-methyl-
3384	25.716	1	Phenanthrene,2-methyl-
3404	23.292	0	
3420	19.728	1	Cyclopenta(def)phenanthrene,4H-
3443	51.292	1	Phenanthrene,methyl-
3459	32.627	1	Phenanthrene,methyl-
3501	19.408	0	
3523	25.167	0	
3552	12.326	0	
3566	10.801	0	
3582	18.263	0	
3614	12.849	1	Anthraquinone
3624	5.822	0	
3645	9.427	0	
3652	5.051	0	
3660	7.446	0	
3666	8.624	0	
3674	11.148	0	
3705	11.293	0	
3720	10.449	0	
3740	5.892	1	Phenanthrene,C2H5-
3755	11.071	0	
3763	9.892	0	
3783	15.737	1	Base-neutral,MW 178,C2H5-
3799	11.892	1	Base-neutral,MW 178,C2H5-
3820	5.261	1	Cyclopentaphenanthrene,methyl-
3854	53.092	1	Fluoranthene
3897	27.534	0	
3938	7.542	0	
3951	13.391	0	
3965	8.269	0	
3987	7.662	0	
4000	58.482	1	Pyrene
4028	12.805	0	
4043	7.215	0	
4075	22.877	1	Phenanthrene,C3H7-/C15-PCB
4110	24.221	0	
4141	29.200	0	

4266	5.684	0	
4227	168.897	1	DDE,4,4'-
4282	8.504	1	Base-neutral,methyl-202
4327	7.470	1	Retene
4370	5.035	1	Benzo(b)fluorene
4412	12.155	1	C15-PCB
4430	43.571	1	C15-PCB
4483	68.223	0	
4498	18.085	1	Cyclopentaphenanthrene,C4H9-
4570	16.853	1	C16-PCB
4588	27.844	0	
4668	5.364	0	
4687	10.489	0	
4753	61.187	1	C16-PCB
4751	6.662	0	
4791	10.221	1	Benzo(ghi)fluoranthene
4811	7.381	1	Benzo(c)phenanthrene
4838	5.690	1	C17-PCB
4896	26.824	1	C17-PCB
4977	7.035	1	Benz(a)anthracene
5000	13.604	1	Chrysene
5028	18.899	0	
5069	16.258	0	
5149	15.108	0	
5222	9.840	0	
5274	7.585	1	Base-neutral,methyl-228
5298	13.996	1	Base-neutral,methyl-228/C17-PCB
5457	5.678	1	Binaphthyl,2,2'-/Dihydrobenzofluoranthene
5517	10.834	0	
5684	35.797	0	
5887	32.835	0	
6056	5.043	1	Base-neutral,methyl-252
6142	17.156	1	Base-neutral,methyl-252
6699	11.721	0	

Table 12

Site: EBE2 - Eastern Branch, Compostella Bridge

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (44% moisture)			
Aromatic fraction	102	56	60,000
Polar fraction	87	24	5,500
Organochlorines	--	--	400
TBT	--	--	220

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	7142.897	
Fluoranthene	5350.604	
Benzofluoranthene	4201.558	
Chrysene	2416.645	
Phenanthrene	2077.038	
Benzo(a)pyrene	1924.024	
Benzo(e)pyrene	1864.135	
Benzo(b)fluorene	1861.597	
Benz(a)anthracene	1842.127	
Naphthalene,phenyl-,methyl-	1619.958	
	30300.583	(30000 to 2 sf)
% of Fraction	50%	

Polar Fraction

Compound	Concentration (ppb)	
Carbazole,9H-	410.890	
Benzocarbazole	407.730	
--	314.176	
Aza-252	246.306	
Benzocarbazole	237.794	
Indenylanthracenone	222.597	
Benzocarbazole	201.856	
Benzanthrone/Benzofluorenone	196.552	
--	193.358	
--	143.314	
	2574.573	(2600 to 2 sf)
% of Fraction	47%	

Station: EBE2
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	448.900	1	Naphthalene
1538	179.738	1	2-Methylnaphthalene
1621	117.493	1	1-Methylnaphthalene
2062	156.967	1	C2-Naphthalene
2100	54.763	1	C2-Naphthalene
2150	120.081	1	C2-Naphthalene
2262	300.684	1	Acenaphthene
2283	65.784	1	4-Methylbiphenyl
2348	211.073	1	Dibenzofuran
2381	73.838	0	
2392	99.839	1	C3-Naphthalene
2440	258.282	1	C3-Naphthalene
2478	184.349	1	C3-Naphthalene
2518	375.791	1	Fluorene
2534	117.635	0	
2565	73.155	1	Methylbiphenyl
2584	84.788	0	
2622	149.728	1	Methyldibenzofuran
2655	270.729	0	
2679	92.913	0	
2753	58.140	0	
2814	89.176	1	Methylfluorene
2829	79.803	0	
2854	123.964	0	
2907	196.917	0	
2919	146.613	0	
2937	188.504	1	Dibenzothiophene
2952	89.288	0	
3000	2077.038	1	Phenanthrene
3032	877.284	1	Anthracene
3132	42.548	0	
3216	63.059	0	
3237	53.029	1	Methyldibenzothiophene
3262	60.804	0	
3278	172.109	0	
3371	521.651	1	3-Methylphenanthrene
3387	545.963	0	2-Methylphenanthrene
3427	1078.888	1	4-H Cyclopenta(def)phenanthrene
3444	446.870	1	Methylphenanthrene
3458	513.258	1	Methylphenanthrene
3618	688.274	1	2-Phenylnaphthalene
3667	87.816	0	
3716	142.534	0	
3743	314.238	1	C2-Phenanthrene
3794	650.640	1	C2-178
3813	323.086	0	
3829	400.108	0	
3856	5350.604	1	Fluoranthene
3900	212.251	0	
3953	355.027	0	
3975	140.979	0	
4000	7142.897	1	Pyrene
4039	1619.958	1	Methyl-phenylnaphthalene

4093	429.001	0	
4143	796.040	0	
4226	1028.761	0	
4309	1460.882	1	Benzo(a)fluorene
4343	848.381	1	Retene
4367	1861.597	1	Benzo(b)fluorene
4437	1256.103	1	Methyl-202
4459	663.269	1	Methyl-202
4520	66.310	0	
4638	363.794	0	
4670	561.064	0	
4722	580.559	0	
4778	548.344	1	Benzo(b)naphtho(2,1-d)thiophene
4803	514.224	1	Benzo(ghi)fluoranthene
4816	546.924	1	Benzo(c)phenanthrene
4850	152.382	0	
4913	35.713	1	Benzonaphthothiophene
4945	50.829	0	
4973	1842.127	1	Benz(a)anthracene
5000	2416.645	1	Chrysene
5047	683.694	1	Tetramethyloctahydrochrysene
5092	80.096	1	Tetramethyloctahydrochrysene
5131	229.789	1	Methyl-228
5157	146.411	0	
5200	143.904	0	
5279	63.049	0	
5307	605.883	1	Methyl-228
5332	299.956	0	
5350	201.707	0	
5373	424.992	0	
5391	633.158	1	1-Phenylphenanthrene
5454	90.071	1	Trimethyltetrahydrochrysene
5491	67.043	0	
5649	96.735	0	
5678	57.346	0	
5749	4201.558	1	Benzofluoranthene
5813	429.335	1	Benzo(a)fluoranthene
5913	1864.135	1	Benzo(e)pyrene
5943	1924.024	1	Benzo(a)pyrene
6000	430.659	1	Perylene
6073	200.254	0	
6179	487.192	0	
6247	39.520	0	
6350	227.342	0	
6716	94.743	0	
6785	256.392	0	
6831	840.510	1	Indeno(1,2,3-cd)pyrene
6880	149.996	1	Dibenz(a,h)anthracene
7000	1029.671	1	Benzo(ghi)perylene

Station: EBE2
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2616	6.576	0	
2718	18.327	0	
2740	17.582	0	
2845	9.055	0	
2926	21.543	0	
3022	5.390	0	
3044	47.625	0	
3096	9.964	0	
3158	14.967	0	
3190	46.910	1	Benzoquinoline
3217	410.890	1	9 H-Carbazole
3277	9.548	0	
3366	193.358	0	
3452	63.749	1	Methyl-9 H-carbazole
3524	13.246	0	
3548	45.779	0	
3562	61.437	0	
3601	42.764	0	
3665	6.436	0	
3725	7.200	0	
3782	76.952	0	
3822	57.015	0	
3892	89.564	1	C2-Carbazole
3916	101.518	1	C2-Carbazole
3934	63.325	1	Aza-202
3981	11.824	1	Aza-202
4079	17.578	0	
4098	11.853	0	
4132	64.314	0	
4156	26.145	0	
4247	314.176	0	
4365	14.432	0	
4399	21.954	0	
4435	16.587	0	
4461	30.840	0	
4531	73.946	0	
4555	49.433	0	
4599	26.950	0	
4694	5.908	0	
4730	10.558	0	
4840	24.031	0	
4887	80.886	0	
4977	87.831	0	
5010	87.169	0	
5039	407.730	1	Benzocarbazole
5108	196.552	1	Benzanthrone/Benzofluorenone
5175	201.856	1	Benzocarbazole
5212	237.794	1	Benzocarbazole
5255	6.513	0	
5347	76.812	0	
5418	39.923	0	
5468	68.306	0	
5508	45.329	0	

5597	59.181	0	
5684	246.306	1	Aza-252
5751	91.310	1	Aza-252
5780	25.740	0	
5802	13.392	0	
5846	9.006	0	
5919	37.916	1	C2-Benzacridine
5951	28.044	1	Cyclopenta(def)chrysen-4-one
5977	106.864	0	
6066	8.878	1	C2-Benzacridine
6091	13.703	1	C2-Benzacridine
6132	54.011	1	C2-Benzacridine
6204	19.803	0	
6309	11.818	0	
6348	32.521	0	
6422	28.983	0	
6472	32.584	0	
6529	6.194	0	
6598	6.966	0	
6641	50.079	1	Dibenzocarbazole
6763	138.155	1	Dibenzocarbazole
6811	22.618	0	
6841	11.500	0	
6862	12.648	0	
6963	5.618	1	Dibenzocarbazole
7008	143.314	0	
7038	222.597	1	Indenylanthracenone
7112	41.054	0	
7164	89.217	1	Dibenzocarbazole
7196	45.369	0	
7269	10.381	0	
7342	48.664	1	Methyldibenzocarbazole
7399	67.062	0	
7467	31.066	0	

Table 13

Site: SBE 1C - Southern Branch, off Norshipco, Berkley - Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (57% moisture)			
Aromatic fraction	156	71	20,000
Polar fraction	36	17	720
Organochlorines	--	--	2400
TBT	--	--	1100

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	1680.014	
Pyrene	1524.537	
Fluoranthene	823.098	
Benzo(a)pyrene	672.468	
Benzo(e)pyrene	645.904	
Chrysene	511.414	
Phenanthrene	473.669	
Indeno(1,2,3-cd)pyrene	437.720	
Benzo(b)fluorene	384.566	
Benzo(ghi(perylene	377.144	
	7530.534	(7500 to 2 sf)
% of Fraction	38%	

Polar Fraction

Compound	Concentration (ppb)	
--	72.820	
--	66.129	
Benzocarbazole	48.877	
Benzanthrone/Benzofluorenone	45.356	
Carbazole,9H-	43.159	
Indenylanthracenone	38.298	
Benzocarbazole	31.358	
Dibenzocarbazole	29.653	
Aza-252	25.750	
Benzocarbazole	22.755	
	425.155	(430 to 2 sf)
% of Fraction	58%	

Station: SBE1C
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	183.713	1	Naphthalene
1096	5.137	0	
1535	99.384	1	2-Methylnaphthalene
1620	50.259	1	1-Methylnaphthalene
1669	11.087	0	
1773	23.341	0	
1953	93.029	0	
2000	28.573	1	Biphenyl
2023	41.101	1	Ethylnaphthalene
2035	36.555	1	C2-Naphthalene
2061	100.336	1	C2-Naphthalene
2099	48.098	1	C2-Naphthalene
2109	124.785	1	C2-Naphthalene
2148	81.018	1	C2-Naphthalene
2170	14.706	1	Acenaphthylene
2186	21.172	1	Hexamethylbenzene
2225	156.318	0	
2262	116.145	1	Acenaphthene
2281	39.690	1	4-Methylbiphenyl
2301	92.783	1	3-Methylbiphenyl
2325	62.246	1	C3-Naphthalene
2346	100.230	1	Dibenzofuran
2381	32.060	0	
2392	55.799	1	C3-Naphthalene
2425	57.755	0	
2441	67.112	1	C3-Naphthalene
2452	228.048	1	C3-Naphthalene
2480	100.407	1	C3-Naphthalene
2518	139.641	1	Fluorene
2565	28.789	1	Methylbiphenyl
2583	50.563	0	
2603	9.215	0	
2622	35.407	1	Methyldibenzofuran
2653	86.414	0	
2677	14.547	0	
2702	14.640	0	
2724	10.446	0	
2752	37.432	0	
2804	36.653	1	Methylfluorene
2813	9.371	1	Methylfluorene
2828	19.525	0	
2848	47.781	0	
2892	7.096	0	
2906	36.862	0	
2917	33.463	0	
2933	50.042	1	Dibenzothiophene
2951	8.248	0	
3000	473.669	1	Phenanthrene
3032	161.266	1	Anthracene
3092	55.924	0	
3133	11.928	0	
3171	9.918	0	
3209	18.482	0	

3234	36.104	1	Methyldibenzothiophene
3276	70.465	0	
3303	31.583	1	Methyldibenzothiophene
3342	48.557	0	
3368	103.348	1	3-Methylphenanthrene
3385	163.650	1	2-Methylphenanthrene
3426	219.686	1	4-H Cyclopenta(def)phenanthrene
3441	69.648	1	Methylphenanthrene
3454	110.107	1	Methylphenanthrene
3476	6.864	0	
3492	12.398	0	
3529	50.067	0	
3551	48.916	0	
3614	211.062	1	2-Phenylnaphthalene
3646	12.376	0	
3666	10.264	0	
3685	16.334	0	
3706	11.657	0	
3739	31.248	1	C2-Phenanthrene
3774	43.471	0	
3792	97.351	1	C2-178
3827	232.274	0	
3855	823.098	1	Fluoranthene
3895	25.053	0	
3925	32.827	0	
3969	312.917	0	
4000	1524.537	1	Pyrene
4034	230.354	1	Methyl-phenylnaphthalene
4069	14.275	0	
4087	40.650	0	
4106	22.553	0	
4133	69.208	1	Methyl-phenylnaphthalene
4150	60.129	0	
4197	72.579	0	
4222	153.552	0	
4292	193.401	1	Benzo(a)fluorene
4305	198.994	1	Benzo(a)fluorene
4326	105.337	1	Retene
4367	384.566	1	Benzo(b)fluorene
4403	70.282	0	
4435	266.526	1	Methyl-202
4456	153.511	1	Methyl-202
4514	20.707	0	
4540	13.645	0	
4582	12.392	0	
4612	17.653	0	
4669	242.236	0	
4719	320.968	0	
4778	152.630	1	Benzo(b)naphtho(2,1-d)thiophene
4804	366.139	1	Benzo(ghi)fluoranthene
4852	50.873	0	
4876	13.255	0	
4892	6.763	0	
4910	18.402	1	Benzonaphthothiophene
4925	13.572	0	
4941	23.558	0	
4972	322.544	1	Benz(a)anthracene
5000	511.414	1	Chrysene
5046	295.962	1	Tetramethyloctahydrochrysene
5087	76.541	1	Tetramethyloctahydrochrysene

5128	114.473	1	Methyl-228
5151	120.251	0	
5198	67.330	0	
5225	12.953	0	
5245	7.285	0	
5277	23.253	0	
5303	166.058	1	Methyl-228
5329	68.578	1	Methyl-228
5347	93.489	0	
5372	179.553	0	
5391	243.507	1	1-Phenylphenanthrene
5448	79.530	1	Trimethyltetrahydrochrysene
5486	36.981	0	
5512	59.793	0	
5588	69.443	0	
5646	41.145	0	
5674	68.070	0	
5754	1680.014	1	Benzofluoranthene
5813	165.212	1	Benzo(a)fluoranthene
5845	10.780	0	
5879	7.209	0	
5916	645.904	1	Benzo(e)pyrene
5947	672.468	1	Benzo(a)pyrene
6000	302.845	1	Perylene
6068	167.838	1	MW-252
6118	133.057	0	
6172	302.126	0	
6241	83.611	0	
6257	70.697	0	
6309	37.685	0	
6345	104.063	0	
6397	3.830	0	
6525	43.328	0	
6550	63.505	0	
6595	27.477	0	
6666	47.005	0	
6711	38.482	0	
6778	162.467	0	
6830	437.720	1	Indeno(1,2,3-cd)pyrene
6871	136.547	1	Dibenz(a,h)anthracene
6940	63.133	0	
6965	69.030	0	
7000	377.144	1	Benzo(ghi)perylene

Station: SBE1C
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2706	8.366	0	
2914	19.021	0	
3078	12.500	0	
3204	43.159	1	9 H-Carbazole
3353	66.129	0	
3441	17.549	0	
3553	8.007	0	
3592	5.129	0	
3644	5.143	0	
3777	15.030	0	
3887	19.170	1	C2-Carbazole
3913	7.948	1	C2-Carbazole
3930	12.177	1	Aza-202
4127	8.697	0	
4244	72.820	0	
5009	18.997	0	
5029	48.877	1	Benzocarbazole
5098	45.356	1	Benzanthrone/Benzofluorenone
5165	22.755	1	Benzocarbazole
5203	31.358	1	Benzocarbazole
5341	9.257	0	
5410	14.688	0	
5461	10.990	0	
5501	6.301	0	
5587	11.606	0	
5676	25.750	1	Aza-252
5967	19.442	1	Cyclopenta(def)chrysen-4-one
6126	5.736	1	C2-Benzacridine
6202	7.074	0	
6341	6.375	0	
6637	9.247	1	Dibenzocarbazole
6769	29.653	1	Dibenzocarbazole
7013	38.298	1	Indenylanthracenone
7039	16.566	1	Indenylanthracenone
7151	7.453	1	Dibenzocarbazole
7309	17.408	1	Methyldibenzocarbazole

Table 14

Site: SBE - 1L, Southern Branch, off Norshipco Berkley - across channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (60% moisture)			
Aromatic fraction	91	55	15,000
Polar fraction	31	15	600
Organochlorines	--	--	680
TBT	--	--	1,600

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	1578.659	
Pyrene	1459.361	
Fluoranthene	1023.146	
Benzo(e)pyrene	726.961	
Benzo(a)pyrene	637.161	
Chrysene	571.694	
Phenanthrene	455.046	
--	372.444	
Indeno(1,2,3-cd)pyrene	352.911	
Benz(a)anthracene	351.459	
	7528.842	(7500 to 2 sf)
% of Fraction	50%	

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	70.405	
--	53.583	
--	44.342	
Carbazole,9H	42.400	
Benzanthrone/Benzofluorenone	37.190	
Benzocarbazole	34.012	
Cyclopenta(def)chrysen-4-one	32.722	
Aza-252	28.618	
--	21.216	
Indenylanthracenone	19.434	
	383.922	(380 to 2 sf)
% of Fraction	63%	

Station: SBE1L
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	146.716	1	Naphthalene
1537	85.787	1	2-Methylnaphthalene
1622	43.517	1	1-Methylnaphthalene
2063	85.796	1	C2-Naphthalene
2109	93.633	1	C2-Naphthalene
2150	18.650	1	C2-Naphthalene
2227	87.583	0	
2263	79.539	1	Acenaphthene
2305	22.051	1	3-Methylbiphenyl
2326	22.138	1	C3-Naphthalene
2348	78.424	1	Dibenzofuran
2393	31.663	1	C3-Naphthalene
2442	10.520	1	C3-Naphthalene
2453	47.156	1	C3-Naphthalene
2479	70.094	1	C3-Naphthalene
2519	89.051	1	Fluorene
2584	92.079	0	
2622	34.425	1	Methyldibenzofuran
2654	79.471	0	
2753	22.415	0	
2829	129.832	0	
2908	36.916	0	
2919	18.602	0	
2936	27.676	1	Dibenzothiophene
3000	455.046	1	Phenanthrene
3032	188.176	1	Anthracene
3237	23.560	1	Methyldibenzothiophene
3278	52.370	0	
3371	96.010	1	3-Methylphenanthrene
3387	127.048	0	2-Methylphenanthrene
3428	210.521	1	4-H Cyclopenta(def)phenanthrene
3445	197.800	1	Methylphenanthrene
3554	73.354	0	
3617	201.098	1	2-Phenylnaphthalene
3690	19.672	0	
3776	34.947	1	C2-178
3793	120.537	1	C2-178
3811	75.571	0	
3832	135.435	0	
3856	1023.146	1	Fluoranthene
3900	51.740	0	
3953	49.801	0	
3977	110.848	0	
4000	1459.361	1	Pyrene
4038	230.839	1	Methyl-phenylnaphthalene
4091	29.804	0	
4138	29.941	1	Methyl-phenylnaphthalene
4203	47.242	0	
4226	40.369	0	
4308	81.520	1	Benzo(a)fluorene
4342	51.459	1	Retene
4369	332.415	1	Benzo(b)fluorene
4405	21.333	0	

4437	196.132	1	Methyl-202
4458	121.817	1	Methyl-202
4670	66.428	0	
4720	372.444	0	
4777	169.974	1	Benzo(b)naphtho(2,1-d)thiophene
4802	210.935	1	Benzo(ghi)fluoranthene
4815	128.089	1	Benzo(c)phenanthrene
4972	351.459	1	Benz(a)anthracene
5000	571.694	1	Chrysene
5046	204.034	1	Tetramethyloctahydrochrysene
5129	78.643	1	Methyl-228
5155	57.940	0	
5200	56.509	0	
5279	21.688	0	
5305	181.909	1	Methyl-228
5330	81.742	1	Methyl-228
5349	71.343	0	
5373	172.261	0	
5391	217.385	1	1-Phenylphenanthrene
5488	25.727	0	
5677	18.617	0	
5750	1578.659	1	Benzofluoranthene
5815	125.103	1	Benzo(a)fluoranthene
5914	726.961	1	Benzo(e)pyrene
5945	637.161	1	Benzo(a)pyrene
6000	226.453	1	Perylene
6070	102.613	1	MW-252
6112	44.367	0	
6176	167.236	0	
6245	21.324	0	
6349	62.804	0	
6673	32.646	0	
6783	167.810	0	
6830	352.911	1	Indeno(1,2,3-cd)pyrene
6876	61.414	1	Dibenz(a,h)anthracene
6946	20.182	0	
6970	17.438	0	
7000	277.113	1	Benzo(ghi)perylene

Station: SBE1L
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2736	5.699	0	
2924	5.399	0	
3214	42.400	1	9 H-Carbazole
3363	13.159	0	
3448	21.216	0	
3560	10.286	0	
3777	9.312	0	
3886	13.790	1	C2-Carbazole
3927	17.913	1	Aza-202
4239	53.583	0	
5025	70.405	1	Benzocarbazole
5093	37.190	1	Benzanthrone/Benzofluorenone
5164	10.157	1	Benzocarbazole
5200	34.012	1	Benzocarbazole
5337	9.722	0	
5404	12.767	0	
5453	7.974	0	
5498	6.245	0	
5583	18.373	0	
5668	28.618	1	Aza-252
5910	13.390	1	C2-Benzacridine
5960	32.722	1	Cyclopenta(def)chrysen-4-one
6119	7.254	1	C2-Benzacridine
6334	7.484	0	
6444	6.848	0	
6629	9.679	1	Dibenzocarbazole
6748	16.338	1	Dibenzocarbazole
7004	44.342	0	
7030	19.434	1	Indenylanthracenone
7317	7.003	1	Methyldibenzocarbazole
7487	5.287	0	

Table 15

Site: SBE1R - Southern Branch, off Norshipco, Berkley, before channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (65% moisture)			
Aromatic fraction	139	66	22,000
Polar fraction	50	19	1,200
Organochlorines	--	--	560
TBT	--	--	1,900

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	1702.730	
Pyrene	1575.358	
Fluoranthene	1472.841	
Chrysene	858.928	
Benzo(e)pyrene	794.839	
Phenanthrene	726.014	
Benzo(a)pyrene	694.094	
Benz(a)anthracene	502.256	
--	421.943	
	8749.003	(8700 to 2 sf)
% of Fraction	40%	

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	99.185	
--	88.540	
Carbazole,9H-	76.991	
--	73.556	
Dibenzocarbazole	71.004	
Benzocarbazole	55.351	
--	50.885	
--	48.109	
Aza-252	46.023	
Benzocarbazole	39.646	
	649.288	(650 to 2 sf)
% of Fraction	54%	

Station: SBE1R
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	189.931	1	Naphthalene
1534	127.361	1	2-Methylnaphthalene
1619	66.260	1	1-Methylnaphthalene
1671	14.410	0	
1770	11.294	0	
2000	31.209	1	Biphenyl
2034	28.493	1	Ethylnaphthalene
2061	132.934	1	C2-Naphthalene
2098	65.022	1	C2-Naphthalene
2108	158.698	1	C2-Naphthalene
2148	73.554	1	C2-Naphthalene
2168	11.465	1	Acenaphthylene
2186	31.941	1	Hexamethylbenzene
2205	38.147	1	
2225	38.768	0	
2261	125.269	1	Acenaphthene
2280	37.605	1	4-Methylbiphenyl
2302	33.237	1	3-Methylbiphenyl
2324	33.916	1	C3-Naphthalene
2345	118.276	1	Dibenzofuran
2380	37.974	0	
2391	60.594	1	C3-Naphthalene
2440	149.870	1	C3-Naphthalene
2451	109.381	1	C3-Naphthalene
2477	112.551	1	C3-Naphthalene
2517	154.993	1	Fluorene
2534	33.163	0	
2582	151.668	0	
2601	12.349	0	
2620	100.814	1	Methyldibenzofuran
2652	120.925	0	
2678	36.886	0	
2700	34.424	0	
2725	31.715	0	
2752	49.719	0	
2779	20.703	0	
2812	152.257	1	Methylfluorene
2827	58.003	0	
2849	73.448	0	
2905	132.296	0	
2918	60.858	0	
2935	94.960	1	Dibenzothiophene
2951	41.391	0	
2976	32.715	0	
3000	726.014	1	Phenanthrene
3032	258.612	1	Anthracene
3090	45.781	0	
3130	33.367	0	
3154	22.794	0	
3169	39.663	0	
3205	55.196	0	
3237	35.882	1	Methyldibenzothiophene
3260	43.579	0	

3278	81.504	0	
3300	55.862	1	Methyldibenzothiophene
3342	34.793	0	
3370	147.544	1	3-Methylphenanthrene
3386	189.453	0	2-Methylphenanthrene
3427	290.166	1	4-H Cyclopenta(def)phenanthrene
3443	140.199	1	Methylphenanthrene
3456	139.848	1	Methylphenanthrene
3529	27.755	0	
3553	33.050	0	
3617	294.663	1	2-Phenylnaphthalene
3664	21.167	0	
3689	24.385	0	
3716	46.654	0	
3739	14.281	1	C2-Phenanthrene
3774	31.687	0	
3792	178.253	1	C2-178
3811	115.592	0	
3830	179.463	0	
3857	1472.841	1	Fluoranthene
3897	70.141	0	
3926	11.115	0	
3950	90.296	0	
3973	124.837	0	
4000	1575.358	1	Pyrene
4036	349.794	1	Methyl-phenylnaphthalene
4089	64.990	0	
4135	131.205	1	Methyl-phenylnaphthalene
4150	98.180	0	
4201	86.460	0	
4226	119.316	0	
4243	90.817	0	
4309	157.026	1	Benzo(a)fluorene
4329	8.397	1	Retene
4363	421.732	1	Benzo(b)fluorene
4405	28.020	0	
4436	194.935	1	Methyl-202
4458	120.011	1	Methyl-202
4515	44.429	0	
4668	257.708	0	
4719	421.943	0	
4777	229.732	1	Benzo(b)naphtho(2,1-d)thiophene
4803	381.461	1	Benzo(ghi)fluoranthene
4849	31.633	0	
4876	12.424	0	
4911	11.196	1	Benzonaphthothiophene
4942	27.508	0	
4972	502.256	1	Benz(a)anthracene
5000	858.928	1	Chrysene
5045	279.756	1	Tetramethyloctahydrochrysene
5089	79.103	1	Tetramethyloctahydrochrysene
5128	125.844	1	Methyl-228
5152	64.980	0	
5197	63.778	0	
5277	138.915	0	
5304	272.509	1	Methyl-228
5329	123.096	1	Methyl-228
5347	90.947	0	
5371	210.085	0	
5391	270.862	1	1-Phenylphenanthrene

5449	65.187	1	Trimethyltetrahydrochrysene
5487	31.380	0	
5595	52.907	0	
5646	43.930	0	
5676	26.344	0	
5751	1702.730	1	Benzofluoranthene
5813	155.947	1	Benzo(a)fluoranthene
5915	794.839	1	Benzo(e)pyrene
5946	694.094	1	Benzo(a)pyrene
6000	266.647	1	Perylene
6070	157.245	1	MW-252
6122	79.454	0	
6175	202.888	0	
6244	60.884	0	
6261	62.072	0	
6311	26.446	0	
6347	68.817	0	
6383	7.433	0	
6671	37.627	0	
6715	36.048	0	
6782	131.166	0	
6830	377.649	1	Indeno(1,2,3-cd)pyrene
6875	97.784	1	Dibenz(a,h)anthracene
6944	49.867	0	
6968	56.905	0	
7000	337.009	1	Benzo(ghi)perylene

Station: SBE1R
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2740	12.506	0	
2789	5.908	0	
3127	5.140	0	
3218	76.991	1	9 H-Carbazole
3367	50.885	0	
3454	25.360	1	Methyl-9 H-carbazole
3487	6.757	1	Methyl-9 H-carbazole
3549	8.741	0	
3563	13.121	0	
3600	12.170	0	
3654	6.860	0	
3721	35.006	0	
3821	8.386	0	
3876	7.339	0	
3893	24.325	1	C2-Carbazole
3935	27.322	1	Aza-202
4173	16.175	0	
4245	88.540	0	
4389	9.258	0	
4686	5.394	0	
4723	6.101	0	
4830	5.484	0	
5024	99.185	1	Benzocarbazole
5092	20.970	1	Benzanthrone/Benzofluorenone
5160	39.646	1	Benzocarbazole
5198	55.351	1	Benzocarbazole
5305	11.673	0	
5334	21.108	0	
5403	18.144	0	
5454	17.459	0	
5498	10.182	0	
5580	23.994	0	
5667	46.023	1	Aza-252
5958	35.284	1	Cyclopenta(def)chrysen-4-one
6115	7.913	1	C2-Benzacridine
6194	5.370	0	
6333	10.766	0	
6442	5.075	0	
6627	19.951	1	Dibenzocarbazole
6747	71.004	1	Dibenzocarbazole
6941	6.045	0	
7002	73.556	0	
7029	32.258	1	Indenylanthracenone
7095	9.476	1	Dibenzocarbazole
7139	24.188	1	Dibenzocarbazole
7178	11.883	1	Dibenzocarbazole
7285	48.109	0	
7372	8.203	1	Methyldibenzocarbazole
7424	14.179	0	
7486	12.701	0	

Table 16

Site: SBE 2C - Southern Branch, off Atlantic Wood, Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (66% moisture)			
Aromatic fraction	161	70	51,000
Polar fraction	52	21	1,700
Organochlorines	--	--	1,300
TBT	--	--	2,100

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	3140.763	
Pyrene	3031.832	
Fluoranthene	1793.465	
Chrysene	1771.878	
Benzo(b)fluorene	1505.258	
Benzo(a)fluorene	1488.133	
Benzo(e)pyrene	1345.793	
Dibenzothiophene	1336.187	
Benzo(a)pyrene	1216.765	
--	1175.336	
	17805.410	(18000 to 2 sf)
% of Fraction	35%	

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	139.676	
--	124.832	
--	119.314	
--	96.697	
Carbazole,9H-	87.961	
Benzocarbazole	80.343	
Benzocarbazole	73.903	
Dibenzocarbazole	72.486	
Indenylanthracenone	56.706	
Aza-252	54.322	
	855.960	(860 to 2 sf)
% of Fraction	51%	

Station: SBE2C
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	491.080	1	Naphthalene
1037	41.374	1	Benzothiophene
1069	22.817	0	
1096	10.855	0	
1186	10.317	0	
1244	9.113	0	
1367	11.049	0	
1471	60.251	0	
1536	269.114	1	2-Methylnaphthalene
1582	27.295	1	
1621	113.873	1	1-Methylnaphthalene
1673	31.289	0	
1771	36.016	0	
1863	61.704	0	
1954	175.717	0	
2000	107.303	1	Biphenyl
2023	137.367	1	Cycloalkene
2035	130.279	1	C2-Naphthalene
2062	291.823	1	Cycloalkene
2110	572.096	1	Cycloalkene
2148	293.448	1	Cycloalkene
2170	117.388	1	Acenaphthylene
2187	234.493	1	Hexamethylbenzene
2206	237.501	0	
2226	463.283	0	
2262	289.006	1	Acenaphthene
2282	131.025	1	4-Methylbiphenyl
2302	224.604	1	3-Methylbiphenyl
2325	136.146	1	C3-Naphthalene
2346	271.046	1	Dibenzofuran
2382	62.423	0	
2393	112.941	1	C3-Naphthalene
2425	162.514	0	
2442	143.471	1	C3-Naphthalene
2453	345.654	1	C3-Naphthalene
2481	183.038	0	
2518	247.916	1	Fluorene
2536	28.208	0	
2564	65.890	1	Methylbiphenyl
2584	139.622	0	
2604	46.125	0	
2621	158.413	1	Methyldibenzofuran
2654	256.493	1	Methyldibenzofuran
2677	72.899	0	
2703	39.499	0	
2715	21.497	0	
2726	44.611	0	
2755	72.514	0	
2799	209.391	0	
2813	99.843	1	Methylfluorene
2828	97.917	0	
2850	213.137	0	
2870	76.523	0	

2880	51.230	0	
2908	469.722	0	
2938	1336.187	1	Dibenzothiophene
2984	253.479	0	
3000	954.373	1	Phenanthrene
3031	451.526	1	Anthracene
3088	106.487	0	
3105	24.943	0	
3128	28.150	0	
3146	25.750	0	
3204	111.695	0	
3236	83.570	1	Methyldibenzothiophene
3256	95.879	0	
3275	138.559	0	
3296	91.439	1	Methyldibenzothiophene
3343	64.433	0	
3368	149.168	1	3-Methylphenanthrene
3386	195.994	0	2-Methylphenanthrene
3426	723.366	1	4-H Cyclopenta(def)phenanthrene
3454	164.286	1	Methylphenanthrene
3481	6.386	0	
3498	15.993	0	
3530	113.865	0	
3552	90.020	0	
3613	467.904	1	2-Phenylnaphthalene
3667	124.634	0	
3687	106.198	0	
3717	179.642	0	
3743	185.013	1	C2-Phenanthrene
3771	163.125	0	
3792	280.596	1	C2-178
3829	773.763	0	
3855	1793.465	1	Fluoranthene
3896	108.103	0	
3971	1175.336	0	
4000	3031.832	1	Pyrene
4035	959.367	1	Methyl-phenylnaphthalene
4088	345.047	1	Methyl-phenylnaphthalene
4134	613.639	1	Methyl-phenylnaphthalene
4199	338.978	0	
4226	429.289	0	
4242	292.757	0	
4308	1488.133	1	Benzo(a)fluorene
4362	1505.258	1	Benzo(b)fluorene
4404	431.123	0	
4435	653.451	1	Methyl-202
4457	467.673	1	Methyl-202
4514	161.905	0	
4585	49,422	0	
4613	72.885	0	
4668	705.962	1	Methyl-202
4719	839.295	0	
4775	517.351	1	Benzo(b)naphtho(2,1-d)thiophene
4802	449.154	1	Benzo(ghi)fluoranthene
4811	344.629	1	Benzo(c)phenanthrene
4847	240.280	0	
4874	114.663	0	
4891	118.837	0	
4908	175.126	1	Benzonaphthothiophene
4938	300.159	0	

4970	903.094	1	Benz(a)anthracene
5000	1771.878	1	Chrysene
5046	788.083	1	MW-228
5087	220.343	1	Tetramethyloctahydrochrysene
5128	312.443	1	Methyl-228
5152	156.562	0	
5198	140.127	0	
5244	18.225	0	
5278	43.023	0	
5305	423.750	1	Methyl-228
5329	185.650	1	Methyl-228
5349	132.083	0	
5373	351.521	0	
5392	468.725	1	1-Phenylphenanthrene
5448	97.231	1	Trimethyltetrahydrochrysene
5487	63.038	0	
5515	59.852	0	
5556	31.440	0	
5594	123.175	0	
5649	150.284	0	
5677	106.028	0	
5696	72.479	0	
5756	3140.763	1	Benzofluoranthene
5815	273.590	1	Benzo(a)fluoranthene
5917	1345.793	1	Benzo(e)pyrene
5948	1216.765	1	Benzo(a)pyrene
6000	381.283	1	Perylene
6070	300.693	1	MW-252
6112	131.489	0	
6174	525.833	1	MW-252
6243	116.463	0	
6259	125.044	0	
6311	65.612	0	
6348	143.220	1	MW-252
6381	14.561	0	
6402	8.422	0	
6424	8.040	0	
6478	30.975	0	
6561	88.369	0	
6597	37.138	0	
6668	68.131	0	
6713	75.959	0	
6780	291.072	1	MW-278
6830	790.128	1	Indeno(1,2,3-cd)pyrene
6873	274.632	1	Dibenz(a,h)anthracene
6942	125.411	0	
6965	134.680	0	
7000	666.173	1	Benzo(ghi)perylene

Station: SBE2C
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2594	6.663	0	
2714	11.281	0	
2734	28.758	0	
2783	7.030	0	
2918	30.533	0	
3210	87.961	1	9 H-Carbazole
3362	96.697	0	
3449	21.386	0	
3484	6.946	0	
3591	11.702	0	
3654	23.070	0	
3783	7.821	0	
3891	35.279	1	C2-Carbazole
3933	21.796	1	Aza-202
4131	21.268	0	
4247	119.314	0	
4568	7.561	0	
4599	13.948	0	
4730	10.736	0	
4837	14.495	0	
5032	139.676	1	Benzocarbazole
5098	33.635	1	Benzanthrone/Benzofluorenone
5167	80.343	1	Benzocarbazole
5203	73.903	1	Benzocarbazole
5312	11.662	0	
5337	39.556	0	
5384	11.524	0	
5408	21.452	0	
5459	28.953	0	
5500	17.562	0	
5583	28.888	0	
5673	54.322	1	Aza-252
5765	11.874	1	Aza-252
5904	18.071	1	C2-Benzacridine
5932	7.999	1	C2-Benzacridine
5958	50.622	1	Cyclopenta(def)chrysen-4-one
6113	19.326	1	C2-Benzacridine
6194	15.837	0	
6290	8.185	0	
6332	18.240	0	
6412	8.988	0	
6439	7.287	0	
6625	31.596	1	Dibenzocarbazole
6747	72.486	1	Dibenzocarbazole
7005	124.832	0	
7029	56.706	1	Indenylanthracenone
7094	21.022	1	Dibenzocarbazole
7143	35.384	1	Dibenzocarbazole
7177	22.481	1	Dibenzocarbazole
7308	43.895	1	Methyldibenzocarbazole
7370	10.192	1	Methyldibenzocarbazole
7486	19.260	0	

Table 17

Site: SBE 2L - Southern Branch, off Atlantic Wood, across channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (67% moisture)			
Aromatic fraction	134	63	33,000
Polar fraction	50	22	1,600
Organochlorines	--	--	260
TBT	--	--	2,800

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	3249.288	
Pyrene	2225.403	
Fluoranthene	1972.338	
Chrysene	1451.260	
Benzo(e)pyrene	1389.015	
Benzo(a)pyrene	1232.602	
Phenanthrene	1118.160	
Benzo(b)fluorene	999.810	
Benzo(a)fluorene	947.882	
Indeno(1,2,3-cd)pyrene	740.607	
	15326.365	(15000 to 2 sf)
% of Fraction	45%	

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	143.452	
--	120.326	
Carbazole,9H-	98.443	
--	82.207	
Dibenzocarbazole	66.397	
Benzocarbazole	65.356	
Benzocarbazole	64.537	
Benzenthrone/Benzofluorenone	62.071	
Dibenzocarbazole	59.368	
AZA-252	55.377	
	817.534	(820 to 2 sf)
% of Fraction	51%	

Station: SBE2L
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	179.288	1	Naphthalene
1534	91.862	1	2-Methylnaphthalene
1617	51.221	1	1-Methylnaphthalene
2000	23.984	1	Biphenyl
2034	21.362	1	Ethylnaphthalene
2060	91.916	1	C2-Naphthalene
2097	49.622	1	C2-Naphthalene
2107	119.120	1	C2-Naphthalene
2147	55.439	1	C2-Naphthalene
2184	21.856	0	
2203	27.942	1	Hexamethylbenzene
2223	40.446	0	
2259	180.438	1	Acenaphthene
2280	19.958	1	4-Methylbiphenyl
2301	22.498	1	3-Methylbiphenyl
2323	34.067	1	C3-Naphthalene
2344	163.334	1	Dibenzofuran
2378	25.977	0	
2390	39.386	1	C3-Naphthalene
2439	107.521	1	C3-Naphthalene
2450	92.251	1	C3-Naphthalene
2475	78.452	1	C3-Naphthalene
2516	299.820	1	Fluorene
2563	18.035	1	Methylbiphenyl
2582	44.032	0	
2620	94.501	1	Methyldibenzofuran
2652	159.785	0	
2678	37.909	0	
2700	19.984	0	
2723	15.015	0	
2751	28.474	0	
2812	131.095	1	Methylfluorene
2828	41.359	0	
2849	65.936	0	
2907	106.392	0	
2918	60.641	0	
2934	102.846	1	Dibenzothiophene
2951	42.745	0	
2974	20.873	0	
3000	1118.160	1	Phenanthrene
3032	344.424	1	Anthracene
3091	53.507	0	
3131	36.583	0	
3172	105.024	0	
3208	58.743	0	
3236	50.998	1	Methyldibenzothiophene
3260	45.178	0	
3277	106.762	0	
3302	51.026	1	Methyldibenzothiophene
3343	28.237	0	
3370	138.577	1	3-Methylphenanthrene
3387	187.550	0	2-Methylphenanthrene
3427	505.637	1	4-H Cyclopenta(def)phenanthrene

3457	147.383	1	Methylphenanthrene
3496	13.015	0	
3532	24.179	0	
3553	43.905	0	
3617	302.916	1	2-Phenylnaphthalene
3668	41.767	0	
3689	32.837	0	
3720	48.407	0	
3794	194.194	1	C2-178
3811	87.308	0	
3833	189.245	0	
3856	1972.338	1	Fluoranthene
3898	13.740	0	
3952	72.194	0	
3975	140.646	0	
4000	2225.403	1	Pyrene
4038	653.016	1	Methyl-phenylnaphthalene
4090	110.953	0	
4138	302.086	1	Methyl-phenylnaphthalene
4202	116.324	0	
4227	197.273	0	
4245	123.417	0	
4309	947.882	1	Benzo(a)fluorene
4363	999.810	1	Benzo(b)fluorene
4406	237.272	0	
4437	499.538	1	Methyl-202
4458	343.419	1	Methyl-202
4516	121.476	0	
4585	31.508	0	
4615	29.760	0	
4669	391.488	0	
4722	555.968	0	
4777	385.460	1	Benzo(b)naphtho(2,1-d)thiophene
4801	345.698	1	Benzo(ghi)fluoranthene
4814	255.069	1	Benzo(c)phenanthrene
4851	54.312	0	
4912	17.203	1	Benzonaphthothiophene
4943	31.818	0	
4972	708.246	1	Benz(a)anthracene
5000	1451.260	1	Chrysene
5047	419.848	1	Tetramethyloctahydrochrysene
5090	78.615	1	Tetramethyloctahydrochrysene
5129	195.166	1	Methyl-228
5155	91.278	0	
5200	89.832	0	
5258	42.913	0	
5278	40.078	0	
5306	388.184	1	Methyl-228
5330	180.270	1	Methyl-228
5349	122.794	0	
5374	331.397	0	
5392	436.256	1	1-Phenylphenanthrene
5451	90.938	1	Trimethyltetrahydrochrysene
5489	57.706	0	
5517	57.782	0	
5557	28.987	0	
5600	89.819	0	
5650	78.862	0	
5678	39.863	0	
5752	3249.288	1	Benzofluoranthene

5815	281.446	1	Benzo(a)fluoranthene
5916	1389.015	1	Benzo(e)pyrene
5946	1232.602	1	Benzo(a)pyrene
6000	377.876	1	Perylene
6071	323.498	0	
6111	122.733	0	
6179	536.373	0	
6243	114.537	0	
6261	137.545	0	
6311	58.051	0	
6348	153.967	0	
6565	85.194	0	
6601	27.733	0	
6672	66.245	0	
6716	58.098	0	
6782	263.942	0	
6830	740.607	1	Indeno(1,2,3-cd)pyrene
6876	255.818	1	Dibenz(a,h)anthracene
6945	99.517	0	
6969	114.816	0	
7000	607.697	1	Benzo(ghi)perylene

Station: SBE2L
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2625	7.325	0	
2717	14.704	0	
2738	38.737	0	
2827	7.891	0	
2925	21.666	0	
3215	98.443	1	9 H-Carbazole
3365	82.207	0	
3451	22.549	1	Methyl-9 H-carbazole
3546	11.950	0	
3560	19.928	0	
3598	12.181	0	
3781	13.591	0	
3817	9.889	0	
3892	16.039	1	C2-Carbazole
3931	34.108	1	Aza-202
4126	10.813	0	
4243	120.326	0	
4564	9.031	0	
4595	16.779	0	
4724	9.842	0	
4832	12.088	0	
5029	143.452	1	Benzocarbazole
5096	62.071	1	Benzanthrone/Benzofluorenone
5164	65.356	1	Benzocarbazole
5201	64.537	1	Benzocarbazole
5310	7.795	0	
5337	33.000	0	
5382	9.262	0	
5404	19.634	0	
5461	21.233	0	
5498	15.160	0	
5582	23.232	0	
5669	55.377	1	Aza-252
5818	5.498	0	
5904	12.365	1	C2-Benzacridine
5959	44.816	1	Cyclopenta(def)chrysen-4-one
6116	15.102	1	C2-Benzacridine
6195	6.422	0	
6331	10.925	0	
6629	39.060	1	Dibenzocarbazole
6743	66.397	1	Dibenzocarbazole
6972	27.259	1	Dibenzocarbazole
6999	59.368	1	Dibenzocarbazole
7024	55.085	1	Indenylanthracenone
7087	14.726	1	Dibenzocarbazole
7133	24.293	1	Dibenzocarbazole
7171	16.176	1	Dibenzocarbazole
7243	5.075	1	Methyldibenzocarbazole
7304	51.184	1	Methyldibenzocarbazole
7466	21.597	0	

Table 18

Site: SBE2R - Southern Branch off Atlantic Wood, before Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (67% moisture)			
Aromatic fraction	162	66	59,000
Polar fraction	65	26	3,700
Organochlorines	--	--	1,000
TBT	--	--	590
Blue Crabs			
Muscle (79% moisture) (6% lipid, dry wt. basis)			
Aromatic fraction	127	91	2,900
PCB	--	--	29
44'-DDE	--	--	17
Hepatopancreas (71% moisture) (42% lipid, dry wt. basis)			
Aromatic fraction	197	110	12,000
PCB	--	--	3,100
4,4'-DDE	--	--	520

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)
Benzofluoranthene	4126.229
Pyrene	2937.551
Fluoranthene	2863.380
Benzo(e)pyrene	2146.287
Benzo(a)pyrene	1671.433
Chrysene	1644.250
Benzo(b)fluorene	1251.839
Naphthalene,phenyl-,methyl-	1228.734
--	1202.332
Cyclopenta(def)phenanthrene	982.961
	19072.035 (19000 to 2 sf)
% of Fraction	32%

Site SBE2R (continued)

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole,methyl-	420.096	
--	243.727	
Dibenzocarbazole	227.746	
--	216.707	
Indenylanthracenone	206.290	
Dibenzocarbazole	188.002	
--	177.616	
--	172,764	
Dibenzocarbazole	152.053	
Benzocarbazole	126.048	
	2131.049	(2100 to 2 sf)
% of Fraction	57%	

Blue Crab (aromatic fraction)

Muscle

Compound	Concentration (ppb)	
--	196.649	
Pyrene	141.161	
Fluoranthene	130.954	
Benzofluoranthene	117,874	
Chrysene	114.889	
Naphthalene,C4H9-	86.497	
Benzo(e)pyrene	77.469	
Phenanthrene	69.173	
Cyclopenta(def)phenanthrene,4H-	65.757	
Naphthalene,C5H11-	58.520	
	1058.943	(1100 to 2 sf)
% of Fraction	38%	

Site SBE2R (continued)

Compound	Hepatopancreas Concentration (ppb)	
Fluoranthene	1040.690	
Pyrene	975.389	
Chrysene	582.836	
Cyclopent(adef)phenanthrene,4H-	396.574	
Benzo(e)pyrene	253.713	
Benzofluoranthene	251.901	
C16-PCB	244.612	
Benzo(c)phenanthrene	224.397	
Phenanthrene	223.817	
Base-neutral,methyl-202	219.240	
	4413.169	(4400 to 2 sf)
% of Fraction	37%	

Station: SBE2R
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	137.410	1	Naphthalene
1210	56.146	0	
1421	23.923	0	
1538	94.089	1	2-Methylnaphthalene
1626	110.737	1	1-Methylnaphthalene
1666	59.042	0	
1740	100.778	0	
1774	76.819	0	
1819	118.931	0	
1888	99.295	0	
2000	131.374	1	Biphenyl
2039	367.399	1	Ethylnaphthalene
2082	319.154	0	C2-Naphthalene
2105	19.074	1	C2-Naphthalene
2121	160.155	0	
2145	28.297	1	C2-Naphthalene
2164	824.676	1	Acenaphthylene
2194	253.857	1	Hexamethylbenzene
2233	277.337	0	
2254	469.853	1	Acenaphthene
2273	533.247	1	Acenaphthene
2290	63.388	1	4-Methylbiphenyl
2306	269.362	1	3-Methylbiphenyl
2326	70.307	1	C3-Naphthalene
2343	169.417	1	Dibenzofuran
2368	85.574	0	
2386	182.391	1	C3-Naphthalene
2430	171.265	1	C3-Naphthalene
2459	434.001	1	C3-Naphthalene
2486	1202.332	0	
2512	338.479	1	Fluorene
2527	72.949	1	
2548	375.493	0	
2564	145.831	1	Methylbiphenyl
2590	21.488	0	
2609	318.058	0	
2631	243.148	0	
2643	262.045	0	
2673	355.608	0	
2698	126.560	0	
2720	107.495	0	
2737	64.647	0	
2746	108.261	0	
2769	290.771	0	
2787	112.803	0	
2813	419.483	1	Methylfluorene
2840	78.014	0	
2857	120.768	0	
2871	37.827	0	
2888	75.953	0	
2910	32.184	0	
2925	21.376	1	Dibenzothiophene
2942	23.687	1	

2952	54.400	0	
2975	98.078	0	
3000	662.208	1	Phenanthrene
3033	445.504	1	Anthracene
3092	401.762	0	
3130	179.868	0	
3147	286.751	0	
3173	446.749	0	
3207	253.411	0	
3226	124.386	1	Methyldibenzothiophene
3241	118.104	1	Methyldibenzothiophene
3260	329.854	0	
3279	270.441	0	
3301	424.833	1	Methyldibenzothiophene
3342	360.314	0	
3372	334.490	1	3-Methylphenanthrene
3398	454.420	0	2-Methylphenanthrene
3429	982.961	1	4-H Cyclopenta(def)phenanthrene
3455	386.376	1	Methylphenanthrene
3494	150.733	0	
3532	275.971	0	
3554	350.258	0	
3620	655.580	1	2-Phenylnaphthalene
3651	26.031	0	
3692	198.519	0	
3718	166.473	0	
3736	125.924	1	C2-Phenanthrene
3751	160.227	0	
3776	165.898	1	C2-178
3795	460.423	1	C2-178
3811	189.872	0	
3831	430.150	0	
3857	2863.380	1	Fluoranthene
3901	307.889	0	
3926	37.069	0	
3975	642.224	0	
4000	2937.551	1	Pyrene
4040	1228.734	1	Methyl-phenylnaphthalene
4092	284.309	0	
4137	269.589	1	Methyl-phenylnaphthalene
4155	289.161	0	
4205	83.854	0	
4228	95.384	0	
4246	66.069	0	
4309	974.736	1	Benzo(a)fluorene
4331	276.831	1	Retene
4364	1251.839	1	Benzo(b)fluorene
4405	291.670	0	
4436	613.446	1	Methyl-202
4462	373.175	0	
4481	126.154	0	
4515	193.036	0	
4543	66.118	0	
4589	131.567	0	
4672	513.866	0	
4724	486.291	0	
4778	403.120	1	Benzo(b)naphtho(2,1-d)thiophene
4803	601.365	1	Benzo(ghi)fluoranthene
4850	101.564	0	
4896	22.546	0	

4915	21.417	1	Benzonaphthothiophene
4973	704.627	1	Benz(a)anthracene
5000	1644.250	1	Chrysene
5048	435.512	1	Tetramethyloctahydrochrysene
5064	176.272	1	Tetramethyloctahydrochrysene
5091	123.910	1	Tetramethyloctahydrochrysene
5128	278.123	1	Methyl-228
5155	171.840	0	
5198	153.272	0	
5227	88.905	0	
5276	76.556	0	
5304	478.050	1	Methyl-228
5327	212.583	1	Methyl-228
5345	140.019	0	
5371	378.564	0	
5389	534.840	1	1-Phenylphenanthrene
5451	131.888	1	Trimethyltetrahydrochrysene
5486	64.495	0	
5509	200.582	0	
5553	66.309	0	
5595	250.338	0	
5651	248.927	0	
5675	214.231	0	
5694	180.515	0	
5712	133.562	0	
5746	4126.229	1	Benzofluoranthene
5811	568.086	1	Benzo(a)fluoranthene
5909	2146.287	1	Benzo(e)pyrene
5939	1671.433	1	Benzo(a)pyrene
6000	966.329	1	Perylene
6061	663.802	1	MW-252
6118	567.865	0	
6169	932.724	0	
6236	216.353	0	
6258	163.336	0	
6348	345.716	0	
6416	127.324	0	
6445	53.678	0	
6492	37.907	0	
6530	674.906	0	
6600	59.529	0	
6670	236.628	0	
6737	88.717	0	
6774	684.428	0	
6829	683.470	1	Indeno(1,2,3-cd)pyrene
6880	340.914	1	Dibenz(a,h)anthracene
6947	30.706	0	
6971	29.919	0	
7000	436.353	1	Benzo(ghi)perylene

Station: SBE2R
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2510	11.331	0	
2569	11.340	0	
2719	44.238	0	
2742	37.433	0	
2790	16.374	0	
2812	11.104	0	
2830	6.473	0	
3022	13.040	0	
3101	36.397	0	
3221	90.233	1	9 H-Carbazole
3371	216.707	0	
3458	34.037	1	Methyl-9 H-carbazole
3494	10.141	1	Methyl-9 H-carbazole
3572	5.330	0	
3611	22.036	0	
3663	19.415	0	
3792	7.967	0	
3900	46.992	1	C2-Carbazole
3943	8.092	0	
4019	5.037	0	
4107	24.101	0	
4141	25.647	0	
4578	13.074	0	
4613	25.036	0	
4646	15.632	0	
4738	14.233	0	
4847	14.869	0	
5040	126.048	1	Benzocarbazole
5066	12.273	0	
5107	66.598	1	Benzanthrone/Benzofluorenone
5175	90.279	1	Benzocarbazole
5212	64.544	1	Benzocarbazole
5318	11.863	0	
5347	34.585	0	
5414	25.830	0	
5464	18.176	0	
5585	23.655	0	
5633	7.364	0	
5678	79.674	1	Aza-252
5756	17.424	1	Aza-252
5842	5.279	0	
5866	7.159	0	
5920	16.911	1	C2-Benzacridine
5953	43.904	1	Cyclopenta(def)chrysen-4-one
6046	14.656	1	C2-Benzacridine
6117	62.827	1	C2-Benzacridine
6162	8.170	1	C2-Benzacridine
6193	27.033	0	
6332	16.716	0	
6438	30.887	0	
6636	152.053	1	Dibenzocarbazole
6748	188.002	1	Dibenzocarbazole
6767	227.746	1	Dibenzocarbazole

6875	61.028	0	
7004	116.583	1	Dibenzocarbazole
7036	206.290	1	Indenylanthracenone
7101	44.962	1	Dibenzocarbazole
7134	100.687	1	Dibenzocarbazole
7179	79.091	1	Dibenzocarbazole
7247	46.656	1	Methyldibenzocarbazole
7288	172.764	1	Dibenzocarbazole
7312	420.096	0	Unknown biogenic
7353	60.051	1	Methyldibenzocarbazole
7419	18.343	0	
7469	177.616	0	

Station: SBE2R Crab Muscle Tissue
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	5.629	1	Naphthalene
1548	5.642	0	
2053	18.558	1	Naphthalene,C2H5-
2268	27.165	2	Acenaphthene
2323	5.024	1	Naphthalene,C3H7-
2351	7.533	1	Dibenzofuran
2370	7.493	1	Naphthalene,C3H7-
2381	10.340	1	Bibenzyl
2392	11.494	1	Naphthalene,C3H7-
2434	12.226	1	Naphthalene,C3H7-
2441	9.994	1	Naphthalene,C3H7-
2474	17.076	1	Naphthalene,C3H7-
2482	15.824	1	Naphthalene,C3H7-
2522	22.051	2	Fluorene
2538	20.003	1	Naphthalene,C3H7-
2570	13.219	1	Naphthalene,C3H7-
2582	5.243	1	Naphthalene,C3H7-
2592	7.878	1	Biphenyl,methyl-/Acenaphthene,methyl-
2613	6.692	1	Dibenzofuran,methyl-
2625	9.799	1	Naphthalene,C4H9-
2636	8.007	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2644	8.741	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2655	7.830	0	
2678	15.576	1	Naphthalene,C4H9-
2695	19.633	1	Naphthalene,C4H9-
2715	8.735	1	Naphthalene,C4H9-
2737	9.874	1	Naphthalene,C4H9-
2748	32.306	1	Naphthalene,C4H9-
2768	58.520	1	Naphthalene,C5H11-
2787	40.360	0	
2797	44.995	1	Naphthalene,C4H9-
2811	26.542	1	Fluorene,methyl-
2828	46.615	1	Fluorene,methyl-
2837	35.920	0	
2858	39.775	1	Fluorene,methyl-/Naphthalene,C5H11-
2869	15.935	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2882	22.338	0	
2899	86.497	1	Naphthalene,C4H9-
2911	27.069	0	
2930	24.619	0	
2938	15.302	0	
2948	11.486	0	
2964	15.539	0	
2968	17.517	0	
2979	6.240	0	
2983	6.264	0	
3000	69.173	2	Phenanthrene
3032	26.573	1	Anthracene/Naphthalene,C5H11-
3069	10.847	0	
3090	8.727	1	Naphthalene,C7H15-
3119	17.185	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3146	26.938	1	Acenaphthene,C4H9-
3161	21.348	1	Acenaphthene,C3H7-/Fluorene,C2H5-

3198	32.068	1	Acenaphthene,C3H7-
3243	17.142	1	Acenaphthene,C4H9-
3260	19.924	1	Acenaphthene,C4H9-
3276	24.753	0	
3320	5.456	1	Naphthalene,C5H11-
3330	16.422	1	Naphthalene,C5H11-
3346	7.014	0	
3366	22.147	1	Phenanthrene,3-methyl-
3383	15.321	1	Phenanthrene,2-methyl-
3402	16.672	0	
3417	12.067	0	
3431	65.757	2	Cyclopenta(def)phenanthrene,4H-
3454	19.132	1	Phenanthrene,methyl-
3482	6.952	0	
3502	9.400	0	
3520	9.600	0	
3597	7.387	1	Anthraquinone
3612	6.073	0	
3669	5.467	0	
3779	19.528	1	Base-neutral,MW 178,C2H5-
3830	11.055	1	Cyclopentaphenanthrene,methyl-
3853	130.954	2	Fluoranthene
4000	141.161	2	Pyrene
4024	21.671	0	
4070	7.912	1	C15-PCB
4108	5.695	0	
4126	10.962	1	Phenanthrene,C3H7-
4184	6.411	1	Phenanthrene,C3H7-
4221	32.284	1	DDE,4,4'-
4290	44.411	1	Base-neutral,methyl-202
4352	12.367	0	
4369	17.488	1	Benzo(b)fluorene
4399	11.604	1	Cyclopentaphenanthrene,C4H9-
4440	38.162	1	Base-neutral,methyl-202
4460	11.952	1	Base-neutral,methyl-202
4482	5.032	0	
4503	8.550	1	Cyclopentaphenanthrene,C4H9-
4565	14.008	1	C16-PCB
4654	9.457	1	Base-neutral,MW 202,C2H5-
4701	7.312	0	
4768	9.536	0	
4791	7.598	0	
4812	36.949	1	Benzo(c)phenanthrene
4862	9.859	1	C17-PCB/Base-neutral,MW 202,C2H5-
4916	7.819	1	Base-neutral,methyl-228
4972	20.267	1	Benz(a)anthracene
5000	114.889	2	Chrysene
5054	34.911	1	Benzanthracene/MW 202,C4H9-
5134	8.922	1	C17-PCB
5148	6.418	0	
5271	5.856	1	Base-neutral,methyl-228
5297	20.476	1	Base-neutral,methyl-228/C17-PCB
5324	8.028	1	Base-neutral,methyl-228
5351	6.817	1	Base-neutral,methyl-226
5375	22.690	1	Base-neutral,methyl-226
5389	9.745	1	Base-neutral,methyl-226
5432	8.644	1	Binaphthyl,2,2'-/Dihydrobenzofluoranthene
5470	10.477	1	Binaphthyl,2,2'-/Dihydrobenzofluoranthene
5747	117.874	1	Benzofluoranthene
5814	10.350	1	Benzo(a)fluoranthene

5891	7.397	0	
5917	77.469	1	Benzo(e)pyrene
5947	33.264	1	Benzo(a)pyrene
6000	13.436	1	Perylene
6062	11.825	1	Base-neutral,methyl-252
6146	8.546	1	Base-neutral,methyl-252
6172	7.766	0	
6233	6.387	1	Base-neutral,methyl-252
6252	6.018	0	
6349	7.417	1	Base-neutral,MW 264
6755	12.363	0	
6818	39.586	1	Indeno(1,2,3-cd)pyrene
6850	196.649	0	
7000	40.059	1	Benzo(ghi)perylene

Station: SBE2R Crab Hepatopancreas
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	9.316	1	Naphthalene
1038	5.478	0	
1556	9.579	0	
1642	7.223	0	
1896	11.753	0	
1919	32.652	0	
2000	9.579	1	Biphenyl
2010	30.463	0	
2032	10.011	1	Naphthalene,ethyl-
2043	13.191	0	
2058	23.467	1	Naphthalene,C2H5-
2098	44.794	1	Naphthalene,C2H5-
2155	8.208	1	Naphthalene,C2H5-
2273	123.005	2	Acenaphthene
2346	9.170	0	
2355	27.354	2	Dibenzofuran
2371	20.384	2	Bibenzyl
2384	14.916	0	
2396	23.191	1	Naphthalene,C3H7-
2437	47.193	1	Naphthalene,C3H7-
2478	19.386	1	Naphthalene,C3H7-
2484	22.640	1	Naphthalene,C3H7-
2525	65.890	2	Fluorene
2541	32.452	1	Naphthalene,C3H7-
2550	6.645	1	Naphthalene,C3H7-
2561	45.680	1	Naphthalene,C3H7-
2572	63.419	1	Naphthalene,C3H7-
2583	11.154	1	Naphthalene,C3H7-
2592	43.943	1	Biphenyl,methyl-/Acenaphthene,methyl-
2615	19.329	1	Dibenzofuran,methyl-
2626	38.010	1	Naphthalene,C4H9-
2637	16.618	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2645	16.002	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2656	37.034	0	
2681	28.191	1	Naphthalene,C4H9-
2696	35.490	1	Naphthalene,C4H9-
2706	23.242	1	Naphthalene,C4H9-
2736	10.244	1	Naphthalene,C4H9-
2747	41.424	1	Naphthalene,C4H9-
2768	76.757	1	Naphthalene,C5H11-
2787	59.111	0	
2797	77.469	1	Naphthalene,C4H9-
2811	25.882	1	Fluorene,methyl-
2828	126.943	1	Fluorene,methyl-
2845	28.970	0	
2855	37.034	1	Fluorene,methyl-/Naphthalene,C5H11-
2859	36.624	1	Fluorene,methyl-/Naphthalene,C5H11-
2868	53.818	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2879	23.752	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2884	22.207	0	
2899	141.795	1	Naphthalene,C4H9-
2912	42.447	0	
2921	22.699	0	

2930	34.833	0	
2944	41.166	0	
2959	21.381	0	
2969	37.291	0	
2984	17.105	0	
3000	223.817	2	Phenanthrene
3020	14.535	1	Naphthalene,C5H11-
3032	30.359	1	Anthracene
3048	10.306	0	
3068	13.936	0	
3078	15.977	0	
3091	15.413	1	Naphthalene,C7H15-
3120	53.007	1	Fluorene,C2H5-
3135	21.437	0	
3147	39.520	1	Acenaphthene,C4H9-
3164	44.378	1	Fluorene,C2H5-
3198	48.033	1	Acenaphthene,C3H7-
3206	20.095	1	Acenaphthene,C3H7-
3241	41.728	1	Acenaphthene,C4H9-
3257	27.244	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3276	23.278	0	
3310	13.344	0	
3329	22.674	1	Naphthalene,C5H11-
3340	5.305	1	Naphthalene,C5H11-
3362	42.025	1	Phenanthrene,3-methyl-
3380	15.335	1	Phenanthrene,2-methyl-
3404	5.519	0	
3430	396.574	2	Cyclopenta(def)phenanthrene,4H-
3453	54.234	1	Phenanthrene,methyl-
3474	6.075	0	
3498	11.743	0	
3518	20.496	0	
3545	6.815	0	
3561	21.558	0	
3577	21.032	0	
3594	23.816	1	Anthraquinone
3607	14.394	0	
3635	6.346	0	
3648	31.634	0	
3677	21.750	0	
3699	34.502	0	
3724	29.861	0	
3745	27.678	1	Phenanthrene,C2H5-
3759	17.063	0	
3777	98.395	1	Base-neutral,MW 178,C2H5-
3796	25.686	1	Base-neutral,MW 178,C2H5-
3817	16.358	0	
3829	83.677	1	Cyclopentaphenanthrene,methyl-
3853	1040.690	2	Fluoranthene
3892	32.213	0	
3944	19.389	0	
3970	7.326	0	
4000	975.389	2	Pyrene
4023	158.364	0	
4050	6.507	0	
4067	96.731	1	C15-PCB
4087	6.037	0	
4103	52.097	0	
4131	79.110	1	Phenanthrene,C3H7-
4170	21.109	1	Phenanthrene,C3H7-

4182	42.612	1	Phenanthrene,C3H7-
4220	303.257	2	DDE,4,4'-
4279	84.603	0	
4287	219.240	1	Base-neutral,methyl-202
4350	70.234	1	Retene
4367	119.327	1	Base-neutral,methyl-202
4397	89.650	1	Cyclopentaphenanthrene,C4H9-
4424	124.976	1	C15-PCB
4438	181.936	1	Base-neutral,methyl-202
4459	65.744	0	
4478	42.163	0	
4494	35.683	1	Cyclopentaphenanthrene,C4H9-
4500	37.405	1	Cyclopentaphenanthrene,C4H9-
4528	34.926	1	C15-PCB
4566	244.612	1	C16-PCB
4583	36.754	0	
4606	8.474	0	
4628	12.520	0	
4652	93.559	1	Base-neutral,MW 202,C2H5-
4668	13.218	0	
4686	12.071	0	
4700	44.262	0	
4732	158.127	1	C16-PCB
4748	17.138	0	
4768	58.264	0	
4791	55.816	1	Benzo(ghi)fluoranthene
4813	224.397	1	Benzo(c)phenanthrene
4837	61.535	1	C17-PCB
4866	95.466	1	C17-PCB/Base-neutral,MW 202,C2H5-
4896	42.058	1	C17-PCB
4918	30.643	1	Base-neutral,methyl-228
4973	117.249	2	Benz(a)anthracene
5000	582.836	2	Chrysene
5036	42.310	0	
5054	161.043	1	Benzanthracene/MW 202,C4H9-
5082	5.636	0	
5097	25.099	1	Benzanthracene/MW 202,C4H9-
5135	112.238	1	C17-PCB
5148	69.649	0	
5197	45.909	0	
5220	22.007	0	
5246	19.444	0	
5272	44.045	1	Base-neutral,methyl-228
5300	112.802	1	Base-neutral,methyl-228/C17-PCB
5325	38.355	1	Base-neutral,methyl-228
5351	56.675	1	Base-neutral,methyl-226
5377	112.306	1	Base-neutral,methyl-226
5390	46.159	1	Base-neutral,methyl-226
5415	9.392	0	
5433	42.003	1	Binaphthyl,2,2'-/Dihydrobenzofluoranthene
5472	32.474	0	
5502	5.878	0	
5594	16.067	0	
5627	6.284	1	Base-neutral,MW 228,C2H5-
5652	17.397	0	
5670	29.215	0	
5746	251.901	1	Benzofluoranthene
5760	184.156	1	Benzofluoranthene
5819	24.999	1	Benzo(a)fluoranthene
5858	7.703	0	

5882	78.228	0	
5917	253.713	2	Benzo(e)pyrene
5946	63.711	1	Benzo(a)pyrene
6000	34.322	1	Perylene
6028	10.357	0	
6058	54.077	1	Base-neutral,methyl-252
6101	13.698	0	
6150	34.646	1	Base-neutral,methyl-252
6178	19.333	0	
6232	19.534	1	Base-neutral,methyl-252
6253	19.600	0	
6325	10.943	0	
6346	34.515	0	
6382	35.371	0	
6406	25.135	0	
6591	18.604	0	
6649	23.409	1	Dibenzanthracene
6682	33.272	0	
6757	12.373	0	
6784	8.291	0	
6817	44.730	1	Indeno(1,2,3-cd)pyrene
6850	12.064	0	
6943	10.107	0	
7000	91.063	1	Benzo(ghi)perylene

Table 19

Site: SBE 3C - Southern Branch, off Eppinger and Russel, Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (66% moisture)			
Aromatic fraction	138	66	68,000
Polar fraction	69	31	3,400
Organochlorines	--	--	270
TBT	--	--	970

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Fluoranthene	6029.821	
Pyrene	5907.821	
Benzofluoranthene	4254.912	
Chrysene	3465.570	
Benzo(b)fluorene	2799.782	
Benzo(a)fluorene	2665.812	
Benz(a)anthracene	2028.631	
Naphthalene,phenyl-,methyl-	1839.631	
Benzo(a)pyrene	1690.246	
Benzo(e)pyrene	1665.135	
	2347.365	(2300 to 2 sf)
% of Fraction	47%	

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	353.662	
Benzocarbazole	245.232	
Carbazole,9H-	230.476	
--	222.138	
--	185.910	
Aza-252	146.993	
Benzocarbazole	119.748	
Benzanthrone/Benzofluorenone	119.725	
Dibenzocarbazole	115.105	
Dibenzocarbazole,methyl-	110.424	
	1828.258	(1800 to 2 sf)
% of Fraction	53%	

Station: SBE3C
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	458.732	1	Naphthalene
1535	168.561	1	2-Methylnaphthalene
1620	91.832	1	1-Methylnaphthalene
2000	45.104	1	Biphenyl
2035	25.728	1	Ethylnaphthalene
2061	104.392	1	C2-Naphthalene
2099	49.047	1	C2-Naphthalene
2109	94.998	1	C2-Naphthalene
2148	75.873	1	C2-Naphthalene
2169	24.923	1	Acenaphthylene
2206	38.893	0	
2226	31.861	0	
2262	319.040	1	Acenaphthene
2281	32.000	1	4-Methylbiphenyl
2302	37.836	1	3-Methylbiphenyl
2325	15.417	1	C3-Naphthalene
2346	272.988	1	Dibenzofuran
2380	28.408	0	
2392	49.825	1	C3-Naphthalene
2439	126.998	1	C3-Naphthalene
2452	71.114	1	C3-Naphthalene
2476	83.722	1	C3-Naphthalene
2517	334.667	1	Fluorene
2564	184.984	1	Methylbiphenyl
2583	142.986	0	
2621	145.778	1	Methyldibenzofuran
2653	326.802	0	
2677	60.442	0	
2700	20.882	0	
2752	16.337	0	
2791	21.555	0	
2813	89.615	1	Methylfluorene
2828	39.491	0	
2853	206.890	0	
2870	57.078	0	
2907	195.672	0	
2918	169.808	0	
2934	161.701	1	Dibenzothiophene
2950	170.114	0	
2975	5.259	0	
3000	1149.834	1	Phenanthrene
3031	1095.056	1	Anthracene
3086	60.965	0	
3127	56.653	0	
3164	216.940	0	
3202	27.590	0	
3233	53.301	1	Methyldibenzothiophene
3257	107.828	0	
3272	181.370	0	
3339	20.427	0	
3365	306.597	1	3-Methylphenanthrene
3381	270.319	1	2-Methylphenanthrene
3423	1144.259	1	4-H Cyclopenta(def)phenanthrene

3440	265.026	1	Methylphenanthrene
3451	250.954	1	Methylphenanthrene
3559	14.173	0	
3608	725.541	1	2-Phenylnaphthalene
3653	78.887	0	
3680	30.694	0	
3706	123.939	0	
3732	122.756	1	C2-Phenanthrene
3743	123.642	1	C2-Phenanthrene
3767	146.751	0	
3787	491.764	1	C2-178
3822	1016.340	0	
3858	6029.821	1	Fluoranthene
3890	112.154	0	
3917	61.682	0	
3943	449.894	0	
3965	652.722	0	
4000	5907.821	1	Pyrene
4030	1839.631	1	Methyl-phenylnaphthalene
4080	426.876	0	
4127	795.392	1	Methyl-phenylnaphthalene
4191	335.203	0	
4217	796.564	0	
4304	2665.812	1	Benzo(a)fluorene
4358	2799.782	1	Benzo(b)fluorene
4395	465.647	0	
4431	1153.379	1	Methyl-202
4451	561.471	1	Methyl-202
4474	20.460	0	
4506	124.903	0	
4573	78.187	0	
4603	186.486	0	
4621	110.711	0	
4658	945.359	0	
4711	978.150	0	
4770	885.806	1	Benzo(b)naphtho(2,1-d)thiophene
4795	634.481	1	Benzo(ghi)fluoranthene
4806	699.746	1	Benzo(ghi)fluoranthene
4839	651.329	0	
4900	265.897	1	Benzonaphthothiophene
4929	248.174	0	
4967	2028.631	1	Benz(a)anthracene
5000	3465.570	1	Chrysene
5041	1039.412	1	Tetramethyloctahydrochrysene
5077	285.906	1	Tetramethyloctahydrochrysene
5121	471.905	1	Methyl-228
5144	249.674	0	
5190	200.262	0	
5249	192.097	0	
5270	204.273	0	
5300	816.952	1	Methyl-228
5323	417.600	1	Methyl-228
5344	314.163	0	
5369	554.812	0	
5387	892.013	1	1-Phenylphenanthrene
5442	205.898	1	Trimethyltetrahydrochrysene
5481	131.187	0	
5510	99.215	0	
5552	47.513	0	
5589	93.985	0	

5644	44.601	0	
5672	76.834	0	
5758	4254.912	1	Benzofluoranthene
5813	378.368	1	Benzo(a)fluoranthene
5917	1665.135	1	Benzo(e)pyrene
5950	1690.246	1	Benzo(a)pyrene
6000	493.915	1	Perylene
6068	443.844	1	MW-252
6108	173.425	0	
6175	683.623	0	
6242	27.855	0	
6258	26.386	0	
6306	88.125	0	
6345	165.761	0	
6380	13.144	0	
6561	101.932	0	
6595	40.911	0	
6666	69.706	0	
6710	83.904	0	
6780	272.861	0	
6831	745.007	1	Indeno(1,2,3-cd)pyrene
6873	257.936	1	Dibenz(a,h)anthracene
6941	119.798	0	
6966	142.181	0	
7000	528.947	1	Benzo(ghi)perylene

Station: SBE3C
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2592	7.357	0	
2709	53.923	0	
2731	48.502	0	
2838	7.358	0	
2917	18.131	0	
3007	10.017	0	
3033	12.243	0	
3085	10.870	0	
3183	13.606	1	Benzoquinoline
3209	230.476	1	9 H-Carbazole
3269	8.674	0	
3362	222.138	0	
3451	21.744	0	
3548	13.358	1	Methyl-9 H-carbazole
3561	30.995	1	Methyl-9 H-carbazole
3607	12.088	0	
3788	31.183	0	
3821	14.882	0	
3843	6.807	0	
3899	53.571	1	C2-Carbazole
3921	53.768	1	Aza-202
3940	48.313	1	Aza-202
3981	35.037	1	Aza-202
4138	17.339	0	
4251	185.910	0	
4343	12.627	0	
4526	5.092	0	
4556	28.946	0	
4597	43.950	0	
4692	17.733	0	
4725	27.072	0	
4748	10.595	0	
4831	34.732	0	
4879	5.024	0	
4943	19.248	0	
5028	353.662	1	Benzocarbazole
5094	119.725	1	Benzanthrone/Benzofluorenone
5167	245.232	1	Benzocarbazole
5199	119.748	1	Benzocarbazole
5332	88.420	1	Methylbenzocarbazole
5376	29.400	1	Methylbenzocarbazole
5403	45.946	1	Methylbenzocarbazole
5455	79.267	1	Methylbenzocarbazole
5490	42.566	1	Methylbenzocarbazole
5546	15.673	0	
5577	31.701	0	
5631	14.963	1	C2-Benzocarbazole
5664	146.993	1	Aza-252
5731	25.782	1	Aza-252
5759	7.781	0	
5899	21.201	0	
5927	11.828	1	C2-Benzacridine
5950	31.197	1	Cyclopenta(def)chrysen-4-one

6105	15.352	1	C2-Benzacridine
6183	48.887	1	C2-Benzacridine
6283	5.353	0	
6324	11.327	0	
6399	14.148	0	
6476	11.044	0	
6617	24.619	1	Dibenzocarbazole
6756	115.105	1	Dibenzocarbazole
6990	96.687	1	Dibenzocarbazole
7021	47.873	1	Indenylanthracenone
7081	16.386	1	Dibenzocarbazole
7133	28.715	1	Dibenzocarbazole
7167	15.937	1	Dibenzocarbazole
7294	110.424	0	Unknown biogenic
7343	16.824	0	
7471	13.194	0	

Table 20

Site: SBE 3L - Southern Branch, off Eppinger and Russel, before channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (64% moisture)			
Aromatic fraction	150	64	82,000
Polar fraction	79	33	7,800
Organochlorines	--	--	290
TBT	--	--	940

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	8138.271	
Fluoranthene	5688.517	
Benzofluoranthene	4336.951	
Benzo(b)fluorene	4212.465	
Benzo(a)fluorene	3772.475	
Chrysene	3767.996	
Naphthalene,phenyl-,methyl-	2705.697	
Anthracene	2504.975	
Phenanthrene	1891.900	
Benzo(a)pyrene	1786.799	
	38806.046	(39000 to 2 sf)
% of Fraction	48%	

Site SBE 3L (continued)

Polar Fraction

Compound	Concentration (ppb)	
Carbazole,9H-	906.172	
Benzocarbazole	747.171	
Benzocarbazole	568.287	
---	423.525	
Dibenzocarbazole	327.499	
Benzocarbazole	313.104	
Aza-252	235.974	
Benzanthrone/Benzofluorenone	222.657	
Dibenzocarbazole	221.102	
---	200.840	
	4166.331	(4200 to 2 sf)
% of Fraction	54%	

Station: SBE3L
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	453.662	1	Naphthalene
1041	27.329	1	Benzothiophene
1536	203.919	1	2-Methylnaphthalene
1621	108.716	1	1-Methylnaphthalene
2000	72.897	1	Biphenyl
2035	40.367	1	Ethylnaphthalene
2061	133.663	1	C2-Naphthalene
2099	71.673	1	C2-Naphthalene
2108	78.797	1	C2-Naphthalene
2148	89.262	1	C2-Naphthalene
2168	41.914	1	Acenaphthylene
2187	22.907	1	Hexamethylbenzene
2205	11.149	1	
2225	22.357	0	
2261	360.487	1	Acenaphthene
2280	35.801	1	4-Methylbiphenyl
2301	35.584	1	3-Methylbiphenyl
2324	26.529	1	C3-Naphthalene
2345	465.360	1	Dibenzofuran
2379	29.654	0	
2391	40.948	1	C3-Naphthalene
2438	137.666	1	C3-Naphthalene
2450	49.604	1	C3-Naphthalene
2475	88.550	1	C3-Naphthalene
2515	531.914	1	Fluorene
2532	44.770	1	
2562	243.164	1	Methylbiphenyl
2581	173.916	0	
2603	35.036	0	
2619	188.768	1	Methyldibenzofuran
2651	396.177	0	
2674	82.431	0	
2697	43.412	0	
2722	9.549	0	
2749	34.235	0	
2759	28.278	0	
2788	92.267	0	
2809	226.067	1	Methylfluorene
2825	86.768	0	
2851	312.870	0	
2867	145.129	0	
2904	246.982	0	
2915	183.445	0	
2931	257.307	1	Dibenzothiophene
2947	303.068	0	
2979	85.831	0	
3000	1891.900	1	Phenanthrene
3033	2504.975	1	Anthracene
3080	86.838	0	
3098	9.638	0	
3121	38.025	0	
3158	209.736	0	
3196	109.937	0	

3222	146.363	0	
3251	191.133	0	
3265	661.921	0	
3330	40.092	1	Methyldibenzothiophene
3358	304.919	1	3-Methylphenanthrene
3375	329.748	1	2-Methylphenanthrene
3404	568.326	0	
3416	880.905	1	4-H Cyclopenta(def)phenanthrene
3432	318.219	1	Methylphenanthrene
3444	295.015	1	Methylphenanthrene
3485	20.720	0	
3524	86.125	0	
3538	59.941	0	
3550	82.434	0	
3601	740.114	1	2-Phenylnaphthalene
3646	99.842	0	
3674	42.686	0	
3699	143.539	0	
3725	260.119	0	
3759	212.563	0	
3780	805.524	1	C2-178
3810	487.127	0	
3853	5688.517	1	Fluoranthene
3880	69.898	0	
3935	799.392	0	
4000	8138.271	1	Pyrene
4027	2705.697	1	Methyl-phenylnaphthalene
4071	642.902	0	
4119	1147.182	0	
4181	429.673	0	
4208	980.277	0	
4303	3772.475	1	Benzo(a)fluorene
4358	4212.465	1	Benzo(b)fluorene
4390	778.104	0	
4406	359.054	0	
4427	1282.393	1	Methyl-202
4446	897.085	1	Methyl-202
4470	145.728	0	
4497	515.213	0	
4544	36.427	0	
4565	125.422	0	
4594	229.232	0	
4651	1098.934	0	
4706	1039.451	0	
4765	957.302	1	Benzo(b)naphtho(2,1-d)thiophene
4800	1394.544	1	Benzo(ghi)fluoranthene
4833	207.341	0	
4876	8.101	0	
4893	82.522	0	
4962	1610.399	1	Benz(a)anthracene
5000	3767.996	1	Chrysene
5039	969.244	1	Tetramethyloctahydrochrysene
5069	215.082	1	Tetramethyloctahydrochrysene
5117	494.252	0	
5137	223.981	1	Methyl-228
5182	231.528	0	
5229	13.544	0	
5241	13.940	0	
5262	102.549	0	
5296	809.526	1	Methyl-228

5320	381.296	1	Methyl-228
5342	297.149	0	
5364	491.875	0	
5384	857.604	1	1-Phenylphenanthrene
5436	169.533	1	Trimethyltetrahydrochrysene
5474	131.565	1	Trimethyltetrahydrochrysene
5503	95.775	0	
5545	39.306	0	
5582	31.562	0	
5637	42.774	0	
5666	126.379	0	
5761	4336.951	1	Benzofluoranthene
5812	401.705	1	Benzo(a)fluoranthene
5843	13.306	0	
5920	1671.030	1	Benzo(e)pyrene
5954	1786.799	1	Benzo(a)pyrene
6000	471.250	1	Perylene
6069	491.883	1	MW-252
6105	165.176	0	
6173	922.168	0	
6240	165.546	0	
6256	219.298	0	
6305	154.582	0	
6343	236.731	0	
6375	91.298	0	
6420	44.405	0	
6469	28.554	0	
6552	104.150	0	
6588	40.597	0	
6657	77.426	0	
6702	81.761	0	
6774	302.296	0	
6830	823.043	1	Indeno(1,2,3-cd)pyrene
6867	323.516	1	Dibenz(a,h)anthracene
6935	171.738	0	
6962	179.307	0	
7000	611.076	1	Benzo(ghi)perylene

Station: SBE3L
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2624	6.382	0	
2717	60.143	0	
2738	100.503	0	
2787	6.612	0	
2845	5.444	0	
2925	31.458	0	
3019	19.903	0	
3044	8.226	0	
3136	5.078	0	
3191	112.922	1	Benzoquinoline
3218	906.172	1	9 H-Carbazole
3277	6.201	0	
3368	170.183	0	
3453	36.288	0	
3549	79.854	1	Methyl-9 H-carbazole
3563	86.252	1	Methyl-9 H-carbazole
3610	34.335	0	
3788	32.370	0	
3821	6.477	0	
3898	63.329	1	C2-Carbazole
3938	67.665	1	Aza-202
3984	9.764	1	Aza-202
4111	6.565	0	
4137	27.634	0	
4252	423.525	0	
4349	29.053	0	
4436	13.857	0	
4466	6.423	0	
4532	39.325	0	
4559	81.355	0	
4605	69.258	0	
4643	14.843	0	
4674	12.325	0	
4699	11.618	0	
4735	30.771	0	
4842	48.788	0	
4890	14.735	0	
5012	13.898	0	
5042	568.287	1	Benzocarbazole
5108	222.657	1	Benzanthrone/Benzofluorenone
5183	747.171	1	Benzocarbazole
5212	313.104	1	Benzocarbazole
5343	175.923	1	Methylbenzocarbazole
5386	66.111	1	Methylbenzocarbazole
5414	90.377	1	Methylbenzocarbazole
5472	95.947	1	Methylbenzocarbazole
5501	11.104	1	Methylbenzocarbazole
5556	18.832	0	
5587	61.180	0	
5638	41.884	0	
5673	235.974	1	Aza-252
5740	27.788	1	C2-Benzocarbazole
5763	39.452	1	Aza-252

5792	5.316	0	
5818	19.673	0	
5903	44.268	1	C2-Benzacridine
5933	30.560	1	C2-Benzacridine
5959	94.646	1	Cyclopenta(def)chrysen-4-one
6046	31.217	1	C2-Benzacridine
6111	82.140	1	C2-Benzacridine
6189	58.034	1	C2-Benzacridine
6289	23.317	0	
6329	41.487	0	
6407	51.259	0	
6468	6.436	0	
6577	8.339	0	
6622	113.780	1	Dibenzocarbazole
6743	221.102	1	Dibenzocarbazole
6987	327.499	1	Dibenzocarbazole
7008	200.840	0	
7029	180.230	1	Indenylanthracenone
7090	90.118	1	Dibenzocarbazole
7142	188.346	1	Dibenzocarbazole
7175	81.264	1	Dibenzocarbazole
7246	27.397	1	Methyldibenzocarbazole
7308	191.480	1	Methyldibenzocarbazole
7349	38.914	1	Methyldibenzocarbazole
7371	68.278	1	Methyldibenzocarbazole
7478	146.387	0	

Table 21

Site: SBE 3R(A) - Southern Branch, off Eppinger and Russel across Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (67% moisture)			
Aromatic fraction	115	77	30,000
Polar fraction	40	17	1,100
Organochlorines	--	--	19
TBT	--	--	100
Blue Crabs			
Muscle (% moisture) (6% lipid, dry wt. basis)			
Aromatic fraction	89	48	1,800
PCB	--	--	67
4,4'-DDE	--	--	32
Hepatopancreas (71% moisture) (49% lipid, dry wt. basis)			
Aromatic fraction	158	96	5,200
PCB	--	--	2,600
4,4'-DDE	--	--	530

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	2769.811	
Fluoranthene	2612.719	
Benzofluoranthene	2337.038	
Chrysene	1459.923	
Benzo(b)fluorene	1329.920	
Benzo(a)fluorene	1228.634	
Benzo(a)pyrene	922.675	
Benz(a)anthracene	863.604	
Benzo(e)pyrene	860.345	
Cyclopenta(def)phenanthrene,4H-	703.228	
	15087.897	(15000 to 2 sf)
% of Fraction	50%	

Site SBE 3R (continued)

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	129.800	
--	106.375	
Benzocarbazole	73.706	
Benzocarbazole	67.738	
--	55.519	
Dibenzocarbazole,methyl-	49.247	
Carbazole,9H-	46.620	
Dibenzocarbazole	43.957	
Benzanthrone/Benzofluorenone	40.234	
--	39.339	
	652.533	(650 to 2 sf)
% of Fraction	59%	

Blue Crab

Muscle

Compound	Concentration (ppb)	
Naphthalene,C4H9-	78.549	
Phenanthrene	76.921	
--	75.941	
Acenaphthene,C3H7-/Fluorene,C2H5-	42.106	
Acenaphthene,C3H7-/Fluorene,C2H5-	40.306	
Naphthalene,C5H11-	39.472	
--	39.052	
Fluorene,methyl-	38.543	
Dibenzothiophene	37.524	
Pyrene	37.323	
	505.737	(510 to 2 sf)
% of Fraction	28%	

Site SBE 3R(A) (continued)

Compound	Hepatopancreas Concentration (ppb)	
Pyrene	394.263	
Fluoranthene	239.989	
--	209.066	
Binaphthyl,1,1'-(ISTD)/C16-PCB	202.631	
C15-PCB	192.440	
C16-PCB	157.817	
Chrysene	135.565	
Cyclopenta(def)phenanthrene,4H-	132.679	
Acenaphthene	116.000	
Phenanthrene,C3H7-/C15-PCB	99.415	
	1879.865	(1900 to 2 sf)
% of Fraction	37%	

Station: SBE3R(A)
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	187.902	1	Naphthalene
1535	69.374	1	2-Methylnaphthalene
1620	36.234	1	1-Methylnaphthalene
2000	13.095	1	Biphenyl
2061	47.253	1	C2-Naphthalene
2099	3.996	1	C2-Naphthalene
2148	10.793	1	C2-Naphthalene
2168	14.925	1	Acenaphthylene
2261	134.663	1	Acenaphthene
2303	13.614	1	3-Methylbiphenyl
2346	95.751	1	Dibenzofuran
2392	26.557	1	C3-Naphthalene
2439	24.535	1	C3-Naphthalene
2517	111.821	1	Fluorene
2564	83.374	1	Methylbiphenyl
2583	54.814	0	
2621	76.283	1	Methyldibenzofuran
2653	196.921	0	
2678	26.548	0	
2752	6.900	0	
2813	92.145	1	Methylfluorene
2828	12.293	0	
2854	58.006	0	
2907	78.037	0	
2919	63.741	0	
2935	47.357	1	Dibenzothiophene
2951	62.208	0	
3000	417.046	1	Phenanthrene
3031	287.362	1	Anthracene
3087	20.958	0	
3129	11.708	0	
3166	69.663	0	
3204	14.482	0	
3232	27.372	1	Methyldibenzothiophene
3259	45.455	0	
3274	100.989	0	
3368	108.729	1	3-Methylphenanthrene
3384	89.059	1	2-Methylphenanthrene
3425	703.228	1	4-H Cyclopenta(def)phenanthrene
3611	250.986	1	2-Phenylnaphthalene
3659	35.986	0	
3685	17.147	0	
3710	33.116	0	
3736	6.159	1	C2-Phenanthrene
3789	220.448	1	C2-178
3827	347.408	0	
3857	2612.719	1	Fluoranthene
3893	45.114	0	
3946	187.248	0	
3969	273.014	0	
4000	2769.811	1	Pyrene
4032	674.740	1	Methyl-phenylnaphthalene
4084	155.318	0	

4131	348.378	1	Methyl-phenylnaphthalene
4195	166.301	0	
4221	466.072	0	
4306	1228.634	1	Benzo(a)fluorene
4360	1329.920	1	Benzo(b)fluorene
4400	187.802	0	
4433	609.512	1	Methyl-202
4454	315.334	1	Methyl-202
4510	79.123	0	
4579	50.521	0	
4608	53.172	0	
4629	12.469	0	
4662	337.286	0	
4716	495.544	0	
4774	389.038	1	Benzo(b)naphtho(2,1-d)thiophene
4799	273.322	1	Benzo(ghi)fluoranthene
4811	312.652	1	Benzo(c)phenanthrene
4845	57.554	0	
4905	29.013	1	Benzonaphthothiophene
4935	34.996	0	
4970	863.604	1	Benz(a)anthracene
5000	1459.923	1	Chrysene
5043	428.601	1	Tetramethyloctahydrochrysene
5082	109.891	1	Tetramethyloctahydrochrysene
5124	195.964	1	Methyl-228
5148	103.479	0	
5194	91.487	0	
5253	47.545	0	
5273	53.229	0	
5302	446.005	1	Methyl-228
5326	233.095	1	Methyl-228
5346	176.775	0	
5371	293.606	0	
5390	469.412	1	1-Phenylphenanthrene
5446	110.367	1	Trimethyltetrahydrochrysene
5484	73.135	0	
5512	48.239	0	
5555	23.206	0	
5591	52.707	0	
5647	32.357	0	
5674	39.943	0	
5756	2337.038	1	Benzofluoranthene
5814	219.173	1	Benzo(a)fluoranthene
5916	860.345	1	Benzo(e)pyrene
5948	922.675	1	Benzo(a)pyrene
6000	291.056	1	Perylene
6071	242.780	0	
6110	88.661	0	
6175	437.792	0	
6244	90.443	0	
6260	99.152	0	
6309	55.949	0	
6347	102.046	0	
6559	35.075	0	
6668	39.287	0	
6714	40.347	0	
6782	145.299	0	
6830	416.346	1	Indeno(1,2,3-cd)pyrene
6874	145.043	1	Dibenz(a,h)anthracene
6943	72.486	0	

6967	78.625	0	
7000	328.424	1	Benzo(ghi)perylene

Station: SBE3R(A)
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2597	5.133	0	
2716	11.820	0	
2737	22.930	0	
3093	9.482	0	
3215	46.620	1	9 H-Carbazole
3365	55.519	0	
3721	16.817	0	
3895	11.307	1	C2-Carbazole
3935	8.356	1	Aza-202
4011	7.179	0	
4250	106.375	0	
4606	8.938	0	
4732	12.287	0	
4839	14.029	0	
5034	129.800	1	Benzocarbazole
5102	40.234	1	Benzanthrone/Benzofluorenone
5169	67.738	1	Benzocarbazole
5206	73.706	1	Benzocarbazole
5314	12.499	0	
5341	39.339	0	
5389	11.503	0	
5411	23.081	0	
5464	27.249	0	
5503	18.099	0	
5588	18.794	0	
5678	27.832	1	Aza-252
5961	18.251	1	Cyclopenta(def)chrysen-4-one
6118	13.493	1	C2-Benzacridine
6196	13.258	0	
6294	6.028	0	
6336	9.978	0	
6413	6.471	0	
6627	19.456	1	Dibenzocarbazole
6749	43.957	1	Dibenzocarbazole
7003	12.271	0	
7031	10.598	1	Indenylanthracenone
7095	8.513	1	Dibenzocarbazole
7141	22.206	1	Dibenzocarbazole
7178	13.142	1	Dibenzocarbazole
7305	49.247	1	Methyldibenzocarbazole

Station: SBE3R Crab Muscle Tissue
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2372	5.246	1	Bibenzyl
2485	7.967	1	Naphthalene,C3H7-
2524	5.215	1	Fluorene
2541	6.392	1	Naphthalene,C3H7-
2680	5.817	1	Naphthalene,C4H9-
2696	9.629	1	Naphthalene,C4H9-
2737	6.332	1	Naphthalene,C4H9-
2748	21.565	1	Naphthalene,C4H9-
2768	39.472	1	Naphthalene,C5H11-
2786	29.452	0	
2798	35.243	1	Naphthalene,C4H9-
2812	20.053	1	Fluorene,methyl-
2828	38.543	1	Fluorene,methyl-
2838	33.190	0	
2851	13.713	0	
2857	25.452	1	Fluorene,methyl-/Naphthalene,C5H11-
2868	18.129	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2880	15.891	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2884	9.948	0	
2898	78.549	1	Naphthalene,C4H9-
2910	29.251	0	
2923	9.667	0	
2934	37.524	0	
2944	21.413	0	
2960	19.053	0	
2965	27.865	0	
2979	19.045	0	
3000	76.921	1	Phenanthrene
3019	17.706	0	
3032	28.466	1	Anthracene
3046	10.390	0	
3067	35.140	0	
3088	27.586	1	Naphthalene,C7H15-
3102	13.619	1	Naphthalene,C7H15-
3120	40.306	1	Acenaphthene,C3H7-
3134	19.625	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3145	35.914	1	Acenaphthene,C4H9-
3162	42.106	1	Acenaphthene,C3H7-
3177	9.961	0	
3191	19.386	1	Acenaphthene,C3H7-
3197	17.299	1	Acenaphthene,C3H7-
3207	34.460	1	Acenaphthene,C3H7-
3241	36.941	1	Acenaphthene,C4H9-
3258	35.534	1	Acenaphthene,C4H9-
3278	14.338	0	
3285	13.544	0	
3295	8.501	0	
3301	13.318	0	
3316	5.345	0	
3329	32.087	1	Naphthalene,C5H11-
3344	7.509	0	
3352	6.914	1	Phenanthrene,methyl-
3365	32.051	1	Phenanthrene,3-methyl-

3381	22.939	1	Phenanthrene,2-methyl-
3401	30.867	0	
3416	12.436	1	Cyclopenta(def)phenanthrene,4H-
3430	10.950	0	
3441	29.999	1	Phenanthrene,methyl-
3458	20.007	1	Phenanthrene,methyl-
3475	6.701	0	
3501	8.374	0	
3520	10.321	0	
3557	5.389	0	
3579	5.729	0	
3600	7.159	0	
3613	12.007	1	Anthraquinone
3636	6.016	0	
3652	6.455	0	
3669	11.603	0	
3728	5.346	0	
3749	9.858	1	Phenanthrene,C2H5-
3762	5.811	0	
3781	14.981	1	Base-neutral,MW 178,C2H5-
3801	7.015	1	Base-neutral,MW 178,C2H5-
3816	6.204	0	
3852	21.354	1	Fluoranthene
3943	11.740	0	
4000	37.323	1	Pyrene
4292	6.128	1	Base-neutral,methyl-202
4814	5.067	1	Benzo(c)phenanthrene
5000	13.074	1	Chrysene
5746	8.642	1	Benzofluoranthene
5760	9.673	1	Benzofluoranthene
5880	19.476	0	
5915	6.760	1	Benzo(e)pyrene
6255	14.832	0	
6410	75.941	0	
6443	13.013	0	
6457	39.052	0	

Station: SBE3R Crab Hepatopancreas
Neutral Extract 63.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	14.982	1	Naphthalene
1037	28.146	0	
1184	10.923	0	
1551	15.150	0	
1570	5.957	0	
1634	11.056	1	Naphthalene,1-methyl-
1860	8.891	0	
1888	8.641	0	
1911	7.143	0	
1967	9.527	0	
2004	7.115	1	Biphenyl
2028	18.104	1	Naphthalene,ethyl-
2054	26.884	1	Naphthalene,C2H5-
2097	36.973	1	Naphthalene,C2H5-
2151	9.313	1	Naphthalene,C2H5-
2269	116.000	1	Acenaphthene
2343	8.105	0	
2353	13.220	1	Dibenzofuran
2369	24.393	1	Naphthalene,C3H7-
2381	13.140	1	Bibenzyl
2394	20.687	1	Naphthalene,C3H7-
2435	32.305	1	Naphthalene,C3H7-
2477	18.373	1	Naphthalene,C3H7-
2483	18.499	1	Naphthalene,C3H7-
2524	30.761	1	Fluorene
2539	23.319	1	Naphthalene,C3H7-
2558	16.935	1	Naphthalene,C3H7-
2570	24.749	1	Naphthalene,C3H7-
2591	9.035	1	Biphenyl,methyl-/Acenaphthene,methyl-
2614	6.141	1	Dibenzofuran,methyl-
2624	14.496	1	Naphthalene,C4H9-
2635	6.471	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2645	10.510	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2655	10.181	0	
2680	15.549	1	Naphthalene,C4H9-
2695	23.954	1	Naphthalene,C4H9-
2706	13.795	1	Naphthalene,C4H9-
2739	7.731	1	Naphthalene,C4H9-
2748	34.519	1	Naphthalene,C4H9-
2768	63.694	1	Naphthalene,C5H11-
2787	39.977	0	
2796	43.250	1	Naphthalene,C4H9-
2811	16.051	1	Fluorene,methyl-
2827	54.514	1	Fluorene,methyl-
2837	17.481	0	
2859	19.710	1	Fluorene,methyl-/Naphthalene,C5H11-
2868	18.348	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2886	21.049	0	
2899	96.621	1	Naphthalene,C4H9-
2914	29.993	0	
2931	25.547	0	
2944	12.919	0	
2960	14.664	0	

2969	33.855	0	
2985	12.907	0	
3000	81.721	1	Phenanthrene
3021	13.184	1	Naphthalene,C5H11-
3034	16.623	1	Anthracene
3052	7.565	0	
3073	7.607	0	
3091	11.088	1	Naphthalene,C7H15-
3120	31.454	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3134	12.723	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3149	24.715	1	Acenaphthene,C4H9-
3164	32.284	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3196	28.029	1	Acenaphthene,C3H7-
3206	19.920	1	Acenaphthene,C3H7-
3242	36.122	1	Acenaphthene,C4H9-
3265	19.436	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3281	21.505	0	
3296	8.908	0	
3311	11.683	0	
3332	14.522	1	Naphthalene,C5H11-
3366	30.655	1	Phenanthrene,3-methyl-
3383	15.444	1	Phenanthrene,2-methyl-
3402	24.322	0	
3432	132.679	1	Cyclopenta(def)phenanthrene,4H-
3456	37.095	1	Phenanthrene,methyl-
3475	12.609	0	
3501	9.076	0	
3521	32.578	0	
3542	5.606	0	
3565	28.448	0	
3579	45.205	0	
3599	12.033	0	
3614	11.833	1	Anthraquinone
3658	11.184	0	
3671	5.024	0	
3706	10.030	0	
3722	7.186	0	
3751	5.158	0	
3781	14.064	1	Base-neutral,MW 178,C2H5-
3831	24.292	1	Cyclopentaphenanthrene,methyl-
3853	239.989	1	Fluoranthene
3893	46.393	0	
3952	35.506	0	
3964	5.913	0	
3979	9.383	0	
4000	394.263	1	Pyrene
4025	31.810	0	
4039	12.506	0	
4071	99.415	1	C15-PCB
4109	40.815	0	
4138	42.146	1	Phenanthrene,C3H7-
4179	9.516	1	Phenanthrene,C3H7-
4226	335.330	1	DDE,4,4'-
4267	7.168	0	
4291	77.012	1	Base-neutral,methyl-202
4354	10.585	0	
4371	47.374	1	Benzo(b)fluorene
4401	26.145	1	Cyclopentaphenanthrene,C4H9-
4428	192.440	1	C15-PCB
4441	47.001	1	Base-neutral,methyl-202

4462	26.265	0	
4482	82.466	0	
4497	42.750	1	Cyclopentaphenanthrene,C4H9-
4534	19.580	1	C15-PCB/Phenanthrene,C4H9-
4569	157.817	1	C16-PCB
4588	47.835	0	
4649	11.980	1	Base-neutral,MW 202,C2H5-
4670	6.188	0	
4688	12.121	0	
4736	202.631	1	C16-PCB
4752	17.383	0	
4772	9.674	1	Benzo(b)naphtho(2,1-d)thiophene
4793	15.381	1	Benzo(ghi)fluoranthene
4813	51.889	1	Benzo(c)phenanthrene
4841	27.274	1	C17-PCB
4871	15.872	1	C17-PCB/Base-neutral,MW 202,C2H5-
4899	36.644	1	C17-PCB
4976	20.017	1	Benz(a)anthracene
5000	135.565	1	Chrysene
5041	35.409	0	
5055	50.347	1	Benzanthracene/MW 202,C4H9-
5139	50.999	1	C17-PCB
5151	37.003	0	
5202	8.963	0	
5228	5.122	0	
5301	42.098	1	Base-neutral,methyl-228
5351	8.553	1	Base-neutral,methyl-226
5378	25.544	1	Base-neutral,methyl-226
5433	5.014	1	Binaphthyl,2,2'-/Dihydrobenzofluoranthene
5746	62.112	1	Benzofluoranthene
5759	36.903	1	Benzofluoranthene
5780	5.119	0	
5887	26.502	0	
5915	47.590	1	Benzo(e)pyrene
5946	19.786	1	Benzo(a)pyrene
6000	7.597	1	Perylene
6061	20.857	1	Base-neutral,methyl-252
6114	28.775	0	
6346	9.530	0	
6655	5.948	1	Dibenzanthracene
6690	209.066	0	
6793	6.249	0	
6821	6.488	1	Indeno(1,2,3-cd)pyrene
6871	8.336	1	Dibenz(a,h)anthracene
7000	24.936	1	Benzo(ghi)perylene

Table 22

Site: SBE 3R(B) - Southern Branch, off Eppinger and Russel, across channel (replicate)

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (52% moisture)			
Aromatic fraction	110	52	32,000
Polar fraction	40	22	1,100
Organochlorines	--	--	20
TBT	--	--	Not analyzed

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	2749.149	
Benzofluoranthene	2723.160	
Fluoranthene	2601.785	
Chrysene	1447.064	
Benzo(a)pyrene	1149.386	
Benzo(e)pyrene	1121.061	
Benzo(a)fluorene	1037.656	
Benzo(b)fluorene	1036.849	
Benz(a)anthracene	909.615	
Cyclopenta(def)phenanthrene,4H-	777.635	
	15553.360	(16000 to 2 sf)
% of Fraction	50%	

Site SBE 3R(B) (continued)

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	147.471	
Benzocarbazole	80.486	
Benzocarbazole	74.117	
--	63.805	
Benzanthrone/Benzofluorenone	53.764	
Carbazole,9H-	52.988	
Aza-252	46,773	
--	44.926	
Dibenzocarbazole	39.689	
Dibenzocarbazole	39.458	
	643.522	(640 to 2 sf)
% of Fraction	58%	

Station: SBE3R(B)
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	157.141	1	Naphthalene
1538	64.551	1	2-Methylnaphthalene
1623	41.710	1	1-Methylnaphthalene
2063	45.967	1	C2-Naphthalene
2101	13.831	1	C2-Naphthalene
2171	14.624	1	Acenaphthylene
2263	158.935	1	Acenaphthene
2348	115.700	1	Dibenzofuran
2394	30.586	1	C3-Naphthalene
2441	30.431	1	C3-Naphthalene
2519	132.366	1	Fluorene
2566	67.368	1	Methylbiphenyl
2585	40.175	0	
2622	85.822	1	Methyldibenzofuran
2654	217.882	0	
2678	30.084	0	
2813	104.514	1	Methylfluorene
2829	19.100	0	
2855	67.687	0	
2907	65.928	0	
2919	55.011	0	
2935	23.276	1	Dibenzothiophene
2951	38.308	0	
3000	542.450	1	Phenanthrene
3031	325.253	1	Anthracene
3129	38.104	0	
3167	52.171	0	
3205	17.908	0	
3260	46.151	0	
3275	103.841	0	
3369	135.249	1	3-Methylphenanthrene
3384	112.193	1	2-Methylphenanthrene
3426	777.635	1	4-H Cyclopenta(def)phenanthrene
3613	245.257	1	2-Phenylnaphthalene
3661	26.809	0	
3687	13.557	0	
3715	33.612	0	
3738	52.733	1	C2-Phenanthrene
3792	242.669	1	C2-178
3830	464.584	0	
3857	2601.785	1	Fluoranthene
3896	41.313	0	
3948	187.705	0	
3971	373.732	0	
4000	2749.149	1	Pyrene
4034	664.544	1	Methyl-phenylnaphthalene
4086	135.799	0	
4133	308.561	1	Methyl-phenylnaphthalene
4198	145.627	0	
4223	317.627	0	
4241	159.542	0	
4307	1037.656	1	Benzo(a)fluorene
4361	1036.849	1	Benzo(b)fluorene

4403	42.819	0	
4433	245.003	1	Methyl-202
4455	145.301	1	Methyl-202
4512	61.862	0	
4580	46.528	0	
4611	78.073	0	
4665	560.110	0	
4717	709.683	0	
4775	423.223	1	Benzo(b)naphtho(2,1-d)thiophene
4800	277.209	1	Benzo(ghi)fluoranthene
4812	303.343	1	Benzo(c)phenanthrene
4846	28.892	0	
4908	38.294	1	Benzonaphthothiophene
4938	86.478	0	
4970	909.615	1	Benz(a)anthracene
5000	1447.064	1	Chrysene
5044	394.574	1	Tetramethyloctahydrochrysene
5084	94.695	1	Tetramethyloctahydrochrysene
5126	189.509	1	Methyl-228
5150	100.474	0	
5195	95.364	0	
5254	39.829	0	
5275	54.953	0	
5304	459.230	1	Methyl-228
5327	240.573	1	Methyl-228
5347	179.292	0	
5371	294.907	0	
5390	462.492	1	1-Phenylphenanthrene
5447	87.339	1	Trimethyltetrahydrochrysene
5485	69.204	0	
5513	53.903	0	
5554	26.398	0	
5604	54.987	0	
5647	36.291	0	
5675	40.618	0	
5755	2723.160	1	Benzofluoranthene
5814	260.810	1	Benzo(a)fluoranthene
5917	1121.061	1	Benzo(e)pyrene
5948	1149.386	1	Benzo(a)pyrene
6000	361.506	1	Perylene
6072	300.906	0	
6109	106.187	0	
6177	565.877	0	
6244	114.880	0	
6261	127.366	0	
6310	68.071	0	
6348	133.277	0	
6560	46.798	0	
6598	18.992	0	
6668	50.897	0	
6713	53.767	0	
6782	192.077	0	
6830	536.602	1	Indeno(1,2,3-cd)pyrene
6874	187.328	1	Dibenz(a,h)anthracene
6943	96.128	0	
6967	102.972	0	
7000	428.262	1	Benzo(ghi)perylene

Station: SBE3R(B)
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2714	10.923	0	
2735	22.722	0	
3093	8.504	0	
3213	52.988	1	9 H-Carbazole
3452	13.366	1	Methyl-9 H-carbazole
3563	13.592	0	
3896	10.344	1	C2-Carbazole
3936	9.624	1	Aza-202
4250	63.805	0	
4602	8.224	0	
4731	16.575	0	
4753	7.338	0	
4838	15.748	0	
5033	147.471	1	Benzocarbazole
5099	53.764	1	Benzanthrone/Benzofluorenone
5166	80.486	1	Benzocarbazole
5202	74.117	1	Benzocarbazole
5336	44.926	0	
5381	12.951	0	
5404	23.731	0	
5458	27.639	0	
5499	15.834	0	
5579	17.143	0	
5667	46.773	1	Aza-252
5759	9.278	1	Aza-252
5949	26.811	1	Cyclopenta(def)chrysen-4-one
6104	14.952	1	C2-Benzacridine
6184	8.952	1	C2-Benzacridine
6282	5.544	0	
6322	9.861	0	
6398	5.683	0	
6615	18.281	1	Dibenzocarbazole
6734	39.458	1	Dibenzocarbazole
6964	20.469	1	Dibenzocarbazole
6986	39.689	1	Dibenzocarbazole
7014	25.987	1	Indenylanthracenone
7081	7.739	1	Dibenzocarbazole
7131	18.088	1	Dibenzocarbazole
7165	9.829	1	Dibenzocarbazole
7295	18.038	1	Methyldibenzocarbazole

Table 23

Site: SBE 4C - Southern Branch, North of Gilmerton Bridge, Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (54% moisture)			
Aromatic fraction	150	90	48,000
Polar fraction	52	24	1,900
Organochlorines	--	--	150
TBT	--	--	350

Most abundant peaks

Sediment

Aromatic Fractions

Compound	Concentration (ppb)	
Fluoranthene	4177.389	
Pyrene	3451.938	
Benzofluoranthene	3232.328	
Chrysene	1970.901	
Benzo(b)fluorene	1678.885	
Benzo(a)fluorene	1648.469	
Benzo(a)pyrene	1455.816	
Benz(a)anthracene	1405.761	
Benzo(e)pyrene	1317.568	
Naphthalene,phenyl-,methyl-	1000.384	
	21339.439	(21000 to 2 sf)
% of Fraction	44%	

Site SBE 4C (continued)

Polar Fraction

Compound	Concentration (ppb)	
Carbazole, 9H-	275.425	
Benzocarbazole	214.249	
Benzocarbazole	115.205	
Benzanthrone/Benzofluorenone	110.380	
---	108.822	
Indenylanthracenone	97.617	
Benzocarbazole	83.536	
Aza-252	83.535	
---	51.544	
Dibenzocarbazole	43.622	
	183.935	(1200 to 2 sf)
% of Fraction	63%	

Station: SBE4C
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	257.203	1	Naphthalene
1535	102.005	1	2-Methylnaphthalene
1620	61.770	1	1-Methylnaphthalene
2000	34.036	1	Biphenyl
2035	20.139	1	Ethylnaphthalene
2061	71.824	1	C2-Naphthalene
2099	49.649	1	C2-Naphthalene
2109	67.318	1	C2-Naphthalene
2148	81.511	1	C2-Naphthalene
2168	34.628	1	Acenaphthylene
2188	22.325	1	Hexamethylbenzene
2206	11.599	0	
2226	15.628	0	
2261	336.271	1	Acenaphthene
2280	20.615	1	4-Methylbiphenyl
2302	19.535	1	3-Methylbiphenyl
2325	6.922	1	C3-Naphthalene
2345	175.755	1	Dibenzofuran
2380	37.402	1	Bibenzyl
2391	46.625	1	C3-Naphthalene
2432	115.748	1	C3-Naphthalene
2451	32.988	1	C3-Naphthalene
2474	90.107	1	C3-Naphthalene
2516	220.514	1	Fluorene
2533	37.674	0	
2564	228.655	1	Me-154
2582	144.269	1	Methylbiphenyl
2620	159.932	1	Methyldibenzofuran
2652	299.485	1	Methyldibenzofuran
2676	60.756	1	Methyldibenzofuran
2699	19.997	0	
2751	61.639	0	
2791	75.484	0	
2811	174.605	1	Methylfluorene
2827	65.520	1	Methylfluorene
2853	341.268	1	Methylfluorene
2906	208.711	1	C2-Dibennzofuran
2918	143.298	1	C2-Dibennzofuran
2934	101.811	1	C2-Dibennzofuran
2950	149.521	1	Dibenzothiophene
2975	3.587	0	
3000	758.729	1	Phenanthrene
3031	946.463	1	Anthracene
3084	38.199	0	
3126	56.314	0	
3166	191.098	1	C4-154
3232	161.419	1	C5-154
3256	108.240	1	Methyldibenzothiophene
3272	193.992	0	
3295	55.577	1	Methyldibenzothiophene
3340	28.429	0	
3365	276.541	1	3-Methylphenanthrene
3382	182.280	1	2-Methylphenanthrene

3423	971.599	1	4-H Cyclopenta(def)phenanthrene
3439	450.375	1	Methylphenanthrene
3493	13.912	0	
3546	12.122	0	
3608	393.690	1	2-Phenylnaphthalene
3654	64.665	0	
3681	27.676	0	
3708	94.856	0	
3733	183.816	1	C2-Phenanthrene
3789	568.458	1	C2-178
3823	841.440	1	C2-178
3860	4177.389	1	Fluoranthene
3890	70.122	0	
3918	67.800	0	
3944	340.348	1	Methyl-phenylnaphthalene
3965	453.031	1	Methyl-phenylnaphthalene
4000	3451.938	1	Pyrene
4031	1000.384	1	Methyl-phenylnaphthalene
4080	213.649	0	
4127	430.818	1	Methyl-phenylnaphthalene
4191	254.756	0	
4217	623.196	1	Methyl-202
4305	1648.469	1	Benzo(a)fluorene
4359	1678.885	1	Benzo(b)fluorene
4396	245.434	1	C2-Phenylnaphthalene
4430	685.168	1	Methyl-202
4450	340.262	1	Methyl-202
4476	14.237	0	
4506	63.512	0	
4573	56.940	0	
4603	82.775	0	
4622	58.496	0	
4657	619.856	0	
4712	623.482	0	
4770	531.335	1	Benzo(b)naphtho(2,1-d)thiophene
4806	772.191	1	Benzo(ghi)fluoranthene
4839	83.597	0	
4882	26.985	0	
4901	62.229	1	Benzonaphthothiophene
4930	43.124	0	
4969	1405.761	1	Benz(a)anthracene
5000	1970.901	1	Chrysene
5042	571.130	1	Benzanthracene
5077	118.282	1	Tetramethyloctahydrochrysene
5122	268.914	1	Methyl-228
5143	148.352	0	
5188	138.535	0	
5233	67.636	0	
5247	69.713	0	
5269	147.335	1	Methyl-228
5300	654.030	1	Methyl-228
5323	319.010	1	Methyl-228
5344	273.304	0	
5368	385.721	1	Methanochrysene
5388	619.073	1	1-Phenylphenanthrene
5441	110.596	1	Trimethyltetrahydrochrysene
5480	85.724	1	Trimethyltetrahydrochrysene
5508	73.115	0	
5550	37.651	0	
5587	27.222	0	

5617	4.253	0	
5640	35.909	0	
5669	77.072	0	
5759	3232.328	1	Benzofluoranthene
5812	308.950	1	Benzo(a)fluoranthene
5843	7.581	0	
5918	1317.568	1	Benzo(e)pyrene
5952	1455.816	1	Benzo(a)pyrene
6000	441.812	1	Perylene
6069	356.234	1	MW-252
6105	138.335	1	MW-252
6174	673.060	1	MW-252
6240	130.224	1	MW-252
6257	130.038	0	
6306	84.248	0	
6343	152.669	1	MW-264
6376	8.794	0	
6424	23.324	0	
6554	105.116	0	
6590	39.107	0	
6659	62.714	0	
6703	77.076	0	
6775	241.291	1	MW-278
6830	702.886	1	Indeno(1,2,3-cd)pyrene
6869	268.232	1	Dibenz(a,h)anthracene
6937	141.358	0	
6964	129.590	0	
7000	568.095	1	Benzo(ghi)perylene
7086	253.779	1	MW-278
7145	41.037	0	
7192	51.304	0	
7268	61.436	0	
7298	89.839	0	
7325	86.086	0	
7385	28.063	0	
7415	28.901	0	
7443	63.557	0	

Station: SBE4C
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2598	5.197	0	
2716	26.270	0	
2737	36.057	0	
2924	6.618	0	
3016	7.361	0	
3094	14.398	0	
3213	275.425	1	9 H-Carbazole
3367	37.065	0	
3452	19.957	1	Methyl-9 H-carbazole
3562	5.269	0	
3646	7.020	0	
3897	13.103	1	C2-Carbazole
3937	22.013	1	Aza-202
4251	108.822	0	
4527	15.098	0	
4554	18.090	0	
4600	11.318	0	
4692	6.757	0	
4728	5.924	0	
4834	12.968	0	
4881	12.209	0	
5030	214.249	1	Benzocarbazole
5098	110.380	1	Benzanthrone/Benzofluorenone
5166	115.205	1	Benzocarbazole
5202	83.536	1	Benzocarbazole
5338	51.544	0	
5384	17.931	0	
5411	39.519	0	
5463	38.837	0	
5502	20.838	0	
5587	22.509	0	
5673	83.535	1	Aza-252
5742	10.603	1	Aza-252
5769	8.073	1	Aza-252
5908	12.319	1	C2-Benzacridine
5939	8.416	1	C2-Benzacridine
5963	39.952	1	Cyclopenta(def)chrysen-4-one
6121	17.885	1	C2-Benzacridine
6199	7.095	0	
6299	7.241	0	
6339	13.428	0	
6416	7.536	0	
6632	24.178	1	Dibenzocarbazole
6752	43.622	1	Dibenzocarbazole
7013	97.617	1	Indenylanthracenone
7036	37.417	1	Indenylanthracenone
7099	15.381	1	Dibenzocarbazole
7151	28.834	1	Dibenzocarbazole
7184	16.677	1	Dibenzocarbazole
7325	17.114	1	Methyldibenzocarbazole
7380	14.659	1	Methyldibenzocarbazole
7490	12.893	0	

Table 24

Site: SBE 4L - Southern Branch, North of Gilmerton Bridge, East of Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (52% moisture)			
Aromatic fraction	153	69	42,000
Polar fraction	66	24	4,800
Organochlorines	--	--	250
TBT	--	--	560

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	3642.251	
Benzofluoranthene	3478.665	
Fluoranthene	2191.792	
Benzo(b)fluorene	1929.592	
Chrysene	1877.651	
Benzo(a)pyrene	1401.677	
Benzo(e)pyrene	1320.039	
Benzo(a)fluorene	1243.099	
Naphthalene,phenyl-,methyl-	955.815	
Base-neutral,methyl-202	892.597	
	18933.178	(19000 to 2 sf)
% of Fraction	45%	

Site SBE 4L (continued)

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole,methyl-	650.481	
Dibenzocarbazole	283.841	
Indenylanthracenone	271.310	
Dibenzocarbazole	241.046	
--	210.631	
Dibenzocarbazole	190.070	
--	178.426	
Aza-252	173.662	
Benzocarbazole	166.232	
--	160.217	
	2531.971	(2500 to 2 sf)
% of Fraction	52%	

Station: SBE4L
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	99.078	1	Naphthalene
1534	53.853	1	2-Methylnaphthalene
1616	37.363	1	1-Methylnaphthalene
1764	16.319	0	
1949	45.624	0	
2000	13.983	1	Biphenyl
2020	16.205	1	Ethylnaphthalene
2033	8.956	1	C2-Naphthalene
2060	61.845	1	C2-Naphthalene
2107	161.373	1	C2-Naphthalene
2146	56.202	1	C2-Naphthalene
2167	35.613	1	Acenaphthylene
2183	45.264	0	
2203	60.296	1	Hexamethylbenzene
2223	98.056	0	
2259	139.524	1	Acenaphthene
2280	22.122	1	4-Methylbiphenyl
2300	33.722	1	3-Methylbiphenyl
2324	19.971	1	C3-Naphthalene
2344	128.241	1	Dibenzofuran
2391	57.698	1	C3-Naphthalene
2439	36.555	1	C3-Naphthalene
2450	127.652	1	C3-Naphthalene
2478	66.765	1	C3-Naphthalene
2516	149.507	1	Fluorene
2532	24.864	1	
2563	55.331	1	Methylbiphenyl
2582	67.306	0	
2607	14.741	0	
2621	77.953	1	Methyldibenzofuran
2652	170.818	0	
2676	40.041	0	
2702	10.573	0	
2724	46.099	0	
2752	24.001	0	
2791	46.100	0	
2814	72.218	1	Methylfluorene
2828	18.358	0	
2856	58.256	0	
2907	75.937	0	
2918	90.101	0	
2935	94.257	1	Dibenzothiophene
2951	88.535	0	
2973	22.538	0	
3000	564.656	1	Phenanthrene
3032	295.052	1	Anthracene
3090	57.456	0	
3132	10.969	0	
3153	19.552	0	
3170	52.448	0	
3207	31.922	0	
3230	31.178	1	Methyldibenzothiophene
3261	50.424	0	

3276	160.780	0	
3299	51.077	1	Methyldibenzothiophene
3341	48.384	0	
3369	126.973	1	3-Methylphenanthrene
3386	184.665	0	2-Methylphenanthrene
3426	462.547	1	4-H Cyclopenta(def)phenanthrene
3442	112.089	1	Methylphenanthrene
3455	191.214	1	Methylphenanthrene
3492	15.922	0	
3529	64.398	0	
3554	141.049	0	
3585	43.102	0	
3615	402.670	1	2-Phenylnaphthalene
3646	89.263	0	
3663	79.656	0	
3688	68.583	0	
3716	119.857	0	
3738	100.356	1	C2-Phenanthrene
3748	75.940	1	C2-Phenanthrene
3775	141.265	1	C2-178
3792	305.702	1	C2-178
3808	138.078	0	
3830	249.586	0	
3855	2191.792	1	Fluoranthene
3894	68.844	0	
3924	50.996	0	
3949	201.671	0	
3972	242.138	0	
4000	3642.251	1	Pyrene
4036	955.815	1	Methyl-phenylnaphthalene
4088	319.042	0	
4135	517.456	1	Methyl-phenylnaphthalene
4199	222.053	0	
4225	305.958	0	
4243	131.649	0	
4308	1243.099	1	Benzo(a)fluorene
4363	1929.592	1	Benzo(b)fluorene
4405	367.609	0	
4436	892.597	1	Methyl-202
4458	597.191	1	Methyl-202
4515	182.956	0	
4538	40.610	0	
4584	83.057	0	
4614	61.336	0	
4632	10.315	0	
4669	402.638	0	
4721	639.482	0	
4776	467.029	1	Benzo(b)naphtho(2,1-d)thiophene
4803	498.781	1	Benzo(ghi)fluoranthene
4815	419.075	1	Benzo(c)phenanthrene
4848	113.941	0	
4891	11.198	0	
4910	50.483	1	Benzonaphthothiophene
4942	46.748	0	
4972	840.224	1	Benz(a)anthracene
5000	1877.651	1	Chrysene
5047	818.766	1	Tetramethyloctahydrochrysene
5086	199.915	1	Tetramethyloctahydrochrysene
5129	333.098	1	Methyl-228
5151	261.217	0	

5198	143.891	0	
5241	52.277	0	
5252	12.630	0	
5278	88.317	0	
5305	566.802	1	Methyl-228
5330	242.332	1	Methyl-228
5349	227.694	0	
5372	423.024	0	
5391	656.716	1	1-Phenylphenanthrene
5450	131.663	1	Trimethyltetrahydrochrysene
5488	88.494	0	
5513	95.888	0	
5557	43.872	0	
5597	127.961	0	
5648	81.105	0	
5677	61.416	0	
5754	3478.665	1	Benzofluoranthene
5814	307.318	1	Benzo(a)fluoranthene
5915	1320.039	1	Benzo(e)pyrene
5946	1401.677	1	Benzo(a)pyrene
6000	406.587	1	Perylene
6070	169.594	1	MW-252
6113	133.000	0	
6175	607.220	0	
6243	142.229	0	
6262	118.250	0	
6310	34.432	0	
6350	110.674	0	
6408	12.825	0	
6486	15.791	0	
6531	230.695	0	
6602	33.030	0	
6670	94.379	0	
6716	27.895	0	
6779	283.857	0	
6829	562.003	1	Indeno(1,2,3-cd)pyrene
6878	291.940	1	Dibenz(a,h)anthracene
6944	80.821	0	
6968	90.662	0	
7000	365.083	1	Benzo(ghi)perylene

Station: SBE4L
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2596	5.483	0	
2715	38.713	0	
2737	40.595	0	
2787	5.995	0	
2925	10.069	0	
3020	5.749	0	
3097	15.271	0	
3215	73.703	1	9 H-Carbazole
3291	7.984	0	
3365	90.696	0	
3454	33.378	1	Methyl-9 H-carbazole
3561	27.408	0	
3608	39.526	0	
3656	12.505	0	
3891	25.456	1	C2-Carbazole
4097	14.167	0	
4128	20.502	0	
4244	210.631	0	
4363	5.632	0	
4522	16.449	0	
4550	18.826	0	
4691	16.024	0	
4766	21.256	0	
4834	15.566	0	
4881	13.877	0	
5030	166.232	1	Benzocarbazole
5096	96.406	1	Benzanthrone/Benzofluorenone
5164	132.255	1	Benzocarbazole
5200	85.692	1	Benzocarbazole
5307	9.136	0	
5333	61.696	0	
5403	76.015	0	
5453	43.629	0	
5494	29.873	0	
5573	42.865	0	
5666	173.662	1	Aza-252
5755	20.095	1	Aza-252
5894	21.464	0	
5946	42.401	1	Cyclopenta(def)chrysen-4-one
6037	11.844	1	C2-Benzacridine
6099	27.063	1	C2-Benzacridine
6178	48.546	1	C2-Benzacridine
6225	13.593	0	
6245	10.585	0	
6277	10.906	0	
6321	20.364	0	
6422	26.091	0	
6619	145.253	1	Dibenzocarbazole
6733	241.046	1	Dibenzocarbazole
6752	190.070	1	Dibenzocarbazole
6810	15.716	0	
6835	17.851	0	
6863	118.591	0	

6912	28.235	0	
6962	82.935	1	Dibenzocarbazole
6991	283.841	1	Dibenzocarbazole
7021	271.310	1	Indenylanthracenone
7083	82.672	1	Dibenzocarbazole
7120	160.217	0	
7161	100.715	1	Dibenzocarbazole
7230	97.368	1	Methyldibenzocarbazole
7295	650.481	1	Methyldibenzocarbazole
7336	109.350	1	Methyldibenzocarbazole
7399	24.428	0	
7453	178.426	0	
7490	56.527	0	

Table 25

Site: SBE 4R - Southern Branch, North of Gilmerton Bridge, West of Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (45% moisture)			
Aromatic fraction	163	62	46,000
Polar fraction	53	24	3,100
Organochlorines	--	--	160
TBT	--	--	43

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Fluoranthene	4743.445	
Pyrene	3816.338	
Benzofluoranthene	3190.192	
Benzo(b)fluorene	1813.732	
Benzo(a)fluorene	1807.865	
Chrysene	1449.467	
Cyclopenta(def)phenanthrene,4H-	1323.747	
Naphthalene,phenyl-,methyl-	1294.690	
Benzo(e)pyrene	1272.769	
Benzo(a)pyrene	1259.083	
	21971.328	(22000 to 2 sf)
% of Fraction	48%	

SITE SBE 4R (continued)

Polar Fraction

Compound	Concentration (ppb)	
Benzocarbazole	479.697	
Benzocarbazole	252.865	
--	211.351	
Benzocarbazole	188.349	
Benzathrone/Benzofluorenone	135.821	
--	124.485	
Dibenzocarbazole	98.934	
Indenylanthracenone	91.279	
--	90.626	
Dibenzocarbazole	88.942	
	1762.349	(1800 to 2 sf)
% of Fraction	58%	

Station: SBE4R
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	118.802	1	Naphthalene
1040	10.445	1	Benzothiophene
1361	1.968	0	
1535	50.790	1	2-Methylnaphthalene
1619	31.873	1	1-Methylnaphthalene
1770	4.679	0	
2000	18.950	1	Biphenyl
2020	5.028	1	
2035	13.516	1	Ethylnaphthalene
2060	35.126	1	C2-Naphthalene
2098	20.113	1	C2-Naphthalene
2109	43.166	1	C2-Naphthalene
2147	30.734	1	C2-Naphthalene
2168	16.111	1	Acenaphthylene
2186	11.197	1	Hexamethylbenzene
2205	13.567	1	
2225	10.008	0	
2261	105.397	1	Acenaphthene
2281	7.860	1	4-Methylbiphenyl
2302	8.645	1	3-Methylbiphenyl
2324	7.931	1	C3-Naphthalene
2344	86.127	1	Dibenzofuran
2379	15.092	0	
2391	18.121	1	C3-Naphthalene
2408	1.667	0	
2439	42.552	1	C3-Naphthalene
2451	18.330	1	C3-Naphthalene
2475	32.800	1	C3-Naphthalene
2516	94.993	1	Fluorene
2532	17.939	1	
2563	113.773	1	Methylbiphenyl
2582	70.429	0	
2604	19.749	0	
2620	81.499	1	Methyldibenzofuran
2652	163.998	0	
2675	61.210	0	
2699	28.763	0	
2723	6.363	0	
2750	12.128	0	
2761	8.065	0	
2791	44.522	0	
2810	89.572	1	Methylfluorene
2828	47.739	0	
2853	251.753	0	
2870	71.928	0	
2893	41.473	0	
2906	138.905	0	
2918	156.350	0	
2935	86.409	1	Dibenzothiophene
2950	225.575	0	
2974	42.644	0	
3000	412.937	1	Phenanthrene
3030	309.837	1	Anthracene

3085	44.631	0	
3127	62.387	0	
3143	30.977	0	
3164	147.833	0	
3203	83.112	0	
3227	80.566	1	Methyldibenzothiophene
3256	113.109	0	
3270	206.342	0	
3293	60.780	1	Methyldibenzothiophene
3314	17.758	1	Methyldibenzothiophene
3336	24.772	0	
3363	136.195	1	3-Methylphenanthrene
3380	92.835	1	2-Methylphenanthrene
3396	95.052	0	
3423	1323.747	1	4-H Cyclopenta(def)phenanthrene
3488	7.903	0	
3518	4.020	0	
3541	17.518	0	
3556	21.125	0	
3604	206.116	1	2-Phenylnaphthalene
3650	55.497	0	
3675	24.713	0	
3703	61.944	0	
3727	55.019	0	
3738	26.664	1	C2-Phenanthrene
3785	467.826	1	C2-178
3814	659.438	0	
3862	4743.445	1	Fluoranthene
3885	111.244	0	
3913	68.651	0	
3939	387.619	0	
3955	357.783	0	
4000	3816.338	1	Pyrene
4028	1294.690	1	Methyl-phenylnaphthalene
4074	306.702	0	
4121	506.339	1	Methyl-phenylnaphthalene
4184	288.311	0	
4211	728.444	0	
4304	1807.865	1	Benzo(a)fluorene
4358	1813.732	1	Benzo(b)fluorene
4392	378.541	0	
4409	146.005	0	
4428	607.329	1	Methyl-202
4449	423.032	1	Methyl-202
4472	68.814	0	
4501	228.125	0	
4534	32.658	0	
4549	31.621	0	
4570	89.238	0	
4598	128.152	0	
4619	63.607	0	
4655	581.467	0	
4712	608.483	0	
4769	525.269	1	Benzo(b)naphtho(2,1-d)thiophene
4805	824.975	1	Benzo(ghi)fluoranthene
4837	296.657	0	
4882	93.969	0	
4898	184.332	0	
4926	67.120	0	
4967	876.575	1	Benz(a)anthracene

5000	1449.467	1	Chrysene
5042	590.097	1	Tetramethyloctahydrochrysene
5074	134.666	1	Tetramethyloctahydrochrysene
5121	294.432	1	Methyl-228
5141	136.356	0	
5187	142.988	0	
5232	5.900	0	
5267	47.003	0	
5298	463.609	1	Methyl-228
5321	221.464	1	Methyl-228
5344	166.941	0	
5366	299.789	0	
5386	481.775	1	1-Phenylphenanthrene
5437	79.117	1	Trimethyltetrahydrochrysene
5475	64.869	1	Trimethyltetrahydrochrysene
5504	53.617	0	
5545	48.016	0	
5582	78.320	0	
5588	60.935	0	
5612	69.669	0	
5636	150.129	0	
5667	279.751	0	
5762	3190.192	1	Benzofluoranthene
5811	353.751	1	Benzo(a)fluoranthene
5840	40.490	0	
5920	1272.769	1	Benzo(e)pyrene
5954	1259.083	1	Benzo(a)pyrene
6000	465.358	1	Perylene
6065	359.539	1	MW-252
6102	113.830	0	
6171	671.705	0	
6239	125.854	0	
6252	149.942	0	
6301	109.797	0	
6341	181.380	0	
6372	68.519	0	
6420	34.416	0	
6451	2.816	0	
6472	5.404	0	
6550	90.824	0	
6582	57.096	0	
6610	15.124	0	
6655	103.755	0	
6699	90.301	0	
6768	259.708	0	
6830	677.639	1	Indeno(1,2,3-cd)pyrene
6864	269.359	1	Dibenz(a,h)anthracene
6931	147.599	0	
6960	140.038	0	
7000	525.417	1	Benzo(ghi)perylene

Station: SBE4R
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2603	6.250	0	
2723	20.089	0	
2743	41.067	0	
2932	6.302	0	
3027	5.651	0	
3220	88.059	1	9 H-Carbazole
3459	13.631	1	Methyl-9 H-carbazole
3608	5.840	0	
3663	6.108	0	
3790	12.590	0	
3901	10.663	1	C2-Carbazole
3941	26.728	0	
4138	14.738	0	
4254	211.351	0	
4606	21.920	0	
4733	21.009	0	
4841	23.129	0	
5004	90.626	0	
5041	479.697	1	Benzocarbazole
5106	135.821	1	Benzanthrone/Benzofluorenone
5174	188.349	1	Benzocarbazole
5210	252.865	1	Benzocarbazole
5341	124.485	0	
5389	36.759	0	
5413	59.079	0	
5462	64.741	0	
5505	50.126	0	
5589	45.420	0	
5641	24.623	0	
5661	24.991	1	Aza-252
5678	72.594	1	Aza-252
5767	22.078	1	Aza-252
5907	29.826	1	C2-Benzacridine
5936	15.310	1	C2-Benzacridine
5962	45.610	1	Cyclopenta(def)chrysen-4-one
6052	18.662	1	C2-Benzacridine
6120	51.867	1	C2-Benzacridine
6197	38.305	0	
6296	14.101	0	
6337	24.431	0	
6413	27.336	0	
6478	6.455	0	
6630	55.865	1	Dibenzocarbazole
6751	88.942	1	Dibenzocarbazole
6986	98.934	1	Dibenzocarbazole
7009	67.385	0	
7034	91.279	1	Indenylanthracenone
7098	36.479	1	Dibenzocarbazole
7148	57.595	1	Dibenzocarbazole
7182	40.508	1	Dibenzocarbazole
7254	6.413	1	Methyldibenzocarbazole
7309	70.724	1	Methyldibenzocarbazole
7476	43.212	0	

Table 26

Site: SBE 5C - Southern Branch, off Virginia Power, Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (51% moisture)			
Aromatic fraction	139	68	61,000
Polar fraction	62	27	3,600
Organochlorines	--	--	250
TBT	--	--	320

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	5407.204	
Pyrene	4380.838	
Fluoranthene	3032.508	
Chrysene	2692.865	
Benzo(a)pyrene	2495.081	
Benzo(e)pyrene	2168.383	
Benzo(b)fluorene	2045.657	
Benzo(a)fluorene	1939.076	
Indeno(1,2,3cd)pyrene	1591.627	
Phenanthrene	1465.821	
	27219.821	(28000 to 2 sf)
% of Fraction	44%	

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole,methlyl-	384.755	
Benzocarbazole	237.871	
--	233.301	
--	221.902	
Benzocarbazole	157.484	
Dibenzocarbazole	146.870	
Aza-252	142.066	
Indenylanthracenone	137.737	
Carbazole,9H-	117.548	
Dibenzocarbazole	110.727	
	1890.160	(1900 to 2 sf)
% of Fraction	53%	

Station: SBE5C
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	417.098	1	Naphthalene
1535	204.545	1	2-Methylnaphthalene
1620	128.224	1	1-Methylnaphthalene
2000	57.095	1	Biphenyl
2034	44.220	1	Ethylnaphthalene
2061	124.140	1	C2-Naphthalene
2099	90.965	1	C2-Naphthalene
2107	104.204	1	C2-Naphthalene
2148	78.906	1	C2-Naphthalene
2168	52.964	1	Acenaphthylene
2188	23.417	1	Hexamethylbenzene
2205	13.387	1	
2225	23.879	0	
2261	254.614	1	Acenaphthene
2280	36.574	1	4-Methylbiphenyl
2301	31.223	1	3-Methylbiphenyl
2324	18.278	1	C3-Naphthalene
2345	204.392	1	Dibenzofuran
2380	38.625	0	
2391	53.636	1	C3-Naphthalene
2439	112.996	1	C3-Naphthalene
2451	45.035	1	C3-Naphthalene
2475	85.667	1	C3-Naphthalene
2516	257.992	1	Fluorene
2533	23.423	1	
2563	162.557	1	Methylbiphenyl
2582	109.615	0	
2620	114.522	1	Methyldibenzofuran
2651	205.317	0	
2677	40.415	0	
2698	9.908	0	
2724	15.115	0	
2750	10.479	0	
2790	14.429	0	
2810	62.908	1	Methylfluorene
2826	29.002	0	
2852	124.402	0	
2905	117.630	0	
2916	87.758	0	
2932	142.900	1	Dibenzothiophene
2948	80.143	0	
3000	1465.821	1	Phenanthrene
3030	463.903	1	Anthracene
3084	35.905	0	
3128	12.301	0	
3168	76.073	0	
3205	28.853	0	
3231	37.706	1	Methyldibenzothiophene
3272	236.264	0	
3299	51.229	1	Methyldibenzothiophene
3340	47.192	0	
3366	316.099	1	3-Methylphenanthrene
3382	350.279	1	2-Methylphenanthrene

3423	729.688	1	4-H Cyclopenta(def)phenanthrene
3439	279.756	1	Methylphenanthrene
3453	287.163	1	Methylphenanthrene
3548	33.153	0	
3612	431.333	1	2-Phenylnaphthalene
3663	39.156	0	
3723	97.171	0	
3792	1093.928	1	C2-178
3809	270.885	0	
3827	603.505	0	
3857	3032.588	1	Fluoranthene
3891	96.632	0	
3920	81.492	0	
3947	442.772	0	
3965	569.817	0	
4000	4380.838	1	Pyrene
4029	972.829	1	Methyl-phenylnaphthalene
4054	63.344	1	Methyl-phenylnaphthalene
4082	302.934	0	
4128	556.727	1	Methyl-phenylnaphthalene
4192	332.108	0	
4217	693.540	0	
4303	1939.076	1	Benzo(a)fluorene
4357	2045.657	1	Benzo(b)fluorene
4396	371.683	0	
4430	909.094	1	Methyl-202
4452	519.354	1	Methyl-202
4507	102.915	0	
4575	70.390	0	
4605	93.352	0	
4660	706.056	0	
4712	713.771	0	
4771	620.286	1	Benzo(b)naphtho(2,1-d)thiophene
4798	594.758	1	Benzo(ghi)fluoranthene
4808	414.218	1	Benzo(ghi)fluoranthene
4842	158.939	0	
4871	75.780	0	
4902	47.823	1	Benzonaphthothiophene
4931	22.316	0	
4968	1240.704	1	Benz(a)anthracene
5000	2692.865	1	Chrysene
5041	850.892	1	Tetramethyloctahydrochrysene
5078	195.802	1	Tetramethyloctahydrochrysene
5122	288.504	1	Methyl-228
5143	180.526	0	
5190	185.252	0	
5249	185.415	0	
5269	198.627	0	
5300	845.905	1	Methyl-228
5324	404.902	1	Methyl-228
5344	307.685	0	
5368	579.561	0	
5388	866.968	1	1-Phenylphenanthrene
5441	176.772	1	Trimethyltetrahydrochrysene
5480	116.885	1	Trimethyltetrahydrochrysene
5507	92.937	0	
5548	48.530	0	
5591	147.386	0	
5618	18.896	0	
5641	53.181	0	

5671	115.370	0	
5759	5407.204	1	Benzofluoranthene
5813	468.599	1	Benzo(a)fluoranthene
5847	14.809	0	
5920	2168.383	1	Benzo(e)pyrene
5953	2495.081	1	Benzo(a)pyrene
6000	657.659	1	Perylene
6069	662.181	1	MW-252
6104	316.719	0	
6173	1194.467	0	
6241	233.569	0	
6255	245.516	0	
6305	162.955	0	
6344	301.404	0	
6376	65.203	0	
6518	7.383	0	
6554	126.197	0	
6586	68.740	0	
6658	162.733	0	
6703	171.862	0	
6773	578.275	0	
6832	1591.627	1	Indeno(1,2,3-cd)pyrene
6868	635.291	1	Dibenz(a,h)anthracene
6934	284.613	0	
6962	361.556	0	
7000	1153.968	1	Benzo(ghi)perylene

Station: SBE5C
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2603	10.585	0	
2745	44.708	0	
2795	10.281	0	
2816	5.036	0	
2853	5.993	0	
2880	106.795	0	
2932	10.657	0	
2978	6.839	0	
2996	8.505	0	
3222	117.548	1	9 H-Carbazole
3301	5.113	0	
3373	80.484	0	
3459	36.728	1	Methyl-9 H-carbazole
3492	10.895	1	Methyl-9 H-carbazole
3551	21.922	0	
3566	20.436	0	
3604	15.332	0	
3657	10.031	0	
3785	8.425	0	
3893	53.720	1	C2-Carbazole
3918	18.172	1	C2-Carbazole
3932	18.229	1	Aza-202
4096	6.537	0	
4131	10.567	0	
4246	221.902	0	
4449	6.336	0	
4603	16.860	0	
4692	8.082	0	
4836	9.075	0	
5000	55.871	0	
5031	237.871	1	Benzocarbazole
5099	6.816	1	Benzanthrone/Benzofluorenone
5167	157.484	1	Benzocarbazole
5203	106.825	1	Benzocarbazole
5338	63.370	0	
5385	20.413	0	
5408	37.123	0	
5461	46.351	0	
5503	26.284	0	
5583	36.962	0	
5638	9.921	0	
5671	142.066	1	Aza-252
5740	17.992	1	Aza-252
5766	5.768	1	Aza-252
5905	31.630	1	C2-Benzacridine
5934	13.478	1	C2-Benzacridine
5958	48.758	1	Cyclopenta(def)chrysen-4-one
6049	10.909	1	C2-Benzacridine
6115	25.626	1	C2-Benzacridine
6191	37.062	0	
6292	5.542	0	
6335	15.148	0	
6413	14.223	0	

6481	6.651	0	
6630	88.116	1	Dibenzocarbazole
6746	146.870	1	Dibenzocarbazole
6764	110.727	1	Dibenzocarbazole
6876	46.094	0	
7006	233.301	0	
7035	137.737	1	Indenylanthracenone
7097	39.946	1	Dibenzocarbazole
7136	96.521	1	Dibenzocarbazole
7178	40.359	1	Dibenzocarbazole
7248	31.315	1	Methyldibenzocarbazole
7310	384.755	0	
7349	43.695	1	Methyldibenzocarbazole
7468	83.885	0	

Table 27

Site: SBE 5L - Southern Branch, off Virginia Power, across Channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (59% moisture)			
Aromatic fraction	141	67	68,000
Polar fraction	54	23	3,200
Organochlorines	--	--	200
TBT	--	--	190

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	5233.787	
Pyrene	4664.024	
Fluoranthene	4004.076	
Benzo(a)pyrene	2519.360	
Chrysene	2487.984	
Benzo(e)pyrene	2393.006	
Benzo(b)fluorene	2248.708	
Benzo(a)fluorene	2201.944	
Indeno(1,2,3-cd)pyrene	1541.667	
Benzo(ghi)perylene	1496.508	
	28791.064	(29000 to 2 sf)
% of Fraction	43%	

Polar Fraction

Compound	Concentration (ppb)	
--	309.663	
Dibenzocarbazole,methyl-	263.071	
Dibenzocarbazole	233.713	
Benzocarbazole	232.766	
Aza-252	166.349	
Benzocarbazole	144.441	
Dibenzocarbazole	120.018	
Indenylanthracenone	119.082	
Carbazole,9H-	105.383	
Benzocarbazole	102.543	
	1761.886	(1800 to 2 sf)
% of Fraction	56%	

Station: SBESL
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	162.162	1	Naphthalene
1534	109.263	1	2-Methylnaphthalene
1619	72.994	1	1-Methylnaphthalene
2000	24.126	1	Biphenyl
2034	15.632	1	Ethylnaphthalene
2060	92.901	1	C2-Naphthalene
2098	154.648	1	C2-Naphthalene
2148	85.028	1	C2-Naphthalene
2168	35.614	1	Acenaphthylene
2187	22.955	1	Hexamethylbenzene
2225	9.224	0	
2261	238.385	1	Acenaphthene
2280	31.620	1	4-Methylbiphenyl
2302	18.449	1	3-Methylbiphenyl
2324	40.167	1	C3-Naphthalene
2345	182.288	1	Dibenzofuran
2379	69.826	0	
2390	76.972	1	C3-Naphthalene
2437	187.460	1	C3-Naphthalene
2475	118.832	1	C3-Naphthalene
2516	203.738	1	Fluorene
2533	45.268	1	
2563	274.578	1	Methylbiphenyl
2582	156.283	0	
2620	136.932	1	Methyldibenzofuran
2651	217.661	0	
2676	45.152	0	
2698	24.395	0	
2750	67.008	0	
2811	119.145	1	Methylfluorene
2827	60.674	0	
2854	257.470	0	
2869	69.853	0	
2893	37.646	0	
2906	115.243	0	
2917	98.145	0	
2933	156.955	1	Dibenzothiophene
2949	95.533	0	
3000	1167.183	1	Phenanthrene
3030	340.435	1	Anthracene
3087	44.739	0	
3128	78.621	0	
3166	202.498	0	
3204	60.850	0	
3233	71.693	1	Methyldibenzothiophene
3273	304.885	0	
3298	106.730	1	Methyldibenzothiophene
3344	15.543	0	
3367	458.500	1	3-Methylphenanthrene
3382	389.787	1	2-Methylphenanthrene
3424	979.830	1	4-H Cyclopenta(def)phenanthrene
3440	405.093	1	Methylphenanthrene
3453	375.903	1	Methylphenanthrene

3526	16.798	0	
3547	31.784	0	
3610	617.256	1	2-Phenylnaphthalene
3656	132.783	0	
3683	93.290	0	
3709	248.995	0	
3734	359.909	1	C2-Phenanthrene
3789	961.191	1	C2-178
3824	1223.421	0	
3856	4004.076	1	Fluoranthene
3892	133.396	0	
3919	73.754	0	
3945	509.698	0	
3965	743.594	0	
4000	4664.024	1	Pyrene
4029	1156.239	1	Methyl-phenylnaphthalene
4054	108.170	1	Methyl-phenylnaphthalene
4082	328.359	0	
4127	409.104	1	Methyl-phenylnaphthalene
4143	262.646	0	
4192	445.529	0	
4217	1029.369	0	
4304	2201.944	1	Benzo(a)fluorene
4359	2248.708	1	Benzo(b)fluorene
4396	501.923	0	
4431	1138.507	1	Methyl-202
4451	725.124	1	Methyl-202
4506	143.871	0	
4576	80.137	0	
4604	100.756	0	
4659	894.508	0	
4714	877.341	0	
4771	739.635	1	Benzo(b)naphtho(2,1-d)thiophene
4797	533.611	1	Benzo(ghi)fluoranthene
4807	533.374	1	Benzo(ghi)fluoranthene
4842	161.410	0	
4866	34.130	0	
4886	7.664	0	
4902	50.091	1	Benzonaphthothiophene
4934	37.318	0	
4968	1448.721	1	Benz(a)anthracene
5000	2487.984	1	Chrysene
5042	706.299	1	Tetramethyloctahydrochrysene
5080	200.153	1	Tetramethyloctahydrochrysene
5122	368.682	1	Methyl-228
5144	210.980	0	
5190	270.589	0	
5249	247.567	0	
5271	236.694	0	
5301	1038.055	1	Methyl-228
5324	518.801	1	Methyl-228
5346	270.144	0	
5369	680.296	0	
5389	935.196	1	1-Phenylphenanthrene
5441	214.185	1	Trimethyltetrahydrochrysene
5480	141.763	1	Trimethyltetrahydrochrysene
5507	94.593	0	
5550	48.103	0	
5590	129.658	0	
5615	24.507	0	

5639	68.185	0	
5670	130.470	0	
5758	5233.787	1	Benzofluoranthene
5812	413.195	1	Benzo(a)fluoranthene
5842	34.803	0	
5920	2393.006	1	Benzo(e)pyrene
5952	2519.360	1	Benzo(a)pyrene
6000	773.045	1	Perylene
6067	735.273	1	MW-252
6105	221.835	0	
6171	1201.418	0	
6241	287.128	0	
6255	278.397	0	
6306	206.307	0	
6343	326.033	0	
6374	47.409	0	
6392	32.424	0	
6473	57.788	0	
6553	189.049	0	
6586	111.119	0	
6656	150.499	0	
6699	169.300	0	
6769	539.520	0	
6828	1541.667	1	Indeno(1,2,3-cd)pyrene
6863	546.494	1	Dibenz(a,h)anthracene
6930	281.282	0	
6960	307.484	0	
7000	1496.508	1	Benzo(ghi)perylene

Station: SBESL
Sediment Polar Extract 63.3 + 63.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2597	14.796	0	
2718	7.052	0	
2739	67.868	0	
2789	9.841	0	
2847	6.283	0	
2928	10.569	0	
3023	7.463	0	
3217	105.383	1	9 H-Carbazole
3369	75.057	0	
3456	39.089	1	Methyl-9 H-carbazole
3489	10.268	1	Methyl-9 H-carbazole
3564	20.951	0	
3602	10.530	0	
3658	19.596	0	
3724	12.225	0	
3784	14.505	0	
3822	10.291	0	
3895	41.821	1	C2-Carbazole
3935	16.196	1	Aza-202
4248	309.663	0	
4601	25.021	0	
4731	8.524	0	
4838	15.176	0	
5033	232.766	1	Benzocarbazole
5101	30.785	1	Benzanthrone/Benzofluorenone
5168	102.543	1	Benzocarbazole
5204	144.441	1	Benzocarbazole
5311	17.974	0	
5337	79.642	0	
5383	23.370	0	
5407	41.966	0	
5456	44.628	0	
5500	30.555	0	
5579	59.932	0	
5670	166.349	1	Aza-252
5951	68.485	1	Cyclopenta(def)chrysen-4-one
6041	14.358	1	C2-Benzacridine
6105	35.039	1	C2-Benzacridine
6183	63.875	1	C2-Benzacridine
6281	8.820	0	
6324	20.039	0	
6403	7.693	0	
6477	8.679	0	
6615	62.111	1	Dibenzocarbazole
6736	81.048	1	Dibenzocarbazole
6755	120.018	1	Dibenzocarbazole
6993	233.713	1	Dibenzocarbazole
7019	119.082	1	Indenylanthracenone
7083	35.875	1	Dibenzocarbazole
7129	66.199	1	Dibenzocarbazole
7166	46.629	1	Dibenzocarbazole
7294	263.071	0	
7342	37.762	1	Methyldibenzocarbazole

Table 28

Site: SBE 5R - Southern Branch, off Virginia Power, before channel

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (68% moisture)			
Aromatic fraction	141	66	36,000
Polar fraction	67	23	4,400
Organochlorines	--	--	270
TBT	--	--	700
Blue crabs			
Muscle (83% moisture) 6% lipid, dry wt. basis)			
Aromatic fraction	73	50	1,300
PCB	--	--	20
4,4'-DDE	--	--	15
Hepatopancreas (81% moisture) (50% lipid, dry wt. basis)			
Aromatic fraction	130	78	5,600
PCB	--	--	2,700
4,4'-DDE	--	--	390

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Benzofluoranthene	2664.495	
Fluoranthene	2559.604	
Pyrene	2545.430	
Chrysene	1721.091	
Benzo(a)fluorene	1368.809	
Benzo(b)fluorene	1344.207	
Benzo(a)pyrene	994.394	
Benzo(e)pyrene	928.986	
Bena(a)anthracene	806.292	
Naphthalene,phenyl-,methyl-	712.602	
	15645.910	(16000 to 2 sf)
% of Fraction	44%	

Site SBE 5R (continued)

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole,methyl-	687.981	
Dibenzocarbazole	306.270	
Indenylanthracenone	285.720	
--	236.502	
Dibenzocarbazole	212.714	
Dibenzocarbazole	197.232	
Aza-252	182.999	
Dibenzocarbazole	169.558	
--	165.642	
--	147.694	
	2592.312	(2600 to 2 sf)
% of Fraction	59%	

Blue crab (aromatic fraction)

Muscle

Compound	Concentration (ppb)	
Naphthalene,C4H9-	67.485	
Phenanthrene	41.686	
Naphthalene,C5H11-	40.167	
Fluorene,methyl-	32.838	
Naphthalene,C4H9-	32.766	
Phenanthrene,methyl-	29.590	
--	27.204	
--	25.310	
Fluorene,methyl-	23.448	
Acenaphthene,C3H7-/Fluorene,C2H5-	23.446	
	343.940	(340 to 2 sf)
% of Fraction	34%	

Site SBE 5R (continued)

Compound	Hepatopancreas Concentration (ppb)	
C16-PCB	293.654	
Pyrene	225.803	
Binaphthyl,1,1'-(ISTD)/C16-PCE	188.946	
Base-neutral,methyl-202	160.486	
--	143.165	
--	135.472	
Naphthalene,C4H9-	133.728	
Fluoranthene	132.198	
Phenanthrene,C3H7-/C15-PCB	125.170	
Chrysene	120.939	
	1659.561	(1700 to 2 sf)
% of Fraction	30%	

Station: SBE5L
Sediment Neutral Extract G3.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	201.356	1	Naphthalene
1535	114.514	1	2-Methylnaphthalene
1620	64.263	1	1-Methylnaphthalene
2000	40.381	1	Biphenyl
2034	18.168	1	Ethylnaphthalene
2061	86.259	1	C2-Naphthalene
2098	52.481	1	C2-Naphthalene
2108	94.136	1	C2-Naphthalene
2147	53.425	1	C2-Naphthalene
2168	24.521	1	Acenaphthylene
2205	32.654	1	Hexamethylbenzene
2225	17.636	0	
2261	136.715	1	Acenaphthene
2280	31.153	1	4-Methylbiphenyl
2301	24.653	1	3-Methylbiphenyl
2324	27.261	1	C3-Naphthalene
2345	165.679	1	Dibenzofuran
2380	30.737	0	
2392	46.084	1	C3-Naphthalene
2439	100.287	1	C3-Naphthalene
2452	48.375	1	C3-Naphthalene
2477	68.556	1	C3-Naphthalene
2517	168.161	1	Fluorene
2534	32.749	0	
2564	94.460	1	Methylbiphenyl
2583	84.867	0	
2621	87.675	1	Methyldibenzofuran
2653	160.419	0	
2677	32.667	0	
2700	14.782	0	
2725	32.065	0	
2752	22.913	0	
2791	15.068	0	
2814	50.822	1	Methylfluorene
2828	32.306	0	
2855	84.127	0	
2907	113.388	0	
2918	74.583	0	
2934	89.324	1	Dibenzothiophene
2951	72.123	0	
2974	9.177	0	
3000	642.110	1	Phenanthrene
3032	355.464	1	Anthracene
3090	38.196	0	
3130	39.701	0	
3169	139.121	0	
3205	38.714	0	
3259	57.079	0	
3276	124.847	0	
3300	39.812	1	Methyldibenzothiophene
3341	20.966	0	
3369	147.526	1	3-Methylphenanthrene
3384	165.210	1	2-Methylphenanthrene

3425	505.558	1	4-H Cyclopenta(def)phenanthrene
3440	139.100	1	Methylphenanthrene
3454	181.223	1	Methylphenanthrene
3494	16.087	0	
3529	21.480	0	
3550	28.706	0	
3565	11.537	0	
3613	367.228	1	2-Phenylnaphthalene
3662	26.660	0	
3686	26.481	0	
3713	82.525	0	
3737	157.098	1	C2-Phenanthrene
3772	102.473	0	
3791	289.500	1	C2-178
3810	154.680	0	
3828	310.875	0	
3858	2559.604	1	Fluoranthene
3894	89.034	0	
3925	21.168	0	
3947	175.083	0	
3969	218.357	0	
4000	2545.430	1	Pyrene
4034	712.602	1	Methyl-phenylnaphthalene
4086	155.956	0	
4132	297.550	1	Methyl-phenylnaphthalene
4147	133.483	0	
4197	205.465	0	
4222	509.052	0	
4307	1368.809	1	Benzo(a)fluorene
4361	1344.207	1	Benzo(b)fluorene
4401	236.339	0	
4434	680.409	1	Methyl-202
4455	375.385	1	Methyl-202
4511	81.150	0	
4579	60.959	0	
4609	58.638	0	
4664	555.020	0	
4717	584.004	0	
4774	461.798	1	Benzo(b)naphtho(2,1-d)thiophene
4800	449.296	1	Benzo(ghi)fluoranthene
4811	295.571	1	Benzo(c)phenanthrene
4846	55.169	0	
4859	11.517	0	
4906	72.564	1	Benzonaphthothiophene
4970	806.292	1	Benz(a)anthracene
5000	1721.091	1	Chrysene
5044	602.416	1	Tetramethyloctahydrochrysene
5084	197.507	1	Tetramethyloctahydrochrysene
5126	255.395	1	Methyl-228
5148	155.857	0	
5194	123.065	0	
5238	79.419	0	
5254	58.404	0	
5274	149.658	0	
5303	528.516	1	Methyl-228
5326	250.171	1	Methyl-228
5347	208.294	0	
5371	363.795	0	
5391	549.784	1	1-Phenylphenanthrene
5447	151.966	1	Trimethyltetrahydrochrysene

5485	79.232	0	
5510	63.549	0	
5554	31.684	0	
5591	79.477	0	
5645	48.101	0	
5674	42.029	0	
5756	2664.495	1	Benzofluoranthene
5813	229.465	1	Benzo(a)fluoranthene
5917	928.986	1	Benzo(e)pyrene
5948	994.394	1	Benzo(a)pyrene
6000	292.257	1	Perylene
6070	287.742	1	MW-252
6111	151.736	0	
6175	489.874	0	
6243	94.837	0	
6261	105.051	0	
6308	54.865	0	
6348	125.210	0	
6529	27.844	0	
6558	56.268	0	
6667	57.921	0	
6713	39.838	0	
6779	182.084	0	
6830	458.758	1	Indeno(1,2,3-cd)pyrene
6875	220.305	1	Dibenz(a,h)anthracene
6943	70.771	0	
6967	82.268	0	
7000	323.633	1	Benzo(ghi)perylene

Station: SBE5R
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2596	9.769	0	
2716	9.634	0	
2737	32.511	0	
2786	9.146	0	
2808	8.324	0	
2844	5.207	0	
2926	8.469	0	
2969	12.075	0	
2988	11.400	0	
3080	10.584	0	
3216	72.957	1	9 H-Carbazole
3294	7.772	0	
3369	59.510	0	
3457	25.003	1	Methyl-9 H-carbazole
3490	8.154	1	Methyl-9 H-carbazole
3551	7.995	0	
3567	10.780	0	
3788	11.023	0	
3898	32.848	1	C2-Carbazole
3939	26.658	1	Aza-202
4102	23.960	0	
4136	6.361	0	
4253	147.694	0	
4458	6.061	0	
4617	33.963	0	
4702	19.668	0	
4736	9.274	0	
4843	13.018	0	
5039	133.071	1	Benzocarbazole
5105	9.722	1	Benzanthrone/Benzofluorenone
5173	113.702	1	Benzocarbazole
5209	66.160	1	Benzocarbazole
5342	34.914	0	
5411	11.894	0	
5427	9.257	0	
5462	25.441	0	
5505	14.958	0	
5583	44.659	0	
5674	182.999	1	Aza-252
5912	28.350	1	C2-Benzacridine
5956	28.735	1	Cyclopenta(def)chrysen-4-one
6113	24.996	1	C2-Benzacridine
6187	70.305	1	C2-Benzacridine
6237	61.081	0	
6255	39.610	0	
6290	6.025	0	
6336	12.069	0	
6433	17.345	0	
6480	13.724	0	
6526	7.453	0	
6594	12.674	0	
6633	197.232	1	Dibenzocarbazole
6744	306.270	1	Dibenzocarbazole

6763	212.714	1	Dibenzocarbazole
6872	165.642	0	
6923	17.306	0	
6953	24.170	0	
7003	236.502	0	
7036	285.720	1	Indenylanthracenone
7098	88.275	1	Dibenzocarbazole
7133	169.558	1	Dibenzocarbazole
7175	75.648	1	Dibenzocarbazole
7244	85.760	1	Methyldibenzocarbazole
7309	687.981	0	
7349	83.118	1	Methyldibenzocarbazole
7427	13.397	0	
7466	126.729	0	

Station: SBE5R Crab Muscle Tissue
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2060	9.933	1	Naphthalene,C2H5-
2374	8.184	1	Bibenzyl
2397	8.353	1	Naphthalene,C3H7-
2438	6.158	1	Naphthalene,C3H7-
2446	6.184	1	Naphthalene,C3H7-
2478	7.772	1	Naphthalene,C3H7-
2486	10.138	1	Naphthalene,C3H7-
2526	9.631	1	Fluorene
2541	12.870	1	Naphthalene,C3H7-
2628	6.527	1	Naphthalene,C4H9-
2639	5.327	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2646	6.030	0	
2682	11.456	1	Naphthalene,C4H9-
2697	10.517	1	Naphthalene,C4H9-
2736	6.565	1	Naphthalene,C4H9-
2749	22.412	1	Naphthalene,C4H9-
2770	40.167	1	Naphthalene,C5H11-
2788	27.204	0	
2798	32.766	1	Naphthalene,C4H9-
2810	16.678	1	Fluorene,methyl-
2829	32.838	1	Fluorene,methyl-
2835	23.448	1	Fluorene,methyl-
2854	16.064	0	
2861	10.861	1	Fluorene,methyl-/Naphthalene,C5H11-
2867	5.709	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2880	6.929	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2899	67.485	1	Naphthalene,C4H9-
2910	12.939	0	
2933	15.573	0	
2944	8.373	0	
2961	21.613	0	
3000	41.686	1	Phenanthrene
3021	6.477	1	Naphthalene,C5H11-
3034	12.486	1	Anthracene
3068	7.975	0	
3076	6.516	0	
3091	7.378	0	
3120	22.980	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3137	18.273	0	
3149	20.059	1	Acenaphthene,C4H9-
3161	23.446	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3197	20.384	1	Acenaphthene,C3H7-
3208	14.003	1	Acenaphthene,C3H7-
3242	20.622	1	Acenaphthene,C4H9-
3260	18.812	1	Acenaphthene,C4H9-
3280	8.204	0	
3296	5.042	0	
3302	5.852	0	
3331	14.865	1	Naphthalene,C5H11-
3365	20.644	1	Phenanthrene,3-methyl-
3382	14.825	1	Phenanthrene,2-methyl-
3401	25.310	0	
3440	29.590	1	Phenanthrene,methyl-

3455	13.868	1	Phenanthrene,methyl-
3486	5.566	0	
3502	6.311	0	
3523	7.954	0	
3602	5.232	0	
3612	9.644	1	Anthraquinone
3727	6.203	0	
3749	8.108	1	Phenanthrene,C2H5-
3782	10.998	1	Base-neutral,MW 178,C2H5-
3801	5.957	1	Base-neutral,MW 178,C2H5-
3815	5.236	0	
3852	15.300	1	Fluoranthene
4000	19.547	1	Pyrene
4292	5.674	1	Base-neutral,methyl-202
5000	8.284	1	Chrysene
5084	5.811	0	
5744	5.799	1	Benzofluoranthene
5764	14.123	1	Benzofluoranthene
5884	14.116	0	
5913	5.832	1	Benzo(e)pyrene

Station: SBE5R Crab Hepatopancreas
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	15.533	1	Naphthalene
1037	22.076	0	
1105	8.355	0	
1201	12.432	0	
1549	18.468	0	
1635	12.625	1	Naphthalene,1-methyl-
1749	8.102	0	
1889	33.866	0	
1911	48.879	0	
1993	10.284	0	
2005	37.821	1	Biphenyl
2028	21.648	1	Naphthalene,ethyl-
2040	19.176	1	Naphthalene,ethyl-
2054	53.307	1	Naphthalene,C2H5-
2096	84.173	1	Naphthalene,C2H5-
2269	80.913	1	Acenaphthene
2353	10.022	1	Dibenzofuran
2371	49.022	1	Bibenzyl
2383	25.434	0	
2394	41.358	1	Naphthalene,C3H7-
2420	12.974	0	
2436	50.728	1	Naphthalene,C3H7-
2475	26.981	1	Naphthalene,C3H7-
2484	40.382	1	Naphthalene,C3H7-
2526	40.905	1	Fluorene
2540	43.284	1	Naphthalene,C3H7-
2572	29.686	1	Naphthalene,C3H7-
2593	12.918	1	Biphenyl,methyl-/Acenaphthene,methyl-
2627	17.442	1	Naphthalene,C4H9-
2637	9.039	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2680	28.741	1	Naphthalene,C4H9-
2696	42.890	1	Naphthalene,C4H9-
2712	34.563	1	Naphthalene,C4H9-
2738	15.114	1	Naphthalene,C4H9-
2748	64.703	1	Naphthalene,C4H9-
2769	118.122	1	Naphthalene,C5H11-
2788	77.463	0	
2798	87.862	1	Naphthalene,C4H9-
2812	41.440	1	Fluorene,methyl-
2828	89.492	1	Fluorene,methyl-
2838	56.657	0	
2856	73.998	1	Fluorene,methyl-/Naphthalene,C5H11-
2868	32.129	1	Naphthalene,C4H9-/Biphenyl,C2H5-
2881	14.201	0	
2900	133.728	1	Naphthalene,C4H9-
2912	21.480	0	
2933	24.706	0	
2949	9.264	0	
2970	48.009	0	
2980	9.437	0	
2993	12.301	0	
3000	82.479	1	Phenanthrene
3025	14.887	1	Anthracene/Naphthalene,C5H11-

3031	21.990	1	Anthracene/Naphthalene,C5H11-
3070	10.650	0	
3090	14.587	1	Naphthalene,C7H15-
3122	45.855	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3148	37.867	1	Acenaphthene,C4H9-
3163	34.719	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3199	67.849	1	Acenaphthene,C3H7-
3243	44.199	1	Acenaphthene,C4H9-
3260	18.770	1	Acenaphthene,C4H9-/Biphenyl,C4H9-
3280	14.283	0	
3298	10.358	0	
3312	12.999	0	
3331	25.054	1	Naphthalene,C5H11-
3367	43.035	1	Phenanthrene,3-methyl-
3383	16.130	1	Phenanthrene,2-methyl-
3403	8.664	0	
3432	31.230	1	Cyclopenta(def)phenanthrene,4H-
3442	28.541	1	Phenanthrene,methyl-
3456	47.222	1	Phenanthrene,methyl-
3504	15.881	0	
3520	31.088	0	
3547	8.723	0	
3567	20.317	0	
3581	24.806	0	
3650	15.279	0	
3658	11.144	0	
3664	8.120	0	
3672	13.207	0	
3752	17.614	0	
3782	21.134	1	Base-neutral,MW 178,C2H5-
3797	8.104	1	Base-neutral,MW 178,C2H5-
3833	13.021	1	Cyclopentaphenanthrene,methyl-
3853	132.198	1	Fluoranthene
3896	52.833	0	
3951	23.145	0	
4000	225.803	1	Pyrene
4025	25.651	0	
4041	15.111	0	
4072	125.170	1	C15-PCB
4111	48.983	0	
4141	44.059	0	
4227	340.517	1	DDE,4,4'-
4293	61.239	1	Base-neutral,methyl-202
4374	23.207	1	Benzo(b)fluorene
4403	11.098	1	Cyclopentaphenanthrene,C4H9-
4431	160.486	1	Base-neutral,methyl-202
4442	36.266	1	Base-neutral,methyl-202
4487	73.024	1	Cyclopentaphenanthrene,C4H9-
4499	41.323	1	Cyclopentaphenanthrene,C4H9-
4535	34.756	1	C15-PCB/Phenanthrene,C4H9-
4574	293.654	1	C16-PCB
4593	48.806	0	
4691	12.140	0	
4739	188.946	1	C16-PCB
4755	18.681	0	
4794	26.170	1	Benzo(ghi)fluoranthene
4816	35.505	1	Benzo(c)phenanthrene
4844	57.419	1	C17-PCB
4874	38.551	1	C17-PCB/Base-neutral,MW 202,C2H5-
4903	50.017	1	C17-PCB

5003	120.939	1	Chrysene
5039	40.432	0	
5059	11.131	1	Benzanthracene/MW 202,C4H9-
5074	7.374	0	
5141	143.165	0	
5229	7.532	0	
5279	11.450	0	
5304	49.661	1	Base-neutral,methyl-228
5355	31.094	1	Base-neutral,methyl-226
5386	32.071	1	Base-neutral,methyl-226
5661	24.717	0	
5892	105.837	0	
5920	31.854	1	Benzo(e)pyrene
5951	9.611	1	Benzo(a)pyrene
6128	65.969	0	
6936	57.853	0	
7000	46.284	1	Benzo(ghi)perylene

Table 29

Site: NR 87 - Nansemond River, Control

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (58% moisture)			
Aromatic fraction	140	62	2,500
Polar fraction	1	1	5.2
Organochlorines	--	--	13
TBT	--	--	8.9
Blue Crabs			
Muscle (80% moisture) (5% lipid, dry wt. basis)			
Aromatic fraction	61	34	710
PCB	--	--	8.7
4'4DDE	--	--	13
Hepatopancreas (76% moisture) (60% lipid, dry wt. basis)			
Aromatic fraction	77	51	1,500
PCB	--	--	1,200
4,4'-DDE	--	--	200

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
Pyrene	156.383	
Benzofluoranthene	154.998	
Fluoranthene	137.244	
Phenanthrene	76.839	
Benzo(e)pyrene	75.796	
--	71.965	
Benzo(a)pyrene	70.346	
Chrysene	70.316	
Perylene	67.227	
Benzo(ghi)perylene	62.099	
	943.213	(940 to 2 sf)
% of Fraction	38%	

Site NR 87 (continued)

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole,methyl-	5.188	
	5.188	(5.2 to 2 sf)
% of Fraction	100%	

Blue crab (aromatic fraction)

Muscle

Compound	Concentration (ppb)	
Naphthalene,C4H9-	39.778	
Phenanthrene	28.259	
Naphthalene,C5H11-	20.859	
--	19.700	
Phenanthrene,3-methyl-	19.358	
Phenanthrene,methyl-	19.213	
--	19.071	
Fluorene,methyl-/Naphthalene,C5H11-	18.690	
--	17.888	
Fluorene,methyl-	17.870	
	221.686	(220 to 2 sf)
% of Fraction	31%	

Hepatopancreas

Compound	Concentration (ppb)	
C16-PCB	185.944	
Binaphthyl,1,1'-(ISTD)/C16-PCB	80.582	
--	58.217	
--	56.638	
Base-neutral,methyl-202	52.024	
Naphthalene,C4H9-	49.201	
C17-PCB	43.466	
Phenanthrene	31.142	
Naphthalene,C5H11-	30.493	
--	28.733	
	616.440	(620 to 2 sf)
% of Fraction	41%	

Station: NR87
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	27.750	1	Naphthalene
1534	27.515	1	2-Methylnaphthalene
1590	4.798	1	
1618	15.787	1	1-Methylnaphthalene
1670	1.793	0	
1913	3.323	0	
2000	5.118	1	Biphenyl
2034	5.906	1	Ethylnaphthalene
2061	26.209	1	C2-Naphthalene
2098	13.298	1	C2-Naphthalene
2105	19.907	1	C2-Naphthalene
2148	10.942	1	C2-Naphthalene
2168	2.202	1	Acenaphthylene
2187	2.648	1	Hexamethylbenzene
2203	2.019	1	
2261	6.615	1	Acenaphthene
2281	7.162	1	4-Methylbiphenyl
2303	2.613	1	3-Methylbiphenyl
2326	10.594	1	C3-Naphthalene
2346	12.716	1	Dibenzofuran
2380	8.306	0	
2391	10.696	1	C3-Naphthalene
2439	27.596	1	C3-Naphthalene
2476	19.331	1	C3-Naphthalene
2518	14.248	1	Fluorene
2534	9.892	0	
2582	5.651	0	
2621	14.426	1	Methyldibenzofuran
2654	17.066	0	
2679	7.104	0	
2700	5.592	0	
2725	3.887	0	
2752	10.000	0	
2779	4.957	0	
2791	3.282	0	
2801	1.803	1	Methylfluorene
2814	4.955	1	Methylfluorene
2828	10.403	0	
2847	3.104	0	
2906	45.737	0	
2918	10.894	0	
2936	12.938	1	Dibenzothiophene
2951	5.732	0	
3000	76.839	1	Phenanthrene
3034	19.359	1	Anthracene
3093	6.272	0	
3131	9.770	0	
3156	12.935	0	
3171	15.776	0	
3207	6.820	0	
3239	4.507	1	Methyldibenzothiophene
3263	7.805	0	
3280	11.529	0	

3303	7.489	1	Methyldibenzothiophene
3342	4.442	0	
3371	25.811	1	3-Methylphenanthrene
3387	35.574	0	2-Methylphenanthrene
3414	9.769	0	
3428	15.822	1	4-H Cyclopenta(def)phenanthrene
3444	23.891	1	Methylphenanthrene
3458	24.277	1	Methylphenanthrene
3532	3.686	0	
3555	3.172	0	
3620	36.615	1	2-Phenylnaphthalene
3650	6.646	0	
3669	4.855	0	
3691	4.412	0	
3725	14.181	0	
3743	13.979	1	C2-Phenanthrene
3794	25.806	1	C2-178
3814	41.490	0	
3856	137.244	1	Fluoranthene
3900	6.387	0	
3929	1.822	0	
3953	10.704	0	
3976	6.286	0	
4000	156.383	1	Pyrene
4042	35.630	1	Methyl-phenylnaphthalene
4095	8.838	0	
4154	22.059	0	
4206	8.426	0	
4228	12.417	0	
4250	15.333	0	
4310	25.056	1	Benzo(a)fluorene
4343	6.842	1	Retene
4371	36.454	1	Benzo(b)fluorene
4438	29.365	1	Methyl-202
4461	19.305	0	
4671	29.454	0	
4723	71.965	0	
4779	20.907	1	Benzo(b)naphtho(2,1-d)thiophene
4804	21.769	1	Benzo(ghi)fluoranthene
4816	16.081	1	Benzo(c)phenanthrene
4853	4.299	0	
4946	2.373	0	
4973	54.749	1	Benz(a)anthracene
5000	70.316	1	Chrysene
5046	9.267	1	Tetramethyloctahydrochrysene
5068	4.571	1	Tetramethyloctahydrochrysene
5096	7.701	1	Tetramethyloctahydrochrysene
5130	6.676	1	Methyl-228
5155	5.606	0	
5201	5.430	0	
5283	2.522	0	
5308	27.095	1	Methyl-228
5332	11.943	0	
5350	10.742	0	
5374	16.394	0	
5397	20.924	1	1-Phenylphenanthrene
5464	11.101	1	Trimethyltetrahydrochrysene
5492	3.072	0	
5602	7.428	0	
5650	8.124	0	

5679	9.873	0	
5747	154.998	1	Benzofluoranthene
5817	12.707	1	Benzo(a)fluoranthene
5913	75.796	1	Benzo(e)pyrene
5944	70.346	1	Benzo(a)pyrene
6000	67.227	1	Perylene
6074	12.435	0	
6113	20.302	0	
6180	16.155	0	
6248	19.372	0	
6352	12.594	0	
6674	4.174	0	
6722	3.956	0	
6784	18.466	0	
6830	50.013	1	Indeno(1,2,3-cd)pyrene
6880	8.932	1	Dibenz(a,h)anthracene
7000	62.099	1	Benzo(ghi)perylene

Station: NR87
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
7297	5.188	1	Methyldibenzocarbazole

Station: NR87 Crab Muscle Tissue
Neutral Extract 63.52 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
2579	6.159	1	Naphthalene,C3H7-
2698	6.757	1	Naphthalene,C4H9-
2750	13.510	1	Naphthalene,C4H9-
2770	20.859	1	Naphthalene,C5H11-
2789	13.811	0	
2799	16.841	1	Naphthalene,C4H9-
2810	8.694	1	Fluorene,methyl-
2828	17.870	1	Fluorene,methyl-
2837	12.123	0	
2861	18.690	1	Fluorene,methyl-/Naphthalene,C5H11-
2882	5.028	0	
2901	39.778	1	Naphthalene,C4H9-
2912	10.122	0	
2932	10.139	0	
2947	7.532	0	
2962	5.689	0	
2969	10.772	0	
3000	28.259	1	Phenanthrene
3032	7.540	1	Anthracene/Naphthalene,C5H11-
3068	6.532	0	
3119	10.866	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3138	5.552	0	
3146	6.376	1	Acenaphthene,C4H9-
3162	8.479	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3199	11.258	1	Acenaphthene,C3H7-
3207	10.197	1	Acenaphthene,C3H7-
3244	11.736	1	Acenaphthene,C4H9-
3261	15.492	1	Acenaphthene,C4H9-
3284	15.831	0	
3332	16.399	1	Naphthalene,C5H11-
3368	19.358	1	Phenanthrene,3-methyl-
3383	13.082	1	Phenanthrene,2-methyl-
3403	17.229	0	
3417	7.842	1	Cyclopenta(def)phenanthrene,4H-
3443	19.213	1	Phenanthrene,methyl-
3459	12.507	1	Phenanthrene,methyl-
3482	5.432	0	
3505	5.306	0	
3525	5.862	0	
3600	5.264	1	Anthraquinone
3673	6.460	0	
3729	5.477	0	
3752	7.138	0	
3784	9.344	1	Base-neutral,MW 178,C2H5-
3804	5.118	1	Base-neutral,MW 178,C2H5-
3820	5.171	1	Cyclopentaphenanthrene,methyl-
3937	7.937	0	
4000	6.317	1	Pyrene
4559	9.050	1	C16-PCB
4832	9.370	1	C17-PCB
5093	8.288	1	Benzanthracene/MW 202,C4H9-
5214	13.223	0	
5339	10.934	0	

5575	11.706	0	
5804	13.941	1	Benzo(a)fluoranthene
5876	8.041	0	
6036	19.700	0	
6318	17.888	0	
6593	19.071	0	
6821	8.960	1	Indeno(1,2,3-cd)pyrene
6857	13.189	0	

Station: NR87 Crab Hepatopancreas
Neutral Extract G3.S2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	6.316	1	Naphthalene
1036	5.771	0	
1908	10.373	0	
1966	6.548	0	
2004	6.464	1	Biphenyl
2054	11.562	1	Naphthalene,C2H5-
2095	13.871	1	Naphthalene,C2H5-
2270	18.797	1	Acenaphthene
2369	9.682	1	Naphthalene,C3H7-
2394	5.287	1	Naphthalene,C3H7-
2435	7.945	1	Naphthalene,C3H7-
2525	9.409	1	Fluorene
2540	10.550	1	Naphthalene,C3H7-
2573	7.924	1	Naphthalene,C3H7-
2626	8.579	1	Naphthalene,C4H9-
2681	7.731	1	Naphthalene,C4H9-
2696	9.596	1	Naphthalene,C4H9-
2738	5.407	1	Naphthalene,C4H9-
2748	18.237	1	Naphthalene,C4H9-
2768	30.493	1	Naphthalene,C5H11-
2787	17.999	0	
2796	20.716	1	Naphthalene,C4H9-
2808	8.439	1	Fluorene,methyl-
2828	16.834	1	Fluorene,methyl-
2836	8.836	0	
2898	49.201	1	Naphthalene,C4H9-
2912	7.951	0	
3000	31.142	1	Phenanthrene
3033	14.745	1	Anthracene/Naphthalene,C5H11-
3120	16.101	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3136	9.877	0	
3147	15.816	1	Acenaphthene,C4H9-
3163	14.076	1	Acenaphthene,C3H7-/Fluorene,C2H5-
3201	5.280	1	Acenaphthene,C3H7-
3243	7.102	1	Acenaphthene,C4H9-
3332	10.008	1	Naphthalene,C5H11-
3367	13.320	1	Phenanthrene,3-methyl-
3384	8.356	1	Phenanthrene,2-methyl-
3403	7.237	0	
3418	5.125	1	Cyclopenta(def)phenanthrene,4H-
3443	13.578	1	Phenanthrene,methyl-
3458	6.597	1	Phenanthrene,methyl-
3523	6.585	0	
3567	5.635	0	
3784	5.008	1	Base-neutral,MW 178,C2H5-
3856	16.459	1	Fluoranthene
3899	13.766	0	
4000	23.099	1	Pyrene
4076	58.217	0	
4112	16.062	0	
4141	8.087	0	
4277	14.815	0	
4432	52.024	1	Base-neutral,methyl-202

4485	20.059	1	Cyclopentaphenanthrene,C4H9-
4501	13.370	1	Cyclopentaphenanthrene,C4H9-
4536	23.946	1	C15-PCB/Phenanthrene,C4H9-
4574	185.944	1	C16-PCB
4593	12.825	0	
4740	80.582	1	C16-PCB
4757	5.597	0	
4793	7.606	1	Benzo(ghi)fluoranthene
4844	43.466	1	C17-PCB
4873	19.589	1	C17-PCB/Base-neutral,MW 202,C2H5-
4902	20.421	1	C17-PCB
5034	24.343	0	
5071	26.962	0	
5141	56.638	0	
5152	7.084	0	
5225	11.122	0	
5300	20.279	1	Base-neutral,methyl-228/C17-PCB
5350	16.215	1	Base-neutral,methyl-226
5378	12.255	1	Base-neutral,methyl-226
5538	10.988	0	
5650	22.061	0	
5876	28.733	0	
6682	15.607	0	
6813	20.400	1	Indeno(1,2,3-cd)pyrene

Table 30

Site: TS1 - Thimble Shoals, Control

	# Peaks	# Identified	Concentration (ppb, dry wt.)
Sediment (27% moisture)			
Aromatic fraction	108	56	410
Polar fraction	12	7	300
Organochlorines	--	--	34
TBT	--	--	8.8

Most abundant peaks

Sediment

Aromatic Fraction

Compound	Concentration (ppb)	
--	28.929	
Benzofluoranthene	27.133	
Fluoranthene	25.424	
Pyrene	22.643	
Perylene	15.124	
--	15.096	
Chrysene	15.044	
Benzo(a)pyrene	11.553	
Benz(a)anthracene	10.812	
Phenanthrene	9.909	
	181.667	(180 to 2 sf)
% of Fraction	44%	

Polar Fraction

Compound	Concentration (ppb)	
Dibenzocarbazole	95.223	
Indenylanthracenone	37.600	
Dibenzocarbazole,methyl-	35.639	
--	32.046	
Dibenzocarbazole	19.258	
Dibenzocarbazole	18.207	
--	17.652	
Dibenzocarbazole	15.214	
--	8.390	
Dibenzocarbazole,methyl-	8.128	
	287.357	(290 to 2 sf)
% of Fraction	97%	

Station: TS1
Sediment Neutral Extract 63.2 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
1000	3.185	1	Naphthalene
1452	3.926	0	
1534	2.300	1	2-Methylnaphthalene
1618	1.475	1	1-Methylnaphthalene
1910	1.205	0	
2000	.895	1	Biphenyl
2060	3.768	1	C2-Naphthalene
2097	1.176	1	C2-Naphthalene
2105	1.527	1	C2-Naphthalene
2147	.442	1	C2-Naphthalene
2260	.966	1	Acenaphthene
2281	.623	1	4-Methylbiphenyl
2301	.498	1	3-Methylbiphenyl
2325	1.522	1	C3-Naphthalene
2345	2.259	1	Dibenzofuran
2390	1.786	1	C3-Naphthalene
2439	3.024	1	C3-Naphthalene
2475	1.798	1	C3-Naphthalene
2517	1.960	1	Fluorene
2534	.786	0	
2621	1.414	1	Methyldibenzofuran
2654	.949	0	
2678	.489	0	
2725	3.231	0	
2751	.611	0	
2814	.459	1	Methylfluorene
2828	1.068	0	
2862	3.022	0	
2907	5.472	0	
2936	.742	1	Dibenzothiophene
3000	9.909	1	Phenanthrene
3034	2.740	1	Anthracene
3092	1.536	0	
3172	.569	0	
3239	.701	1	Methyldibenzothiophene
3269	3.448	0	
3347	1.375	0	
3372	2.627	1	3-Methylphenanthrene
3388	3.196	0	2-Methylphenanthrene
3401	1.677	0	
3428	1.016	1	4-H Cyclopenta(def)phenanthrene
3445	1.873	1	Methylphenanthrene
3460	2.821	1	Methylphenanthrene
3554	1.414	0	
3620	6.984	1	2-Phenylnaphthalene
3645	.761	0	
3673	.448	0	
3726	.756	0	
3746	1.447	1	C2-Phenanthrene
3795	3.928	1	C2-178
3815	3.240	0	
3828	2.299	0	
3857	25.424	1	Fluoranthene

3901	1.420	0	
3955	1.288	0	
4000	22.643	1	Pyrene
4041	5.510	1	Methyl-phenylnaphthalene
4064	1.147	0	
4094	.526	0	
4154	3.238	0	
4206	2.556	0	
4248	15.096	0	
4311	7.409	1	Benzo(a)fluorene
4344	2.020	1	Retene
4372	7.018	1	Benzo(b)fluorene
4439	4.892	1	Methyl-202
4462	2.348	0	
4524	1.853	0	
4672	4.084	0	
4723	28.929	0	
4818	5.652	1	Benzo(c)phenanthrene
4853	1.018	0	
4973	10.812	1	Benz(a)anthracene
5000	15.044	1	Chrysene
5046	1.529	1	Tetramethyloctahydrochrysene
5066	.668	1	Tetramethyloctahydrochrysene
5098	1.167	1	Tetramethyloctahydrochrysene
5130	1.023	1	Methyl-228
5155	.869	0	
5202	.802	0	
5281	.663	0	
5307	4.993	1	Methyl-228
5331	1.410	0	
5349	.643	0	
5374	.804	0	
5398	1.960	1	1-Phenylphenanthrene
5492	.461	0	
5679	.484	0	
5747	27.133	1	Benzofluoranthene
5817	2.094	1	Benzo(a)fluoranthene
5913	9.886	1	Benzo(e)pyrene
5944	11.553	1	Benzo(a)pyrene
5972	2.100	0	
6000	15.124	1	Perylene
6067	4.392	1	MW-252
6111	3.972	0	
6180	2.354	0	
6242	1.758	0	
6266	1.029	0	
6355	1.975	0	
6533	.513	0	
6676	1.376	0	
6769	7.881	0	
6831	9.722	1	Indeno(1,2,3-cd)pyrene
6890	6.451	1	Dibenz(a,h)anthracene
6950	.915	0	
6972	1.022	0	
7000	7.587	1	Benzo(ghi)perylene

Station: TS1
Sediment Polar Extract G3.3 + G3.4 Fraction

ARI	Conc. (ppb)	Id	Probable Compound
6241	8.390	0	
6638	19.258	1	Dibenzocarbazole
6745	95.223	1	Dibenzocarbazole
6874	32.046	0	
7039	37.600	1	Indenylanthracenone
7101	15.214	1	Dibenzocarbazole
7130	18.207	1	Dibenzocarbazole
7243	8.128	1	Methyldibenzocarbazole
7285	17.652	0	
7309	35.639	1	Methyldibenzocarbazole
7468	7.422	0	
7496	5.292	0	

Discussion

The stations collected within this project all lie in a single river system and as such it does not seem appropriate that they be discussed individually, but rather collectively.

Sediments

A consistent pattern of compounds was observed throughout the system. The components identified in the aromatic fraction were primarily PAH, their alkylated derivatives, and thiophene derivatives. The polar fraction consists mainly of nitrogen containing PAH which fall into the categories of carbazole, benzocarbazole, dibenzocarbazoles, benzacridines, etc. For identifications of compounds of individual stations, refer to individual station result tables given previously. It has been recognized (Bieri et al., 1986) that the most heavily polluted sediments are in the Southern branch and the first part of the Eastern branch of the river. The current results bear this out. Concentration of pollutants (summarized in Table 31) are approximately an order of magnitude higher in these two branches, averaging 45,000 ppb, compared with an average of 3,700 ppb at the other stations (including control sites). This reflects the heavy industry (particularly shipyards) and the effects of the wood preserving industry on this section of the river system. The ten most common aromatic fraction compounds are very consistent throughout the system: 4 and 5 ring unsubstituted PAH, typically fluoranthene, pyrene, benzofluoranthene, chrysene, benzofluorenes and benzopyrenes. The ten most common compounds represent a significant and consistent proportion of the compounds extracted, ranging from 28% to 50% of the aromatic fraction ($\bar{x}$=42%, s.d.=6).

This is all indicative of the constancy of the composition of the pollutants in the sediment. The compounds in the polar fraction, which are present at concentrations about 10 times less than the aromatic fraction compounds, follow the same general distribution pattern (Table 31). The average concentrations in the Eastern and Southern Branches are 2900 ppb compared with all other stations (including controls) which averaged 150 ppb, approximately an order of magnitude less. Again a look at the ten most common compounds is indicative of the constancy of composition of the polar fraction, predominantly made of carbazole derivatives. This fraction is not as well characterized as the aromatic fraction and further work will be required to determine the identities of these compounds.

TBT concentrations (Table 31) are notable in that they follow a very similar pattern, except that the areas with the highest concentrations occur over a smaller area (namely EBE1, SBE1 and SBE2). Average concentrations are 1600 ppb for EBE1, SBE1 and SBE2, 920 ppb for all sites in the Southern and Eastern branches and 32 ppb for all other stations (including control sites). The areas of highest concentration are, therefore, 50 times higher than the average of the sites outside the Southern and Eastern branches. The concentrations are comparable to those reported in sediments from other harbors (Maguire et al. 1986). There seems little doubt that the sources of the TBT are the ship-repair facilities located close to EBE1, SBE1 and SBE2. This is a large reservoir of TBT and, with the concentrations as high as reported here, it is expected that the sediments in this area will be a source of TBT to the water column in the future. This will be particularly the case as the sediments are reworked by ship propellors and dredging. While there is little information on the toxicity of TBT in sediment, this recirculation of the sediment will allow the TBT to enter the water column

Table 31

Organic Compounds in Sediment

Station	% Moisture	Aromatic fraction ppb (dry wt.)	Polar fraction ppb (dry wt.)	PCB ppb (dry wt.)	TBT ppb (dry wt.)
ELI 1	52	3,100	<10	lost	32
ELI 2	60	5,400	320	24	99 (99, rep.)
ELI 3	54	6,700	110	120	38
SBE 1 LS	60	15,000	600	680	1,600
C	57	20,000	720	2,400	1,100
RS	65	22,000	1,200	560	1,900
SBE 2 LS	67	33,000	1,600	260	2,800
C	66	51,000	1,700	1,300	2,100
RS	67	59,000	3,700	1,000	590
SBE 3 LS	64	82,000	7,800	290	940
C	66	68,000	3,400	270	970
RS	67	30,000	1,100	19	100
RS(R)	52	32,000	1,100	20	-- (rep.)
SBE 4 LS	52	42,000	4,800	250	560
C	54	48,000	1,900	150	350
RS	45	46,000	3,100	160	43
SBE 5 LS	59	68,000	3,200	204	190
C	51	61,000	3,600	250	320
RS	68	36,000	4,400	270	700
EBE 1	63	31,000	1,700	660	1,100 (1,100 rep.)
EBE 2	44	60,000	5,500	400	220
WBE 1	59	6,100	230	240	19
LAF 1	57	1,400	<10	91	15 (rep.)
1 B(R)	--	1,400	110	56	--
TS	27	410	300	34	8.8
NR	58	2,500	<10	13	8.9

where it is known to be highly toxic to shellfish. The use of TBT on vessels <25 m long has been banned, but it may still be used on larger ships. Because of its efficiency as an antifouling agent it can be expected that TBT will continue to be used on such vessels. Ship repair facilities can, therefore, be expected to remain as a continuing source of TBT contamination to waterways.

The pattern of PCB concentrations (Table 31) in the sediments matched that for TBT; with ELI1, SBE1 and SBE2 being the highest and averaging 980 ppb. The congener distribution pattern indicated that both Aroclors 1254 and 1260 are present. The overall average concentrations for the Eastern and Southern branches is 410 ppb, while for all other stations (controls included) the average was 84 ppb. It should be noted that, for these compounds, the Western branch had concentrations similar to those at sites SBE 3, 4, and 5.

Overall, there is a similarity of pattern between all sites with the sediments from the Eastern and Southern branches being the most contaminated. There is evidence that those chemicals associated with heavy industry namely TBT and PCB, occur at higher concentration in sediments from EBE1, SBE1 and SBE2.

Blue Crab tissues

The results of the blue crab tissue extractions are given in Table 32. The anthropogenic compounds are, as expected, concentrated in the lipid rich hepatopancreas. This is particularly the case for the organochlorines. The distribution of the compounds accumulated in the crabs varies according to site. For the majority of the sites the predominant compounds (see individual site listings) are low molecular weight alkylated PAH, such as

Table 32

Blue crab tissue analysis (dry wt. basis).

Station.

Muscle

	Aromatic fraction ppb.	PCB ppb.	4,4-DDE ppb.	% Moisture	% Lipid (dry wt. basis)
E1I 2	1300	23	16	81	5
SBE 2	2900	29	17	79	6
SBE 3	1800	67	32	80	6
SBE 5	1300	20	15	83	6
EBE 1	520	22	10	79	4
WBE 1	1500	16	9.1	80	5
NR	710	8.7	13	80	5

Hepatopancreas

	Aromatic fraction ppb.	PCB ppb.	4,4-DDE ppb.	% Moisture	% Lipid (dry wt. basis)
ELI 2	4900	1200	440	81	43
SBE 2	12000	3100	520	71	42
SBE 3	5200	2600	530	71	49
SBE 5	5600	2700	640	81	50
EBE 1	3000	2300	390	71	48
WBE 1	14000	2000	530	72	44
NR	1500	1200	200	76	60

the alkyl naphthalenes. These compounds are components of fuel oils and are relatively water soluble. As such they are probably being acquired by the crab on a continuous basis from the water column. There is, likely therefore, a different form and source of contamination than that which is observed in the sediments. The pattern of contamination changes for crabs obtained at sites SBE2R andSBE3R. Here there is an increase in the unsubstituted PAH making the pattern more comparable with the sediments. These two sites are among the highest for sediment PAH concentrations. Crabs are capable of metabolizing and excreting PAH and related pollutants and, therefore, can be expected to remove both the PAH and low molecular weight alkylated-PAH from their systems. As such it can be hypothesized that the alkyl-PAH present are recent contaminants and are in equilibrium between acquisition and metabolism. A similar equilibrium can be expected to occur for the unsubstituted PAH. At most sites this appears to be in favor of removal of the PAH. However, at SBE2R and SBE3R the system is apparently incapable of removing the contaminants quickly enough and thus they are accumulating. An alternative hypothesis is that the high levels of contaminants in those areas have affected the competence of the system reducing the ability of the organism to metabolize the compounds. The site specificity in the pattern of pollutants is of interest and further research should be undertaken to determine the cause of the differences.

PCB are present in the crab tissues. The patterns are indicative of the presence of at least Aroclors 1254 and 1260. The ability of the hepatopancreas to accumulate PCB is particularly noticeable with concentrations (1200-3100 ppb) in that tissue being approximately two orders of magnitude higher than the concentrations in the muscle tissue (16-87 ppb). All concentration are given on a dry weight basis. With these

concentrations it is appropriate to consider them with respect to the Federal action limit which is 2000 ppb, on a wet weight basis, in the edible tissue. The muscle is usually considered to be the edible tissue for blue crabs, however it is not uncommon for at least portions of the hepatopancreas to be consumed. On a wet weight basis, the concentrations of PCB in muscle are 3-17 ppb, more than two orders of magnitude below the action limit. For the hepatopancreas wet weight concentrations are 230-890 ppb which is below the action level (2000 ppb), but not with a wide margin of safety. This situation should probably be discussed with officials familiar with the Federal regulations and the tissues to which the regulations apply. After such discussions, it may be appropriate that further research be conducted with respect to PCB in blue crabs. The ELCD analyses also indicated that 4,4'-DDE was present in muscle and hepatopancreas (confirmed by MS). This compound was not an obvious component of the organochlorines in the sediment and, therefore, it is the potential of the compound to bioaccumulate that has made it a significant component of the tissue.

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