9-24-2013

Shellfish Tissue Monitoring in Piscataqua Region Estuaries 2012

Matthew A. Wood
New Hampshire Department of Environmental Services

Philip R. Trowbridge
New Hampshire Department of Environmental Services

Shellfish Tissue Monitoring in Piscataqua Region Estuaries 2012

A Final Report to

Piscataqua Region Estuaries Partnership
University of New Hampshire
Durham, New Hampshire

Submitted by

Matthew A. Wood
Philip R. Trowbridge, P.E.
New Hampshire Department of Environmental Services
Watershed Management Bureau
Concord, New Hampshire

September 24, 2013

This project was funded in part by a grant from the Piscataqua Region Estuaries Partnership, as authorized by the U.S. Environmental Protection Agency's National Estuary Program.

Table of Contents

Introduction

Originally conducted by a committee of Canadian and US governments and university scientists, Gulfwatch examined the effects of decades of development and industrialization on the water quality of the Gulf of Maine as it relates to human health primarily through assessing contaminant exposure of marine organisms from 1993 to 2010. The NH Gulfwatch Program continues these efforts by collecting blue mussels at two sites in the Great Bay Estuary and one in the Hampron-Seabrook Estuary, and analyzes the organisms' tissue for potentially harmful levels and concentrations of toxins including heavy metals, chlorinated pesticides, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs).

During the 2012 sampling season, mussels were collected at three sampling locations in New Hampshire and Maine (MECC, NHHS and NHDP).

Project Goals and Objectives

The goal of this project was to provide data for two PREP indicators of estuarine condition: TOX1 and TOX3. These two indicators report on "Shellfish tissue concentrations relative to FDA standards" and "Trends in shellfish tissue contaminant concentrations", respectively. Both of these indicators depend on data from the Gulfwatch Program. In particular, TOX3 requires annual data at benchmark sites to assess trends. In 2012, PREP supported the collection and analysis of tissue samples from benchmark mussel sites in Hampton-Seabrook Harbor, Portsmouth Harbor and Dover Point.

Methods

Blue mussel samples for the NH Gulfwatch Program were collected from three locations on October 5, 2012. The station visits and field data have been documented in an interim report (Appendix A).

All field sampling was conducted as outlined in Sowles et al. (1997). Collection times were set to avoid collecting during or shortly after periods when stormwater runoff and wave resuspension of bottom sediment could result in enhanced uptake and accumulation of sediment in the mussel gut. At each site, mussels were collected from three discrete areas within a segment of the shoreline that was representative of local water quality. Using a ruler to measure length, a composite sample of 60 mussels of 50-60 mm shell length was collected from each area. The composite sample of mussels from the station was created by combining 20 mussels from each of the three replicate areas. The mussels were cleaned of all sediment, epibiota, and other accretions in clean seawater from the collection site, placed in clean containers, and then transported to the lab in coolers with ice. Prior to shucking, residual seawater was drained from the shells.

In the laboratory, individual mussel lengths, widths and heights (as defined by Seed, 1968) were determined to the nearest 0.1 mm using calipers. Using plastic or stainless steel wedges, mussels were shucked directly into appropriately prepared Mason jars for metal and organic analysis,

respectively (for details see Sowles et al., 1997). Each sample (20 mussels/sample/station) was capped, labeled and stored at -15 degrees Celsius.

The sets of samples to be analyzed for metal and organic contaminants were delivered to the Battelle Marine Sciences Laboratory in Duxbury, Massachusetts. Table 1 contains a summary of the trace metal (inorganic) and organic compounds measured in the shellfish tissue.

The data were quality assured by the laboratory following the procedures in Sowles et al. (1997). In addition, DES conducted five quality assurance tests on the data:

1. Relative percent differences (RPD) were calculated between routine samples and lab duplicates. An acceptance criteria of RPD <25% was used to flag results for additional review.
2. Relative standard deviation (RSD) were calculated for each set of three replicate samples from the mussel stations. The RSD is the standard deviation divided by the mean value. An acceptance criterion of RSD <25% was used to flag results for additional review.
3. The laboratory results for composite samples were compared to the average value from the three replicate samples at each station. An acceptance criterion of RPD <0.25% was used to flag results for additional review.
4. Summary statistics (mean and maximum) of the concentrations for each parameter measured in 2012 were compared to the same statistics for the 1993-2011 dataset. The RPD between the mean value for 2012 and the mean value for 1993-2011 was calculated. The ratio of the maximum value for 2012 and the maximum value for 1993-2011 was calculated. Acceptance criteria of RPD <50% or a ratio of the maximum values <1.5 were used to flag results for additional review.
5. Trend plots for each parameter at each station were generated to identify any outliers or unusual trends.

For all quality assurance tests, censored results were included in the analyses. The results were assigned a value of the reporting detection level. NH Gulfwatch procedures for aggregating congeners, testing for normality, and calculating descriptive statistics were followed (Chase et al., 2001).

Table 1: Target analytes for tissue analysis

METAL	C1-Fluorenes	**PESTICIDE**	Cl3(29)
ALUMINUM	C1-Naphthalenes	2,4'-DDD	Cl4(44)
CADMIUM	C1-Phenanthrenes/Anthracenes	2,4'-DDE	Cl4(50)
CHROMIUM	C2-Chrysenes	2,4'-DDT	Cl4(52)
COPPER	C2-Dibenzothiophenes	4,4'-DDD	Cl4(53)
IRON	C2-Fluoranthenes/Pyrenes	4,4'-DDE	Cl4(66)
LEAD	C2-Fluorenes	4,4'-DDT	Cl4(77)
MERCURY	C2-Naphthalenes	a-BHC	Cl5(87)
NICKEL	C2-Phenanthrenes/Anthracenes	aldrin	Cl5(95)
SILVER	C3-Chrysenes	dieldrin	Cl5(101)
ZINC	C3-Dibenzothiophenes	endosulfan I	Cl5(105)
PHYSICAL	C3-Fluorenes	endosulfan II	Cl5(118)
LIPID CONTENT	C3-Naphthalenes	endrin	Cl5(126)

PERCENT SOLIDS	C3-Phenanthrenes/Anthracenes	g-chlordane	Cl6(128)
PAH	C4-Chrysenes	heptachlor	Cl6(138)
Acenaphthene	C4-Naphthalenes	heptachlor epoxide	Cl6(153)
Acenaphthylene	C4-Phenanthrenes/Anthracenes	Hexachlorobenzene	Cl6(169)
Anthracene	Chrysene	Lindane	Cl7(170)
Benzo(a)anthracene	Dibenz(a,h)anthracene	methoxychlor	Cl7(180)
Benzo(a)pyrene	Dibenzothiophene	Mirex	Cl7(187)
Benzo(b)fluoranthene	Fluoranthene	trans-nonachlor	Cl8(195)
Benzo(e)pyrene	Fluorene	Total DDT	Cl9(206)
Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene	**PCB**	Cl9(208)
Benzo(k)fluoranthene	Naphthalene	Cl2(5)	Cl10(209)
Biphenyl	Perylene	Cl2(8)	SUM PCBS
C1-Chrysenes	Phenanthrene	Cl2(15)	
C1-Dibenzothiophenes	Pyrene	Cl3(18)	
C1-Fluoranthenes/Pyrenes	TOTAL PAHS	Cl3(28)	

Results

Quality Assurance Test #1

Laboratory duplicate analyses for metals were performed for NHDP COMP (mussels). Out of ten duplicate pairs, there was 1 (10%) which had a RPD value greater than 25%. This pair was considered acceptable because it had a RPD less than 50% and/or had measurements close to or below the method detection level.

Quality Assurance Test #2

There were no station replicates collected in 2012 due to budgetary constraints. Consequently this QA test was not completed.

Quality Assurance Test #3

There were no station replicates collected in 2012 due to budgetary constraints. Consequently this QA test was not completed.

Quality Assurance Test #4

The mean and maximum values for each parameter in the 2012 dataset were compared to the same statistics for the 1993-2011 databases. If the RPD between the means was greater than 50% or the maximum value in 2012 was more than 50% greater than the maximum value from 1993-2011 the parameter was flagged for additional review. The flagged results are listed in the table below.

2012 - Results Flagged for Additional Review

Parameter Type	Parameter	1993-2011 Results			2012 Results			RPD
		N	Mean	Max	N	Mean	Max	
PAH	ACENAPHTHYLENE	8	5.5	10.0	3	2.1	2.6	91%

Parameter Type	Parameter	1993-2011 Results			2012 Results			RPD
		N	Mean	Max	N	Mean	Max	
PAH	ANTHRACENE	63	6.4	25.3	3	2.6	3.1	86%
PAH	BENZO(A)ANTHRACENE	206	18.9	72.3	3	4.7	7.3	120%
PAH	BENZO(A)PYRENE	205	12.6	49.3	3	2.4	3.7	137%
PAH	BENZO(B)FLUORANTHENE	220	29.4	115.2	3	6.6	10.6	127%
PAH	BENZO(E)PYRENE	269	28.8	105.5	3	9.1	15.3	104%
PAH	BENZO(GHI)PERYLENE	120	14.4	41.0	3	2.7	4.0	136%
PAH	BENZO(K)FLUORANTHENE	241	21.5	91.5	3	6.8	11.2	104%
PAH	BIPHENYL	2	6.0	6.5	3	1.0	1.0	144%
PAH	C1-CHRYSENE	45	28.7	173.3	3	4.1	6.9	150%
PAH	C1-DIBENZOTHIOPHENE	3	15.3	31.7	3	1.3	1.4	168%
PAH	C1-FLUORANTHENE	41	29.1	168.2	3	11.9	18.7	84%
PAH	C1-FLUORENE	16	18.7	46.5	3	2.1	2.4	160%
PAH	C1-NAPHTHALENE	46	14.1	25.6	3	4.8	6.8	98%
PAH	C1-PHENANTHRENE	41	31.9	250.6	3	6.1	6.4	136%
PAH	C2-CHRYSENE	1	10.4	10.4	3	5.3	7.3	64%
PAH	C2-DIBENZOTHIOPHENE	8	22.9	72.6	1	5.9	5.9	119%
PAH	C2-NAPHTHALENE	32	15.7	83.2	3	4.1	5.7	117%
PAH	C2-PHENANTHRENE	53	62.5	797.2	3	7.6	8.7	157%
PAH	C3-DIBENZOTHIOPHENE	1	26.5	26.5	3	2.9	3.8	161%
PAH	C3-PHENANTHRENE	10	41.7	334.3	3	6.0	7.0	149%
PAH	C4-NAPHTHALENE	2	7.4	7.5	3	3.6	5.1	69%
PAH	C4-PHENANTHRENE	1	10.8	10.8	3	3.2	4.8	108%
PAH	CHRYSENE	279	28.1	143.1	3	8.0	11.7	112%
PAH	DIBENZO(AH)ANTHRACENE	9	7.2	11.5	2	0.5	0.6	174%
PAH	FLUORANTHENE	300	41.6	165.3	3	19.4	24.9	73%
PAH	FLUORENE	12	9.3	16.2	3	2.2	2.2	124%
PAH	INDENO(123CD)PYRENE	175	12.5	44.5	2	2.0	2.4	144%
PAH	NAPHTHALENE	101	11.3	33.9	3	3.7	4.1	101%
PAH	PERYLENE	188	14.0	55.3	3	5.9	9.1	82%
PAH	PHENANTHRENE	259	14.0	86.8	3	6.4	6.9	75%
PAH	PYRENE	307	45.1	240.4	3	20.8	31.1	74%
PAH	TOTAL PAHS	312	242.6	1127.8	3	130.9	172.8	60%
PCB	105 ;	145	2.8	17.6	2	0.9	0.9	107%
PCB	118 ;	260	5.1	13.6	3	2.4	2.8	74%
PCB	138 ;	302	7.8	21.7	3	3.4	4.2	78%
PCB	180 ;	53	1.6	3.1	3	0.6	0.8	86%
PCB	187 ;	240	3.9	13.6	3	2.0	2.6	64%
PESTICIDE	DIELDRIN	83	1.9	8.2	3	0.3	0.4	137%
PESTICIDE	G-CHLORDANE	19	2.2	5.7	1	0.1	0.1	184%
PESTICIDE	O,P'-DDD	96	3.3	18.3	3	0.6	0.7	140%
PESTICIDE	P,P'-DDD	214	5.5	39.3	3	1.3	1.7	122%
PESTICIDE	P,P'-DDE	310	6.0	19.8	3	3.5	3.7	51%
PESTICIDE	P,P'-DDT	33	3.1	14.9	1	0.3	0.3	168%
PESTICIDE	TOTAL DDT	312	11.2	76.4	3	5.5	6.1	69%
PESTICIDE	TRANSNONACHLOR	56	1.8	6.1	3	0.3	0.5	141%

The mean and maximum concentrations for all of the flagged PAHs, PCBs and pesticides were lower than in previous years. Therefore, although the RPD between the mean values exceeded the data quality objective, the results were within the range of concentrations previously observed for shellfish in New Hampshire tidal waters.

Quality Assurance Test #5

The results for each parameter at each station were plotted against year starting in 1993. The 2012 results were visually compared to the 1993-2011 trends to identify outliers or unusual results. There was one issue identified during the analysis:

1. The concentaration of indeno(123CD)pyrene at station MECC was detected but was flagged because it was less than the reporting limit. No action was needed, as the low concentration was already flagged by the laboratory as being <RL.

Quality Assurance Conclusions

The quality assurances tests flagged 33 PAHs, 5 PCBs and 8 pesticides as suspect because the RPD between the means of the 2012 data and the full dataset were greater than 50%; or the maximum values in 2012 were more than 50% greater than the maximum value from the full database. Adequate explanations were provided for these anomalous results. Therefore, all of the data from the 2012 Gulfwatch sampling in New Hampshire were considered valid.

Quality Assured Data

The laboratory results for the samples are provided in Appendix B. The data from 2012 have been incorporated into the DES Gulfwatch database.

Conclusions and Recommendations

Conclusions about the condition of the estuaries based on these data will be drawn in the next PREP Environmental Indicators Report.

References

Chase, M., S. Jones, P. Hennigar, J Sowles, G. Harding, K. Freeman, P. Wells, C Krahforst, R. Crawford, J. Pederson, and D. Taylor. 2001. *Gulfwatch: Monitoring Spatial and Temporal Patterns of Trace Metal and Organic Contaminants in the Gulf of Maine (1991-1997) with the Blue Mussel, Mytilis edulis L.*

Seed, R., 1968. *Factors influencing shell shape in the mussel* Mytilus edulis. J. Mar. Biol. Ass. U.K. 48: 561-584/

Sowles, J., R. Crawford, P. Hennigar, G. Harding, S. Jones, M.E. Chase, W. Robinson, J. Pederson, K. Coombs, D. Taylor, and K. Freeman, 1997. *Gulfwatch project standard*

procedures: field and laboratory Gulfwatch implementation period 1993-2001. Gulf of Maine Council on the Marine Environment, State Planning Office, Augusta, ME.

Appendix A: Sampling Summary Report for 2012

MEMORANDUM

TO: Dr. Stephen Jones, UNH
FROM: Matthew A. Wood, DES
RE: 2012 Gulfwatch Samples
DATE: October 05, 2012

The purpose of this memorandum is to document the sample collection activities for Gulfwatch 2012.

On October 4, 2012, DES managed the collection of mussel samples from three sites. These sites are summarized in the following table. In the table, the coordinates for the replicates are listed in the order of replicate number, where applicable. Maps showing the location of each site are provided in Appendix A.

Date / Time	Station	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Water Temperature (deg C)	Water Salinity (ppt)	Personnel
10/5/12 8:48	MECC – Clarks Cove, Kittery, ME	43.0772 43.0773	-70.7246 -70.7242	14.5	32.4	P. Trowbridge I. Trefray
10/5/12 9:10	NHHS - Hampton/ Seabrook Harbor, Hampton, NH	42.8975 42.8974 42.8974	-70.8165 -70.8165 -70.8163	15.1	29.6	M. Wood K. Svendsen O. David L. Loosigian
10/5/12 10:15	NHDP – Dover Point, Dover, NH	43.1197 43.1197 43.1196	-70.8272 -70.8271 -70.8271	15.5	27.0	M. Wood K. Svendsen O. David L. Loosigian

Sample collection and processing was conducted following NH Gulfwatch SOPs (Appendix B). Samples were processed and frozen at the DES Limnology Center within 8 hours of collection.

Physical data on the mussels were transferred from hard copy datasheets to Excel spreadsheets. Data entry was checked twice for transcription errors following DES protocols. The physical data for the samples is provided in Appendix C. The field data for the samples are provided in Appendix D. The original datasheets will be kept on file at DES. It should be noted that it was difficult to collect the three replicates of 60 mussels at all stations with the exception of NHDP – Dover Point. Only two replicates were collected at MECC – Clarks Cove, and only 20 mussels were collected for each of the replicates at NHHS - Hampton/ Seabrook Harbor (enough to comprise the COMP sample).

If you have any questions about this report, please contact me at (603) 271-8868 or Matthew.Wood@des.nh.gov

Sampling Summary Report for 2012: Appendix A

Maps of Sampling Sites

GULFWATCH STATION INFORMATION

GULFWATCH STATION INFORMATION

GULFWATCH STATION INFORMATION

Sampling Summary Report for 2012: Appendix B

NH Gulfwatch SOPs

Standard Operating Procedures for Gulfwatch

Revised: 9/13/2012

Prep Work SOP

1. Print and fill out field sheets
2. Print lab sheets (2 sets)
3. Print maps of stations and SOPs
4. Label bait bags/baskets.
5. Label jars (4 oz. jars for mussels, 12 oz. jars for clams or oysters).
   The labels will have three lines:
   - Line one should include "NH Gulfwatch" and the year.
   - Line two shoule include the species being collected.
   - Line three should be in **Bold** and include the station ID, "-", the replicate number followed by the letter N, "-", and the collection date in YYMMDD format. For example, NHDP replicate 1 collected on 9/02/11, the label would be "NHDP-1N-110902". For the composite sample, the replicate number should be replaced with "COMP". The destination of the sample (e.g., "Metals Lab", "Organics Archive", etc.) should follow the sample ID in parentheses. There will be one set of jars for organics analysis, which will be covered by aluminum foil, and another set of jars for metals analysis, which will be covered by plastic wrap. Place the jars back into the box in order. Use a mail merge to generate the labels as shown below.

   NH Gulfwatch 2011
   Mussel Tissue
   MECC-COMP-121004 (Metals Lab)

6. Weigh jars for organics analysis. Jars for metals analysis will be weighed during the shucking process. Use a scale to weigh the jars without lids. Record the value in the "Jar Weight" column of the appropriate lab data sheet. Note there are separate data sheets for metals and organics for each replicate. Make sure the weights of the jars for organics are recorded on the lab data sheets for organics.
7. Put field materials into coolers and distribute to team leaders. Use checklist.
8. Make sure that DES soaks the knives in advance of the shucking.
9. Make sure DHHS cleans the jars.
10. Check calibration of YSI-30 meters with 10,000 µS/cm standard.
11. Contact Portsmouth Naval Shipyard 2 weeks in advance. Select a field crew with valid US passports. Verify that the vehicle has registration and insurance information. Arrange for the Installation Restoration Manager to meet the crew at the gate. Have the IRM's number on the field paperwork.

Mussel Field Collection SOP

1. Navigate to station
2. In the general location of the station, identify 3 replicate mussel bed sites within a 50 m section of shoreline (low intertidal zone).
3. Complete field data sheet including measuring the latitude and longitude of each replicate site with a GPS unit.
4. Measure water temperature and salinity with YSI-30 meter and record values on field data sheet
5. Select the bait bags or plastic baskets which are pre-labeled with the site name and replicate number (e.g., "NHDP-1" = station NHDP, replicate #1).
6. Collect at least 60 mussels from each replicate site (must be 50-60 mm in length). Use the gauge or ruler to measure the mussels. Place the mussels from each replicate site in the correct bait bags or plastic basket.
7. Count out exactly 60 mussels from the bait bag or basket onto a clean surface (spread out a plastic garbage bag if needed), verifying that each mussel is not full of mud by trying to separate the two shells.
8. Return any extra mussels to the intertidal zone at the site
9. Collect wash water in a large basin.
10. Use a toothbrush and the wash water to clean the outside shell of attachments (seaweed or barnacles) for all 60 mussels collected, placing each mussel back into the correct bait bag or basket after it is cleaned. Do not pour all of the mussels into the cleaning basin. Dunk and clean each mussel separately.
11. Place the bait bags or baskets of clean mussels upright in the cooler on ice.
12. Verify that field sheet is complete and that the bait bags or baskets are correctly labeled.
13. Transport cooler to laboratory.

Clam / Oyster collection SOP

1. Navigate to station
2. In the general location of the station, identify 2 replicate sites 10 to 50 m apart.
3. Complete field data sheet including measuring the latitude and longitude of each replicate site with a GPS unit.
4. Measure water temperature and salinity and record it on field data sheet
5. Select the plastic baskets which are labeled with the site name and replicate number (e.g., NHDP-1, station NHDP, replicate #1).
6. Collect at least 50 shellfish from each replicate site (must be 50-100 mm in length for clams, 50-125 mm in length for oysters). Use the gauge or ruler to measure the shellfish. Place the shellfish from each replicate site in the correct bait bag or plastic basket.
7. Count out exactly 50 shellfish from the bait bag or basket onto a clean surface (spread out a plastic garbage bag if needed), verifying that each clam/oyster is not full of mud by trying to separate the two shells.
8. Collect wash water in a large basin.
9. Use a toothbrush and the wash water to clean the outside shell of the 50 clams/oysters collected, placing each clam/oyster back into the correct bait bag or basket after it is cleaned. Do not pour all of the clams/oysters into the cleaning basin. Dunk and clean each clam/oyster separately.
10. Place the bait bags or baskets of clean clams/oysters upright in the cooler on ice.
11. Verify that field sheet is complete and that the baskets are correctly labeled.
12. Transport cooler to laboratory.

Mussel Measurement SOP

1. Bring the coolers into the laboratory.
2. Set up measuring stations, each with a caliper, the lab data sheets for one station, the mussels from one station.
3. Assign two to three people to each measuring station.
4. Each team will take 12 mussels from replicate #1, 14 mussels from replicate #2, and 14 mussels from replicate #3 to make up the "COMP" sample. Randomize the mussels so that some mussels from each replicate are used for metals and organics. Place 40 mussels from the COMP sample into rows of 10 on the lab bench. The two rows will be for metals analysis and two rows will be for organics analysis. Use a piece of masking tape to label each row on the lab bench to alleviate confusion. There should be ~5 left over mussels in each bait bag or baskets. Leave the extra mussels in the bait bag or baskets and return the bait bags or baskets to the cooler.
5. Each team will measure the length, height and width of the mussels in the tray and record the information on the lab data sheet. Be sure to record the measurements of the mussels for metals and organics analysis on the correct sheets (there are separate sheets for metals and organics analysis). The mussels are in the same order on the lab bench as on the sheet. The top left mussel is number 1. The bottom left is 10. The top right is number 11. The bottom right is 20. The height and width (and later weight) measurements are done for mussels number 11 through 20. Record the length, height and width to the nearest tenth of a millimeter. Do not report values for cells that are filled in with gray.

Mussel Shucking SOP - **Organics**

1. Set up shucking stations for organics analysis. Each station will have two metal knives, a beaker of DI water and the corresponding jar (from the jars for organics analysis). One of the scales should be placed on a separate table so that the full jars can be weighed easily.
2. Assign two people to each shucking station and two other people to act as floaters and to help with weighing jars, sealing jars and storing jars.
3. Clean all of the metal knives in solvents. Put out 100 ml of **methanol**, **toluene**, and **hexane** in 150 ml beakers under the fume hood. Swish each metal knife in the 3 solutions (in order) three times. Clean the knives in this way before each new tray of mussels.
4. Open and scrape the meat from the mussels into the jar using the following procedure.
    a. Swish the knife tip in DI water.
    b. Select one of the mussels marked for organics analysis.
    c. Turn the mussel upside down so that the byssus is facing up.
    d. Tear off the byssus.
    e. Insert the tip of knife between the shells where the byssus was formerly and twist the knife to open the shell slightly.
    f. Shake the mussel over the waste bin for 10-20 seconds to remove water from the shell.
    g. Run the knife blade around the mussel between the two shells to cut the adductor muscle and then separate the two shells.
    h. Place the two shells on the table, meat side up.
    i. Scrape the meat out of one of the shells into the jar.
    j. Discard the empty shell into the waste bin.
    k. Scrape the meat from the second shell into the jar.
    l. Discard the empty shell.
    m. Swish the knife in DI water to clean it.
    n. If there are more mussels left on the tray for organics analysis, repeat steps b-m.
5. When all 20 mussels have been shucked, weigh the jar and record the value on the lab data sheet, cover the top with a piece of **aluminum foil** (dull side down), screw on the lid, and place the jar in the freezer. Then, clean the knives in the solvents under the hood using the same procedure from Step 3.

Mussel Shucking SOP - **Metals**

1. Set up shucking stations for metals analysis. Each station will have a scale, a waste bucket, DI water, one acid-washed plastic wedge and three acid-washed plastic knives.
2. Assign people to each station.
3. Clean all of the knives and wedges in **nitric acid** solution. Put out 100 ml of 4 N nitric acid in a 150 ml beaker under the fume hood. Swish each knife and wedge in the solution. Clean the knives and wedges in this way before each new batch of mussels.
4. Open and scrape the meat from the mussels #11 through #20 into the jar using the following procedure. Mussel #11 will be the mussel at the top of the right hand row for metals analysis. Mussel #20 will be the mussel at the bottom of the right hand row for metals analysis. Each person in the group does a different task. The person with the plastic wedge does steps c-i. Two people with plastic knives do steps j-m. The person with the scale and lab sheets does steps a and o.
    a. Tare the scale, then place the correct jar on the scale.
    b. Swish the knives in DI water.
    c. Select mussel #11 marked for metals analysis.
    d. Turn the mussel upside down so that the byssus is facing up.
    e. Tear off the byssus.
    f. Insert the tip of plastic wedge between the shells where the byssus was formerly and twist the plastic wedge to open the shell slightly.
    g. Shake the mussel over the waste bin for 10-20 seconds to remove some water from the shell.
    h. Run the plastic wedge or plastic knife around the mussel between the two shells to cut the adductor muscle and then separate the two shells.
    i. Place the two shells on the table, meat side up.
    j. Scrape the meat out of one of the shells into the jar.
    k. Discard the empty shell into the waste bin.
    l. Scrape the meat from the second shell into the jar.
    m. Discard the empty shell.
    n. Swish the knives in DI water to clean them.
    o. Record the total weight of the jar and the mussel meat on the lab data sheet in the location for mussel #11.
    p. Repeat steps for mussels #12 through #20. When complete, leave the jar on the scale and go to Step 5.
5. Open and scrape the meat from mussels #1 through #10 into the jar using the same procedure as for Step 4 except: (1) Weight does not need to be recorded after each mussel (step o), only at the end; (2) the person who recorded the weights should use a plastic knife to help with steps j-m.
6. When all 20 mussels from the tray have been shucked, weigh the jar (without the cap) and record the value on the lab data sheet, cover the top with a piece of **saran wrap**, screw on the lid, and place the jar in the freezer. Then, clean the knives in the nitric acid solution under the hood using the same procedure from Step 3.

Cleanup SOP

1. Wash all knives in hot water and soap.
2. Wash all DI containers.
3. Wash all tubs.
4. Discard shells and unused mussels.
5. Collect bait bags for storage at DES.
6. Return bottles, rulers and other equipment to lab.
7. Wipe down scales and counters.

Sampling Summary Report for 2012: Appendix C

Physical Data for Mussels

MECC 2012 (INDIGENOUS MUSSELS)					METALS		*calculated field	*Weight of jar and mussel meat	
Site	#	Length (mm)	#	Length (mm)	Height (mm)	Width (mm)	Wet weight (g)	Cumulative wet weight (g)*	Jar weight (g)
MECC-COMP	1	58.6	11	53.2	26.5	22.7	4.83	199.56	194.73
MECC-COMP	2	57.9	12	54.9	25.0	20.5	4.96	204.52	
MECC-COMP	3	58.0	13	59.3	32.4	23.8	6.91	211.43	
MECC-COMP	4	56.9	14	59.1	30.0	23.8	7.67	219.10	
MECC-COMP	5	53.1	15	58.4	31.0	24.5	7.05	226.15	
MECC-COMP	6	55.8	16	52.3	26.1	21.6	3.79	229.94	
MECC-COMP	7	52.8	17	56.2	28.4	24.6	6.76	236.70	
MECC-COMP	8	56.0	18	53.9	27.0	24.3	4.08	240.78	
MECC-COMP	9	53.0	19	58.6	30.2	24.9	7.31	248.09	
MECC-COMP	10	57.8	20	58.2	29.5	25.7	6.88	254.97	
1-20 total							123.21	317.94	

MECC 2012 (INDIGENOUS MUSSELS)					ORGANICS		*calculated field	*Weight of jar and mussel meat	
Site	#	Length (mm)		Length (mm)	Height (mm)	Width (mm)	Wet weight (g)	Cumulative wet weight (g)*	Jar weight (g)
MECC-COMP	1	58.8	11	59.8					194.76
MECC-COMP	2	57.4	12	57.7					
MECC-COMP	3	57.6	13	53.3					
MECC-COMP	4	54.3	14	51.8					
MECC-COMP	5	57.8	15	56.4					
MECC-COMP	6	58.5	16	57.6					
MECC-COMP	7	50.8	17	59.2					
MECC-COMP	8	52.4	18	57.5					
MECC-COMP	9	51.2	19	52.9					
MECC-COMP	10	56.5	20	56.0					
1-20 total							122.86	317.62	

NHDP 2012 (INDIGENOUS MUSSELS)					METALS		*calculated field	*Weight of jar and mussel meat	
Site	#	Length (mm)	#	Length (mm)	Height (mm)	Width (mm)	Wet weight (g)	Cumulative wet weight (g)*	Jar weight (g)
NHDP-COMP	1	52.9	11	53.7	24.9	22.0	4.09	198.60	194.51
NHDP-COMP	2	53.1	12	51.7	25.8	21.2	4.12	202.72	
NHDP-COMP	3	55.9	13	52.8	24.3	21.1	4.49	207.21	
NHDP-COMP	4	53.6	14	52.7	23.8	19.8	4.03	211.24	
NHDP-COMP	5	51.2	15	56.0	26.9	24.3	5.68	216.92	
NHDP-COMP	6	53.9	16	56.4	27.9	25.0	5.38	222.30	
NHDP-COMP	7	57.4	17	54.4	25.6	22.0	4.33	226.63	
NHDP-COMP	8	52.1	18	52.9	25.0	20.9	4.98	231.61	
NHDP-COMP	9	51.5	19	56.6	28.3	22.6	4.15	235.76	
NHDP-COMP	10	59.9	20	58.1	28.2	24.8	5.87	241.63	
1-20 total							93.68	288.19	

NHDP 2012 (INDIGENOUS MUSSELS)					ORGANICS		*calculated field	*Weight of jar and mussel meat	
Site	#	Length (mm)		Length (mm)	Height (mm)	Width (mm)	Wet weight (g)	Cumulative wet weight (g)*	Jar weight (g)
NHDP-COMP	1	53.8	11	55.8					194.61
NHDP-COMP	2	51.2	12	57.4					
NHDP-COMP	3	55.9	13	58.4					
NHDP-COMP	4	51.2	14	51.7					
NHDP-COMP	5	51.4	15	54.5					
NHDP-COMP	6	51.0	16	51.2					
NHDP-COMP	7	58.8	17	57.2					
NHDP-COMP	8	56.1	18	50.8					
NHDP-COMP	9	55.5	19	51.2					
NHDP-COMP	10	54.8	20	55.9					
1-20 total							100.54	295.15	

NHHS 2012 (INDIGENOUS MUSSELS)					METALS		*calculated field	*Weight of jar and mussel meat	
Site	#	Length (mm)	#	Length (mm)	Height (mm)	Width (mm)	Wet weight (g)	Cumulative wet weight (g)*	Jar weight (g)
NHHS-COMP	1	55.2	11	50.2	25.2	26.7	5.09	199.65	194.56
NHHS-COMP	2	57.4	12	50.3	27.7	26.3	6.89	206.54	
NHHS-COMP	3	52.7	13	53.9	31.2	23.2	8.00	214.54	
NHHS-COMP	4	52.6	14	55.1	27.8	25.8	6.49	221.03	
NHHS-COMP	5	51.3	15	50.1	25.5	25.2	5.28	226.31	
NHHS-COMP	6	51.6	16	51.3	27.4	23.1	6.08	232.39	
NHHS-COMP	7	51.6	17	53.4	26.2	26.3	6.52	238.91	
NHHS-COMP	8	51.6	18	55.2	24.0	30.3	7.39	246.30	
NHHS-COMP	9	51.8	19	58.2	28.6	27.4	6.45	252.75	
NHHS-COMP	10	53.1	20	53.9	28.7	29.5	7.69	260.44	
1-20 total							130.70	325.26	

NHHS 2012 (INDIGENOUS MUSSELS)					ORGANICS		*calculated field	*Weight of jar and mussel meat	
Site	#	Length (mm)		Length (mm)	Height (mm)	Width (mm)	Wet weight (g)	Cumulative wet weight (g)*	Jar weight (g)
NHHS-COMP	1	54.1	11	50.5					194.67
NHHS-COMP	2	50.8	12	51.1					
NHHS-COMP	3	58.5	13	53.8					
NHHS-COMP	4	50.4	14	50.2					
NHHS-COMP	5	51.8	15	52.0					
NHHS-COMP	6	50.3	16	53.3					
NHHS-COMP	7	52.4	17	53.3					
NHHS-COMP	8	51.2	18	51.1					
NHHS-COMP	9	56.8	19	52.1					
NHHS-COMP	10	53.7	20	51.7					
1-20 total							129.09	323.76	

NH Gulfwatch 2012 Sample Jar Data Summary			TARE WEIGHT		TOTAL WEIGHT		TISSUE WEIGHT		LENGTH	
Site	Site #	Jar label	ORGANICS	METALS	ORGANICS	METALS	ORGANICS	METALS	MIN	MAX
Indigenous Mussels										
Harbor, Maine	MECC-COMP	MECC-COMP-121004	194.76	194.73	317.62	317.94	122.86	123.21	50.80	59.80
New Hampshire	NHHS-COMP	NHHS-COMP-121004	194.67	194.56	323.76	325.26	129.09	130.70	50.10	58.50
New Hampshire	NHDP-COMP	NHDP-COMP-121004	194.61	194.51	295.15	288.19	100.54	93.68	50.80	59.90
Summary Statistics			Mean	Mean	Mean	Mean	Mean	Mean	Min	Max
Mussels			194.68	194.60	312.18	310.46	117.50	115.86	50.10	59.90

Appendix B: NH Gulfwatch Data for 2012

StationID	SampNo	StartDate	Medium	Category	ParmType	Parameter	ResultNumeric	ResultUnits
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	ALUMINUM	220.2	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	CADMIUM	2.0	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	CHROMIUM	1.6	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	COPPER	6.9	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	IRON	367.0	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	LEAD	2.9	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	MERCURY	0.2	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	NICKEL	1.1	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	SILVER	0.0	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	ZINC	113.5	MG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ACENAPHTHENE	4.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ACENAPHTHYLENE	< 2.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ANTHRACENE	< 2.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(A)ANTHRACENE	4.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(A)PYRENE	< 2.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(B)FLUORANTHENE	6.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(E)PYRENE	8.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(GHI)PERYLENE	3.1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(K)FLUORANTHENE	6.9	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BIPHENYL	< 1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-CHRYSENE	3.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-DIBENZOTHIOPHENE	< 1.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-FLUORANTHENE	11.0	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-FLUORENE	< 2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-NAPHTHALENE	4.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-PHENANTHRENE	5.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-CHRYSENE	4.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-DIBENZOTHIOPHENE	< 2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-FLUORANTHENE	5.1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-FLUORENE	< 2.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-NAPHTHALENE	3.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-PHENANTHRENE	6.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-CHRYSENE	< 1.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-DIBENZOTHIOPHENE	< 2.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-FLUORENE	< 2.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-NAPHTHALENE	3.9	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-PHENANTHRENE	5.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-CHRYSENE	< 1.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-NAPHTHALENE	< 2.9	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-PHENANTHRENE	< 2.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	CHRYSENE	7.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	DIBENZO(AH)ANTHRACENE	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	DIBENZOTHIOPHENE	< 2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	FLUORANTHENE	19.0	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	FLUORENE	< 2.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	INDENO(123CD)PYRENE	< 1.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	NAPHTHALENE	< 3.9	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PERYLENE	6.4	UG/KG-dw

StationID	SampNo	StartDate	Medium	Category	ParmType	Parameter	ResultNumeric	ResultUnits
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PHENANTHRENE	6.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PYRENE	20.9	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	TOTAL PAHS	130.0	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	101 ;	3.0	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	105 ;	0.9	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	118 ;	2.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	126 ;	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	128 ;	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	138 ;	4.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	15 ;	< 0.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	153 ;	7.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	169 ;	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	170 ;	< 0.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	18 ;	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	180 ;	0.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	187 ;	2.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	195 ;	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	206 ;	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	208 ;	< 0.1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	209 ;	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	28 ;	< 0.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	29 ;	< 0.1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	44 ;	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	5 ;	< 0.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	50 ;	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	52 ;	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	53 ;	< 0.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	66 ;	< 0.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	77 ;	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	8 ;	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	87 ;	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	95 ;	1.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	SUM PCBS	24.1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	A_BHC (ALPHA LINDANE)	< 0.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	A-ENDOSULFAN	< 0.7	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	ALDRIN	< 0.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	B-ENDOSULFAN	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	DIELDRIN	< 0.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	ENDRIN	< 0.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	G-CHLORDANE	< 0.1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEPTACHLOR	< 0.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEPTACHLOR EPOXIDE	< 0.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEXACHLOROBENZENE	< 0.8	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	LINDANE (G-HCH)	< 0.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	METHOXYCHLOR	< 1.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	MIREX	< 0.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDD	< 0.6	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDE	< 0.2	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDT	< 0.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDD	1.4	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDE	3.5	UG/KG-dw

StationID	SampNo	StartDate	Medium	Category	ParmType	Parameter	ResultNumeric	ResultUnits
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDT	< 1.1	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	TOTAL DDT	5.5	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	TRANSNONACHLOR	< 0.3	UG/KG-dw
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PHYSICAL	LIPID CONTENT	6.1	%
MECC	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PHYSICAL	PERCENT SOLIDS	14.4	%
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	ALUMINUM	191.9	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	ALUMINUM	162.8	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	CADMIUM	2.3	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	CADMIUM	2.5	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	CHROMIUM	2.0	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	CHROMIUM	2.0	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	COPPER	6.5	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	COPPER	6.5	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	IRON	349.5	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	IRON	279.5	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	LEAD	1.7	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	LEAD	1.5	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	MERCURY	0.3	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	MERCURY	0.3	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	NICKEL	1.4	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	NICKEL	1.4	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	SILVER	0.0	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	SILVER	0.1	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	ZINC	120.4	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	METAL	ZINC	123.3	MG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ACENAPHTHENE	7.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ACENAPHTHYLENE	< 2.6	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ANTHRACENE	< 3.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(A)ANTHRACENE	7.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(A)PYRENE	3.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(B)FLUORANTHENE	10.6	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(E)PYRENE	15.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(GHI)PERYLENE	4.0	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(K)FLUORANTHENE	11.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BIPHENYL	< 0.9	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-CHRYSENE	6.9	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-DIBENZOTHIOPHENE	< 1.4	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-FLUORANTHENE	18.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-FLUORENE	< 1.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-NAPHTHALENE	3.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-PHENANTHRENE	6.0	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-CHRYSENE	7.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-DIBENZOTHIOPHENE	5.9	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-FLUORANTHENE	8.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-FLUORENE	< 2.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-NAPHTHALENE	< 2.9	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-PHENANTHRENE	8.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-CHRYSENE	< 1.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-DIBENZOTHIOPHENE	3.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-FLUORENE	< 2.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-NAPHTHALENE	4.0	UG/KG-dw

StationID	SampNo	StartDate	Medium	Category	ParmType	Parameter	ResultNumeric	ResultUnits
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-PHENANTHRENE	7.0	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-CHRYSENE	< 1.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-NAPHTHALENE	< 2.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-PHENANTHRENE	4.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	CHRYSENE	11.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	DIBENZO(AH)ANTHRACENE	< 0.6	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	DIBENZOTHIOPHENE	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	FLUORANTHENE	24.9	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	FLUORENE	< 2.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	INDENO(123CD)PYRENE	< 2.4	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	NAPHTHALENE	< 3.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PERYLENE	9.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PHENANTHRENE	5.6	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PYRENE	31.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	TOTAL PAHS	172.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	101 ;	2.4	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	105 ;	0.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	118 ;	2.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	126 ;	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	128 ;	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	138 ;	3.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	15 ;	< 0.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	153 ;	6.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	169 ;	< 0.4	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	170 ;	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	18 ;	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	180 ;	< 0.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	187 ;	2.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	195 ;	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	206 ;	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	208 ;	< 0.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	209 ;	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	28 ;	< 0.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	29 ;	< 0.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	44 ;	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	5 ;	< 0.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	50 ;	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	52 ;	< 0.4	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	53 ;	< 0.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	66 ;	< 0.6	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	77 ;	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	8 ;	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	87 ;	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	95 ;	1.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	SUM PCBS	21.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	A_BHC (ALPHA LINDANE)	< 0.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	A-ENDOSULFAN	< 0.7	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	ALDRIN	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	B-ENDOSULFAN	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	DIELDRIN	< 0.3	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	ENDRIN	< 0.6	UG/KG-dw

StationID	SampNo	StartDate	Medium	Category	ParmType	Parameter	ResultNumeric	ResultUnits
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	G-CHLORDANE	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEPTACHLOR	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEPTACHLOR EPOXIDE	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEXACHLOROBENZENE	< 0.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	LINDANE (G-HCH)	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	METHOXYCHLOR	< 1.4	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	MIREX	< 0.6	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDD	< 0.4	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDE	< 0.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDT	< 0.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDD	0.9	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDE	3.5	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDT	< 1.1	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	TOTAL DDT	4.8	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	TRANSNONACHLOR	< 0.2	UG/KG-dw
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PHYSICAL	LIPID CONTENT	5.9	%
NHDP	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PHYSICAL	PERCENT SOLIDS	13.4	%
NHDP	COMP	10/4/2012	MUSSEL TISSUE	LAB DUPLICATE	PHYSICAL	PERCENT SOLIDS	13.4	%
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	ALUMINUM	257.2	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	CADMIUM	2.2	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	CHROMIUM	1.1	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	COPPER	5.9	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	IRON	317.7	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	LEAD	1.9	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	MERCURY	0.1	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	NICKEL	0.8	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	SILVER	0.0	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	METAL	ZINC	96.7	MG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ACENAPHTHENE	3.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ACENAPHTHYLENE	< 1.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	ANTHRACENE	< 1.8	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(A)ANTHRACENE	< 2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(A)PYRENE	< 0.9	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(B)FLUORANTHENE	2.6	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(E)PYRENE	3.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(GHI)PERYLENE	< 1.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BENZO(K)FLUORANTHENE	< 2.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	BIPHENYL	< 1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-CHRYSENE	< 1.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-DIBENZOTHIOPHENE	< 1.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-FLUORANTHENE	6.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-FLUORENE	2.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-NAPHTHALENE	6.8	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C1-PHENANTHRENE	6.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-CHRYSENE	4.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-DIBENZOTHIOPHENE	< 1.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-FLUORANTHENE	2.9	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-FLUORENE	4.0	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-NAPHTHALENE	5.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C2-PHENANTHRENE	7.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-CHRYSENE	< 1.3	UG/KG-dw

StationID	SampNo	StartDate	Medium	Category	ParmType	Parameter	ResultNumeric	ResultUnits
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-DIBENZOTHIOPHENE	< 2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-FLUORENE	< 1.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-NAPHTHALENE	6.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C3-PHENANTHRENE	5.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-CHRYSENE	< 1.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-NAPHTHALENE	5.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	C4-PHENANTHRENE	< 2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	CHRYSENE	4.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	DIBENZO(AH)ANTHRACENE	< 1.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	DIBENZOTHIOPHENE	< 0.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	FLUORANTHENE	14.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	FLUORENE	< 2.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	INDENO(123CD)PYRENE	< 0.8	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	NAPHTHALENE	4.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PERYLENE	< 2.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PHENANTHRENE	6.9	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	PYRENE	10.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PAH	TOTAL PAHS	90.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	101 ;	1.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	105 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	118 ;	1.6	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	126 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	128 ;	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	138 ;	2.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	15 ;	< 0.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	153 ;	3.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	169 ;	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	170 ;	< 0.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	18 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	180 ;	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	187 ;	1.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	195 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	206 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	208 ;	< 0.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	209 ;	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	28 ;	< 0.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	29 ;	< 0.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	44 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	5 ;	< 0.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	50 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	52 ;	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	53 ;	< 0.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	66 ;	0.6	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	77 ;	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	8 ;	< 0.2	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	87 ;	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	95 ;	0.8	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PCB	SUM PCBS	12.0	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	A_BHC (ALPHA LINDANE)	< 0.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	A-ENDOSULFAN	< 0.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	ALDRIN	< 0.4	UG/KG-dw

StationID	SampNo	StartDate	Medium	Category	ParmType	Parameter	ResultNumeric	ResultUnits
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	B-ENDOSULFAN	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	DIELDRIN	< 0.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	ENDRIN	< 0.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	G-CHLORDANE	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEPTACHLOR	< 0.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEPTACHLOR EPOXIDE	< 0.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	HEXACHLOROBENZENE	< 0.6	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	LINDANE (G-HCH)	< 0.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	METHOXYCHLOR	< 1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	MIREX	< 0.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDD	0.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDE	< 0.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	O,P'-DDT	< 0.4	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDD	1.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDE	3.7	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	P,P'-DDT	< 0.3	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	TOTAL DDT	6.1	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PESTICIDE	TRANSNONACHLOR	< 0.5	UG/KG-dw
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PHYSICAL	LIPID CONTENT	9.2	%
NHHS	COMP	10/4/2012	MUSSEL TISSUE	ROUTINE SAMPLE	PHYSICAL	PERCENT SOLIDS	16.0	%