

**The Continuing State Assessment of the Environmental Impacts of
Construction and Operation of the Hart-Miller Island
Containment Facility**

Project II

**SEDIMENTARY ENVIRONMENT
THIRTY-FIRST YEAR DATA REPORT
(September 2012 - August 2013)**

Part 1: Sedimentary Environment
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INTRODUCTION

This report partially fulfills the requirements of a contract with the State of Maryland to assess the environmental impacts of construction and operation of the Hart-Miller Island Confined Disposal Facility (HMI). The reported data were collected under the Sedimentary Environment Project (Project II) of that contract. One of the primary objectives of the project was to identify the sedimentological and geochemical conditions of the near-surface sediment column in the vicinity of the containment facility. The data presented in this report represents the 31st year of the continuous monitoring of the sedimentary environment in the vicinity of the HMI Facility. This year also represents the second year of post-closure monitoring phase. HMI stopped accepting dredged material after December 31, 2009 and facility operations shifted to dewatering and long-term crust management in the North Cell in preparation for environmental restoration activities.

METHODOLOGY

FIELD METHODS

The information presented in this report is based on observations and textural and chemical analyses of surficial sediment samples collected at 43 stations around HMI during two sampling cruises aboard the *R/V Kerhin*. The first cruise (Cruise 65) took place on September 10, 2012, and the second (Cruise 66), on April 2, 2013. Figure 2-1 presents a map of the sampling stations.

Sampling stations were located in the field by means of a Leica Model MX412B differential global positioning system (GPS) with a built-in beacon receiver. The repeatability of the navigation system, that is, the ability to return to a location at which a navigation fix has previously been obtained, is reported to be between 5-10 m (16-33 ft) (Rick Younger, Captain of *RV Kerhin*, per. comm.). Table 2-1 lists the target geographic coordinates (latitude and longitude, North American Datum of 1983 [NAD83]) and the actual geographic coordinates of Year 31 sample locations.

Using a dip-galvanized Petersen sampler (maximum depth of penetration = 38 centimeters or 15 inches), crew members collected undisturbed samples, or grabs, of surficial sediments at the 43 sites for both sampling cruises.

At 39 stations, a single grab sample was collected, described lithologically, and representative sample taken of the grab. Triplicate grab samples were collected at the remaining four stations (MDE-2, MDE-7, MDE-9 and MDE-30) and, likewise, described and subsampled.

Triplicate samples are identified by 'a, b, or c' after the station number. MGS analyzed each sample for grain size composition, a suite of trace metals, and total nitrogen, carbon and

sulfur. During the September cruise, a second subsample was taken from each grab at all stations and analyzed by the Chesapeake Biological Laboratory (CBL) for a different suite of trace metals. Tables 2-7 and 2-12 contain the field descriptions of grab samples collected in September 2012 and April 2013, respectively.

Using plastic scoops rinsed with deionized water, the crew took sediment sub-samples from below the flocculent layer, usually several centimeters from the top, and away from the sides of the sampler to avoid possible contamination by the sampler itself. MGS's sub-samples were placed in 18-oz Whirl-PakTM bags and refrigerated at 4°C until they were processed in the laboratory. CBL's splits were handled in a slightly different manner: their splits included the flocculent layer (floc) and were frozen instead of refrigerated.

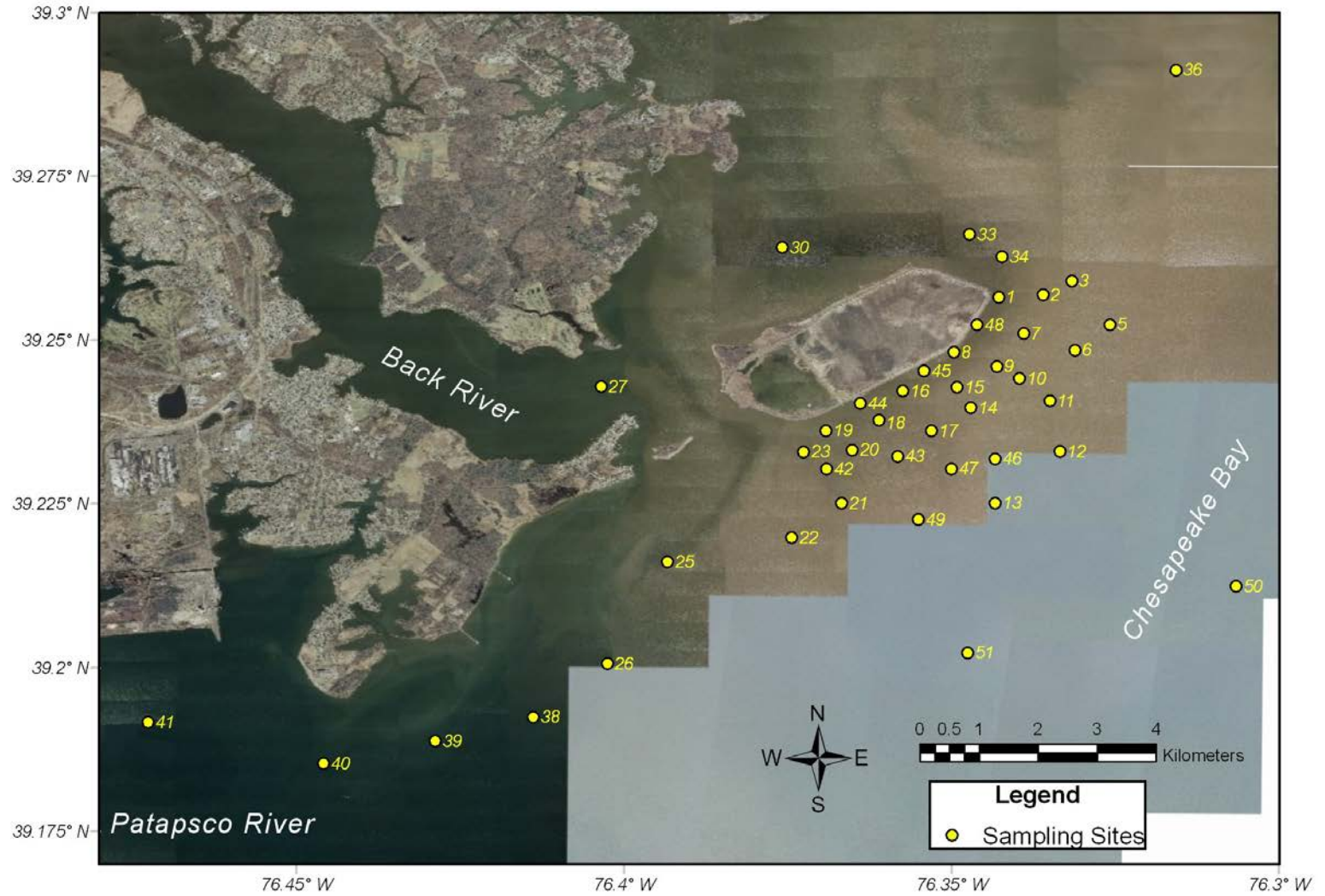


Figure 2-1. The Hart-Miller Island Containment Facility and vicinity with locations of the sediment stations sampled during Year 31 monitoring.

Table 2-1. Target and actual geographic coordinates (NAD 83) of stations sampled during Year 31 monitoring.

Station	Target coordinates (degrees and decimal minutes)		Actual coordinates September 10, 2012 (degrees and decimal minutes)		Actual coordinates April 2, 2013 (degrees and decimal minutes)	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
MDE-1	39° 15.395'	-76° 20.568'	39° 15.399'	-76° 20.565'	39° 15.399'	-76° 20.572'
MDE-2	39° 15.415'	-76° 20.164'	39° 15.419'	-76° 20.157'	39° 15.419'	-76° 20.172'
MDE-3	39° 15.544'	-76° 19.903'	39° 15.551'	-76° 19.899'	39° 15.547'	-76° 19.912'
MDE-5	39° 15.143'	-76° 19.552'	39° 15.146'	-76° 19.549'	39° 15.149'	-76° 19.547'
MDE-6	39° 14.910'	-76° 19.869'	39° 14.910'	-76° 19.862'	39° 14.904'	-76° 19.868'
MDE-7	39° 15.062'	-76° 20.341'	39° 15.065'	-76° 20.340'	39° 15.054'	-76° 20.343'
MDE-8	39° 14.890'	-76° 20.981'	39° 14.898'	-76° 20.972'	39° 14.893'	-76° 20.977'
MDE-9	39° 14.762'	-76° 20.584'	39° 14.765'	-76° 20.586'	39° 14.756'	-76° 20.589'
MDE-10	39° 14.651'	-76° 20.377'	39° 14.654'	-76° 20.376'	39° 14.652'	-76° 20.375'
MDE-11	39° 14.443'	-76° 20.102'	39° 14.446'	-76° 20.097'	39° 14.440'	-76° 20.099'
MDE-12	39° 13.980'	-76° 20.011'	39° 13.986'	-76° 20.017'	39° 13.988'	-76° 20.017'
MDE-13	39° 13.510'	-76° 20.603'	39° 13.518'	-76° 20.601'	39° 13.514'	-76° 20.604'
MDE-14	39° 14.380'	-76° 20.824'	39° 14.382'	-76° 20.823'	39° 14.380'	-76° 20.823'
MDE-15	39° 14.569'	-76° 20.953'	39° 14.564'	-76° 20.952'	39° 14.564'	-76° 20.941'
MDE-16	39° 14.537'	-76° 21.449'	39° 14.539'	-76° 21.448'	39° 14.539'	-76° 21.443'
MDE-17	39° 14.169'	-76° 21.186'	39° 14.166'	-76° 21.182'	39° 14.172'	-76° 21.190'
MDE-18	39° 14.270'	-76° 21.668'	39° 14.270'	-76° 21.672'	39° 14.264'	-76° 21.668'
MDE-19	39° 14.173'	-76° 22.151'	39° 14.173'	-76° 22.145'	39° 14.175'	-76° 22.143'
MDE-20	39° 13.995'	-76° 21.913'	39° 13.997'	-76° 21.906'	39° 13.993'	-76° 21.912'
MDE-21	39° 13.507'	-76° 22.007'	39° 13.508'	-76° 22.002'	39° 13.507'	-76° 22.005'
MDE-22	39° 13.193'	-76° 22.466'	39° 13.194'	-76° 22.461'	39° 13.193'	-76° 22.464'

Station	Target coordinates (degrees and decimal minutes)		Actual coordinates September 10, 2012 (degrees and decimal minutes)		Actual coordinates April 2, 2013 (degrees and decimal minutes)	
	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
MDE-23	39° 13.979'	-76° 22.358'	39° 13.983'	-76° 22.362'	39° 13.984'	-76° 22.360'
MDE-25	39° 12.970'	-76° 23.604'	39° 12.972'	-76° 23.601'	39° 12.976'	-76° 23.604'
MDE-26	39° 12.038'	-76° 24.154'	39° 12.040'	-76° 24.153'	39° 12.042'	-76° 24.143'
MDE-27	39° 14.577'	-76° 24.211'	39° 14.581'	-76° 24.217'	39° 14.577'	-76° 24.218'
MDE-30	39° 15.850'	-76° 22.553'	39° 15.852'	-76° 22.556'	39° 15.849'	-76° 22.559'
MDE-33	39° 15.970'	-76° 20.837'	39° 15.975'	-76° 20.837'	39° 15.978'	-76° 20.843'
MDE-34	39° 15.765'	-76° 20.539'	39° 15.771'	-76° 20.538'	39° 15.766'	-76° 20.531'
MDE-36	39° 17.477'	-76° 18.948'	39° 17.464'	-76° 18.957'	39° 17.476'	-76° 18.937'
MDE-38	39° 11.550'	-76° 24.830'	39° 11.551'	-76° 24.823'	39° 11.554'	-76° 24.820'
MDE-39	39° 11.330'	-76° 25.730'	39° 11.325'	-76° 25.730'	39° 11.330'	-76° 25.723'
MDE-40	39° 11.125'	-76° 26.750'	39° 11.122'	-76° 26.759'	39° 11.119'	-76° 26.742'
MDE-41	39° 11.502'	-76° 28.358'	39° 11.506'	-76° 28.356'	39° 11.508'	-76° 28.364'
MDE-42	39° 13.823'	-76° 22.143'	39° 13.824'	-76° 22.144'	39° 13.826'	-76° 22.137'
MDE-43	39° 13.939'	-76° 21.492'	39° 13.940'	-76° 21.490'	39° 13.936'	-76° 21.490'
MDE-44	39° 14.423'	-76° 21.838'	39° 14.424'	-76° 21.834'	39° 14.420'	-76° 21.831'
MDE-45	39° 14.719'	-76° 21.254'	39° 14.720'	-76° 21.248'	39° 14.724'	-76° 21.239'
MDE-46	39° 13.916'	-76° 20.602'	39° 13.916'	-76° 20.602'	39° 13.909'	-76° 20.599'
MDE-47	39° 13.823'	-76° 21.003'	39° 13.824'	-76° 21.003'	39° 13.827'	-76° 21.008'
MDE-48	39° 15.142'	-76° 20.767'	39° 15.144'	-76° 20.764'	39° 15.143'	-76° 20.763'
MDE-49	39° 13.357'	-76° 21.304'	39° 13.359'	-76° 21.303'	39° 13.343'	-76° 21.297'
MDE-50	39° 12.748'	-76° 18.395'	39° 12.749'	-76° 18.386'	39° 12.752'	-76° 18.387'
MDE-51	39° 12.139'	-76° 20.852'	39° 12.126'	-76° 20.853'	39° 12.138'	-76° 20.849'

LABORATORY PROCEDURES

Textural Analysis

In the laboratory, subsamples from the surficial grabs were analyzed for water content and grain size composition (sand-silt-clay content).

Water content was calculated as the percentage of the water weight to the total weight of the wet sediment:

$$\%Water = \frac{W_w}{W_t} * 100 \quad \text{Equation 1}$$

where W_w = weight of water (g)
 W_t = weight of wet sediment (g).

Water weight was determined by weighing approximately 25 grams of the wet sample, drying the sediment at 65°C, and reweighing it. The difference between total wet weight (W_t) and dry weight equals water weight (W_w).

Bulk density (ρ_B) is calculated from water content utilizing equation 2 by assuming an average grain density (ρ_s) of 2.72 g/cm³ and saturation of voids with water of density $\rho_w = 1.0$ g/cm³. This method was adopted from the work of Bennett and Lambert (1971):

$$\rho_B = \frac{W_t}{W_d / 2.72 + W_w} \quad \text{Equation 2}$$

where W_d is the weight of dry sediment.

The relative proportions of sand, silt, and clay were determined using the sedimentological procedures described in Kerhin and others (1988). The sediment samples were pre-treated with hydrochloric acid and hydrogen peroxide to remove carbonate and organic matter, respectively. Then the samples were wet sieved through a 62- μ m mesh to separate the sand from the mud (silt plus clay) fraction. In this study, grain size is defined using the Wentworth size nomenclature (Table 2-2). The finer fraction was analyzed using the pipette method to determine the silt and clay components (Carver, 1971; Folk, 1974). Each fraction was weighed; percent sand, silt, and clay were determined; and the sediments were categorized according to Shepard's (1954) nomenclature (Fig. 2-2) and Pejrup's (1988) classification (Fig. 2-3). The results of textural analyses for surficial samples collected in September 2011, and April 2012 are presented in the appendices in Tables 2-8 and 2-13, respectively.

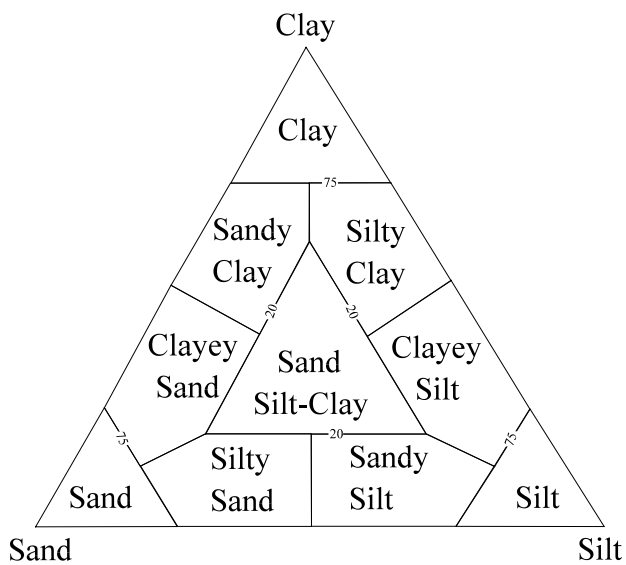


Figure 2-2. Shepard's (1954) classification of sediment types

PEJRUP'S DIAGRAM

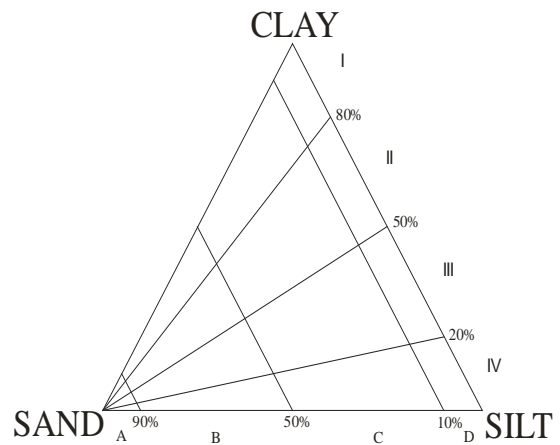


Figure 2-3. Diagram showing Pejrup's (1988) classification of sediment type

Table 2-2. Wentworth size nomenclature (from Folk, 1974).

Diameter (mm)	Phi (ϕ)	Wentworth size class
Gravel		
> 2.00	< -1.0	gravel
Sand		
1.00 to 2.00	0.0 to -1.0	very coarse sand
0.50 to 1.00	1.0 to 0.0	coarse sand
0.25 to 0.50	2.0 to 1.0	medium sand
0.125 to 0.25	3.0 to 2.0	fine sand
0.0625 to 0.125	4.0 to 3.0	very fine sand
Mud		
0.0039 to 0.0625	8.0 to 4.0	silt
< 0.0039	> 8.0	clay

Chemical Analysis

Target Metals, Total Phosphorus and Ancillary Elements Analyses

Sediment solids were analyzed for eight metals - cadmium (Cd), chromium (Cr), copper (Cu), iron (Fe), manganese (Mn), nickel (Ni), lead (Pb) and zinc (Zn). These metals are the target metals of concern for this study and are particularly useful in interpreting geochemical trends (see Sinex and Helz, 1981; Kerhin et al., 1982). Except for Mn, these metals are included in the list of chemicals of concern by the EPA Chesapeake Bay Program (EPA, 2000).

Sediment samples were analyzed in separate sample batches (January, 2013 and June, 2013) based on sampling cruise (#65 and #66) by Activation Laboratories LLC (Actlabs). The sediments were analyzed for the eight target metals as well as total phosphorus (P) and 40 additional elements (ancillary elements). The elements were determined using a combination of techniques to achieve total elemental concentrations. The samples were analyzed using a “near total four acid digestion” followed by analysis of the digestate on an Inductively Coupled Argon Plasma unit (ICAP). Elements not totally recovered by this method were determined using Instrumental Neutron Activation Analyses (INAA) (Table 2-3).

To insure proper QA/QC, standard reference materials (SRMs) and replicates were included run for every eight to 10 samples. The standard reference materials used were from the National Institute of Standards and Technology (NIST): SRM #2702 - Estuarine Sediment; and SRM #1646a - Estuarine Sediment; and the National Research Council of Canada (NRCC): SRM PACS-2 - Marine Sediment. The results of the replicate analyses of the SRMs from each analysis batch were combined, and the average and standard deviation for each element were calculated and compared to the certified value, if available. Those results are presented in Tables 2-4 and 2-5. Both the accuracy and precision of the analyses for most elements are in good agreement with the SRMs, with recoveries between 95% and 105%. Those elements having the poorest agreement were near the detection limit of Actlabs methods (e.g., Cd). Concentrations of the target metals, P and ancillary elements for the surficial samples are reported in Appendix 2-1 (September 10, 2012) and Appendix 2-2 (April 2, 2013).

Table 2-3. Elements (Analytes) that are reported for this study include the eight target metals of concern (shaded) and 40 additional elements analyzed by Actlabs and 2 others by MGS (N and C). Sulfur was analyzed by both MGS and Actlabs using different methods. Methods abbreviations: High Temp. Combustion-GC: High Temperature combustion, following by Gas Chromatography; TD-ICP: Total Digestion followed by Inductively Coupled Plasma Spectrometry; INAA: Instrumental Neutron Activation Analysis. Detection limits for each element are reported as method detection limit.

Symbol	Element	Unit	Detection Limit	Analysis Method	Analysis Laboratory
N	Nitrogen	%	0.001	High Temp. Combustion-GC	MGS
C	Carbon	%	0.001	High Temp. Combustion-GC	MGS
P	Phosphorus	%	0.001	TD-ICP	Actlabs
S	Sulfur	%	0.001/0.01	High Temp. Combustion-GC/TD-ICP	MGS/Actlabs
Cd	Cadmium	ppm	0.3	TD-ICP	Actlabs
Cr	Chromium	ppm	2	INAA	Actlabs
Cu	Copper	ppm	1	TD-ICP	Actlabs
Fe	Iron	%	0.01	INAA	Actlabs
Mn	Manganese	ppm	1	TD-ICP	Actlabs
Ni	Nickel	ppm	1	INAA / TD-ICP	Actlabs
Pb	Lead	ppm	3	TD-ICP	Actlabs
Zn	Zinc	ppm	1	INAA / TD-ICP	Actlabs
Ag	Silver	ppm	0.3	INAA / TD-ICP	Actlabs
Al	Aluminum	%	0.01	TD-ICP	Actlabs
As	Arsenic	ppm	0.5	INAA	Actlabs
Au	Gold	ppb	2	INAA	Actlabs
Ba	Barium	ppm	50	INAA	Actlabs
Be	Beryllium	ppm	1	TD-ICP	Actlabs
Bi	Bismuth	ppm	2	TD-ICP	Actlabs
Br	Bromine	ppm	0.5	INAA	Actlabs
Ca	Calcium	%	0.01	TD-ICP	Actlabs
Ce	Cerium	ppm	3	INAA	Actlabs
Co	Cobalt	ppm	1	INAA	Actlabs
Cs	Cesium	ppm	1	INAA	Actlabs
Eu	Europium	ppm	0.2	INAA	Actlabs
Hf	Hafnium	ppm	1	INAA	Actlabs
Hg	Mercury	ppm	1	INAA	Actlabs
Ir	Iridium	ppb	5	INAA	Actlabs
K	Potassium	%	0.01	TD-ICP	Actlabs
La	Lanthanum	ppm	0.5	INAA	Actlabs
Li	Lithium	ppm	1	TD-ICP	Actlabs
Lu	Lutetium	ppm	0.05	INAA	Actlabs
Mg	Magnesium	%	0.01	TD-ICP	Actlabs
Mo	Molybdenum	ppm	1	TD-ICP	Actlabs
Na	Sodium	%	0.01	INAA	Actlabs
Nd	Neodymium	ppm	5	INAA	Actlabs
Rb	Rubidium	ppm	15	INAA	Actlabs

Symbol	Element	Unit	Detection Limit	Analysis Method	Analysis Laboratory
Sb	Antimony	ppm	0.1	INAA	Actlabs
Sc	Scandium	ppm	0.1	INAA	Actlabs
Se	Selenium	ppm	3	INAA	Actlabs
Sm	Samarium	ppm	0.1	INAA	Actlabs
Sn	Tin	%	0.01	INAA	Actlabs
Sr	Strontium	ppm	1	TD-ICP	Actlabs
Ta	Tantatum	ppm	0.5	INAA	Actlabs
Tb	Terbium	ppm	0.5	INAA	Actlabs
Th	Thorium	ppm	0.2	INAA	Actlabs
Ti	Titanium	%	0.01	TD-ICP	Actlabs
U	Uranium	ppm	0.5	INAA	Actlabs
V	Vanadium	ppm	2	TD-ICP	Actlabs
W	Tungsten	ppm	1	INAA	Actlabs
Y	Yttrium	ppm	1	TD-ICP	Actlabs
Yb	Ytterbium	ppm	0.2	INAA	Actlabs

Table 2-4. Actlabs' results of target metal and phosphorous analyses of standard reference materials (SRMs) from the U.S. National Institute of Standards and Technology (NIST) (#2702 - Estuarine Sediment; #1646a - Estuarine Sediment) and the National Research Council of Canada (NRCC) (PACS-2 - Marine Sediment) compared to the certified or known values. Actlabs' values were obtained by averaging the results of all SRM analyses (N= # of analyses) run with the unknowns (sediment samples from both cruises).

Analyte	NIST SRM 1646a (Estuarine Sediment)			NRCC PACS-2 (Marine Sediment)			NIST SRM 2702 (Estuarine Sediment)					
	Certified values ±Std dev	Actlabs Results, N=7			Certified values ±Std dev	Actlabs Results, N=6			Certified values ±Std dev	Actlabs Results, N=5		
		Average	Std dev	% Recovery		Average	Std dev	% Recovery		Average	Std dev	% Recovery
Phosphorus (P) %	0.027 ±0.001	0.026	0.001	97.9	0.096 ±0.004	0.093	0.003	96.9	0.155 ±0.007	0.135	0.006	87.0
Cadmium (Cd) ppm	0.148 ±0.007	< 0.3			2.11 ±0.15	2.18	0.15	103.5	0.82 ±0.01	≤0.74		
Chromium (Cr) ppm	40.9 ±1.9	40.4	4.4	98.8	90.7 ±4.6	93.5	8.3	103.1	352.0 ±22.0	317	8	90.0
Copper (Cu) ppm	10.01 ±0.34	11.1	0.9	111.3	310 ±12	321	13	103.6	117.7 ±5.6	114.6	6.5	97.4
Iron (Fe) %	2.008 ±0.039	2.13	0.14	106.1	4.09 ±0.06	4.15	0.31	101.4	7.91 ±0.24	7.70	0.50	97.3
Manganese (Mn) ppm	234.5 ±2.8	263.7	6.6	112.5	440 ±19	481	15	109.3	1757 ±58	1810	84	103.0
Nickel (Ni) ppm		24	1.2		39.5 ±2.3	41.8	1.2	105.9	75.4 ±1.5	77.2	3.6	102.4
Lead (Pb) ppm	11.7 ±1.2	10.3	1.4	87.9	183 ±8	174	6	95.3	133 ±1	120	7	89.9
Zinc (Zn) ppm	48.9 ±1.6	51	1	103.7	364 ±23	374	9	102.7	485 ±4	473	17	97.4

Table 2-5. Actlabs' results of ancillary element analyses of SRMs from NIST (#2702 - Estuarine Sediment; #1646a - Estuarine Sediment) and NRCC (PACS-2 - Marine Sediment) compared to the certified or known values. Actlabs' values were obtained by averaging the results of all SRM analyses (N=# of analyses) run with the unknowns (sediment samples from Cruises 65 and 66).

Analyte	NIST SRM 1646a (Estuarine Sediment)			NRCC PACS-2 (Marine Sediment)			NIST SRM 2702 (Estuarine Sediment)		
	Certified value ±Std dev	Actlabs Results, N=7		Certified value ±Std dev	Actlabs Results, N=6		Certified value ±Std dev	Actlabs Results, N=5	
		Average ±Std dev	% recovery		Average ±Std dev	% recovery		Average ±Std dev	% recovery
Silver (Ag) ppm		≤0.3		1.22±0.14	1.37±0.23	112.0	0.622±0.078	1.3±0.1	190.3
Gold (Au) ppb		< 2			≤5.7			< 2	
Aluminum (Al) %	2.297±0.018	2.369±0.100	103.1	6.62±0.32	6.23±0.39	94.1	8.41±0.22	7.94±0.46	94.4
Arsenic (As) ppm	6.23±0.21	7.8±1.1	125.7	26.2±1.5	27.2±2.6	103.7	45.3±1.8	47.0±3.8	103.8
Barium (Ba) ppm		213±153			916±177		397.4±3.2	393±140	99.0
Beryllium (Be) ppm		< 1		1±0.2	≤1		3	3±0	100.0
Bismuth (Bi) ppm		< 2			≤2			≤3.2	
Bromide (Br) ppm		47.4±6.1			218±31			56.5±8.3	
Calcium (Ca) %	0.519±0.020	0.58±0.02	112.6	1.96±0.18	2.08±0.03	106.3	0.343±0.024	0.35±0	102.0
Cerium (Ce) ppm		39±3			37±9			121±5	
Cobalt (Co) ppm		≤5		11.5±0.3	18.2±2.3	158.3	27.76±0.58	29.8±1.8	107.5
Cesium (Cs) ppm		≤1			1.25±1.75		7.1	6.75±2.22	95.1
Europium (Eu) ppm		≤0.5			≤0.3			2.0±0.6	
Hafnium (Hf) ppm		13±2			≤3.7		12.6	8±2	66.7
Mercury (Hg) ppm		< 1		3.04±0.2	≤2.33		0.4474±0.007	< 1	
Iridium (Ir) ppb		< 5			< 5			< 5	
Potassium (K) %	0.864±0.016	0.98±0.13	113.6	1.24±0.05	1.31±0.04	105.8	2.054±0.072	2.12±0.07	103.2
Lanthanum (La) ppm		19.6±2.0			17.5±1.6		73.5±4.2	69.8±2.0	94.9
Lithium (Li) ppm	18	17±0	93.7	32.2±2.0	29±1	90.6	78.2	66±3	84.9
Lutetium (Lu) ppm		0.22±0.07			0.23±0.09			0.60±0.20	
Magnesium (Mg) %	0.388±0.009	0.39±0.01	101.6	1.47±0.13	1.40±0.04	95.0	0.99±0.074	0.92±0.03	92.5
Molybdenum (Mo) ppm		≤2		5.43±0.28	5.17±0.75	95.2	10.8±1.6	10.6±3.5	98.1
Sodium (Na) %	0.741±0.017	0.74±0.02	99.9	3.45±0.17	3.38±0.20	97.9	0.681±0.02	0.71±0.02	103.7
Neodymium (Nd)		≤18			≤22		56	65±12	115.4

Analyte	NIST SRM 1646a (Estuarine Sediment)			NRCC PACS-2 (Marine Sediment)			NIST SRM 2702 (Estuarine Sediment)		
	Certified value ±Std dev	Actlabs Results, N=7		Certified value ±Std dev	Actlabs Results, N=6		Certified value ±Std dev	Actlabs Results, N=5	
		Average ±Std dev	% recovery		Average ±Std dev	% recovery		Average ±Std dev	% recovery
ppm									
Rubidium (Rb) ppm		≤24			≤17		127.7±8.8	≤131.2	
Antimony (Sb) ppm		≤0.4		11.3±2.6	12.4±1.5	110.0	5.6±0.24	6.0±1.1	107.5
Scandium (Sc) ppm		4.4±0.2			12.7±1.1		25.9±1.1	22.8±1.6	87.9
Selenium (Se) ppm	0.193±0.028	< 3		0.92±0.22	< 3		4.95±0.46	< 3	
Samarium (Sm) ppm		2.7±0.4			3.0±0.4		10.8	9.3±1.1	85.7
Tin (Sn) %		< 0.1		0.00198±0.000	< 0.01		±0.000 0.0032 2	< 0.01	
Strontium (Sr) ppm		72±3		276±30	253±14	91.6	119.7±3	117±2	97.7
Tantalum (Ta) ppm		< 0.5			< 0.5			≤3.6	
Terbium (Tb) ppm		≤0.6			< 0.5			≤0.6	
Titanium (Ti) %	0.456±0.021	0.41±0.05	90.2	0.443±0.032	0.45±0.02	102.0	0.884±0.082	0.83±0.05	94.3
Thorium (Th) ppm		4.9±0.9			4.8±0.7			18.3±1.6	
Uranium (U) ppm		≤1.8		3	≤2.2		10.4	9.8±2.5	94.6
Vanadium (V) ppm	44.84±0.76	33±8	74.6	133±5	135±3	101.4	357.6±9.2	352±12	98.4
Tungsten (W) ppm		< 1			< 1		6.2	≤3.2	
Yttrium (Y) ppm		9±0			14±0			30±2	
Ytterbium (Yb) ppm		1.5±0.2			2.1±0.5			3.7±0.4	
Sulfur (S) %	0.352±0.004	0.35±0.00	100.2	1.29±0.13	1.25±0.03	96.6	1.5	1.45±0.05	96.9

Total Nitrogen, Carbon and Sulfur

The sediments were analyzed for total nitrogen, carbon and sulfur (NCS) contents using a Carlo Erba NA 1500 analyzer. This analyzer uses complete combustion of the sample followed by separation and analysis of the resulting gasses by gas chromatographic techniques employing a thermal conductivity detector. The NA 1500 Analyzer is configured for NCS analysis using the manufacturer's recommended settings. An organic compound, sulfanilamide, is used as the primary standard. Blanks were run at the beginning of the analyses and after 12 to 15 unknown samples and standards. Replicates of every seventh sample are run as secondary standards and either NIST reference materials (NIST SRM #2702 – Baltimore Harbor Sediment or NIST SRM #1646a – Estuarine Sediment) were run after every 7 to 8 sediment samples. There is good agreement between the reference values and MGS's results, with recovery of nitrogen, carbon and sulfur at or above 95%, as seen in Table 2-6. The results of the analyses for the samples collected for this study are presented in Table 2-11 (September 10, 2012) and Table 2-16 (April 2, 2013) in the appendices.

Table 2-6. MGS's results of nitrogen, carbon, and sulfur (NCS) analyses of NIST-SRM #2702 and #1646a are compared to the certified or known values. MGS values were obtained by averaging the results of all SRM analyses run with the unknown sediment samples from Cruises 65 and 66. NCS values are % dry weight.

Element	NIST SRM 2702 Baltimore Harbor			NIST SRM 1646a Estuarine Sediment		
	Referenced/ Certified Values ¹	MGS Results (N=12)	% Recovery	Referenced/ Certified Values ²	MGS Results (N=11)	% Recovery
Nitrogen	0.251 ±0.018	0.247 ±0.011	98.9	0.058 ±0.008	0.054 0.007±	90.8
Carbon	3.36	3.167 ±0.049	94.3	0.587 ±0.040	0.569 ±0.016	97.0
Sulfur	1.5	1.545 ±0.063	103.0	0.352 ±0.004	0.322 ±0.022	91.5

¹ For NIST SRM 2702, the value for carbon and sulfur are informational values reported by NIST; nitrogen value was obtained from repeated analyses in-house
² For NIST SRM 1646a, the value for sulfur is certified by NIST. The values for nitrogen and carbon were obtained from repeated analyses in-house and by other laboratories (Haake Buchler Labs and U.S. Dept. of Agriculture).

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Appendix 2-1

Textural and chemical data for samples collected on September 10, 2012 (Cruise 65)

Table 2-7. Field descriptions of the surficial sediment samples collected on September 10, 2012 (Cruise 65). Munsell colors and numerical designations are from Rock-Color Chart (Rock-Color Chart Committee, 1984).

Station Number	Water Depth (ft)	Description
MDE-1	14.4	No floc layer; dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1), fine to medium grained silty sand; some mostly dead or disarticulated <i>Rangia</i> at top, with very few throughout.
MDE-2	15.4	No floc layer; dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) fine to medium grained silty sand, gritty; few mostly dead or disarticulated, mostly juvenile <i>Rangia</i> throughout; triplicate with all three grabs similar.
MDE-3	19.7	Floc layer, 1.5 cm thick, consisting of soft, soupy, watery dark yellowish brown (10YR 4/2) mud; overlies grayish black (N2) to dark greenish gray (5GY 4/1), very fine, slightly firmer, gritty, sandy mud; many (+) dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer, with some to many at depth; worms.
MDE-5	16.7	No floc layer; olive gray (5Y 4/1) to grayish black to dark gray (N2.5), smooth, soft, watery, silty mud, gritty from shell fragments; few mostly dead and disarticulated <i>Rangia</i> on top; dead and disarticulated oysters; many dead and disarticulated shell hash throughout, fossil shells.
MDE-6	21.3	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a very smooth, not gritty, soft, soupy, grayish black (N2) mud, with olive gray (5Y 4/1) oxidized burrows; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer; few worms at depth, mostly dead and disarticulated.
MDE-7		Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a slightly gritty, smooth, soft, olive gray (5Y 4/1) to grayish black to dark gray (N2.5) sandy mud; many (++) dead and disarticulated, mostly juvenile <i>Rangia</i> in floc and the top of the first layer and many at depth; all three grabs similar.
MDE-8	13.5	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, slightly gritty, dark yellowish brown (10YR 4/2) sandy mud; overlies a very gritty, firmer, fine, grayish black to dark gray (N2.5) silty sand with olive gray oxidized burrows; very few dead and disarticulated adult <i>Rangia</i> in floc and top of first layer; worms.

Station Number	Water Depth (ft)	Description
MDE-9	19.4	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, slightly firm, soft grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) oxidized burrows; many dead or disarticulated, mostly juvenile <i>Rangia</i> in floc and top of the first layer with some at depth; worm; all three replicates similar.
MDE-10	20.0	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a very soft, smooth, not gritty, slightly firmer, grayish black to dark gray (N2.5) clayey mud; some to many mostly dead, mostly juvenile <i>Rangia</i> in floc and at top of first layer, no <i>Rangia</i> at depth; few dead and disarticulated adult <i>Macoma</i> ; worm.
MDE-11	19.4	Floc layer, 1.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies soft, smooth, not gritty, grayish black (N2) silty mud with dark greenish gray (5GY 4/1) oxidized burrows; many dead and disarticulated, mostly juvenile <i>Rangia</i> in floc and top of the first layer with some at depth.
MDE-12	17.7	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies smooth, not gritty, slightly lumpy, soft, grayish black to dark gray (N2.5) silty mud with dark greenish gray (5GY 4/1) oxidized burrows; some dead and disarticulated, juvenile to adult <i>Rangia</i> throughout; worms.
MDE-13	17.4	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, slightly lumpy, soft, grayish black (N2) silty mud; few dead and disarticulated, juvenile to adult <i>Rangia</i> in floc at depth; few dead and disarticulated, adult <i>Macoma</i> throughout.
MDE-14	18.7	Floc layer, 1.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, not gritty, very soft, fluffy, grayish (N2) silty mud; few dead and disarticulated, juvenile <i>Rangia</i> at depth.
MDE-15	17.4	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies smooth, very slightly gritty, soft, grayish black to dark gray (N2.5) silty mud; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> throughout.

Station Number	Water Depth (ft)	Description
MDE-16	16.1	Floc layer, 2.0 cm thick, consisting of soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies an extremely smooth, not gritty, soft olive gray (5Y 4/1) to pink (5Y 5/6) clay; some to many dead and disarticulated, juvenile <i>Rangia</i> in floc and top of the first layer, with none at depth; worm.
MDE-17	17.7	Floc layer, 1.0 cm thick, consisting of soft, soupy, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, olive gray (5Y 4/1) to dark gray to grayish black (N2.5) silty mud; many (+) dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of first layer, with some to many at depth.
MDE-18	16.7	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a soft, soupy, watery, olive gray (5Y 4/1) clayey mud; some to many dead and disarticulated, mostly juvenile <i>Rangia</i> throughout.
MDE-19	16.7	Floc layer, 3.0 cm thick, consisting of softy, soupy, watery, dark yellowish brown (10 YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, not gritty, soft, grayish black to dark gray (N2.5) with olive gray (5Y 4/1) clayey mud; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer, with few at depth; few dead and disarticulated adult <i>Macoma</i> at depth.
MDE-20	17.1	Floc layer, 2.5 cm thick, consisting of soft, soupy watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, very soft, olive gray (5Y 4/1) to dark gray to grayish black (N2.5) silty mud; few dead and disarticulated, mostly adult <i>Rangia</i> , at depth.
MDE-21	17.7	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 5/4) mud; overlies smooth, not gritty, very soft, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) oxidized burrows; no shell.
MDE-22	18.4	Floc layer, 2.5 cm thick, consisting of soft, watery, soupy, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, very soft, dark greenish gray (5GY 4/1) silty mud; few dead and disarticulated, adult <i>Rangia</i> and <i>Macoma</i> at depth.

Station Number	Water Depth (ft)	Description
MDE-23	16.1	Floc layer, 2.5 cm thick, consisting of watery, soft, soupy, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, not gritty, soft, grayish black (N2) silty mud, with olive gray (5Y 4/1) oxidized burrows; few dead and disarticulated adult <i>Rangia</i> in floc and top of the first layer; worms.
MDE-25	15.4	Floc layer; 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to dark greenish gray (5GY 4/1) mud; overlies a smooth, soft, firmer with depth, dark greenish gray (5GY 4/1) silty mud with oxidized worm burrows; some dead and disarticulated, juvenile to adult <i>Rangia</i> throughout; worms.
MDE-26	16.1	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies smooth, not gritty, soft, grayish black to dark gray (N2.5) silty mud, with olive gray (5Y 4/1) oxidized burrows; few dead and disarticulated adult <i>Rangia</i> at depth.
MDE-27	13.1	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, soft grayish black (N2) silty mud; very few dead and disarticulated adult <i>Rangia</i> throughout; worms.
MDE-30	11.5	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, not gritty, soft, grayish black (N2) mud with olive gray (5Y 4/1) oxidized burrows; some dead and disarticulated, mostly adult <i>Rangia</i> in floc and top of the first layer with few to some a depth; worm. All three grabs similar.
MDE-33	8.9	No floc layer; firm, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1), medium silty sand; few dead and disarticulated, mostly juvenile at depth.
MDE-34	10.8	Floc layer, 0.5 cm thick, soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a firmer olive gray (5Y 4/1), fine to medium silty sand with black (N1) heavy material; very few mostly dead and disarticulated, juvenile <i>Rangia</i> at depth; shell fragments, worms.
MDE-36	12.5	Floc layer, 1.5 cm thick, consisting of watery, soft, soupy, dark yellowish brown (10YR 4/2) mud; overlies a slightly gritty, soft, grayish black (N2) slightly sandy mud; some dead and disarticulated, mostly juvenile <i>Rangia</i> throughout.

Station Number	Water Depth (ft)	Description
MDE-38	16.1	Floc layer, 2.5 cm, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, slightly lumpy, olive gray (5Y 4/1) grading to grayish black to dark gray (N2.5), silty mud; some disarticulated, juvenile to adult <i>Rangia</i> throughout; few dead and disarticulated <i>Macoma</i> at depth.
MDE-39	15.7	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, soft, dark greenish gray (5GY 4/1) to grayish black to dark gray (N2.5) silty mud; very few, dead and disarticulated, mostly adult <i>Macoma</i> at depth.
MDE-40	16.1	Floc layer, 0.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a slightly gritty, soft, dark greenish gray (5GY 4/1) very fine sandy mud; many (+) dead and disarticulated, mostly juvenile oysters throughout.
MDE-41	22.6	Floc layer, 1.0 cm thick, consisting of soft, soupy, dark greenish gray (5GY 4/1) mud; overlies a dark greenish gray, gravelly, silty sand; overlies a smooth, gritty, soft, black (N1) layer; few dead and disarticulated adult <i>Macoma</i> throughout.
MDE-42	17.4	Floc layer, 2.0 cm thick, consisting of soupy, soft, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, very soft, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) burrows; few mostly dead and mostly disarticulated adult <i>Rangia</i> at depth.
MDE-43	17.7	Floc layer, 2.0 cm thick, consisting of soft, soupy, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, not gritty, soft, grayish black (N2) silty mud; some dead and disarticulated, mostly adult <i>Rangia</i> at depth; worms.
MDE-44	17.1	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies very smooth, very plastic, very soft, medium dark gray (N3.5) clayey fluid mud; very few dead and disarticulated <i>Macoma</i> at depth; worms.
MDE-45	16.7	No floc layer (was very thin); smooth, not gritty, soft, firm, medium dark gray to medium gray (N4.5) clay.

Station Number	Water Depth (ft)	Description
MDE-46	17.7	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, slightly firm, silty mud; many (+) mostly dead and mostly disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer, with some to many at depth; sticks.
MDE-47	17.7	Floc layer, 0.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a slightly gritty, soft, grayish black to dark gray (N2.5) silty mud; many (+) mostly dead and disarticulated, juvenile to adult <i>Rangia</i> throughout.
MDE-48	9.5	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; over a smooth, not gritty, very soft, olive gray (5Y 4/1) to black (N1) silty mud; very few dead and disarticulated adult <i>Rangia</i> at depth; very fibrous.
MDE-49	17.4	Floc layer, 3.0 cm thick, consisting of soft, soupy, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies smooth, not gritty, soft, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) oxidized burrows; few mostly dead and disarticulated adult <i>Rangia</i> at depth.
MDE-50	15.1	Floc layer, 0.5 cm thick, watery, dark yellowish brown (10YR 4/2) silty sand; overlies a very gritty, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) medium to fine silty sand, with black (N1) heavy material; few dead and disarticulated adult <i>Rangia</i> in floc and top of the first layer.
MDE-51	17.1	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies smooth, not gritty, soft, grayish black to dark gray (N2.5) mud with olive gray (5Y 4/1) oxidized burrows; few mostly dead and disarticulated, mostly adult <i>Rangia</i> in floc and top of the first layer.

Table 2-8. Textural data for the sediment samples collected on September 10, 2012 (Cruise 65).

Station	%H2O	%Gravel	%Sand	%Silt	%Clay	Clay:mud	Pejrup's Class
MDE-01	28.14	0.00	93.59	3.29	3.11	0.49	A,III
MDE-02a	26.77	0.00	92.96	3.79	3.25	0.46	A,III
MDE-02b	20.46	0.00	96.05	1.72	2.23	0.57	A,II
MDE-02c	22.10	0.00	89.48	5.90	4.63	0.44	B,III
MDE-03	40.77	0.00	48.73	24.00	27.27	0.53	C,II
MDE-05	51.76	0.00	11.88	41.46	46.66	0.53	C,II
MDE-06	60.12	0.00	0.74	42.33	56.93	0.57	D,II
MDE-07a	35.13	0.16	74.30	11.48	14.07	0.55	B,II
MDE-07b	36.86	0.00	66.70	16.65	16.65	0.50	B,III
MDE-07c	44.01	0.00	64.19	15.98	19.83	0.55	B,II
MDE-08	41.36	0.00	86.90	6.34	6.76	0.52	B,II
MDE-09a	57.09	0.00	5.31	39.95	54.74	0.58	D,II
MDE-09b	54.72	0.00	5.27	40.64	54.08	0.57	D,II
MDE-09c	55.21	0.00	6.22	39.87	53.91	0.57	D,II
MDE-10	52.56	0.08	1.59	40.17	58.17	0.59	D,II
MDE-11	61.27	0.00	1.05	45.01	53.94	0.55	D,II
MDE-12	57.12	0.00	0.85	49.23	49.92	0.50	D,II
MDE-13	57.94	0.00	2.48	48.29	49.23	0.50	D,II
MDE-14	62.11	0.00	3.19	42.49	54.31	0.56	D,II
MDE-15	57.23	0.00	9.03	39.27	51.70	0.57	D,II
MDE-16	47.30	0.00	6.04	64.47	29.49	0.31	D,III
MDE-17	50.94	0.00	3.24	42.46	54.30	0.56	D,II
MDE-18	69.64	0.00	4.53	41.72	53.74	0.56	D,II
MDE-19	62.78	0.00	6.04	42.13	51.84	0.55	D,II
MDE-20	65.73	0.00	0.92	43.53	55.55	0.56	D,II
MDE-21	61.61	0.00	1.25	45.82	52.93	0.54	D,II
MDE-22	59.70	0.00	1.32	44.38	54.30	0.55	D,II
MDE-23	61.94	0.00	3.98	44.95	51.06	0.53	D,II
MDE-25	60.70	0.00	2.27	45.37	52.36	0.54	D,II
MDE-26	59.56	0.00	3.73	41.26	55.00	0.57	D,II
MDE-27	51.17	0.00	37.57	33.49	28.94	0.46	C,III
MDE-30a	59.72	0.00	3.06	42.77	54.16	0.56	D,II
MDE-30b	58.35	0.00	2.57	42.72	54.71	0.56	D,II
MDE-30c	61.36	0.00	2.94	41.05	56.01	0.58	D,II
MDE-33	17.89	0.56	96.76	1.27	1.41	0.53	A,II
MDE-34	28.94	0.00	92.44	3.26	4.30	0.57	A,II
MDE-36	51.61	0.00	34.90	31.15	33.95	0.52	C,II

Station	%H2O	%Gravel	%Sand	%Silt	%Clay	Clay:mud	Pejrup's Class
MDE-38	57.34	0.00	6.08	39.85	54.07	0.58	D,II
MDE-39	57.67	0.00	9.97	35.76	54.27	0.60	D,II
MDE-40	46.76	5.70	54.01	17.61	22.68	0.56	B,II
MDE-41	45.38	15.04	29.69	20.93	34.34	0.62	C,II
MDE-42	60.45	0.00	0.66	43.31	56.02	0.56	D,II
MDE-43	55.00	0.00	1.50	44.45	54.04	0.55	D,II
MDE-44	53.98	0.00	3.68	36.64	59.68	0.62	D,II
MDE-45	52.06	0.00	5.63	37.80	56.57	0.60	D,II
MDE-46	57.62	0.00	1.64	46.00	52.36	0.53	D,II
MDE-47	57.15	0.00	4.22	42.36	53.43	0.56	D,II
MDE-48	66.02	0.00	16.37	41.58	42.05	0.50	C,II
MDE-49	59.18	0.00	0.92	49.29	49.79	0.50	D,II
MDE-50	28.65	0.09	89.67	5.50	4.75	0.46	B,III
MDE-51	54.44	0.00	0.74	54.46	44.80	0.45	D,III

Table 2-9. Target metal data for surficial samples collected on September 10, 2012 (Cruise 65). All concentrations are in ppm (ug/g) unless otherwise noted. Values preceded with '<' indicate 'below detection limit' and value listed is detection limit for that element. Method detection limits for all elements are listed in Table 2-3.

Station	Cd	Cr	Cu	Fe (%)	Mn	Ni	Pb	Zn
MDE-01	< 0.3	17	8	0.75	979	13	10	64
MDE-02a	< 0.3	13	6	0.49	589	11	10	48
MDE-02b	< 0.3	13	5	0.43	511	10	9	46
MDE-02c	< 0.3	17	8	0.64	563	12	10	51
MDE-03	0.5	56	32	2.93	1550	62	40	270
MDE-05	0.4	72	25	3.42	2230	42	24	167
MDE-06	0.7	102	64	5.58	2620	91	74	381
MDE-07a	0.3	33	20	1.74	1010	33	19	164
MDE-07b	< 0.3	36	19	1.79	1100	32	22	147
MDE-07c	< 0.3	45	23	2.30	1380	37	26	170
MDE-08	0.3	45	17	2.13	1120	30	24	127
MDE-09a	0.9	101	69	5.50	2460	121	78	461
MDE-09b	0.9	94	64	5.27	2220	118	77	448
MDE-09c	0.9	93	51	5.28	2190	100	66	404
MDE-10	< 0.3	93	34	5.26	3490	56	21	159
MDE-11	1.2	114	60	5.61	6250	135	76	539
MDE-12	0.5	94	41	4.93	2030	80	51	305
MDE-13	0.7	89	41	5.05	2150	80	54	313
MDE-14	0.4	108	42	5.27	4390	80	53	325
MDE-15	0.5	85	39	4.90	2500	70	45	286
MDE-16	< 0.3	81	31	3.62	1180	52	30	177
MDE-17	0.5	95	41	5.10	2580	80	51	316
MDE-18	0.5	97	41	5.04	4590	72	53	287
MDE-19	0.7	103	45	5.17	3385	80	62	346
MDE-20	0.6	98	42	5.35	4460	78	58	338
MDE-21	0.5	101	40	5.39	2260	73	55	321
MDE-22	0.4	91	40	5.31	2470	70	53	304
MDE-23	0.7	103	41	5.24	3030	73	58	320
MDE-25	0.5	101	42	5.11	2280	74	70	312
MDE-26	0.8	106	48	5.98	5180	92	82	466
MDE-27	0.7	102	39	3.30	1420	51	56	256
MDE-30a	1.6	133	65	5.38	1730	119	97	491
MDE-30b	1.1	124	57	5.34	1730	101	85	411
MDE-30c	0.9	115	50	5.32	1540	90	76	373
MDE-33	< 0.3	31	11	1.37	2310	22	14	89

Station	Cd	Cr	Cu	Fe (%)	Mn	Ni	Pb	Zn
MDE-34	< 0.3	14	9	0.67	7660	66	17	90
MDE-36	< 0.3	73	28	3.47	1290	51	33	189
MDE-38	1.4	132	72	6.39	3260	125	121	778
MDE-39	0.7	115	48	5.44	1960	69	76	458
MDE-40	0.4	83.5	37	3.42	1500	37	39	231
MDE-41	0.3	604	32	4.18	1790	36	27	219
MDE-42	0.7	114	42	5.47	3910	74	53	320
MDE-43	0.7	89	43	5.22	2710	81	50	309
MDE-44	0.3	85	39	5.52	2200	64	34	210
MDE-45	< 0.3	80	16	4.82	1340	37	13	112
MDE-46	1.2	99	54	5.57	4450	114	66	448
MDE-47	0.5	80	35	5.36	2240	68	37	255
MDE-48	0.5	94.5	40	4.93	5725	71	51	286
MDE-49	0.5	88	38	4.78	2460	66	47	264
MDE-50	< 0.3	26	7	1.07	3560	32	11	85
MDE-51	0.5	72	37	4.66	2100	63	42	247

Table 2-10. Ancillary element data for surficial sediment samples collected September 10, 2012 (Cruise 65). All concentrations are in ppm (ug/g) unless otherwise noted. Values preceded with '<' indicate 'below detection limit' and value listed is detection limit for that element. Detection limits for all elements are listed in Table 2-3.

Station	Ag	Al (%)	As	Au (ppb)	Ba	Be	Bi	Br	Ca (%)	Ce	Co	Cs	Eu	Hf	Hg	Ir (ppb)	K (%)	La	Li	Lu	Mg (%)
MDE-01	0.5	1.33	3.2	< 2	110	< 1	< 2	15.6	0.37	26	8	1	0.4	9	< 1	< 5	0.39	11.8	14	0.14	0.14
MDE-02a	0.5	1.06	2.5	< 2	70	< 1	< 2	12.0	0.14	21	8	1	0.4	8	< 1	< 5	0.33	10.3	14	0.09	0.11
MDE-02b	0.6	1.03	1.8	< 2	< 50	< 1	< 2	8.2	0.09	21	6	< 1	0.4	7	< 1	< 5	0.33	10.0	14	0.08	0.10
MDE-02c	0.9	1.34	1.8	< 2	80	< 1	< 2	11.0	0.15	23	8	1	0.5	8	< 1	< 5	0.39	12.4	16	0.12	0.13
MDE-03	2.6	4.54	9.6	< 2	120	2	< 2	30.3	0.75	72	39	3	1.2	13	< 1	< 5	0.98	38.6	43	0.34	0.50
MDE-05	0.5	4.67	7.0	< 2	230	2	< 2	66.6	10.10	73	41	4	1.2	5	< 1	< 5	1.17	38.3	40	0.42	0.60
MDE-06	6.5	8.62	22.2	< 2	270	4	3	50.4	1.08	106	59	7	1.8	5	< 1	< 5	1.90	57.5	75	0.58	0.94
MDE-07a	0.7	2.67	5.4	< 2	160	1	< 2	26.8	1.08	50	21	2	1.0	8	< 1	< 5	0.92	25.0	25	0.25	0.30
MDE-07b	0.6	2.88	6.2	< 2	< 50	1	< 2	26.0	1.50	52	21	3	0.9	8	< 1	< 5	1.04	25.7	27	0.34	0.33
MDE-07c	0.7	3.58	7.2	< 2	160	2	< 2	36.6	1.18	56	23	3	0.9	8	< 1	< 5	1.63	30.3	33	0.24	0.41
MDE-08	0.5	3.46	4.9	< 2	190	1	< 2	30.8	0.27	61	20	2	0.9	11	< 1	< 5	0.98	28.6	31	0.38	0.35
MDE-09a	0.9	8.45	24.1	< 2	500	4	2	49.7	0.46	115	73	4	1.6	8	< 1	< 5	2.08	59.0	80	0.68	0.80
MDE-09b	1.0	8.38	20.2	< 2	250	4	< 2	51.6	0.77	121	73	7	2.4	7	< 1	< 5	2.07	57.8	79	0.68	0.79
MDE-09c	0.7	7.84	16.0	< 2	520	4	6	53.9	1.85	111	68	9	1.8	8	< 1	< 5	2.12	54.2	72	0.58	0.79
MDE-10	0.4	8.78	14.7	< 2	430	3	3	51.8	0.59	106	33	8	1.8	6	< 1	< 5	2.37	56.5	81	0.59	0.93
MDE-11	1.4	8.28	21.5	< 2	265	4	4	60.3	0.34	109	90	8	1.9	7	< 1	< 5	2.22	57.3	75	0.66	0.89
MDE-12	0.9	8.01	11.8	< 2	320	4	< 2	61.6	0.44	103	49	8	2.2	8	< 1	< 5	2.25	54.7	69	0.72	0.88
MDE-13	1.0	5.58	14.3	< 2	450	3	3	64.6	0.29	106	55	10	1.6	7	< 1	< 5	2.19	53.9	67	0.65	0.80
MDE-14	0.8	7.80	13.8	< 2	540	3	3	75.2	0.51	112	58	10	1.8	8	< 1	< 5	1.98	55.4	70	0.55	0.87
MDE-15	0.9	7.50	13.7	< 2	200	3	< 2	66.1	1.87	97	46	9	1.8	8	< 1	< 5	2.11	51.7	64	0.59	0.80
MDE-16	2.2	7.37	10.4	< 2	470	3	< 2	33.2	0.25	98	31	4	1.8	12	< 1	< 5	1.92	47.8	57	0.55	0.63
MDE-17	0.7	8.16	13.5	< 2	220	4	< 2	73.3	1.60	109	55	12	1.4	7	< 1	< 5	2.22	54.6	71	0.59	0.88
MDE-18	0.9	8.25	16.8	< 2	200	3	< 2	81.6	2.22	100	47	5	1.6	8	< 1	< 5	2.28	51.7	71	0.64	0.91
MDE-19	1.0	8.25	15.2	< 2	380	4	4	71.2	0.45	108	50	8	2.2	8	< 1	< 5	2.27	53.2	71	0.64	0.88
MDE-20	0.9	8.31	15.7	< 2	700	4	< 2	80.2	0.27	107	50	9	1.6	6	< 1	< 5	2.35	56.4	72	0.65	0.92
MDE-21	1.0	5.75	13.8	16	260	3	< 2	75.8	0.20	110	54	9	2.1	7	< 1	< 5	2.33	53.9	67	0.63	0.82
MDE-22	0.9	7.70	13.1	< 2	520	3	< 2	75.3	1.94	106	50	7	1.6	7	< 1	< 5	2.31	54.1	67	0.83	0.83
MDE-23	0.9	7.81	13.2	37	400	3	2	73.0	0.28	112	51	11	1.6	8	< 1	< 5	2.03	54.1	66	0.72	0.83
MDE-25	0.9	7.36	13.2	< 2	210	3	< 2	73.2	3.16	101	48	6	1.5	9	< 1	< 5	2.04	51.6	64	0.53	0.79

Station	Ag	Al (%)	As	Au (ppb)	Ba	Be	Bi	Br	Ca (%)	Ce	Co	Cs	Eu	Hf	Hg	Ir (ppb)	K (%)	La	Li	Lu	Mg (%)
MDE-26	0.7	7.41	23.2	<2	290	3	<2	79.5	3.17	113	75	8	1.8	7	<1	<5	2.02	54.8	66	0.53	0.86
MDE-27	1.0	5.46	10.5	<2	200	2	<2	51.6	0.60	90	30	3	1.3	18	<1	<5	1.40	42.3	47	0.60	0.53
MDE-30a	1.9	8.38	20.2	7	425	4	3.5	49.2	0.49	116	63	10	2.1	8	<1	<5	2.13	57.2	76	0.54	0.78
MDE-30b	1.4	8.27	18.5	<2	520	4	2	51.2	0.90	117	53	6	1.8	7	<1	<5	2.10	55.4	74	0.72	0.79
MDE-30c	1.3	6.71	15.9	<2	240	3	9	54.2	0.47	118	53	8	1.9	9	<1	<5	2.24	56.9	70	0.65	0.73
MDE-33	0.5	2.41	5.6	<2	180	1	<2	27.1	0.17	36	11	2	0.4	12	<1	<5	0.69	15.4	22	0.18	0.26
MDE-34	<0.3	1.10	4.4	<2	220	<1	<2	11.9	0.32	31	16	<1	0.5	10	<1	<5	0.38	12.3	14	0.18	0.12
MDE-36	1.1	5.83	6.4	<2	190	2	<2	33.1	1.51	88	33	6	1.7	12	<1	<5	1.65	43.2	51	0.49	0.59
MDE-38	1.3	8.45	28.8	<2	360	4	3	66.1	0.34	120	93	9	2.0	7	<1	<5	2.22	57.4	78	0.72	0.90
MDE-39	2.0	7.25	14.1	<2	430	3	<2	75.0	0.48	96	50	7	1.5	10	<1	<5	1.94	49.1	64	0.59	0.79
MDE-40	0.8	4.70	10.1	<2	430	2	<2	64.9	5.11	76	28	4	1.3	12	<1	<5	1.26	37.0	44	0.44	0.53
MDE-41	0.6	5.32	11.3	<2	430	2	<2	49.5	0.33	65	20	3	1.1	8	<1	<5	1.49	32.3	48	0.36	0.65
MDE-42	0.8	8.46	16.9	<2	560	4	<2	83.6	0.32	105	51	10	1.7	6	<1	<5	2.01	54.1	70	0.56	0.90
MDE-43	0.9	8.46	13.4	<2	340	4	4	58.5	1.12	103	53	8	1.8	6	<1	<5	2.32	50.7	71	0.75	0.89
MDE-44	0.6	8.92	17.4	<2	310	4	2	55.2	0.22	118	37	10	2.0	6	<1	<5	2.36	53.5	82	0.63	0.86
MDE-45	0.4	7.68	9.7	<2	280	3	<2	72.5	0.50	95	21	5	1.9	7	<1	<5	2.21	44.3	71	0.55	0.94
MDE-46	1.3	7.77	20.9	<2	440	4	<2	58.4	2.85	107	84	8	1.7	7	<1	<5	2.14	50.9	71	0.47	0.85
MDE-47	0.9	7.94	20.4	5	530	3	<2	77.5	2.06	106	47	9	1.7	7	<1	<5	2.23	49.4	71	0.65	0.90
MDE-48	0.8	7.82	15.8	<2	345	3	<2	82.9	0.31	104	44	10	1.9	9	<1	<5	2.20	50.2	66	0.58	0.84
MDE-49	0.8	6.65	14.3	<2	210	3	<2	66.0	3.71	103	51	8	1.5	7	<1	<5	2.12	46.2	63	0.62	0.76
MDE-50	<0.3	1.29	5.8	<2	90	<1	<2	12.4	0.20	28	15	<1	0.6	11	<1	<5	0.40	12.6	14	0.18	0.16
MDE-51	0.9	6.92	10.3	<2	320	3	<2	67.4	3.81	96	49	9	1.7	8	<1	<5	1.87	44.7	60	0.60	0.75

Table 2-10 (cont.). Ancillary element data for surficial sediment samples collected September 10, 2012 (Cruise 65). All concentrations are in ppm (ug/g) unless otherwise noted. Values preceded with '<' indicate 'below detection limit' and value listed is detection limit for that element. Detection limits for all elements are listed in Table 2-3.

Station	Mo	Na (%)	Nd	Rb	S (%)	Sb	Sc	Se	Sm	Sn (%)	Sr	Ta	Tb	Th	Ti (%)	U	V	W	Y	Yb
MDE-01	< 1	0.20	9	25	0.04	0.4	2.2	< 3	1.9	< 0.01	39	< 0.5	< 0.5	2.6	0.14	0.9	18	< 1	23	1.0
MDE-02a	< 1	0.18	10	< 15	0.03	0.3	1.6	< 3	1.6	< 0.01	25	< 0.5	< 0.5	2.0	0.13	0.6	15	< 1	19	0.7
MDE-02b	< 1	0.16	6	< 15	0.02	0.6	1.3	< 3	1.6	< 0.01	25	< 0.5	< 0.5	2.0	0.14	< 0.5	12	< 1	21	0.6
MDE-02c	< 1	0.18	9	< 15	0.03	0.4	2.1	< 3	1.9	< 0.01	28	< 0.5	< 0.5	2.4	0.15	1.1	19	< 1	20	0.9
MDE-03	3	0.44	29	51	0.37	1.5	8.4	< 3	6.4	< 0.01	81	< 0.5	0.9	8.1	0.40	4.0	70	< 1	32	2.7
MDE-05	< 1	0.74	28	88	0.33	0.7	10.0	< 3	6.5	< 0.01	371	< 0.5	< 0.5	9.3	0.31	4.5	62	< 1	20	2.9
MDE-06	3	0.84	72	94	0.92	2.0	15.9	< 3	9.6	< 0.01	129	< 0.5	1.1	12.6	0.56	6.0	128	4	36	4.0
MDE-07a	< 1	0.33	26	27	0.16	0.8	5.0	< 3	4.4	< 0.01	72	< 0.5	0.8	5.3	0.24	1.6	37	< 1	21	1.9
MDE-07b	2	0.35	31	24	0.16	1.2	5.1	< 3	4.4	< 0.01	89	< 0.5	< 0.5	4.8	0.25	1.6	40	< 1	22	1.9
MDE-07c	3	0.47	31	49	0.23	0.6	6.6	< 3	5.2	< 0.01	92	< 0.5	< 0.5	6.9	0.30	1.4	54	< 1	24	2.3
MDE-08	3	0.45	18	17	0.13	1.0	6.6	< 3	4.6	< 0.01	51	< 0.5	0.7	7.1	0.31	1.3	51	< 1	24	2.1
MDE-09a	2	0.78	69	197	0.65	3.0	15.7	< 3	9.9	< 0.01	102	< 0.5	1.2	14.8	0.52	6.9	123	< 1	38	4.2
MDE-09b	1	0.78	50	100	0.59	1.7	15.8	< 3	9.7	< 0.01	110	< 0.5	< 0.5	14.4	0.51	5.7	120	< 1	38	4.1
MDE-09c	< 1	0.79	55	53	0.45	2.2	15.0	< 3	9.6	< 0.01	133	< 0.5	1.2	12.4	0.49	5.1	111	< 1	35	4.3
MDE-10	2	0.78	50	128	0.87	1.1	16.3	< 3	9.5	< 0.01	106	< 0.5	1.2	14.1	0.52	6.4	126	< 1	36	3.9
MDE-11	< 1	0.91	52	148	0.80	2.6	15.8	< 3	10.2	< 0.01	98	< 0.5	1.8	13.2	0.52	5.6	128	< 1	38	4.6
MDE-12	< 1	0.96	60	166	0.39	1.7	15.0	< 3	9.2	< 0.01	102	< 0.5	< 0.5	13.6	0.44	6.4	96	< 1	36	4.3
MDE-13	< 1	0.91	50	88	0.35	1.4	15.3	< 3	9.5	< 0.01	79	< 0.5	1.4	13.3	0.51	6.3	114	4	27	4.0
MDE-14	1	0.95	50	146	0.35	1.6	15.6	< 3	9.7	< 0.01	101	< 0.5	1.1	12.8	0.50	4.2	121	< 1	35	4.4
MDE-15	1	0.89	62	159	0.41	1.6	14.2	< 3	8.8	< 0.01	144	< 0.5	1.9	12.9	0.48	6.6	110	< 1	33	3.8
MDE-16	< 1	0.77	38	97	0.43	1.2	13.7	< 3	8.3	< 0.01	83	< 0.5	< 0.5	14.4	0.54	5.5	102	< 1	31	4.4
MDE-17	1	0.95	52	73	0.54	1.2	15.6	< 3	9.5	< 0.01	148	< 0.5	1.1	14.2	0.50	5.7	122	< 1	35	4.3
MDE-18	< 1	1.01	34	51	0.27	2.0	14.9	< 3	8.7	< 0.01	164	< 0.5	< 0.5	13.6	0.45	5.5	110	< 1	33	5.0
MDE-19	1	0.92	51	146	0.34	2.8	15.2	< 3	9.3	< 0.01	105	< 0.5	1.1	12.7	0.48	5.3	116	< 1	35	4.1
MDE-20	< 1	1.05	58	178	0.24	1.7	16.4	< 3	9.6	< 0.01	101	< 0.5	2.3	13.7	0.44	6.0	118	< 1	35	4.3
MDE-21	1	1.02	41	109	0.30	2.0	16.1	< 3	9.7	< 0.01	77	< 0.5	1.3	13.5	0.50	5.2	115	< 1	25	4.2

Station	Mo	Na (%)	Nd	Rb	S (%)	Sb	Sc	Se	Sm	Sn (%)	Sr	Ta	Tb	Th	Ti (%)	U	V	W	Y	Yb
MDE-22	< 1	0.97	45	109	0.29	0.9	15.7	< 3	9.3	< 0.01	140	< 0.5	1.1	13.4	0.48	5.3	119	< 1	33	3.8
MDE-23	3	0.93	58	214	0.26	1.8	15.6	< 3	9.2	< 0.01	94	< 0.5	1.5	14.7	0.51	8.2	122	< 1	34	4.6
MDE-25	< 1	0.95	41	136	0.30	2.6	14.7	< 3	8.8	< 0.01	166	< 0.5	< 0.5	13.3	0.31	7.8	86	< 1	31	4.2
MDE-26	< 1	0.96	60	92	0.27	2.1	14.4	< 3	9.8	< 0.01	193	< 0.5	1.4	12.2	0.30	5.1	99	< 1	37	4.6
MDE-27	3	0.65	37	84	0.33	1.9	10.2	< 3	7.3	< 0.01	82	< 0.5	0.9	11.6	0.35	2.8	44	< 1	28	3.7
MDE-30a	1	0.74	63	113	0.70	2.8	16.0	< 3	10.1	< 0.01	100	< 0.5	1.4	13.6	0.56	7.0	131	< 1	38	4.8
MDE-30b	1	0.74	49	89	0.58	2.6	16.5	< 3	10.0	< 0.01	115	< 0.5	1.2	14.5	0.53	8.9	129	2	37	4.5
MDE-30c	< 1	0.74	76	229	0.46	1.7	16.3	< 3	10.2	< 0.01	88	< 0.5	< 0.5	14.9	0.52	7.5	119	< 1	31	4.5
MDE-33	< 1	0.29	7	< 15	0.05	0.3	4.1	< 3	2.6	< 0.01	40	< 0.5	< 0.5	3.6	0.18	2.3	36	< 1	35	1.1
MDE-34	2	0.18	15	< 15	0.02	0.8	1.9	< 3	2.3	< 0.01	45	< 0.5	0.6	2.1	0.12	0.9	18	3	26	1.1
MDE-36	1	0.58	43	43	0.33	1.3	10.8	< 3	7.7	< 0.01	114	< 0.5	1.1	10.7	0.38	2.7	69	< 1	29	3.7
MDE-38	1	0.92	51	189	0.57	3.9	16.5	< 3	10.4	< 0.01	101	< 0.5	1.0	12.3	0.52	6.5	144	< 1	39	4.4
MDE-39	< 1	0.88	44	197	0.35	2.2	13.8	< 3	8.6	< 0.01	94	< 0.5	< 0.5	12.2	0.46	4.1	106	< 1	34	4.2
MDE-40	2	0.64	30	63	0.38	0.8	9.3	< 3	6.5	< 0.01	211	< 0.5	1.1	9.4	0.37	2.5	72	< 1	26	3.0
MDE-41	1	0.69	35	100	0.98	0.6	10.3	< 3	5.9	< 0.01	81	< 0.5	< 0.5	9.3	0.36	3.0	95	< 1	29	2.7
MDE-42	1	1.11	54	184	0.47	1.0	16.2	< 3	9.5	< 0.01	101	< 0.5	1.3	12.0	0.52	3.7	127	< 1	34	4.2
MDE-43	2	0.91	49	111	0.51	1.7	15.6	< 3	9.0	< 0.01	131	< 0.5	1.2	13.5	0.50	7.2	117	< 1	35	4.3
MDE-44	< 1	0.80	63	213	0.61	0.6	16.4	< 3	9.9	< 0.01	94	< 0.5	1.3	13.8	0.54	5.6	130	< 1	38	4.3
MDE-45	2	0.90	43	157	1.59	< 0.1	14.9	< 3	8.9	< 0.01	102	< 0.5	1.2	11.1	0.45	6.4	114	< 1	32	3.6
MDE-46	1	0.85	52	92	0.74	2.5	15.3	< 3	9.6	< 0.01	179	< 0.5	1.1	12.0	0.47	6.9	115	< 1	35	3.9
MDE-47	2	0.92	52	99	1.01	1.1	15.5	< 3	9.2	< 0.01	157	< 0.5	1.2	12.6	0.49	7.0	116	< 1	33	3.6
MDE-48	< 1	0.95	59	126	0.22	1.3	15.1	< 3	9.0	< 0.01	98	< 0.5	1.2	12.8	0.36	3.7	93	< 1	34	4.3
MDE-49	< 1	0.90	60	56	0.36	1.5	14.2	< 3	8.7	< 0.01	191	< 0.5	< 0.5	11.5	0.40	5.1	91	< 1	30	4.1
MDE-50	< 1	0.22	20	79	0.02	1.1	2.4	< 3	2.6	< 0.01	37	< 0.5	< 0.5	2.8	0.19	1.2	21	< 1	27	1.2
MDE-51	< 1	0.97	37	120	0.28	0.9	13.5	< 3	8.4	< 0.01	200	< 0.5	< 0.5	11.1	0.35	3.0	84	< 1	31	3.7

Table 2-11. Total nitrogen, carbon, phosphorus, and sulfur (N, C, P, and S) content for surficial samples collected on September 10, 2012 (Cruise 65). All concentrations are in percentage (%) dry weight; detection limit is 0.001% for N, C, P, and S.

Station	N	C	P	S
MDE-01	0.040	0.458	0.011	0.028
MDE-02a	0.026	0.279	0.011	0.023
MDE-02b	0.020	0.182	0.008	<0.001
MDE-02c	0.032	0.333	0.016	0.022
MDE-03	0.106	1.719	0.040	0.351
MDE-05	0.178	5.890	0.051	0.253
MDE-06	0.218	4.020	0.084	0.924
MDE-07a	0.081	1.217	0.027	0.152
MDE-07b	0.082	1.318	0.028	0.130
MDE-07c	0.104	1.586	0.033	0.205
MDE-08	0.094	1.178	0.028	0.138
MDE-09a	0.218	5.388	0.079	0.668
MDE-09b	0.216	5.276	0.082	0.620
MDE-09c	0.211	4.120	0.068	0.443
MDE-10	0.146	1.604	0.072	0.917
MDE-11	0.220	4.226	0.080	0.812
MDE-12	0.218	3.710	0.072	0.412
MDE-13	0.234	3.794	0.075	0.421
MDE-14	0.243	3.352	0.087	0.372
MDE-15	0.220	3.193	0.072	0.395
MDE-16	0.134	1.741	0.042	0.432
MDE-17	0.251	3.543	0.070	0.546
MDE-18	0.265	3.616	0.093	0.248
MDE-19	0.245	3.153	0.088	0.341
MDE-20	0.263	3.262	0.100	0.262
MDE-21	0.251	3.412	0.082	0.339
MDE-22	0.245	3.744	0.081	0.283
MDE-23	0.249	3.051	0.086	0.280
MDE-25	0.243	3.854	0.072	0.292
MDE-26	0.234	4.120	0.102	0.244
MDE-27	0.180	2.177	0.048	0.335
MDE-30a	0.221	3.505	0.084	0.678
MDE-30b	0.236	3.433	0.082	0.604
MDE-30c	0.243	3.323	0.081	0.498
MDE-33	0.083	0.872	0.019	0.047
MDE-34	0.030	0.339	0.009	<0.001
MDE-36	0.148	2.269	0.046	0.298

Station	N	C	P	S
MDE-38	0.221	3.880	0.088	0.574
MDE-39	0.217	3.114	0.076	0.350
MDE-40	0.168	3.956	0.058	0.295
MDE-41	0.144	2.437	0.045	0.988
MDE-42	0.288	3.253	0.100	0.481
MDE-43	0.216	3.077	0.080	0.505
MDE-44	0.169	1.963	0.079	0.626
MDE-45	0.189	1.870	0.041	1.594
MDE-46	0.217	4.574	0.075	0.721
MDE-47	0.238	3.413	0.068	1.041
MDE-48	0.408	4.481	0.095	0.323
MDE-49	0.215	4.229	0.069	0.314
MDE-50	0.034	0.433	0.010	0.024
MDE-51	0.224	4.733	0.071	0.227

Appendix 2-2
Textural and chemical data for samples collected on April 2, 2013 (Cruise 66)

Table 2-12. Field descriptions of the surficial sediment samples collected on April 2, 2013 (Cruise 66). Munsell colors and numerical designations are from Rock-Color Chart (Rock-Color Chart Committee, 1984).

Station Number	Water Depth (ft)	Description
MDE-1	15.4	No floc layer; dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1), firm, fine to medium grained silty sand; dead and disarticulated, juvenile to adult <i>Rangia</i> throughout.
MDE-2	16.7	No floc layer; dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) gritty, soft, fine grained muddy sand; some dead and disarticulated, juvenile to adult <i>Rangia</i> throughout. Grab A- slightly silty sand; B- sandier than A; C- sandiest, yet very little silt.
MDE-3	21.0	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery dark yellowish brown (10YR 4/2) mud; overlies grayish black to dark gray (N2.5) to dark greenish gray (5GY 4/1), very slightly gritty, soft, smooth, silty mud; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer, with mostly juvenile <i>Rangia</i> at depth.
MDE-5	21.3	Floc layer, 3.5 cm thick, consisting of soft, soupy, watery dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; grayish black to dark gray (N2.5), smooth, soft, not gritty, silty mud; very few dead and disarticulated adult <i>Rangia</i> at depth.
MDE-6	22.6	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a very soft, smooth, not gritty, olive gray (5Y 4/1) grading to dark greenish gray (5GY 4/1) silty mud; some dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer; few dead and disarticulated, adult <i>Macoma</i> at depth.
MDE-7	21.7	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, slightly gritty, dark yellowish brown (10YR 4/2); overlies a gritty, watery, soft, olive gray (5Y 4/1) to grayish black (N2) very fine, sandy mud; many dead and disarticulated, juvenile to adult <i>Rangia</i> throughout; many (+) shell fragments at depth. All three grabs dissimilar: Grab A sandier than B and C; Grab B has less sand than A and it was shelly; Grab C was entirely soupy mud with no sand and fewer shells.

Station Number	Water Depth (ft)	Description
MDE-8	14.1	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, gritty, dark yellowish brown (10YR 4/2) sandy mud; overlies a very gritty, firm, soft, dark greenish gray (5GY 4/1) very fine, muddy sand with dark yellowish brown (10YR 4/2) oxidized burrows; some live, juvenile to adult <i>Rangia</i> at in floc and top of the first layer; many amphipods; mud crab.
MDE-9	20.7	Floc layer, 1.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, firmer, soft dark greenish gray (5GY 4/1) silty mud with olive gray (5Y 4/1) oxidized burrows; many dead or disarticulated, mostly juvenile <i>Rangia</i> in floc and top of the first layer with very few at depth; worms; very few dead and disarticulated, adult <i>Macoma</i> at depth. All three replicates similar.
MDE-10	21.3	Floc layer, 1.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a soft, smooth, very slightly gritty from shell fragments, olive gray (5Y 4/1) silty mud; some to many dead and disarticulated, juvenile <i>Rangia</i> in floc and at top of first layer, few <i>Rangia</i> at depth.
MDE-11	20.3	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies soft, smooth, not gritty, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) oxidized burrows; many dead and disarticulated, mostly juvenile <i>Rangia</i> in floc and top of the first layer with few at depth; very few dead and disarticulated, adult <i>Macoma</i> at depth; worm.
MDE-12	19.0	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, dark greenish gray (5GY 4/1) silty mud with olive gray (5Y 4/1) oxidized burrows; few mostly dead and disarticulated, mostly juvenile <i>Rangia</i> at the top of the first layer, with very few at depth.
MDE-13	18.7	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, lumpy, soft, grayish black (N2) silty mud with olive gray (5Y 4/1) oxidized burrows; some dead and disarticulated, juvenile to adult <i>Rangia</i> throughout; one amphipod spotted.

Station Number	Water Depth (ft)	Description
MDE-14	20.0	Floc layer, 1.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, firmer, soft, dark greenish gray (5GY 4/1) silty mud; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer with few at depth.
MDE-15	19.0	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, grayish black to dark gray (N2.5) silty mud; some dead and disarticulated, juvenile to adult <i>Rangia</i> at depth.
MDE-16	17.1	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, soft, grayish black (N2) silty mud with olive gray (5Y 4/1) oxidized worm burrows; some dead and disarticulated, mostly adult <i>Rangia</i> in floc and top of the first layer, with very few at depth; amphipod.
MDE-17	18.7	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, dark gray (N2) silty mud with olive gray (5Y 4/1) oxidized burrows; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of first layer, with some to many dead and disarticulated, juvenile <i>Rangia</i> at depth.
MDE-18	17.7	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a soft, smooth, not gritty, olive gray (5Y 4/1) to grayish black (N2) silty mud; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> throughout.
MDE-19	17.7	Floc layer, 3.0 cm thick, consisting of softy, soupy, watery, dark yellowish brown (10 YR 4/2) mud; overlies a smooth, not gritty, soft, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1); some dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer.
MDE-20	16.7	Floc layer, 2.5 cm thick, consisting of soft, soupy watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, soupy, olive gray (5Y 4/1) silty mud; many (+) dead and disarticulated, juvenile to adult <i>Rangia</i> throughout.

Station Number	Water Depth (ft)	Description
MDE-21	18.7	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 5/4) mud; overlies smooth, not gritty, very soft, grayish black to dark gray (N2.5) silty mud with dark yellowish brown (10YR 4/2) oxidized burrows; one dead and disarticulated juvenile <i>Rangia</i> ; mud crab.
MDE-22	19.7	Floc layer, 3.0 cm thick, consisting of soft, watery, soupy, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, dark greenish gray (5GY 4/1) silty mud with dark yellowish brown (10YR 4/2) oxidized burrows; very few adult <i>Rangia</i> in floc and top of the first layer; jelly; few shell fragments at depth.
MDE-23	17.1	Floc layer, 2.5 cm thick, consisting of watery, soft, soupy, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, not gritty, very soft, olive gray (5Y 4/1) grading to grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) oxidized burrows; worms; amphipods; no shells.
MDE-25	16.7	Floc layer; 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, soft, not gritty, slightly lumpy, dark greenish gray (5GY 4/1) silty mud with olive gray (5Y 4/1) burrows; some dead and disarticulated, mostly adult <i>Rangia</i> in floc and top of the first layer; few dead and disarticulated adult <i>Macoma</i> at depth; worms.
MDE-26	17.1	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies smooth, not gritty, soft, dark greenish gray (5GY 4/1) with grayish black to dark gray (N2.5) silty mud; some to many dead and disarticulated, juvenile to adult <i>Rangia</i> throughout; few dead and disarticulated adult <i>Macoma</i> at depth; worm.
MDE-27	13.8	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies a smooth, not gritty, firmer, soft, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) oxidized burrows; one dead, adult <i>Rangia</i> ; no shells.

Station Number	Water Depth (ft)	Description
MDE-30	12.1	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, soft, grayish black to dark gray (N2.5) with olive gray (5Y 4/1) worm burrows; some dead and disarticulated, mostly adult <i>Rangia</i> in floc and top of the first layer; worms. All three grabs similar.
MDE-33	9.5	No floc layer; firm, dark yellowish brown (10YR 4/2) medium to coarse, very slightly silty sand; some dead and disarticulated, juvenile to adult <i>Rangia</i> throughout; amphipod.
MDE-34	23.0	Floc layer, 1.5 cm thick, soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, soft, very slightly gritty olive gray (5Y 4/1) to dark greenish gray (5GY 4/1) silty mud; many (+)dead and disarticulated, juvenile to adult <i>Rangia</i> throughout.
MDE-36	13.1	Floc layer, 1.0 cm thick, consisting of watery, soft, soupy, dark yellowish brown (10YR 4/2) mud; overlies a very slightly gritty, very soft, soupy, dark greenish gray (5GY 4/1) silty mud with olive gray (5Y 4/1) burrows; some mostly dead and mostly disarticulated, juvenile to adult <i>Rangia</i> throughout; worm.
MDE-38	17.4	Floc layer, 2.5 cm, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, firmer, dark greenish gray (5GY 4/1) silty mud with dark yellowish brown (10YR 4/2) oxidized worm burrows; few disarticulated, <i>Rangia</i> ; few dead and disarticulated <i>Macoma</i> at depth; amphipod.
MDE-39	16.7	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, slightly lumpy, slightly firmer, soft, dark greenish gray (5GY 4/1) silty mud; very few dead and disarticulated <i>Macoma</i> at depth; worms; no odor.
MDE-40	16.4	No floc layer; soft, soupy, watery dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) silty mud; many (+) dead and disarticulated, juvenile to adult oysters throughout. No sample taken.

Station Number	Water Depth (ft)	Description
MDE-41	23.3	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) sandy mud; overlies a slightly gritty, soft, grayish black (N2) to dark greenish gray (5GY 4/1) sandy mud; few dead and disarticulated <i>Macoma</i> at depth; few oyster fragments throughout; worms.
MDE-42	18.0	Floc layer, 3.0 cm thick, consisting of soupy, soft, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; overlies smooth, not gritty, very soft, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) burrows; very few dead and disarticulated juvenile to adult <i>Macoma</i> at depth; worms.
MDE-43	19.0	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, soft, grayish black (N2) silty mud with olive gray (5Y 4/1) oxidized burrows; some dead and disarticulated, mostly adult <i>Rangia</i> throughout; very few dead and disarticulated adult <i>Macoma</i> at depth.
MDE-44	18.4	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, slightly lumpy, not gritty, firmer with depth, soft, grayish black to dark gray (N2.5) with dark gray (N3) clayey mud with olive gray (5Y 4/1) oxidized burrows; few dead and disarticulated adult <i>Rangia</i> in floc and top of the first layer.
MDE-45	17.1	Floc layer, 2.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, very soft, dark greenish gray silty mud with lots of dark yellowish brown (10YR 4/2) oxidized worm burrows; no shell.
MDE-46	17.4	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a smooth, not gritty, soft, firmer, slightly lumpy, dark greenish gray (5GY 4/1) silty mud with olive gray (5Y 4/1) burrows; some dead and mostly disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer; few dead and disarticulated adult <i>Macoma</i> at depth.

Station Number	Water Depth (ft)	Description
MDE-47	19.0	Floc layer, 1.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies a not gritty, soft, smooth, grayish black to dark gray (N2.5) silty mud; many (+)dead and disarticulated, juvenile to adult <i>Rangia</i> in floc and top of the first layer with few to some at depth.
MDE-48	9.8	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) mud; over a smooth, fluffy, very soft, grayish black to dark gray (N2.5) to dark greenish gray (5GY 4/1) silty mud; fiber pockets; amphipod; no shell.
MDE-49	18.4	Floc layer, 3.0 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, soft, grayish black (N2) silty mud with dark yellowish brown (10YR 4/2) oxidized burrows; few dead and disarticulated adult <i>Rangia</i> at depth; worms.
MDE-50	16.4	No floc layer; firm, dark yellowish brown (10YR 4/2) to olive gray (5Y 4/1) fine silty sand, with black (N1) heavy material; few mostly dead and disarticulated juvenile to adult <i>Rangia</i> throughout.
MDE-51	19.0	Floc layer, 2.5 cm thick, consisting of soft, soupy, watery, dark yellowish brown (10YR 4/2) mud; overlies smooth, not gritty, very soft, grayish black to dark gray (N2.5) silty mud with olive gray (5Y 4/1) burrows; one dead and disarticulated <i>Rangia</i> ; few worms at depth; shell fragments.

Table 2-13. Textural data for the surficial sediment samples collected on April 2, 2013 (Cruise 66).

Station	%H2O	%Gravel	%Sand	%Silt	%Clay	Clay:Mud	Pejrup's Class
MDE-01	35.58	0.00	88.62	5.13	6.25	0.55	B,II
MDE-02a	33.12	0.00	85.61	6.32	8.06	0.56	B,II
MDE-02b	29.08	0.00	88.71	4.74	6.54	0.58	B,II
MDE-02c	28.80	0.00	94.36	2.57	3.06	0.54	A,II
MDE-03	51.16	0.00	44.57	23.91	31.52	0.57	C,II
MDE-05	68.39	0.00	0.82	43.34	55.84	0.56	D,II
MDE-06	57.04	0.00	0.94	42.82	56.24	0.57	D,II
MDE-07a	49.66	0.00	47.60	23.00	29.40	0.56	C,II
MDE-07b	55.66	0.00	28.94	30.69	40.37	0.57	C,II
MDE-07c	69.25	0.00	10.72	38.71	50.57	0.57	C,II
MDE-08	33.62	0.00	78.48	10.98	10.53	0.49	B,III
MDE-09a	55.24	0.00	7.40	39.11	53.49	0.58	D,II
MDE-09b	54.97	0.00	8.57	39.59	51.84	0.57	D,II
MDE-09c	56.34	0.00	4.46	42.84	52.70	0.55	D,II
MDE-10	59.52	2.00	2.92	37.34	57.74	0.61	D,II
MDE-11	60.17	0.00	1.95	46.57	51.48	0.53	D,II
MDE-12	63.98	0.00	1.00	51.71	47.29	0.48	D,III
MDE-13	56.73	0.00	3.02	48.86	48.12	0.50	D,III
MDE-14	63.79	0.00	2.25	42.35	55.41	0.57	D,II
MDE-15	63.79	0.00	7.63	40.70	51.67	0.56	D,II
MDE-16	51.58	0.00	15.92	45.93	38.15	0.45	C,III
MDE-17	53.25	0.00	2.02	40.67	57.31	0.58	D,II
MDE-18	60.51	0.00	3.81	41.43	54.76	0.57	D,II
MDE-19	68.07	0.00	6.67	43.04	50.30	0.54	D,II
MDE-20	67.50	0.00	1.05	41.76	57.19	0.58	D,II
MDE-21	63.24	0.00	1.09	44.97	53.94	0.55	D,II
MDE-22	61.75	0.00	1.01	44.79	54.20	0.55	D,II
MDE-23	63.17	0.00	3.48	44.89	51.64	0.53	D,II
MDE-25	59.22	0.00	2.20	44.12	53.67	0.55	D,II
MDE-26	61.64	0.00	4.63	41.06	54.31	0.57	D,II
MDE-27	53.56	0.00	36.86	34.35	28.79	0.46	C,III
MDE-30a	61.53	0.00	2.59	39.68	57.74	0.59	D,II
MDE-30b	62.92	0.00	2.41	39.53	58.06	0.59	D,II
MDE-30c	57.84	0.00	3.68	42.60	53.72	0.56	D,II
MDE-33	22.49	0.35	98.26	0.71	0.68	0.49	A,III
MDE-34	50.41	0.00	54.73	20.29	24.98	0.55	B,II

Station	%H2O	%Gravel	%Sand	%Silt	%Clay	Clay:Mud	Pejrup's Class
MDE-36	60.46	0.00	14.57	41.27	44.16	0.52	C,II
MDE-38	57.45	0.00	6.55	39.17	54.28	0.58	D,II
MDE-39	59.79	0.00	12.25	36.78	50.97	0.58	C,II
MDE-40	No Sample Collected						
MDE-41	34.39	14.71	60.77	9.39	15.13	0.62	B,II
MDE-42	62.31	0.00	0.98	41.02	58.00	0.59	D,II
MDE-43	66.79	0.00	1.85	41.87	56.28	0.57	D,II
MDE-44	66.55	0.63	6.03	41.00	52.34	0.56	D,II
MDE-45	65.49	0.00	5.38	41.78	52.83	0.56	D,II
MDE-46	57.81	0.00	1.70	45.11	53.19	0.54	D,II
MDE-47	56.89	0.00	1.60	41.42	56.98	0.58	D,II
MDE-48	66.84	0.00	13.26	38.15	48.58	0.56	C,II
MDE-49	63.87	0.00	0.93	47.40	51.67	0.52	D,II
MDE-50	23.55	0.03	93.33	3.22	3.43	0.52	A,II
MDE-51	58.03	0.00	0.85	52.61	46.54	0.47	D,III

Table 2-14. Target metal data for samples collected on Cruise 66. All concentrations are in ppm (ug/g) unless otherwise noted. Values preceded with '<' indicate 'below detection limit' and value listed is detection limit for that element.

Station	Cd	Cr	Cu	Fe (%)	Mn	Ni	Pb	Zn
MDE-01	< 0.3	31	9	1.17	1120	17	14	67
MDE-02a	< 0.3	23	9	1.08	1270	19	13	76
MDE-02b	< 0.3	24	7	0.80	896	15	10	53
MDE-02c	< 0.3	12	6	0.75	733	13	9	47
MDE-03	< 0.3	70	25	2.99	1710	53	31	213
MDE-05	0.3	107	47	5.47	4970	77	51	296
MDE-06	0.4	83	54	5.24	5390	80	57	331
MDE-07a	< 0.3	56	17	2.33	2070	33	25	137
MDE-07b	< 0.3	73	28	3.34	2800	51	35	207
MDE-07c	0.3	88	48	5.08	7820	78	52	321
MDE-08	< 0.3	43	17	1.41	797	20	16	83
MDE-09a	0.4	104	59	5.69	2270	108	69	421
MDE-09b	1.0	128	69	5.53	2360	133	83	505
MDE-09c	0.7	119	69	5.56	2480	124	78	475
MDE-10	< 0.3	94	53	5.58	2900	65	29	196
MDE-11	0.6	98	52	5.58	2615	97	64	392
MDE-12	< 0.3	86	59	5.19	3720	74	49	299
MDE-13	0.6	110	51	5.08	2450	90	61	358
MDE-14	0.9	104	64	4.83	3200	122	72	496
MDE-15	< 0.3	84	42	4.32	3900	68	48	274
MDE-16	0.4	88	38	3.78	2040	61	47	244
MDE-17	0.4	114	43	4.55	2440	76	49	302
MDE-18	0.9	106	56	5.15	3880	106	75	460
MDE-19	0.6	94	45	4.79	5045	78	64	340
MDE-20	0.4	96	46	5.11	4770	83	61	340
MDE-21	0.4	98	56	4.96	3060	81	60	357
MDE-22	0.5	96	52	5.18	3080	85	64	375
MDE-23	0.5	109	50	5.06	3900	84	62	362
MDE-25	0.6	115	52	4.76	2560	86	69	385
MDE-26	0.4	115	50	5.42	5810	94	84	480
MDE-27	0.6	94	36	3.05	1410	48	51	245
MDE-30a	1.0	124	60	5.05	1670	100	89	423
MDE-30b	0.9	130	60	4.98	1620	100	88	413
MDE-30c	0.8	118	58	5.06	1620	96	80	397
MDE-33	< 0.3	8	3	0.26	256	5	4	16

Station	Cd	Cr	Cu	Fe (%)	Mn	Ni	Pb	Zn
MDE-34	< 0.3	65	28	3.23	1680	48	33	182
MDE-36	< 0.3	72	33	4.20	2590	63	42	229
MDE-38	1.0	117	73	6.05	3090	127	122	758
MDE-39	0.6	128	80	5.72	1940	79	88	528
MDE-40	No Sample Collected							
MDE-41	0.4	198	38	3.13	556	30	39	271
MDE-42	0.4	89	45	5.26	2750	78	60	335
MDE-43	< 0.3	94	46	5.37	4540	81	57	337
MDE-44	0.3	104	45	5.20	4190	76	58	324
MDE-45	0.4	88	42	5.13	3910	73	53	305
MDE-46	0.7	88	53	5.09	2980	98	62	391
MDE-47	0.6	110	76	5.47	2730	90	59	357
MDE-48	0.5	94	45	4.96	5740	75	52	297
MDE-49	0.4	83	57	5.07	2790	76	50	312
MDE-50	< 0.3	18	10	1.05	3640	28	12	80
MDE-51	0.4	92	44	4.80	2580	79	51	310

Table 2-15. Ancillary elemental data for the surficial samples collected on April 2, 2013 (Cruise 66). All concentrations are in ppm (ug/g) unless otherwise noted. Values preceded with '<' indicate 'below detection limit' and value listed is detection limit for that element. Detection limits for all elements are listed in Table 2-3.

Station	Ag	Al (%)	As	Au (ppb)	Ba	Be	Bi	Br	Ca (%)	Ce	Co	Cs	Eu	Hf	Hg	Ir (ppb)	K (%)	La	Li	Lu	Mg (%)
MDE-01	< 0.3	1.67	2.7	< 2	< 50	< 1	< 2	18.5	0.12	28	11	< 1	0.4	19	< 1	< 5	0.53	17.3	18	0.12	0.18
MDE-02a	< 0.3	1.65	4.7	< 2	< 50	< 1	< 2	15.1	0.28	33	13	5	< 0.2	8	< 1	< 5	0.54	17.6	19	0.15	0.18
MDE-02b	< 0.3	1.25	3.0	< 2	110	< 1	< 2	12.9	0.27	28	9	< 1	0.4	5	< 1	< 5	0.44	13.9	16	0.21	0.13
MDE-02c	< 0.3	1.19	1.4	< 2	< 50	< 1	< 2	11.1	0.08	18	8	< 1	< 0.2	5	< 1	< 5	0.41	12.2	16	0.19	0.12
MDE-03	0.4	4.33	9.7	< 2	210	2	< 2	34.6	1.58	74	37	< 1	1.2	11	< 1	< 5	1.31	44.1	42	0.44	0.53
MDE-05	0.8	7.72	10.8	< 2	390	4	< 2	65.6	0.57	97	56	< 1	1.8	< 1	< 1	< 5	2.46	61.0	68	0.78	0.94
MDE-06	0.7	7.75	19.8	< 2	280	4	< 2	70.0	0.52	133	51	11	1.1	6	< 1	< 5	2.40	61.3	69	0.60	0.95
MDE-07a	< 0.3	3.49	7.8	< 2	155	2	< 2	32.0	2.99	60	26	2	1.8	9	< 1	< 5	1.03	31.3	32	0.31	0.41
MDE-07b	0.3	4.93	8.9	< 2	290	2	< 2	43.8	1.93	80	34	< 1	0.9	11	< 1	< 5	1.54	41.2	46	0.49	0.60
MDE-07c	0.9	7.65	20.3	< 2	< 50	4	< 2	85.5	0.47	108	49	< 1	1.7	6	< 1	< 5	2.18	61.5	69	0.78	0.99
MDE-08	< 0.3	2.30	4.9	< 2	< 50	< 1	< 2	15.8	0.79	41	9	< 1	0.5	9	< 1	< 5	0.72	23.5	24	0.21	0.24
MDE-09a	1.0	7.58	17.7	< 2	< 50	4	< 2	40.4	2.08	102	68	4	1.2	7	< 1	< 5	2.21	61.7	72	0.68	0.83
MDE-09b	0.9	7.19	27.3	< 2	300	4	< 2	37.5	0.37	106	78	8	2.2	8	< 1	< 5	2.17	63.7	76	0.74	0.80
MDE-09c	0.8	7.91	20.2	< 2	< 50	5	< 2	41.3	0.55	114	75	10	1.5	6	< 1	< 5	2.26	63.3	77	0.52	0.84
MDE-10	0.4	8.65	14.1	< 2	< 50	4	< 2	39.2	0.34	105	34	< 1	1.3	5	< 1	< 5	2.60	62.8	80	0.57	0.99
MDE-11	1.3	7.77	14.9	8	< 50	4	< 2	50.8	0.58	115	64	6	1.8	7	< 1	< 5	2.36	61.1	71	1.06	0.93
MDE-12	0.7	7.60	15.3	< 2	< 50	4	< 2	63.5	0.84	97	43	5	1.1	8	< 1	< 5	2.33	57.6	66	0.80	0.92
MDE-13	1.1	7.69	13.8	< 2	< 50	4	< 2	45.7	0.70	100	58	7	1.5	7	< 1	< 5	2.34	57.2	71	0.54	0.92
MDE-14	1.1	7.90	18.9	< 2	< 50	4	< 2	55.7	0.64	101	63	9	1.5	5	< 1	< 5	2.55	50.0	79	0.63	0.96
MDE-15	0.8	7.30	11.8	< 2	520	3	< 2	56.1	4.67	94	42	10	1.6	4	< 1	< 5	2.27	44.9	65	0.47	0.86
MDE-16	1.2	6.20	11.8	11	610	3	< 2	34.0	0.27	89	33	7	1.8	9	< 1	< 5	1.80	42.1	53	0.77	0.68
MDE-17	0.9	6.23	13.8	< 2	570	3	< 2	47.0	3.28	96	52	8	1.2	5	< 1	< 5	2.04	47.0	63	0.61	0.77
MDE-18	1.1	7.47	16.4	10	420	4	< 2	46.4	1.60	110	58	13	1.9	6	< 1	< 5	2.24	50.3	70	0.65	0.87
MDE-19	0.7	7.57	16.1	< 2	400	4	< 2	67.8	0.31	102	45	10	1.8	6	< 1	< 5	2.34	48.5	67	0.66	0.92
MDE-20	0.8	8.08	18.1	9	430	4	< 2	70.1	0.72	110	51	8	2.1	4	< 1	< 5	2.50	49.6	71	0.77	0.99
MDE-21	0.8	8.04	13.8	8	480	4	< 2	65.3	0.28	105	50	9	2.0	4	< 1	< 5	2.37	49.7	70	0.64	0.96
MDE-22	0.9	7.81	16.7	< 2	650	4	< 2	61.6	0.28	113	51	7	2.0	5	< 1	< 5	2.51	50.8	73	0.63	0.98
MDE-23	1.0	7.16	11.9	< 2	650	4	< 2	61.2	0.27	104	48	9	1.9	5	< 1	< 5	2.33	50.0	69	0.75	0.92
MDE-25	1.1	7.47	15.5	4	520	3	< 2	56.1	1.27	105	49	7	2.1	6	< 1	< 5	2.31	48.5	69	0.57	0.89
MDE-26	0.8	7.31	23.3	21	410	4	< 2	87.4	1.12	111	65	10	1.6	8	< 1	< 5	2.22	55.7	66	0.40	0.97

Station	Ag	Al (%)	As	Au (ppb)	Ba	Be	Bi	Br	Ca (%)	Ce	Co	Cs	Eu	Hf	Hg	Ir (ppb)	K (%)	La	Li	Lu	Mg (%)
MDE-27	1.3	4.51	9.7	5	380	2	< 2	42.6	0.77	81	27	3	1.3	12	< 1	< 5	1.32	37.7	41	0.64	0.52
MDE-30a	1.4	7.69	17.2	< 2	490	4	< 2	40.1	0.28	115	49	10	1.8	6	< 1	< 5	2.15	51.0	69	0.77	0.81
MDE-30b	1.8	8.33	16.5	< 2	490	4	< 2	41.2	0.30	115	49	8	1.9	5	< 1	< 5	2.29	51.6	74	0.88	0.88
MDE-30c	1.4	7.86	16.3	13	480	4	< 2	42.2	1.13	109	47	9	1.9	6	< 1	< 5	2.19	50.5	70	0.86	0.83
MDE-33	< 0.3	0.45	1.8	< 2	100	< 1	< 2	5.6	0.28	10	3	< 1	< 0.2	5	< 1	< 5	0.22	3.8	6	0.06	0.04
MDE-34	0.4	4.50	4.6	< 2	< 50	2	< 2	36.0	2.39	73	25	< 1	1.2	19	< 1	< 5	1.37	37.1	42	0.60	0.53
MDE-36	0.3	6.46	6.7	< 2	< 50	3	< 2	36.1	1.08	93	37	4	1.8	10	< 1	< 5	1.97	46.2	55	0.50	0.71
MDE-38	1.2	7.86	19.8	< 2	420	4	< 2	56.5	0.43	108	85	< 1	2.3	7	< 1	< 5	2.24	55.8	74	0.67	0.90
MDE-39	0.8	6.72	19.3	< 2	185	3.5	< 2	67.2	0.35	94	56	7	1.6	10	< 1	< 5	2.00	50.3	62	0.69	0.83
MDE-40	No Sample Collected																				
MDE-41	0.5	3.70	12.2	< 2	< 50	2	< 2	31.4	0.54	50	21	3	1.3	7	< 1	< 5	1.08	26.4	31	0.27	0.45
MDE-42	0.8	7.49	13.9	< 2	< 50	4	< 2	59.8	0.25	101	48	6	1.8	5	< 1	< 5	2.30	52.4	66	0.66	0.89
MDE-43	0.9	7.98	15.1	< 2	< 50	4	< 2	66.5	0.57	103	48	< 1	2.8	5	< 1	< 5	2.47	51.5	71	0.41	0.97
MDE-44	1.0	7.07	15.0	< 2	< 50	3	< 2	58.7	0.32	94	47	< 1	1.6	7	< 1	< 5	2.24	49.2	64	0.76	0.88
MDE-45	0.5	7.09	17.1	< 2	< 50	3	< 2	57.7	0.52	99	45	4	1.7	7	< 1	< 5	2.13	47.2	62	0.69	0.83
MDE-46	1.0	7.61	20.0	< 2	320	4	< 2	52.5	1.74	96	65	7	2.2	6	< 1	< 5	2.29	56.1	70	0.84	0.91
MDE-47	1.1	7.75	13.7	13	< 50	4	< 2	49.1	0.31	106	58	10	1.2	5	< 1	< 5	2.29	58.5	71	0.69	0.92
MDE-48	0.9	7.48	15.6	< 2	< 50	3	< 2	63.9	0.58	106	44	7	1.5	8	< 1	< 5	2.30	53.0	65	0.58	0.88
MDE-49	0.7	7.14	9.7	< 2	540	3	< 2	65.3	0.34	105	51	11	1.9	5	< 1	< 5	2.33	55.9	65	0.69	0.89
MDE-50	< 0.3	1.29	4.0	< 2	< 50	< 1	< 2	10.9	0.19	23	14	< 1	0.5	10	< 1	< 5	0.46	12.3	15	0.17	0.17
MDE-51	0.9	7.29	9.5	< 2	410	4	< 2	56.0	0.69	97	51	8	1.8	9	< 1	< 5	2.35	54.0	66	0.56	0.90

Table 2-15 (cont.). Ancillary element data for surficial sediment samples collected April 2, 2013 (Cruise 66). All concentrations are in ppm (ug/g) unless otherwise noted. Values preceded with '<' indicate 'below detection limit' and value listed is detection limit for that element. Detection limits for all elements are listed in Table 2-3.

Station	Mo	Na (%)	Nd	Rb	S (%)	Sb	Sc	Se	Sm	Sn (%)	Sr	Ta	Tb	Th	Ti (%)	U	V	W	Y	Yb
MDE-01	< 1	0.22	< 5	< 15	0.03	0.6	3.1	< 3	2.1	< 0.01	33	< 0.5	< 0.5	2.5	0.15	< 0.5	21	< 1	41	0.8
MDE-02a	< 1	0.22	21	< 15	0.03	< 0.1	3.1	< 3	2.2	< 0.01	38	< 0.5	< 0.5	1.9	0.14	< 0.5	22	< 1	21	1.3
MDE-02b	< 1	0.19	< 5	< 15	0.02	0.5	2.1	< 3	1.7	< 0.01	34	< 0.5	< 0.5	2.7	0.11	< 0.5	16	< 1	14	1.1
MDE-02c	< 1	0.17	22	< 15	0.02	0.5	2.1	< 3	1.4	< 0.01	25	< 0.5	< 0.5	1.8	0.12	< 0.5	17	< 1	16	0.8
MDE-03	< 1	0.54	< 5	< 15	0.26	1.4	8.6	< 3	5.8	< 0.01	109	< 0.5	< 0.5	7.5	0.34	< 0.5	57	< 1	27	2.7
MDE-05	1	0.96	< 5	248	0.18	0.8	16.0	< 3	7.6	< 0.01	116	< 0.5	< 0.5	14.5	0.39	< 0.5	102	< 1	31	4.0
MDE-06	1	1.00	38	102	0.32	1.9	15.3	< 3	7.7	< 0.01	115	< 0.5	< 0.5	10.4	0.45	1.9	102	< 1	33	2.7
MDE-07a	< 1	0.45	40	37	0.14	0.8	6.7	< 3	4.2	< 0.01	133	< 0.5	< 0.5	6.2	0.19	1.6	38	< 1	23	2.2
MDE-07b	< 1	0.62	36	< 15	0.20	1.9	9.6	< 3	5.4	< 0.01	125	< 0.5	1.0	7.3	0.29	< 0.5	57	< 1	28	2.4
MDE-07c	1	1.00	27	160	0.21	1.6	14.9	< 3	7.7	< 0.01	118	< 0.5	< 0.5	9.9	0.50	< 0.5	125	< 1	32	5.7
MDE-08	< 1	0.29	22	< 15	0.07	0.5	4.4	< 3	3.1	< 0.01	57	< 0.5	< 0.5	4.6	0.20	< 0.5	30	< 1	20	1.9
MDE-09a	2	0.69	62	280	0.56	2.0	15.0	< 3	7.5	< 0.01	165	< 0.5	< 0.5	11.9	0.51	12.3	117	< 1	33	4.4
MDE-09b	2	0.73	40	< 15	0.56	3.0	16.4	< 3	8.4	< 0.01	92	< 0.5	< 0.5	12.5	0.53	6.3	124	< 1	35	4.2
MDE-09c	1	0.76	30	411	0.62	2.4	15.7	< 3	8.1	< 0.01	102	< 0.5	< 0.5	11.2	0.54	9.2	126	< 1	36	3.8
MDE-10	1	0.74	52	< 15	0.90	1.0	16.1	< 3	7.9	< 0.01	104	< 0.5	2.2	12.2	0.60	7.3	137	< 1	36	3.7
MDE-11	1	0.87	92	77	0.68	2.0	15.7	< 3	8.2	< 0.01	110	< 0.5	< 0.5	12.2	0.57	5.1	129	< 1	34	4.1
MDE-12	< 1	0.98	50	119	0.24	1.4	14.6	< 3	7.7	< 0.01	120	< 0.5	< 0.5	10.5	0.44	4.1	103	< 1	31	4.4
MDE-13	1	0.84	47	284	0.49	0.9	15.6	< 3	7.8	< 0.01	121	< 0.5	< 0.5	14.9	0.53	5.6	120	< 1	32	4.1
MDE-14	2	0.90	29	272	0.49	1.9	15.5	< 3	7.6	< 0.01	117	< 0.5	< 0.5	11.5	0.57	6.3	132	2	35	4.2
MDE-15	1	0.89	30	200	0.27	1.6	13.8	< 3	6.8	< 0.01	234	< 0.5	1.7	11.0	0.47	3.5	112	< 1	28	3.8
MDE-16	< 1	0.76	28	183	0.71	1.3	12.3	< 3	6.3	< 0.01	83	< 0.5	< 0.5	10.0	0.59	4.3	104	< 1	30	4.2
MDE-17	< 1	0.83	26	344	0.46	1.4	14.7	< 3	7.3	< 0.01	192	< 0.5	3.4	10.4	0.45	5.6	102	< 1	28	3.4
MDE-18	1	0.86	26	181	0.61	1.6	15.5	< 3	7.7	< 0.01	138	< 0.5	< 0.5	10.8	0.51	6.2	125	< 1	33	3.7
MDE-19	< 1	1.02	43	171	0.20	1.4	15.4	< 3	7.4	< 0.01	105	< 0.5	0.9	11.5	0.31	3.7	86	3	32	3.8
MDE-20	< 1	1.13	36	170	0.27	1.4	16.5	< 3	7.8	< 0.01	120	< 0.5	2.2	11.8	0.40	6.2	98	< 1	33	3.6
MDE-21	< 1	1.06	54	244	0.28	1.6	16.3	< 3	7.9	< 0.01	103	< 0.5	1.5	11.9	0.44	2.5	112	< 1	32	3.8
MDE-22	< 1	1.03	38	143	0.28	1.8	16.3	< 3	8.0	< 0.01	103	< 0.5	1.4	11.9	0.51	5.6	131	< 1	32	4.3
MDE-23	1	0.97	49	251	0.28	1.2	15.9	< 3	7.8	< 0.01	102	< 0.5	2.3	12.8	0.55	4.9	135	< 1	31	4.1
MDE-25	2	0.94	52	192	0.39	2.1	15.4	< 3	7.7	< 0.01	131	< 0.5	2.3	10.5	0.56	3.8	134	< 1	32	4.2
MDE-26	1	0.84	43	114	0.24	1.3	14.0	< 3	9.1	< 0.01	132	< 0.5	1.7	12.7	0.46	3.3	130	< 1	36	4.0
MDE-27	1	0.70	22	112	0.31	1.5	10.0	< 3	5.8	< 0.01	83	< 0.5	< 0.5	10.1	0.45	2.5	68	< 1	25	3.5

Station	Mo	Na (%)	Nd	Rb	S (%)	Sb	Sc	Se	Sm	Sn (%)	Sr	Ta	Tb	Th	Ti (%)	U	V	W	Y	Yb
MDE-30a	1.5	0.77	44	174.5	0.62	2.0	16.3	< 3	8.2	< 0.01	93	< 0.5	1.6	11.0	0.57	6.8	131	< 1	35	4.6
MDE-30b	2	0.77	55	163	0.66	2.2	16.3	< 3	8.2	< 0.01	100	< 0.5	< 0.5	11.8	0.59	6.6	137	< 1	40	4.1
MDE-30c	< 1	0.78	44	183	0.53	1.9	15.8	< 3	8.0	< 0.01	123	< 0.5	2.1	11.4	0.53	5.5	115	< 1	33	4.2
MDE-33	< 1	0.09	< 5	< 15	0.01	0.3	0.8	< 3	0.5	< 0.01	20	< 0.5	< 0.5	1.1	0.06	< 0.5	7	< 1	14	0.4
MDE-34	< 1	0.55	29	< 15	0.28	1.7	8.6	< 3	5.3	< 0.01	142	< 0.5	< 0.5	8.9	0.32	6.1	48	< 1	25	3.1
MDE-36	< 1	0.67	40	66	0.28	0.6	12.5	< 3	6.9	< 0.01	112	< 0.5	< 0.5	10.2	0.40	2.6	69	< 1	31	4.0
MDE-38	2	0.83	43	201	0.52	4.6	15.7	< 3	8.3	< 0.01	107	< 0.5	< 0.5	15.4	0.54	6.2	141	< 1	35	4.7
MDE-39	< 1	0.99	75	< 15	0.53	2.6	13.7	< 3	7.0	< 0.01	91.5	< 0.5	< 0.5	10.8	0.50	6.4	119	< 1	31	4.2
MDE-40	No Sample Collected																			
MDE-41	2	0.55	23	< 15	0.55	1.2	8.0	< 3	3.3	< 0.01	81	< 0.5	< 0.5	4.5	0.36	3.8	81	< 1	24	1.5
MDE-42	< 1	0.88	61	148	0.31	1.4	14.7	< 3	7.7	< 0.01	94	< 0.5	< 0.5	14.0	0.41	3.2	99	< 1	31	3.5
MDE-43	1	0.96	64	217	0.22	< 0.1	15.2	< 3	7.8	< 0.01	121	< 0.5	< 0.5	11.3	0.49	< 0.5	123	< 1	31	3.7
MDE-44	< 1	0.92	48	91	0.39	1.9	14.6	< 3	7.1	< 0.01	96	< 0.5	< 0.5	9.9	0.49	7.3	112	< 1	31	3.0
MDE-45	< 1	0.86	45	147	0.26	1.1	14.1	< 3	6.9	< 0.01	99	< 0.5	< 0.5	12.1	0.36	4.1	72	< 1	30	4.2
MDE-46	< 1	0.85	71	272	0.64	2.5	14.7	< 3	7.5	< 0.01	151	< 0.5	< 0.5	11.8	0.54	4.5	122	< 1	33	4.5
MDE-47	1	0.81	49	< 15	0.65	2.4	16.0	< 3	7.8	< 0.01	97	< 0.5	< 0.5	13.2	0.54	8.9	129	< 1	31	4.5
MDE-48	< 1	0.85	52	< 15	0.27	1.8	14.0	< 3	7.3	< 0.01	106	< 0.5	< 0.5	11.4	0.47	< 0.5	109	< 1	32	4.1
MDE-49	1	1.01	20	237	0.25	1.8	15.3	< 3	7.9	< 0.01	100	< 0.5	1.2	10.9	0.51	2.9	119	< 1	30	4.8
MDE-50	2	0.19	11	< 15	0.03	0.7	2.2	< 3	1.8	< 0.01	40	< 0.5	< 0.5	2.1	0.17	< 0.5	22	< 1	23	0.9
MDE-51	< 1	0.96	38	87	0.31	2.0	13.9	< 3	7.2	< 0.01	112	< 0.5	< 0.5	10.0	0.53	6.4	119	< 1	32	4.4

Table 2-16. Total nitrogen, carbon, phosphorus, and sulfur (N, C, P, and S) contents for surficial samples collected on April 2, 2013 (Cruise 66). All concentrations are in percentage (%) dry weight; detection limit is 0.001% for N, C, P and S.

Station	N	C	P	S
MDE-01	0.057	0.639	0.002	<0.001
MDE-02a	0.050	0.564	0.014	<0.001
MDE-02b	0.039	0.434	0.011	<0.001
MDE-02c	0.035	0.352	0.010	<0.001
MDE-03	0.130	1.921	0.036	0.223
MDE-05	0.274	3.428	0.101	0.200
MDE-06	0.305	3.780	0.100	0.332
MDE-07a	0.121	2.126	0.032	0.116
MDE-07b	0.171	2.363	0.047	0.175
MDE-07c	0.299	3.229	0.100	0.222
MDE-08	0.063	0.852	0.017	0.064
MDE-09a	0.217	4.304	0.080	0.514
MDE-09b	0.223	4.914	0.085	0.624
MDE-09c	0.223	5.169	0.081	0.681
MDE-10	0.163	2.028	0.077	0.972
MDE-11	0.235	3.679	0.080	0.741
MDE-12	0.260	3.717	0.089	0.247
MDE-13	0.229	3.849	0.077	0.515
MDE-14	0.254	4.183	0.096	0.516
MDE-15	0.281	4.172	0.095	0.197
MDE-16	0.154	2.005	0.059	0.733
MDE-17	0.209	3.899	0.072	0.378
MDE-18	0.209	3.696	0.080	0.576
MDE-19	0.259	3.124	0.096	0.210
MDE-20	0.260	3.307	0.102	0.250
MDE-21	0.222	3.321	0.088	0.289
MDE-22	0.225	3.300	0.094	0.275
MDE-23	0.221	3.035	0.088	0.289
MDE-25	0.214	3.298	0.081	0.358
MDE-26	0.236	3.391	0.119	0.227
MDE-27	0.172	2.167	0.054	0.306
MDE-30a	0.192	3.057	0.075	0.606
MDE-30b	0.196	3.065	0.085	0.649
MDE-30c	0.202	3.276	0.081	0.505
MDE-33	<0.001	0.159	<0.001	<0.001

Station	N	C	P	S
MDE-34	0.124	2.182	0.036	0.195
MDE-36	0.181	2.568	0.058	0.252
MDE-38	0.207	3.670	0.093	0.483
MDE-39	0.195	3.290	0.070	0.545
MDE-40	No sample collected			
MDE-41	0.109	2.685	0.036	0.512
MDE-42	0.252	3.188	0.083	0.336
MDE-43	0.291	3.374	0.104	0.214
MDE-44	0.292	3.191	0.091	0.430
MDE-45	0.261	3.015	0.082	0.268
MDE-46	0.226	3.977	0.072	0.572
MDE-47	0.225	3.458	0.073	0.677
MDE-48	0.278	3.052	0.097	0.337
MDE-49	0.259	3.516	0.088	0.266
MDE-50	0.041	0.501	0.013	0.026
MDE-51	0.245	3.978	0.088	0.285