N62661.AR 000705
NAVSTA NEWPORT RI
5090 3a

Interim Data Deliverable

for

Marine Ecological Risk Assessment

Former Derecktor Shipyard
Naval Education & Training Center
Newport, Rhode Island

Northern Division
Naval Facilities Engineering Command
Contract Number N62472-90-D-1298
Contract Task Order 0254

April 1996

Brown & Root Environmental
A Division f Halliburton NUS Corp ration

Note to Readers

This data package has been prepared to provide an outline of the draft report and a summary of available data collected for the Marine Ecological Risk Assessment for the Former Derecktor Shipyard, located at the Naval Education and Training Center in Newport Rhode Island.

This package has been formatted to reflect the format in which these data will be presented in the marine ecological risk assessment (ERA) report. Each section divider represents a section of the ERA, and data in those sections will appear similarly in the ERA. Some gaps are present, pending receipt of appropriate data from the analytical contractors.

The table of contents reflects the proposed outline of the ERA report for the site. A description of the data products included in this interim deliverable follows. Section 3 includes the contaminants of concern for the site. Section 4 presents results from the hydrographic survey, water quality analysis data, geophysical survey, data from chemistry analysis of sediments, elutriate and tissue, in that order. Missing from Section 4 is butyltin data, pending receipt from the analytical laboratory. Section 5 presents results from the amphipod and sea urchin toxicity tests, benthic community analysis, condition indices of bivalves, hematopoietic neoplasia, and pathogen analysis. Missing from Section 5 is P450 analysis, due to poor success of sample collection in 1995. Also missing from Section 5 is tissue analysis from deployed mussels; however, this information is combined with tissue data presented in Section 4. Currently, Sections 1, 2, 6, 7 and 8 contain no information, but are assigned for future use.

The material in this interim deliverable is of rough draft quality. The tables and figures have not been numbered, formats have not been reviewed by all the contract team members, and the presentation and organization of the information may still be modified before inclusion in the ERA report.

The information contained in this interim deliverable will be presented and discussed at the Ecorisk Advisory Board Meeting No. 7, scheduled for April 17, 1996.

PRELIMINARY TABLE OF CONTENTS
MARINE ERA
DERECKTOR SHIPYARD

SECTION		PAGE
1.0	**EXECUTIVE SUMMARY**	
2.0	**INTRODUCTION**	
2.1	BACKGROUND	
2.2	PURPOSE, SCOPE, AND OBJECTIVES	
3.0	**PROBLEM FORMULATION**	
3.1	SITE DESCRIPTION	
3.1.1	Derecktor Shipyard Regional Geology/Hydrogeology	
3.1.2	GSO/URI 1993-94 Results	
3.2	ASSESSMENT AND MEASUREMENT ENDPOINTS	
3.3	CONTAMINANTS OF CONCERN (COCS)	
3.3.1	Existing Toxicity-Based Criteria and Standards	
3.3.2	COC Selection	
3.4	RECEPTORS OF CONCERN	
3.5	CONCEPTUAL MODEL	
3.5.1	Tier I Model	
3.5.2	Tier II Model	
3.5.3	Tier III Model	
3.5.4	Tier IV Models	
3.6	SAMPLING AND ANALYSIS SUMMARY	
3.6.1	Sediment Sampling Activities	
3.6.2	Biota Sampling Activities	
3.6.3	Geophysical Survey Activities	
3.6.4	Hydrographic Survey Activities	
3.6.5	Dissolved Oxygen Model Sampling Activities	
4.0	**EXPOSURE ASSESSMENT**	
4.1	SOURCES AND EXPOSURE PATHWAYS OF COCS	
4.2	WATER QUALITY PARAMETERS	
4.3	FATE AND TRANSPORT ANALYSIS	
4.3.1	Hydrographic Circulation	
4.3.2	Geomorphology	
4.4	ESTIMATE OF EXPOSURE POINT CONCENTRATIONS	
4.4.1	Sediments	
4.4.2	Resuspended Sediments	
4.4.3	Tissues	
4.5	UNCERTAINTY	
5.0	**ECOLOGICAL EFFECTS ASSESSMENT**	
5.1	KNOWN EFFECTS OF COCS	
5.2	TOXICITY EVALUATIONS	
5.2.1	Amphipod Test Results	
5.2.2	Sea Urchin Test Results	

PRELIMINARY TABLE OF CONTENTS (Continued)
MARINE ERA
DERECKTOR SHIPYARD

SECTION			PAGE
	5.3	BIOLOGICAL FIELD INVESTIGATIONS	
	5.3.1	Benthic Composition and Abundance	
	5.3.2	Bivalve Condition Indices	
	5.3.3	Hematopoietic Neoplasia Assessment	
	5.3.4	Cytochrome P450 Induction	
	5.3.5	Mussel Deployments	
	5.3.5	Fecal Pollution Indicators	
	5.4	UNCERTAINTY	
6.0	**RISK CHARACTERIZATION**		
	6.1	COMPARISON OF COC CONCENTRATIONS WITH CRITERIA AND STANDARDS	
	6.1.1	Sediment-based Hazard Quotients	
	6.1.2	Elutriate vs. Water Criteria Comparisons	
	6.2	ANALYSIS OF SEDIMENT COC CONCENTRATION VERSUS EFFECTS MEASUREMENTS	
	6.4.1	Amphipod Survival Results	
	6.4.2	Sea Urchin Fertilization Results	
	6.4.3	Comparisons of Findings with Previous Studies	
	6.3	ANALYSIS OF BIOACCUMULATION	
	6.3.1	Organic COC Bioaccumulation	
	6.3.2	Metals Bioaccumulation	
	6.4	ANALYSIS OF COC CONCENTRATIONS VERSUS APPARENT ADVERSE IMPACTS	
	6.4.1	Exposure - Benthic Composition Relationships	
	6.4.2	Exposure - Biota Condition Relationships	
	6.4.3	Exposure - Neoplasia Incidence Relationships.	
	6.4.4	Exposure - Response Relationships from Prior Studies	
	6.5	RESIDUE-BASED EXPOSURE-EFFECTS RELATIONSHIPS	
	6.5.1	Critical Body Residue Assessments	
	6.5.2	Tissue Screening Concentration Assessments	
	6.6	RISK CHARACTERIZATION IN THE CONTEXT OF REFERENCE STATION DATA	
	6.7	UNCERTAINTY	
7.0	**RISK SUMMARY AND CONCLUSIONS**		
	7.1	INTERPRETATION OF SEVERITY AND SIGNIFICANCE OF RISKS	
	7.2	OTHER POTENTIAL SOURCES OF STRESS AND COCS	
	7.3	LIMITATIONS/UNCERTAINTY OF THE ASSESSMENT	
8.0	**REFERENCES**		

PRELIMINARY TABLE OF CONTENTS (Continued)
MARINE ERA
DERECKTOR SHIPYARD

TABLES

FIGURES

APPENDICES

APPENDIX

A	GEOPHYSICAL AND HYDROGRAPHIC SURVEY DATA
B	CHEMISTRY ANALYTICAL DATA
C	TOXICITY TEST RESULTS AND BENTHIC STUDIES DATA

TABLE X-XX
SAMPLE COLLECTION SUMMARY
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND

	Sediment Chemistry					Tissue Chemistry							Geotechnical		Water			Bioassay							
STA	Bulk Sediment			Elutriate	SEM/AVS	Bivalves				Fish							CTD						CI		
NUM	SUR	MID DEPTH	BOTTOM	SUR		IBM	DEP	Hard Clam	Pitar	Lobster	MF	CN	GS	TOC	BOD/ SOD	DO/NH4/ TSS/CHL		HN	DIV	P450	MICRO	AMP	DM	IBM	Elutriate
DSY-24						1											1							1	
DSY-25	1			1	1	1				1			1	1			2		1			1		1	1
DSY-26	1			1+		1	1					1	1	1	1	3	2	1	1		1	1	1	1	1
DSY-27	1	1	1	1+		1				1		1	1	1	1		2	1	1			1		1	1
DSY-28	1	1	1	1+		1	1			1		1	1	2		3	2	1	1		1	1	1	1	1
DSY-29	2FD	2FD	2FD	1+			1			1		1	2	2		3	2	1	1		1	1	1		1
DSY-30	1	1	1	1+									1	2	1				1			1			1
DSY-31	1	1	1	1	1		1		1				1	2	1	2	3	1	1		1	1	1		1
DSY-32	1			1	1				1				1	1	1		2		1			1			1
DSY-33	1			1	1		1		1	1			1	1	1	3	3		1		1	1	1		1
DSY-34	1	1	1	1+					1				1	2	1		1		1			1			1
DSY-35	1			1+		1		1	1	1		1	1	1	1		2	1	1			1		1	1
DSY-36	1	1	1	1	1	1			1	1		1	1	2			1	1	1	1		1		1	1
DSY-37	1			1	1				1				1	1		3	1		1			1			1
DSY-38	1			1	1		1		1	1			1	1		2	2		1		1	1	1		1
DSY-39	1			1	1		1			1			1	1			2		1		1	1	1		1
DSY-40	1			1	1	1	1						1	1	1	3		1	1		1	1	1	1	1
DSY-41	1			1+				1	1				1	1			2		1			1			1
JPC-1	1			1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1		1	1	1	1	1
JPC-2	1			1+									1	1					1			1			1
CHC-1						1	1			1		1	1	1		3	1	1	1		1		1	1	
DSY-V4		1	1										2												
DSY-V9		1	1										2												
T_0							1														1		1		
TOTAL	20	10	10	19	10	10	11	3	10	11	1	8	25	26	10	28	32	10	20	1	11	19	11	10	19

DSY = Derecktor Ship Yard
JPC = Jamestown, Potter's Cove
CHC = Castle Hill Cove
T_0 = Time Zero
+ = Organics Data Only
FD = Field Duplicate

DEP = Deployed Blue Mussel Mytilus edulis
IBM = Indigenous Blue Mussel = Mytilus edulis
HARD CLAM = Mercenaria mercanana
PITAR = Pitar morrhuana
LOBSTER = Homarus americanus
MF = Mummichog Fish = Fundulus heterociitus
CN = Cunner = Tautogolabrus adspersus

SOD/BOD = Sediment Oxygen Demand/Biological Oxygen Demand
DO/NH4 = Dissolved Oxygen/ Ammonia
TSS/CHL = Total Suspended Solids/Chlorophyll a
CTD = Conductivity/Temperature/Depth

HN = Hematopoietic Neoplasia
DIV = Community Structure Analysis
P450 = Cytochrome P450 Assay
Micro = Sewage Pathogens in Mussel Tissue
AMP = Amphipod Survival Test
CI = Bivalve Condition Index
ELUTRIATE = Elutriate Test With Arbacia

TABLE X-XX
SAMPLE COLLECTION SUMMARY
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND

STA	Sediment Chemistry					Tissue Chemistry							Geotechnical		Water			Bioassay							
	Bulk Sediment			Elutriate	SEM/AVS	Bivalves					Fish						CTD						CI		
NUM	SUR	MID DEPTH	BOTTOM	SUR		IBM	DEP	Hard Clam	Pitar	Lobster	MF	CN	GS	TOC	BOD/ SOD	DO/NH4/ TSS/CHL		HN	DIV	P450	MICRO	AMP	DM	IBM	Elutriate
DSY-24						1											1							1	
DSY-25	1			1	1	1				1			1	1			2		1			1		1	1
DSY-26	1					1	1					1	1	1	1	3	2	1	1		1	1	1	1	1
DSY-27	1	1	1	1		1				1		1	1	1	1		2	1	1			1		1	1
DSY-28	1	1	1			1	1			1		1	1	2		3	2	1	1		1	1	1	1	1
DSY-29	2FD	2FD	2FD	1			1			1		1	2	2		3	2	1	1		1	1	1		1
DSY-30	1	1	1										1	2	1				1			1			1
DSY-31	1	1	1	1	1		1		1				1	2	1	2	3	1	1		1	1	1		1
DSY-32	1			1	1				1				1	1	1		2		1			1			1
DSY-33	1			1	1		1		1	1			1	1	1	3	3		1		1	1	1		1
DSY-34	1	1	1						1				1	2	1		1		1			1			1
DSY-35	1					1		1	1	1		1	1	1	1		2	1	1			1		1	1
DSY-36	1	1	1	1	1	1			1	1		1	1	2			1	1	1	1		1		1	1
DSY-37	1			1	1				1				1	1		3	1		1			1			1
DSY-38	1			1	1		1		1	1			1	1		2	2		1		1	1	1		1
DSY-39	1			1	1		1			1			1	1			2		1		1	1	1		1
DSY-40	1			1	1	1	1						1	1	1	3		1	1		1	1	1	1	1
DSY-41	1							1	1				1	1			2		1			1			1
JPC-1	1			1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1		1	1	1	1	1
JPC-2	1												1	1					1			1			1
CHC-1						1	1			1		1	1	1		3	1	1	1		1		1	1	
DSY-V4		1	1										2												
DSY-V9		1	1										2												
T_0							1														1		1		
TOTAL	20	10	10	12	10	10	11	3	10	11	1	8	25	26	10	28	32	10	20	1	11	19	11	10	19

DSY = Derecktor Ship Yard
JPC = Jamestown, Potter's Cove
CHC = Castle Hill Cove
T_0 = Time Zero
+ = Organics Data Only
FD = Field Duplicate

DEP = Deployed Blue Mussel Mytilus edulis
IBM = Indigenous Blue Mussel = Mytilus edulis
HARD CLAM = Mercenaria mercanaria
PITAR = Pitar morrhuana
LOBSTER = Homarus americanus
MF = Mummichog Fish = Fundulus heterociitus
CN = Cunner = Tautogolabrus adspersus

SOD/BOD = Sediment Oxygen Demand/Biological Oxygen Demand
DO/NH4 = Dissolved Oxygen/ Ammonia
TSS/CHL = Total Suspended Solids/Chlorophyll a
CTD = Conductivity/Temperature/Depth

HN = Hematopoietic Neoplasia
DIV = Community Structure Analysis
P450 = Cytochrome P450 Assay
Micro = Sewage Pathogens in Mussel Tissue
AMP = Amphipod Survival Test
CI = Bivalve Condition Index
ELUTRIATE = Elutriate Test With Arbacia

ERL and ERM guideline values for trace metals (ppm, dry wt) and percent incidence of biological effects in concentration ranges defined by the two values

	Guidelines		Percent (ratios) incidence of effects[a]		
Chemical	ERL	ERM	<ERL	ERL-ERM	>ERM
Arsenic	8.2	70	5.0 (2/40)	11.1 (8/73)	63.0 (17/27)
Cadmium	1.2	9.6	6.6 (7/106)	36.6 (32/87)	65.7 (44/67)
Chromium	81	370	2.9 (3/102)	21.1 (15/71)	95.0 (19/20)
Copper	34	270	9.4 (6/64)	29.1 (32/110)	83.7 (36/43)
Lead	46.7	218	8.0 (7/87)	35.8 (29/81)	90.2 (37/41)
Mercury	0.15	0.71	8.3 (4/48)	23.5 (16/68)	42.3 (22/52)
Nickel	20.9	51.6	1.9 (1/54)	16.7 (8/48)	16.9 (10/59)
Silver	1.0	3.7	2.6 (1/39)	32.3 (11/34)	92.8 (13/14)
Zinc	150	410	6.1 (6/99)	47.0 (31/66)	69.8 (37/53)

[a]Number of data entries within each concentration range in which biological effects were observed divided by the total number of entries within each range.

From Long et al., 1995.

ERL and ERM Guideline Values for Organic Compounds (ppb, dry wt)

	Guidelines	
Chemical	**ERL**	**ERM**
Acenaphthene	16	500
Acenaphthylene	44	640
Anthracene	85.3	1100
Fluorene	19	540
2-Methyl naphthalene	70	670
Naphthalene	160	2100
Phenanthrene	240	1500
Low-molecular weight PAHs (7)	552	3160
Benz(a)anthracene	261	1600
Benzo(a)pyrene	430	1600
Chrysene	384	2800
Dibenzo(a,h)anthracene	63.4	260
Fluoranthene	600	5100
Pyrene	665	2600
High molecular weight PAHs (6)	1700	9600
Total PAHs measured (ΣPAHs)	4022	44792
p,p'-DDE	2.2	27
Total DDT	1.58	46.1
Total PCBs	22.7	180

From Long et al., 1995.

TABLE xxxx Preliminary Data Summary and Comparison to Benchmarks for Derecktor Shipyard Sediment contaminants[1].

CLASS	ANALYTE	FREQUENCY OF DETECTION			RANGE OF CONCENTRATION[a]		MEAN CONCENTRATION[b]	95% UPPER CONFIDENCE LIMIT	BACKGROUND CONCENTRATION[c]	MINIMUM BENCHMARK VALUE[d]	95% UCL or MAX CONCENTRATION[e]		FREQUENCY OF DETECTION > 5%?	IS TARGET ANALYTE A CoC?
		# Detects	# Samples	%	Minimum	Maximum					Exceeds Minimum Benchmark?	Exceeds Background?		
MET	Arsenic	33	33	100%	3 00	12 46	8 15	12 28	3 73	8 2	YES	YES	YES	YES
	Cadmium	33	33	100%	0 07	1 45	0 46	1 11	0 23	1 2	NO	YES	YES	YES
	Chromium	33	33	100%	24.25	112 75	62 68	104 57	42 75	81	YES	YES	YES	YES
	Copper	27	33	82%	1 50	179 50	60 13	151 82	10 38	34	YES	YES	YES	YES
	Lead	33	33	100%	12.80	192 60	66 60	154 53	41 45	46 70	YES	YES	YES	YES
	Mercury	24	33	73%	0 07	1 08	0 36	0 79	0 18	0 15	YES	YES	YES	YES
	Nickel	31	33	94%	12 50	77 75	24 73	45 98	14 13	20 90	YES	YES	YES	YES
	Silver	25	33	76%	0 14	1 82	0 55	1 26	0 20	1 00	YES	YES	YES	YES
	Zinc	33	33	100%	28 50	547 25	147 10	373 39	68 63	150 00	YES	YES	YES	YES
PAH	1,6,7-Trimethylnaphthalene	23	33	70%	1 89	27 94	8 31	18 66	1 46		NA	YES	YES	YES
	1-Methylnaphthalene	22	33	67%	5 56	55 11	21 66	46 78	2 58		NA	YES	YES	YES
	1-Methylphenanthrene	23	33	70%	8 88	266 56	61 82	165 94	9 49		NA	YES	YES	YES
	2,6-Dimethylnaphthalene	24	33	73%	4 39	112 32	33 61	77 67	6 18		NA	YES	YES	YES
	2-Methylnaphthalene	22	33	67%	3 50	88 19	29 94	63 61	3 83	70	NO	YES	YES	YES
	Acenaphthene	23	33	70%	1 71	196 96	37 34	132 74	1 42	16	YES	YES	YES	YES
	Acenaphthylene	25	33	76%	1 00	326 77	82 86	215 22	10 66	44	YES	YES	YES	YES
	Anthracene	27	33	82%	2 57	1220 00	242 86	715 17	21 21	85 3	YES	YES	YES	YES
	Benzo(a)anthracene	28	33	85%	6 77	3740 00	507 88	1900 38	45 10	261	YES	YES	YES	YES
	Benzo(a)pyrene	28	33	85%	6 23	2380 00	492 93	1531 10	62 87	430	YES	YES	YES	YES
	Benzo(b,j,k)fluoranthene	28	33	85%	13 22	6100 00	1114 43	3536 97	124 81	3200	YES	YES	YES	YES
	Benzo(e)pyrene	29	33	88%	4 69	2070 00	412 53	1269 51	53 19		NA	YES	YES	YES
	Benzo(g,h,i)perylene	29	33	88%	4 12	1110 00	238 39	676 96	37 28		NA	YES	YES	YES
	Biphenyl	22	33	67%	2 85	29 91	11 58	22 93	1 35		NA	YES	YES	YES
	Chrysene	27	33	82%	8 13	2800 00	533 01	1723 78	49 91	384	YES	YES	YES	YES
	Dibenz(a,h)anthracene	25	33	76%	3 18	317 43	79 55	212 00	10 10	63 4	YES	YES	YES	YES
	Fluoranthene	28	33	85%	11 85	4970 00	715 10	2493 84	99 28	600	YES	YES	YES	YES
	Fluorene	23	33	70%	6 42	293 64	54 75	170 03	4 56	19	YES	YES	YES	YES
	Indeno(1,2,3-cd)pyrene	27	33	82%	5 91	1020 00	243 90	668 15	34 58		NA	YES	YES	YES
	Naphthalene	23	33	70%	5 26	136 11	38 73	85 26	13 64	160	NO	YES	YES	YES
	Perylene	32	33	97%	2 11	617 53	121 25	373 29	19 27		NA	YES	YES	YES
	Phenanthrene	26	33	79%	5 78	1609 54	332 74	1029 13	43 71	240	YES	YES	YES	YES
	Pyrene	28	33	85%	14 81	9870 00	1223 54	4588 11	97 93	665	YES	YES	YES	YES
	Total PAHs	33	33	100%	25 43	34723 93	5563 91	19417 86	746 00	4022	YES	YES	YES	YES

Notes
1 Concentration units Metals (MET) - ug/g, PAHs, PCBs, pesticides (PST) and Butyltins (BT) - ng/g.
[a]The range of concentrations reported for site data excludes non-detected values, see Appendix A
[b]The mean of concentrations reported for site data excludes non-detected values, see Appendix A
[c]Sample Quantitation Limits substituted for non-detects when calculating mean of reference station data, see Appendix A
[d]Conservative biological benchmarks are presented in Table 3 3-2 of the Derecktor ERA report.
[e]If 95% UCL is greater than the Maximum Concentration, as indicated with a "+", then Maximum Concentration is used to screen against background and benchmarks
NA = Not Applicable

CLASS	ANALYTE	FREQUENCY OF DETECTION # Detects	# Samples	%	RANGE OF CONCENTRATION[a] Minimum	Maximum	MEAN CONCENTRATION[b]	95% UPPER CONFIDENCE LIMIT	BACKGROUND CONCENTRATION[c]	MINIMUM BENCHMARK VALUE[d]	95% UCL or MAX CONCENTRATION[e] Exceeds Minimum Benchmark?	Exceeds Background?	FREQUENCY OF DETECTION > 5%?	IS TARGET ANALYTE A CoC?
PCB	101 (2 2'3 5 5')	33	33	100%	0.26	220 22	14 51	125 20	0 82		NA	YES	YES	YES
PCB	105 (2 3 3'4 4')	27	33	82%	0 10	137 44	8 93	86 73	0 18		NA	YES	YES	YES
PCB	118 (2 3'4 4'5)	26	33	79%	0 35	242 41	19 65	154 33	0 57		NA	YES	YES	YES
PCB	128 (2 2'3 3'4 4')	27	33	82%	0 10	73 00	5 63	44 29	0 25		NA	YES	YES	YES
PCB	138 (2 2'3 4 4'5)	26	33	79%	0 31	265 35	23 80	169 82	0 97		NA	YES	YES	YES
PCB	153 (2 2'4 4'5 5')	27	33	82%	0 21	174 00	16 82	111 21	0 98		NA	YES	YES	YES
PCB	170 (2 2'3 3'4 4'5)	27	33	82%	0 13	44 16	4 86	28 77	0 34		NA	YES	YES	YES
PCB	18 (2 2'5)	28	33	85%	0 09	27 54	2 00	6 34	0 15		NA	YES	YES	YES
PCB	180 (2 2'3 4 4'5 5')	28	33	85%	0 21	53 17	7 32	34 84	0 55		NA	YES	YES	YES
PCB	187 (2 2'3 4'5 5'6)	32	33	97%	0 05	25 82	3 86	16 65	0 47		NA	YES	YES	YES
PCB	195 (2 2'3 3'4 4'5 6)	28	33	85%	0 06	3 83	0 89	3 06	0 22		NA	YES	YES	YES
PCB	206 (2 2'3 3'4 4'5 5'6)	32	33	97%	0 20	17 39	3 07	11 57	0 71		NA	YES	YES	YES
PCB	209 (2 2'3 3'4 4'5 5'6 6')	33	33	100%	0 20	105 27	5 61	58 81	0 75		NA	YES	YES	YES
PCB	28 (2 4 4')	33	33	100%	0 06	28 34	2 44	8 92	0 33		NA	YES	YES	YES
PCB	44 (2 2'3 5')	33	33	100%	0 09	65 05	4 27	37 01	0 61		NA	YES	YES	YES
PCB	52 (2 2'5 5)	32	33	97%	0 24	130 50	8 42	77 42	1 11		NA	YES	YES	YES
PCB	66 (2 3'4 4')	33	33	100%	0 08	179 58	8 06	99 91	0 33		NA	YES	YES	YES
PCB	8 (2 4)	25	33	76%	0 11	65 95	3 66	6 68	0 11		NA	YES	YES	YES
PCB	PCB Sum of Congeners x 2	33	33	100%	2 85	3310 00	250 44	1901 13	18 91	22 7	YES	YES	YES	YES
PST	Aldrin	0	33	0%	0 00	0 00			0 20		+ NA	NO	NO	NO
PST	Hexachlorobenzene	1	33	3%	0 38	0 38	0 38		0 20		+ NA	YES	NO	NO
PST	Mirex	14	33	42%	0 23	8 58	1 68	3 50	0 20		NA	YES	YES	YES
PST	o,p'-DDE	28	33	85%	0 25	65 22	4 85	43 48	0 55	2 2	YES	YES	YES	YES
PST	p p'-DDE	31	33	94%	0 08	17 06	3 11	11 94	0 29	2 2	YES	YES	YES	YES
BT	MONOBT	0	33	0%	0 00	0 00					+ NA	NO	NO	NO
BT	DIBT	0	33	0%	0 00	0 00					+ NA	NO	NO	NO
BT	TETRABT	0	33	0%	0 00	0 00					+ NA	NO	NO	NO
BT	TOTBT	0	33	0%	0 00	0 00					+ NA	NO	NO	NO

Notes
1 Concentration units Metals (MET) - ug/g, PAHs, PCBs, pesticides (PST) and Butyltins (BT) - ng/g.
aThe range of concentrations reported for site data excludes non-detected values, see Appendix A
bThe mean of concentrations reported for site data excludes non-detected values, see Appendix A
cSample Quantitation Limits substituted for non-detects when calculating mean of reference station data, see Appendix A
dConservative biological benchmarks are presented in Table 3 3-2 of the Dereckitor ERA report.
eIf 95% UCL is greater than the Maximum Concentration, as indicated with a "+",
then Maximum Concentration is used to screen against background and benchmarks
NA = Not Applicable

Shaded Results indicate data not yet available

TABLE X-XX
SUMMARY WATER QUALITY RESULTS
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND

Sample ID	Chlorophyll (mg/m^3) Mean	SD	Dissolved Oxygen (mg/L) Mean	SD	Suspended Solids (mg/L) Mean	SD	Total Ammonia (mg/L) Mean	SD	Un-Ionized Ammonia (mg/L) Mean	SD
Test Series 1[1]										
CHC-1	ND		8.05	0.21	23.08	NA	0.00	0.01	0.000	0.000
DSY-26	ND		8.00	0.28	26.21	0.27	0.09	0.01	0.001	0.000
DSY-28	ND		8.05	0.35	8.56	0.68	0.09	0.02	0.002	0.000
DSY-29	ND		8.35	0.35	13.18	3.20	0.06	0.07	0.001	0.001
DSY-31	ND		7.55	0.21	8.28	1.16	0.06	0.02	0.001	0.000
DSY-33	ND		8.05	0.49	15.63	0.27	0.06	0.05	0.001	0.001
DSY-37	ND		7.15	0.64	16.22	NA	0.06	0.01	0.001	0.001
DSY-38	ND		8.10	0.28	37.76	30.58	0.05	0.07	0.001	0.001
DSY-40	ND		8.25	0.49	25.13	18.82	0.15	0.14	0.003	0.003
JPC-1	ND		7.50	0.42	13.37	12.40	0.06	0.08	0.001	0.001

TABLE X-XX
SUMMARY WATER QUALITY RESULTS
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND

Sample ID	Chlorophyll (mg/m^3) Mean	Chlorophyll (mg/m^3) SD	Dissolved Oxygen (mg/L) Mean	Dissolved Oxygen (mg/L) SD	Suspended Solids (mg/L) Mean	Suspended Solids (mg/L) SD	Total Ammonia (mg/L) Mean	Total Ammonia (mg/L) SD	Un-Ionized Ammonia (mg/L) Mean	Un-Ionized Ammonia (mg/L) SD
T st Seri s 2[2]										
CHC-1	0.53	0.75	6.90	0.00	18.64	NA	0.00	NA	0.000	NA
DSY-26	3.45	1.10	7.30	0.14	38.82	NA	0.00	NA	0.001	NA
DSY-28	1.95	1.48	7.05	0.07	30.66	NA	0.02	NA	0.001	NA
DSY-29	5.12	1.26	8.35	0.21	36.11	18.71	0.00	NA	0.000	NA
DSY-31	2.50	0.71	7.15	0.07	35.64	NA	0.03	NA	0.000	NA
DSY-33	3.17	2.98	7.50	0.28	15.44	NA	0.00	NA	0.001	NA
DSY-37	0.53	0.75	6.95	0.07	43.18	NA	0.00	NA	0.000	NA
DSY-38	0.52	0.73	7.10	0.00	27.38	NA	0.00	NA	0.000	NA
DSY-40	3.42	0.11	8.25	0.07	37.86	19.01	0.00	NA	0.000	NA
JPC-1	1.59	0.59	7.45	0.07	20.12	NA	0.00	NA	0.000	NA

TABLE X-XX
SUMMARY WATER QUALITY RESULTS
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND

Sample ID	Chlorophyll (mg/m^3) Mean	Chlorophyll (mg/m^3) SD	Dissolved Oxygen (mg/L) Mean	Dissolved Oxygen (mg/L) SD	Suspended Solids (mg/L) Mean	Suspended Solids (mg/L) SD	Total Ammonia (mg/L) Mean	Total Ammonia (mg/L) SD	Un-Ionized Ammonia (mg/L) Mean	Un-Ionized Ammonia (mg/L) SD
T st S ries 3[3]										
CHC-1	ND		7.90	0.00	16.11	3.74	0.03	0.01	0.001	0.000
DSY-26	1.03	0.04	8.10	0.14	17.90	0.47	0.12	0.03	0.003	0.001
DSY-28	0.53	0.75	7.85	0.07	12.24	0.20	0.06	0.00	0.002	0.000
DSY-29	ND		8.75	0.21	15.10	0.16	0.04	0.02	0.001	0.001
DSY-31	ND		7.80	0.14	25.08	0.09	0.07	0.01	0.001	0.000
DSY-33	2.05	1.48	7.90	0.00	26.62	17.82	0.10	0.02	0.003	0.001
DSY-37	0.52	0.73	7.55	0.07	15.88	3.42	0.07	0.03	0.002	0.001
DSY-38	0.67	0.95	7.55	0.07	22.67	0.33	0.08	0.01	0.002	0.000
DSY-40	1.00	0.00	8.60	0.00	19.19	8.52	0.03	0.04	0.001	0.002
JPC-1	0.75	0.35	8.15	0.07	18.89	4.68	0.02	0.03	0.001	0.001

FOOTNOTES

NA Data was not available.

ND Value was below the method detection limit.

(1) Samples were collected on 10/4/95.

(2) Samples were collected on 10/25/95.

(3) Samples were collected on 11/10/95.

TABLE X-XX
SUMMARY SOD RESULTS
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND

Sample ID	Calculated SOD ($g/m^2/day$)[1,2]		Normalized SOD[3] ($g/m^2/day$)
	Mean	CV	
DSY-26	0.21	23.50	0.65
DSY-27	0.25	11.60	0.77
DSY-30	0.17	23.00	0.53
DSY-31	0.18	16.00	0.55
DSY-32	0.17	14.30	0.54
DSY-33	0.15	17.10	0.47
DSY-34a	0.27	11.60	0.86
DSY-34b	0.17	17.30	0.53
DSY-40	0.19	20.60	0.59
Mean	0.20	17.20	0.55

FOOTNOTES

(1) Water-only uptake - sediment-water uptake at *in situ* temperature (17-19°C).
(2) Based on 6 replicate pairs. CV = Coefficient of Variation
(3) Calculated SOD was normalized using the formula: $SOD_{20C} = SOD_T/(1.06^{(T-20)})$. from Whitmore (1988)

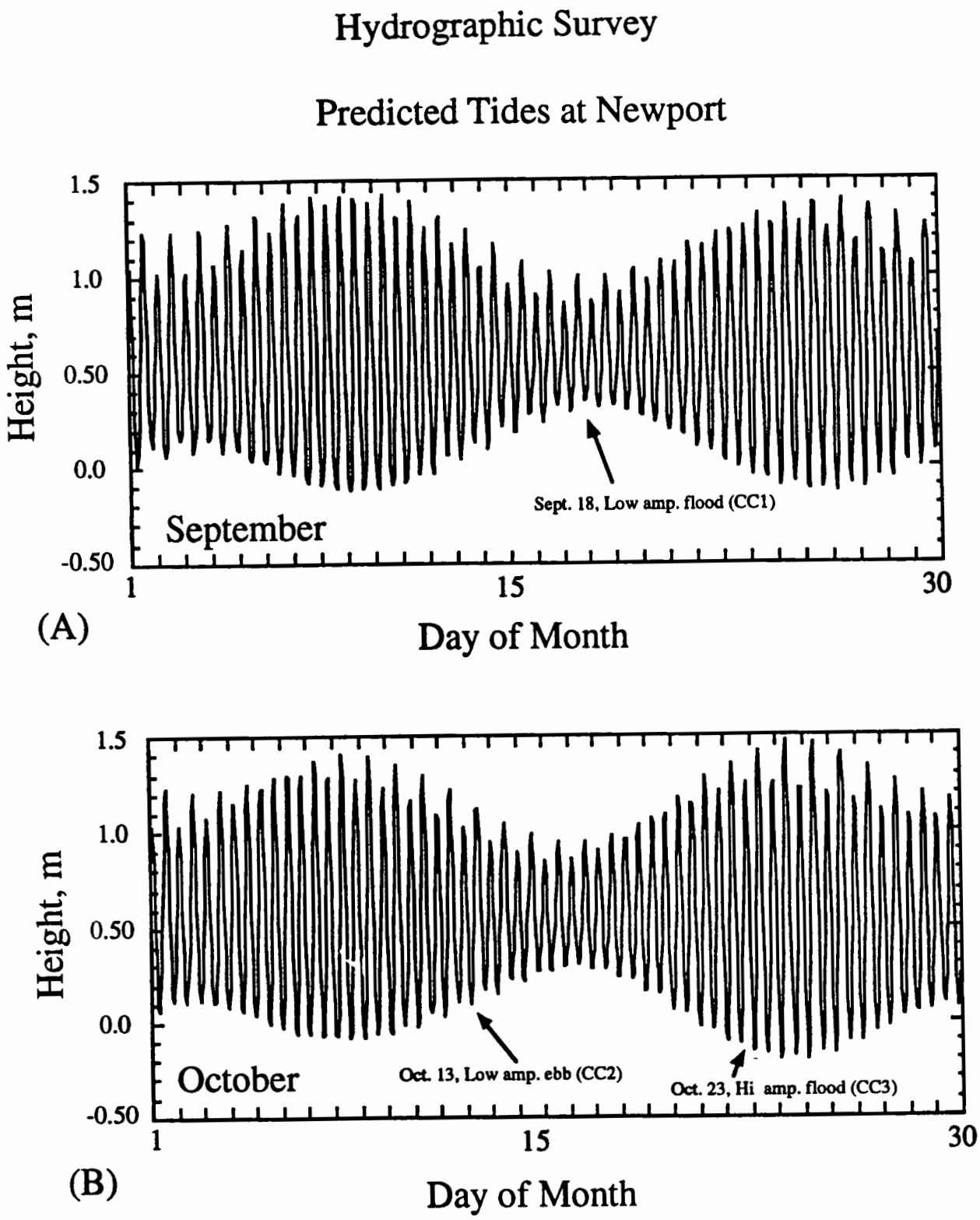
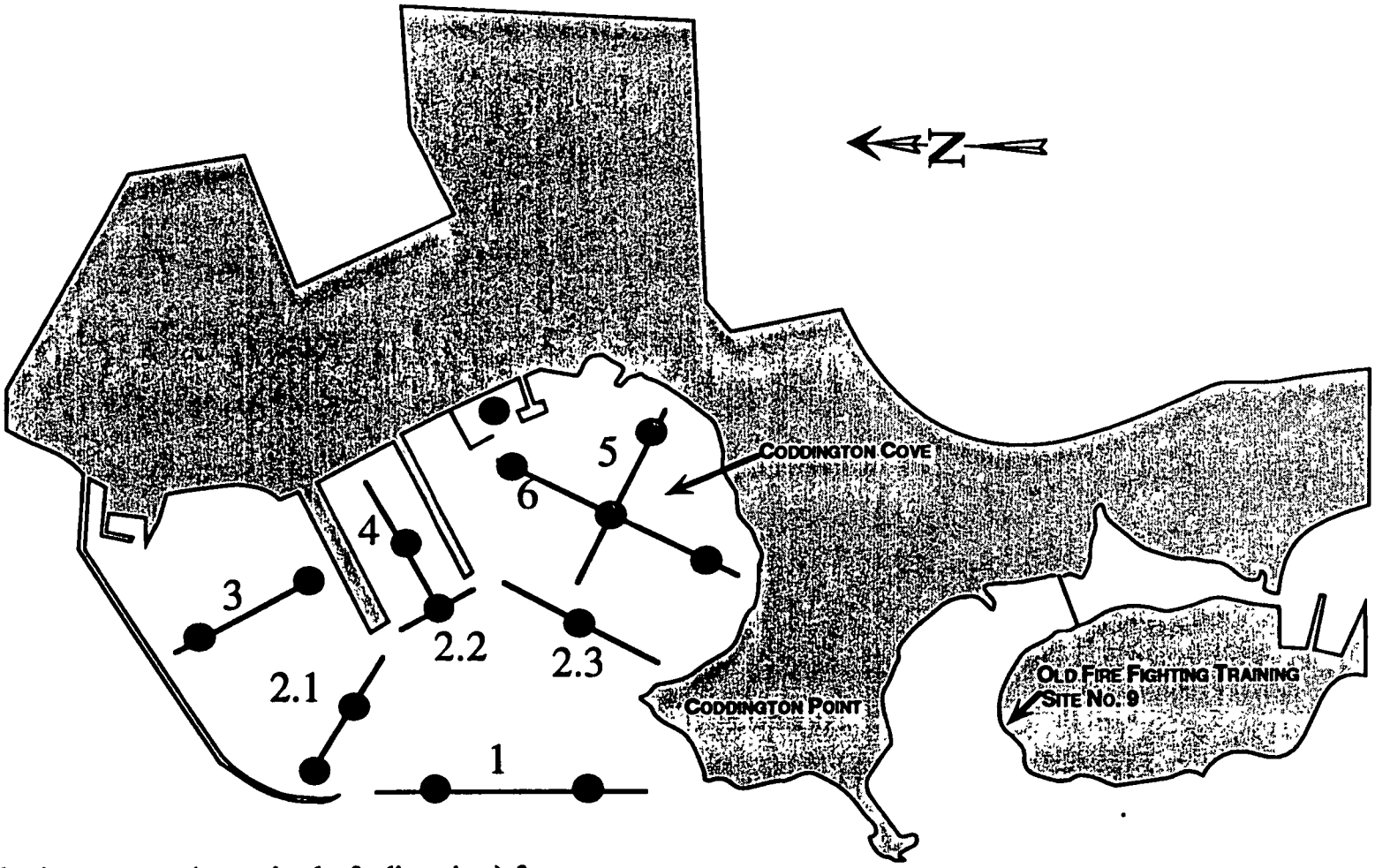


Figure 1. Plots of tidal height, as predicted for Newport Harbor, versus time for (a) September, 1995 and (b) October, 1995. Plots highlight conditions during the three fall surveys. The first survey was done September 18 (labeled CC1) during a low amplitude (0.6 meter) tide. During the survey period the tide was flooding. The second survey was conducted on October 13 during a low (0.9 meter) tide to characterize ebbing conditions. The final survey was conducted on October 23 during a high amplitude (>1.5 meter) tide. This survey period covered the end of an Ebb and a large portion of the flood tide.



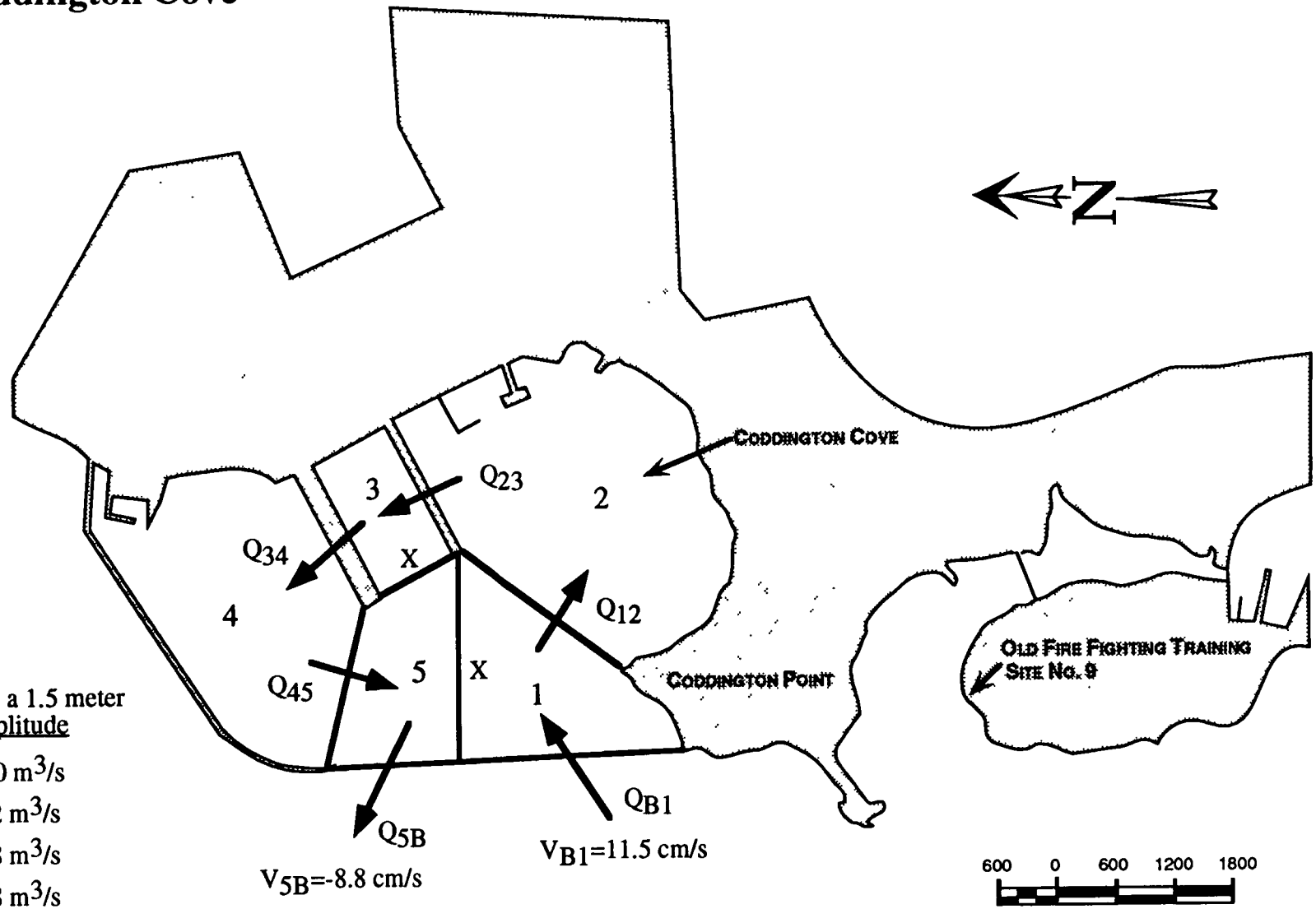
= site of velocity vectors (magnitude & direction) for both deep and shallow flow.

= times series data; velocity magnitude only (e.g. Dead Zone)

Figure 1c. Map of Coddington Cove showing locations and orientations of transect lines over which data on current velocities is collected using the Doppler Current Profiler. Shaded circles represent regions were data is laterally averaged and sectioned into 3 depth levels (shallow= upper 1/4 of the profile, intermediate= middle 1/3 of profile and bottom=lower 1/4 of the profile).

Figure 7. Map shows flux arrows for a simplified box model of Coddington Cove. Values for calculated fluxes between boxes are also shown. The simple model breaks the cove into distinct regions, or boxes. The average inflow velocity (11.5 cm/s) is taken from data recorded during a high amplitude flood tide and is multiplied by the cross sectional area of the inflow boundary for box 1. The data show a general counterclockwise pattern of flow in the cove and, based on this data, the simple flux-box model is constrained to flow in this manner. Therefore, the flux into box 2 is calculated as the difference between the flux into box 1 minus the storage in box 1, assuming zero flux between box 1 and 5 (denoted as X in the figure). The storage is equivalent to the rate of rise of surface elevation (calculated from the tidal curve) times the surface area of box 1. The flux (or Q) values are then calculated within the next box based on the inflow to that box and the process proceeds around the cove in this fashion. These values can provide the driving force for simple box models of contaminant transport within the cove, but also provide an important check on the data obtained at the mouth by the current profiler. The method of calculating successive fluxes around the cove (boxes 1 to 2 to 3, etc.) leads to a calculated value for outflux from box 5, which when divided by cross-sectional area of the outflow boundary at the mouth provides an average outflow velocity magnitude. This value of 8.8 cm/s agrees within 5-8% of the value obtained from the data.

Coddington Cove



Assuming a 1.5 meter
Tidal Amplitude

Q_{B1}=690 m^3/s
Q_{12}=652 m^3/s
Q_{23}=568 m^3/s
Q_{34}=548 m^3/s
Q_{45}=445 m^3/s
Q_{5B}=407 m^3/s

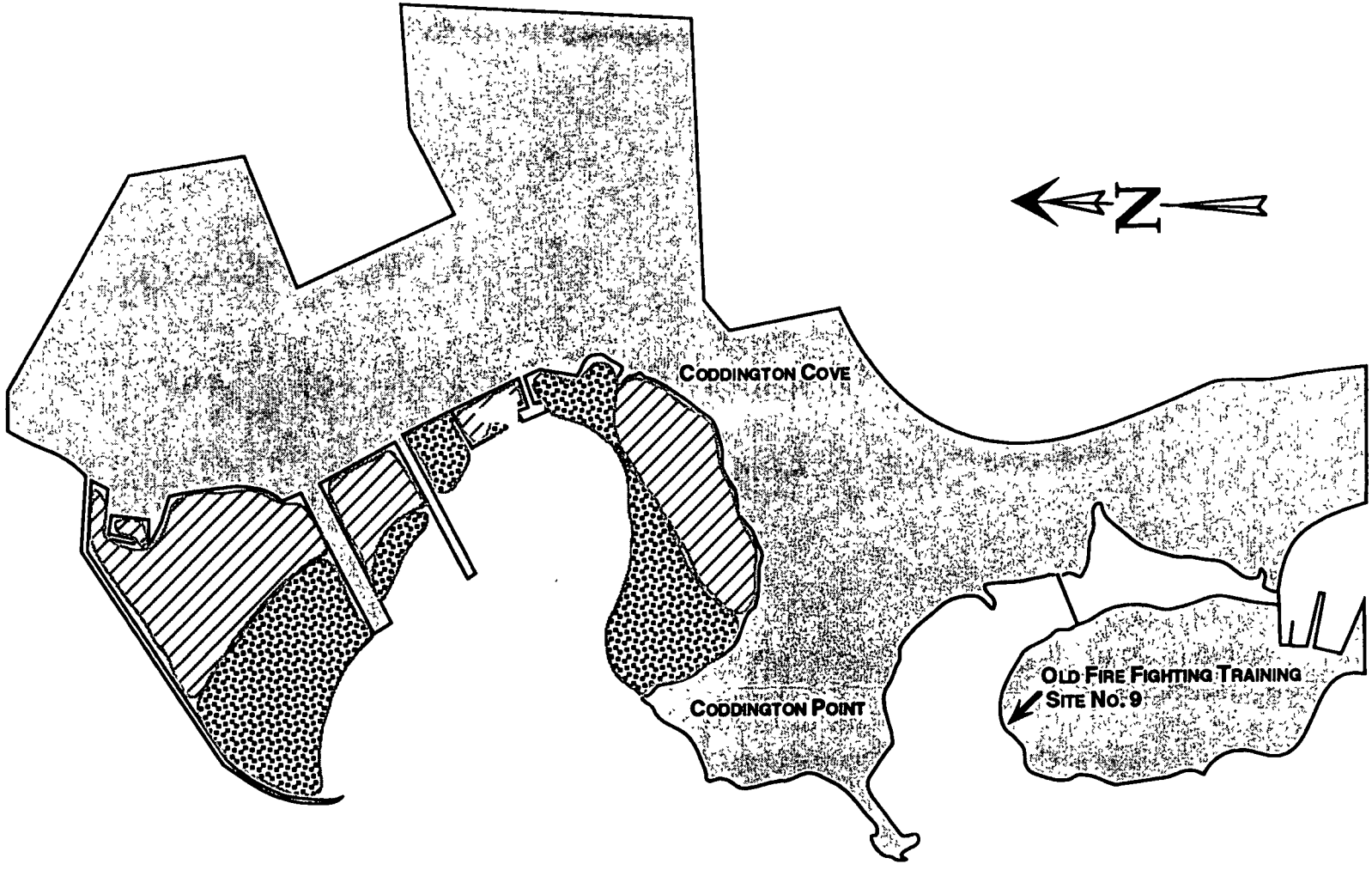
X=no net flux assumed

Figure 7

Figure 11. Map of depositional environments within Coddington Cove. Map is constructed by dividing each data transect (e.g. as shown in figure 1c) into sections, averaging laterally within that section to produce an average profile of velocity magnitude and orientation and then recording near-bottom magnitudes at these specific locations (as in figures 8-10). This erosion/deposition map is determined by averaging these bottom magnitudes over each of the periods of data collection. The three regions shown are for (1) average bottom velocity < 5 cm/s, (2) < 10 cm/s and (3) above 10 cm/s. These values represent upper bounds in that velocities in these areas were not seen to exceed these values, but might fall well below these bounds during portions of the tidal cycle. In addition, the two shaded regions, or (1) and (2) above, are expected to have sedimentation of particles >0.1mm and >0.8 mm diameter grains, respectively. The important features of the map are the high velocity core which extends into the southeastern section of the cove (box 2 in figure 7), approaching the region called "the dead zone", located between piers at the eastern end of transect 6 (figure 1b). In fact, some of the highest velocities (>25 cm/s) were recorded just outside this region of the cove. The interior sections of box 3 and box 4 (as denoted in figure 7) are generally sluggish and it is expected that the very interior section, or northeastern end, of box 4 is a strongly depositional zone. The data suggests an overall pattern (based on flow patterns and distribution of flow magnitudes) of re suspending sediment from the eastern sections of box 2 and transporting it around in a counterclockwise pattern through boxes 3, 4 and 5. While the majority of the sediment should be carried out with the vigorous outflow, some is expected to fall out of suspension in the northeastern corner of the cove.

Map of Coddington Cove Depositional Regimes

(Based on ADCP Data)

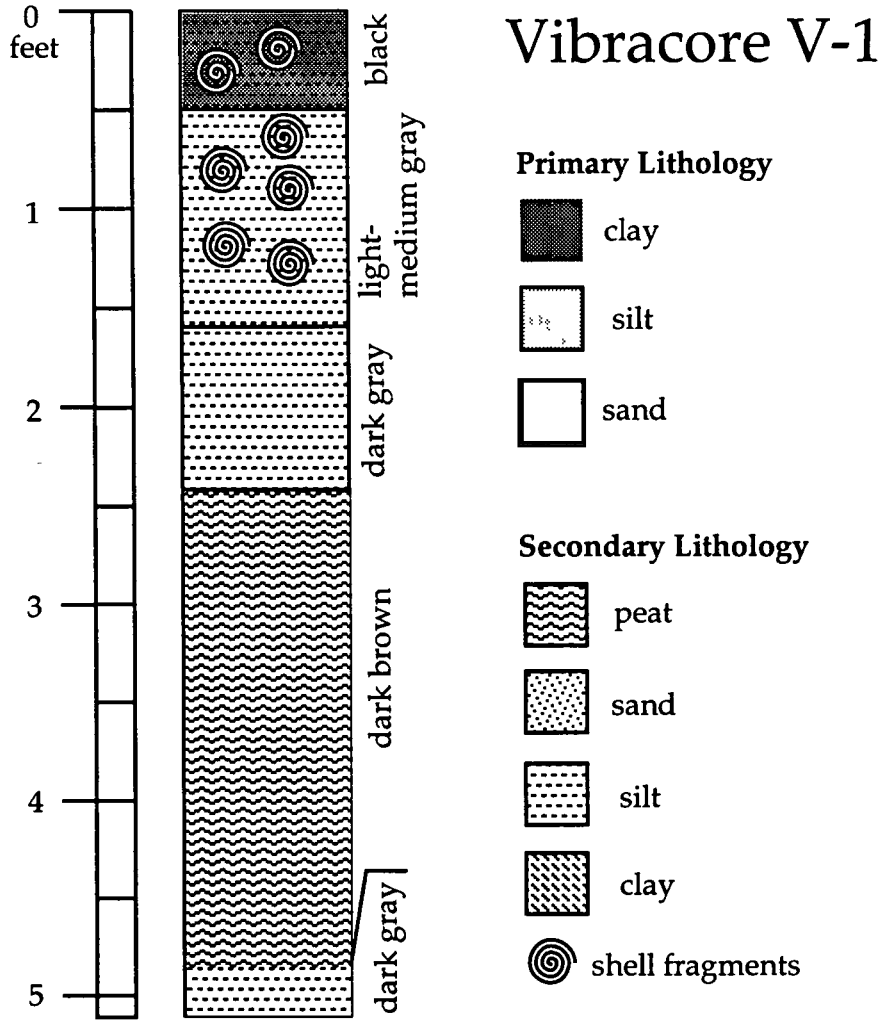


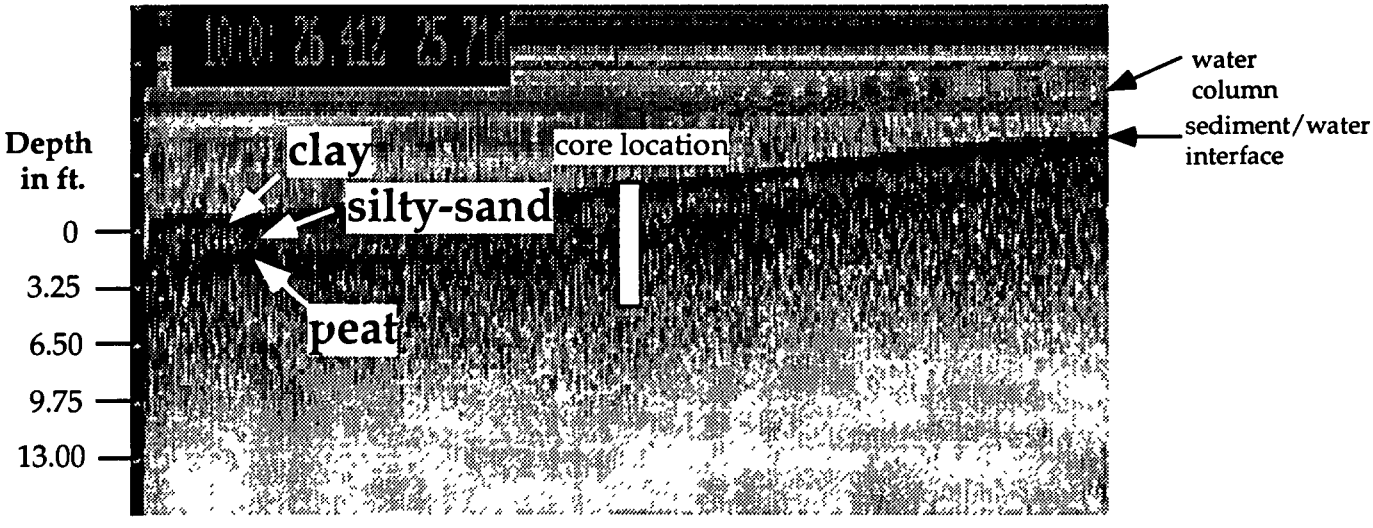
Velocity < 5 cm/s (Sedimentation > 0.1 mm)

Velocity < 10 cm/s (Sedimentation > 0.8 mm)

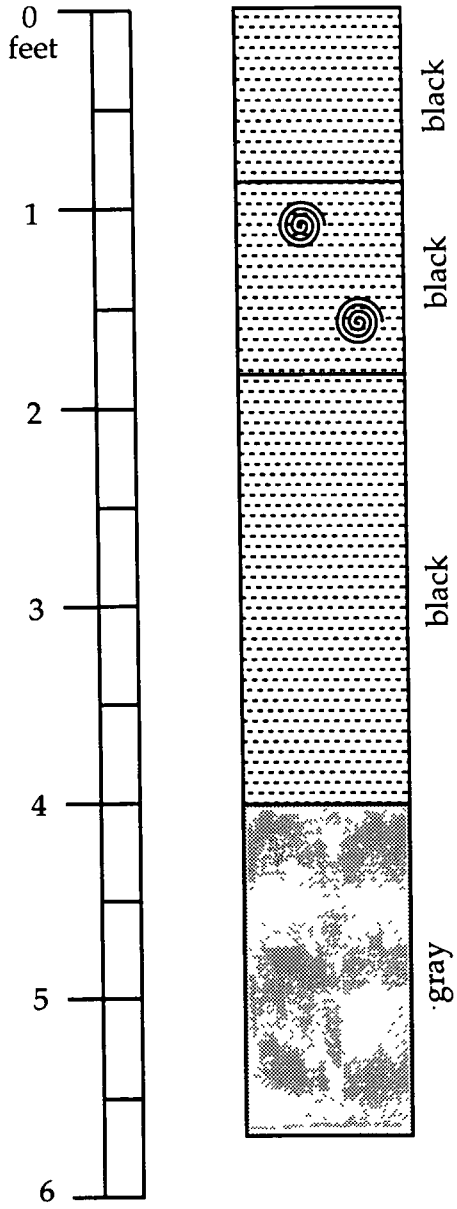
600 0 600 1200 1800

Figure 11


Vibracore V-1
0 feet
1
2
3
4
5
black
light-medium gray
dark gray
dark brown
dark gray
Primary Lithology
clay
silt
sand
Secondary Lithology
peat
sand
silt
clay
shell fragments


Depth in ft.
0
3.25
6.50
9.75
13.00
clay
silty-sand
peat
core location
water column
sediment/water interface

Vibracore V-4



Primary Lithology

- clay
- silt
- sand

Secondary Lithology

- peat
- sand
- silt
- clay
- shell fragments

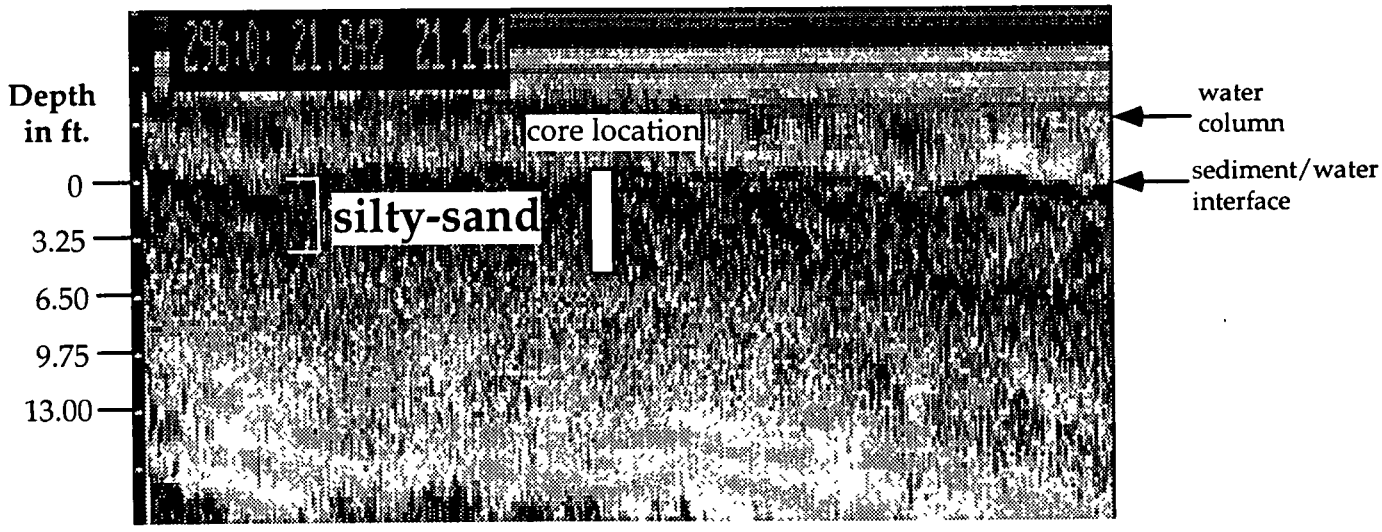


Table 1

Concentration of Organic Components(per g dry wt. sediment or mg O.C.) in Surface Sediments from Derecktor Shipyard.

COMPONENT	Site	DSY -25	DSY -26	DSY -27	DSY -28	DSY -29	DSY-29FD	DSY -30	DSY -31	DSY -32	DSY -33	DSY -34	DSY -35	DSY -36	DSY -37	DSY -38	DSY -39	DSY -40	DSY -41	JPC
	depth cm	0-12	0-18	0-17	0-18	0-18	0-18	0-18	0-18	0-18	0-14	0-18	0-14	0-18	0-18	0-18	0-18	0-14	0-13	0-14
	(units)																			
Σ PCBs	(ng/g)	94	98	3310	134	546	936	315	221	201	40	65	7	113	100	59	58	84	14	19
p,p'-DDE	(ng/g)	0.9	0.6	7.0	2.0	6.3	6.4	4.4	1.9	2.4	0.4	1.0	0.1	2.6	1.4	1.3	0.7	1.1	0.1	0.3
TBT	(ng Sn/g)																			
Σ PAHs	(ng/g)	4940	5800	11,000	4810	32,800	46,400	11,800	5150	5980	879	1930	62	3720	2250	1750	1830	5390	291	746
Organic Carbon	(mg/g)	18	15	37	40	61	59	38	38	36	17	32	6	35	22	31	26	15	8	11
COMPONENT/ ORGANIC CARBON	(units)																			
Σ PCBs	(ng/mgO.C.)	5.20	6.55	89.5	3.34	8.96	15.9	8.30	5.82	5.58	2.35	2.02	1.12	3.24	4.54	1.91	2.24	5.61	1.72	1.72
p,p'-DDE	(ng/mgO.C.)	0.05	0.04	0.19	0.05	0.10	0.11	0.12	0.05	0.07	0.02	0.03	0.01	0.07	0.06	0.04	0.03	0.08	0.01	0.03
TBT	(ng/mgO.C.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Σ PAHs	(ng/mgO.C.)	274	387	297	120	538	786	311	136	166	51.7	60.3	10.3	106	102	56.5	70.4	359	36.4	67.8

DSY = Derecktor Shipyard; FD = Field Duplicate; JPC = Jamestown Potter Cove; O.C. = organic carbon.

Σ PCBs = Sum of Polychlorinated Biphenyls; TBT = Tributyltin; Σ PAHs = Sum of Polycyclic Aromatic Hydrocarbons.

Table 2

Concentration of Organic Components(per g dry wt. sediment or mg O.C.) in Surface and Core Sediments from Derecktor Shipyard.

COMPONENT	Site	DSY-27			DSY-28					DSY-29			DSY-30		
	depth(cm)	0-17(S)	10-20(V)	39-45(V)	0-18(S)	24-34(P)	76-86(P)	105-115(V)	130-140(V)	0-18(S)	16-26(P)	44-54(P)	0-18(S)	18-28(P)	68-78(P)
	(units)														
Σ PCBs	(ng/g)	3310	1380	91	134	430	204	17	7	546	81	3	315	13	5
p,p'-DDE	(ng/g)	7.0	9.6	0.5	2.0	5.0	17.1	0.2	0.1	6.3	9.2	0.1	4.4	0.6	0.2
TBT	(ngSn/g)														
Σ PAHs	(ng/g)	11,000	34,700	3300	4810	8170	8260	25	96	32,800	19,600	157	11,800	1710	38
Organic Carbon	(mg/g)	37	37	10	40	39	35	7	7	61	15	5	38	15	17
COMPONENT/ ORGANIC CARBON	(units)														
Σ PCBs	(ng/mgO.C.)	89.5	37.3	9.13	3.34	11.0	5.82	2.40	1.06	8.96	5.43	0.57	8.30	0.86	0.31
p,p'-DDE	(ng/mgO.C.)	0.19	0.26	0.05	0.05	0.13	0.49	0.03	0.01	0.10	0.62	0.02	0.12	0.04	0.01
TBT	(ng/mgO.C.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Σ PAHs	(ng/mgO.C.)	297	938	330	120	209	1830	3.57	13.7	538	1310	31.4	311	114	2.23

DSY = Derecktor Shipyard; (S) = Surface sample; (P) = Piston core sample; (V) = Vibracore sample;

O.C. = organic carbon.

Σ PCBs = Sum of Polychlorinated Biphenyls; TBT = Tributyltin;

Σ PAHs = Sum of Polycyclic Aromatic Hydrocarbons.

Table 2 (cont.)

Concentration of Organic Components(per g dry wt. s dim nt or mg O.C.) in Surface and Core Sediments from Derecktor Shipyard.

COMPONENT	Site	DSY-31			DSY-34			DSY-36		
	depth(cm)	0-18(S)	45-55(P)	100-110(P)	0-18(S)	20-30(P)	70-80(P)	0-18(S)	40-50(P)	90-100(P)
	(units)									
Σ PCBs	(ng/g)	221	147	3	65	21	5	113	393	4
p,p'-DDE	(ng/g)	1.9	4.9	0.2	1.0	0.2	0.2	2.6	14.3	0.1
TBT	(ngSn/g)									
Σ PAHs	(ng/g)	5150	1640	39	1930	299	41	3720	5010	118
Organic Carbon	(mg/g)	38	17	16	32	15	16	35	45	9
COMPONENT/ ORGANIC CARBON	(units)									
Σ PCBs	(ng/mgO.C.)	5.82	8.63	0.20	2.02	1.40	0.31	3.24	8.74	0.46
p,p'-DDE	(ng/mgO.C.)	0.05	0.29	0.01	0.03	0.01	0.01	0.07	0.32	0.01
TBT	(ng/mgO.C.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Σ PAHs	(ng/mgO.C.)	136	96.5	2.44	60.3	19.9	2.56	106	111	13.1

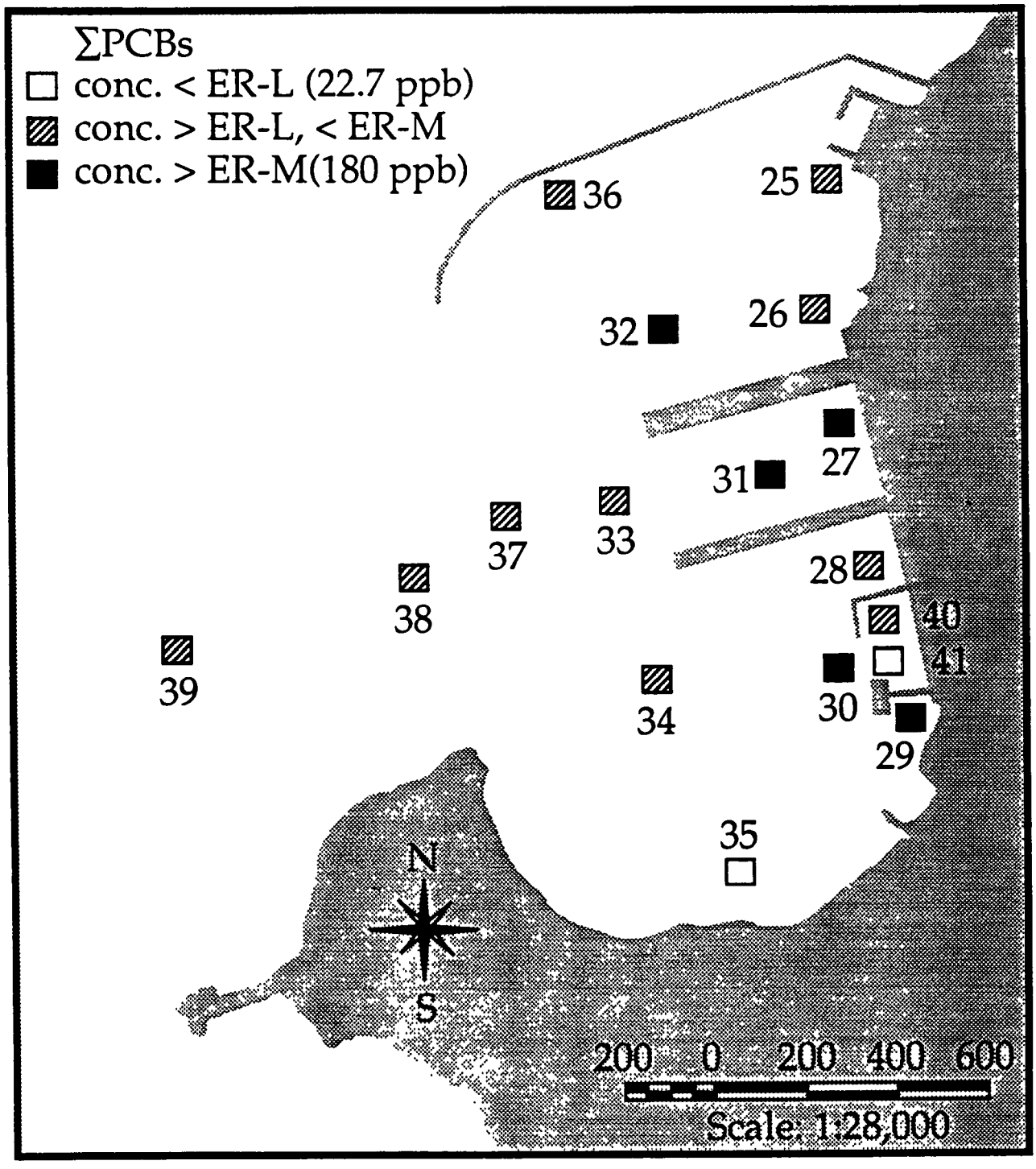


Figure 1a. Concentration (ng/g dry wt. sediment) of ΣPCBs in surface sediments (0-18cm) from Derecktor Shipyard/Coddington Cove.

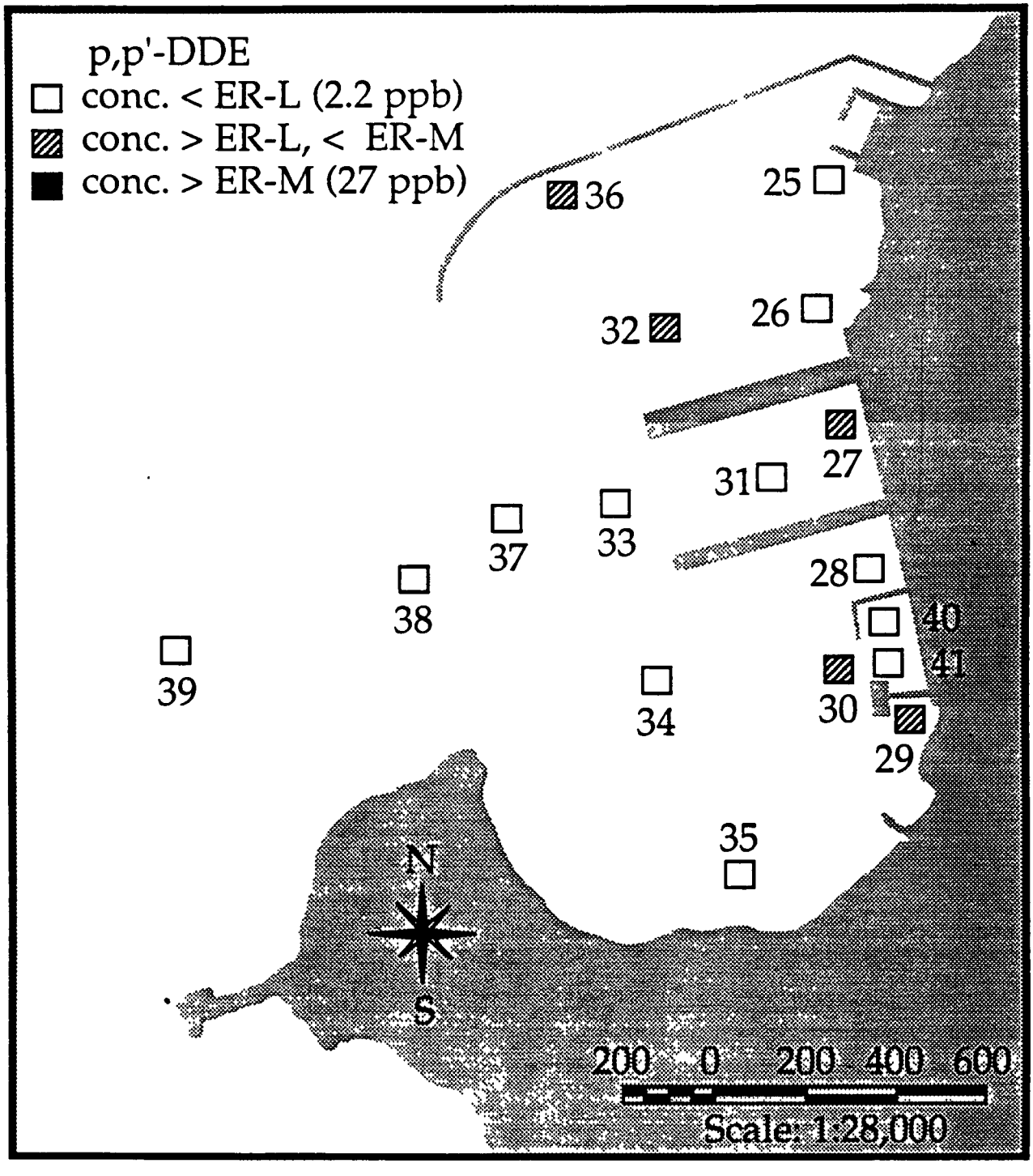


Figure 1b. Concentration (ng/g dry wt. sediment) of p,p'-DDE in surface sediments (0-18cm) from Derecktor Shipyard/Coddington Cove.

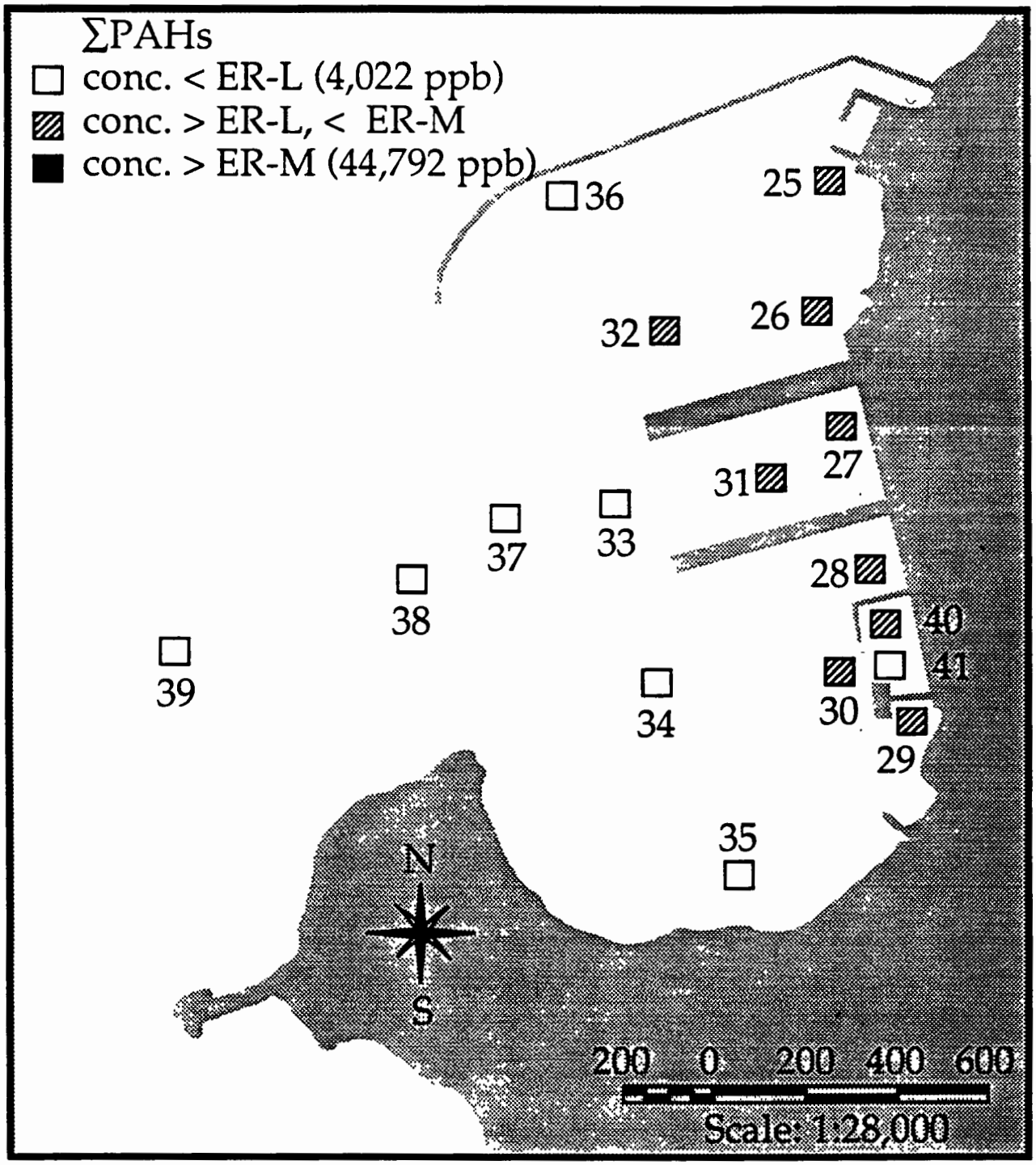


Figure 1c. Concentration (ng/g dry wt. sediment) of ΣPAHs in surface sediments (0-18cm) from Derecktor Shipyard/Coddington Cove.

Derecktor Shipyard/Coddington Cove 1995:
Sediment Metal Concentrations (µg/g) - Total Digestion

Surface Samples

	DSY-25	DSY-26	DSY-27	DSY-28	DSY-29	DSY-29 FD	DSY-30	DSY-31	DSY-32	DSY-33	DSY-34	DSY-35	DSY-36	DSY-37	DSY-38	DSY-39	DSY-40	DSY-41	DSY-JPC	DSY-JPCII
	0-12 cm	0-18 cm	0-17 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-14 cm	0-18 cm	0-14 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-14 cm	0-13 cm	0-14 cm	0-16 cm
Aluminum	21201 3	23628 5	43767 5	41307 5	37147 5	38107 5	37525 0	38455 0	34225 0	23359 5	32957 5	19687 3	38025 0	27560 0	37845 0	34007 5	25730 0	26762 5	27475 0	30460 0
Arsenic	6 36	9 43	11 60	8 68	12 46	12.32	10 30	10 22	10 93	7 39	9 66	3.39	11 21	7 41	8 94	7 58	6 79	11 43	2 61	4 84
Cadmium	0 34	0 18	1 03	0 55	1 45	2 18	1 20	0 76	0 72	0 19	0 32	0 09	0 40	0 32	0 25	0 18	0 50	0 18	0 29	0 17
Chromium	55 0	53 5	103 0	80 5	86 5	88 0	79 3	76 8	84 8	46 5	64 3	24 3	83 3	56 5	66 0	56 5	44 5	36 8	36 5	49 0
Copper	23 5	39 3	166 3	71 8	157 8	165 0	81.3	80 8	66 8	17 3	33 5	ND (U)	54 0	27 0	28 0	20 0	29 8	9 3	7 0	13 8
Iron	23830 8	23353 5	34532 5	29155 0	35452 5	36347 5	27417 5	28335 0	26545 0	21405 8	25630 0	12660 0	28620 0	20071 5	26180 0	21417 8	20511 0	17739 3	18091 5	18616 5
Lead	35 9	40 4	150 7	77 7	185 9	172 5	80 0	81 0	124 8	40 0	47 6	14 0	78 8	56 9	62 2	54 0	42 1	17 0	29 7	53 2
Manganese	268 5	148 5	346 5	302 5	282 3	289 8	276 5	307 5	293 5	133 5	280 0	90 3	312 8	265 0	333 8	285 3	116 5	106 0	293 5	284 3
Mercury	0 134	0 137	0 588	0 315	0 503	0 510	0 470	0 395	0 373	0 128	0 153	0 068	0 375	0 278	0 263	0 150	0 194	<0 03 (B)	0 245	0 106
Nickel	21 0	20 5	43 5	24 3	34 8	36 0	27 3	24 8	25 8	18 3	20 5	<10 0 (B)	25 8	16 8	22 0	17 8	17 3	14 5	14 3	14 0
Silver	0 26	0 19	0 69	0 51	0 79	0 99	0 74	0 51	0 81	0 24	0 29	<0 13 (B)	0 56	0 39	0 16	0 26	0 21	<0 13 (B)	0 14	0 26
Zinc	110 0	101 5	547 3	169 3	392 8	403 3	192 8	167 0	201 3	72.3	105 5	28 5	144 3	93 5	109 0	97 3	100 3	47 3	58 0	79 3

Core Samples

	DSY-28	DSY-28	DSY-29	DSY-29	DSY-30	DSY-30	DSY-31	DSY-31	DSY-34	DSY-34	DSY-36	DSY-36	DSY-V4	DSY-V4	DSY-V9	DSY-V9	27-Sep Field Blank	19-Oct Field Blank
	24-34 cm	76-86 cm	16-26 cm	44-54 cm	18-28 cm	68-78 cm	45-55 cm	100-110 cm	20-30 cm	70-80 cm	40-50 cm	90-100 cm	105-115 cm	130-140 cm	10-20 cm	39-45 cm	na	na
Aluminum	30315 0	38435 0	17663 0	18495 3	26627 5	23276 5	27677 5	34225 0	32772 5	24773 0	31102 5	16196 3	29658 8	17497 8	18218 0	18200 3	0 27ppm	0 018ppm
Arsenic	9 50	9 66	5 57	3 00	5 45	6 07	9 04	5 49	6 79	7 41	7 79	4 11	4 85	8 59	10 32	11 38	ND (U)	ND (U)
Cadmium	0 91	0 90	0 78	0 14	0 16	0 27	0 53	0 12	0 16	0 14	0 93	0 10	0 07	0 11	1 24	0 10	0 8 ug/L (B)	ND (U)
Chromium	112 8	107 8	56 0	31 3	49 8	42 0	56 5	38 8	48 0	54 5	110 5	30 5	108 0	44 0	50 8	29 8	ND (U)	ND (U)
Copper	179 5	132 5	60 0	<3 75 (B)	9 8	<3 75 (B)	36 8	<3 75 (B)	<3 75 (B)	4 3	104 5	<3 75 (B)	168 0	18.3	1 5	2 5	ND (U)	ND (U)
Iron	32305 0	35297 5	22018 5	16445 8	21970 3	21068 8	24123 0	17771 8	21319 8	23519 8	28667 5	13836 0	30379 3	33277 8	15478 3	17196 0	ND (U)	ND (U)
Lead	148 4	192 6	87 1	19 0	34 9	21 7	52 7	29 9	24 5	25 7	112 5	33 5	16 1	12.8	182 0	15 5	<2 9 ug/L (B)	<2 9 ug/L (B)
Manganese	331 5	338 0	137 0	113 0	140 8	214 0	219 8	253 5	294 3	312 0	317 3	132.3	268 3	343 3	193 5	189 0	<8 ug/L	ND (U)
Mercury	0 408	1 078	0 565	ND	0 140	<0 03	0 275	0 071	<0 03	<0 03	0 750	<0 03	0 860	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)
Nickel	77 8	45 5	23 3	15 3	16.8	13 5	21 8	12 5	17 0	21 5	30 8	<10 0	37 3	30 8	13 0	15 5	ND (U)	ND (U)
Silver	0 96	1 00	0 61	<0 5 ug/L (B)	0 14	<0 5 ug/L (B)	0 57	<0 5 ug/L (B)	<0 5 ug/L (B)	<0 5 ug/L (B)	1 54	<0 5 ug/L (B)	0 15	0 16	1 82	0 17	<0 5 ug/L (B)	<0 5 ug/L (B)
Zinc	455 0	327 8	130 5	34 5	64 5	48 5	122 8	36 0	47 0	55 5	213 8	35 5	466 5	71 3	29 8	36 0	ND (U)	ND (U)

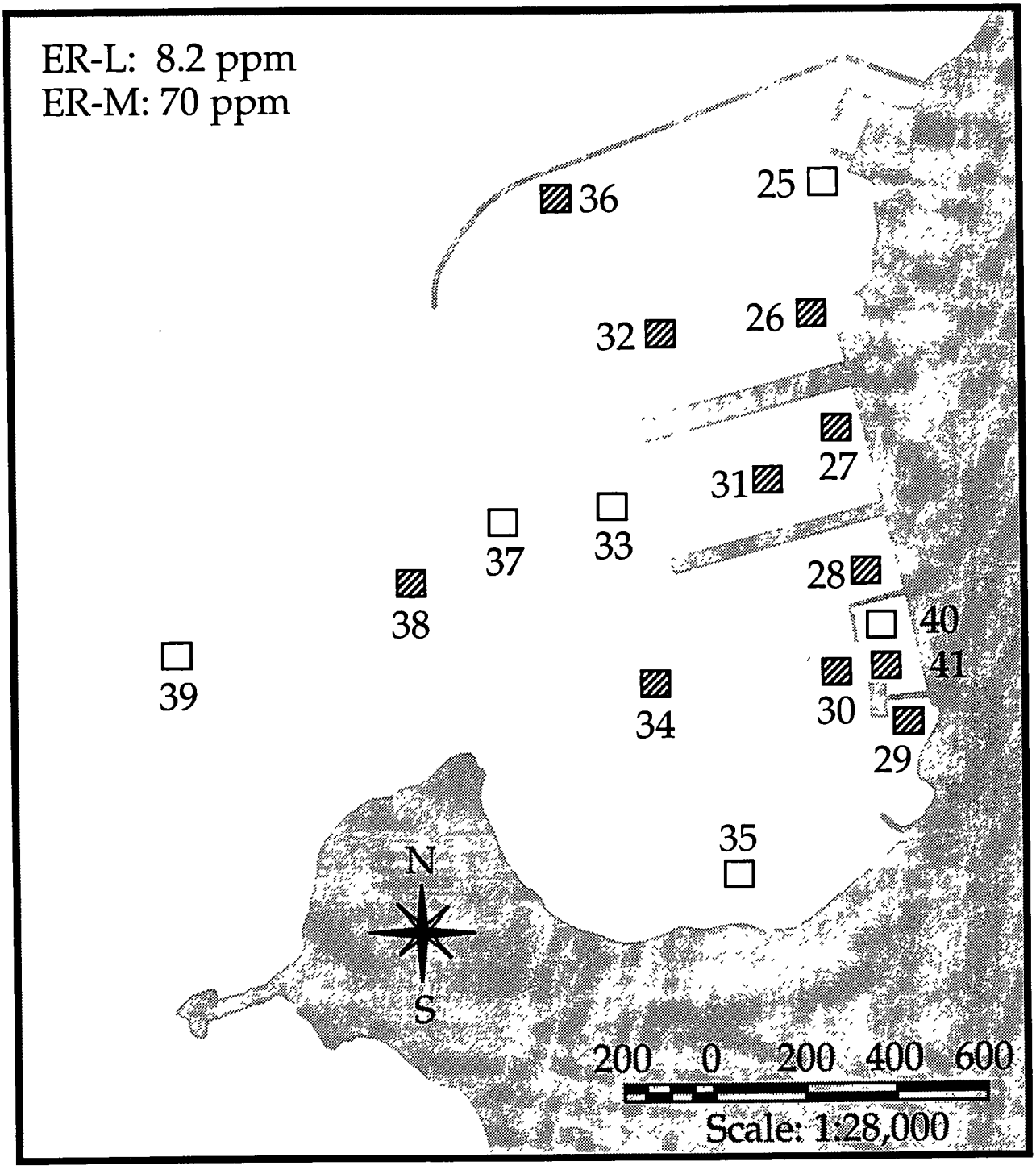
Notes:

1 "<" symbols designate concentrations below the Method Limit of Quantitation (MLQ)
2 "<" symbols associated with "ug/L" units designate concentrations below the Limit of Quantitative Detection (LQD)
3 Metal concentrations in field blanks can not be corrected for weight or volume Concentrations are therefore reported uncorrected, in the units appropriate to the instrument on which they were run

Abbreviations:

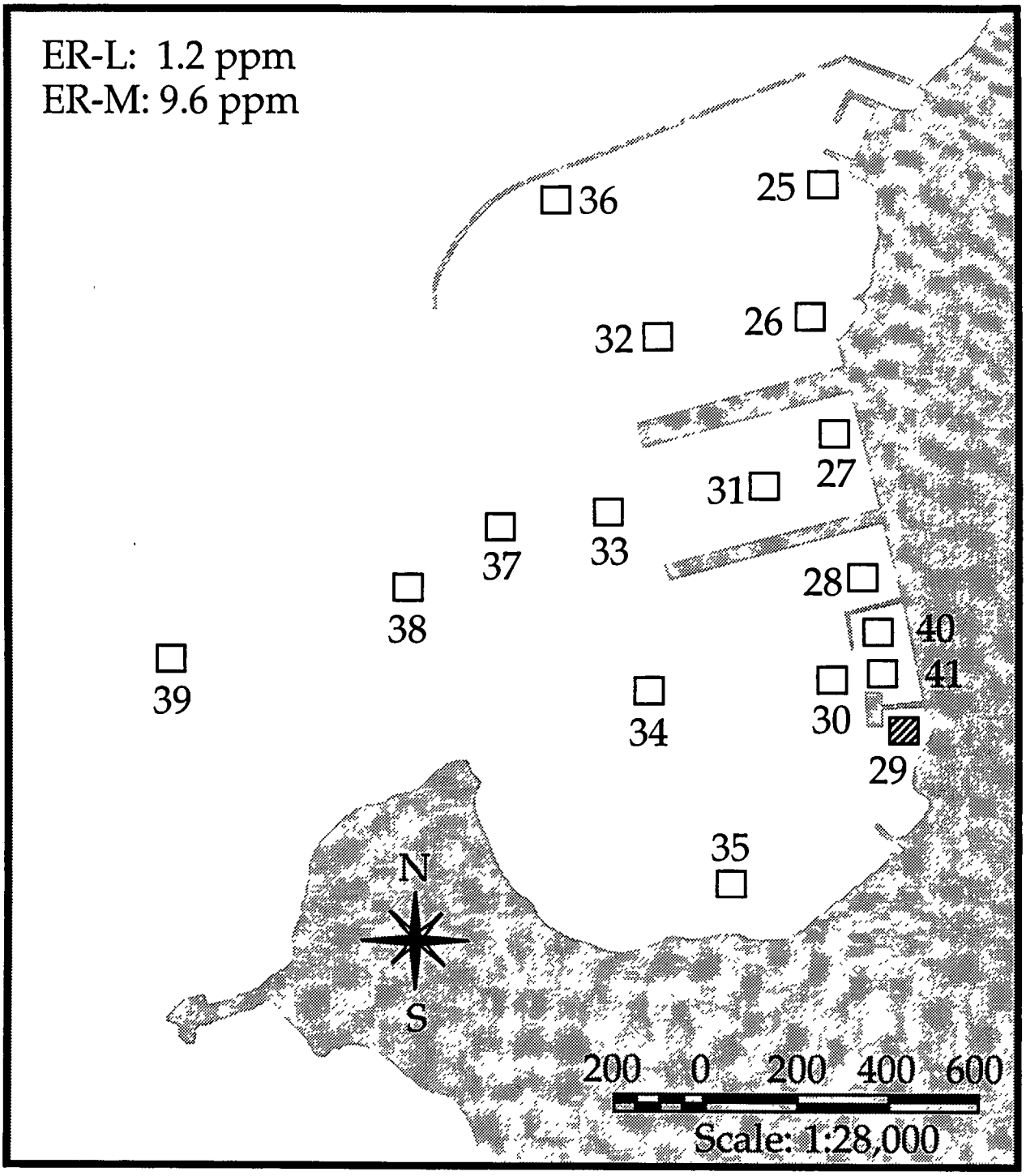
1 cm. centimeters Associated with the sample depth interval
2 µg/g micrograms per gram
3 µg/L micrograms per liter
4 ND not detected
5 Letters in ( ) are data qualifiers Data qualification scheme is based on "Data Qualifiers for Inorganic Analytical Data, Laboratory Qualifiers" as described in SAIC QA Technical Procedure No TP-DM-300-7, revision 1, pages 21-22
The following Data Qualifiers are used in this table
(B) Indicates that the reported value was obtained from a reading that was less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit
(U) Indicates that the analyte was analyzed for but not detected

Derecktor Shipyard/ Coddington Cove
Concentration of Arsenic in Sediments



□ concentration less than ER-L
▨ concentration greater than ER-L but less than ER-M
■ concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Cadmium in Sediments

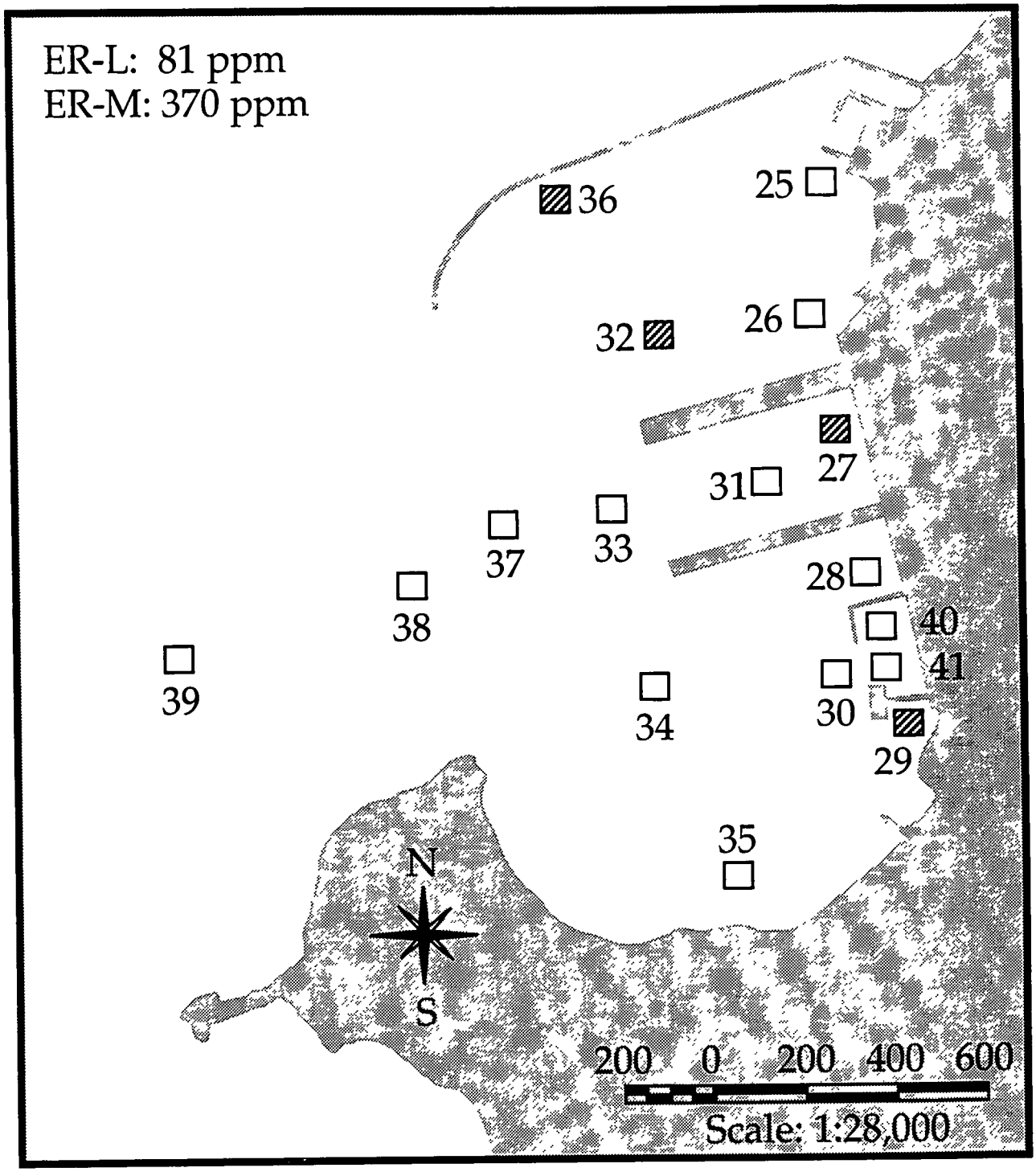


concentration less than ER-L

concentration greater than ER-L but less than ER-M

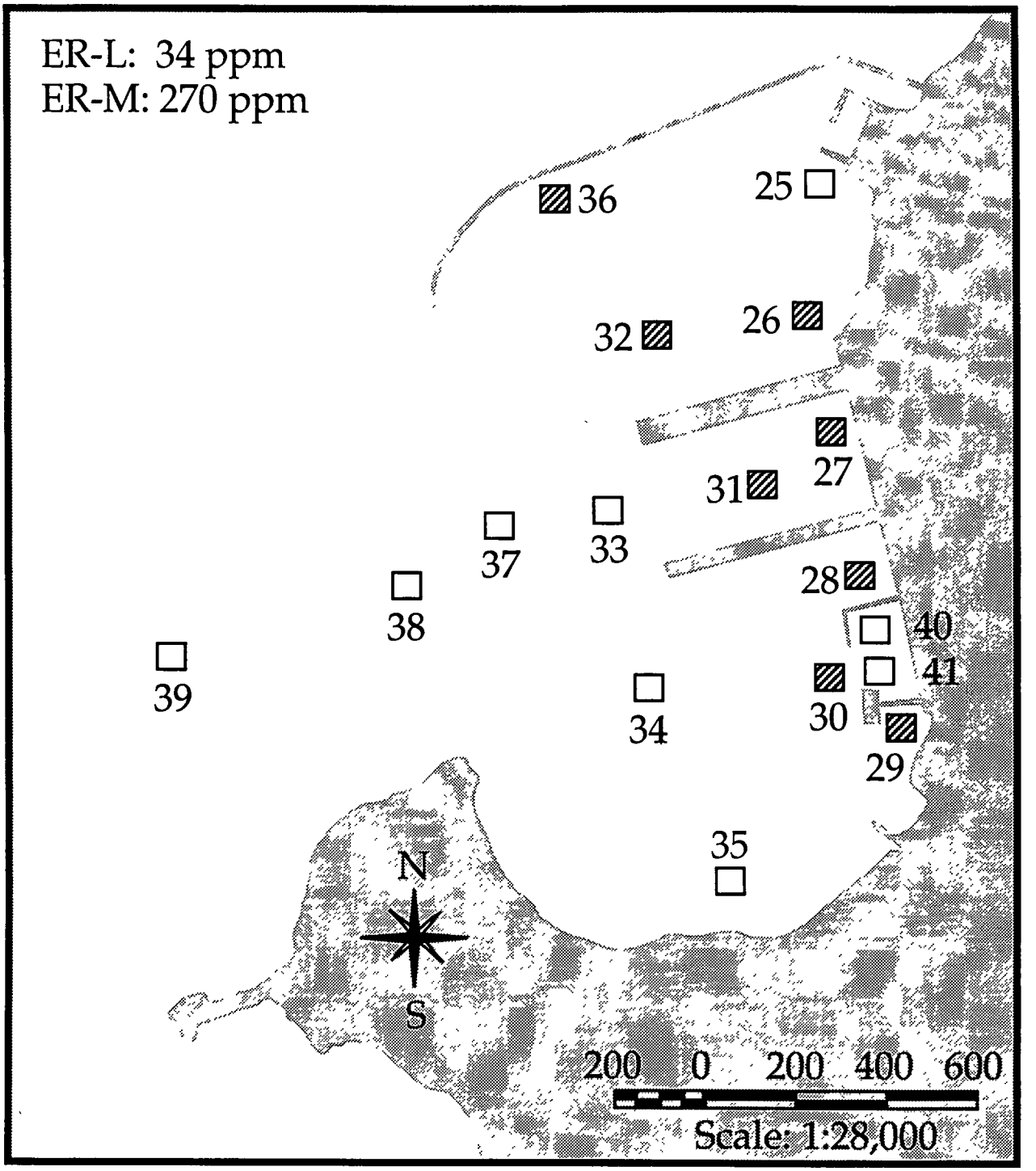
concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Chromium in Sediments



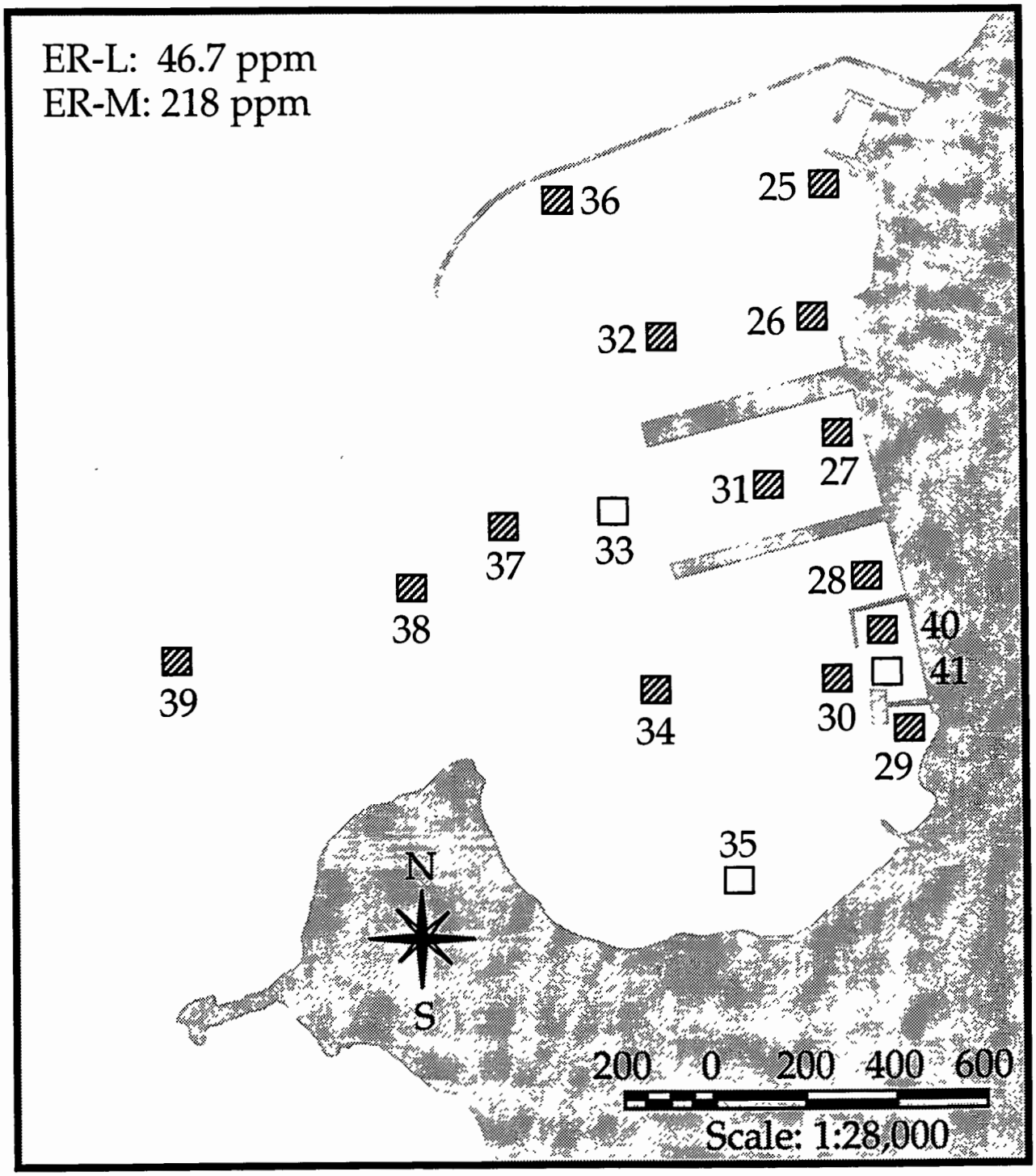
□ concentration less than ER-L
▨ concentration greater than ER-L but less than ER-M
■ concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Copper in Sediment



□ concentration less than ER-L
▨ concentration greater than ER-L but less than ER-M
■ concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Lead in Sediments

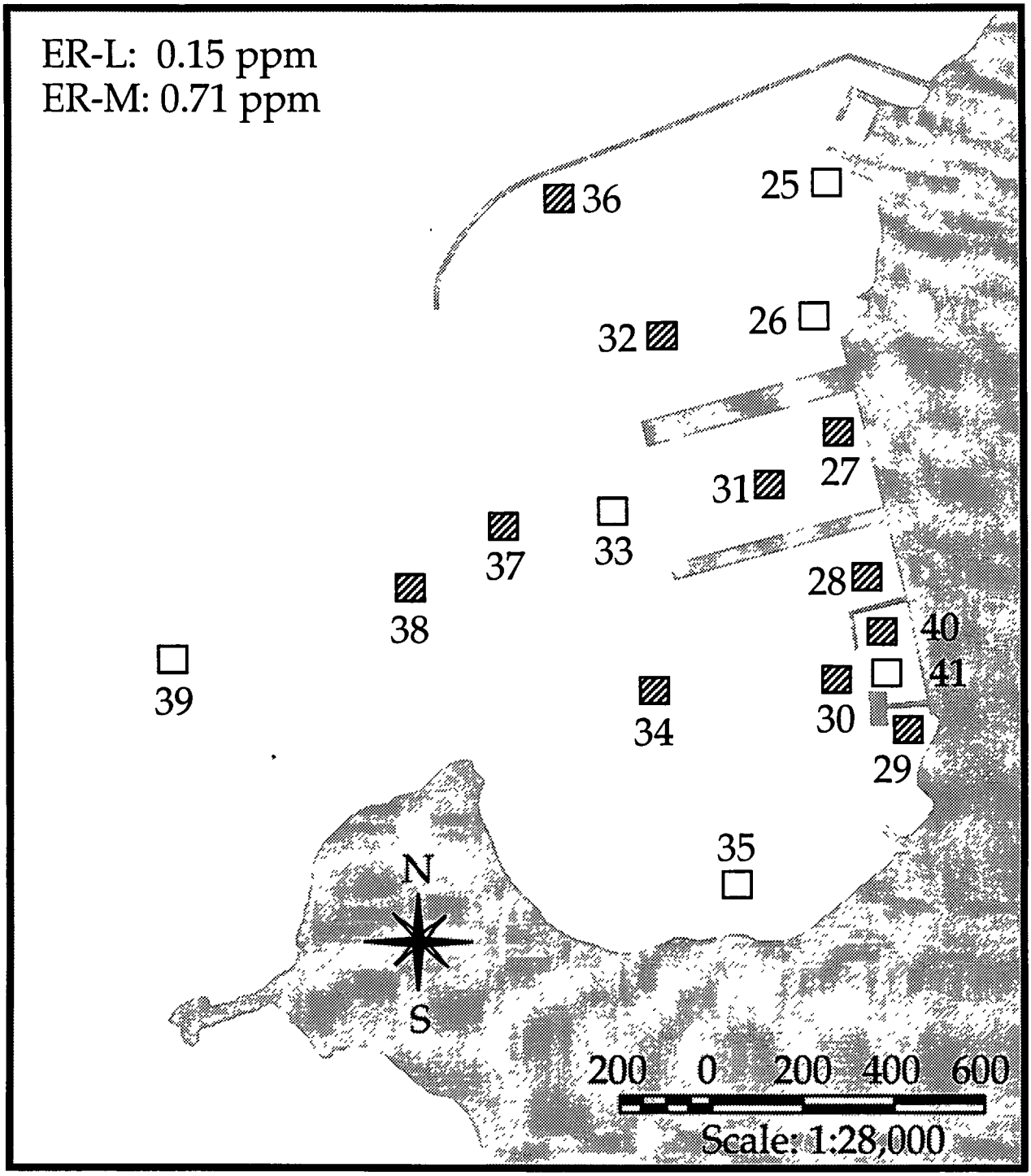


concentration less than ER-L

concentration greater than ER-L but less than ER-M

concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Mercury in Sediments

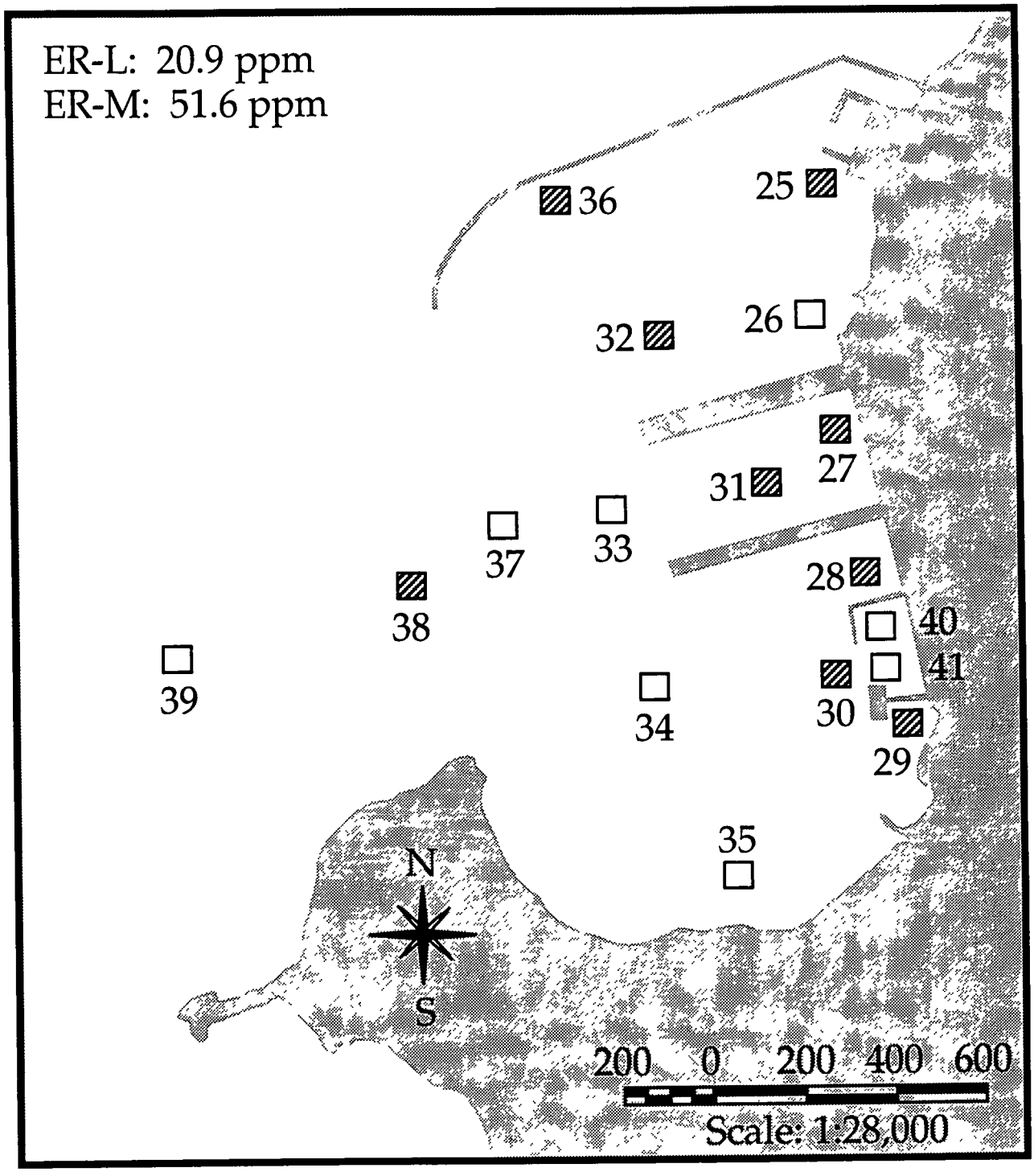


□ concentration less than ER-L

▨ concentration greater than ER-L but less than ER-M

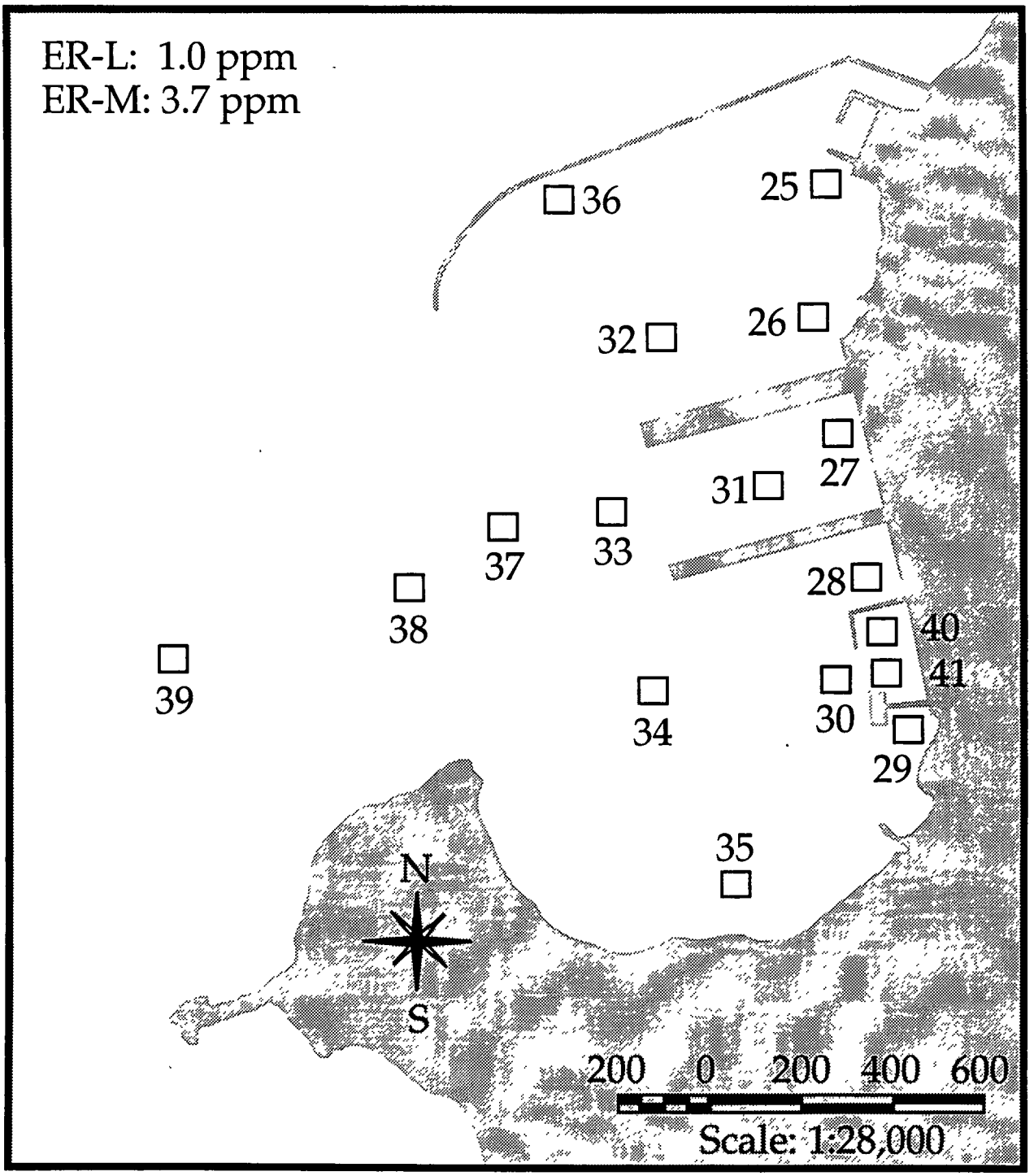
■ concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Nickel in Sediments



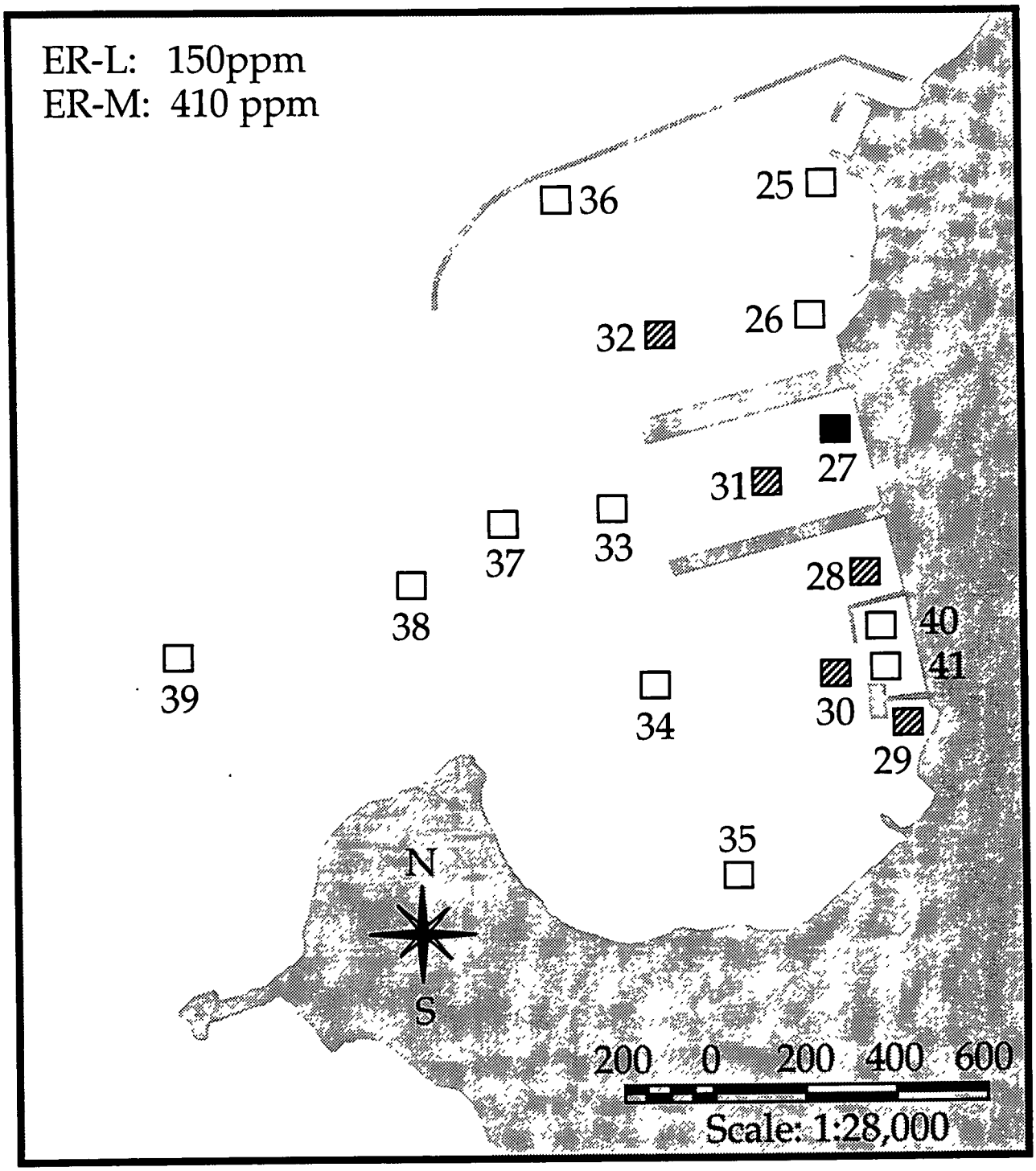
□ concentration less than ER-L
▨ concentration greater than ER-L but less than ER-M
■ concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Silver in Sediments



□ concentration less than ER-L
▨ concentration greater than ER-L but less than ER-M
■ concentration greater than ER-M

Derecktor Shipyard/Coddington Cove
Concentration of Zinc in Sediments



□ concentration less than ER-L
▨ concentration greater than ER-L but less than ER-M
■ concentration greater than ER-M

Derecktor Shipyard/Coddington Cove: Total Organic Carbon

Surface Samples

	DSY-25 0-12 cm	DSY-26 0-18 cm	DSY-27 0-17 cm	DSY-28 0-18 cm	DSY-29 0-18 cm	DSY-29 FD 0-18 cm	DSY-30 0-18 cm	DSY-31 0-18 cm	DSY-32 0-18 cm	DSY-33 0-14 cm
Total % Organic Carbon	4.1	3.4	8.6	9.3	14.1	13.7	8.8	8.9	8.3	3.8
% Organic Carbon	1.8	1.5	3.7	4.0	6.1	5.9	3.8	3.8	3.6	1.7

	DSY-34 0-18 cm	DSY-35 0-14 cm	DSY-36 0-18 cm	DSY-37 0-18 cm	DSY-38 0-18 cm	DSY-39 0-18 cm	DSY-40 0-14 cm	DSY-41 0-13 cm	DSY-JPC 0-14 cm	DSY-JPCII 0-16 cm
Total % Organic Carbon	7.4	1.4	8.2	5.1	7.1	5.9	3.4	1.9	2.5	4.0
% Organic Carbon	3.2	0.6	3.5	2.2	3.1	2.6	1.5	0.8	1.1	1.7

Core Samples

	DSY-28 24-34 cm	DSY-28 76-86 cm	DSY-29 16-26 cm	DSY-29 44-54 cm	DSY-30 18-28 cm	DSY-30 68-78 cm	DSY-31 45-55 cm	DSY-31 100-110 cm
T tal % Organic Carbon	9.0	8.1	3.4	1.1	3.5	4.0	3.8	3.6
% Organic Carbon	3.9	3.5	1.5	0.5	1.5	1.7	1.7	1.6

	DSY-34 20-30 cm	DSY-34 70-80 cm	DSY-36 40-50 cm	DSY-36 90-100 cm	DSY-V4 105-115 cm	DSY-V4 130-140 cm	DSY-V9 10-20 cm	DSY-V9 39-45 cm
Total % Organic Carbon	3.5	3.7	10.4	2.0	1.6	1.7	8.6	2.3
% Organic Carbon	1.5	1.6	4.5	0.9	0.7	0.7	3.7	1.0

Abbreviations:

1. cm: centimeters

Derecktor Shipyard/Coddington C ve 1995:
Grain Size

Surface Samples

	DSY-25	DSY-26	DSY-27	DSY-28	DSY-29	DSY-29 FD	DSY-30	DSY-31	DSY-32	DSY-33	DSY-34	DSY-35	DSY-36	DSY-37	DSY-38	DSY-39	DSY-40	DSY-41	DSY-JPC	DSY-JPCII
	0-12 cm	0-18 cm	0-17 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-14 cm	0-18 cm	0-14 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-14 cm	0-13 cm	0-14 cm	0-16 cm
% SAND	79 8	81 1	9 7	1 8	18 3	20 1	27 1	11 8	11.0	70 1	13 3	98 9	14 8	50 0	16 1	38 5	76 5	96 3	88 1	66 6
% SILT	20 0	18 7	90 3	98 2	80 3	79 9	72 3	88.2	88 3	29 5	86 1	1 1	85 2	49 9	83 5	60 7	23 5	3 7	11 9	33 2
% Silt 63-15.6 u	14 2	10 4	50 0	54 9	44 5	38 9	45 0	53 0	52 9	19 2	57 2	0 6	46 7	34 7	56 5	38 3	13 6	1 9	7 9	23 3
% Silt <15.6 u	6 0	8 5	40 3	43 3	37 2	41 0	27 9	35 2	36 1	10 7	29 5	0 5	38 5	15 4	27 4	23 1	9 9	1 8	4 0	10 1
% CLAY	0 1	0 2	0 0	0 0	1 4	0 0	0 5	0 0	0 6	0 3	0 5	0 0	0 0	0 2	0 4	0 8	0 0	0 0	0 0	0 2

C re Samples

	DSY-28	DSY-28	DSY-29	DSY-29	DSY-30	DSY-30	DSY-31	DSY-31	DSY-34	DSY-34	DSY-36	DSY-36	DSY-V4	DSY-V4	DSY-V9	DSY-V9
	24-34 cm	76-86 cm	16-26 cm	44-54 cm	18-28 cm	68-78 cm	45-55 cm	100-110 cm	20-30 cm	70-80 cm	40-50 cm	90-100 cm	105-115 cm	130-140 cm	10-20 cm	39-45 cm
% SAND	11.0	4 9	81 3	96 9	65 3	38 3	41 4	67 4	28 3	8 0	3 1	81 3	82 1	80 3	17 5	86 1
% SILT	89 0	95 1	17 9	3 0	34 6	61 5	58 3	32 5	71 6	91 7	96 9	18 6	17 8	19.6	81 6	13 8
% Silt 63-15.6 u	47 4	49 6	12.5	2 0	28 3	47 2	42 6	24 0	57 0	67 4	52 8	12 9	14 1	15 2	46 2	8 8
% Silt <15.6 u	41 6	45 5	6 2	1 0	6 4	14 5	16 1	8 5	14 7	24 6	44 1	5 8	3 8	4 5	36 3	5 2
% CLAY	0 0	0 0	0 8	0 0	0 1	0 2	0 3	0 1	0 1	0 3	0 0	0 1	0 0	0 1	0 9	0 1

Abbreviations:

1. cm: centimeters
2. μ microns

Derecktor Shipyard/Coddington Cove 1995: Simultaneously Extracted Metals (µg/g)

		DSY-25 0-12 cm	DSY-26 0-18 cm	DSY-27 0-17 cm	DSY-28 0-18 cm	DSY-29 0-18 cm	DSY-29 FD 0-18 cm	DSY-30 0-18 cm	DSY-31 0-18 cm	DSY-32 0-18 cm	DSY-33 0-14 cm
Copper	Replicate 1	20.79	19 85	2 31	152 20	12.75	49 74	1.26	26.39	27.22	27.07
	Replicate 2	21.88	20.93	1.99	97.50	ND	62.44	3 11	37.13	24.76	29.83
Zinc	Replicate 1	110.79	46.27	864.67	324 63	436 86	429.74	86.24	141.75	96.34	44.46
	Replicate 2	126 81	43.87	566.26	225.50	387.41	447.32	88.40	183.28	98 46	44.11
Lead	Replicate 1	26 50	17.66	169.59	71.95	122 16	106.32	38.38	52.78	53.08	19.98
	Replicate 2	28.61	16 21	189.08	67.00	105 19	126 59	38.66	54 81	53.44	20.34
Nickel	Replicate 1	37.86	5.34	12.05	61 95	43 92	53.68	3.56	12 93	31 54	9 29
	Replicate 2	31.53	5 20	13.69	50.50	27.04	52.44	4 76	14.48	8.46	9.88
Cadmium	Replicate 1	0.14	<0.09 (B)	1.13	<0 09 (B)	0.98	1 32	0.33	0.30	0.18	<0.09 (B)
	Replicate 2	0.21	<0 09 (B)	0.78	0.25	0 93	1 22	0.40	0.30	0.22	<0.09 (B)
Mercury (ng/g)	Replicate 1	3.54	0.93	2.57	8.50	9 07	14.88	<2 (B)	2.39	<2 (B)	3.36
	Replicate 2	4 07	<2 (B)	2 67	14 39	8.63	20.53	<2 (B)	2 74	2.31	2 66

		DSY-34 0-18 cm	DSY-35 0-14 cm	DSY-36 0-18 cm	DSY-37 0-18 cm	DSY-38 0-18 cm	DSY-39 0-18 cm	DSY-40 0-14 cm	DSY-41 0-13 cm	DSY-JPC 0-14 cm	DSY-JPCII 0-16 cm
Copper	Replicate 1	16.03	3 72	38.01	19.82	46.53	31 63	9 23	3.70	15.09	3.86
	Replicate 2	11.90	4.83	40.81	20.68	34.10	30.19	10.34	2.86	11.29	3.84
Zinc	Replicate 1	67 21	14 06	94.87	51.99	93.20	91.50	91.49	20.36	34.52	21.19
	Replicate 2	64.33	13.47	92.35	52.30	84.16	98.32	96.58	36.49	28.68	24.79
Lead	Replicate 1	32.31	3.12	52.18	32.69	37.49	34 82	27.03	5.77	12.20	40.85
	Replicate 2	31.43	2.92	50.74	32.99	38.98	35.20	26.36	6.60	11.18	40.36
Nickel	Replicate 1	7.98	3 22	13.76	4.70	12.85	13.49	9 15	5 40	5.32	20.16
	Replicate 2	7 42	3 53	13.53	4 33	26.45	14.39	9.48	3.13	5.46	18.88
Cadmium	Replicate 1	0.12	<0.09 (B)	0.11	0 13	<0.09 (B)	<0.09 (B)	0.23	<0.09 (B)	0.09	6.27
	Replicate 2	0.12	<0.09 (B)	<0 09 (B)	0.13	<0.09 (B)	<0.09 (B)	0.27	<0 09 (B)	<0.09 (B)	7.71
Mercury (ng/g)	Replicate 1	<2 (B)	<2 (B)	<2 (B)	<2 (B)	3.31	2.02	<2 (B)	2.08	<2 (B)	<2 (B)
	Replicate 2	2.31	<2 (B)	2.62	<2 (B)	3.20	2.51	<2 (B)	<2 (B)	<2 (B)	<2 (B)

Notes:

1. "<" symbols designate concentrations below the Method Limit of Quantitation (MLQ).

Abbreviations:

1. µg/g: micrograms per gram
2. ng/g: nannograms per gram
3. cm: centimeters
4. ND: not detected
5. Letters in ( ) are data qualifiers. Data qualification scheme is based on "Data Qualifiers for Inorganic Analytical Data, Laboratory Qualifiers" as described in SAIC QA Technical Procedure No TP-DM-300-7, revision 1, pages 21 The following Data Qualifiers are used in this table:
   (B) Indicates that the reported value was obtained from a reading that was less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

Derecktor Shipyard/Coddington Cove 1995:
Acid Volatile Sulfide (µmole/gram dry sample)

	DSY-25	DSY-26	DSY-27	DSY-28	DSY-29	DSY-29 FD	DSY-30	DSY-31	DSY-32	DSY-33
	0-12 cm	0-18 cm	0-17 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-14 cm
Replicate # 1	23.80	4.22	174.99	59.65	185.74	161.81	25.76	51.90	17.07	0.80
Replicate #2	25.36	3.93	177.86	66.25	180.58	180.25	24.26	48.22	17.34	0.77
% Difference	6.3	7.1	1.6	10.5	2.8	10.8	6.0	7.4	1.6	3.8

	DSY-34	DSY-35 rep	DSY-36	DSY-37	DSY-38	DSY-39	DSY-40	DSY-41	DSY-JPC	DSY-JPCII
	0-18 cm	0-14 cm	0-18 cm	0-18 cm	0-18 cm	0-18 cm	0-14 cm	0-13 cm	0-14 cm	0-16 cm
Replicate # 1	31.36	1.13	38.18	2.78	28.65	20.65	18.33	4.56	1.95	0.70
Replicate #2	27.68	0.87	35.71	3.24	30.92	22.69	19.24	4.48	1.89	0.80
% Difference	12.5	26.0	6.7	15.3	7.6	9.4	4.8	1.8	3.1	13.3

Abbreviations:

1. cm: centimeters
2. µmole: micro-mole

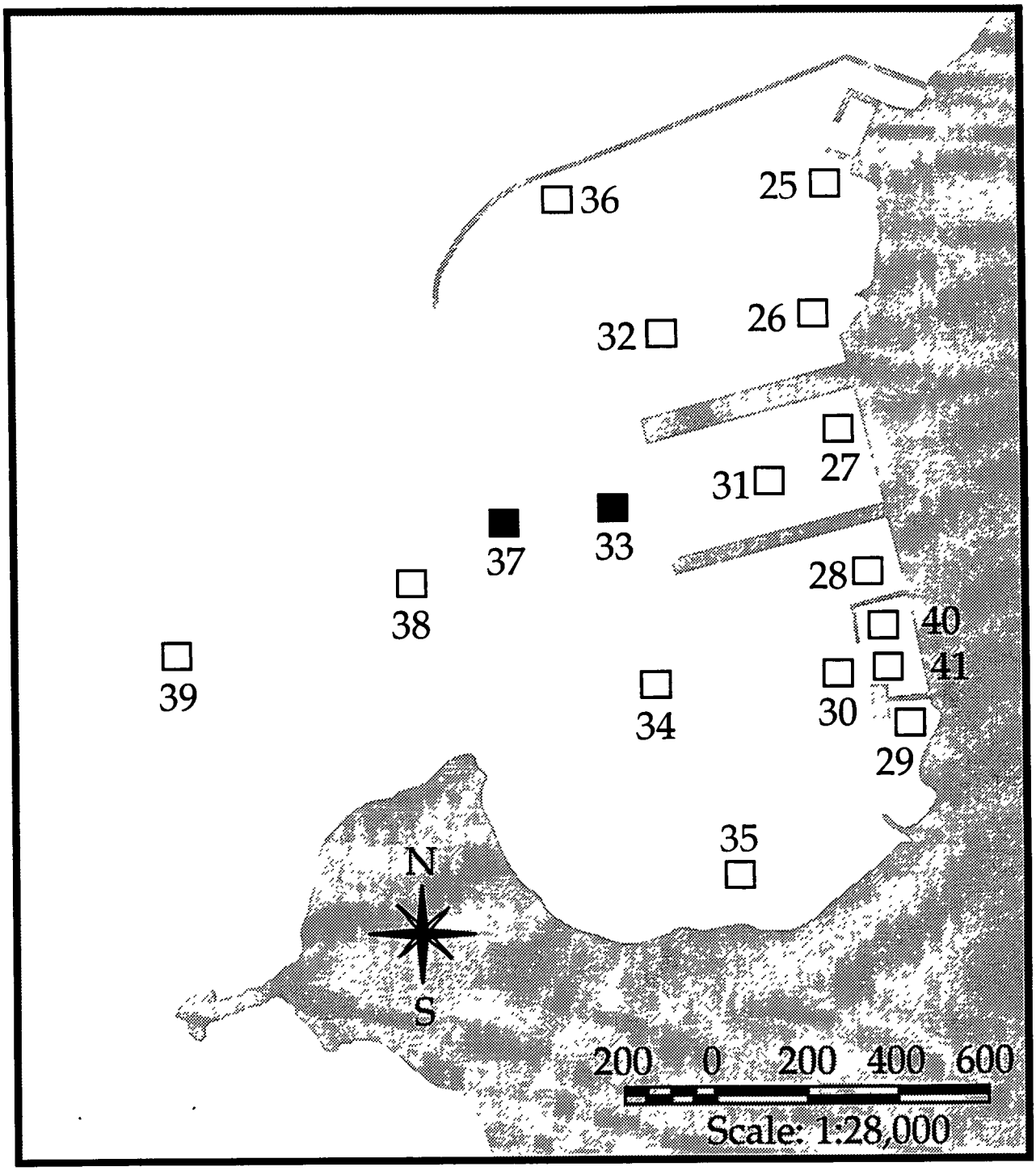
Derecktor Shipyard/Coddington Cove 1995:
Ratio of Simultaneously Extracted Metals (SEM) to Acid Volatile Sulfide (AVS)

		DSY-25 0-12 cm	DSY-26 0-18 cm	DSY-27 0-17 cm	DSY-28 0-18 cm	DSY-29 0-18 cm	DSY-29 FD 0-18 cm	DSY-30 0-18 cm	DSY-31 0-18 cm	DSY-32 0-18 cm	DSY-33 0-14 cm	DSY-34 0-18 cm	DSY-35 0-14 cm	DSY-35 rep 0-14 cm	DSY-36 0-18 cm	DSY-37 0-18 cm	DSY-37 rep 0-18 cm	DSY-38 0-18 cm	DSY-39 0-18 cm	DSY-40 0-14 cm	DSY-41 0-13 cm	DSY-JPC 0-14 cm	DSY-JPCII 0-16 cm
AVS	Replicate 1	23 80	4 22	174 99	59 65	185 74	161 81	25 76	51 90	17 07	0 80	31 36	1 55	1 13	38 18	2.88	2 78	28 65	20 65	18 33	4 56	1 95	0 70
(µmole/g dry)	Replicate 2	25 36	3 93	177 86	66 25	180 58	180 25	24 26	48 22	17 34	0 77	27 68	1 14	0 87	35 71	1 89	3 24	30 92	22 69	19 24	4 48	1 89	0 80
SEM, Replicate 1:	Copper	0 327	0 312	0 036	2.395	0 201	0 000	0 983	0.049	0.584	0 390	0 469	0 187	0 118	0 076	0 642	0 701	0 326	0 537	0 475	0 163	0 045	0 178
(µmole/g dry)	Zinc	1 695	0 708	13 227	4 966	6 683	5 926	6 843	1 352	0 568	1 506	0 675	0 984	0 346	0 206	1 413	1 531	0 800	1 287	1 504	1 478	0 558	0 439
	Lead	0 128	0 085	0 819	0.347	0.590	0 508	0 611	0 187	0 885	0.258	0 098	0 152	0 016	0 014	0 245	0 170	0 159	0 188	0 170	0 127	0 032	0 054
	Nickel	0 645	0 091	0 205	1 055	0 748	0 461	0 893	0 081	0 934	0 144	0.168	0 126	0 112	0 060	0 230	0 598	0 074	0 451	0 245	0 162	0 053	0 093
	Cadmium	0 001	0 001	0 010	0 002	0 009	0 008	0 011	0 004	0 129	0 002	0 000	0 001	0 000	0 000	0 001	0 001	0 001	0 001	0 001	0 002	0 001	0 001
	Mercury	0 000	0 000	0 000	0 000	0.000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0.000	0 000	0 000
SEM, Replicate 2:	Copper	0 344	0.329	0 031	1 534	0 000	0.983	0 049	0 584	0 390	0 469	0 187	0.118	0 076	0 642	0 701	0.326	0 537	0.475	0 163	0 045	0 178	0 060
(µmole/g dry)	Zinc	1 940	0 671	8 662	3 450	5 926	6 843	1 352	2.804	1 506	0 675	0 984	0.346	0 206	1 413	1 531	0 800	1 287	1 504	1 478	0 558	0 439	0 379
	Lead	0 138	0 078	0 913	0 323	0 508	0 611	0 187	0 265	0 258	0 098	0 152	0 016	0 014	0 245	0 170	0 159	0 188	0 170	0 127	0 032	0 054	0 195
	Nickel	0 537	0 089	0 233	0 860	0 461	0 893	0 081	0 247	0 144	0 168	0 126	0 112	0 060	0 230	0 598	0 074	0 451	0 245	0 162	0 053	0 093	0 322
	Cadmium	0 002	0 001	0 007	0 002	0 008	0 011	0 004	0 003	0 002	0 000	0 001	0 000	0 000	0 001	0 001	0 001	0 001	0 001	0 002	0 001	0 001	0 069
	Mercury	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000
SEM/AVS	Replicate 1	0 117	0 284	0 082	0 147	0 044	0 043	0 363	0 032	0 182	2.875	0 045	0 936	0 523	0 009	0 879	1 080	0 047	0 119	0 131	0 424	0 353	1 092
SEM/AVS	Replicate 2	0 117	0 297	0 055	0 093	0 038	0 052	0 069	0 081	0 133	1 832	0 052	0 518	0 410	0 071	1 588	0 420	0 080	0 106	0 100	0 154	0 404	1 281

Abbreviations:

1. µmole/g dry micomole per gram of dry sediment
2. SEM. Simultaneously Extracted Metals
3. AVS Acid Volatile Sulfides
4. cm centimeter

Derecktor Shipyard/Coddington Cove
SEM/AVS



□ SEM/AVS ratio < 1

■ SEM/AVS ratio > 1

Table 3

Concentration of Organic Components(per L elutriate) in Elutriate Samples from Derecktor Shipyard.

ELUTRIATE COMPONENTS	Site (units)	DSY Blank 1 clean	DSY-25 clean	DSY-27 clean	DSY-29 clean	DSY-31 clean	DSY-32 clean	DSY-33 clean	DSY-36 clean	DSY-37 clean	DSY-38 clean	DSY-39 clean	DSY-40 clean	JPC-1 clean
Σ PCBs	(ng/L)	14	78	69	54	59	39	27	26	37	19	26	37	48
p,p'-DDE	(ng/L)	<2.3	0.4	0.4	0.6	0.6	0.3	0.3	0.4	0.7	0.3	0.6	0.6	1.0
TBT	(ngSn/L)													
Σ PAHs	(ng/L)	51	872	260	604	230	259	275	162	143	97	129	476	226

DSY = Derecktor Shipyard; DSY Blank 1 = Field Blank; JPC = Jamestown Potter Cove.

Σ PCBs = Sum of Polychlorinated Biphenyls; TBT = Tributyltin; Σ PAHs = Sum of Polycyclic Aromatic Hydrocarbon

Derecktor Shipyard/Coddington Cove:
Elutriate Metals (µg/L)

	DSY-Blank2	DSY-25	DSY-31	DSY-32	DSY-33	DSY-36	DSY-37	DSY-38	DSY-39	DSY-40	DSY-JPC-1
Aluminum	<40 (B)	178	58	208	45	51	<40 (B)	<40 (B)	59	<40 (B)	60
Arsenic	ND (U)	12.4	27.2	24.8	ND (U)	40.4	19.6	40.7	76.0	30.0	18.3
Cadmium	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)
Chromium	ND (U)	<0.8 (B)	<0.8 (B)	<0.8 (B)	ND (U)	ND (U)	ND (U)	ND (U)	<0.8 (B)	ND (U)	ND (U)
Copper	ND (U)	<2 5 (B)	5.1	ND (U)	ND (U)	<2.5 (B)	<2.5 (B)	ND (U)	ND (U)	ND (U)	<2.5 (B)
Iron	ND (U)	140	<60 (B)	88	334	ND (U)	387	223	310	ND (U)	ND (U)
Lead	ND (U)	9.4	8.5	9.4	15.9	8.3	12.9	10.7	14.6	9.0	13.2
Manganese	ND (U)	187	83	163	1213	242	1126	935	2284	87	465
Mercury	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)	ND (U)
Nickel	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)	<8.0 (B)
Silver	<0.5 (B)	<0.5 (B)	<0.5 (B)	<0.5 (B)	<0.5 (B)	ND (U)	<0.5 (B)	ND (U)	<0.5 (B)	ND (U)	ND (U)
Zinc	<9 (B)	<9 (B)	<9 (B)	<9 (B)	ND (U)	<9 (B)	<9 (B)	<9 (B)	<9 (B)	ND (U)	<9 (B)

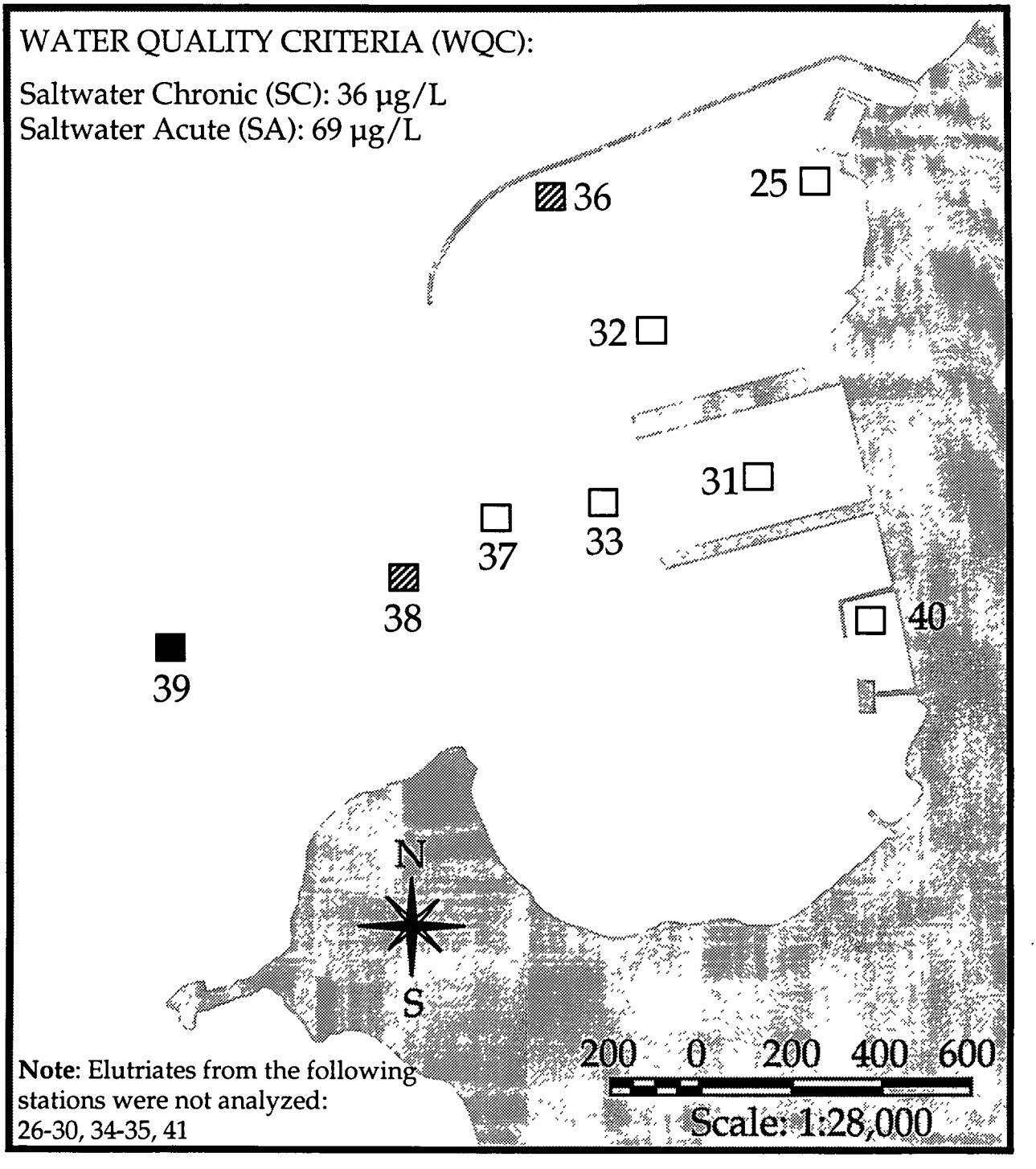
Notes:

1. "<" symbols designate concentrations below the Limit of Quantitative Detection (LQD).

Abbreviations:

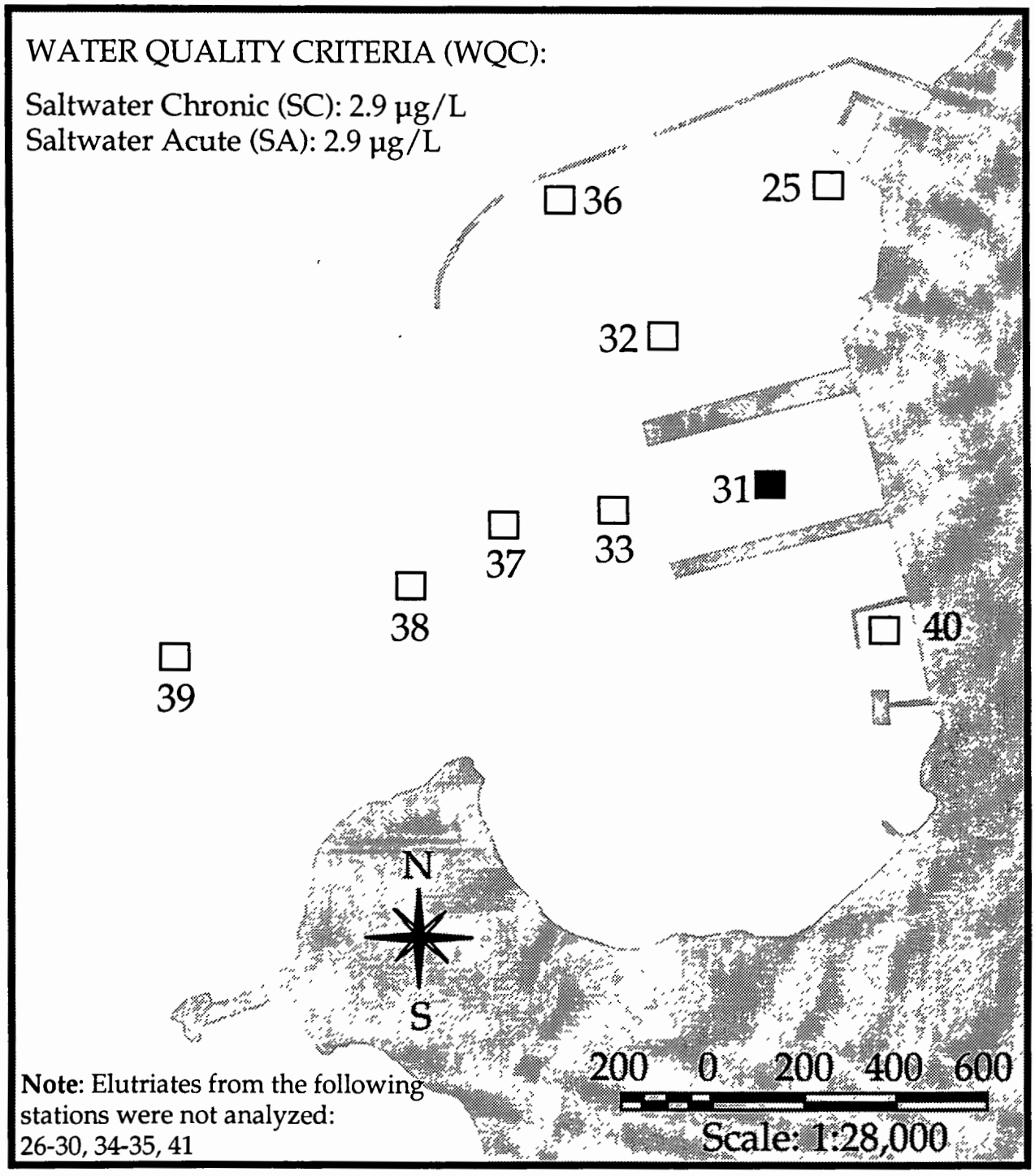
1. µg/L: micrograms per liter
2. ND: Not detected.
3. Letters in ( ) are data qualifiers. Data qualification scheme is based on "Data Qualifiers for Inorganic Analytical Data, Laboratory Qualifiers" as described in SAIC QA Technical Procedure No TP-DM-300-7, revision 1, pages 21-22.
   The following Data Qualifiers are used in this table:
   (B) Indicates that the reported value was obtained from a reading that was less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

Derecktor Shipyard/Coddington Cove
Concentration of Arsenic in Elutriates



☐ concentration less than WQC-SC
▨ concentration greater than WQC-SC but less than WQC-SA
■ concentration greater than WQC-SA

Derecktor Shipyard/Coddington Cove
Concentration of Copper in Elutriates

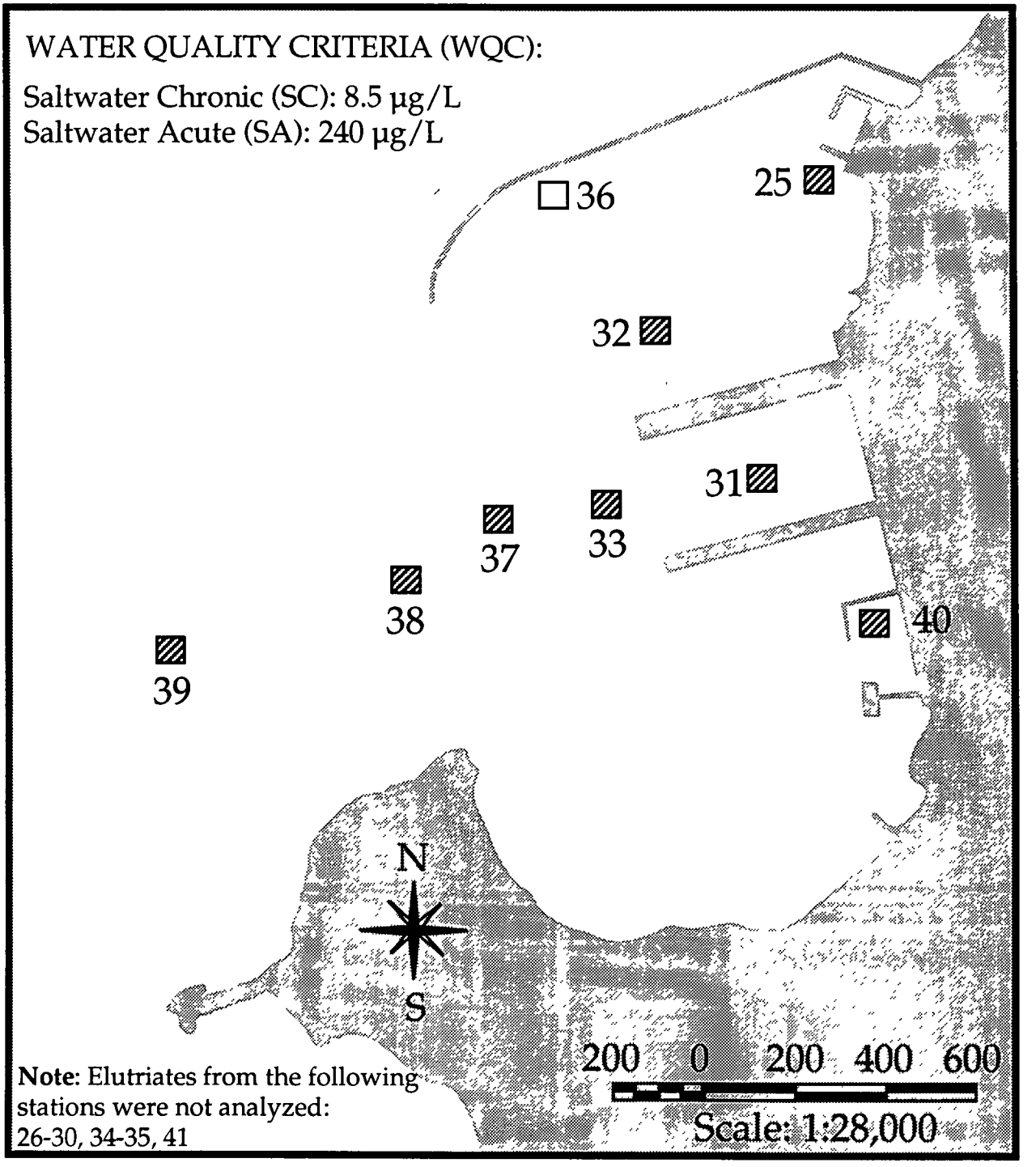


□ concentration less than WQC-SC

▨ concentration greater than WQC-SC but less than WQC-SA

■ concentration greater than WQC-SA

Derecktor Shipyard/Coddington Cove
Concentration of Lead in Elutriates



- ☐ concentration less than WQC-SC
- ▨ concentration greater than WQC-SC but less than WQC-SA
- ■ concentration greater than WQC-SA

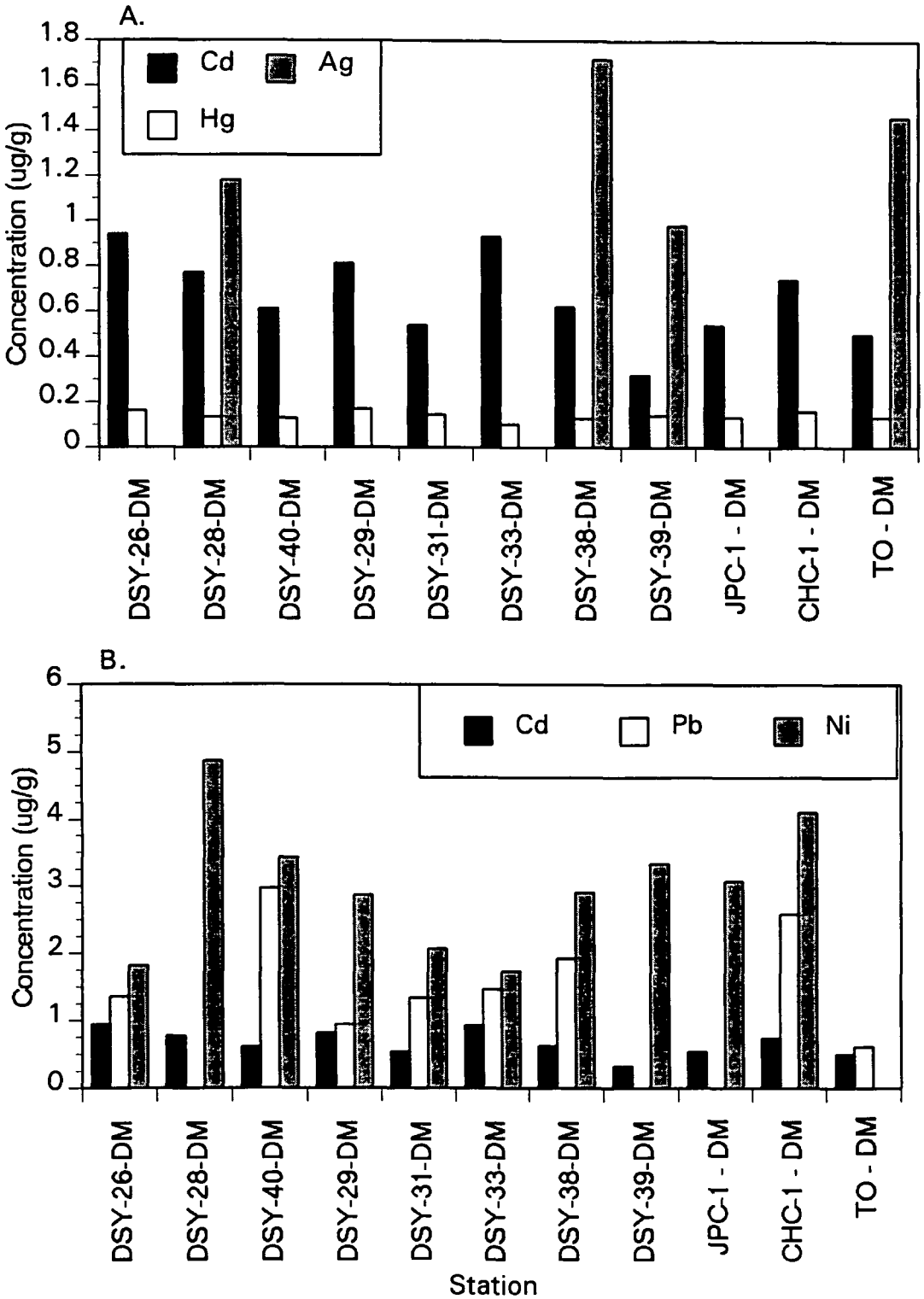
Table 4

Concentration of Organic Components(per g dry wt. tissue) in Indigenous and Deployed Blue Mussels from Derecktor Shipyard.

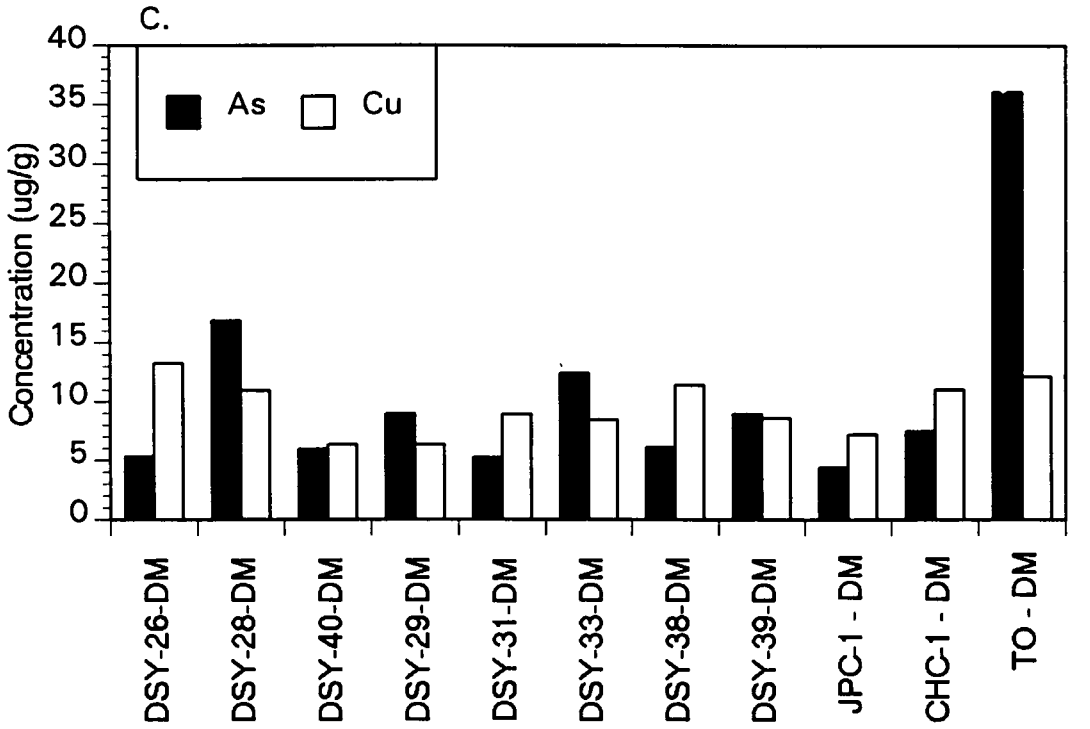
INDIGENOUS BLUE MUSSEL COMPONENTS	Site (units)	T0 DM	DSY-24	DSY-25	DSY-26	DSY-27	DSY-28	DSY-29	DSY-31	DSY-33	DSY-35	DSY-36	DSY-38	DSY-39	DSY-40	JPC	CHC-1
Σ PCBs	(ng/g)	-	615	528	831	1150	802	-	-	-	696	895	-	-	912	565	389
p,p'-DDE	(ng/g)	-	7.9	4.9	7.6	11.9	7.3	-	-	-	12.1	8.2	-	-	10.4	6.7	6.1
TBT	(ngSn/g)	-						-	-	-			-	-			
Σ PAHs	(ng/g)	-	384	3630	9020	3970	1090	-	-	-	505	498	-	-	495	231	639
DEPLOYED BLUE MUSSEL COMPONENTS	(units)																
Σ PCBs	(ng/g)	296	-	-	1780	-	689	868	786	638	-	-	549	461	556	617	386
p,p'-DDE	(ng/g)	15.4	-	-	12.6	-	-	15.7	14.5	13.0	-	-	8.8	9.8	10.0	8.0	8.7
TBT	(ngSn/g)		-	-		-					-	-					
Σ PAHs	(ng/g)	102	-	-	1250	-	510	872	543	176	-	-	233	363	704	317	850

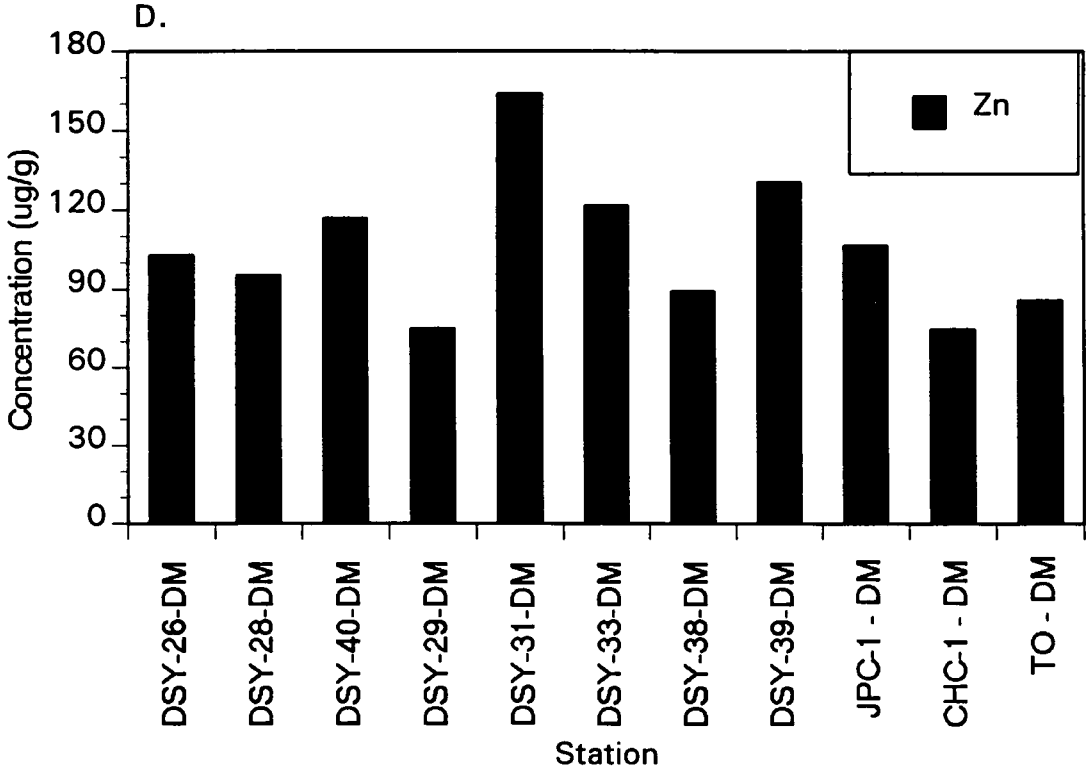
T0DM = Time 0, deployed Blue Mussel; DSY = Derecktor Shipyard; JPC = Jamestown Potter Cove; CHC = Castle Hill Cove.

Σ PCBs = Sum of Polychlorinated Biphenyls; TBT = Tributyltin; Σ PAHs = Sum of Polycyclic Aromatic Hydrocarbons.

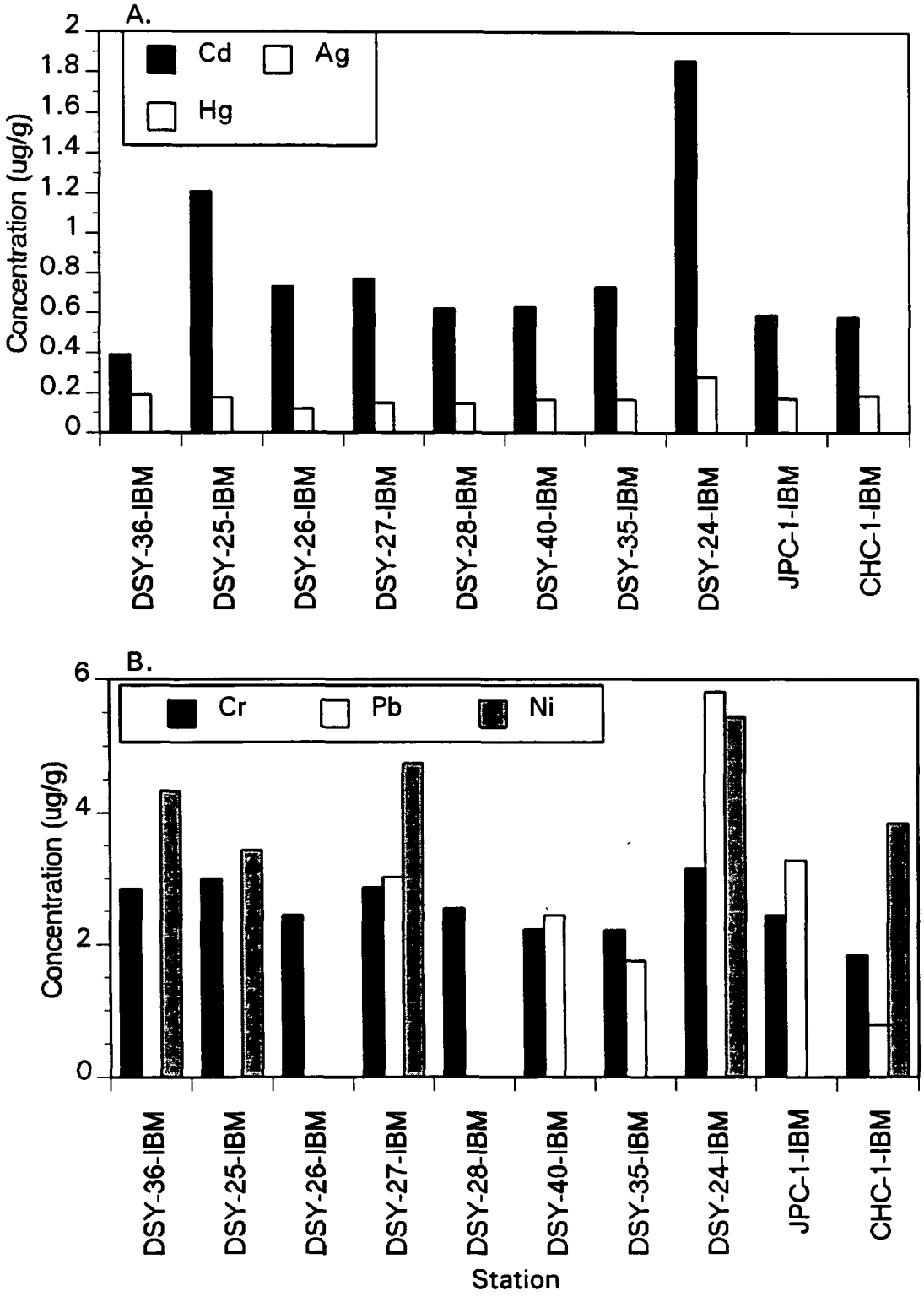


Concentration of metals in Blue Mussels deployed (DM) in Derecktor Shipyard (DSY). A. Cadmium, Mercury, and Silver; B. Chromium, Lead and Nickel; C. Arsenic and Copper; and D. Zinc.

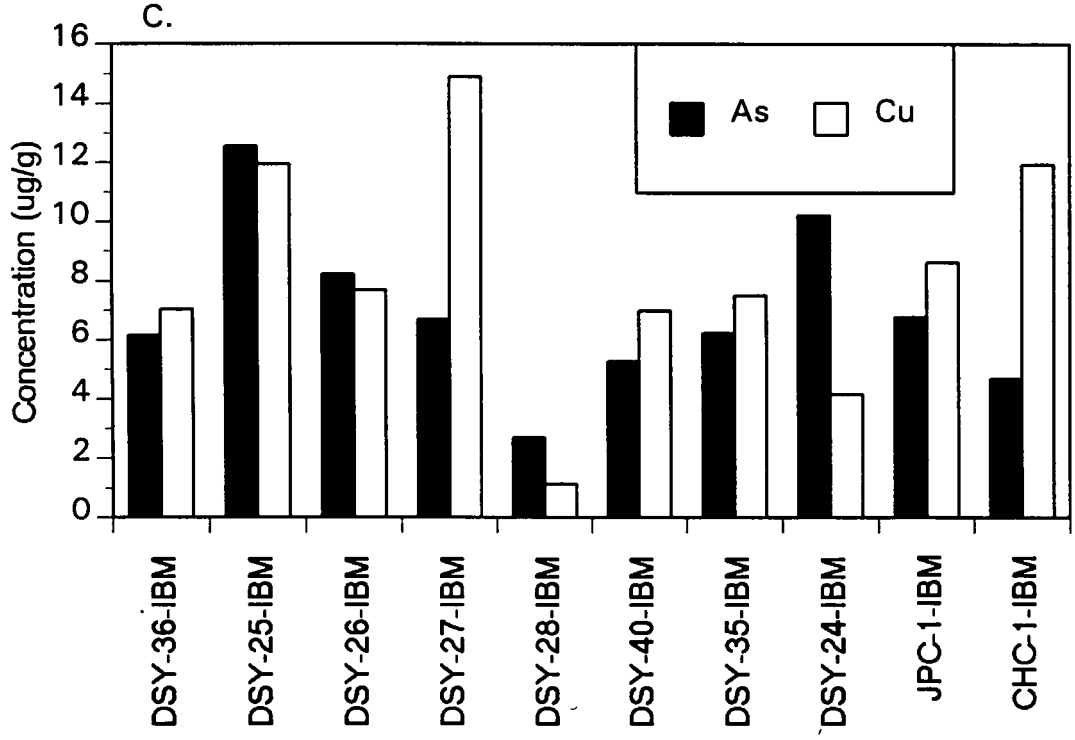


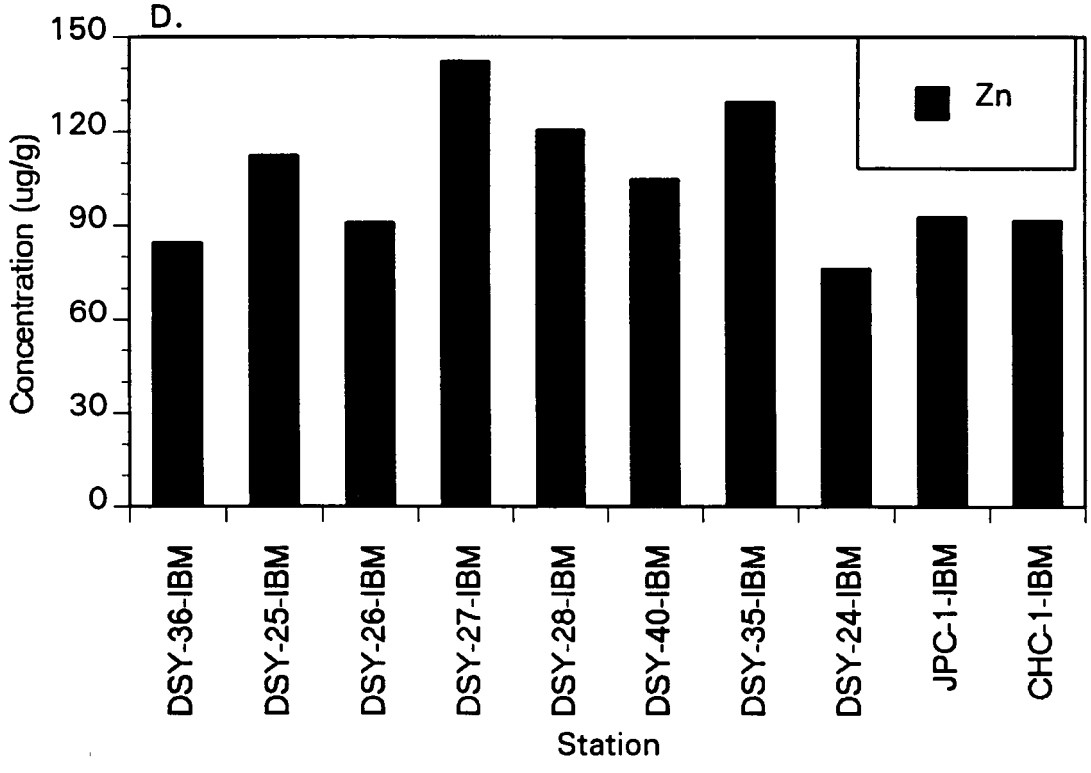


Concentration of metals in Blue Mussels deployed (DM) in Derecktor Shipyard (DSY). (continued)



Concentration of metals in Blue Mussels indigenous (IBM) to Derecktor Shipyard (DSY). A. Cadmium, Mercury, and Silver; B. Chromium, Lead, and Nickel; C. Arsenic and Copper; and D. Zinc.





Concentration of metals in Blue Mussels indigenous (IBM) to Derecktor Shipyard (DSY). (continued)

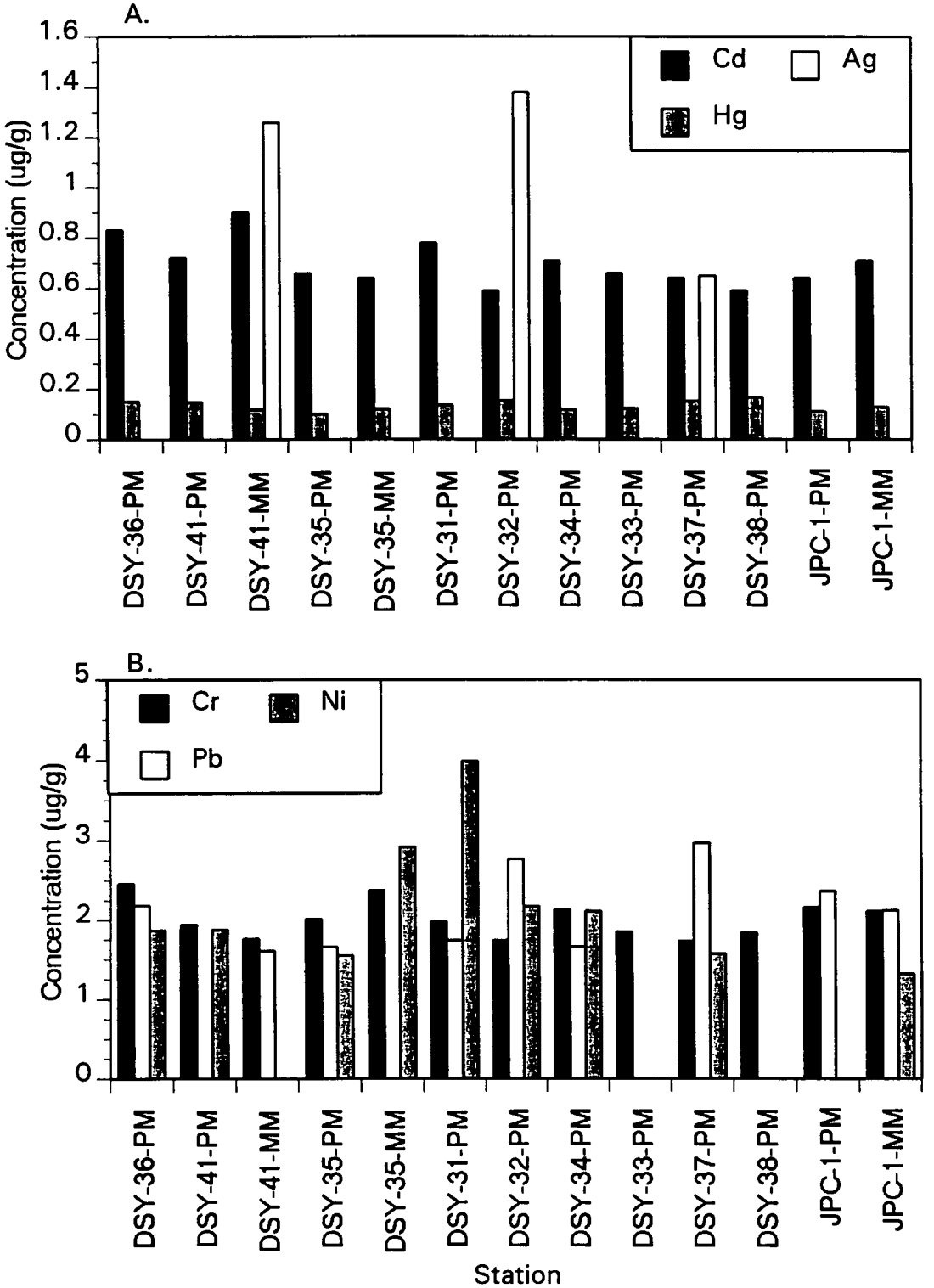
Table 5

Concentration of Organic Components(per g dry wt. tissue) in Clams from Derecktor Shipyard.

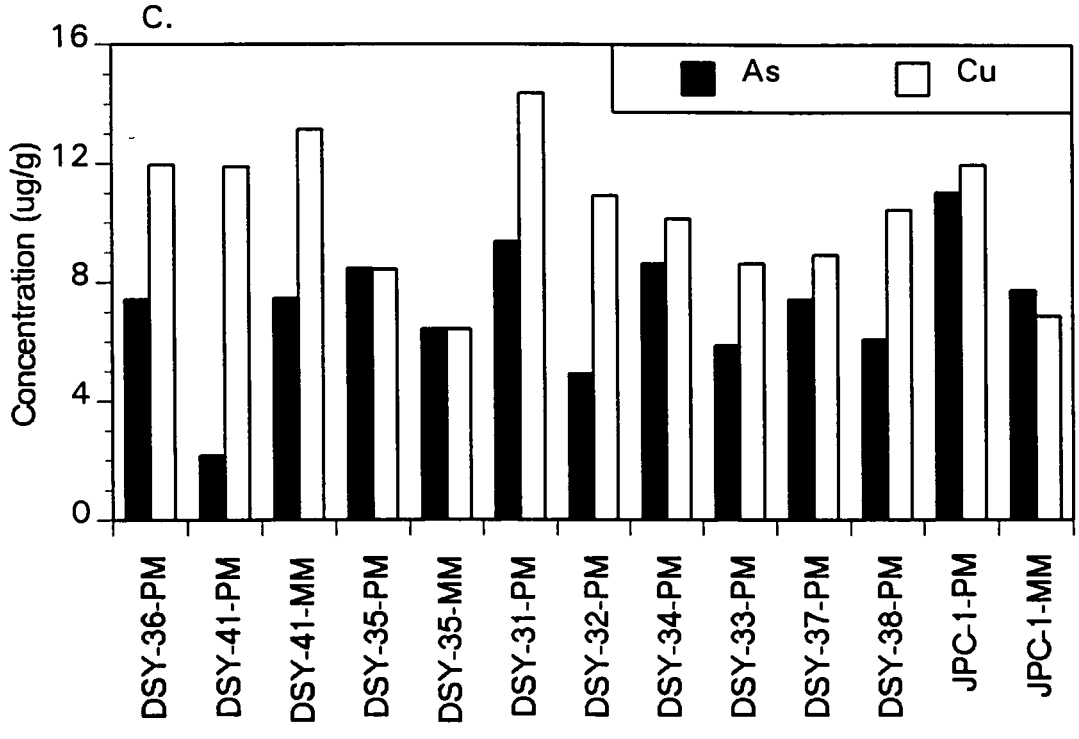
CLAM COMPONENTS	Site	DSY-31-PT	DSY-32-PT	DSY-33-PT	DSY-34-PT	DSY-35-PT	DSY-35-HC	DSY-36-PT	DSY-37-PT	DSY-38-PT	DSY-41-PT	DSY-41-HC	JPC-1-PT	JPC-1-QH
	(units)													
Σ PCBs	(ng/g)	643	951	367	524	311	159	484	493	427	274	251	267	204
p,p'-DDE	(ng/g)	2.4	3.0	2.5	3.8	1.5	2.0	4.7	2.9	2.9	1.8	4.3	2.6	3.1
TBT	(ngSn/g)													
Σ PAHs	(ng/g)	850	812	470	501	297	162	704	430	359	428	223	230	127

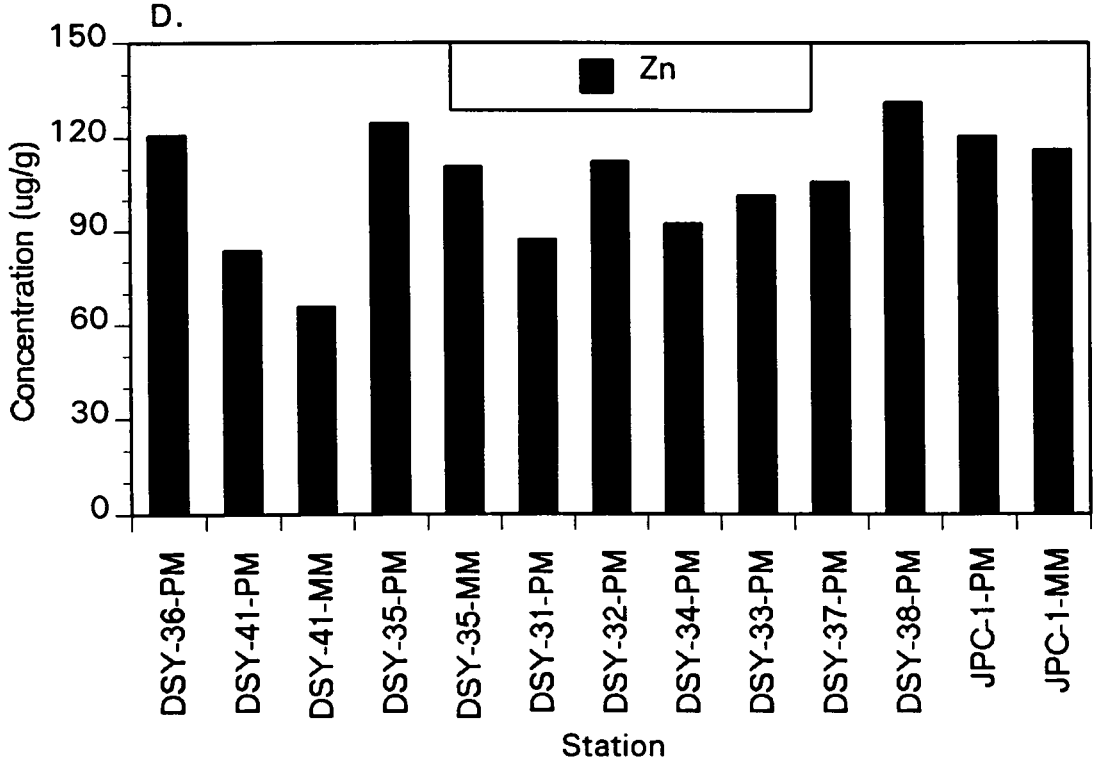
DSY = Derecktor Shipyard; JPC = Jamestown Potter Cove; PT = Pitar; HC = hardshell clams; QH = Quahog.

Σ PCBs = Sum of Polychlorinated Biphenyls; TBT = Tributyltin; Σ PAHs = Sum of Polycyclic Aromatic Hydrocarbon



Concentration of metals in Hard Clams (*Mercenaria mercenaria* (MM) and *Pitar morrhuana* (PM)) from Derecktor Shipyard (DSY). A. Cadmium, Mercury, and Silver; B. Chromium, Lead, and Nickel; C. Arsenic and Copper; and D. Zinc.





Concentration of metals in Hard Clams (*Mercenaria mercenaria (MM)* and *Pitar morrhuana* (PM)) from Derecktor Shipyard (DSY). (continued)

Table 6

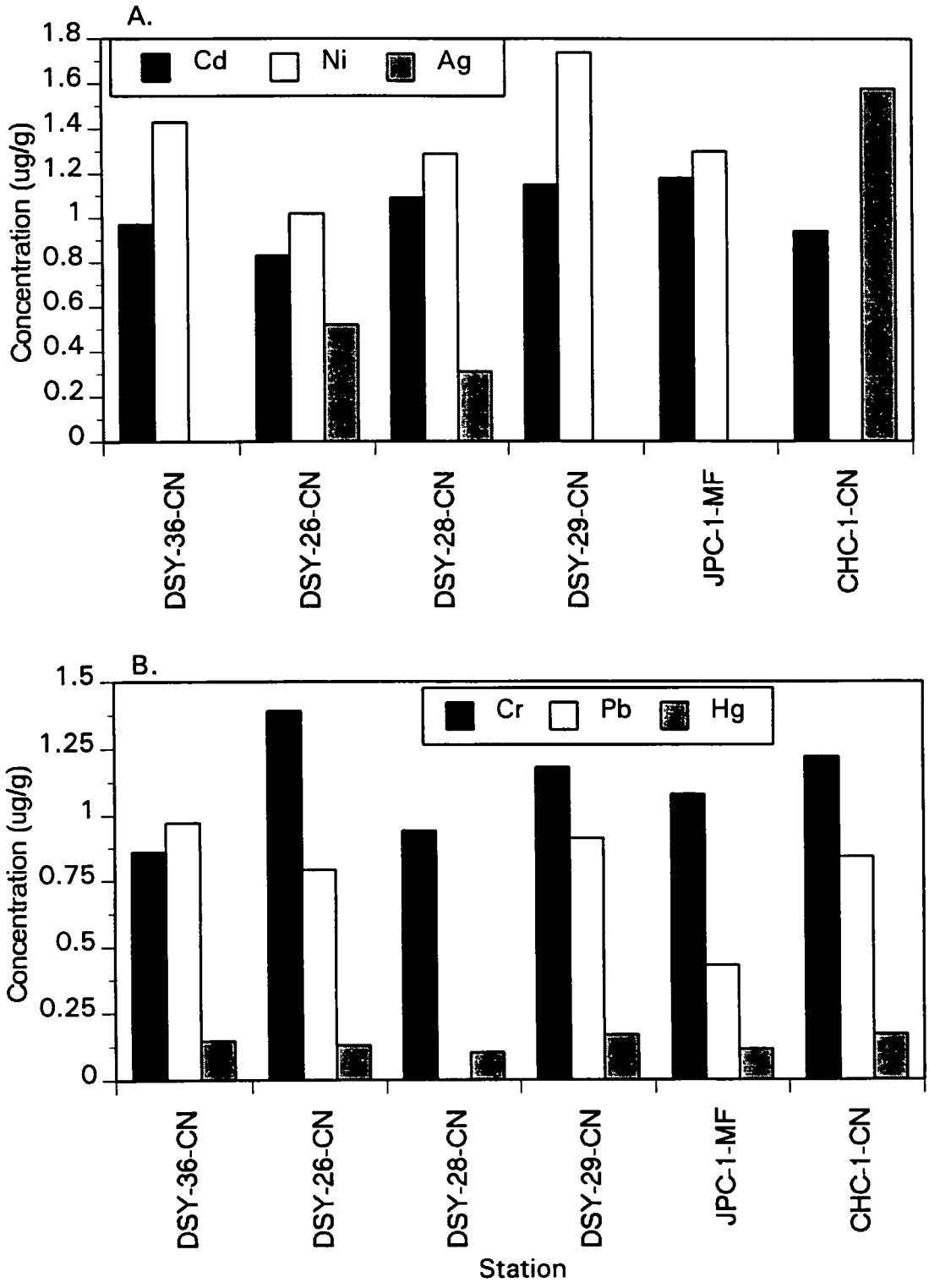
Concentration of Organic Components(per g dry wt. tissue) in Fish from Derecktor Shipyard.

FISH COMPONENTS	Site	DSY-BT	DSY-26-CN	DSY-28-CN	DSY-29-CN	DSY-36-CN	JPC-1-MF	CHC-1-CN
	(units)							
Σ PCBs	(ng/g)	514	2200	3870	3170	3130	1900	1010
p,p'-DDE	(ng/g)	42.9	29.1	44.8	67.0	53.6	67.4	21.2
TBT	(ngSn/g)							
Σ PAHs	(ng/g)	125	322	1500	331	326	82	1380

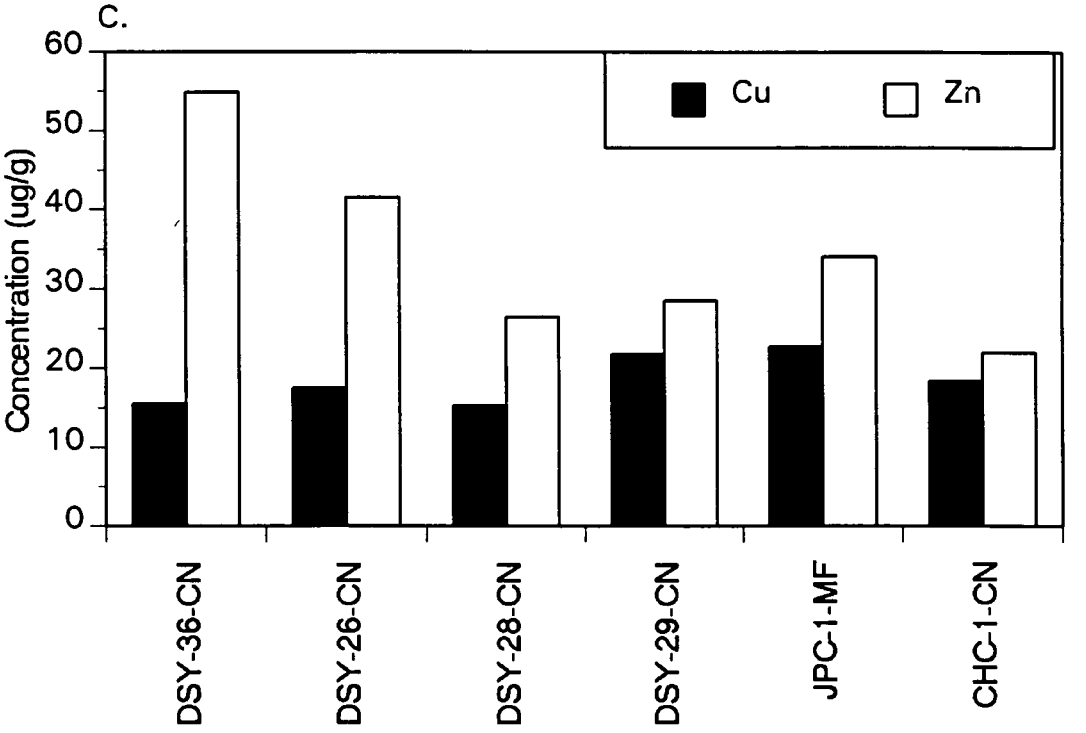
DSY = Derecktor Shipyard; JPC = Jamestown Potter Cove; CHC = Castle Hill Cove.

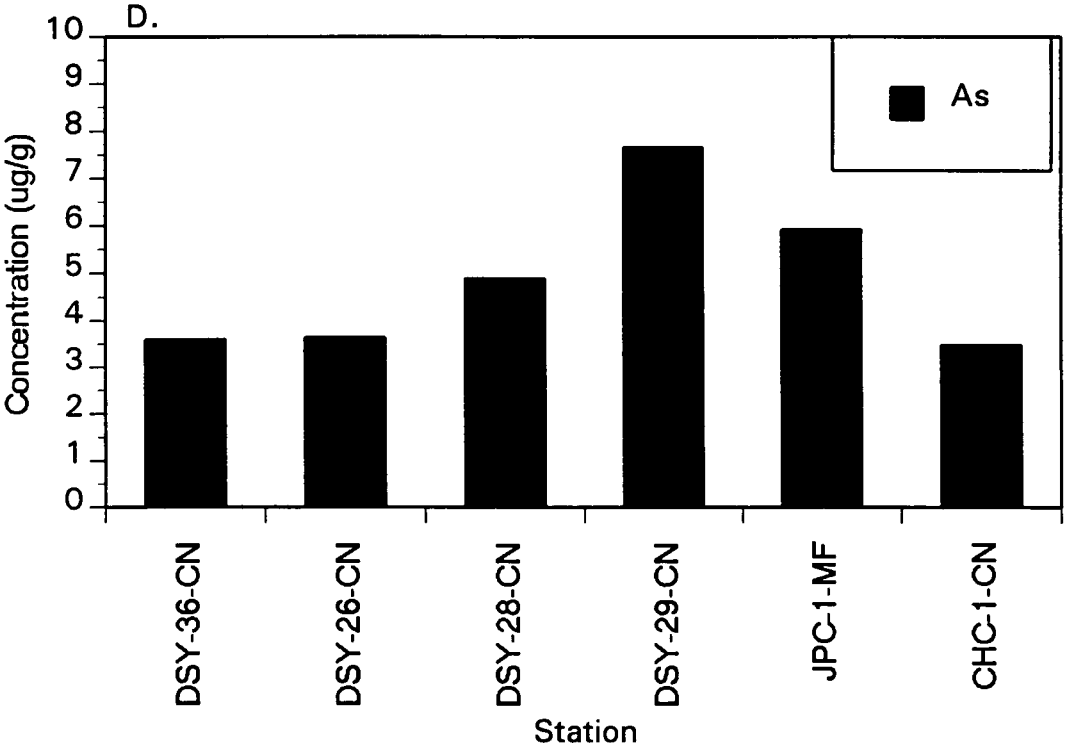
BT = lobster bait; CN = Cunner; MF= Mummichogs.

Σ PCBs = Sum of Polychlorinated Biphenyls; TBT = Tributyltin; Σ PAHs = Sum of Polycyclic Aromatic Hydrocarbons



Concentration of metals in fish (Mummichog fish and Cunner) (MF and CN) from Derecktor Shipyard (DSY). A. Cadmium, Nickel, and Silver; B. Chromium, Lead, and Mercury; C. Copper and Zinc; and D. Arsenic.





Concentration of metals in fish (Mummichog fish and Cunner) (MF and CN) from Derecktor Shipyard (DSY). (continued)

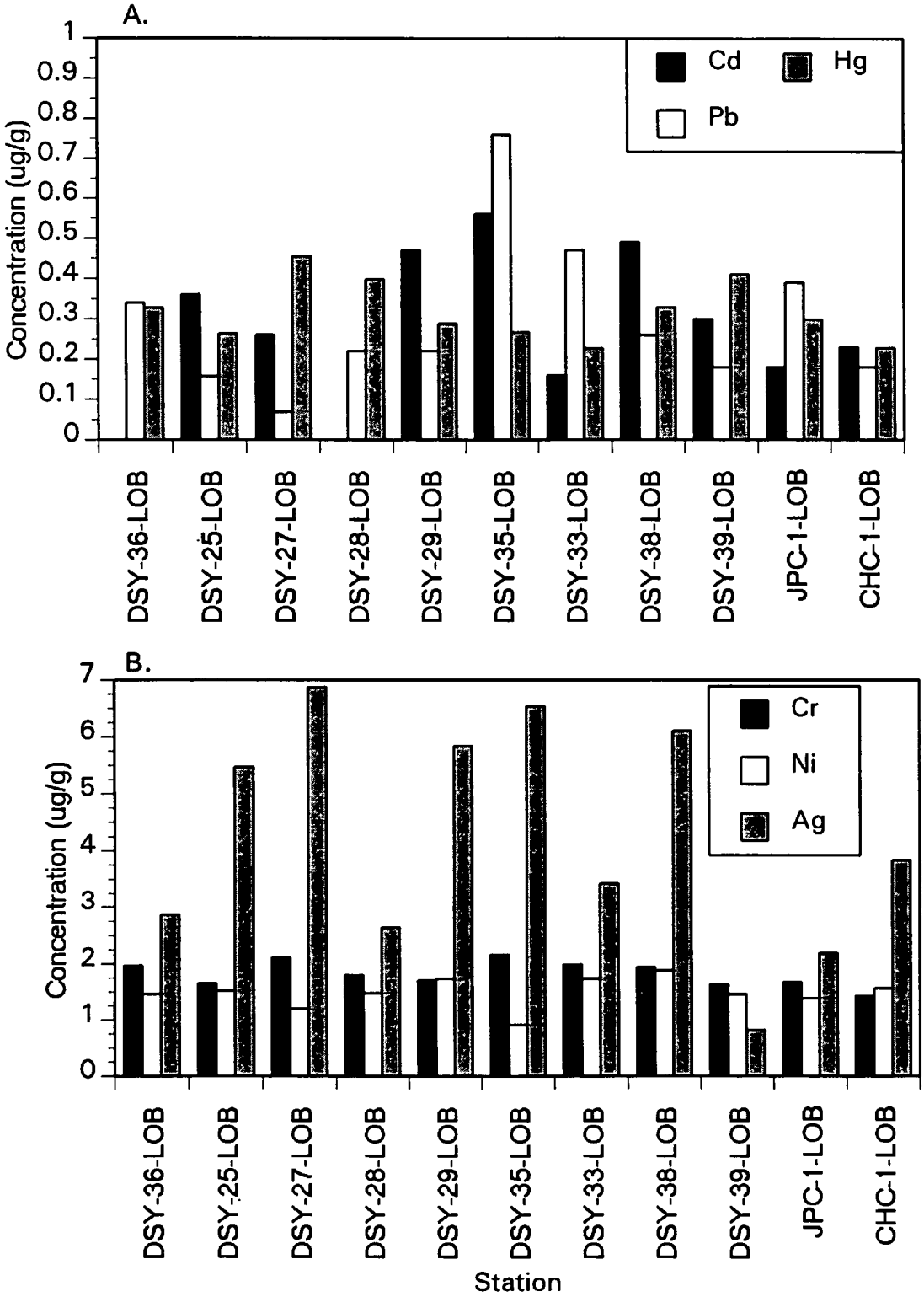
Table 7

Concentration of Organic Components(per g dry wt. tissue) in Lobsters from Derecktor Shipyard.

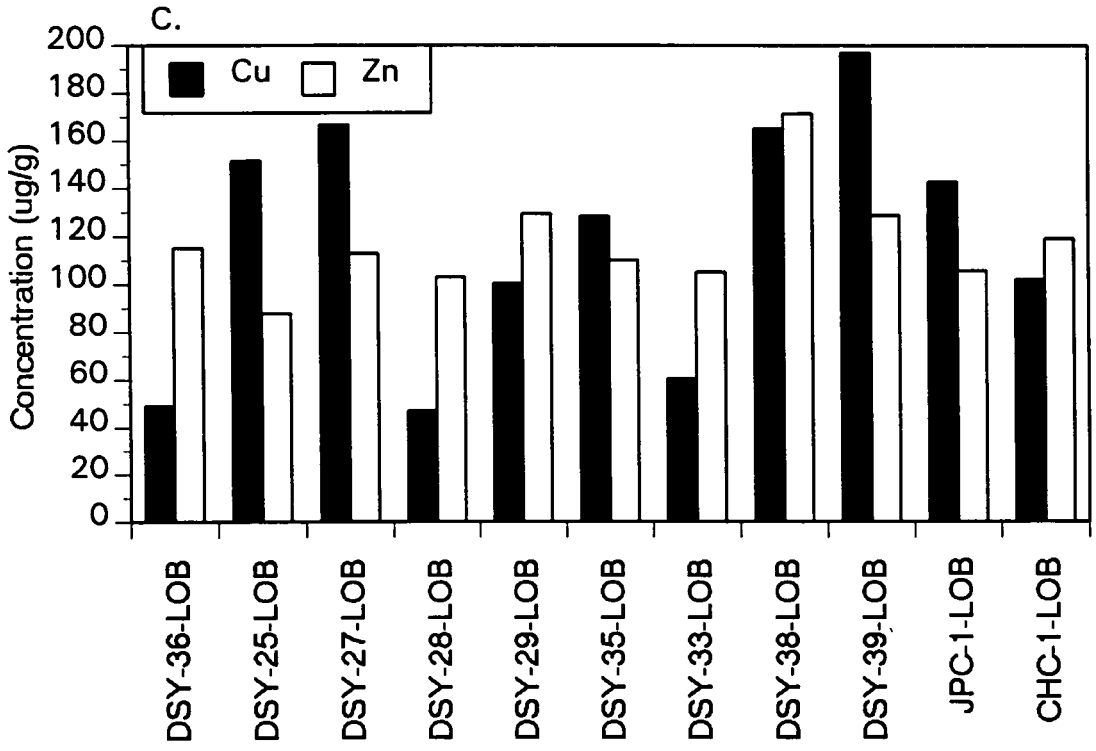
LOBSTER MUSCLE TISSUE COMPONENTS	Site	DSY-25	DSY-27	DSY-28	DSY-29	DSY-33	DSY-35	DSY-36	DSY-38	DSY-39	JPC-1	CHC-1
	(units)											
Σ PCBs	(ng/g)	468	748	861	355	469	339	317	840	291	397	461
p,p'-DDE	(ng/g)	5.9	8.4	9.8	6.3	6.6	5.2	4.9	4.1	7.1	4.1	7.8
TBT	(ngSn/g)											
Σ PAHs	(ng/g)	186	508	565	344	302	74	136	38	29	155	137

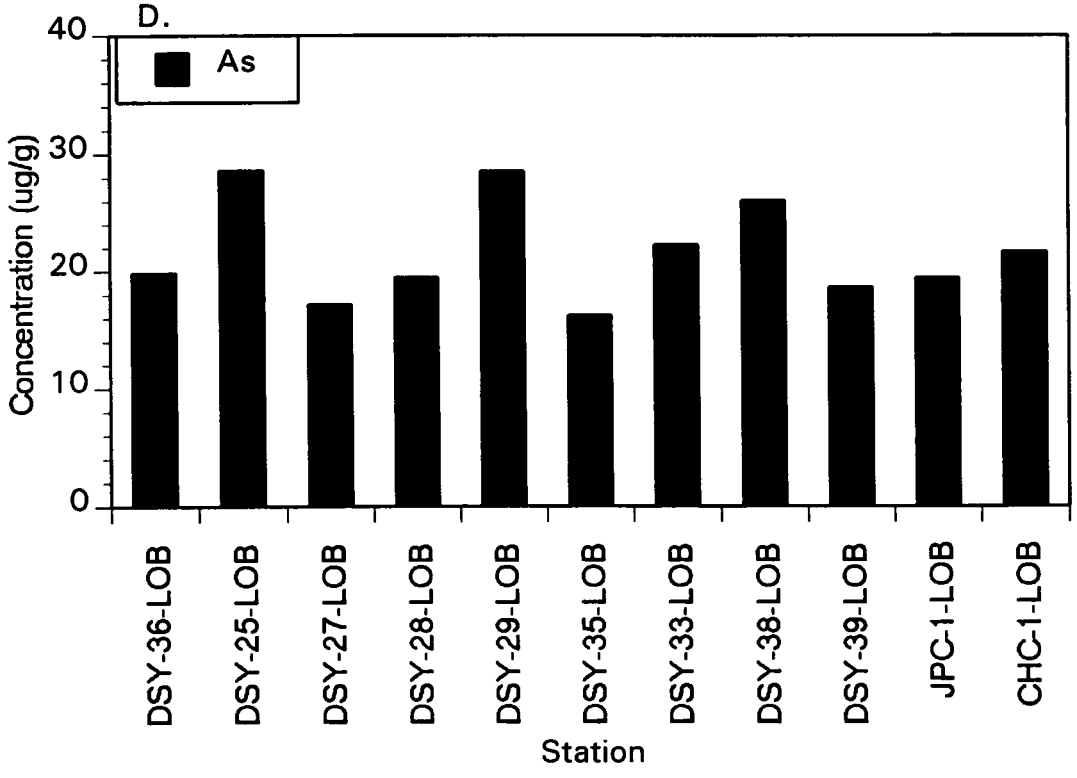
DSY = Derecktor Shipyard; JPC = Jamestown Potter Cove; CHC = Castle Hill Cove.

Σ PCBs = Sum of Polychlorinated Biphenyls; TBT = Tributyltin; Σ PAHs = Sum of Polycyclic Aromatic Hydrocarbons.



Concentration of metals in lobsters (LOB) from Derecktors Shipyard (DSY). A. Cadmium, Mercury and Lead; B. Chromium, Nickel, and Silver; C. Copper and Zinc; and D. Arsenic.





Concentration of metals in lobsters (LOB) from Derecktor Shipyard (DSY). (continued)

TABLE X-XX
SUMMARY TOXICITY TEST RESULTS
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND
PAGE 1 OF 1

Sample	Amphipod Survival (%)[1]			Urchin Development (%)[2]			Urchin Fertilization (%)[3]		
ID	Mean	SD	Comment	Mean	SD	Comment	Mean	SD	Comment
DSY-25	99	2.2		49	1.7	a	96	2.8	
DSY-26	101	2.7		14	6.0	a	103	0.7	
DSY-27	79	9.4	a,b	100	2.8		98	0.0	
DSY-28	70	23.9	a,b	0	0.0	a	94	0.7	
DSY-29	95	7.6		0	0.0	a	92	1.4	
DSY-30	84	7.9		99	2.2		97	0.7	
DSY-31	101	4.2		66	5.7	a	93	0.7	
DSY-32	97	4.2		80	2.8	a	89	0.7	
DSY-33	100	2.7		57	12.6	a	92	1.4	
DSY-34	97	2.7		101	2.9		89	0.7	
DSY-35	103	4.5		98	3.2		97	2.1	
DSY-36	99	7.4		78	1.0	a	94	0.7	
DSY-37	101	2.7		80	3.3	a	96	0.7	
DSY-38	99	2.2		34	12.5	a	96	2.1	
DSY-39	100	5.0		83	3.2	a	89	1.4	
DSY-40	100	5.0		83	4.0	a	97	2.1	
DSY-41	98	2.7		95	2.4	a	95	0.7	
JPC-1	98	7.1		99	1.9		98	2.1	
JPC-2	100	2.7		97	2.2	a	100	1.4	

FOOTNOTES

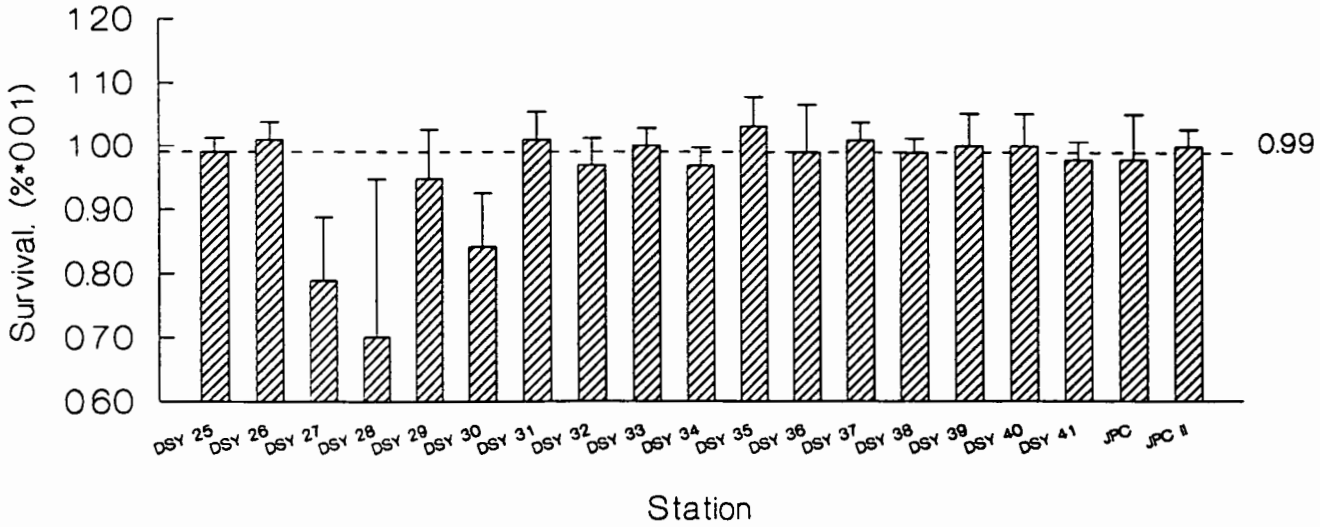
a Mean sample response was statistically less than mean control response.

b Mean sample response was less than 80% of mean control response.

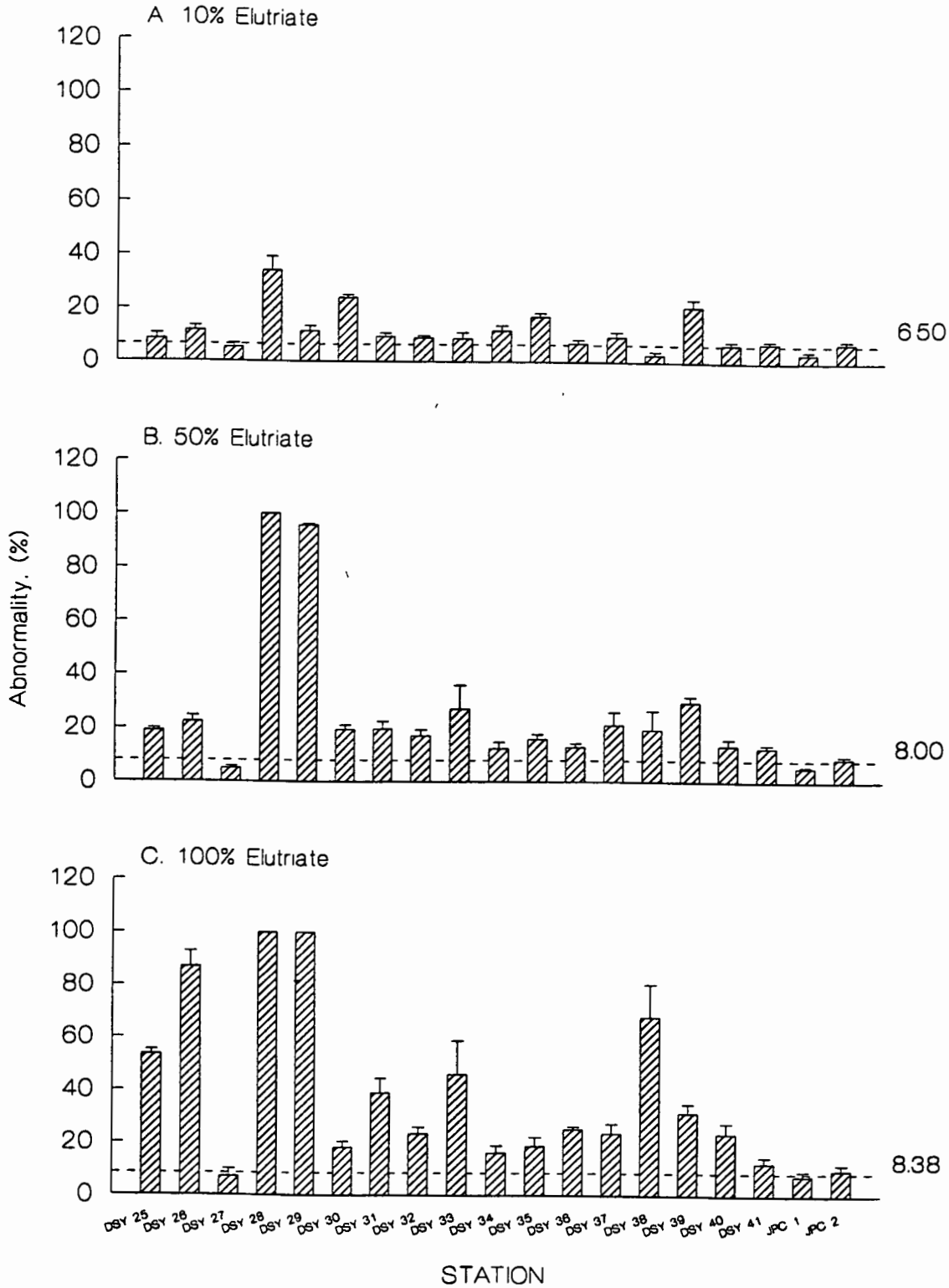
(1) Percent survival in solid-phase test. Data was normalized to the control.

(2) Percent normal larvae in 100% elutriate of sediment sample. Data was normalized to the control.

(3) Percent fertilized eggs in 100% elutriate of sediment sample. Data was normalized to the control.



Plot of amphipod (*Ampelisca*) mortality (%) in Derecktor Shipyard. Dashed line indicates median across reference stations. Values are mean ± the Standard Error of the mean.



Plot of sea urchin (*Arbacia)* fertilization abnormality (%) in Derecktor Shipyard in A) 10% elutriate, B) 50% elutriate, and C) 100% elutriate. Dashed line indicates median across reference stations. Values are mean ± the Standard Error of the mean.

S. Pratt

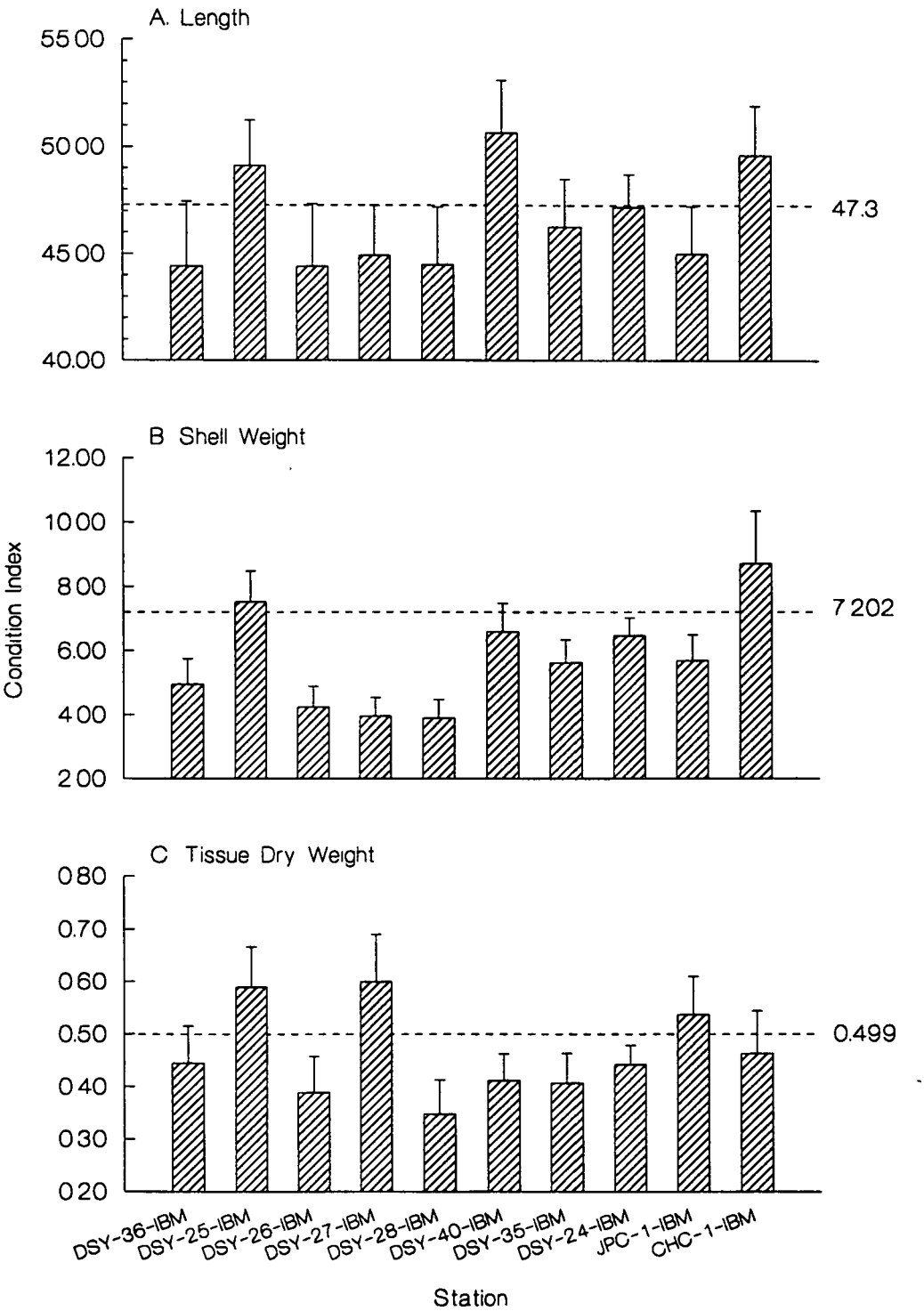
CODDINGTON COVE BENTHIC INVERTEBRATES												
	SAND											
STATION	25 1	25	26.1	26 2	33 1	33.2	35.1	35 2	JPC1.1	JPC1.2	JPC2.1	JPC2.2
	Coddington Cove (near shore)								Jamestown control			
	north				off pier		south		shallow		deep	
NEMERTINEA												
Tubulanus pellucidus			5		5	3			8	5	7	7
POLYCHAETA												
Aricidea catherinae			1		25	20	66	66	62	48	7	
Glycera americana			11	12	5	15	7	13	16	15		1
Mediomastus ambiseta		1	44	51	182	144		11	99	88	1	1
Montocellina baptisteae			14	10	76	11			2	1		2
Nephtys incisa					10	5			2		27	18
Ninoe nigripes			19	11	57	57			6	8	18	11
OLIGOCHAETA												
Oligochaeta spp.			5	7	103	88	23	31	40	172	3	7
MOLLUSCA												
GASTROPODA												
Acteocina canaliculata					3					1	14	23
Cylichnella oryza									5	6	29	35
Nassarius trivittatus			1			2	1				2	
BIVALVIA												
Macoma tenta			1	1	2	6		1	3	3	21	30
Mulinia lateralis									1		5	2
Nucula annulata			19	5	6	14			2	6	145	251
Tellina agilis			31	18			27	31	32	16	4	3
Yoldia limatula									2	1	22	19
CRUSTACEA												
AMPHIPODA												
Ampelisca abdita/vadorum			3	1	2				22	10	1	
Leptocheirus pinguis			1		100	57				1		2
Stress tolerant species												
Neanthes succinea				1		1						
Polydora cornuta				1			5					
Streblospio benedicti							1	2				
Number of species	2	3	34	34	39	34	19	18	51	52	40	30
Percent Nucula annulata	0.00	0.00	0.09	0 03	0.01	0.03	0.00	0.00	0.00	0.01	0 38	0.54
Number of individuals	4	3	217	193	673	511	221	226	456	505	382	463

S. Pratt 10

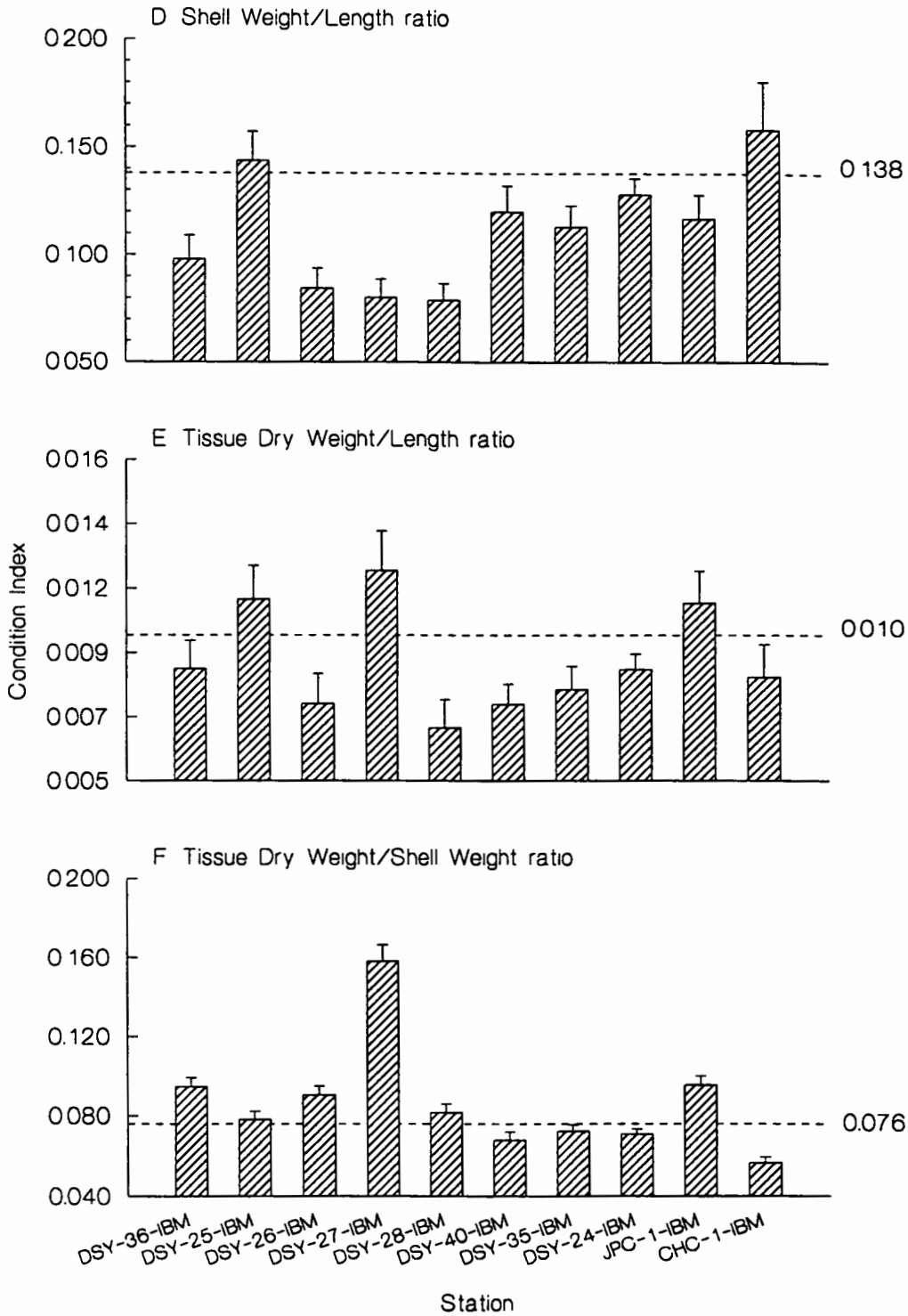
CODDINGTON COVE BENTHIC INVERTEBRATES														
	SILT													
STATION	27 1	27 2	28 1	28 2	40.1	40.2	41.1	41 2	29.1	29 2	30 1	30.2	31.1	31.2
	near shore....				.....		....	....	....		inside piers....			
					Derecktor inner . .				D south					
NEMERTINEA														
Tubulanus pellucidus	5	5	5			2		2			7	3	4	3
POLYCHAETA														
Aricidea cathernae														
Glycera americana		1			5	1	7	5	1					1
Mediomastus ambiseta	4	85	344	155	23	2	5	4			313	143	94	292
Montocellina baptisteae														
Nephtys incisa	13	9	13	13							21	2	17	20
Ninoe nigripes	18	4									2	7	4	3
OLIGOCHAETA														
Oligochaeta spp.		3	134	1			5	18	2		26	17	2	7
MOLLUSCA														
GASTROPODA														
Acteocina canaliculata	2	1		6							4	12	14	12
Cylichnella oryza	6	11		10							9	31	32	22
Nassarius trivittatus	4	2	14	6			7	6			3		11	21
BIVALVIA														
Macoma tenta	4	3	18	14									20	34
Mulinia lateralis	3		7	17							5	11	9	9
Nucula annulata	729	461	598	263	13	11	1	1			169	214	611	868
Tellina agilis	9	3	13	8	2		2	3			11	9	6	4
Yoldia limatula	1		7	7							2		11	6
CRUSTACEA														
AMPHIPODA														
Ampelisca abdita/vadorum	1		7	3	3	5	54	113	3	1	7	3		
Leptocheirus pinguis	1	1	1	1										
Stress tolerant species														
Neanthes succinea	1		2		11	10	28	18		4				
Polydora cornuta	1			1			10	29			1		1	
Streblospio benedicti		1	19	5	1	1	9	12						
Number of species	29	23	23	30	17	12	18	16	5	2	27	24	27	26
Percent Nucula annulata	0.85	0 76	0 50	0 49	0 17	0.29	0 01	0 00	0 00	0.00	0.28	0.44	0 71	0 66
Number of individuals	854	603	1204	541	78	38	138	216	10	5	611	485	862	1323

S. Pratt 9

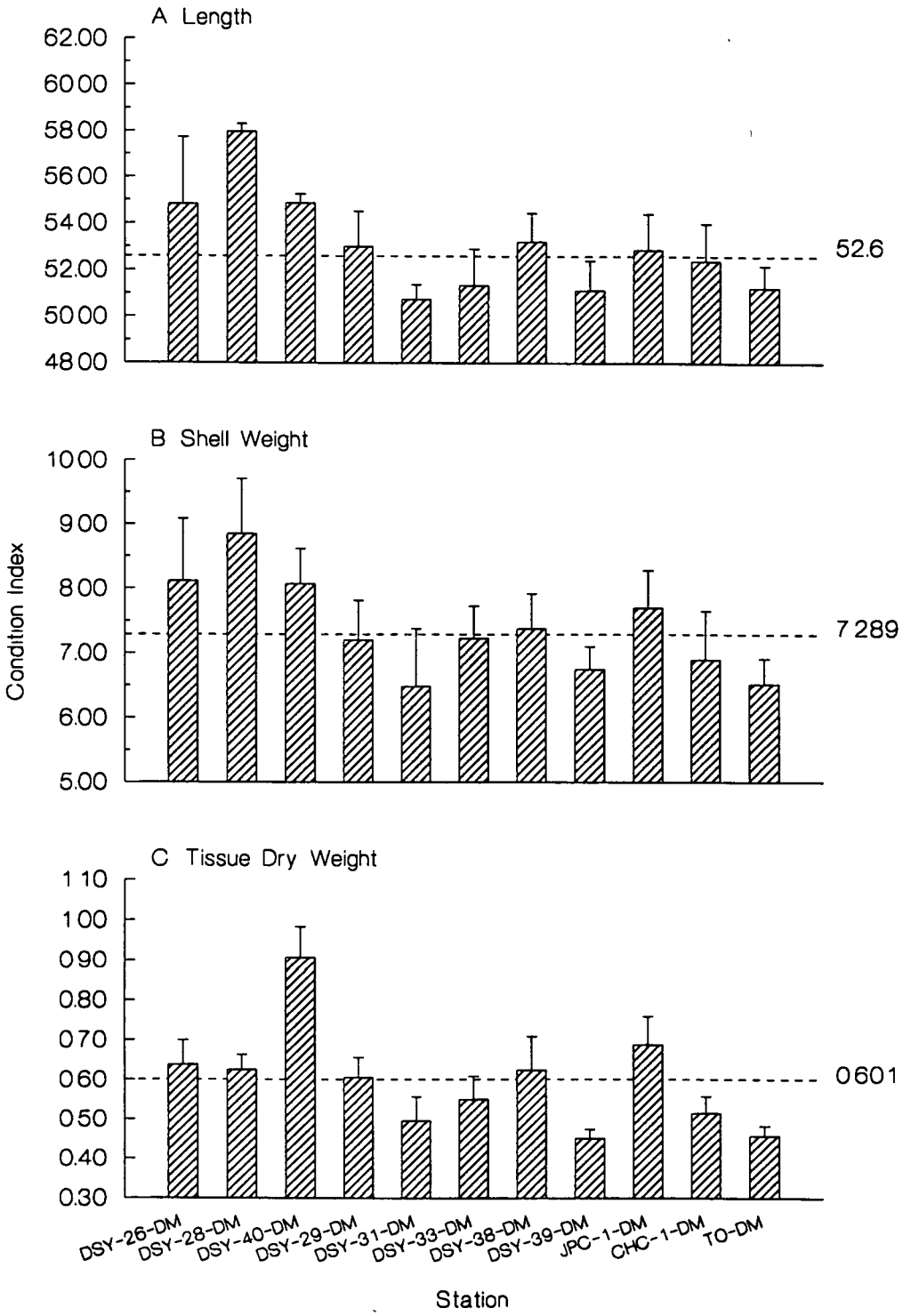
CODDINGTON COVE BENTHIC INVERTEBRATES												
	SILT											
STATION	32.1	32.2	34 1	34.2	36.1	36.2	37 1	37.2	38.1	38.2	39 1	39 2
.. .	mid cove				....		outer cove-offshore.....					
NEMERTINEA												
Tubulanus pellucidus	12	1	14	25	3	1	7	15	1	1	1	2
POLYCHAETA												
Aricidea catherinae				1			1	1	1	1		
Glycera americana							2		1	2		
Mediomastus ambiseta	350	212	16	160	39	30	128	217	93	72	23	35
Montocellina baptisteae								1				
Nephtys incisa	22	15	20	28	23	30	36	25	24	22	50	61
Ninoe nigripes	3	2	5	5	7	6	11	15	11	2	4	1
OLIGOCHAETA												
Oligochaeta spp.	5		1	5		2						2
MOLLUSCA												
GASTROPODA												
Acteocina canaliculata		2	6	7	13	17	10	24	6		1	1
Cylichnella oryza	3	3	9	10	14	2	42	64	5	2	38	40
Nassarius trivittatus	7	9		3	8	4	3	3	18	9	12	9
BIVALVIA												
Macoma tenta		4	26	47	15	18	18	9			17	25
Mulinia lateralis	1		6	7	2	4	11	10		1	14	25
Nucula annulata	794	842	254	628	1121	1371	449	268	195	1524	2305	2292
Tellina agilis		2					6	7	8	5	11	22
Yoldia limatula			2	2	6	8	8	6	8	2	6	
CRUSTACEA												
AMPHIPODA												
Ampelisca abdita/vadorum			1	1								
Leptocheirus pinguis							25	3	1			1
Stress tolerant species												
Neanthes succinea												1
Polydora cornuta						1						9
Streblospio benedicti			1									
Number of species	18	21	26	26	23	26	33	34	25	22	29	32
Percent Nucula annulata	0.65	0.75	0 67	0 65	0 88	0.89	0.56	0 38	0 49	0.92	0.92	0.89
Number of individuals	1218	1119	381	964	1268	1548	801	709	397	1658	2512	2576



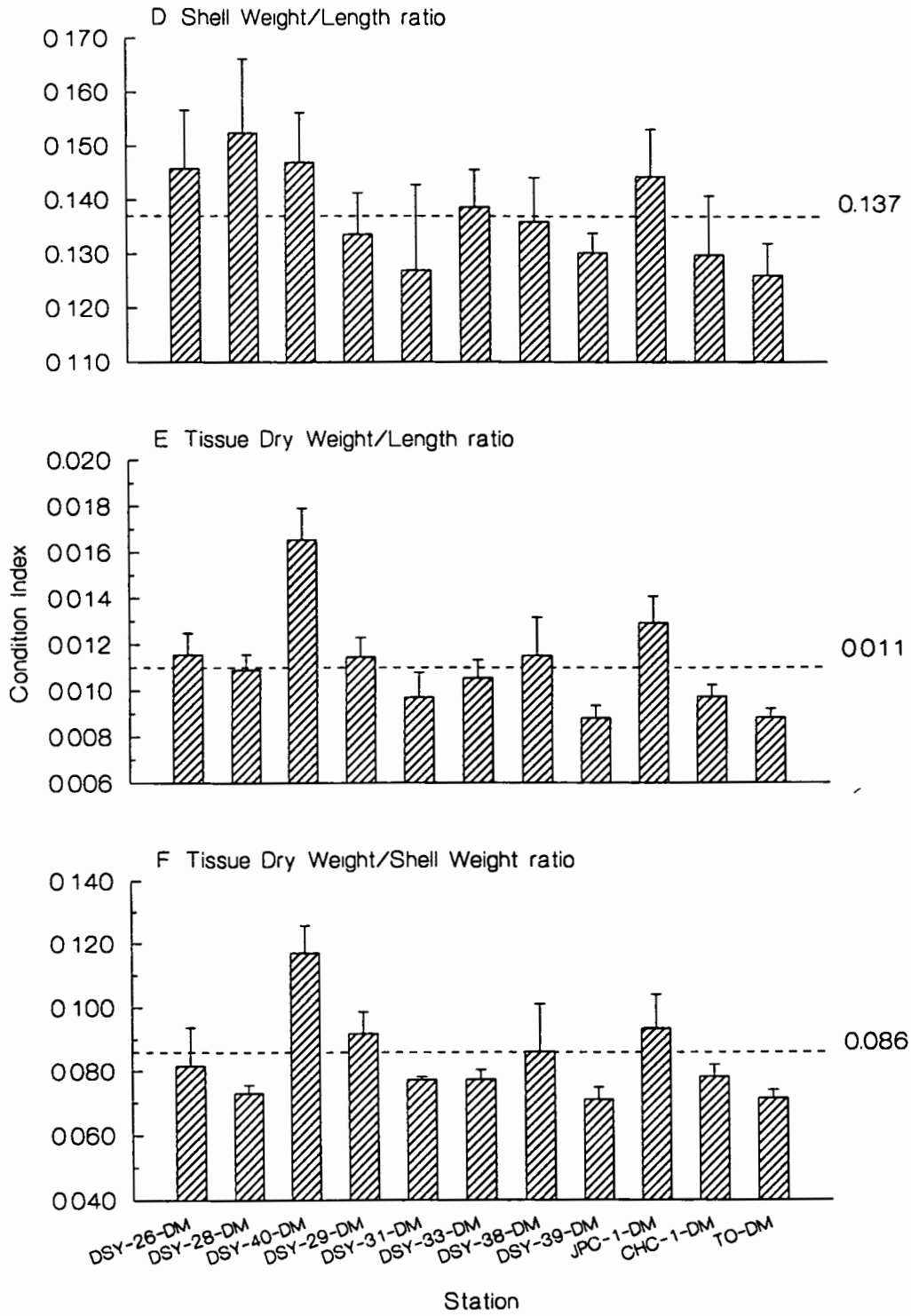
Condition indices for Indigenous Blue Mussels in Derecktor Shipyard. A) length, B) shell weight, C) tissue dry weight, D) shell weight to length ratio, E) tissue dry weight to length ratio, and F) tissue dry weight to shell weight ratio. Dashed line indicates median across reference stations. Values are ± the Standard Error of the mean.



Condition indices for Indigenous Blue Mussels in Derecktor Shipyard. A) length, B) shell weight, C) tissue dry weight, D) shell weight to length ratio, E) tissue dry weight to length ratio, and F) tissue dry weight to shell weight ratio. Dashed line indicates median across reference stations. Values are ± the Standard Error of the mean.



Condition indices for Deployed Blue Mussels in Derecktor Shipyard. A) length, B) shell weight, C) tissue dry weight, D) shell weight to length ratio, E) tissue dry weight to length ratio, and F) tissue dry weight to shell weight ratio. Dashed line indicates median across reference stations. Values are ± the Standard Error of the mean.



Condition indices for Deployed Blue Mussels in Derecktor Shipyard. A) length, B) shell weight, C) tissue dry weight, D) shell weight to length ratio, E) tissue dry weight to length ratio, and F) tissue dry weight to shell weight ratio. Dashed line indicates median across reference stations. Values are ± the Standard Error of the mean.

TABLE X-XX
SUMMARY NEOPLASIA RESULTS FOR INDIGENOUS MUSSELS
DRAFT MARINE ECOLOGICAL RISK ASSESSMENT
DERECKTOR SHIPYARD, NETC
NEWPORT, RHODE ISLAND
PAGE 1 OF 1

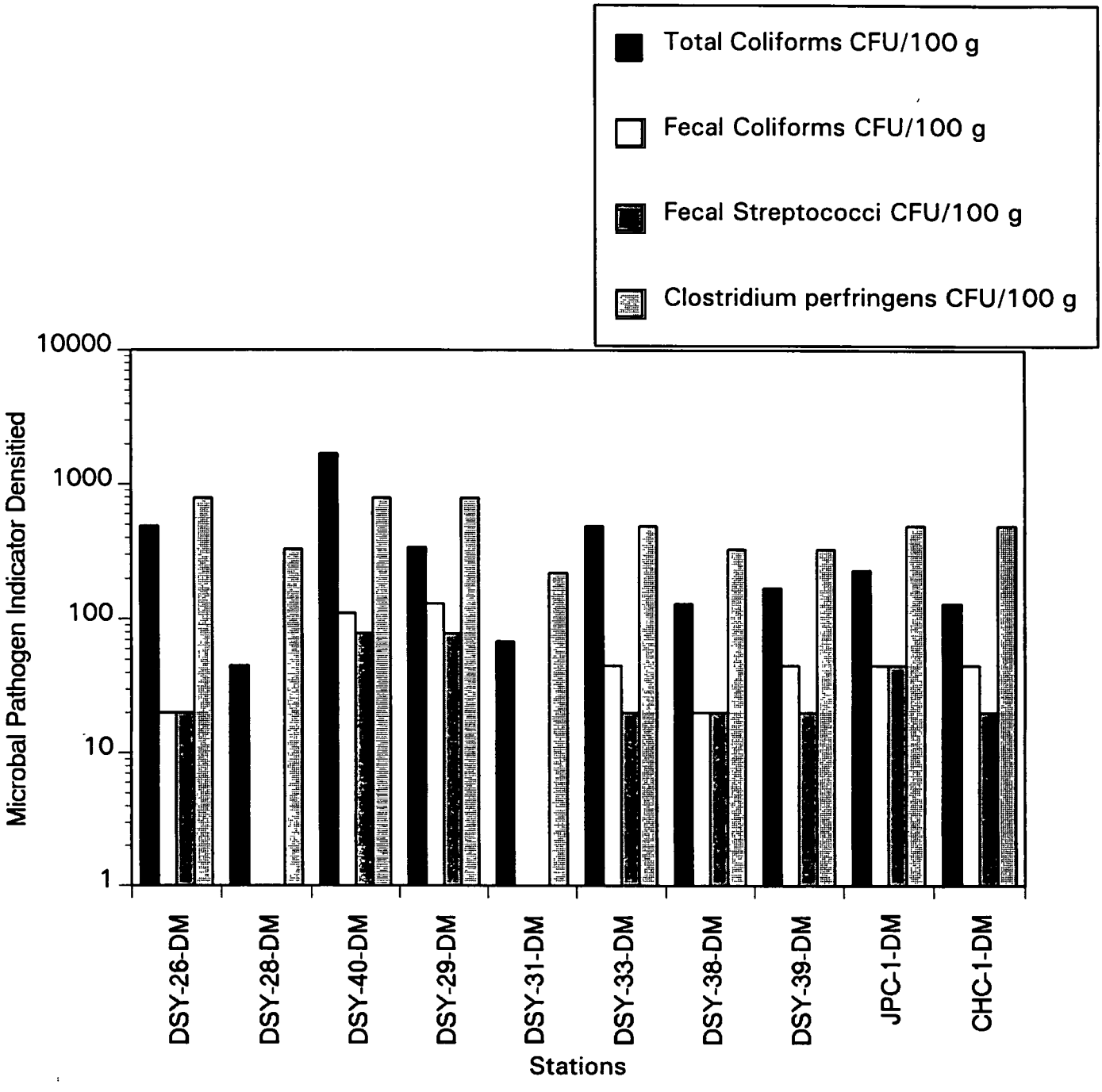
Sample ID	Number of Animals Assayed	Incidence (%)(1)	Severity (%)(2)
CHC-1	NA	NA	NA
DSY-26	20	100	19.3
DSY-27	NA	NA	NA
DSY-28	NA	NA	NA
DSY-29	20	75	28.1
DSY-31	12	50	17.9
DSY-35	20	30	0.6
DSY-36	16	31	0.3
DSY-40	20	80	24.1
JPC-1	20	65	40.0

FOOTNOTES

NA Data was not available.

(1) Percentage of animals assayed with neoplastic cells.

(2) Mean percentage of neoplastic cells in afflicted animals.



Microbal pathogen indicator densities for Blue Mussels deployed (DM) in Derecktor Shipyard (DSY).

Hydrographic Survey

Figure 2. Contour plots of velocity versus position in a plane across the mouth of Coddington Cove. The plane is oriented such that into the paper(e.g. into the cove) is East and out of the paper is West. Dark colors show higher flow magnitudes (+ or -) and lighter colors represent more sluggish flow. Actual velocity magnitudes are also given on the plots (negative values are out of the cove). Both plots show flow patterns on the first sample day (September18, 1995; low amplitude tide) in the time period 12:03-12:25. The flow is represents the early stages of a flood tide. The two frames (a) and (b) are recorded within 10 minutes of each other and show some degree of variability in exact flow patterns. However, the two agree in terms of showing a robust feature of the flow which is a strong inflow along the southern section of the mouth and a strong outflow in the northern section.

Figure 3. Similar contour plot as Figure 2, but for later in the first day of sampling (14:30-14:45). This data is recorded towards the end of the flood tide, or during periods of maximum expected velocity within the cove (e.g., high tide was ~15:30). Again, both contour fields show the predominant inflow is to the south and the dominant outflow occurs in the north. Flow magnitudes reach +/- 22-24 cm/s at this stage of the flood tide. An interesting feature of the flow is that the inflow is focused, vertically uniform core situated just north of the shallow point. Earlier in the flood tide, the inflow was more diffuse and centered up on the shallow section. The outflow is more consistently focused into a vertically uniform core (e.g., left side of Figure 2a, 2b and 3a).

Figure 4. Similar contour plots as Figures 2&3, but for the day 2 of sampling (October 13, 1995) to characterize a low amplitude ebb tide. The two contour fields are for (a) 13:52 and (b) 15:04 and represent middle and late stages of the ebb tide, respectively. Similar patterns of southern inflow and northern outflow are recorded.

Figure 5. Velocity contour plots for day 3 of sampling (October 23, 1995) to characterize conditions during a high amplitude flooding tide. These contour fields are for (a), 12:59 (b) 13:21 and (c) 14:08 and all represent the transitional period between ebb and flood. The plots are important because they provide an indication of flow energies and flushing close to slack water. The plots clearly show that flow magnitudes into and out of the cove in this counterclockwise pattern (inflow in the south, outflow in the north) is a robust feature over all stages of the tide (maximum flood, maximum ebb and at slack water, as shown here). The cove does not simply fill up during flood, drain during ebb and stagnate during slack water. Instead, this counterclockwise flow is a nearly steady feature of the flow and simply increases and decreases in magnitude depending on the stage of the tide.

Figure 6. Data shows that there is one other mode of flow which occurs within Coddington Cove. On Day 3 of sampling there was wind out of the southwest (5-10 kts), with gusts up to 15-20 kts. This velocity contour plot across the mouth of the cove shows that wind events are able to override the more general pattern of counterclockwise flow demonstrated above. Here the flow has switched from a more vertically coherent, laterally varying flow, to one with significant vertical structure. The flow pattern shown here is inflow in the surface and outflow at depth. Again, maximum outflow occurs in the north and some inflow is recorded up on the shallow section to the south.

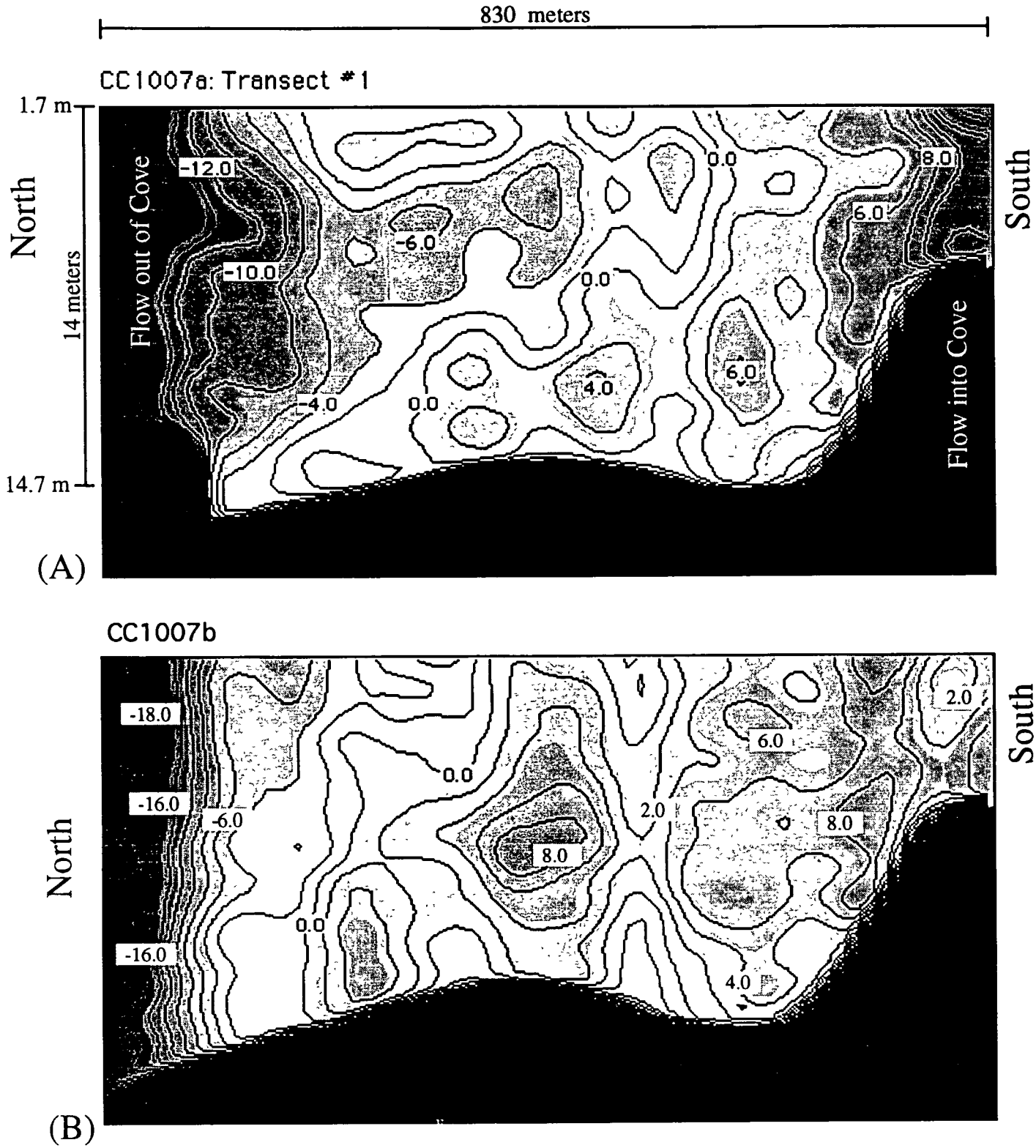
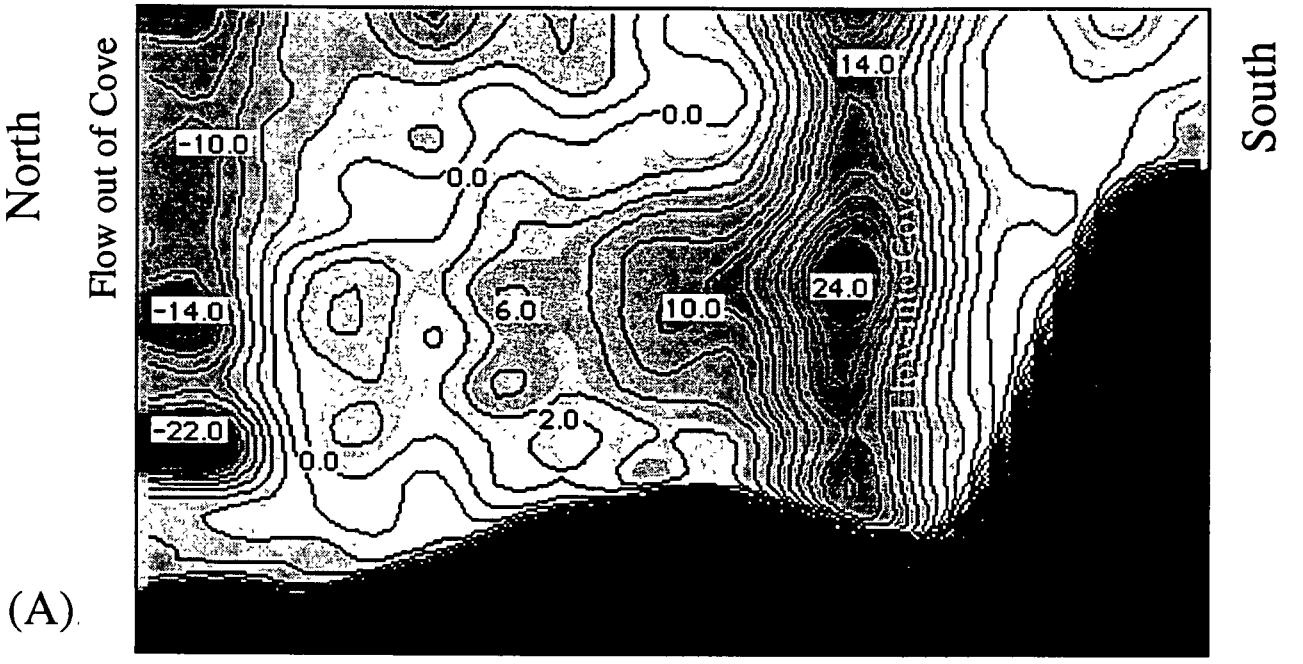
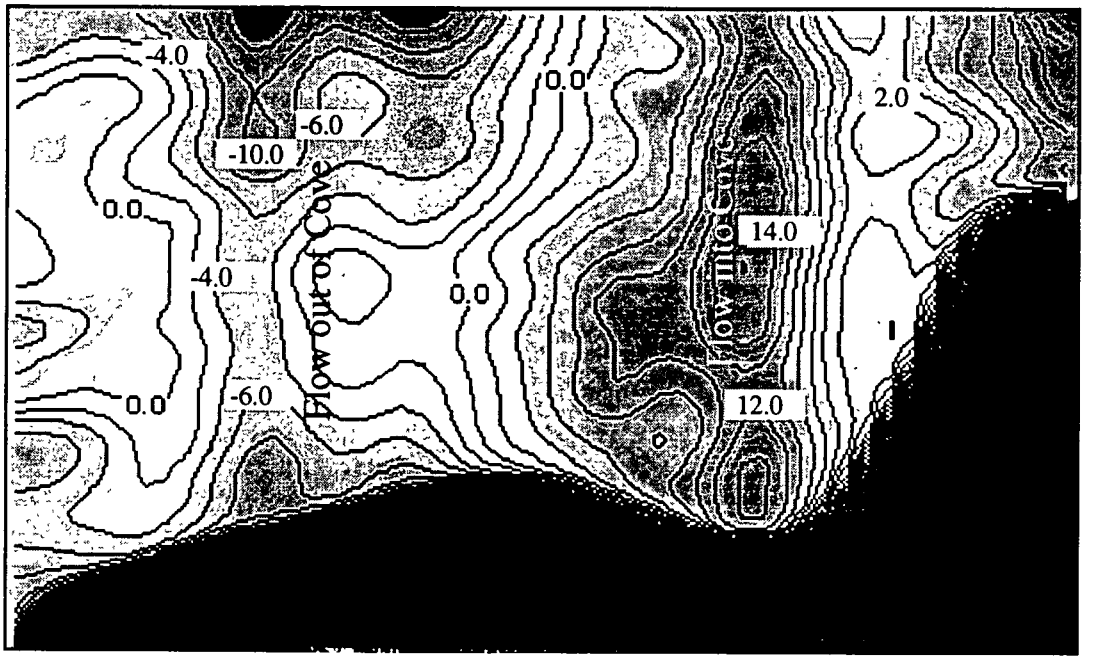

830 meters
CC1007a: Transect #1
1.7 m
14 meters
14.7 m
North
South
Flow out of Cove
Flow into Cove
-12.0
-10.0
-6.0
-4.0
0.0
0.0
0.0
4.0
6.0
6.0
8.0
(A)
CC1007b
North
South
-18.0
-16.0
-16.0
-6.0
0.0
0.0
2.0
8.0
8.0
6.0
2.0
4.0
(B)

Figure 2

CC1014a. Transect #1

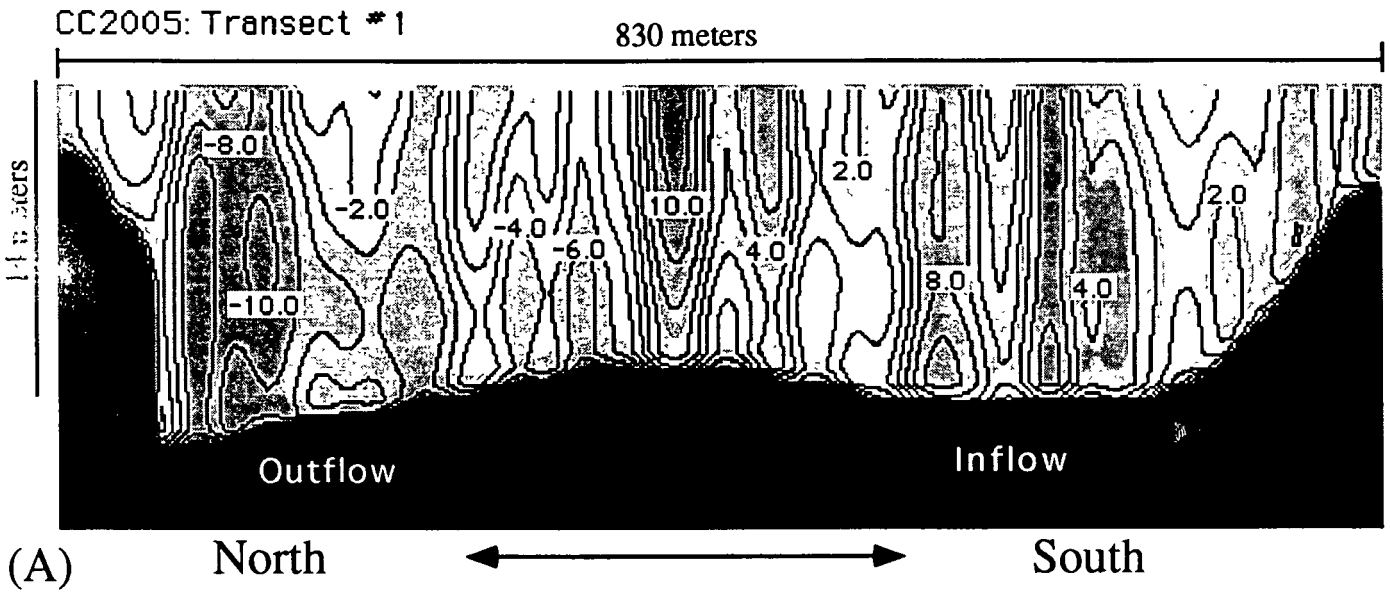


(A)



(B)

Figure 3


CC2005: Transect #1
830 meters
-8.0
-2.0
-4.0
-6.0
10.0
4.0
2.0
2.0
8.0
4.0
-10.0
Outflow
Inflow
(A)
North
South

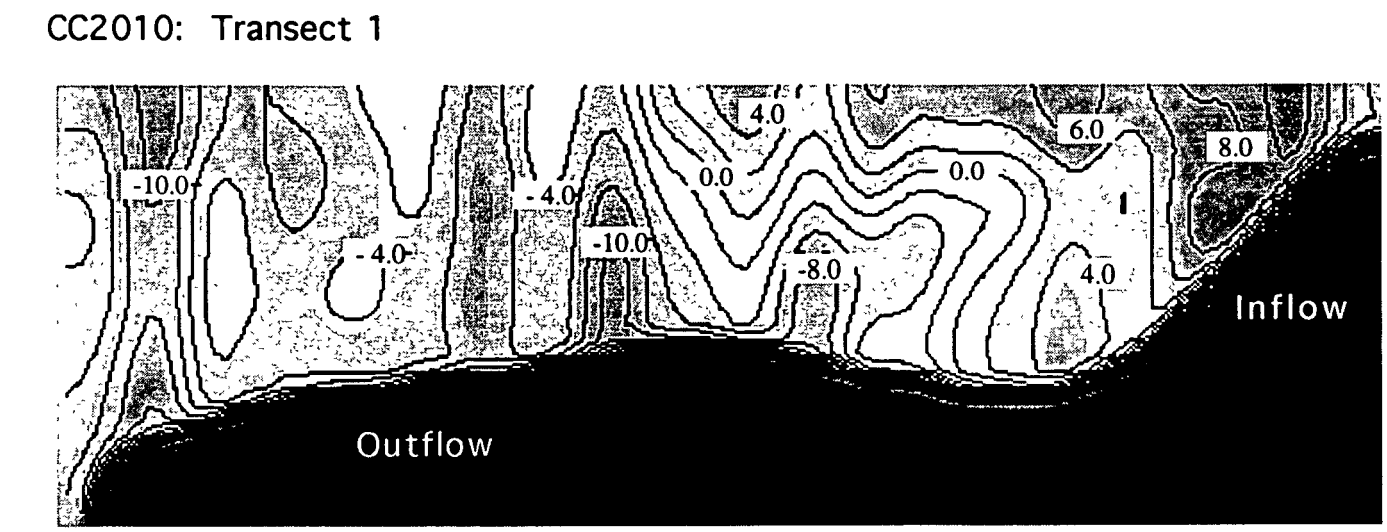
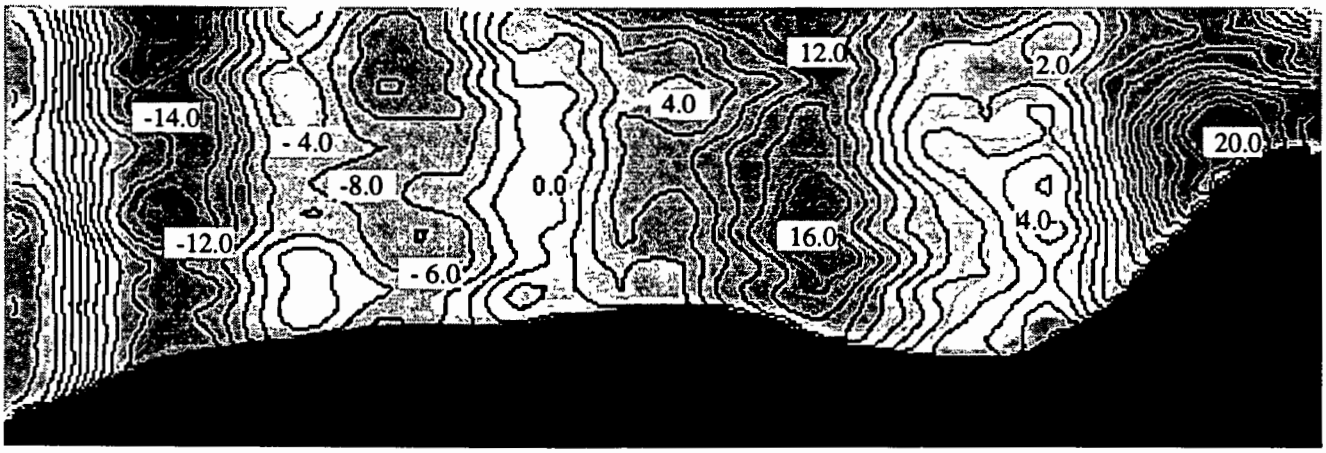

CC2010: Transect 1
4.0
6.0
8.0
-10.0
-4.0
0.0
0.0
-4.0
-10.0
-8.0
4.0
Inflow
Outflow
(B)
North
South

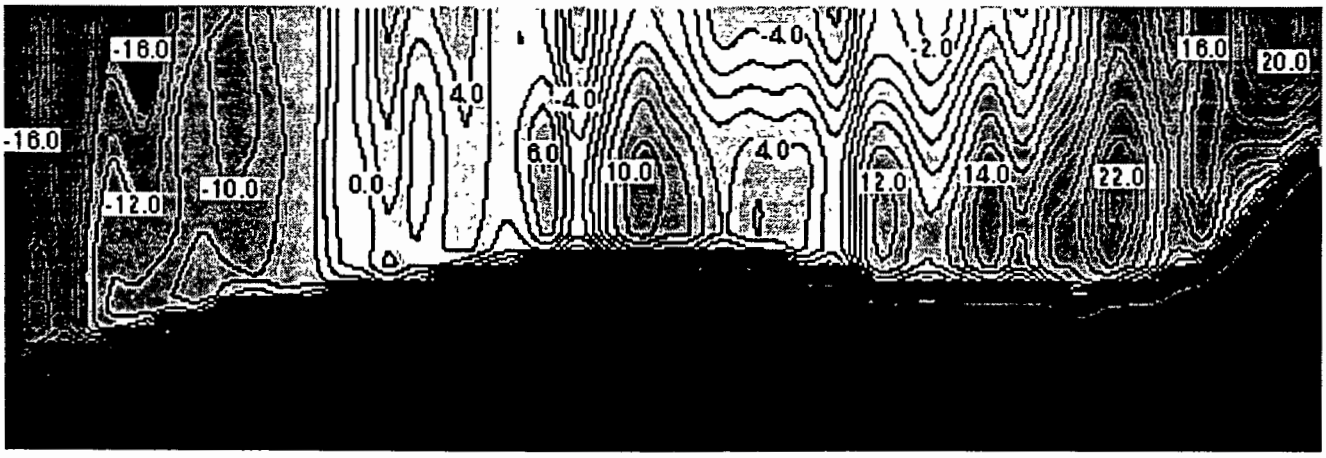
Figure 4

CC3001: Transect 1



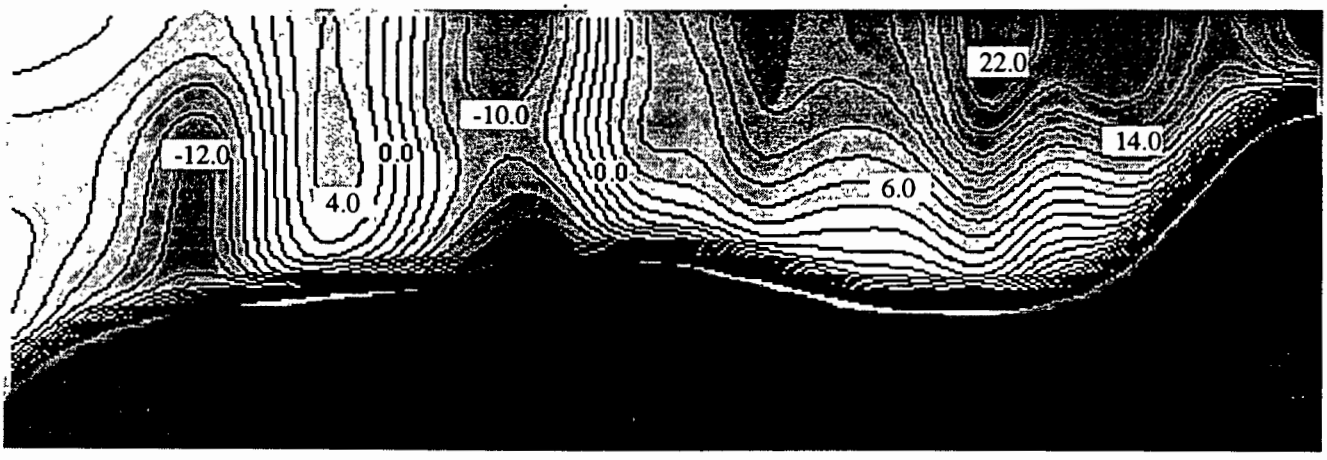
(A)

CC3002: Transect #1



(B)

CC3003: Transect 1



(C)

Figure 5

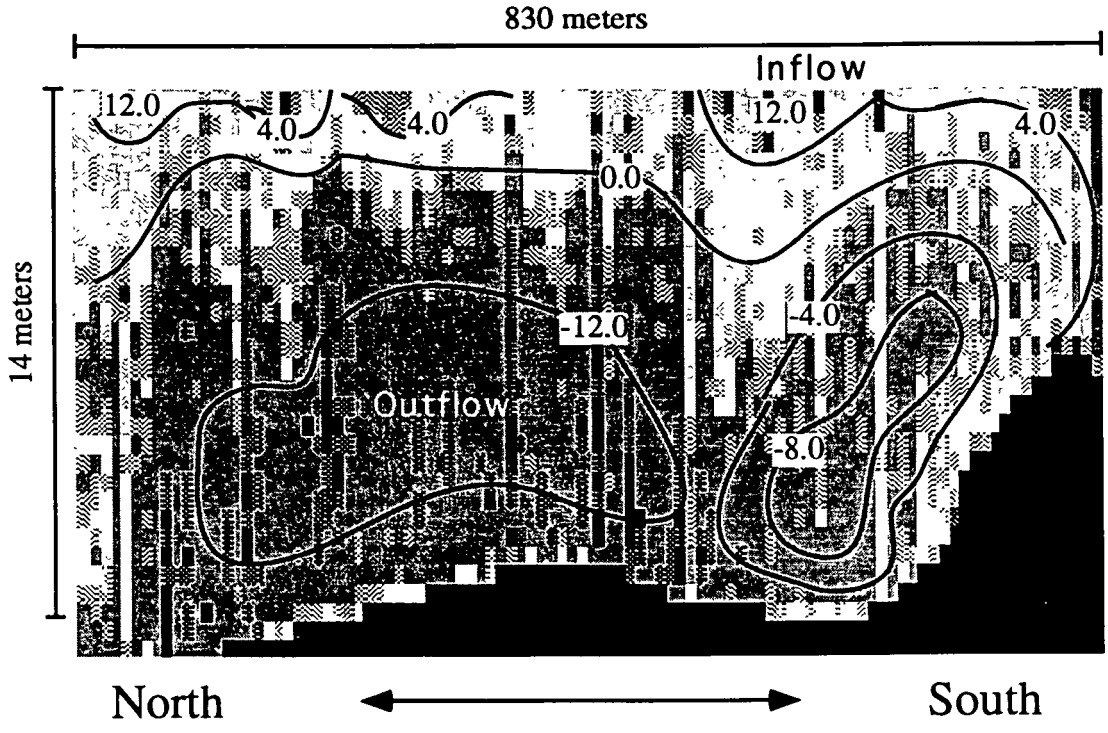

830 meters
Inflow
12.0
4.0
4.0
12.0
4.0
0.0
14 meters
-12.0
-4.0
Outflow
-8.0
North
South

Figure 6

Figure 8a and b. Average bottom current magnitudes and directions for measurements made in Coddington Cove on September 18th, 1995. Data points are determined by dividing each transect (e.g. as shown in figure 1c) into sections, averaging laterally within that section to produce an average profile of velocity magnitude and orientation. These vertical profiles are then divided into three vertical bins (near bottom, intermediate depth and surface). Figure (a) shows the early flood tide while (b) represents the late flood tide. The split flow structure at the mouth of the cove is observed with flow out of the cove to the north and flow into the cove at the southern section of the mouth. The cyclonic (counter clockwise) flow pattern is evident and extends beyond transect 2.3 into the southeastern region of the cove.

Figure 9a and b. Average bottom current magnitudes and directions for October 13rd, 1995 which was a low amplitude ebb tide. The split flow structure at the mouth of the cove is observed again. The cyclonic (counter clockwise) flow pattern is evident and extends beyond transect 2.3 into the southeastern region of the cove.

Figure 10a and b. Average bottom current magnitudes and directions for October 23rd, 1995 which was a high amplitude flood tide. The currents at the mouth reached a maximum during the ebb-slack tide. These were the highest average current velocities observed at the mouth of Coddington Cove during the three days sampled. These larger magnitudes are consistent with this tide being a high amplitude case. During the ebb-slack portion, most of the current vectors display water moving west out of the cove. However, the split flow at the mouth is still evident. The cyclonic pattern in the cove is observed during the flood tide.

Appendix. Figures of average surface current magnitudes and directions for the same time periods illustrated in Figures 8-10.

CC1-A Low Amplitude
Early Flood

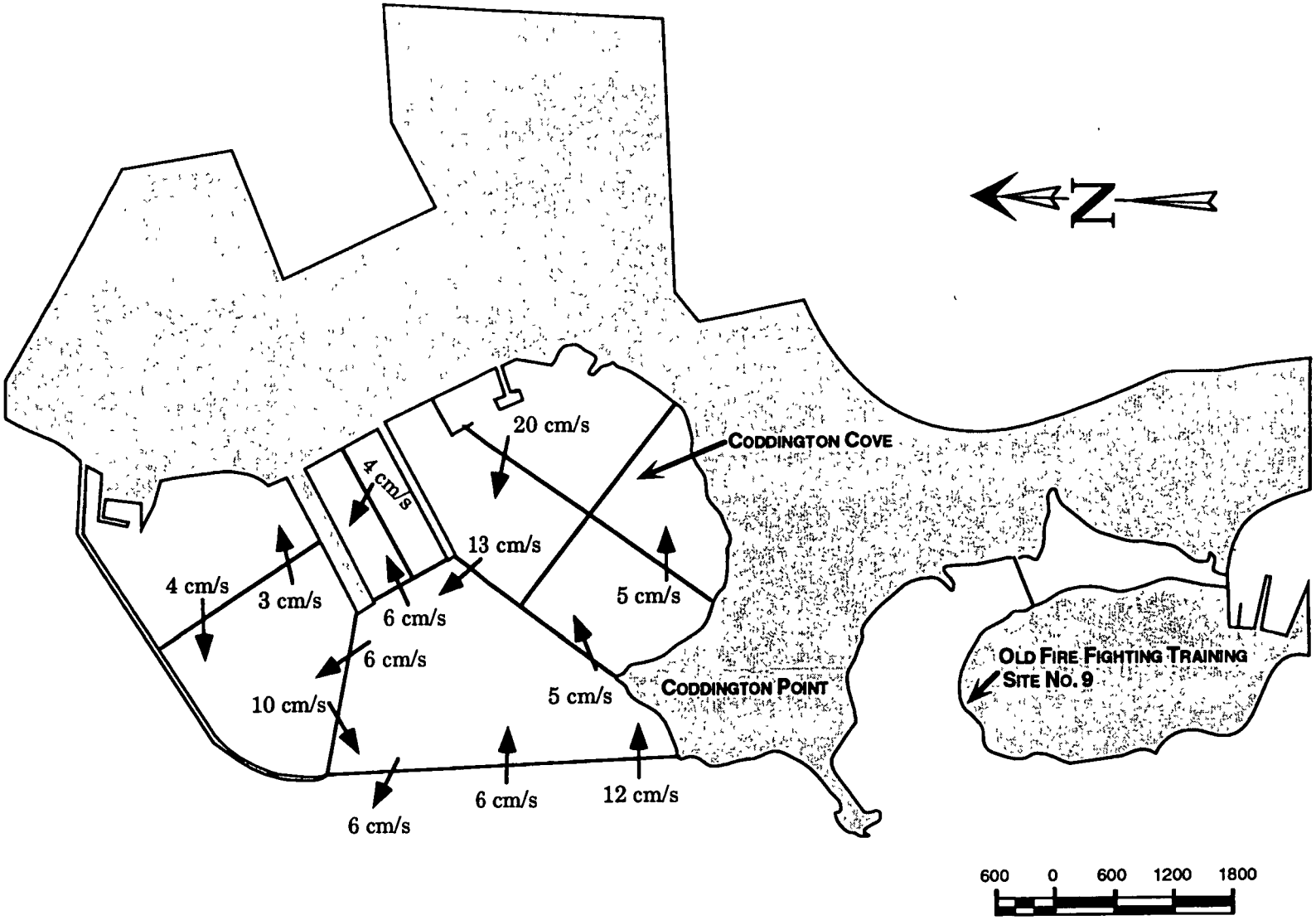


Figure 8a.

CC1-B Low Amplitude
Late Flood

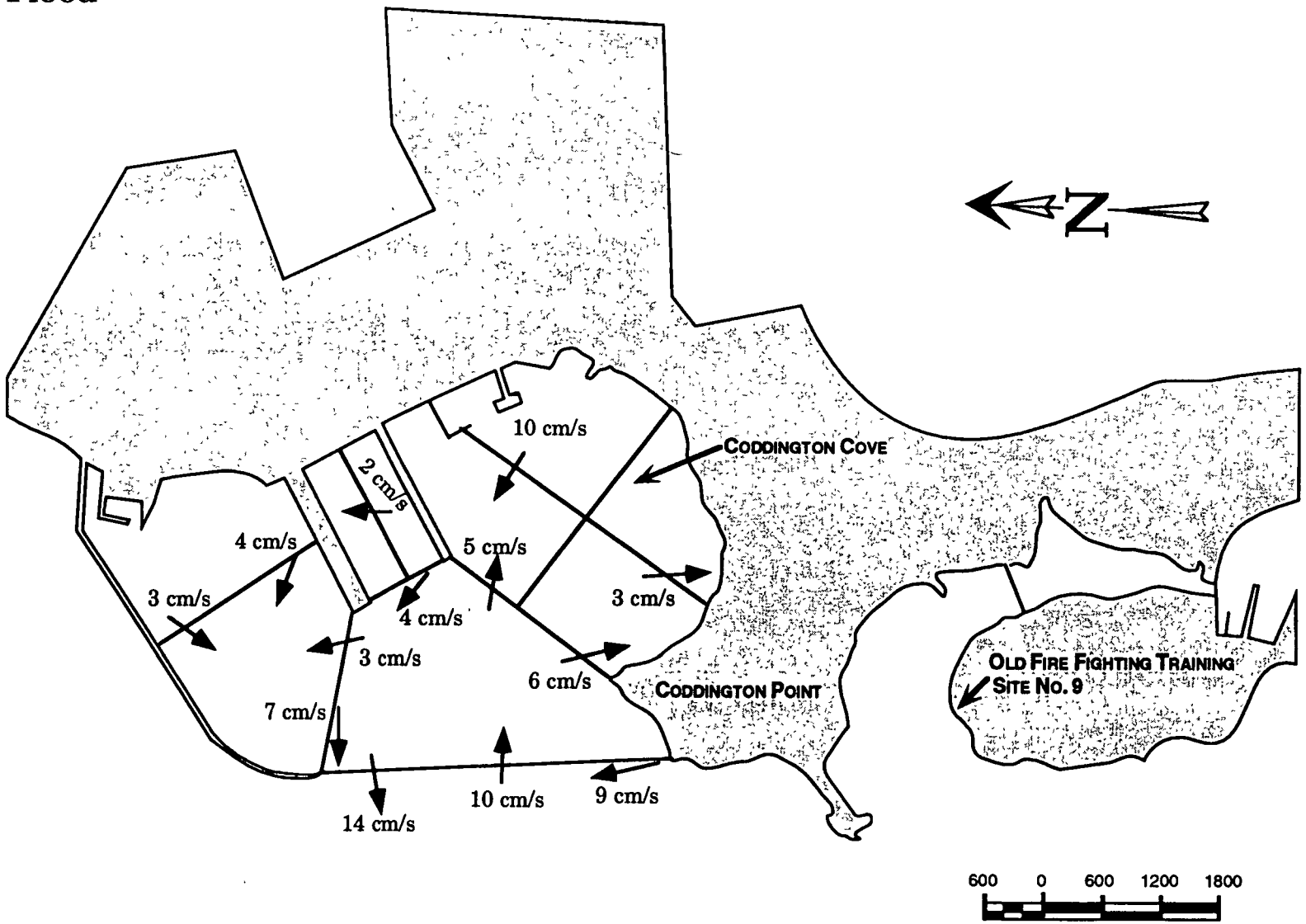


Figure 8b.

CC2-A Low Amplitude
Starting to Ebb

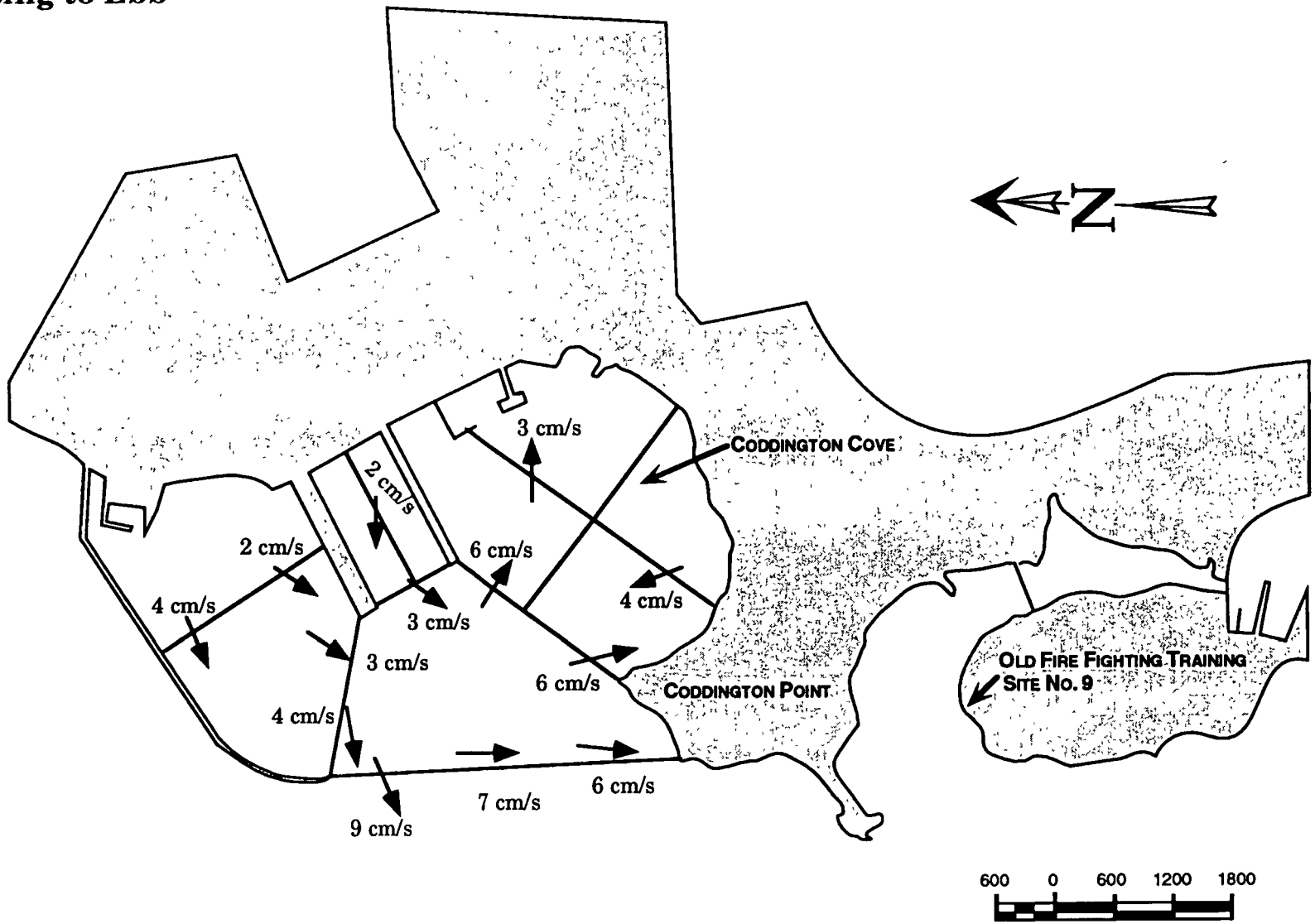


Figure 9a.

CC2-B Low Amplitude
Early Flood

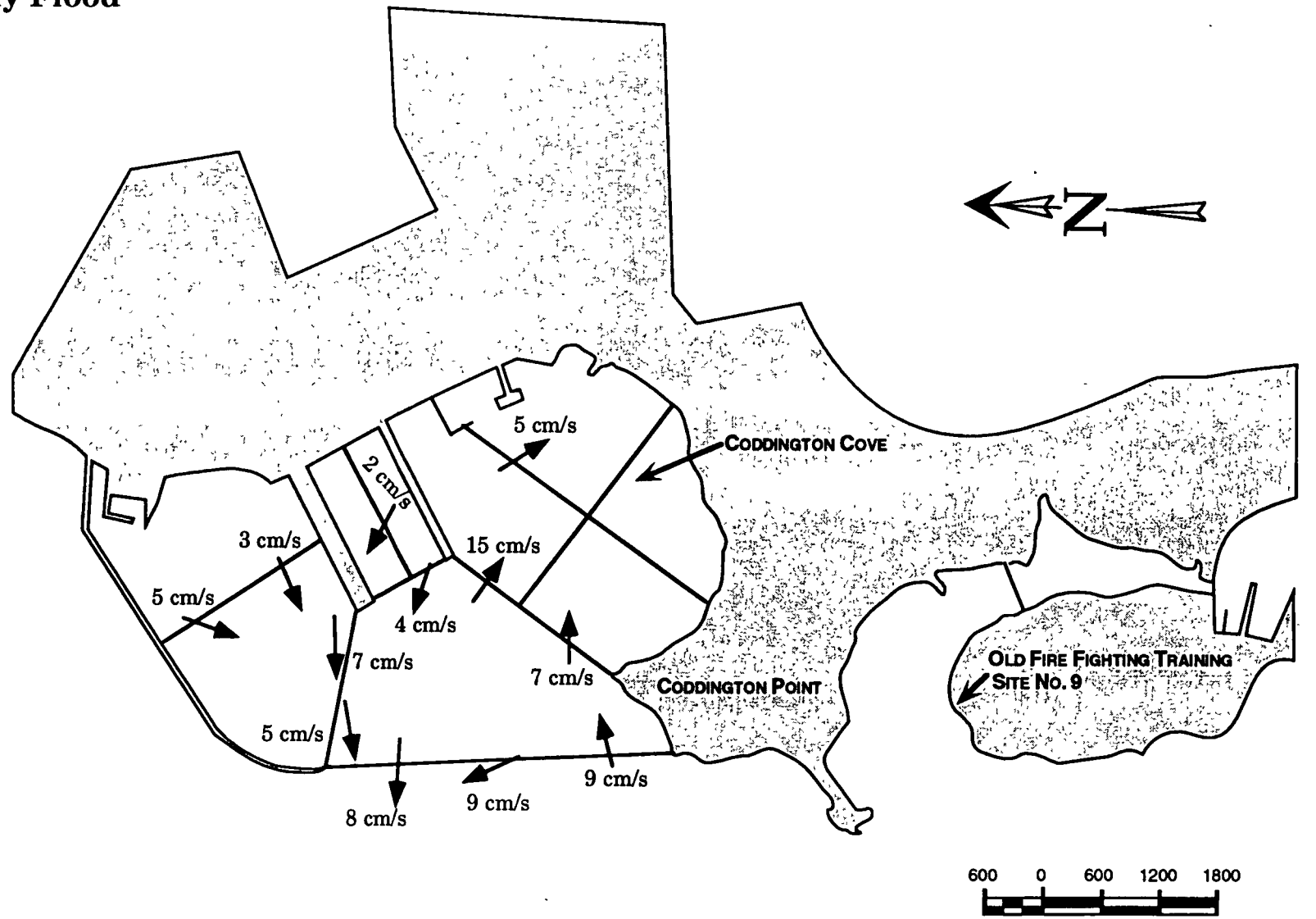


Figure 9b.

CC3-A High Amplitude
Ebb going to Slack

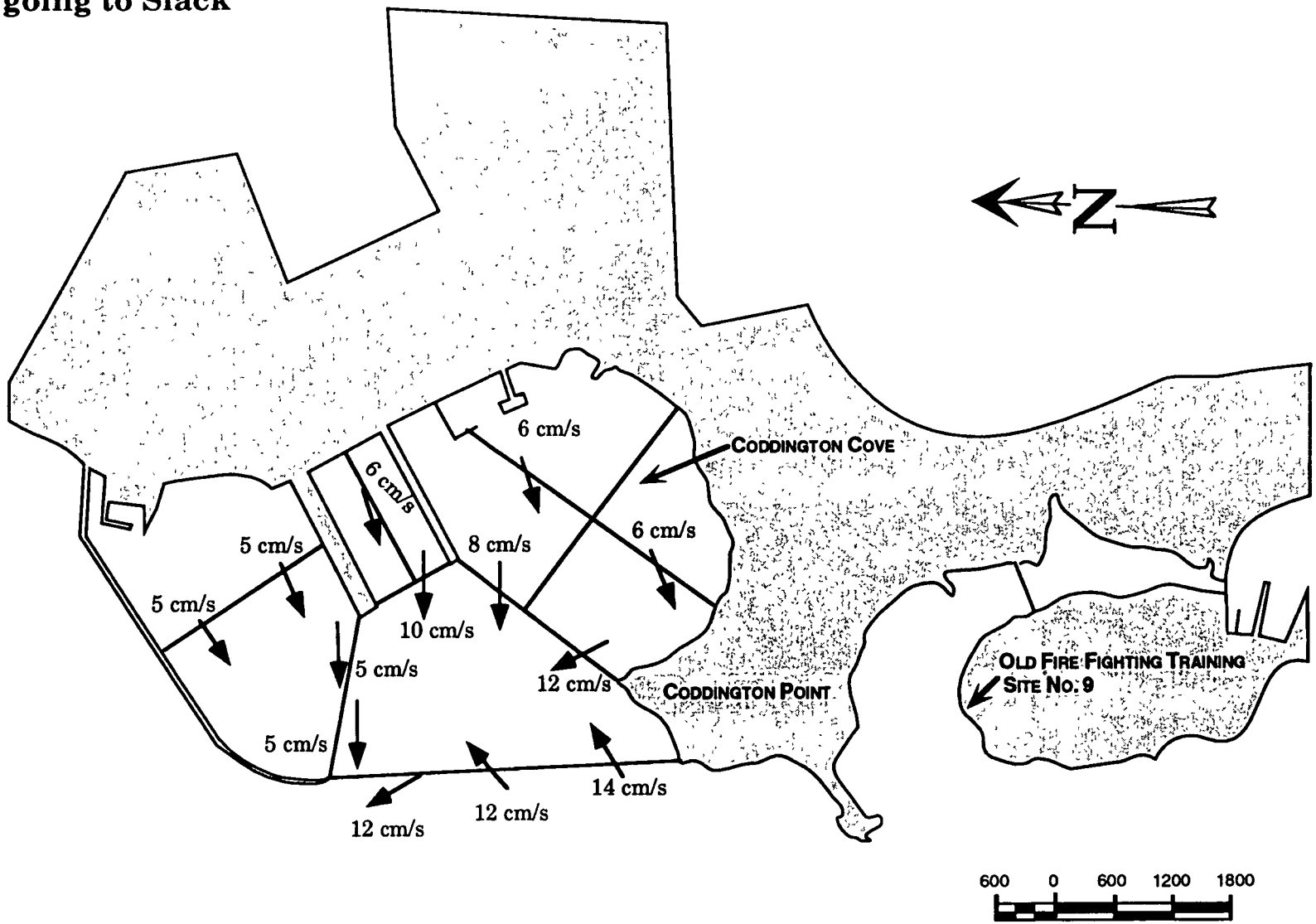


Figure 10a.

CC3-B High Amplitude Flood Tide

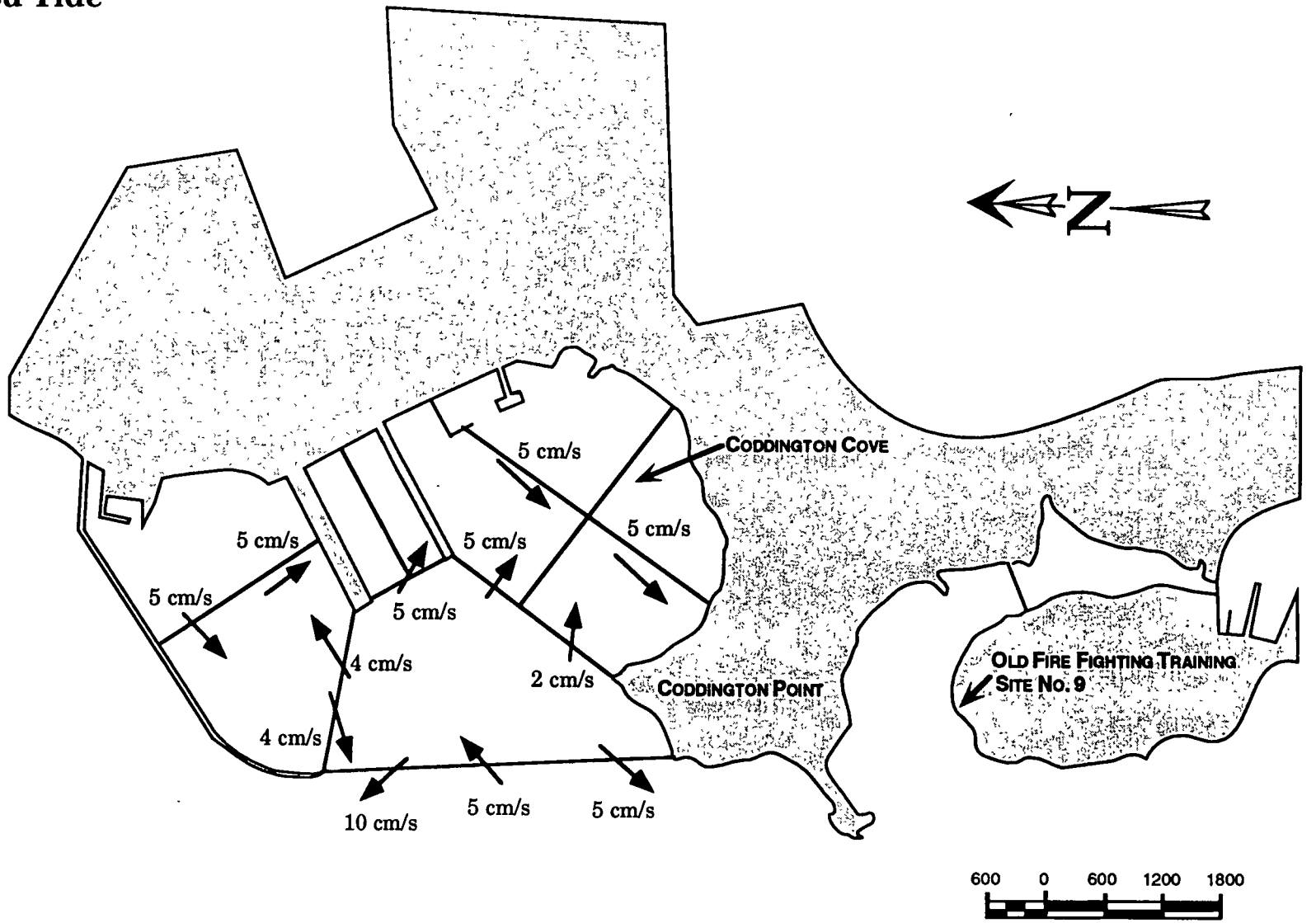
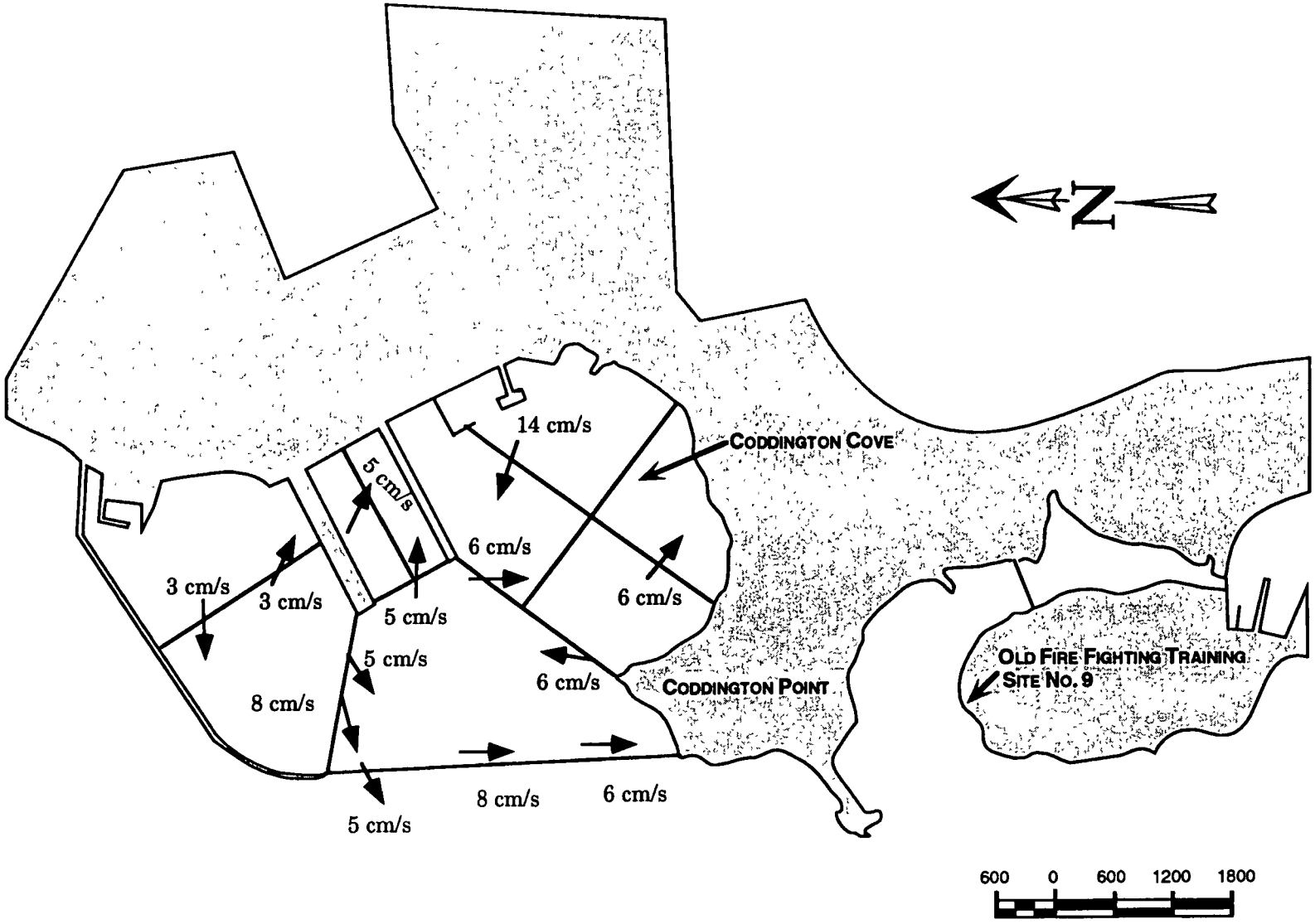


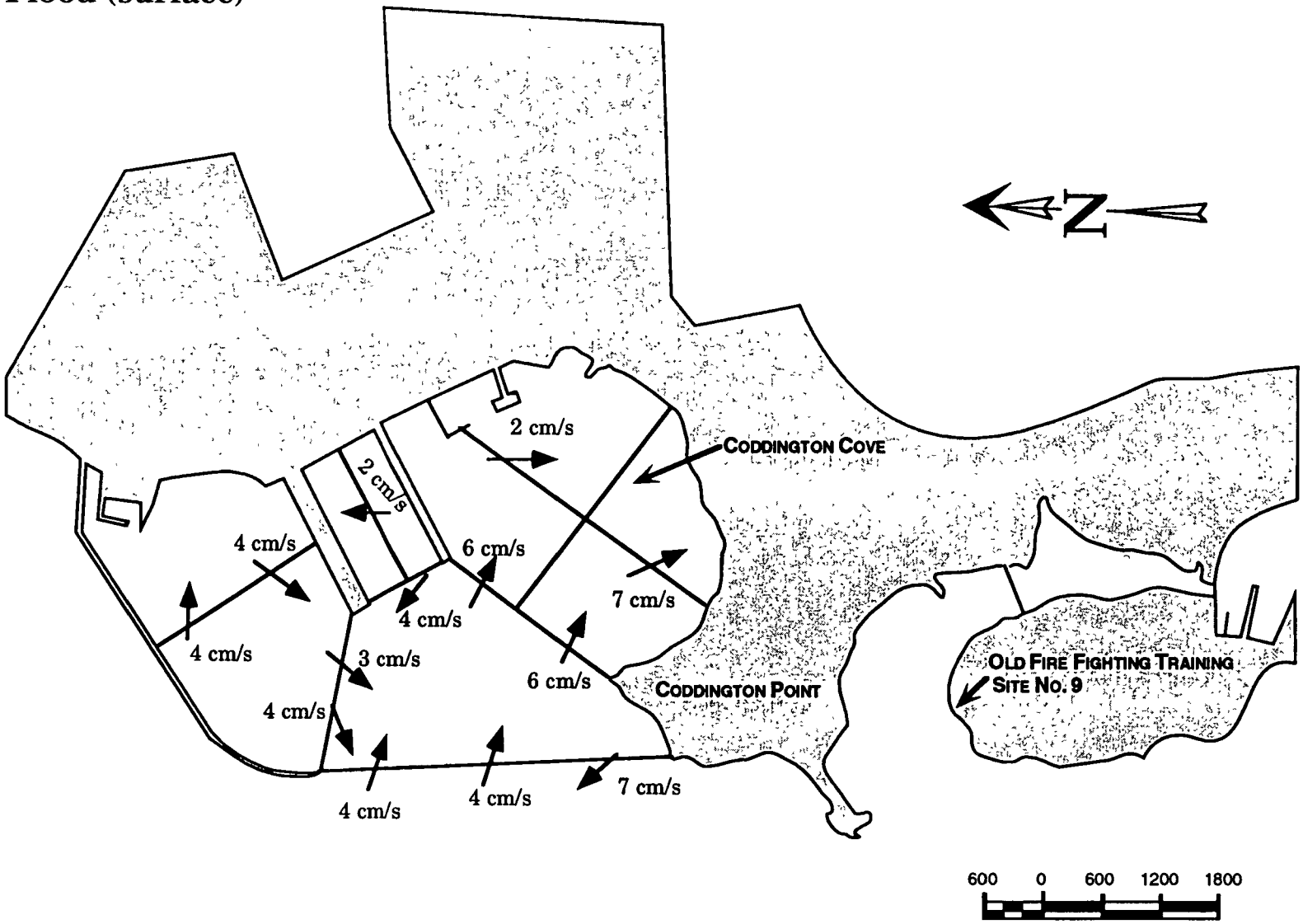
Figure 10b.

CC1-A Low Amplitude
Early Flood (surface)



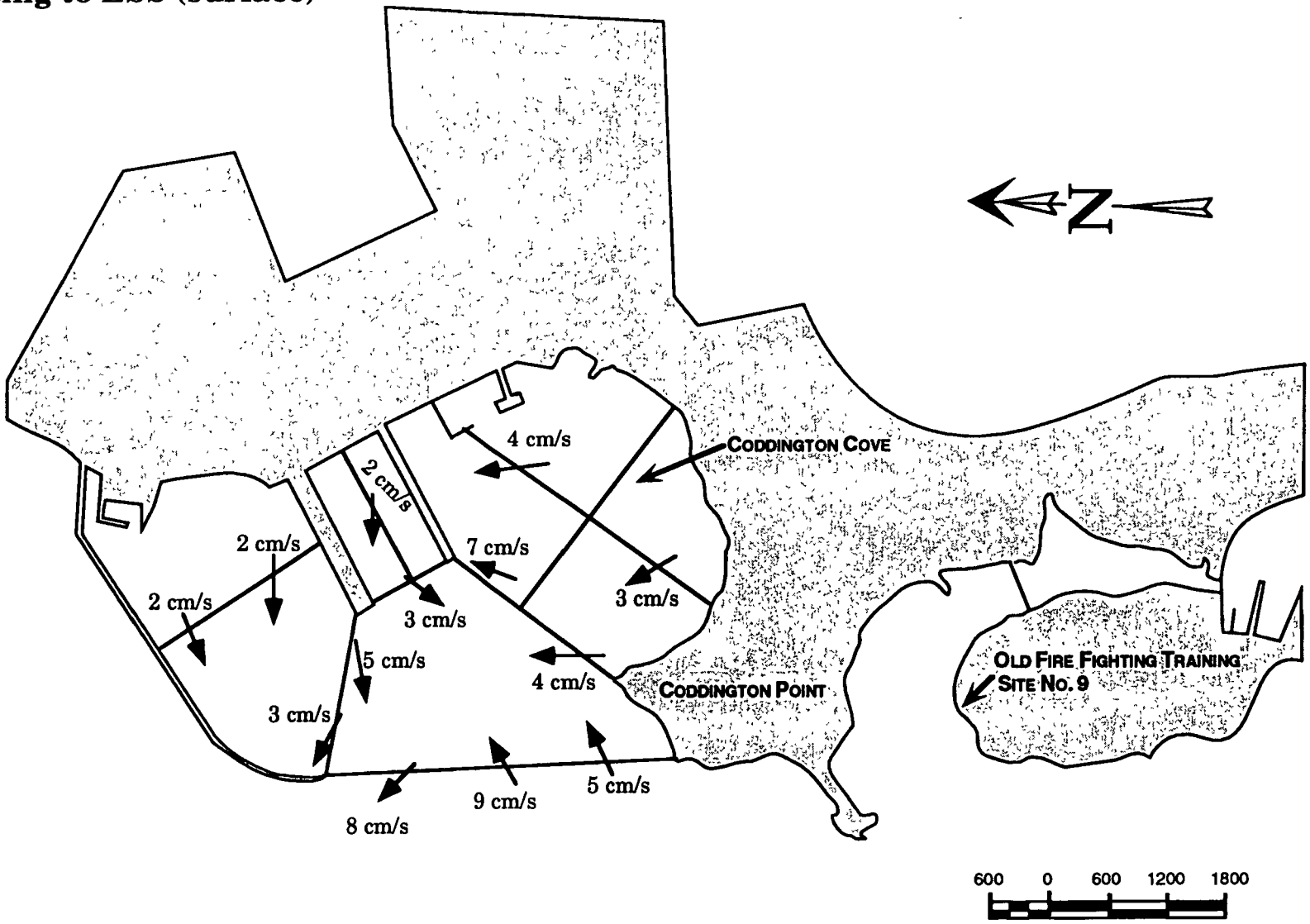
Appendix

CC1-B Low Amplitude
Late Flood (surface)



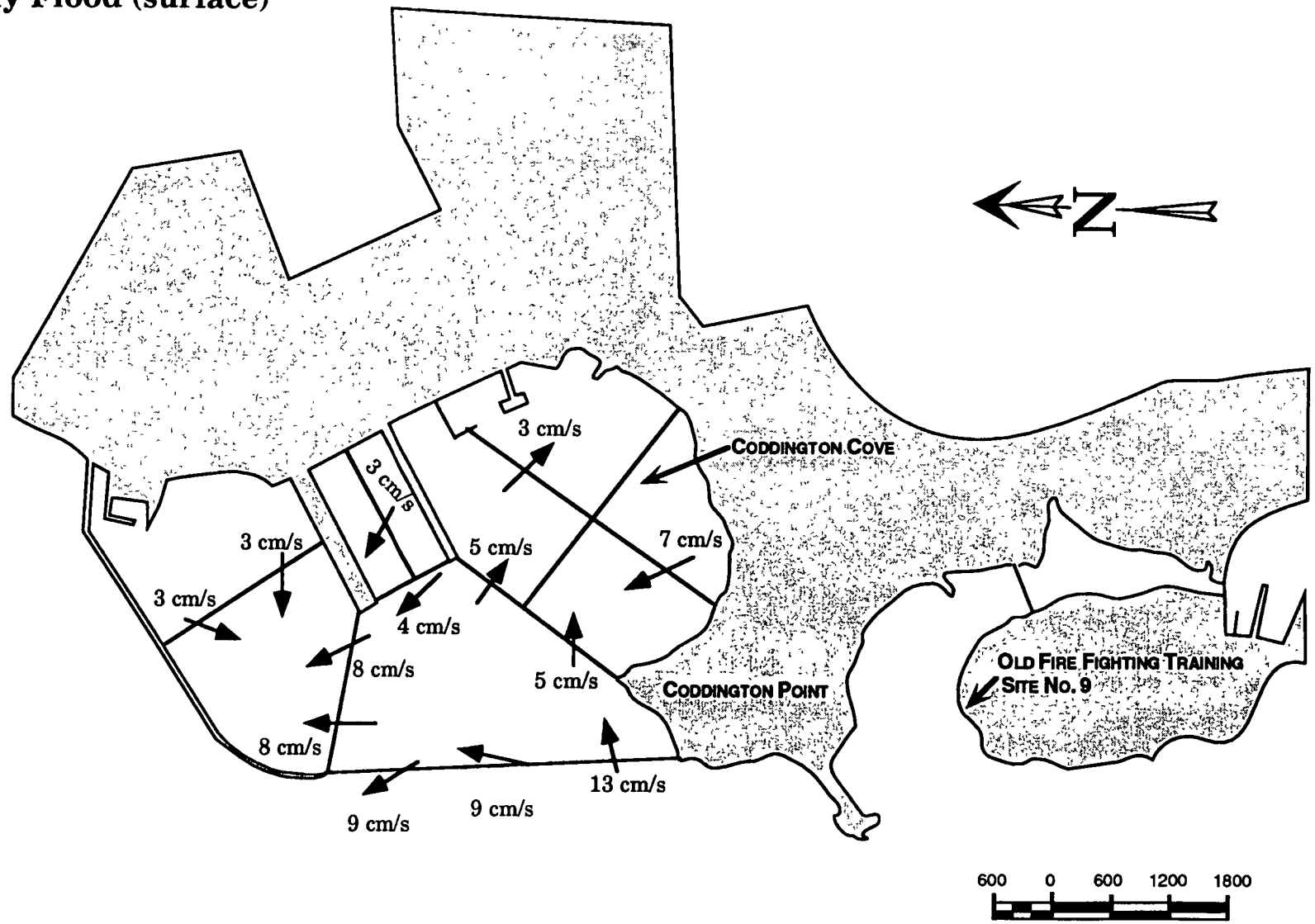
Appendix

CC2-A Low Amplitude
Starting to Ebb (surface)



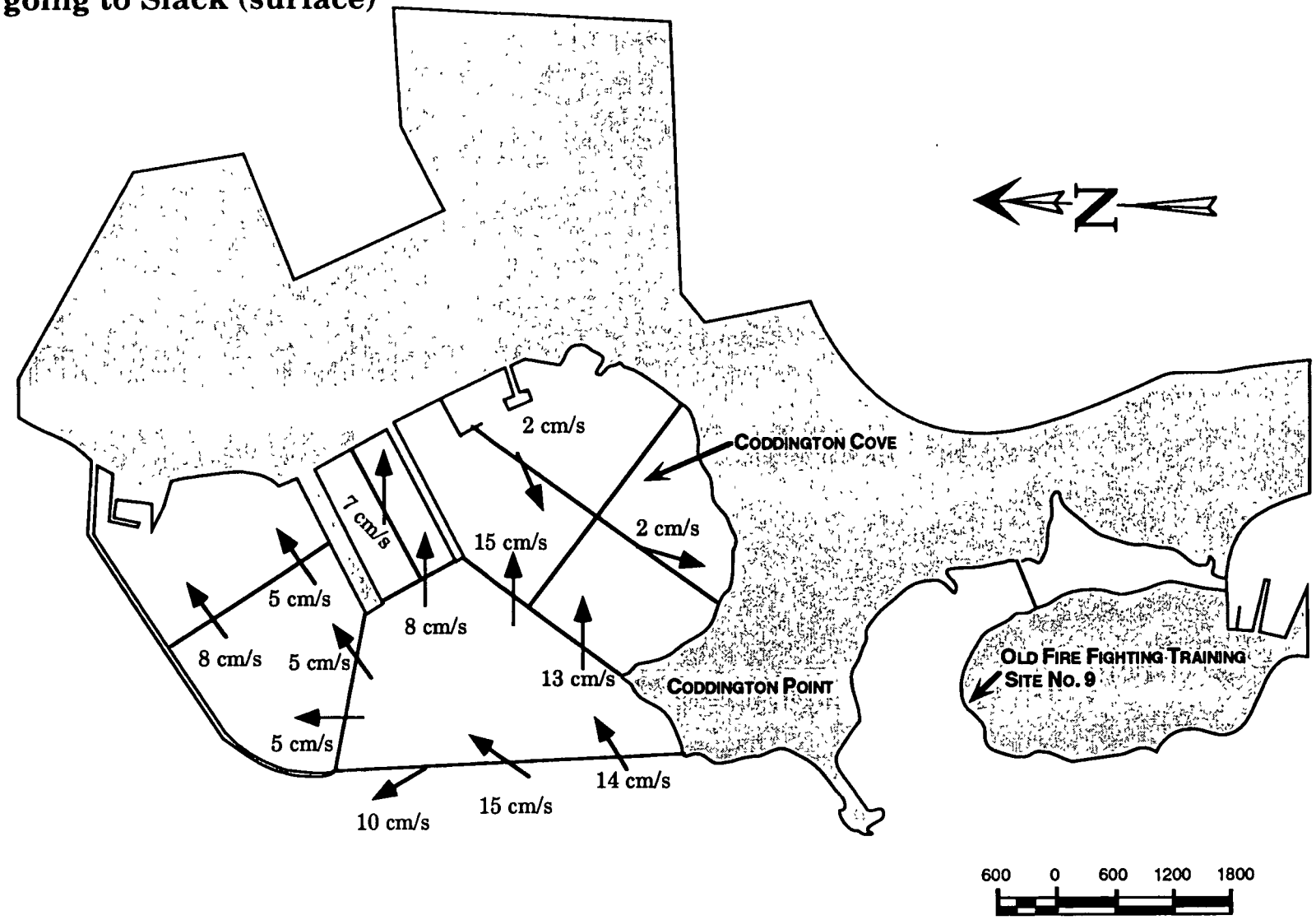
Appendeix

CC2-B Low Amplitude
Early Flood (surface)



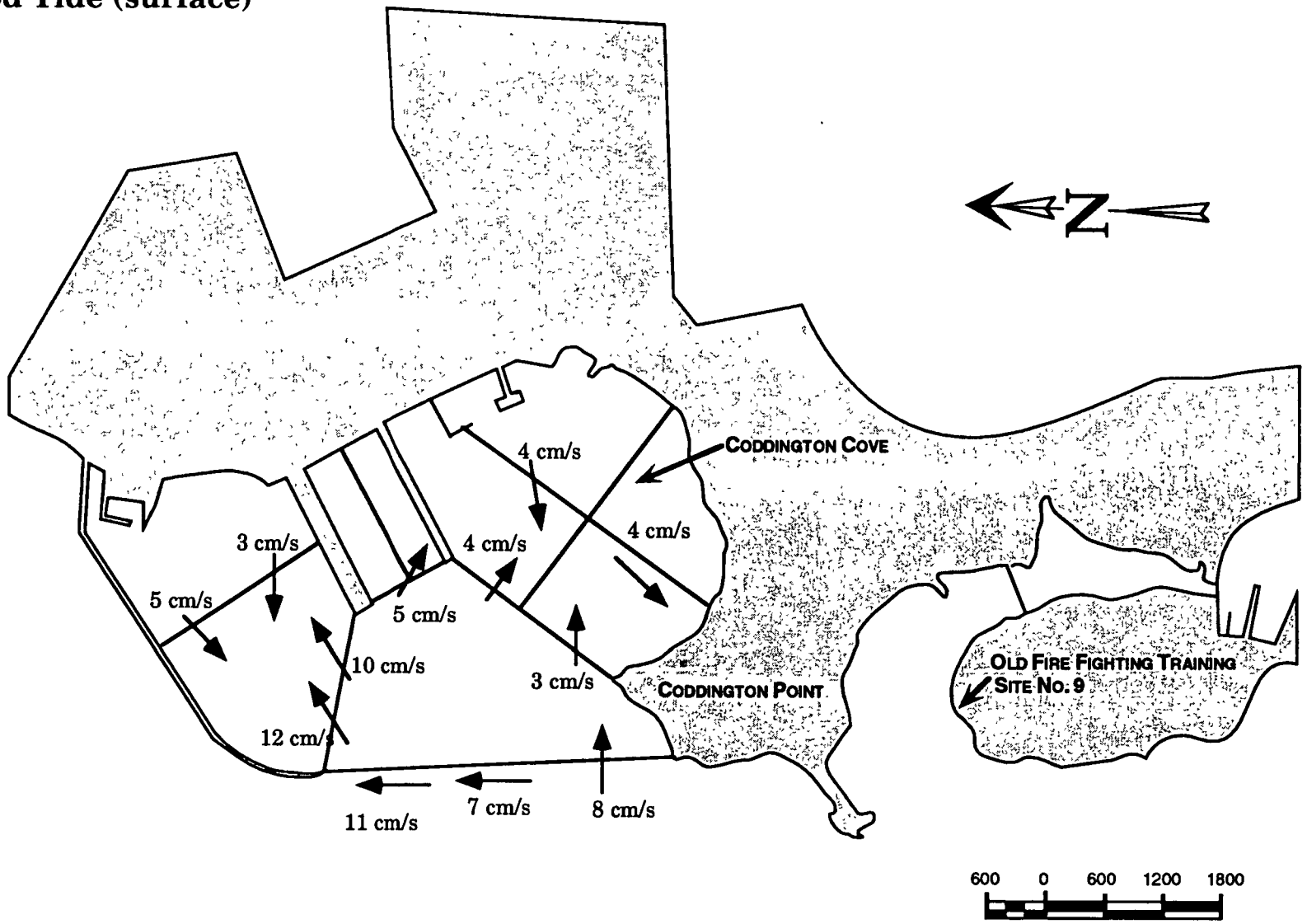
Appendix

CC3-A High Amplitude
Ebb going to Slack (surface)



Appendix

CC3-B High Amplitude Flood Tide (surface)



Appendix

Figure 12. Data was also collected during these days within the Dead Zone. The procedure for data collection in this area of the cove was to anchor for 5-10 minutes within this region and collect a time series of velocity profiles at a fixed point. This is a composite figure to highlight this data for sample day 1. Individual plots include (a) the tidal height versus time plot (as predicted for Newport) with locations of the time series data sets (labeled CC1008 and CC1016; see table 1). Plots (b) and (c) show mean velocity magnitude (averaged over the vertical extent of the profile) as a function of time for the two stages of the flood tide. The energy within the dead zone averages are 8.5 and 11.5 cm/s (the higher value coming later in the flood tide) and both time series show a 50% fluctuation over this period. Plots (d) and (e) give the time averaged velocity magnitude profiles (meaning orientation is not considered) with depth for the two tidal stages and show the flow is well mixed vertically. An interesting feature of the data in this area is that the average velocity at this point is zero over the time series indicating there is no coherent flow (e.g. net transport). Instead the flow is simply swirling within this region.

Figure 13. Similar plots as figure 12 but for Day 2 of sampling.

Figure 14. Similar plots as figure 12 but for Day 3 of sampling. It is important to note that data sets CC1008 and CC3011 are taken at similar stages of a flood tide and show similar velocity magnitude profiles.

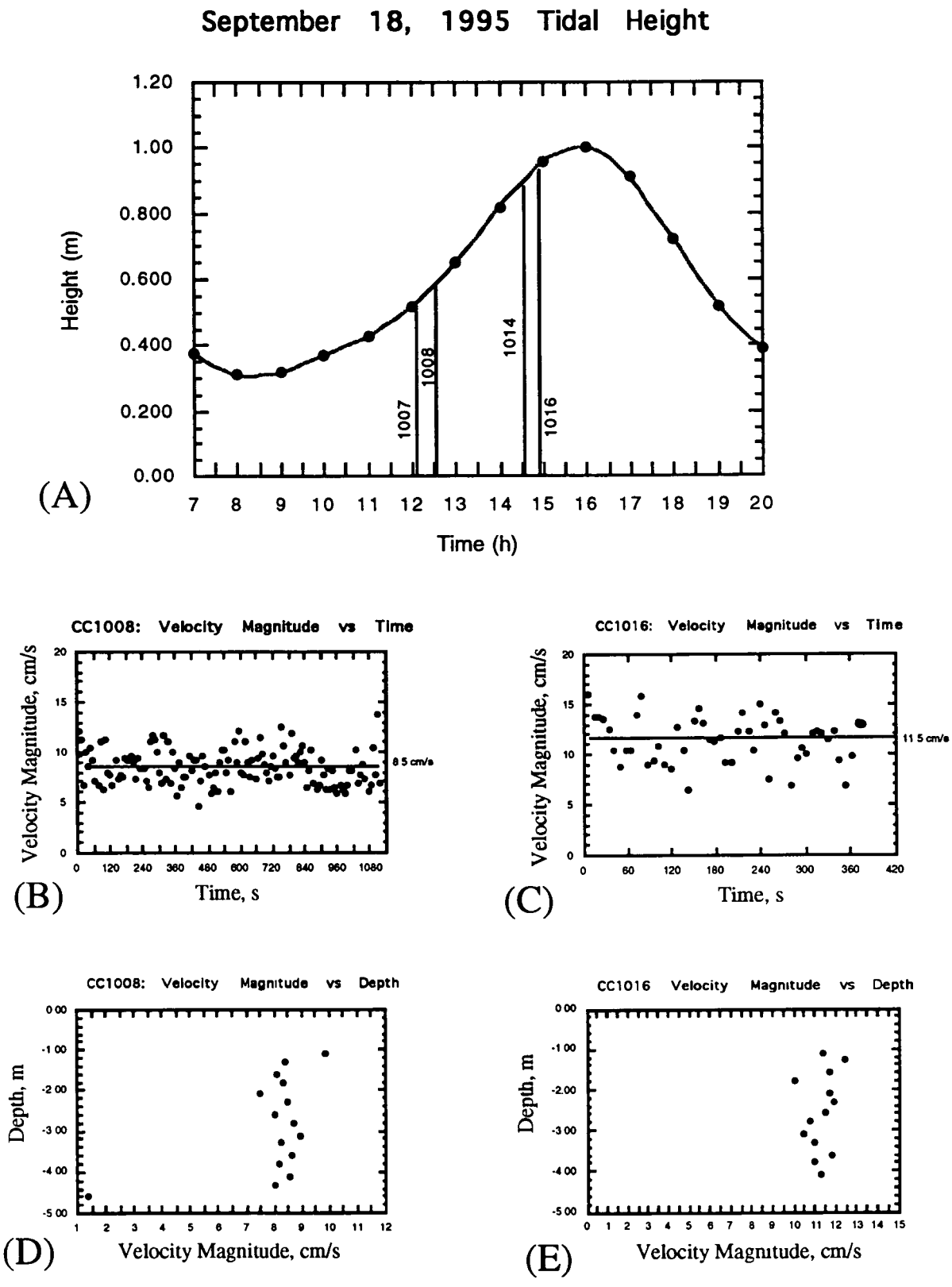

September 18, 1995 Tidal Height
Height (m)
Time (h)
1007
1008
1014
1016
(A)
CC1008: Velocity Magnitude vs Time
Velocity Magnitude, cm/s
Time, s
8.5 cm/s
(B)
CC1016: Velocity Magnitude vs Time
Velocity Magnitude, cm/s
Time, s
11.5 cm/s
(C)
CC1008: Velocity Magnitude vs Depth
Depth, m
Velocity Magnitude, cm/s
(D)
CC1016 Velocity Magnitude vs Depth
Depth, m
Velocity Magnitude, cm/s
(E)

Figure 12

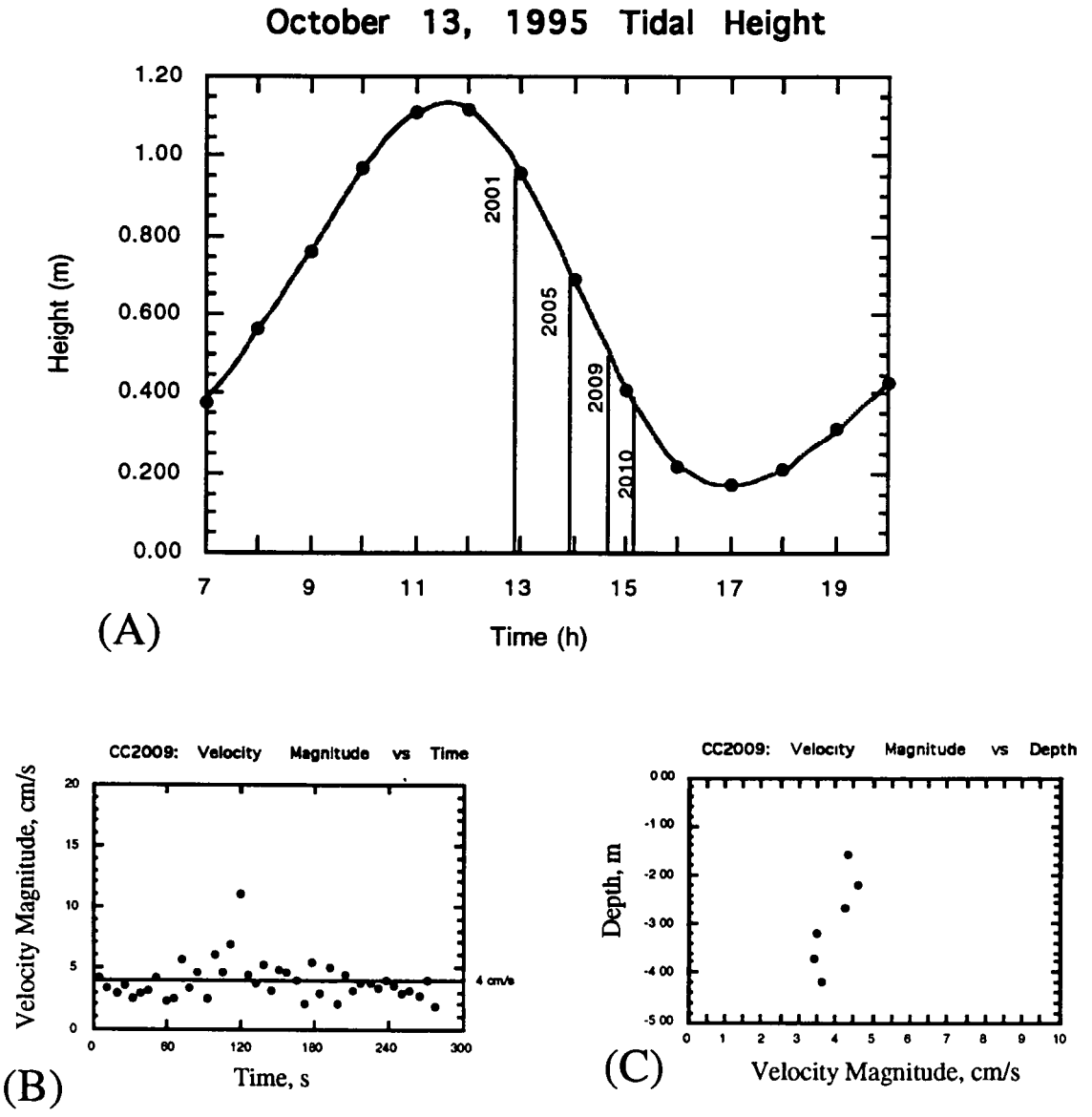

October 13, 1995 Tidal Height
Height (m)
1.20
1.00
0.800
0.600
0.400
0.200
0.00
7
9
11
13
15
17
19
2001
2005
2009
2010
(A)
Time (h)
CC2009: Velocity Magnitude vs Time
Velocity Magnitude, cm/s
20
15
10
5
0
0
60
120
180
240
300
4 cm/s
(B)
Time, s
CC2009: Velocity Magnitude vs Depth
Depth, m
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
0
1
2
3
4
5
6
7
8
9
10
(C)
Velocity Magnitude, cm/s

Figure 13

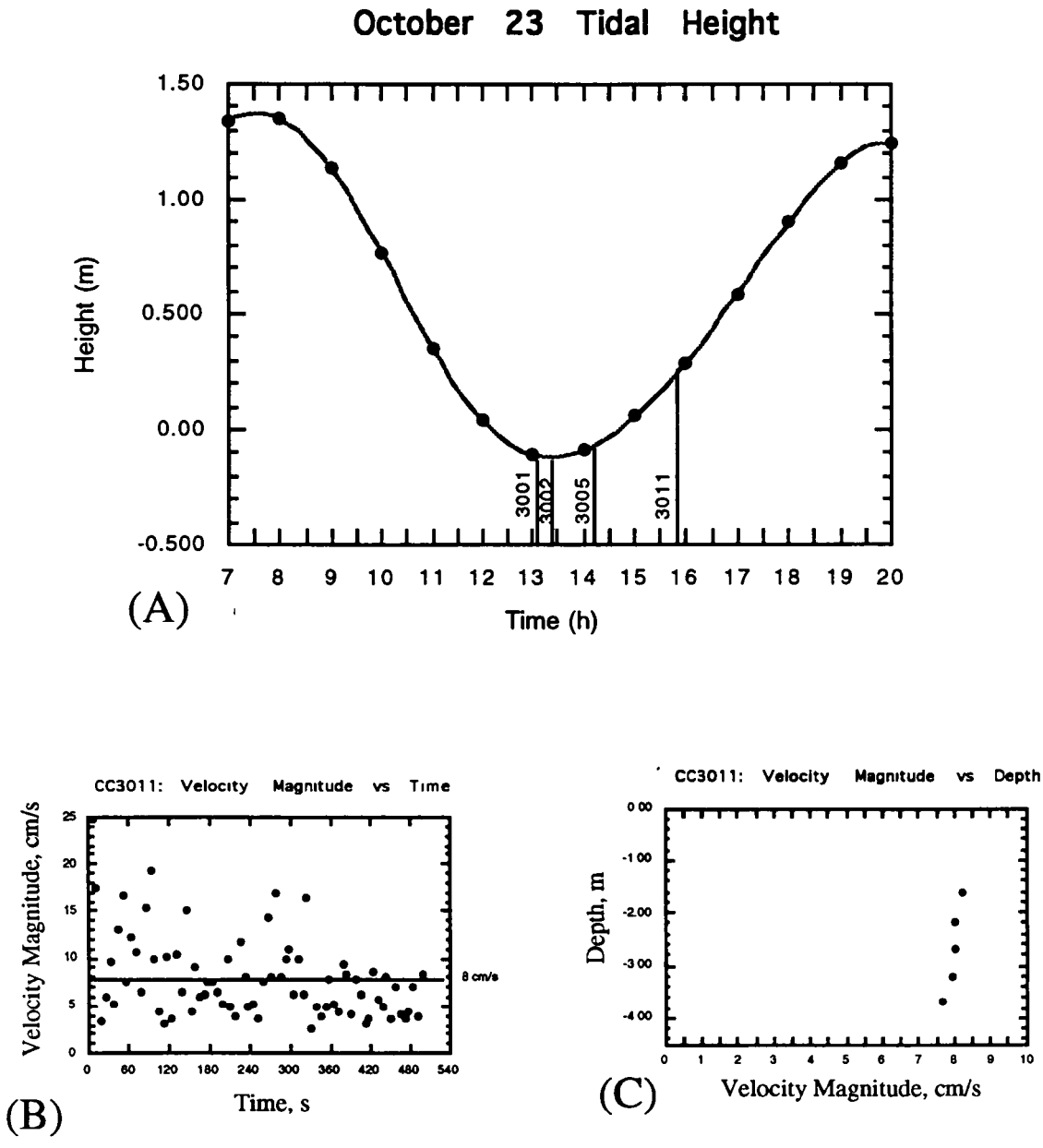

October 23 Tidal Height
Height (m)
1.50
1.00
0.500
0.00
-0.500
3001
3002
3005
3011
7 8 9 10 11 12 13 14 15 16 17 18 19 20
(A)
Time (h)
CC3011: Velocity Magnitude vs Time
Velocity Magnitude, cm/s
25
20
15
10
5
0
8 cm/s
0 60 120 180 240 300 360 420 480 540
(B)
Time, s
CC3011: Velocity Magnitude vs Depth
Depth, m
0.00
-1.00
-2.00
-3.00
-4.00
0 1 2 3 4 5 6 7 8 9 10
(C)
Velocity Magnitude, cm/s

Figure 14

Table 1. Breakdown of individual transects by reference name, date/time and transect number (corresponding to numbers given in figure 1b).

Table 2. A listing of the average current direction and magnitude for individual sections of the transects in Coddington Cove. Values are listed for the upper portion of the water column (surface) and the lower portion of the water column (bottom). These same magnitudes and directions were used to construct Figures 8-10 (bottom) and the Figures in the Appendix (surface). Transect 1 was divided into three regions, transects 2.1, 2.3, 3, and 6 were divided into regions, and only one vector was reported for transects 2.2 and 4.

	TABLE 1 .	File Name	Date Time	Transect #
0		CC1001a	9/18/1995 10:02:25	5
1		CC1001b		5
2		CC1002a	9/18/1995 10:25:01	6
3		CC1002b		6
4		CC1003a	9/18/1995 10:52:15	2.3
5		CC1003b		2.3
6		CC1004a	9/18/1995 11:09:08	2.2
7		CC1004b		2.1
8		CC1004c		2.1
9		CC1004d		2.2
10		CC1005a	9/18/1995 11:20:00	4
11		CC1005b		4
12		CC1006a	9/18/1995 11:38:22	3
13		CC1006b		3
14		CC1007a	9/18/1995 12:03:46	1
15		CC1007b		1
16		CC1008	9/18/1995 12:35:29	DEAD ZONE
17		CC1009a	9/18/1995 13:15:14	6
18		CC1009b		6
19		CC1010	9/18/1995 13:26:33	5
20		CC1011a	9/18/1995 13:44:01	2.3
21		CC1011b		2.3
22		CC1012a	9/18/1995 14:02:07	2.2
23		CC1012b		2.1
24		CC1012c		2.1
25		CC1012d		2.2
26		CC1013a	9/18/1995 14:11:47	4
27		CC1013b		4
28		CC1014a	9/18/1995 14:32:48	1
29		CC1014b		1
30		CC1015a	9/18/1995 14:48:26	3
31		CC1015b		3
32		CC1016	9/18/1995 14:59:59	DEAD ZONE
33				
34		CC2001	10/13/1995 12:52:12	1
35		CC2002a	10/13/1995 13:06:00	2.1
36		CC2002b		2.2
37		CC2003	10/13/1995 13:13:31	4
38		CC2004	10/13/1995 13:28:16	3
39		CC2005	10/13/1995 13:52:35	1
40		CC2006	10/13/1995 14:10:45	2.3
41		CC2007	10/13/1995 14:16:52	5
42		CC2008	10/13/1995 14:31:07	6
43		CC2009	10/13/1995 14:39:28	DEAD ZONE
44		CC2010	10/13/1995 15:04:00	1
45		CC2011a	10/13/1995 15:20:34	2.1
46		CC2011b		2.2

	TABLE 1 .	File Name	Date Time	Transect #
47		CC2012	10/13/1995 15:28:21	4
48		CC2013	10/13/1995 15:41:53	3
49		CC2014	10/13/1995 15:57:36	2.3
50		CC2015	10/13/1995 16:16:44	6
51				
52		CC3001	10/23/1995 12:59:58	1
53		CC3002	10/23/1995 13:21:48	1
54		CC3003	10/23/1995 14:08:13	1
55		CC3004	10/23/1995 14:30:40	6
56		CC3005	10/23/1995 14:43:54	5
57		CC3006	10/23/1995 14:53:31	2.3
58		CC3007	10/23/1995 15:01:25	4
59		CC3008	10/23/1995 15:09:02	2.2
60		CC3009	10/23/1995 15:16:54	2.1
61		CC3010	10/23/1995 15:31:23	3
62		CC3011	10/23/1995 15:51:11	DEAD ZONE
63		CC3012	10/23/1995 16:11:37	1
64		CC3013	10/23/1995 16:32:57	6
65		CC3014	10/23/1995 16:42:06	2.3
66		CC3015	10/23/1995 16:46:08	2.2
67		CC3016	10/23/1995 16:55:40	2.1
68		CC3017	10/23/1995 17:11:31	3

Table 2.

	Transect Number	Transect Section	Bottom Avg. Magnitude (cm/s)	Bottom Avg. Direction (degrees)	Surface Avg. Magnitude (cm/s)	Surface Avg. Direction (degr s)
CC1-A	1	a	6	300	5	225
		b	6	90	8	180
		c	12	90	6	135
	2.1	a	10	260	8	260
		b	5	325	5	240
	2.2		5	45	5	90
	2.3	a	13	340	6	90
		b	5	30	6	3
	3	a	4	270	3	270
		b	3	80	3	135
	4		4	300	5	135
	6	a	20	285	14	285
		b	5	90	6	120
CC1-B	1	a	14	250	4	120
		b	10	90	4	120
		c	9	350	7	315
	2.1	a	7	270	4	250
		b	3	350	3	225
	2.2		4	340	4	340
	2.3	a	5	100	6	135
		b	6	170	6	136
	3	a	3	225	4	90
		b	4	300	4	225
	4		2	0	2	0
	6	a	10	315	2	180
		b	3	175	7	150
CC2-A	1	a	9	240	8	315
		b	7	180	9	45
		c	6	175	5	45
	2.1	a	4	260	3	280
		b	3	225	5	260
	2.2		3	225	3	225
	2.3	a	6	125	7	5
		b	6	145	4	0
	3	a	4	250	2	260
		b	2	225	2	270
	4		2	270	2	270
	6	a	3	90	4	350
		b	4	315	3	315

Tabl 2. (cont'd.)

	Transect Number	Transect Section	Bottom Avg. Magnitude (cm/s)	Bottom Avg. Direction (degrees)	Surface Avg. Magnitude (cm/s)	Surface Avg. Direction (degrees)
CC2-B	1	a	8	275	9	315
		b	9	320	9	5
		c	9	55	13	50
	2.1	a	5	260	8	360
		b	7	270	8	315
	2.2		4	285	4	315
	2.3	a	15	125	5	135
		b	7	90	5	45
	3	a	5	200	3	200
		b	3	240	3	270
	4		2	300	3	300
	6	a	5	150	3	135
		b			7	325
CC3-A	1	a	12	300	10	315
		b	12	30	15	30
		c	14	45	14	45
	2.1	a	5	270	5	0
		b	5	270	5	45
	2.2		10	270	8	90
	2.3	a	8	270	15	90
		b	12	325	13	90
	3	a	5	225	8	45
		b	5	240	5	45
	4		6	250	7	90
	6	a	6	250	2	230
		b	6	225	2	190
CC3-B	1	a	10	345	11	0
		b	5	45	7	0
		c	5	225	8	90
	2.1	a	4	255	12	45
		b	4	50	10	45
	2.2		5	135	5	135
	2.3	a	5	145	4	135
		b	2	110	3	90
	3	a	5	225	5	225
		b	5	160	3	270
	4					
	6	a	5	225	4	260
		b	5	225	4	225

List of Organic Contaminants Analyzed in this Investigation

Abbrev.	Component Name	[CAS]
	Polycyclic Aromatic Hydrocarbons (PAHs)	
ACL:	acenaphthylene	208-96-8
ACT:	acenaphthene	83-32-9
ANT:	anthracene	120-12-7
BAA:	benzo (a) anthracene	56-55-3
BAP:	benzo (a) pyrene	50-32-8
BEP:	benzo (e) pyrene	192-97-2
BIP:	biphenyl	92-52-4
B(BJK)F:	benzo (BJK) fluoranthene	207-08-9
BPE:	benzo [ghi] perylene	191-245-2
CHR:	chrysene	218-01-9
DBA:	dibenzo [a,h] anthracene	53-70-3
FLA:	fluoranthene	206-44-0
FLU:	fluorene	86-73-7
INP:	indeno [1,2,3-cd] pyrene	193-39-5
NAP:	naphthalene	91-20-3
1MN:	1-methylnaphthalene	90-12-0
2MN:	2-methylnaphthalene	91-57-6
DMN:	2,6-dimethylnaphthalene	581-42-0
TMN:	2,3,5-trimetylnaphthalene	2245-38-7
PHE:	phenanthrene	85-01-08
1MP:	1-methylphenanthrene	832-69-9
PER:	perylene	198-55-0
PYR:	pyrene	129-00-0
$\sum$ PAHs:	sum of the 23 polycyclic aromatic hydrocarbons	

Data Qualifiers for Organic Analytical Data

J	=	analyte detected but the measured concentration was below the MDL
Q	=	measurements are outside of QA limits as specified in the DQOs
ND	=	analyte was not detected; these values are reported as < MDL for that analyte/matrix
I	=	analytical interference with the analyte

USN SEDIMENT Derecktor Shipyard-PAHs

Chain of Custody Record ID depth cm		DSY-25 0-12	DSY-26 0-18	DSY-27 0-17	DSY-28 0-18	DSY-29 0-18	DSY-29FD 0-18	DSY-30 0-18	DSY-31 0-18	DSY-32 0-18	DSY-33 0-14	DSY-34 0-18	DSY-35 0-14	DSY-36 0-18	DSY-37 0-18
OGL Lab ID		CD9	CD28	CD69	CD29	CD30	CD31	CD19	CD20	CD10	CD16	CD17	CD18	CD12	CD13
PAHs	units	surface sediments----------													------->
NAP	ng/g	18.0	16.2	41.7	37.5	76.1	91.0	136	45.3	42.7	10.9	22.3	0.7 J	34.1	26.9
2MN	ng/g	11.2	13.9	32.7	43.9	73.5	61.8	88.2	36.9	32.1	9.7 J	24.2	0.6 J	23.0	17.6
1MN	ng/g	10.9	7.8	20.5	19.8	50.1	45.4	55.1	20.4	17.6	5.1 J	12.7	0.4 J	16.7	12.6
BIP	ng/g	6.9	6.7	15.1	12.6	29.9	30.2	23.8	14.4	15.4	3.2	6.4	0.4 J	10.5	5.8
DMN	ng/g	27.2	18.6	38.5	34.2	112	124	70.7	34.6	43.6	9.9	9.6	1.7 J	46.6	18.8
ACL	ng/g	75.7	93.8	142	74.6	300	461	91.9	71.0	131	11.9	28.7	0.6 J	74.9	34.5
ACT	ng/g	41.7	12.2	23.9	17.3	189	197	197	17.1	14.3	3.3	8.6	0.2 J	11.0	7.4
TMN	ng/g	6.2	4.3	7.9	8.4	27.9	28.8	19.2	7.9	7.9	2.0	4.4	0.2 J	6.4	4.7
FLU	ng/g	44.1	53.9	61.6	31.4	294	333	177	28.1	25.7	6.6	13.9	0.6 J	18.0	9.7
PHE	ng/g	283	317	335	220	1610	1750	1270	216	182	46.2	110	3.7 J	138	83.1
ANT	ng/g	302	268	383	183	1220	1750	456	200	298	31.5	64.3	1.6 J	158	141
1MP	ng/g	52.6	43.5	61.4	38.6	267	241	114	32.5	51.6	8.9	18.3	0.5 J	33.9	39.8
FLA	ng/g	490	686	801	459	4970	8290	1490	399	535	95.2	208	7.2 J	345	262
PYR	ng/g	584	740	1950	650	5300	8290	1750	846	917	107	250	6.5 J	482	362
BAA	ng/g	328	518	809	294	2700	4310	697	281	388	50.0	101	2.8 J	222	144
CHR	ng/g	485	592	912	364	2800	3740	716	399	491	58.8	128	3.6 J	287	154
B(BJK)F	ng/g	877	999	2240	911	5350	7050	1640	1040	1100	155	348	11.0 J	700	308
BEP	ng/g	345	365	829	362	1950	2510	773	401	417	63.5	141	5.0	275	140
BAP	ng/g	396	434	924	377	2380	3200	812	421	495	67.8	148	4.1 J	319	164
PER	ng/g	104	133	249	133	611	844	207	142	150	23.9	61.0	2.1	97.6	53.3
INP	ng/g	195	209	473	223	1020	1310	398	218	264	45.3	93.3	3.2 J	178	100
DBA	ng/g	60.9	61.3	131	66.6	317	393	130	62.9	72.2	12.4	26.5	0.9 J	48.3	28.8
BPE	ng/g	200	201	500	247	1110	1360	452	215	287	50.3	97.6	4.1	195	126
ΣPAHs	ng/g	4940	5800	11000	4810	32800	46400	11800	5150	5980	879	1930	62	3720	2250
LMWs	ng/g	776	775	1020	609	3761	4644	2416	615	726	120	272	8	456	320
HMWs	ng/g	2344	3031	5527	2210	18467	28223	5594	2409	2898	391	860	25	1703	1116

USN SEDIMENT Derecktor Shipyard-PAHs

Chain of Custody Record ID depth cm		DSY-38 0-18	DSY-39 0-18	DSY-40 0-14	DSY-41 0-13	JPC 0-14	V9 10-20cm	V9 39-45cm	DSY-28; 24-34	DSY-28; 76-86	V4 105-115cm	V4 130-140cm	DSY-29; 16-26	DSY-29; 44-54	DSY-30; 18-28
OGL Lab ID		CD14	CD23	CD24	CD25	CD32	CD99	CD98	CD60	CD139	CD100	CD101	CD64	CD65	CD58
PAHs	units	surface sediments---				-->	core---								-->
NAP	ng/g	23.2	23.7	21.0	1.8 J	5.4	51.6	5.3	47.6	57.5	- I	<5.2 ND	55.1	<5.2 ND	13.6
2MN	ng/g	14.0	15.2	16.4	2.0 J	3.8 J	31.7	3.5 J	35.1	42.2	- I	<10.6 ND	26.7	<10.6 ND	12.2
1MN	ng/g	9.2	9.3	9.4	1.3 J	2.6 J	42.7	5.6 J	27.7	28.0	- I	<6.5 ND	53.0	<6.5 ND	10.9
BIP	ng/g	5.7	5.6	6.0	0.7 J	1.3	18.1	1.9	12.7	17.0	<1.3 ND	<1.3 ND	12.6	<1.3 ND	2.8
DMN	ng/g	18.3	14.3	17.3	2.4 J	6.2	57.0	0.6 J	39.2	56.0	<3.6 ND	<3.6 ND	23.9	<3.6 ND	6.8
ACL	ng/g	25.1	22.5	95.6	4.2 J	10.7	327	26.6	109	91.6	<1.5 ND	<1.5 ND	120	<1.5 ND	19.3
ACT	ng/g	6.5	10.2	16.2	1.7	1.4	27.3	2.8	20.8	34.6	1.0	<.9 ND	158	<.9 ND	9.4
TMN	ng/g	4.0	4.6	4.7	0.5 J	1.5	15.7	1.9	8.9	6.9	<1.1 ND	<1.1 ND	17.6	<1.1 ND	3.7
FLU	ng/g	6.4	14.7	19.1	2.1 J	4.6	151	13.2	42.2	49.9	<2.7 ND	<2.7 ND	138	<2.7 ND	15.7
PHE	ng/g	67.1	116	304	20.2	43.7	862	85.8	303	389	2.1 J	1.5 J	1240	4.1 J	141
ANT	ng/g	94.0	77.2	234	11.1	21.2	988	91.2	323	230	1.2 J	2.1 J	541	4.5	49.9
1MP	ng/g	30.9	20.2	38.3	2.2 J	9.5	148	14.2	50.0	88.8	<5.4 ND	<5.4 ND	195	2.2 J	18.6
FLA	ng/g	230	216	779	37.8	99.3	2560	275	649	861	2.2 J	7.4 J	2860	20.4	239
PYR	ng/g	254	227	1190	49.5	97.9	9870	940	1510	1410	14.4	32.9	3550	28.3	237
BAA	ng/g	112	97.7	234	13.8	45.1	3740	359	513	503	- I	9.7	1640	6.8	105
CHR	ng/g	107	120	444	20.6	49.9	2690	243	646	624	- I	8.1	1590	15.3	110
B(BJK)F	ng/g	260	302	836	47.3	125	6100	574	1550	1570	<11.6 ND	13.2	2750	34.6	267
BEP	ng/g	112	126	333	19.4	53.2	2070	197	603	540	1.9 J	4.7	1140	11.9	104
BAP	ng/g	120	143	317	19	62.9	2380	236	698	639	1.6 J	6.2	1550	9.5	138
PER	ng/g	51.1	51.9	78.7	7.3	19.3	618	66.7	176	170	- I	5.7	368	5.0	38.5
INP	ng/g	80.2	91.3	166	11.4	34.6	872	80.3	332	384	<3.3 ND	2.2 J	673	5.9	70.6
DBA	ng/g	21.0	27.3	52.8	3.2	10.1	257	23	99.6	118	<2.8 ND	0.3 J	223	1.9 J	17.7
BPE	ng/g	94.6	96.7	184	12.2	37.3	847	49.3	373	348	1.1 J	2.0 J	701	7.1	74.6
ΣPAHs	ng/g	1750	1830	5390	291	746	34700	3300	8170	8260	25	96	19600	157	1710
LMWs	ng/g	236	279	706	43	91	2439	228	881	894	4	4	2279	9	262
HMWs	ng/g	844	831	3017	144	365	21497	2075	4116	4155	18	65	11413	82	847

USN SEDIMENT Derecktor Shipyard-PAHs

Chain of Custody Record ID depth cm		DSY-30; 68-78	DSY-31; 45-55	DSY-31; 100-110	DSY-34; 20-30	DSY-34; 70-80	DSY-36; 40-50	DSY-36; 90-100
OGL Lab ID		CD59	CD62	CD66	CD72	CD67	CD71	CD68
PAHs	units	core---	----------	----------	----------	----------	----------	---------->>
NAP	ng/g	<5.2 ND	17.9	<5.2 ND	3.1 J	<5.2 ND	66.6	<5.2 ND
2MN	ng/g	<10.6 ND	15.1	<10.6 ND	3.0 J	<10.6 ND	49.5	<10.6 ND
1MN	ng/g	<6.5 ND	10.3	<6.5 ND	1.6 J	<6.5 ND	26.4	<6.5 ND
BIP	ng/g	<1.3 ND	6.5	<1.3 ND	1.0 J	<1.3 ND	17.1	<1.3 ND
DMN	ng/g	4.4	17.1	2.5 J	5.0	3.6 J	82.7	<3.6 ND
ACL	ng/g	<1.5 ND	22.4	<1.5 ND	5.2	<1.5 ND	76.2	1.3 J
ACT	ng/g	<.9 ND	4.2	<.9 ND	0.8 J	<.9 ND	27.4	<.9 ND
TMN	ng/g	<1.1 ND	4.1	<1.1 ND	0.8 J	<1.1 ND	11.6	<1.1 ND
FLU	ng/g	<2.7 ND	9.2	<2.7 ND	1.8 J	<2.7 ND	36.7	<2.7 ND
PHE	ng/g	1.7 J	60.2	1.7 J	11.5	1.1 J	235	5.8
ANT	ng/g	0.9 J	51.1	<2.2 ND	10.0	<2.2 ND	144	2.6
1MP	ng/g	<5.4 ND	14.1	<5.4 ND	2.5 J	<5.4 ND	41.6	2.0 J
FLA	ng/g	1.9 J	104	2.6 J	23.8	1.3 J	399	11.9
PYR	ng/g	1.8 J	300	3.7 J	42.8	0.8 J	666	14.8
BAA	ng/g	0.8 J	66.9	1.8 J	19.4	0.8 J	264	6.8
CHR	ng/g	1.3 J	100	2.6 J	15.0	0.7 J	272	7.5 J
B(BJK)F	ng/g	4.0 J	295	5.9 J	49.3	3.0 J	865	22.0
BEP	ng/g	<4.1 ND	156	1.5 J	21.3	<4.1 ND	449	9.1
BAP	ng/g	<4.8 ND	147	2.0 J	21.0	<4.8 ND	432	10.3
PER	ng/g	17.5	45.3	11.6	22.7	27.4	144	7.2
INP	ng/g	1.3 J	74.8	1.3 J	16.6	0.9 J	304	7.2
DBA	ng/g	0.8 J	25.9	0.8 J	4.7	<2.8 ND	96.4	1.9 J
BPE	ng/g	1.5 J	92.9	1.5 J	15.9	1.1 J	301	8.1
ΣPAHs	ng/g	38	1640	39	299	41	5010	118
LMWs	ng/g	3	180	2	35	1	635	10
HMWs	ng/g	7	744	13	127	4	2129	53

USN ELUTRIATE Derecktor Shipyard-PAHs

Chain of Custody Record ID		DSY-Blank 1 clean	DSY-25 clean	DSY-27 clean	DSY-29 clean	DSY-31 clean	DSY-32 clean	DSY-33 clean	DSY-36 clean	DSY-37 clean	DSY-38 clean	DSY-39 clean	DSY-40 clean	JPC-1 clean
OGL Lab ID		EB40	CD43	CD96	CD97	CD44	CD41	CD42	CD46	CD45	CD48	CD49	CD47	CD50
PAHs	units													
NAP	ng/L	8.5	14.6	- I	- I	5.2 J	11.6	12.8	9.6	8.2	10.9	6.7 J	7.7	- I
2MN	ng/L	4.7 J	11.3 J	- I	- I	4.6 J	4.8 J	9.8 J	5.8 J	6.2 J	6.1 J	5.1 J	4.3 J	- I
1MN	ng/L	2.7 J	6.8 J	- I	- I	3.0 J	3.1 J	7.0 J	4.0 J	4.1 J	4.8 J	4.5 J	2.4 J	- I
BIP	ng/L	1.3 J	2.9 J	1.2 J	1.3 J	1.3 J	1.5 J	1.8 J	1.2 J	1.9 J	1.5 J	1.6 J	1.6 J	- I
DMN	ng/L	<6.4 ND	3.7 J	<6.4 ND	<6.4 ND	1.2 J	2.3 J	4.3 J	1.3 J	2.0 J	1.3 J	1.7 J	0.9 J	- I
ACL	ng/L	0.2 J	12.9	<3.4 ND	<3.4 ND	2.9 J	3.9	6.8	3.0 J	1.6 J	1.1 J	2.2 J	4.8	6.1
ACT	ng/L	0.6 J	27.7	2.0 J	3.9 J	2.2 J	2.7 J	2.2 J	2.0 J	1.7 J	2.1 J	2.1 J	2.4 J	3.5 J
TMN	ng/L	1.1 J	2.3 J	<9.9 ND	<9.9 ND	0.8 J	1.0 J	1.4 J	0.8 J	0.9 J	0.9 J	1.0 J	0.8 J	2.6 J
FLU	ng/L	0.8 J	24.8	<12.3 ND	<12.3 ND	1.6 J	2.2 J	4.8 J	2.0 J	1.8 J	2.4 J	2.0 J	1.8 J	4.7 J
PHE	ng/L	5.3 J	28.7	8.7 J	10.1 J	10.7	8.9 J	15.0	9.0 J	12.7	8.4 J	9.1 J	11.3	20.9
ANT	ng/L	0.6 J	46.8	- I	8.1	6.3	9.6	8.7	5.9	4.4	3.0	4.4	14.1	8.0
1MP	ng/L	<7.1 ND	7.9	<7.1 ND	8.7	1.5 J	2.2 J	3.2 J	1.5 J	2.4 J	1.3 J	2.3 J	2.9 J	4.1 J
FLA	ng/L	1.2 J	78.2	17.0	118	11.3	12.5	25.3	13.3	12.5	11.0	12.0	19.0	28.9
PYR	ng/L	2.2 J	227	203	311	87.7	79.9	31.7	33.6	27.4	14.2	14.5	274	34.6
BAA	ng/L	1.3 J	46.5	- I	42.1	8.8 J	7.5 J	11.9 J	6.6 J	4.5 J	3.8 J	4.8 J	12.1 J	8.9 J
CHR	ng/L	2.0 J	31.7	- I	- I	3.9 J	4.2 J	12.1 J	4.5 J	3.2 J	2.4 J	4.0 J	5.8 J	10.1 J
B(BJK)F	ng/L	5.0 J	120	<13.6 ND	47.1	31.2	39.0	38.7	21.8	19.5	8.5 J	16.9	43.8	36.9
BEP	ng/L	2.8 J	57.1	12.5	23.6	13.8	17.0	18.1	11.5	9.6	5.0	9.6	23.8	17.1
BAP	ng/L	2.1 J	40.9	6.6 J	16.1	11.0	11.2	17.4	7.8	3.7 J	1.8 J	7.7	11.7	11.8
PER	ng/L	2.3 J	10.6	<3.3 ND	<3.3 ND	3.1 J	4.2	4.4	2.4 J	1.8 J	1.2 J	3.2 J	4.0	4.0
INP	ng/L	2.8 J	26.9	4.0 J	5.2 J	6.2 J	10.7 J	14.1 J	5.1 J	4.5 J	2.3 J	4.9 J	9.4 J	9.2 J
DBA	ng/L	0.8 J	8.3 J	<23.0 ND	<23.0 ND	2.0 J	4.5 J	3.8 J	0.6 J	1.4 J	<23.0 ND	<23.0 ND	1.6 J	<23.0 ND
BPE	ng/L	2.5 J	34.7	5.0 J	9.3	9.3	14.1	19.4	8.4	7.3 J	3.4 J	9.0	15.5	14.7
ΣPAHs	ng/L	51	872	260	604	230	259	275	162	143	97	129	476	226
LMWs	ng/L	21	167	11	22	34	44	60	37	37	34	31	46	43
HMWs	ng/L	10	433	226	487	125	120	102	66	53	33	43	325	94

USN TISSUE Derecktor Shipyard-PAHs

Chain of Custody Record ID		DSY-24-IBM	DSY-25-IBM	DSY-26-IBM	DSY-27-IBM	DSY-28-IBM	DSY-35-IBM	DSY-36-IBM	DSY-40-IBM	JPC-1-IBM	CHC-1-IBM	TO-DM	DSY-26-DM	DSY-28-DM	DSY-29-DM
OGL Lab ID		CD35	CD26	CD34	CD36	CD53	CD54	CD55	CD56	CD37	CD52	CD38	CD82	CD83	CD84
PAHs	units	blue mssl	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
NAP	ng/g	<3.4 I	136	183	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 I	15.1	<3.4 I	<3.4 ND	<3.4 I	<3.4 ND	<3.4 ND	<3.4 ND
2MN	ng/g	<18.8 I	28.1	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 I	<18.8 ND	<18.8 I	<18.8 ND	<18.8 I	<18.8 ND	<18.8 ND	<18.8 ND
1MN	ng/g	<11.3 I	14.9	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 I	<11.3 ND	<11.3 I	<11.3 ND	<11.3 I	<11.3 ND	<11.3 ND	<11.3 ND
BIP	ng/g	<11.4 ND	11.6	<11.4 ND	12.9	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND
DMN	ng/g	43.9	13.8	16.1	24.7	<10.5 ND	19.3	4.6 J	<10.5 ND	<10.5 ND	22.2	<10.5 ND	27.0	<10.5 ND	47.1
ACL	ng/g	11.5	74.5	89.5	59.1	34.8	<5.7 ND	15.3	22.6	11.3	17.5	<5.7 ND	49.5	<5.7 ND	31.2
ACT	ng/g	<5.3 ND	15.7	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	67.3	<5.3 ND	151
TMN	ng/g	<7.5 ND	<7.5 ND	<7.5 ND	19.2	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND
FLU	ng/g	6.9	29.7	33.4	39.1	25.1	11.6	5.0	14.3	6.5	16.7	6.2	<3.9 ND	<3.9 ND	<3.9 ND
PHE	ng/g	23.9	152	227	272	114	41.7	28.3	59.3	17.7 J	29.0	30.0	77.7	43.9	47.4
ANT	ng/g	17.7	184	237	167	68.2	25.5	29.0	34.1	11.8 J	25.1	6.0 J	65.0	23.7	40.2
1MP	ng/g	8.5 J	26.0	36.3	49.7	<18.1 ND	9.9 J	6.8 J	<18.1 ND	<18.1 ND	<18.1 ND	<18.1 ND	<18.1 ND	<18.1 ND	<18.1 ND
FLA	ng/g	58.9	741	1310	1160	246	105	105	105	46.2	84.9	15.9 J	343	116	171
PYR	ng/g	48.2	505	1040	819	175	78.6	85.3	81.5	35.0	73.9	13.3	271	117	163
BAA	ng/g	15.3	281	1040	290	71.8	31.1	30.3	24.7	15.8	47.3	<6.7 ND	75.6	42.3	53.7
CHR	ng/g	20.8	301	626	297	85.9	40.2	40.5	29.5	16.9	49.5	<10.5 ND	68.4	29.4	37.4
B(BJK)F	ng/g	43.3	551	2310	393	128	66.0	71.0	55.5	35.8	110	10.8 J	120	76.7	71.0
BEP	ng/g	36.9	274	820	234	108	52.3	48.6	47.0	26.4	86.1	13.7	88.6	60.8	59.3
BAP	ng/g	7.9	115	548	73.1	33.9	<7.2 ND	12.5	6.2 J	7.8	31.0	6.0 J	<7.2 ND	<7.2 ND	<7.2 ND
PER	ng/g	- I	82.0	184	- I	- I	- I	- I	- I	- I	- I	- I	<7.0 ND	<7.0 ND	<7.0 ND
INP	ng/g	11.9	35.5	121	26.8	<3.1 ND	10.4	6.0	<3.1 ND	<3.1 ND	15.5	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND
DBA	ng/g	7.9	13.5	49.7	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND
BPE	ng/g	20.8	48.1	148	29.2	<3.1 ND	14.1	10.1	<3.1 ND	<3.1 ND	30.4	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND
ΣPAHs	ng/g	384	3630	9020	3970	1090	505	498	495	231	639	102	1250	510	872
LMWs	ng/g	60	619	770	538	242	79	78	146	47	88	42	260	68	269
HMWs	ng/g	159	1955	4614	2639	613	255	274	247	122	287	35	758	304	425

USN TISSUE Derecktor Shipyard-PAHs

Chain of Custody Record ID		DSY-31-DM	DSY-33-DM	DSY-38-DM	DSY-39-DM	DSY-40-DM	JPC-1-DM	CHC-1-DM	DSY-25-LOB	DSY-27-LOB	DSY-28-LOB	DSY-29-LOB	DSY-33-LOB	DSY-35-LOB	DSY-36-LOB
OGL Lab ID		CD85	CD86	CD78	CD79	CD80	CD77	CD76	CD110	CD104	CD105	CD106	CD107	CD111	CD112
PAHs	units	blue mssl	----------	----------	----------	----------	----------	----------	lobster----	----------	----------	----------	----------	----------	----------
NAP	ng/g	<3.4 ND	<3.4 ND	<3.4 I	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	12.0	12.0	19.4	35.2	<3.4 I	<3.4 I
2MN	ng/g	<18.8 ND	<18.8 ND	<18.8 I	<18.8 ND	<18.8 ND	<18.8 ND	55.4	<18.8 ND	7.6 J	12.3 J	14.9 J	13.8 J	<18.8 I	<18.8 I
1MN	ng/g	<11.3 ND	<11.3 ND	<11.3 I	<11.3 ND	<11.3 ND	<11.3 ND	22.2	<11.3 ND	5.3 J	13.3	9.8 J	11.6	<11.3 I	<11.3 I
BIP	ng/g	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	8.1 J	<11.4 ND	14.2	<11.4 ND	<11.4 ND
DMN	ng/g	<10.5 ND	<10.5 ND	6.4 J	13.1	32.6	<10.5 ND	70.8	<10.5 ND	<10.5 ND	12.6	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND
ACL	ng/g	<5.7 ND	<5.7 ND	11.9	32.5	49.7	<5.7 ND	39.9	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND
ACT	ng/g	<5.3 ND	<5.3 ND	<5.3 ND	67.4	131	64.4	55.2	<5.3 ND	32.5	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND
TMN	ng/g	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND
FLU	ng/g	<3.9 ND	<3.9 ND	<3.9 ND	<3.9 ND	<3.9 ND	<3.9 ND	<3.9 ND	<3.9 ND	<3.9 ND	<3.9 ND	14.9	<3.9 ND	<3.9 ND	<3.9 ND
PHE	ng/g	41.0	<18.9 ND	18.5	<18.9 ND	68.9	27.8	30.8	<18.9 ND	20.1	32.2	28.2	19.8	13.2 J	18.5 J
ANT	ng/g	33.4	<16.0 ND	11.9 J	<16.0 ND	40.9	21.7	42.8	<16.0 ND	8.2 J	4.2 J	<16.0 ND	<16.0 ND	3.1 J	5.3 J
1MP	ng/g	<18.1 ND	<18.1 ND	<18.1 ND	<18.1 ND	<18.1 ND	<18.1 ND	15.2	<18.1 ND	44.6	83.7	78.8	86.9	<18.1 ND	<18.1 ND
FLA	ng/g	119	87.3	39.0	40.9	144	48.1	103	100	86.5	72.9	39.0	32.1	32.9	38.6
PYR	ng/g	117	88.4	43.2	43.3	124	56.5	88.6	85.6	93.8	124	69.5	53.1	24.6	43.1
BAA	ng/g	58.9	<6.7 ND	14.8	17.8	42.1	16.5	45.4	<6.7 ND	29.0	24.3	<6.7 ND	<6.7 ND	<6.7 ND	<6.7 ND
CHR	ng/g	38.3	<10.5 ND	14.4	19.7	22.8	14.0	36.1	<10.5 ND	30.8	38.6	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND
B(BJK)F	ng/g	89.3	<12.4 ND	32.7	<12.4 ND	<12.4 ND	35.9	94.8	<12.4 ND	61.0	58.4	23.6	23.0	<12.4 ND	30.8
BEP	ng/g	45.6	<7.8 ND	30.8	44.4	48.6	32.0	67.5	<7.8 ND	20.0	20.1	9.7	11.9	<7.8 ND	<7.8 ND
BAP	ng/g	<7.2 ND	<7.2 ND	8.1	<7.2 ND	<7.2 ND	<7.2 ND	21.7	<7.2 ND	28.7	25.0	13.1	<7.2 ND	<7.2 ND	<7.2 ND
PER	ng/g	<7.0 ND	<7.0 ND	1.4 J	<7.0 ND	<7.0 ND	<7.0 ND	38.7	<7.0 ND	10.8	11.9	<7.0 ND	<7.0 ND	<7.0 ND	<7.0 ND
INP	ng/g	<3.1 ND	<3.1 ND	<3.1 ND	27.9	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND	8.6	<3.1 ND	10.6	<3.1 ND	<3.1 ND	<3.1 ND
DBA	ng/g	<1.0 ND	<1.0 ND	<1.0 ND	33.2	<1.0 ND	<1.0 ND	21.2	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND
BPE	ng/g	<3.1 ND	<3.1 ND	<3.1 ND	23.1	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND	8.2	11.7	12.7	<3.1 ND	<3.1 ND	<3.1 ND
ΣPAHs	ng/g	543	176	233	363	704	317	850	186	508	565	344	302	74	136
LMWs	ng/g	74	0	42	100	290	114	224	0	80	61	77	69	16	24
HMWs	ng/g	333	176	119	155	333	135	316	186	269	284	122	85	57	82

USN TISSUE Derecktor Shipyard-PAHs

Chain of Custody Record ID		DSY-38-LOB	DSY-39-LOB	JPC-1-LOB	CHC-1-LOB	DSY-31-PT	DSY-32-PT	DSY-33-PT	DSY-34-PT	DSY-35-PT	DSY-35-HC	DSY-36-PT	DSY-37-PT	DSY-38-PT	DSY-41-PT
OGL Lab ID		CD113	CD114	CD108	CD102	CD116	CD117	CD118	CD119	CD120	CD134	CD121	CD122	CD123	CD124
PAHs	units	lobster--->				clams--->									
NAP	ng/g	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 I	<3.4 ND	<3.4 ND
2MN	ng/g	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 I	<18.8 ND	<18.8 ND
1MN	ng/g	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 I	<11.3 ND	<11.3 ND
BIP	ng/g	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND
DMN	ng/g	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND
ACL	ng/g	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	13.5	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	<5.7 ND	5.4 J	8.5
ACT	ng/g	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	2.8 J	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	<5.3 ND	5.6	6.4
TMN	ng/g	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND
FLU	ng/g	<3.9 ND	<3.9 ND	12.6	<3.9 ND	<3.9 ND	<3.9 ND	5.2	5.2	5.5	2.9 J	<3.9 ND	<3.9 ND	4.7	8.0
PHE	ng/g	10.1 J	7.5 J	15.5 J	14.5 J	23.8	28.8	14.3 J	35.1	28.3	18.6 J	31.7	27.4	9.2 J	16.4 J
ANT	ng/g	2.8 J	1.8 J	<16.0 ND	6.4 J	30.4	27.5	13.4 J	19.8	6.6 J	<16.0 ND	30.0	10.1 J	10.7 J	19.7
1MP	ng/g	<18.1 ND	<18.1 ND	105	81.8	<18.1 I	60.8	158	125	47.1	4.3 J	120	<18.1 ND	75.5	76.7
FLA	ng/g	16.6 J	9.2 J	10.2 J	14.5 J	179	152	57.2	73.4	69.3	47.5	124	74.8	43.5	79.7
PYR	ng/g	9.0	10.6	12.1	19.6	197	182	55.7	77.5	54.9	35.6	116	83.2	43.3	83.2
BAA	ng/g	<6.7 ND	<6.7 ND	<6.7 ND	<6.7 ND	133	79.2	35.2	46.1	21.5	15.7	66.2	56.0	45.7	41.4
CHR	ng/g	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	67.4	59.7	42.3	24.4	11.2	6.8 J	51.2	37.6	28.0	31.4
B(BJK)F	ng/g	<12.4 ND	<12.4 ND	<12.4 ND	<12.4 ND	129	94.4	35.6	48.7	16.4	9.2 J	90.6	58.1	40.5	22.8
BEP	ng/g	<7.8 ND	<7.8 ND	<7.8 ND	<7.8 ND	<7.8 ND	<7.8 ND	<7.8 ND	<7.8 ND	3.7 J	1.8 J	<7.8 ND	8.2	<7.8 ND	3.0 J
BAP	ng/g	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	45.0	42.6	22.2	22.4	16.1	7.0 J	32.3	23.1	20.7	17.3
PER	ng/g	<7.0 ND	<7.0 ND	<7.0 ND	<7.0 ND	- I	10.3	5.3 J	3.9 J	16.1	12.6	16.6	25.6	4.1	13.5
INP	ng/g	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND	20.4	26.9	8.8	7.9	<3.1 ND	<3.1 ND	10.9	<3.1 ND	9.2	<3.1 ND
DBA	ng/g	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND
BPE	ng/g	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND	25.8	34.2	13.3	11.2	<3.1 ND	<3.1 ND	14.6	26.3	12.8	<3.1 ND
ΣPAHs	ng/g	38	29	155	137	850	812	470	501	297	162	704	430	359	428
LMWs	ng/g	13	9	28	21	54	70	36	60	40	21	62	38	36	59
HMWs	ng/g	26	20	22	34	621	516	213	244	173	113	390	275	181	253

USN TISSUE Derecktor Shipyard-PAHs

Chain of Custody Record ID		DSY-41-HC	JPC-1-PT	JPC-1-QH	DSY-BT	DSY-26-CN	DSY-28-CN	DSY-29-CN	DSY-36-CN	JPC-1-MF	CHC-1-CN				
OGL Lab ID		CD135	CD125	CD136	CD70	CD141	CD131	CD132	CD133	CD129	CD128				
PAHs	units	clams-----	--------	------->	fish------	--------	--------	--------	--------	--------	------->				
NAP	ng/g	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 ND	<3.4 I	<3.4 ND	34.7				
2MN	ng/g	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	<18.8 ND	14.1 J	23.9	<18.8 I	<18.8 ND	91.0				
1MN	ng/g	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	<11.3 ND	12.5	32.8	<11.3 I	<11.3 ND	68.2				
BIP	ng/g	<11.4 ND	<11.4 ND	<11.4 ND	<11.4 ND	14.2	7.4 J	6.3 J	<11.4 ND	<11.4 ND	7.1 J				
DMN	ng/g	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	<10.5 ND	12.3				
ACL	ng/g	4.6 J	3.0 J	2.6 J	<5.7 ND	<5.7 ND	3.9 J	<5.7 ND	<5.7 ND	<5.7 ND	5.1 J				
ACT	ng/g	6.5	<5.3 ND	<5.3 ND	93.4	28.9	45.7	39.5	<5.3 ND	<5.3 ND	10.0				
TMN	ng/g	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND	<7.5 ND				
FLU	ng/g	3.8 J	3.2	3.7 J	23.2	24.1	37.8	25.8	20.0	27.3	13.6				
PHE	ng/g	13.3 J	8.4 J	5.9 J	8.4	40.3	30.8	47.3	18.6 J	9.2 J	15.4 J				
ANT	ng/g	10.9	6.1 J	6.1	<16.0 ND	10.6	6.0 J	6.2 J	<16.0 ND	2.0 J	<16.0 ND				
1MP	ng/g	6.7 J	78.0	29.6	<18.1 ND	<18.1 ND	1210	32.6	209	<18.1 ND	1080				
FLA	ng/g	68.5	25.8	21.6	<17.1 ND	31.8	24.8	38.5	19.4	<17.1 ND	7.7 J				
PYR	ng/g	65.5	31.2	21.5	<8.7 ND	21.3	24.8	36.4	48.8	43.2	24.2				
BAA	ng/g	<6.7 I	26.5	10.5	<6.7 ND	12.7	42.9	<6.7 ND	I -	- I	- I				
CHR	ng/g	<10.5 I	17.4	9.8 J	<10.5 ND	15.4	32.2	<10.5 ND	I -	- I	- I				
B(BJK)F	ng/g	13.3	15.9	6.2 J	<12.4 ND	48.2	<12.4 ND	27.0	<12.4 ND	<12.4 ND	<12.4 ND				
BEP	ng/g	3.1 J	2.0 J	1.1 J	<7.8 ND	21.7	<7.8 ND	<7.8 ND	<7.8 ND	<7.8 ND	<7.8 ND				
BAP	ng/g	11.1	8.0	4.2 J	<7.2 ND	19.1	1.6 J	12.0	<7.2 ND	<7.2 ND	3.8 J				
PER	ng/g	12.4	4.2 J	4.2 J	<7.0 ND	<7.0 ND	2.6 J	3.2 J	10.4	<7.0 ND	7.4				
INP	ng/g	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND	14.2	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND				
DBA	ng/g	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND	<1.0 ND				
BPE	ng/g	3.7	<3.1 ND	<3.1 ND	<3.1 ND	19.5	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND	<3.1 ND				
ΣPAHs	ng/g	223	230	127	125	322	1500	331	326	82	1380				
LMWs	ng/g	39	21	18	125	104	138	143	39	38	170				
HMWs	ng/g	145	109	68	0	100	126	87	68	43	36				

List of Organic Contaminants Analyzed in this Investigation

Abbrev.	Component Name	[CAS]
	Polychlorinated Biphenyls (PCBs)	
CB008:	2,4'-dichlorobiphenyl	34883-43-7
CB018:	2,2',5-trichlorobiphenyl	37680-65-2
CB028:	2,4,4'-trichlorobiphenyl	7012-37-5
CB052:	2,2',5,5'-tertrachlorobiphenyl	35693-99-3
CB044:	2,2',3,5-tetrachlorobiphenyl	41464-39-5
CB066:	2,3',4,4'-tetrachlorobiphenyl	32598-10-0
CB101:	2,2',4,5,5'-pentachlorobiphenyl	37680-73-2
CB118:	2,3',4,4',5-pentachlorobiphenyl	31508-00-6
CB153:	2,2',4,4',5,5'-hexachlorobiphenyl	35065-27-1
CB105:	2,3,3',4,4'-pentachlorobiphenyl	32598-14-4
CB138:	2,2',3,4,4',5'-hexachlorobiphenyl	35065-28-2
CB187:	2,2',3,4',5,5',6-heptachlorobiphenyl	52663-68-0
CB128:	2,2',3,3',4,4'-hexachlorobiphenyl	38380-07-3
CB180:	2,2',3,4,4',5,5'-heptachlorobiphenyl	35065-29-3
CB170:	2,2',3,3',4,4',5-heptachlorobiphenyl	35065-30-6
CB195:	2,2',3,3',4,4',5,6-octachlorobiphenyl	52663-78-2
CB206:	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl	40186-72-9
CB209:	2,2',3,3',4,4',5,5',6,6'-decachlorobiphenyl	2051-24-3
Σ CBs:	sum of the 18 chlorobiphenyls	
Σ PCBs	Σ CBs x 2.0	
	Organo-Chlorine Pesticides (OCPs)	
o,p'-DDE:	o,p'-(dichlorodiphenyldichloro)ethene	3424-82-6
p,p'-DDE:	p,p'-(dichlorodiphenyldichloro)ethene	72-55-9
ALDRIN:	aldrin	309-00-2
HCB:	hexachlorobenzene	118-74-1
MIREX:	mirex	238-585-5

Data Qualifiers for Organic Analytical Data

J	=	analyte detected but the measured concentration was below the MDL
Q	=	measurements are outside of QA limits as specified in the DQOs
ND	=	analyte was not detected; these values are reported as < MDL for that analyte/matrix
I	=	analytical interference with the analyte

USN SEDIMENT Derecktor Shipyard-PCBs+OCPs

Chain of Custody Record ID depth cm		DSY-25 0-12	DSY-26 0-18	DSY-27 0-17	DSY-28 0-18	DSY-29 0-18	DSY-29FD 0-18	DSY-30 0-18	DSY-31 0-18	DSY-32 0-18	DSY-33 0-14	DSY-34 0-18	DSY-35 0-14	DSY-36 0-18	DSY-37 0-18
OGL Lab ID		CD9	CD28	CD69	CD29	CD30	CD31	CD19	CD20	CD10	CD16	CD17	CD18	CD12	CD13
PCBs/OCPs	units	surface sediments---		----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	---------- -->
8	ng/g	0.6	0.5	5.6	0.7	0.6	0.7	1.2	1.4	1.2	0.3	0.3	<0.1 ND	0.6	0.5
HCB	ng/g	<0.2 ND	0.1 J	0.1 J	0.1 J	0.2 J	0.2 J	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND
18	ng/g	0.7	0.8	8.4	0.5	0.7	0.7	1.3	1.3	0.9	0.3	0.2	<0.1 ND	0.5	0.3
28	ng/g	2.1	1.3	12.9	1.5	1.7	1.7	2.5	3.7	2.6	0.6	0.9	0.2	1.3	0.8
52	ng/g	3.2	3.6	130	2.9	9.7	8.2	9.2	7.2	4.4	1.0	1.4	0.5	1.4	2.1
ALDRIN	ng/g	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	0.2	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND
44	ng/g	2.0	2.0	65.0	1.5	3.9	3.7	4.5	3.7	2.6	0.5	0.8	0.4	1.1	1.1
66	ng/g	6.2	1.6	180	1.7	3.9	2.8	0.9	2.7	11.3	0.5	0.9	0.1	5.4	4.8
OP'DDE*	ng/g	<0.2 ND	1.5	65.2	1.7	5.0	4.8	5.7	3.6	0.3	0.6	0.9	0.3	0.2	<0.2 ND
101	ng/g	6.5	5.7	220	5.5	16.7	15.7	19.0	12.7	14.3	1.7	2.9	0.5	6.7	6.4
PP'DDE	ng/g	0.9	0.6	7.0	2.0	6.3	6.4	4.4	1.9	2.4	0.4	1.0	0.1 J	2.6	1.4
118	ng/g	5.0	6.2	242	7.1	18.4	17.6	19.6	13.7	11.3	2.3	3.5	<0.3 ND	6.1	5.3
153	ng/g	4.4	6.2	174	10.0	22.8	22.7	20.5	14.4	12.2	2.7	4.8	0.2	8.0	5.8
105	ng/g	1.8	1.8	137	2.0	6.6	6.5	7.0	4.4	2.6	0.6	0.8	<0.1 ND	1.4	1.4
138	ng/g	5.9	7.2	265	10.9	27.0	26.1	26.6	16.1	15.2	2.9	4.9	<0.3 ND	9.1	7.4
187	ng/g	1.8	1.9	25.8	3.9	8.5	9.8	7.0	4.7	4.3	1.2	1.9	0.1	3.4	2.4
128	ng/g	1.4	1.3	73.0	1.9	5.1	4.9	6.2	3.1	3.1	0.5	0.9	<0.1 ND	1.9	1.8
180	ng/g	1.9	2.7	53.2	5.8	13.8	14.7	11.6	6.8	4.5	1.5	2.5	0.3	3.2	2.5
170	ng/g	0.9	1.5	44.2	3.1	7.2	7.6	6.3	3.8	2.3	0.8	1.4	0.1	1.7	1.4
MIREX	ng/g	0.2 J	0.2 J	2.6	0.2 J	0.2 J	0.3	5.0	0.3	0.7	<0.2 ND	0.3	<0.2 ND	0.4	0.4
195	ng/g	0.2	0.5	2.9	1.0	3.8	5.9	1.0	1.8	0.5	0.2	0.5	0.1	0.3	0.2
206	ng/g	1.5	2.1	7.4	3.1	17.4	39.0	6.3	4.3	2.7	1.1	1.8	0.4	2.2	2.8
209	ng/g	0.9	2.0	5.0	4.0	105	280	6.8	4.5	4.3	1.3	2.0	0.4	2.4	3.1
ΣCBs	ng/g	47	49	1650	67	273	468	158	110	100	20	32	3	57	50
ΣPCBs	ng/g	94	98	3310	134	546	936	315	221	201	40	65	7	113	100

* = pesticide + congener

USN SEDIMENT Derecktor Shipyard-PCBs+OCPs

Chain of Custody Record ID depth cm		DSY-38 0-18	DSY-39 0-18	DSY-40 0-14	DSY-41 0-13	JPC 0-14	V9 10-20cm	V9 39-45cm	DSY-28; 24-34	DSY-28; 76-86	V4 105-115cm	V4 130-140cm	DSY-29; 16-26	DSY-29; 44-54	DSY-30; 18-28
OGL Lab ID		CD14	CD23	CD24	CD25	CD32	CD99	CD98	CD60	CD61	CD100	CD101	CD64	CD65	CD58
PCBs/OCPs	units	surface sediments---		----------	----------	---------->	core--	----------	----------	----------	----------	----------	----------	----------	---------->
8	ng/g	0.2	0.3	0.1	0.2	0.1 J	66.0	5.3	2.5	0.7	0.1 J	0.2	0.2	<0.1 ND	0.1
HCB	ng/g	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	0.4	<0.2 ND	0.1 J	0.1 J	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND
18	ng/g	0.7	0.2	0.3	0.3	0.2	27.5	2.1	3.0	1.0	0.5	0.5	0.2	<0.1 ND	0.2
28	ng/g	0.6	0.8	0.7	0.2	0.3	28.3	2.1	6.3	2.1	0.2	0.1	0.5	0.1	0.6
52	ng/g	0.7	1.2	1.5	0.7	1.1	46.2	3.9	12.8	4.5	0.9	0.2	1.8	0.1 J	0.5
ALDRIN	ng/g	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND
44	ng/g	0.5	0.9	0.8	0.5	0.6	25.5	1.8	6.8	2.6	0.5	0.2	1.0	0.1	0.2
66	ng/g	2.1	0.9	0.7	0.2	0.3	21.9	1.2	5.9	2.9	0.2	0.1	1.0	0.1	0.4
OP'DDE*	ng/g	<0.2 ND	0.7	1.1	0.4	0.5	23.2	1.8	6.3	3.0	0.5	0.3	1.1	0.2 J	0.4
101	ng/g	2.8	2.1	3.9	0.5	0.8	76.2	5.3	21.3	10.1	1.1	0.6	4.3	0.3	0.3
PP'DDE	ng/g	1.3	0.7	1.1	0.1	0.3	9.6	0.5	5.0	17.1	0.2	0.1 J	9.2	0.1	0.6
118	ng/g	2.5	2.3	4.8	0.4	0.6	82.0	5.5	22.6	12.4	0.7	0.3 J	4.5	<0.3 ND	0.3
153	ng/g	4.5	4.4	5.9	0.5	1.0	65.4	4.1	27.5	14.7	0.7	0.2	5.2	0.1 J	0.1 J
105	ng/g	0.6	0.5	1.5	0.1	0.2	42.8	2.5	6.4	3.7	0.2	0.1	1.4	<0.1 ND	0.1
138	ng/g	5.1	4.1	7.1	0.6	1.0	95.0	5.8	33.3	15.8	0.9	0.3	6.0	0.1 J	0.2 J
187	ng/g	1.9	1.8	2.3	0.3	0.5	14.7	0.9	11.5	5.9	0.3	0.1	2.7	0.1	0.2
128	ng/g	0.8	0.6	1.4	0.2	0.3	25.2	1.3	7.0	2.8	0.2	0.1 J	1.0	<0.1 ND	<0.1 ND
180	ng/g	2.5	2.8	3.5	0.3	0.6	29.2	1.5	21.9	7.3	0.6	0.2	3.7	0.1 J	0.1 J
170	ng/g	1.3	1.5	1.7	0.2	0.3	20.4	1.0	12.9	4.0	0.1	<0.1 ND	1.7	<0.1 ND	0.2
MIREX	ng/g	0.3	<0.2 ND	0.2	<0.2 ND	<0.2 ND	8.6	0.4	1.7	0.4	0.1 J	0.1 J	<0.2 ND	<0.2 ND	0.1 J
195	ng/g	0.3	0.6	0.6	0.2	0.2	3.6	0.3	2.2	0.8	0.1	0.1	0.6	<0.1 ND	<0.1 ND
206	ng/g	1.1	1.9	2.4	0.7	0.7	9.7	0.6	6.9	5.3	0.4	0.2	2.6	0.3	1.1
209	ng/g	1.6	2.1	2.8	0.8	0.8	9.6	0.6	4.4	5.2	0.8	0.3	2.5	0.2	1.8
ΣCBs	ng/g	30	29	42	7	9	689	46	215	102	8	4	41	1	6
ΣPCBs	ng/g	59	58	84	14	19	1380	91	430	204	17	7	81	3	13

* = pesticide + congener

USN SEDIMENT Derecktor Shipyard-PCBs+OCPs

Chain of Custody Record ID depth cm		DSY-30; 68-78	DSY-31; 45-55	DSY-31; 100-110	DSY-34; 20-30	DSY-34; 70-80	DSY-36; 40-50	DSY-36; 90-100
OGL Lab ID		CD59	CD62	CD66	CD72	CD67	CD71	CD68
PCBs/OCPs	units	core-- ----	----------	----------	----------	----------	----------	---------- -->
8	ng/g	<0.1 ND	0.5	<0.1 ND	0.1 J	0.1 J	1.6	<0.1 ND
HCB	ng/g	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND
18	ng/g	0.1	1.2	<0.1 ND	<0.1 ND	0.1	2.1	<0.1 ND
28	ng/g	0.1	2.2	0.2	0.2	0.2	3.1	0.2
52	ng/g	0.3	5.4	0.3	0.5	0.3	10.5	0.2
ALDRIN	ng/g	<0.2 ND	0.1 J	0.1 J	<0.2 ND	<0.2 ND	<0.2 ND	<0.2 ND
44	ng/g	0.1	3.1	0.2	0.3	0.2	6.0	0.3
66	ng/g	0.1	2.4	0.1	0.3	0.1	5.6	0.1
OP'DDE*	ng/g	<0.2 ND	2.4	0.3	0.6	0.3	7.9	0.3
101	ng/g	0.3	7.5	0.3	1.3	0.3	21.2	0.3
PP'DDE	ng/g	0.2	4.9	0.2	0.2	0.2	14.3	0.1
118	ng/g	<0.3 ND	7.8	<0.3 ND	1.1	<0.3 ND	22.9	<0.3 ND
153	ng/g	<0.2 ND	8.0	<0.2 ND	1.1	0.1 J	25.8	0.1 J
105	ng/g	<0.1 ND	3.4	<0.1 ND	0.3	0.1 J	9.7	<0.1 ND
138	ng/g	0.1 J	10.4	0.1 J	1.3	0.2 J	34.7	<0.3 ND
187	ng/g	0.1	4.1	<0.1 ND	0.5	0.1	9.1	0.1
128	ng/g	0.1	2.5	<0.1 ND	0.4	0.1	8.2	<0.1 ND
180	ng/g	0.2	6.4	<0.1 ND	0.8	<0.1 ND	13.7	<0.1 ND
170	ng/g	<0.1 ND	2.6	<0.1 ND	0.3	<0.1 ND	8.5	0.1 J
MIREX	ng/g	<0.2 ND	0.2 J	<0.2 ND	0.1 J	<0.2 ND	2.2	<0.2 ND
195	ng/g	<0.1 ND	1.1	0.1 J	0.5	0.1	1.0	<0.1 ND
206	ng/g	<0.1 ND	2.7	0.2	0.6	0.2	7.5	0.4
209	ng/g	1.1	2.1	0.2	0.7	0.2	5.5	0.4
ΣCBs	ng/g	3	73	2	10	2	197	2
ΣPCBs	ng/g	5	147	3	21	5	393	4

* = pesticide + congener

USN ELUTRIATE Derecktor Shipyard -PCBs+OCPs

Chain of Custody Record ID		DSY-Blank 1 clean	DSY-25 clean	DSY-27 clean	DSY-29 clean	DSY-31 clean	DSY-32 clean	DSY-33 clean	DSY-36 clean	DSY-37 clean	DSY-38 clean	DSY-39 clean	DSY-40 clean	JPC-1 clean
OGL Lab ID		EB40	CD43	CD96	CD97	CD44	CD41	CD42	CD46	CD45	CD48	CD49	CD47	CD50
PCBs/OCPs	units													
8	ng/L	0.8 J	1.3 J	1.1 J	0.4 J	0.9 J	0.4 J	0.3 J	0.3 J	0.3 J	0.2 J	0.3 J	0.4 J	0.4 J
HCB	ng/L	0.3 J	0.1 J	0.1 J	<1.8 ND	0.3 J	0.1 J	0.1 J	<1.8 ND	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J
18	ng/L	0.7 J	1.4 J	1.5 J	0.7 J	1.9 J	0.9 J	0.8 J	0.2 J	0.4 J	0.4 J	0.2 J	0.3 J	0.1 J
28	ng/L	1.3 J	3.2	1.5 J	1.1 J	1.8 J	1.5 J	0.8 J	1.1 J	0.5 J	1.0 J	0.9 J	1.1 J	1.1 J
52	ng/L	1.4 J	5.5	6.0	2.9 J	3.1 J	2.6 J	1.7 J	2.1 J	2.4 J	1.5 J	2.2 J	2.3 J	2.4 J
ALDRIN	ng/L	<3.2 ND	<3.2 ND	0.9 J	0.9 J	<3.2 ND	<3.2 ND	<3.2 ND	<3.2 ND	<3.2 ND	<3.2 ND	<3.2 ND	<3.2 ND	<3.2 ND
44	ng/L	0.5 J	3.5 J	3.4 J	2.8 J	4.8 J	2.6 J	1.6 J	1.8 J	2.3 J	2.0 J	2.9 J	1.8 J	4.3 J
66	ng/L	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND	<7.2 ND
OP'DDE*	ng/L	0.3 J	3.5	2.8 J	3.0 J	3.2	1.9 J	1.3 J	2.0 J	3.4	1.4 J	2.2 J	2.5 J	3.6
101	ng/L	<5.2 ND	4.6 J	6.2	4.4 J	4.8 J	2.4 J	2.0 J	2.7 J	4.9 J	2.0 J	2.3 J	3.6 J	3.8 J
PP'DDE	ng/L	<2.3 ND	0.4 J	0.4 J	0.6 J	0.6 J	0.3 J	0.3 J	0.4 J	0.7 J	0.3 J	0.6 J	0.6 J	1.0 J
118	ng/L	0.1 J	2.5	3.5	1.5 J	1.5 J	1.0 J	0.7 J	0.4 J	0.6 J	0.3 J	0.4 J	0.8 J	0.7 J
153	ng/L	0.2 J	2.9	2.5	1.7 J	1.7 J	1.4 J	1.1 J	0.6 J	0.9 J	0.4 J	0.9 J	1.2 J	1.2 J
105	ng/L	0.1 J	0.6 J	0.9 J	0.4 J	0.5 J	0.3 J	0.2 J	0.1 J	0.1 J	0.1 J	0.2 J	0.2 J	0.3 J
138	ng/L	0.2 J	3.0	3.0	2.1	1.8 J	1.3 J	1.1 J	0.6 J	1.0 J	0.6 J	0.8 J	1.3 J	1.1 J
187	ng/L	0.1 J	1.2 J	0.5 J	0.7 J	0.7 J	0.5 J	0.4 J	0.3 J	0.4 J	0.2 J	0.4 J	0.5 J	0.5 J
128	ng/L	<4.2 ND	0.4 J	0.5 J	0.3 J	0.4 J	0.2 J	0.2 J	0.1 J	0.1 J	<4.2 ND	0.1 J	0.2 J	0.3 J
180	ng/L	0.1 J	2.4	0.6 J	1.3 J	0.6 J	0.5 J	0.5 J	0.2 J	0.4 J	0.2 J	0.3 J	1.8 J	0.7 J
170	ng/L	<2.7 ND	0.6 J	0.6 J	0.6 J	0.3 J	0.3 J	0.2 J	0.1 J	0.2 J	0.1 J	0.1 J	0.2 J	0.6 J
MIREX	ng/L	<1.2 ND	0.4 J	0.1 J	0.7 J	<1.2 ND	0.1 J	<1.2 ND	<1.2 ND	0.1 J	0.1 J	0.1 J	0.1 J	0.1 J
195	ng/L	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	<3.0 ND	1.4 J
206	ng/L	0.9 J	3.0	1.4 J	2.8 J	2.3 J	2.1 J	1.0 J	1.2 J	1.9 J	0.5 J	0.6 J	1.6 J	2.8 J
209	ng/L	0.8 J	2.9 J	1.4 J	3.4 J	2.3 J	1.6 J	0.9 J	1.3 J	2.2 J	0.1 J	0.3 J	1.1 J	2.4 J
ΣCBs	ng/L	7	39	35	27	29	20	13	13	19	10	13	18	24
ΣPCBs	ng/L	14	78	69	54	59	39	27	26	37	19	26	37	48

* = pesticide + congener

USN TISSUE Derecktor Shipyard -PCBs+OCPs

Chain of Custody Record ID		DSY-24-IBM	DSY-25-IBM	DSY-26-IBM	DSY-27-IBM	DSY-28-IBM	DSY-35-IBM	DSY-36-IBM	DSY-40-IBM	JPC-1-IBM	CHC-1-IBM	TO-DM	DSY-26-DM	DSY-28-DM	DSY-29-DM
OGL Lab ID		CD35	CD26	CD34	CD36	CD53	CD54	CD55	CD56	CD37	CD52	CD38	CD82	CD83	CD84
PCBs/OCPs	units	blue mssl	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
8	ng/g	7.3	7.5	2.5 J	6.1	1.9 J	2.2 J	3.3 J	2.7 J	6.9	2.3 J	<4.7 ND	2.5 J	2.7 J	4.8
HCB	ng/g	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	1.6	40.5	<0.3 ND	2.3
18	ng/g	2.8 J	<6.5 ND	2.7 J	6.2 J	<6.5 ND	<6.5 ND	<6.5 ND	<6.5 ND	1.1 J	<6.5 ND	2.2 J	16.9	<6.5 ND	<6.5 ND
28	ng/g	5.8	14.2	16.4	10.2	9.9	9.0	8.8	8.9	17.2	16.4	14.1	10.2	11.1	6.5
52	ng/g	11.7	21.3	14.2	19.8	21.9	10.5	12.8	13.4	12.6	12.8	14.8	20.4	15.9	20.7
ALDRIN	ng/g	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND
44	ng/g	6.7	5.5	8.0	11.1	5.9	6.3	6.9	7.9	6.7	<0.8 ND	14.1	13.5	11.4	10.5
66	ng/g	<7.7 ND	4.1 J	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND
OP'DDE*	ng/g	4.2	4.8	5.6	8.9	5.8	3.9	4.7	5.7	3.1	1.4	7.6	11.4	13.0	10.7
101	ng/g	27.8	25.4	41.3	56.8	40.6	34.6	39.9	44.1	25.1	16.6	22.4	39.6	37.5	31.9
PP'DDE	ng/g	7.9	4.9	7.6	11.9	7.3	12.1	8.2	10.4	6.7	6.1	15.4	12.6	- I	15.7
118	ng/g	21.0	19.2	29.6	44.5	26.3	26.5	29.2	35.1	17.3	19.3	4.6 J	30.9	38.9	29.3
153	ng/g	91.5	69.8	125	173	119	104	144	136	80.3	48.1	17.8	82.4	83.3	78.4
105	ng/g	4.7 J	4.0 J	7.2 J	9.6	6.4 J	6.1 J	6.4 J	7.9 J	3.5 J	3.4 J	2.1 J	528	10.4	126
138	ng/g	60.5	46.9	87.7	126	83.9	73.8	100	98.2	49.5	31.9	17.7	69.8	65.7	59.9
187	ng/g	29.2	23.6	40.6	55.7	38.0	37.0	48.0	44.7	25.1	14.0	6.4	25.6	25.3	23.9
128	ng/g	14.4	7.9	16.4	19.5	11.6	20.3	19.9	23.0	9.6	13.2	9.1	11.8	12.2	11.0
180	ng/g	11.7	8.4	12.1	27.6	16.9	11.3	17.5	19.5	12.7	4.9	4.0	19.1	15.6	17.2
170	ng/g	4.7	1.6	2.6	4.6	3.7	1.7	3.6	3.6	3.1	1.9	1.1	8.3	3.6	4.3
MIREX	ng/g	3.5	0.5	2.2	2.0	3.7	1.3	2.9	2.6	1.3	1.9	3.1	5.3	3.0	2.1
195	ng/g	<0.8 ND	1.2	<0.8 ND	0.9	3.0	<0.8 ND	<0.8 ND	2.8	4.7	1.3	<0.8 ND	1.4	1.7	1.6
206	ng/g	3.1	2.0	5.5	2.2	3.6	2.6	2.9	3.5	4.2	3.8	8.4	3.7	5.0	3.6
209	ng/g	4.7	1.5	4.1	0.6 J	8.3	2.6	3.3	4.1	2.6	4.4	9.4	3.3	4.2	4.1
ΣCBs	ng/g	308	264	416	574	401	348	447	456	282	194	148	888	345	434
ΣPCBs	ng/g	615	528	831	1150	802	696	895	912	565	389	296	1780	689	868

* = pesticide + cogener

USN TISSUE Derecktor Shipyard -PCBs+OCPs

Chain of Custody Record ID		DSY-31-DM	DSY-33-DM	DSY-38-DM	DSY-39-DM	DSY-40-DM	JPC-1-DM	CHC-1-DM	DSY-25-LOB	DSY-27-LOB	DSY-28-LOB	DSY-29-LOB	DSY-33-LOB	DSY-35-LOB	DSY-36-LOB
OGL Lab ID		CD85	CD86	CD78	CD79	CD80	CD77	CD76	CD110	CD104	CD105	CD106	CD107	CD111	CD112
PCBs/OCPs	units	blue mssl	----------	----------	----------	----------	----------	----------	lobster----	----------	----------	----------	----------	----------	----------
8	ng/g	3.0 J	3.2 J	2.1 J	2.1 J	1.2 J	2.7 J	2.0 J	<4.7 ND	3.8 J	4.1 J	<4.7 ND	1.8 J	<4.7 ND	7.3
HCB	ng/g	<0.3 ND	<0.3 ND	0.7	0.9	0.5	4.5	0.6	0.2 J	1.1	1.2	1.2	0.5	0.4	1.3
18	ng/g	<6.5 ND	1.5 J	<6.5 ND	<6.5 ND	2.8 J	2.6 J	<6.5 ND	<6.5 ND	2.2 J	3.5 J	4.1 J	1.2 J	4.7 J	10.7
28	ng/g	8.2	5.3	6.4	6.7	3.7	4.0	7.6	9.1	7.3	4.5	6.4	3.8	10.2	5.4
52	ng/g	27.2	12.7	14.1	14.8	11.4	10.2	14.2	7.6	9.6	9.2	12.2	4.8	13.8	7.6
ALDRIN	ng/g	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND
44	ng/g	16.0	9.8	8.3	8.8	6.4	5.8	4.7	5.2	2.6	0.4 J	0.3 J	4.9	3.6	8.7
66	ng/g	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	<7.7 ND	12.6	15.1	15.2	11.4	10.3	10.1	6.8 J
OP'DDE*	ng/g	15.2	10.3	7.1	8.8	5.4	4.4	4.8	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND
101	ng/g	48.8	35.5	28.2	24.5	29.6	26.4	16.9	8.3	11.5	11.7	9.3	10.7	2.3 J	5.2
PP'DDE	ng/g	14.5	13.0	8.8	9.8	10.0	8.0	8.7	5.9	8.4	9.8	6.3	6.6	5.2	4.9
118	ng/g	45.3	39.2	24.7	16.3	24.2	22.3	21.2	37.0	51.8	68.9	14.9	22.1	14.7	13.9
153	ng/g	95.9	86.1	71.5	58.6	70.2	71.1	48.8	58.4	65.8	99.1	35.4	47.1	41.0	30.6
105	ng/g	10.7	6.3 J	5.6 J	7.5 J	4.9 J	59.7	3.5 J	7.3 J	95.7	36.2	3.3 J	41.7	2.6 J	3.8 J
138	ng/g	67.3	60.6	48.8	42.1	53.6	49.8	34.4	35.8	46.2	71.2	25.9	32.5	23.4	21.2
187	ng/g	27.2	26.2	20.7	15.8	21.5	19.3	12.0	15.2	18.1	31.5	13.6	14.2	12.1	10.2
128	ng/g	11.7	10.3	8.0	7.3	11.6	9.2	9.9	4.7	7.5	12.4	3.5	4.3	2.5	2.4
180	ng/g	15.9	15.4	12.8	10.2	17.6	14.2	8.9	15.0	18.9	34.2	14.2	14.7	14.1	10.6
170	ng/g	3.5	3.7	4.5	3.2	5.4	4.0	3.3	6.5	7.2	12.2	6.5	5.5	6.4	5.1
MIREX	ng/g	3.7	2.7	5.5	3.2	2.2	2.7	1.2	0.8	1.2	0.7	1.1	1.5	0.2 J	0.6
195	ng/g	2.0	1.0	2.9	1.5	2.5	1.0	1.8	1.6	2.7	4.7	4.3	4.1	2.1	2.0
206	ng/g	5.7	1.8	5.0	5.5	4.6	3.2	1.9	5.9	4.5	7.0	6.3	6.5	4.1	3.6
209	ng/g	4.7	0.4 J	11.2	5.4	7.0	2.8	1.9	3.7	3.5	4.2	5.7	4.4	1.7	3.1
ΣCBs	ng/g	393	319	275	230	278	308	193	234	374	430	178	235	169	158
ΣPCBs	ng/g	786	638	549	461	556	617	386	468	748	861	355	469	339	317

* = pesticide + cogener

USN TISSUE Derecktor Shipyard -PCBs+OCPs

Chain of Custody Record ID		DSY-38-LOB	DSY-39-LOB	JPC-1-LOB	CHC-1-LOB	DSY-31-PT	DSY-32-PT	DSY-33-PT	DSY-34-PT	DSY-35-PT	DSY-35-HC	DSY-36-PT	DSY-37-PT	DSY-38-PT	DSY-41-PT
OGL Lab ID		CD113	CD114	CD108	CD102	CD116	CD117	CD118	CD119	CD120	CD134	CD121	CD122	CD123	CD124
PCBs/OCPs	units	lobster----	----------	----------	---------->	clam------	----------	----------	----------	----------	----------	----------	----------	----------	---------->
8	ng/g	<4.7 ND	1.8 J	<4.7 ND	<4.7 ND	<4.7 ND	<4.7 ND	<4.7 ND	<4.7 ND	<4.7 ND	- I	<4.7 ND	<4.7 ND	<4.7 ND	<4.7 ND
HCB	ng/g	0.4	0.6	1.4	5.2	0.6	1.0	0.3	1.1	0.5	0.3 I	0.7	2.8	<0.3 ND	0.6
18	ng/g	<6.5 ND	<6.5 ND	25.8	57.8	<6.5 ND	2.7 J	<6.5 ND	<6.5 ND	<6.5 ND	<6.5 ND	<6.5 ND	3.0 J	1.7 J	1.0 J
28	ng/g	4.0	4.3	14.7	20.6	40.8	11.8	12.5	11.0	24.1	1.3 J	20.8	1.1 J	2.5 J	0.3 J
52	ng/g	7.2	5.2	6.1	11.5	13.1	9.0	8.1	6.7	5.0	2.8 J	11.6	7.0	2.6 J	5.0
ALDRIN	ng/g	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND
44	ng/g	6.2	7.2	2.1	<0.8 ND	6.7	3.8	<0.8 ND	11.8	7.4	0.6 J	1.2	4.0	0.8	2.3
66	ng/g	10.6	10.6	6.9 J	4.6 J	19.4	12.7	10.6	12.2	6.9 J	6.4 J	15.6	22.3	10.1	9.7
OP'DDE*	ng/g	3.6	<0.3 ND	<0.3 ND	8.5	7.1	3.8	<0.3 ND	<0.3 ND	<0.3 ND	1.1	<0.3 ND	2.8	2.1	1.8
101	ng/g	12.5	7.2	7.4	17.8	37.4	21.6	16.2	19.5	7.6	5.3	18.7	13.7	12.1	7.6
PP'DDE	ng/g	4.1	7.1	4.1	7.8	2.4	3.0	2.5	3.8	1.5 J	2.0	4.7	2.9	2.9	1.8 J
118	ng/g	33.3	13.1	13.8	11.2	28.5	18.4	13.5	15.7	5.8	4.0 J	14.3	14.1	11.2	7.3
153	ng/g	46.0	32.2	31.4	22.1	60.3	52.3	37.8	52.1	23.6	17.1	53.1	50.4	56.2	33.0
105	ng/g	209	2.6 J	6.7 J	5.6 J	8.3	244	10.7	34.4	10.7	1.9 J	<8.2 ND	8.8	5.1 J	<8.2 ND
138	ng/g	38.3	21.5	21.4	14.9	43.1	36.8	26.5	34.0	18.6	7.9	38.3	47.3	39.9	21.6
187	ng/g	12.4	9.9	20.3	31.5	17.1	16.2	12.8	17.5	10.6	6.7	20.1	20.2	20.5	13.1
128	ng/g	5.9	2.3	5.6	7.9	5.6	4.7	3.5	3.5	1.5	1.0 J	6.5	4.9	5.1	1.9
180	ng/g	15.0	12.2	10.6	3.9	18.8	18.3	14.3	20.0	13.7	11.3	18.8	23.7	26.2	19.2
170	ng/g	7.9	6.2	7.9	4.1	7.1	5.7	6.2	7.7	5.4	4.8	6.6	6.8	7.4	4.4
MIREX	ng/g	0.4	0.3 J	1.0	1.5	0.8	0.5	1.1	0.9	0.6	- I	0.7	0.4	0.2 J	0.4
195	ng/g	2.5	2.1	<0.8 ND	<0.8 ND	2.6	2.3	1.5	4.1	1.7	1.1	3.0	1.0	3.1	2.8
206	ng/g	4.8	3.8	9.5	17.0	7.2	7.8	5.0	6.4	6.4	4.9	7.3	8.1	4.2	4.4
209	ng/g	4.5	3.1	8.3	<1.4 ND	5.8	6.4	4.6	5.2	6.6	2.5	6.2	9.9	5.1	3.4
ΣCBs	ng/g	420	145	199	230	322	475	184	262	156	80	242	246	214	137
ΣPCBs	ng/g	840	291	397	461	643	951	367	524	311	159	484	493	427	274

* = pesticide + cogener

USN TISSUE Derecktor Shipyard -PCBs+OCPs

Chain of Custody Record ID		DSY-41-HC	JPC-1-PT	JPC-1-QH	DSY-BT	DSY-26-CN	DSY-28-CN	DSY-29-CN	DSY-36-CN	JPC-1-MF	CHC-1-CN				
OGL Lab ID		CD135	CD125	CD136	CD70	CD130	CD131	CD132	CD133	CD129	CD128				
PCBs/OCPs	units	clam------	-------->		fish------	-------->									
8	ng/g	- I	<4.7 ND	- I	<4.7 ND	- I	- I	- I	- I	- I	- I				
HCB	ng/g	0.9 I	0.2 J	0.3 I	2.9	1.0 I	1.0 I	1.0 I	0.9 I	0.5 I	1.4 I				
18	ng/g	<6.5 ND	1.0 J	<6.5 ND	8.5	2.3 J	1.4 J	1.5 J	0.8 J	2.7 J	2.1 J				
28	ng/g	5.3	1.5 J	1.9 J	6.0	7.9	5.8	4.4	4.9	10.8	4.9				
52	ng/g	3.7 J	3.5 J	2.8 J	16.0	35.9	47.8	30.9	34.7	21.3	18.0				
ALDRIN	ng/g	<0.3 ND	<0.3 ND	<0.3 ND	<0.3 ND	0.4	<0.3 ND	0.3 J	1.0	<0.3 ND	<0.3 ND				
44	ng/g	2.0	2.1	1.2	24.5	4.8	3.9	2.8	2.6	3.8	1.2				
66	ng/g	11.0	9.0	7.0 J	4.3 J	41.6	82.3	50.7	45.1	43.0	16.7				
OP'DDE*	ng/g	<0.3 ND	1.8	1.2	14.1	3.6	5.5	3.2	1.8	5.7	2.8				
101	ng/g	8.1	9.3	6.1	23.6	93.3	173	120	123	80.0	43.6				
PP'DDE	ng/g	4.3	2.6	3.1	42.9	29.1	44.8	67.0	53.6	67.4	21.2				
118	ng/g	8.2	7.5	5.7	27.9	117	154	144	134	90.6	64.4				
153	ng/g	22.6	31.0	27.1	46.9	293	550	418	431	264	147				
105	ng/g	5.5 J	2.3 J	1.4 J	10.8	30.4	39.7	39.0	32.1	21.6	12.3				
138	ng/g	14.9	22.5	10.6	38.9	189	364	280	282	160	79.9				
187	ng/g	7.5	10.8	10.5	16.8	86.0	182	132	139	82.2	35.2				
128	ng/g	4.4	1.1	1.2	8.6	24.5	38.3	31.4	29.9	19.5	7.4				
180	ng/g	12.9	13.6	16.1	12.1	115	203	210	188	98.9	45.3				
170	ng/g	11.2	4.5	4.3	6.0	46.9	75.5	92.4	83.1	38.0	18.1				
MIREX	ng/g	- I	0.4	- I	2.1	- I	- I	- I	- I	- I	- I				
195	ng/g	1.1	1.7	0.5 J	1.5	4.8	5.8	8.2	8.6	4.5	4.1				
206	ng/g	4.9	7.0	2.9	2.9	7.1	7.1	12.4	17.4	5.6	5.5				
209	ng/g	1.9	5.0	2.8	1.9	1.9	2.3	6.8	7.9	3.0	1.6				
ΣCBs	ng/g	125	133	102	257	1100	1940	1580	1560	949	507				
ΣPCBs	ng/g	251	267	204	514	2200	3870	3170	3130	1900	1010				
		Note: For CD128 to CD136: 1) CB008/HCB coelute and will be reported as HCB; 2) Mirex & a congener coelute and will not be reported.													

* = pesticide + cogener

SAMPLE INVENTORY AND DATA ANALYSIS INFORMATION
OFF-SHORE ECOLOGICAL RISK ASSESSMENT FOR THE LOWER EAST PASSAGE STUDY AREA
DERECKTOR SHIPYARD
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

ORGANIC CONTAMINANTS

	Sample					Preservation		Preparation/Extraction/Analysis						
				Organic Geochemistry Lab										
Item	Field ID	Matrix	Sampling Date	Date Received	ID	Freezer Storage Date at (-20°C)	Any Sample Remain?	% Solid (Dry Wet Wt Ratio)	Sample Dry Weight	Solvent Extraction Date	Column Chromatog Date	OCP/PCB Analysis Date	PAH Analysis Date	Calculation Date
1	DSY-25	Sed. 0-12cm	09/27/95	09/27/95	CD9	09/28/95	yes	64.68%	10.0326	09/28/95	10/02/95	10/04/95	10/03/95	10/04/95
2	DSY-32	Sed. 0-18cm	09/27/95	09/27/95	CD10	09/28/95	yes	43.12%	3.0183	09/28/95	10/02/95	10/04/95	10/03/95	10/05/95
3	DSY-33	Sed. 0-14cm	09/27/95	09/27/95	CD16	09/28/95	yes	66.92%	10.3654	10/13/95	10/17/95	10/19/95	10/18/95	10/19/95
4	DSY-36	Sed. 0-18cm	09/27/95	09/27/95	CD12	09/28/95	yes	40.27%	6.3632	09/28/95	10/02/95	10/04/95	10/03/95	10/04/95
5	DSY-37	Sed. 0-18cm	09/27/95	09/27/95	CD13	09/28/95	yes	50.59%	7.3565	09/28/95	10/02/95	10/03/95	10/03/95	10/03/95
6	DSY-38	Sed. 0-18cm	09/27/95	09/27/95	CD14	09/28/95	yes	46.43%	7.2477	09/28/95	10/02/95	10/03/95	10/02/95	10/03/95
7	DSY-Field Blank	FB	09/27/95	09/27/95	SB15	_	no	_	_	09/28/95	10/02/95	10/03/95	10/02/95	10/03/95
8	DSY-25-IBM	Tiss./M n=28	10/10/95	10/12/95	CD26	10/12/95	yes	8.79%	1.3752	10/17/95	10/19/95	11/01/95	10/24/95	11/01/95
9	DSY-26-IBM	Tiss./M n=38	10/10/95	10/12/95	CD34	10/12/95	yes	12.56%	1.9070	10/30/95	11/02/95	11/06/95	11/28/95	12/01/95
10	DSY-35-HC	Tiss./C n=10	10/09/95	10/12/95	CD134	10/12/95	yes	14.26%	2.1397	02/06/96	02/15/96	02/20/96	02/19/96	02/22/96
11	DSY-41-HC	Tiss./C n=11	10/09/95	10/12/95	CD135	10/12/95	yes	15.41%	2.4279	02/06/96	02/15/96	02/21/96	02/19/96	02/22/96
12	DSY-36-LOB-MUS	Tiss./L	10/09/95	10/12/95	CD112	10/12/95	yes	13.58%	2.0164	01/23/96	01/26/96	01/31/96	02/19/96	02/19/96
13	DSY-35-IBM	Tiss./M n=25	10/11/95	10/12/95	CD54	10/12/95	yes	13.83%	2.0784	11/16/95	11/21/95	11/27/95	12/01/95	12/04/95
14	DSY-39	Sed. 0-18cm	10/11/95	10/12/95	CD23	10/12/95	yes	56.05%	8.7660	10/17/95	10/19/95	10/20/95	10/24/95	10/24/95
15	DSY-30	Sed. 0-18cm	10/11/95	10/12/95	CD19	10/12/95	y s	47.92%	7.5420	10/13/95	10/17/95	10/19/95	10/18/95	10/19/95
16	DSY-31	Sed. 0-18cm	10/11/95	10/12/95	CD20	10/12/95	yes	43.07%	4.2077	10/13/95	10/17/95	10/19/95	10/19/95	10/19/95
17	DSY-35	Sed. 0-14cm	10/11/95	10/12/95	CD18	10/12/95	yes	74.91%	11.9183	10/13/95	10/17/95	10/18/95	10/18/95	10/18/95

SAMPLE INVENTORY AND DATA ANALYSIS INFORMATION
OFF-SHORE ECOLOGICAL RISK ASSESSMENT FOR THE LOWER EAST PASSAGE STUDY AREA
DERECKTOR SHIPYARD
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

ORGANIC CONTAMINANTS

	Sample					Preservation		Preparation/Extraction/Analysis						
				Organic Geochemistry Lab										
Item	Field ID	Matrix	Sampling Date	Date Received	ID	Freezer Storage Date at (-20°C)	Any Sample Remain?	% Solid (Dry Wet Wt Ratio)	Sample Dry Weight	Solvent Extraction Date	Column Chromatog Date	OCP/PCB Analysis Date	PAH Analysis Date	Calculation Date
18	DSY-34	Sed. 0-18cm	10/11/95	10/12/95	CD 17	10/12/95	yes	49.96%	7.9132	10/13/95	10/17/95	10/19/95	10/19/95	10/19/95
19	DSY-40	Sed. 0-14cm	10/11/95	10/12/95	CD 24	10/12/95	yes	65.20%	10.1061	10/17/95	10/19/95	10/20/95	10/24/95	10/25/95
20	DSY-41	Sed. 0-13cm	10/11/95	10/12/95	CD 25	10/12/95	yes	75.13%	11.7128	10/17/95	10/19/95	10/22/95	10/24/95	10/26/95
21	DSY-27	Sed. 0-17cm	10/11/95	10/12/95	CD69	10/12/95	yes	39.32%	6.2865	12/08/95	12/11/95	12/14/95	12/12/95	12/14/95
22	DSY-25 clean	Elut.	_	10/06/95	CD43	_	no	_	4.1 L	11/07/95	11/14/95	11/17/95	11/16/95	11/20/95
23	DSY-32 clean	Elut.	_	10/06/95	CD41	_	no	_	3.8 L	11/07/95	11/09/95	11/14/95	11/09/95	11/14/95
24	DSY-33 clean	Elut.	_	10/06/95	CD42	_	no	_	3.2 L	11/07/95	11/14/95	11/14/95	11/15/95	11/16/95
25	DSY-36 clean	Elut.	_	10/06/95	CD46	_	no	_	3.8 L	11/07/95	11/14/95	11/16/95	11/15/95	11/20/95
26	DSY-37 clean	Elut.	_	10/06/95	CD45	_	no	_	3.7 L	11/07/95	11/14/95	11/16/95	11/15/95	11/17/95
27	DSY-38 clean	Elut.	_	10/06/95	CD48	_	no	_	4.1 L	11/08/95	11/14/95	11/16/95	11/15/95	11/17/95
28	DSY-30 clean	Elut.	10/12/95	10/13/95		_		_						
29	DSY-34 clean	Elut.	10/12/95	10/13/95		_		_						
30	DSY-35 clean	Elut.	10/13/95	10/13/95		_		_						
31	DSY-39 clean	Elut.	10/13/95	10/13/95	CD49	_	no	_	3.0 L	11/09/95	11/14/95	11/15/95	11/15/95	11/17/95
32	DSY-Blank1 clean	Elut.	10/13/95	10/13/95	EB40	_	no	_	3.5 L	11/01/95	11/02/95	11/03/95	11/06/95	11/07/95
33	JPC	Sed. 0-14cm	10/19/95	10/19/95	CD32	10/20/95	yes	74.78%	11.6288	10/25/95	10/27/95	10/27/95	10/30/95	10/31/95
34	DSY-29	Sed. 0-18cm	10/19/95	10/19/95	CD30	10/20/95	yes	30.80%	2.7504	10/25/95	10/26/95	10/31/95	10/30/95	11/01/95

SAMPLE INVENTORY AND DATA ANALYSIS INFORMATION
OFF-SHORE ECOLOGICAL RISK ASSESSMENT FOR THE LOWER EAST PASSAGE STUDY AREA
DERECKTOR SHIPYARD
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

ORGANIC CONTAMINANTS

	Sample					Preservation		Preparation/Extraction/Analysis						
				Organic Geochemistry Lab										
Item	Field I.D.	Matrix	Sampling Date	Date Received	I.D.	Freezer Storage Date at (-20°C)	Any Sample Remain?	% Solid (Dry.Wet Wt. Ratio)	Sample Dry Weight	Solvent Extraction Date	Column Chromatog Date	OCP/PCB Analysis Date	PAH Analysis Date	Calculation Date
35	DSY-29 FD	Sed. 0-18cm	10/19/95	10/19/95	CD31	10/20/95	yes	30.01%	2.6406	10/25/95	10/26/95	11/01/95	10/30/95	11/01/95
36	Field Blank #2	FB	10/19/95	10/19/95		_								
37	DSY-28	Sed. 0-18cm	10/19/95	10/19/95	CD29	10/20/95	yes	36.72%	3.2278	10/25/95	10/27/95	10/31/95	10/30/95	10/31/95
38	DSY-26	Sed. 0-18cm	10/19/95	10/19/95	CD28	10/20/95	yes	69.59%	5.3171	10/25/95	10/27/95	10/31/95	10/30/95	10/31/95
39	DSY-27 clean	Elut.	10/17/95	10/18/95	CD96	_	no	-	3.0 L	01/09/96	01/11/96	01/18/96	01/23/96	01/24/96
40	DSY-31 clean	Elut.	10/17/95	10/18/95	CD44	_	no	_	3.1 L	11/07/95	11/14/95	11/17/95	11/15/95	11/20/95
41	DSY-40 clean	Elut.	10/17/95	10/18/95	CD47	_	no	_	3.1 L	11/08/95	11/14/95	11/17/95	11/15/95	11/20/95
42	DSY-41 clean	Elut.	10/18/95	10/18/95		_		_						
43	DSY-Blank2 clean	Elut.	10/18/95	10/18/95	EB51	_	no	_	3.5 L	11/09/95	11/14/95	11/15/95	11/16/95	11/17/95
44	JPC-1-IBM	Tiss./M n=36	10/11/95	10/20/95	CD37	10/20/95	yes	10.82%	1.5982	10/30/95	11/02/95	11/06/95	12/01/95	12/04/95
45	DSY-24-IBM	Tiss./M n=44	10/12/95	10/20/95	CD35	10/20/95	yes	8.93%	1.2760	10/30/95	11/02/95	11/06/95	11/30/95	12/01/95
46	DSY-27-IBM	Tiss./M n=50	10/18/95	10/20/95	CD36	10/20/95	yes	12.97%	2.0763	10/30/95	11/02/95	11/07/95	12/01/95	12/01/95
47	DSY-36-IBM	Tiss./M n=40	10/18/95	10/20/95	CD55	10/20/95	yes	11.84%	1.8434	11/16/95	11/21/95	11/28/95	12/01/95	12/04/95
48	DSY-38-LOB-MUS	Tiss./L	10/18/95	10/20/95	CD113	10/20/95	yes	11.43%	1.7515	01/23/96	01/26/96	01/30/96	02/08/96	02/08/96
49	DSY-39-LOB-MUS	Tiss./L	10/18/95	10/20/95	CD114	10/20/95	yes	15.31%	2.3015	01/23/96	01/26/96	01/30/96	02/08/96	02/08/96
50	TO-DM	Tiss./M n=20	10/02/95	10/20/95	CD38	10/20/95	yes	7.04%	1.0402	10/30/95	11/02/95	11/03/95	12/01/95	12/01/95
51	JPC II	Sed. 0-16cm	10/26/95	10/26/95		10/27/95								

SAMPLE INVENTORY AND DATA ANALYSIS INFORMATION
OFF-SHORE ECOLOGICAL RISK ASSESSMENT FOR THE LOWER EAST PASSAGE STUDY AREA
DERECKTOR SHIPYARD
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

ORGANIC CONTAMINANTS

	Sample					Preservation		Preparation/Extraction/Analysis						
				Organic Geochemistry Lab										
Item	Field I.D.	Matrix	Sampling Date	Date Received	I D	Freezer Storage Date at (-20°C)	Any Sample Remain?	% Solid (Dry:Wet Wt Ratio)	Sample Dry Weight	Solvent Extraction Date	Column Chromatog Date	OCP/PCB Analysis Date	PAH Analysis Date	Calculation Date
52	DSY-26 clean	Elut.	10/26/95	10/27/95		_		_						
53	DSY-29 clean	Elut.	10/27/95	10/27/95	CD97	_	no	_	3.8 L	01/10/96	01/11/96	01/18/96	01/23/96	01/24/96
54	DSY-28 clean	Elut.	10/27/95	10/27/95		_		_						
55	JPC-1 clean	Elut.	10/27/95	10/27/95	CD50	_	no	_	3.1 L	11/09/95	11/14/95	11/15/95	11/16/95	11/16/95
56	JPC-2 clean	Elut.	10/27/95	10/27/95		_		_						
57	DSY-28-IBM	Tiss./M n=64	10/25/95	10/31/95	CD53	10/31/95	yes	10.53%	1.5841	11/16/95	11/21/95	11/29/95	12/01/95	12/01/95
58	CHC-1-IBM	Tiss./M n=48	10/23/95	10/31/95	CD52	10/31/95	yes	10.47%	1.6119	11/16/95	11/21/95	11/28/95	12/01/95	12/01/95
59	DSY-40-IBM	Tiss./M n=55	10/23/95	10/31/95	CD56	10/31/95	yes	14.15%	2.1540	11/16/95	11/21/95	11/27/95	11/28/95	11/28/95
60	DSY-28-LOB-MUS	Tiss./L	10/21/95	10/31/95	CD105	10/31/95	yes	13.54%	2.0341	01/18/96	01/19/96	01/25/96	01/25/96	02/01/96
61	DSY-25-LOB-MUS	Tiss./L	10/21/95	10/31/95	CD110	10/31/95	yes	15.33%	2.3287	01/23/96	01/26/96	02/05/96	02/07/96	02/07/96
62	DSY-29-LOB-MUS	Tiss./L	10/21/95	10/31/95	CD106	10/31/95	yes	13.89%	2.1281	01/18/96	01/19/96	01/25/96	01/25/96	02/01/96
63	DSY-33-LOB-MUS	Tiss./L	10/28/95	10/31/95	CD107	10/31/95	yes	16.74%	2.4893	01/18/96	01/19/96	01/25/96	01/25/96	02/01/96
64	DSY-35-LOB-MUS	Tiss./L	10/21/95	10/31/95	CD111	10/31/95	yes	15.06%	2.3396	01/23/96	01/26/96	01/29/96	02/08/96	02/08/96
65	DSY-27-LOB-MUS	Tiss./L	10/28/95	10/31/95	CD104	10/31/95	yes	14.79%	2.2066	01/18/96	01/19/96	01/26/96	01/25/96	02/01/96
66	DSY-28,24-34	Sed.	10/27/95	11/16/95	CD60	11/16/95	yes	38.20%	5.7638	11/28/95	12/05/95	12/06/95	12/06/95	12/06/95
67	DSY-28;76-86	Sed.	10/27/95	11/16/95	CD61	11/16/95	yes	37.26%	5.6631	11/28/95	12/05/95	12/06/95	12/06/95	12/06/95
68	DSY-29,16-26	Sed.	10/25/95	11/16/95	CD64	11/16/95	yes	71.34%	6.1636	12/08/95	12/11/95	12/14/95	12/12/95	12/14/95

SAMPLE INVENTORY AND DATA ANALYSIS INFORMATION
OFF-SHORE ECOLOGICAL RISK ASSESSMENT FOR THE LOWER EAST PASSAGE STUDY AREA
DERECKTOR SHIPYARD
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

ORGANIC CONTAMINANTS

	Sample					Preservation		Preparation/Extraction/Analysis						
				Organic Geochemistry Lab										
Item	Field I.D	Matrix	Sampling Date	Date Received	I D	Freezer Storage Date at (-20°C)	Any Sample Remain?	% Solid (Dry.Wet Wt. Ratio)	Sample Dry Weight	Solvent Extraction Date	Column Chromatog Date	OCP/PCB Analysis Date	PAH Analysis Date	Calculation Date
69	DSY-29,44-54	Sed.	10/25/95	11/16/95	CD65	11/16/95	yes	80.00%	10.9521	12/08/95	12/11/95	12/13/95	12/12/95	12/13/95
70	DSY-30,18-28	Sed.	10/25/95	11/16/95	CD58	11/16/95	yes	73.53%	11.3675	11/28/95	12/05/95	12/07/95	12/06/95	12/07/95
71	DSY-30;68-78	Sed.	10/25/95	11/16/95	CD59	11/16/95	yes	64.85%	9.9419	11/28/95	12/05/95	12/06/95	12/06/95	12/07/95
72	DSY-31;45-55	Sed.	10/25/95	11/16/95	CD62	11/16/95	yes	64.37%	10.0543	11/28/95	12/05/95	12/06/95	12/06/95	12/07/95
73	DSY-31;100-110	Sed.	10/25/95	11/16/95	CD66	11/16/95	yes	73.97%	11.1924	12/08/95	12/11/95	12/13/95	12/12/95	12/13/95
74	DSY-34;20-30	Sed.	10/25/95	11/16/95	CD72	11/16/95	yes	64.77%	9.3078	12/20/95	12/21/95	12/27/95	01/03/96	01/03/96
75	DSY-34;70-80	Sed.	10/25/95	11/16/95	CD67	11/16/95	yes	64.88%	9.8881	12/08/95	12/11/95	12/12/95	12/12/95	12/13/95
76	DSY-36;40-50	Sed.	10/27/95	11/16/95	CD71	11/16/95	yes	40.33%	6.1698	12/20/95	12/21/95	12/27/95	01/03/96	01/03/96
77	DSY-36,90-100	Sed.	10/27/95	11/16/95	CD68	11/16/95	yes	78.88%	12.2113	12/08/95	12/11/95	12/12/95	12/12/95	12/13/95
78	DSY-28-DM	Tiss./M n=23	11/01/95	11/20/95	CD83	11/21/95	yes	10.81%	1.6638	12/29/95	01/03/96	01/17/96	01/09/96	01/17/96
79	DSY-31-DM	Tiss./M n=16	11/01/95	11/20/95	CD85	11/21/95	yes	10.62%	1.6653	12/29/95	01/03/96	01/17/96	01/09/96	01/17/96
80	CHC-1-DM	Tiss./M n=34	11/01/95	11/20/95	CD76	11/21/95	yes	12.78%	1.9351	12/27/95	12/29/95	01/03/96	01/04/96	01/04/96
81	DSY-39-DM	Tiss./M n=30	11/01/95	11/20/95	CD79	11/21/95	yes	11.96%	1.7859	12/27/95	12/29/95	01/05/96	01/09/96	01/09/96
82	DSY-38-DM	Tiss./M n=28	11/01/95	11/20/95	CD78	11/21/95	yes	12.80%	1.9400	12/27/95	12/29/95	01/05/96	01/04/96	01/05/96
83	DSY-26-DM	Tiss./M n=23	11/01/95	11/20/95	CD82	11/21/95	yes	11.72%	1.7788	12/29/95	01/03/96	01/16/96	01/09/96	01/16/96
84	DSY-40-DM	Tiss./M n=37	11/01/95	11/20/95	CD80	11/21/95	y s	15.52%	2.4349	12/27/95	12/29/95	01/05/96	01/09/96	01/09/96
85	DSY-33-DM	Tiss./M n=35	11/01/95	11/20/95	CD86	11/21/95	yes	11.38%	1.7797	12/29/95	01/03/96	01/12/96	01/09/96	01/12/96

SAMPLE INVENTORY AND DATA ANALYSIS INFORMATION
OFF-SHORE ECOLOGICAL RISK ASSESSMENT FOR THE LOWER EAST PASSAGE STUDY AREA
DERECKTOR SHIPYARD
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

ORGANIC CONTAMINANTS

	Sample					Preservation		Preparation/Extraction/Analysis						
				Organic Geochemistry Lab										
Item	Field ID	Matrix	Sampling Date	Date Received	ID	Freezer Storage Date at (-20°C)	Any Sample Remain?	% Solid (Dry Wet Wt. Ratio)	Sample Dry Weight	Solvent Extraction Date	Column Chromatog Date	OCP/PCB Analysis Date	PAH Analysis Date	Calculation Date
86	DSY-29-DM	Tiss./M n=36	11/01/95	11/20/95	CD84	11/21/95	yes	14.30%	2.1456	12/29/95	01/03/96	01/17/96	01/09/96	01/25/96
87	JPC-1-DM	Tiss./M n=34	11/01/95	11/20/95	CD77	11/21/95	yes	13.71%	2.0951	12/27/95	12/29/95	01/04/96	01/04/96	01/17/96
88	DSY-31-PT	Tiss./C n=14	11/15/95	11/29/95	CD116	11/29/95	yes	9.09%	1.3624	01/29/96	02/01/96	02/08/96	02/12/96	02/12/96
89	DSY-32-PT	Tiss./C n=8	11/15/95	11/29/95	CD117	11/29/95	yes	10.78%	1.6297	01/29/96	02/01/96	02/07/96	02/12/96	02/12/96
90	DSY-33-PT	Tiss./C n=14	11/15/95	11/29/95	CD118	11/29/95	yes	8.89%	1.3572	01/29/96	02/01/96	02/06/96	02/12/96	02/12/96
91	DSY-34-PT	Tiss./C n=15	11/15/95	11/29/95	CD119	11/29/95	yes	9.53%	1.4353	01/29/96	02/01/96	02/07/96	02/12/96	02/12/96
92	DSY-35-PT	Tiss./C n=5	11/15/95	11/29/95	CD120	11/29/95	yes	11.59%	1.6880	01/29/96	02/01/96	02/06/96	02/12/96	02/12/96
93	DSY-36-PT	Tiss./C n=24	11/15/95	11/29/95	CD121	11/29/95	yes	7.53%	1.1322	01/29/96	02/01/96	02/07/96	02/12/96	02/12/96
94	DSY-37-PT	Tiss./C n=2	11/15/95	11/29/95	CD122	11/29/95	no	2.83%	0.4076	01/29/96	02/05/96	02/09/96	02/14/96	02/14/96
95	DSY-38-PT	Tiss./C n=13	11/15/95	11/29/95	CD123	11/29/95	yes	10.29%	1.5742	01/29/96	02/05/96	02/09/96	02/14/96	02/14/96
96	DSY-41-PT	Tiss./C n=3	11/15/95	11/29/95	CD124	11/29/95	no	12.27%	1.5905	01/29/96	02/05/96	02/08/96	02/14/96	02/14/96
97	JPC-1-PT	Tiss./C n=12	11/15/95	11/29/95	CD125	11/29/95	yes	8.69%	1.3905	01/29/96	02/05/96	02/09/96	02/14/96	02/14/96
98	JPC-1-QH	Tiss./C n=8	11/15/95	11/29/95	CD136	11/29/95	yes	18.18%	2.7429	02/06/96	02/15/96	02/21/96	02/20/96	02/22/96
99	JPC-1-LOB	Tiss./L	11/15/95	11/29/95	CD108	11/29/95	yes	12.31%	1.9544	01/18/96	01/19/96	01/24/96	01/25/96	02/01/96
100	CHC-1-LOB	Tiss./L	11/15/95	11/29/95	CD102	11/29/95	yes	12.94%	1.9717	01/11/96	01/15/96	01/24/96	01/24/96	02/01/96
101	CHC-1-CN	Tiss./F n=18	11/27/95	11/29/95	CD128	11/29/95	yes	14.57%	2.2225	02/06/96	02/13/96	02/16/96	02/19/96	02/19/96
102	JPC-1-MF	Tiss./F n=27	11/27/95	11/29/95	CD129	11/29/95	yes	17.44%	2.7786	02/07/96	02/13/96	02/16/96	02/20/96	02/20/96

SAMPLE INVENTORY AND DATA ANALYSIS INFORMATION
OFF-SHORE ECOLOGICAL RISK ASSESSMENT FOR THE LOWER EAST PASSAGE STUDY AREA
DERECKTOR SHIPYARD
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

ORGANIC CONTAMINANTS

	Sample					Preservation		Preparation/Extraction/Analysis						
				Organic Geochemistry Lab										
Item	Field ID	Matrix	Sampling Date	Date Received	ID	Freezer Storage Date at (-20°C)	Any Sample Remain?	% Solid (Dry:Wet Wt Ratio)	Sample Dry Weight	Solvent Extraction Date	Column Chromatog Date	OCP/PCB Analysis Date	PAH Analysis Date	Calculation Date
103	DSY-26-CN	Tiss./F n=1	11/27/95	11/29/95	CD130	11/29/95	yes	15.40%	2.3435	02/06/96	02/13/96	02/18/96	02/20/96	02/21/96
104	DSY-28-CN	Tiss./F n=15	11/27/95	11/29/95	CD131	11/29/95	yes	16.78%	2.5109	02/06/96	02/13/96	02/20/96	02/20/96	02/22/96
105	DSY-29-CN	Tiss./F n=4	11/27/95	11/29/95	CD132	11/29/95	yes	15.58%	1.9384	02/06/96	02/13/96	02/19/96	02/20/96	02/21/96
106	DSY-36-CN	Tiss./F n=12	11/27/95	11/29/95	CD133	11/29/95	yes	15.18%	2.3070	02/06/96	02/13/96	02/19/96	02/20/96	02/21/96
107	DSY-BT	Tiss./F n=1	11/27/95	11/29/95	CD70	11/29/95	yes	28.79%	4.3986	12/20/95	12/21/95	01/02/96	01/03/96	01/11/96
108	V-4 105-115cm	Sed.	11/21/95	01/10/96	CD100	01/10/96	yes	84.58%	12.6863	01/11/96	01/15/96	01/19/96	01/24/96	01/31/96
109	V-4 130-140cm	Sed.	11/21/95	01/10/96	CD101	01/10/96	yes	86.50%	13.3732	01/11/96	01/15/96	01/19/96	01/24/96	01/31/96
110	V-9 10-20cm	Sed.	11/21/95	01/10/96	CD99	01/10/96	yes	51.19%	5.5492	01/11/96	01/15/96	01/23/96	01/23/96	01/31/96
111	V-9 39-45cm	Sed.	11/21/95	01/10/96	CD98	01/10/96	yes	84.63%	12.9393	01/11/96	01/15/96	01/23/96	01/23/96	01/31/96

DSY = Derecktor Shipyard; IBM = Indigenous Blue Mussel; HC = hardshell clam; LOB-MUS = lobster muscle; clean = centrifuged elutriate;

JPC = Jamestown Potter's Cove; FD = field duplicate;TO-DM = time zero- deployed Blue Mussel; CHC = Castle Hill Cove;PT = clam Pitar;

QH = Quahogs; CN = Cunner fish; MF = Mummichogs fish; BT = bait; V4,V9 = vibracore samples .

Sed. = surface sediment;FB = field blank;Tiss. = tissue;M = mussel;n = number of organisms;C = clam;L = lobster;Elut. = elutriate;F = fish.

CD = Coddington/Derecktor Shipyard; SB = solvent blank; EB = elutriate blank.

L = lit r volume.

NOTE: Samples received in the Organic Geochemistry Lab are stor d directly at -20°C or held at 0°C for l ss than 24 hours befor homogenizing and then b ing stored at -20°C.

Chain of Custody Record ID	OGL Lab ID	Chain of Custody Record ID	OGL Lab ID	Chain of Custody Record ID	OGL Lab ID	Chain of Custody Record ID	OGL Lab ID
SEDIMENT SURFACE		**TISSUES**		**TISSUES**		**ELUTRIATES**	
DSY-25	CD9	Indigenous Blue Mussel		Pitar		DSY-Blank1 clean	EB40
DSY-26	CD28	CHC-1-IBM	CD52	DSY-31-PT	CD116	DSY-Blank2 clean	EB51(B+)
DSY-27	CD69	DSY-24-IBM	CD35	DSY-32-PT	CD117	DSY-25 clean	CD43
DSY-27	CD73du	DSY-25-IBM	CD26	DSY-33-PT	CD118	DSY-27 clean	CD96
DSY-28	CD29	DSY-25-IBM	CD87du	DSY-34-PT	CD119	DSY-29 clean	CD97
DSY-29	CD30	DSY-26-IBM	CD34	DSY-35-PT	CD120	DSY-31 clean	CD44
DSY-29FD	CD31	DSY-26-IBM	CD140du	DSY-36-PT	CD121	DSY-32 clean	CD41
DSY-30	CD19	DSY-27-IBM	CD36	DSY-36-PT	CD126du	DSY-33 clean	CD42
DSY-31	CD20	DSY-28-IBM	CD53	DSY-37-PT	CD122	DSY-36 clean	CD46
DSY-32	CD10	DSY-35-IBM	CD54	DSY-38-PT	CD123	DSY-37 clean	CD45
DSY-32	CD21du	DSY-36-IBM	CD55	DSY-41-PT	CD124	DSY-38 clean	CD48
DSY-33	CD16	DSY-40-IBM	CD56	JPC-1-PT	CD125	DSY-39 clean	CD49
DSY-34	CD17	JPC-1-IBM	CD37	Hard Shell Clams		DSY-40 clean	CD47
DSY-35	CD18	Deployed Blue Mussel		DSY-35-HC	CD134	JPC-1 clean	CD50
DSY-35	CD74du	TO-DM	CD38	DSY-41-HC	CD135		
DSY-35	CD75(B+)	CHC-1-DM	CD76	Quahogs			
DSY-36	CD12	DSY-26-DM	CD82	JPC-1-QH	CD136		
DSY-37	CD13	DSY-28-DM	CD83	Cunner			
DSY-38	CD14	DSY-29-DM	CD84	CHC-1-CN	CD128		
DSY-39	CD23	DSY-31-DM	CD85	DSY-26-CN	CD130/CD141		
DSY-40	CD24	DSY-33-DM	CD86	DSY-28-CN	CD131		
DSY-41	CD25	DSY-38-DM	CD78	DSY-28-CN	CD137du		
JPC	CD32	DSY-39-DM	CD79	DSY-29-CN	CD132		
SEDIMENT CORE		DSY-40-DM	CD80	DSY-36-CN	CD133		
Near DSY-27		JPC-1-DM	CD77	Mummichogs			
V9 10-20cm	CD99	Bait		JPC-1-MF	CD129		
V9 39-45cm	CD98	DSY-BT	CD70				
DSY-28; 24-34	CD60	Lobster Muscle					
DSY-28; 24-34	CD143du	CHC-1-LOB	CD102				
DSY-28; 76-86	CD61/CD139	DSY-25-LOB	CD110				
Near DSY-28		DSY-27-LOB	CD104				
V4 105-115cm	CD100	DSY-28-LOB	CD105				
V4 130-140cm	CD101	DSY-29-LOB	CD106				
DSY-29; 16-26	CD64	DSY-33-LOB	CD107				
DSY-29; 44-54	CD65	DSY-35-LOB	CD111				
DSY-30; 18-28	CD58	DSY-35-LOB	CD115(B+)				
DSY-30; 68-78	CD59	DSY-36-LOB	CD112				
DSY-31; 45-55	CD62	DSY-38-LOB	CD113				
DSY-31; 100-110	CD66	DSY-39-LOB	CD114				
DSY-34; 20-30	CD72	JPC-1-LOB	CD108				
DSY-34; 70-80	CD67						
DSY-36; 40-50	CD71						
DSY-36; 90-100	CD68						
CHC = Castle Hill Cove							
DSY = Derecktor Shipyard							
JPC = Jamestown Potter Cove							
V4,V9 = Vibracore obtained samples vs. piston core							
du = duplicate; FD = field duplicate.							
(B+) = sample + spike.							

METHOD DETECTION LIMIT

Method Detection Limit : PCB Congeners/ OCPs

	8	HCB	18	29	50	28	52	104	ALDRIN	44	66	OP'DDE	101	87	PP'DDE	77/154	118	188	153	105	138	126	187	128	200	180	MIREX	170	195	206	209
	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Sediment	0.11	0.16	0.03	0.10	0.07	0.01	0.23	0.10	0.2	0.06	0.05	0.2	0.23	0.19	0.05	0.35	0.27	0.05	0.15	0.07	0.28	0.04	0.02	0.07	0.02	0.09	0.2	0.07	0.04	0.03	0.02
Tissue	4.70	0.30	6.50	1.59	2.81	3.05	3.79	4.74	0.3	0.76	7.71	0.3	2.70	2.75	1.90	6.09	5.09	1.75	8.10	8.18	4.19	5.00	2.81	1.01	0.20	0.73	0.32	0.69	0.80	1.02	1.44
	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
Elutriate	3.66	1.82	2.05	2.47	1.69	2.61	3.13	4.78	3.20	5.40	7.25	3.16	5.16	3.24	2.27	7.60	2.07	3.03	2.33	2.20	1.83	3.57	3.13	4.19	2.28	2.31	1.23	2.707	3.02	2.93	3.56

Method Detection Limit : PAHs

	NAP	2MN	1MN	BIP	DMN	ACL	ACT	TMN	FLU	PHE	ANT	1MP	FLA	PYR	BAA	CHR	B(B,J,K)F	BEP	BAP	PER	INP	DBA	BPE
	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Sediment	5.20	10.6	6.51	1.28	3.56	1.54	0.88	1.08	2.88	4.56	2.17	5.43	8.08	6.84	4.72	7.52	11.6	4.08	4.83	0.89	3.29	2.78	2.16
Tissue	3.36	18.8	11.3	11.4	10.5	5.77	5.30	7.51	3.90	18.9	16.0	18.1	17.1	8.70	6.72	10.5	12.4	7.80	7.23	7.00	3.08	0.98	3.11
	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
Elutriate	6.83	29.4	14.1	3.13	6.36	3.36	6.01	9.91	12.3	10.3	1.65	7.11	10.5	10.0	24.1	12.3	13.6	4.35	7.13	3.32	18.4	23.0	8.15

METHOD DETECTION LIMIT: BUTYLTINS

	Tetrabutyltin	Tributyltin	Dibutyltin	Monobutyltin
Sediment (ng Sn/g dry)	1.0	1.0	1.0	1.0
Tissue (ng Sn/g dry)	5.0	6.0	6.0	7.0
Water (ng Sn/L)	5.0	5.0	5.0	5.0

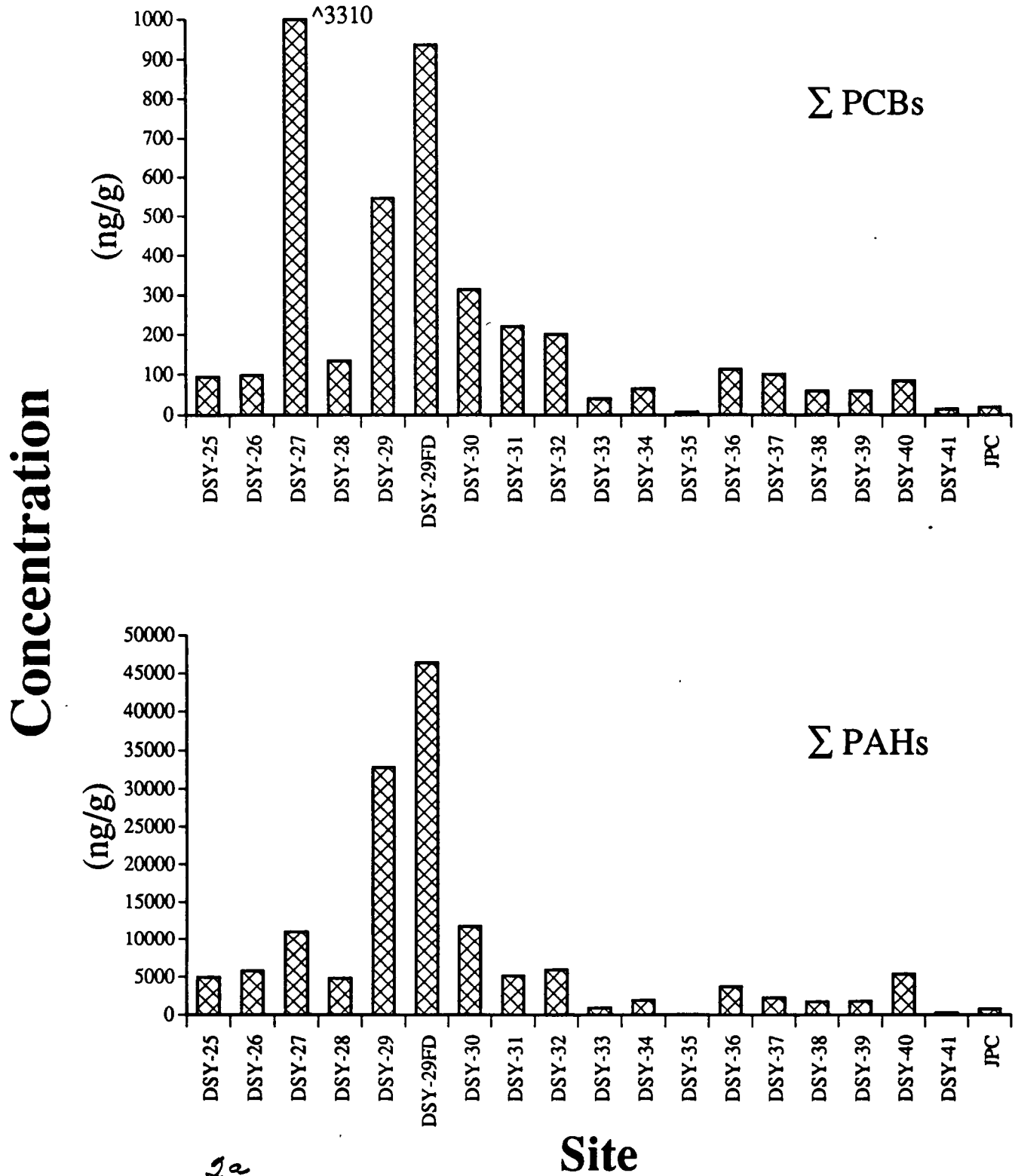


Figure 2a Concentration (ng/g dry wt. sediment) of organic contaminants in surface sediments(0-18cm) from Derecktor Shipyard.

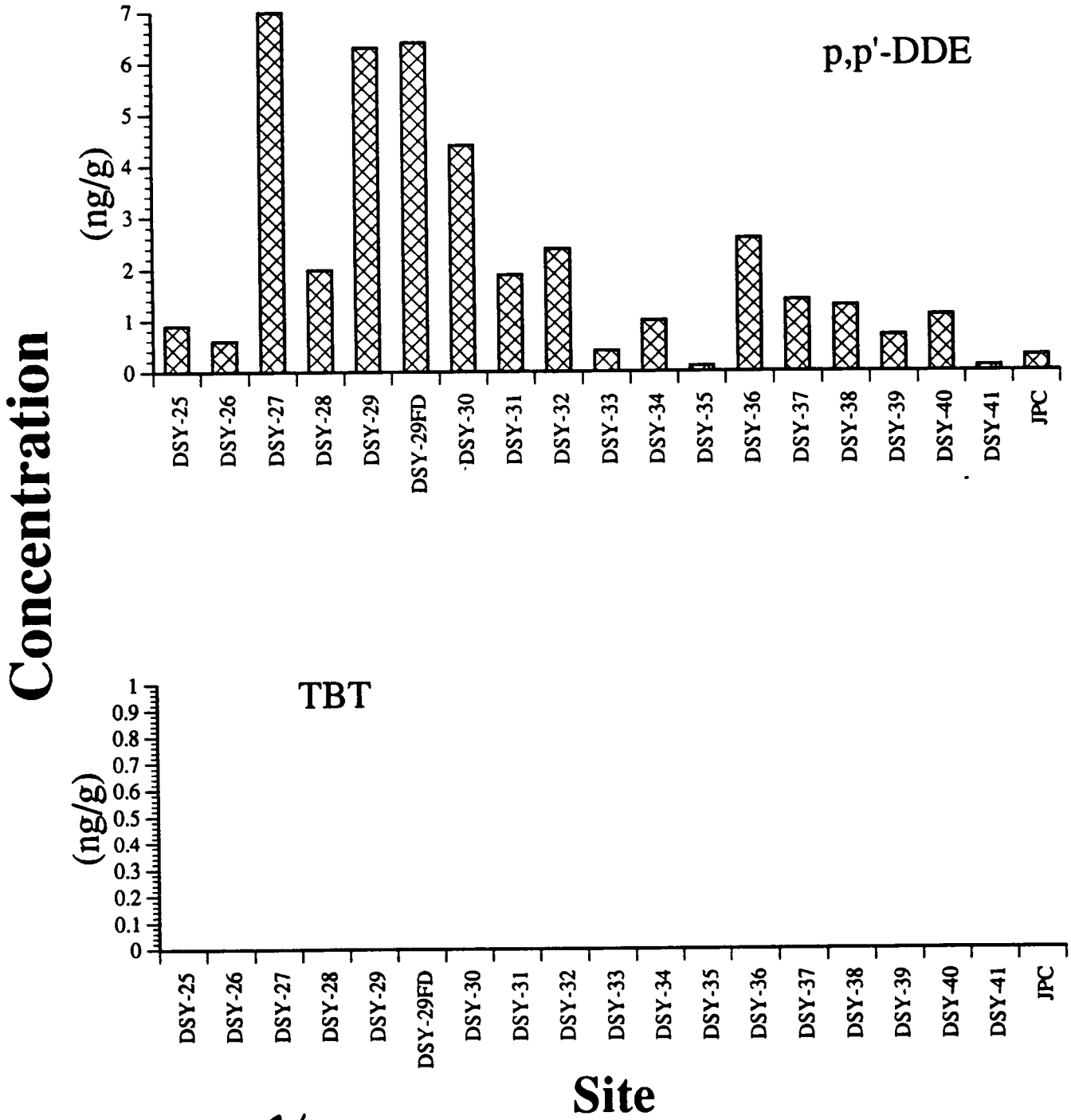


Figure 2b

Concentration (ng/g dry wt. sediment) of organic contaminants in surface sediments (0-18cm) from Derecktor Shipyard.

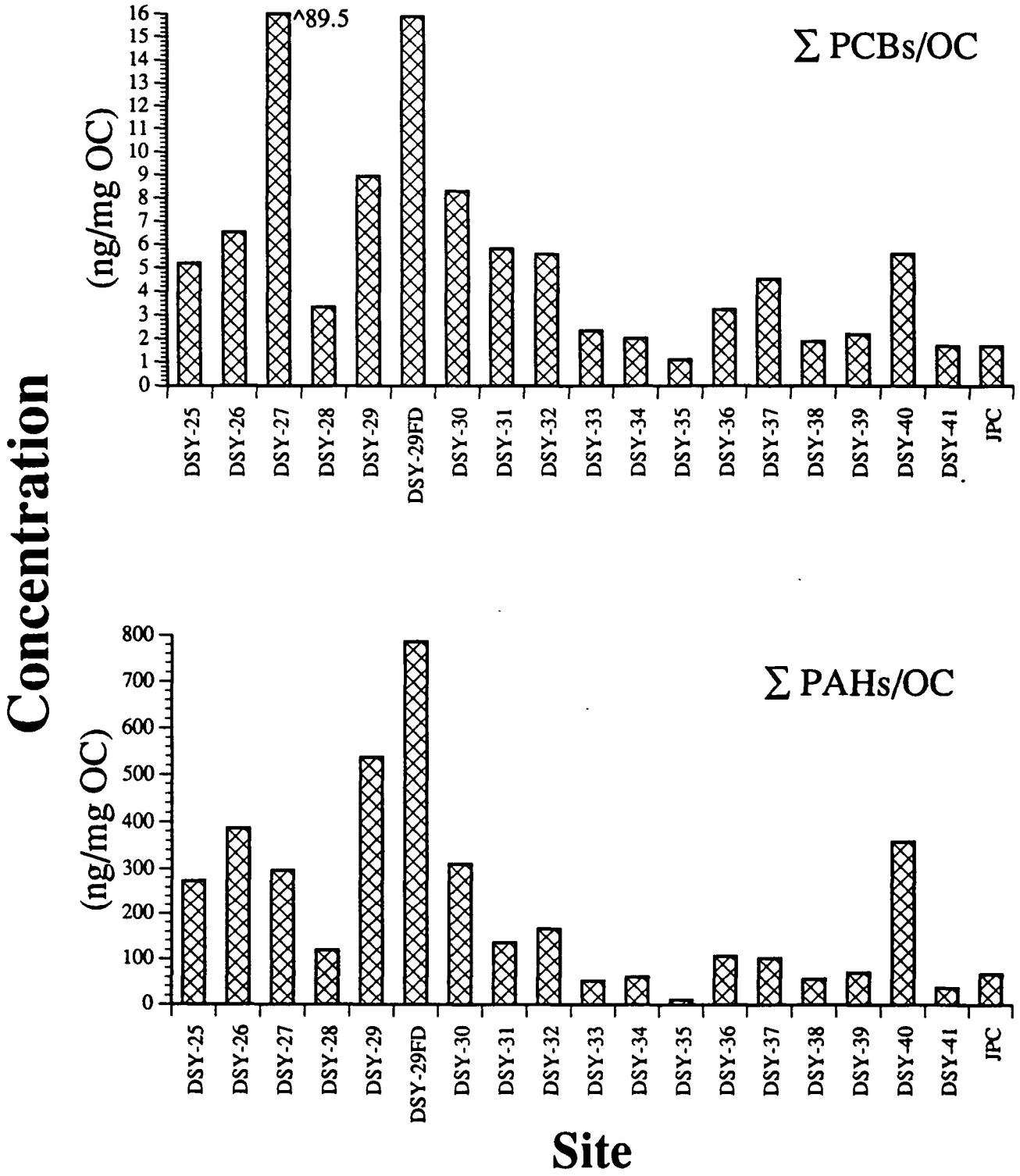


Figure 2c Concentration (ng/mg O.C.) of organic contaminants in surface sediments(0-18cm) from Derecktor Shipyard.

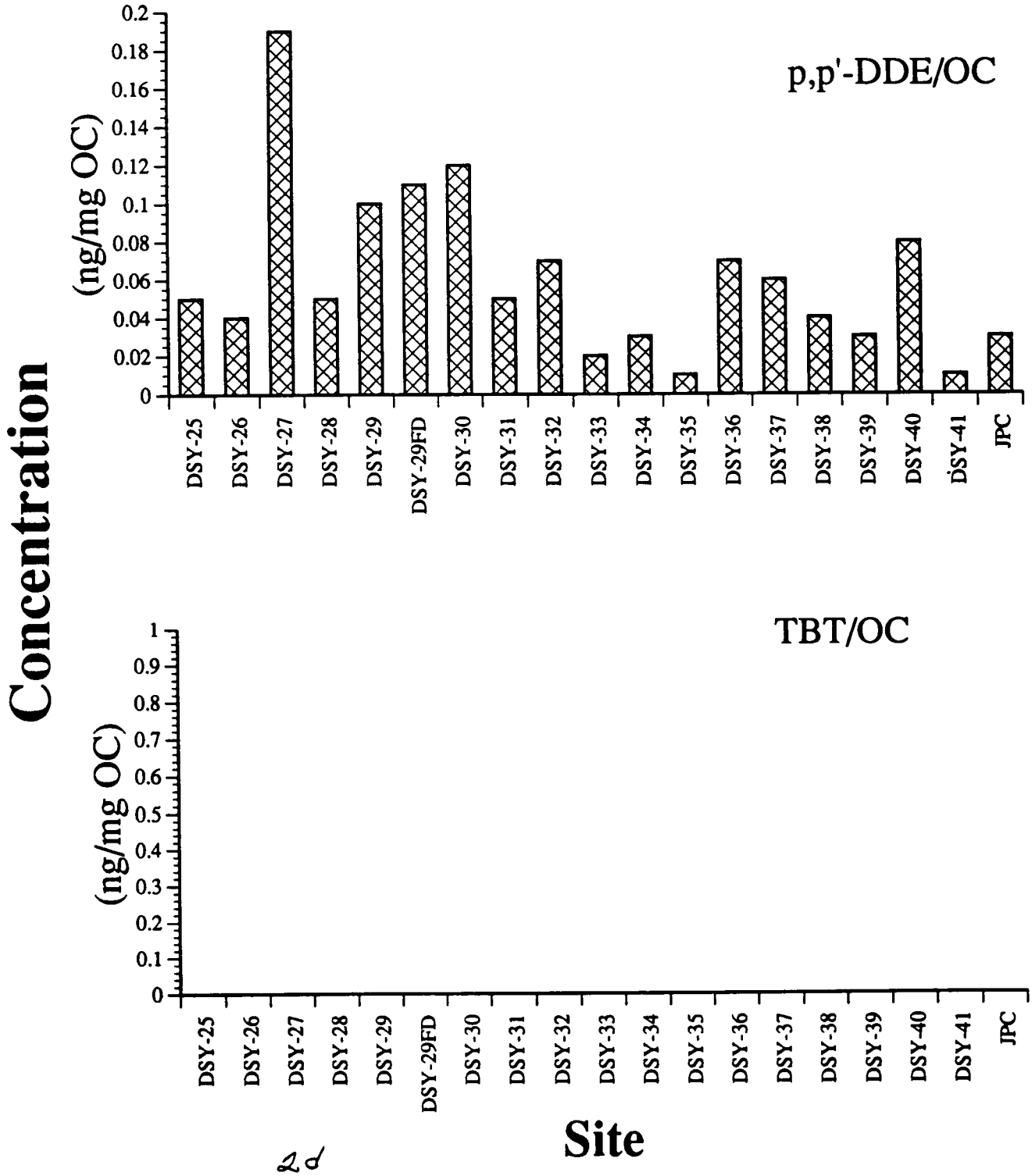


Figure 2d

Concentration (ng/mg O.C.) of organic contaminants in surface sediments (0-18cm) from Derecktor Shipyard.

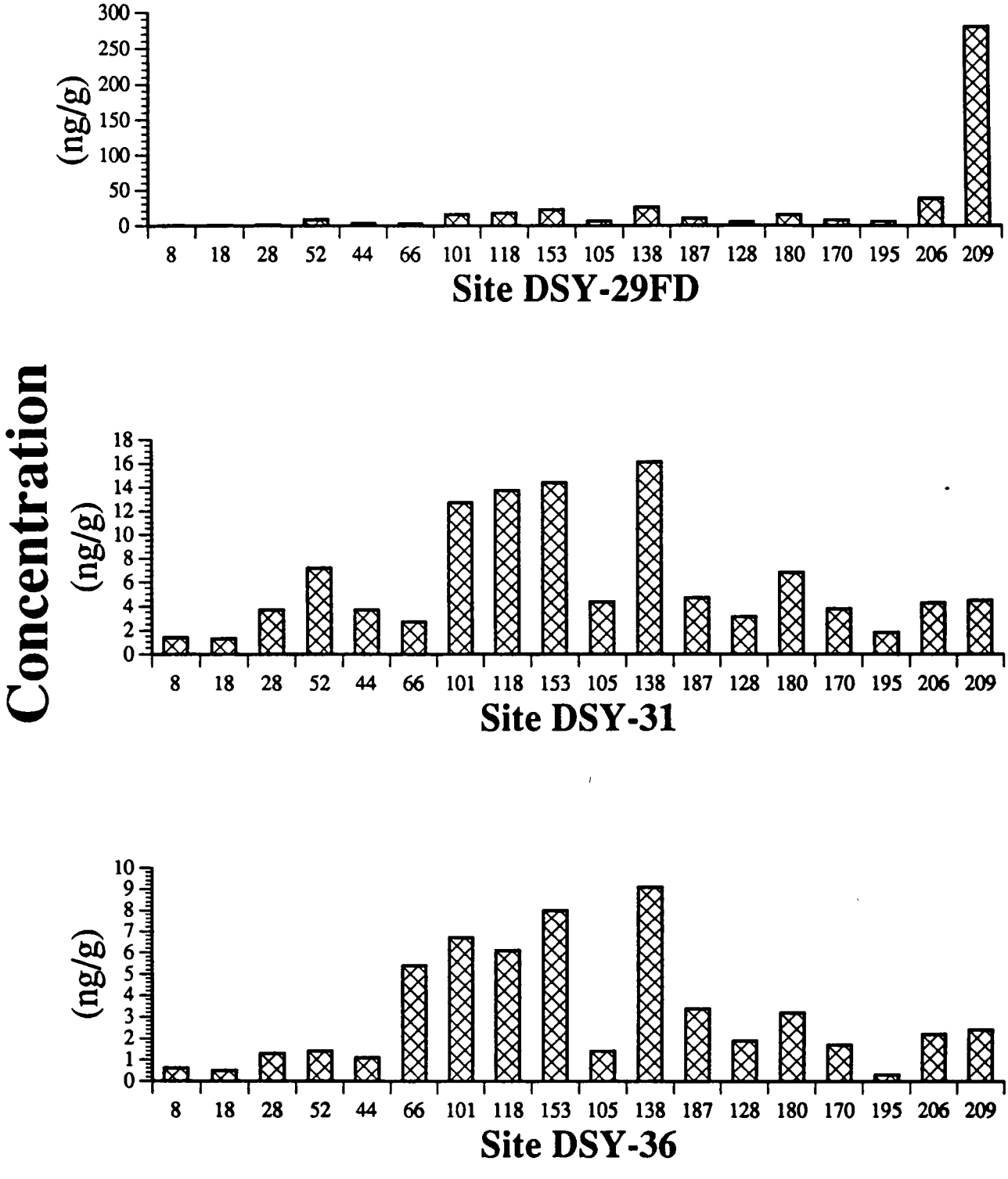


Figure 3. Concentration (ng/g dry wt. sediment) of PCB congeners in surface sediments(0-18cm) from Derecktor Shipyard.

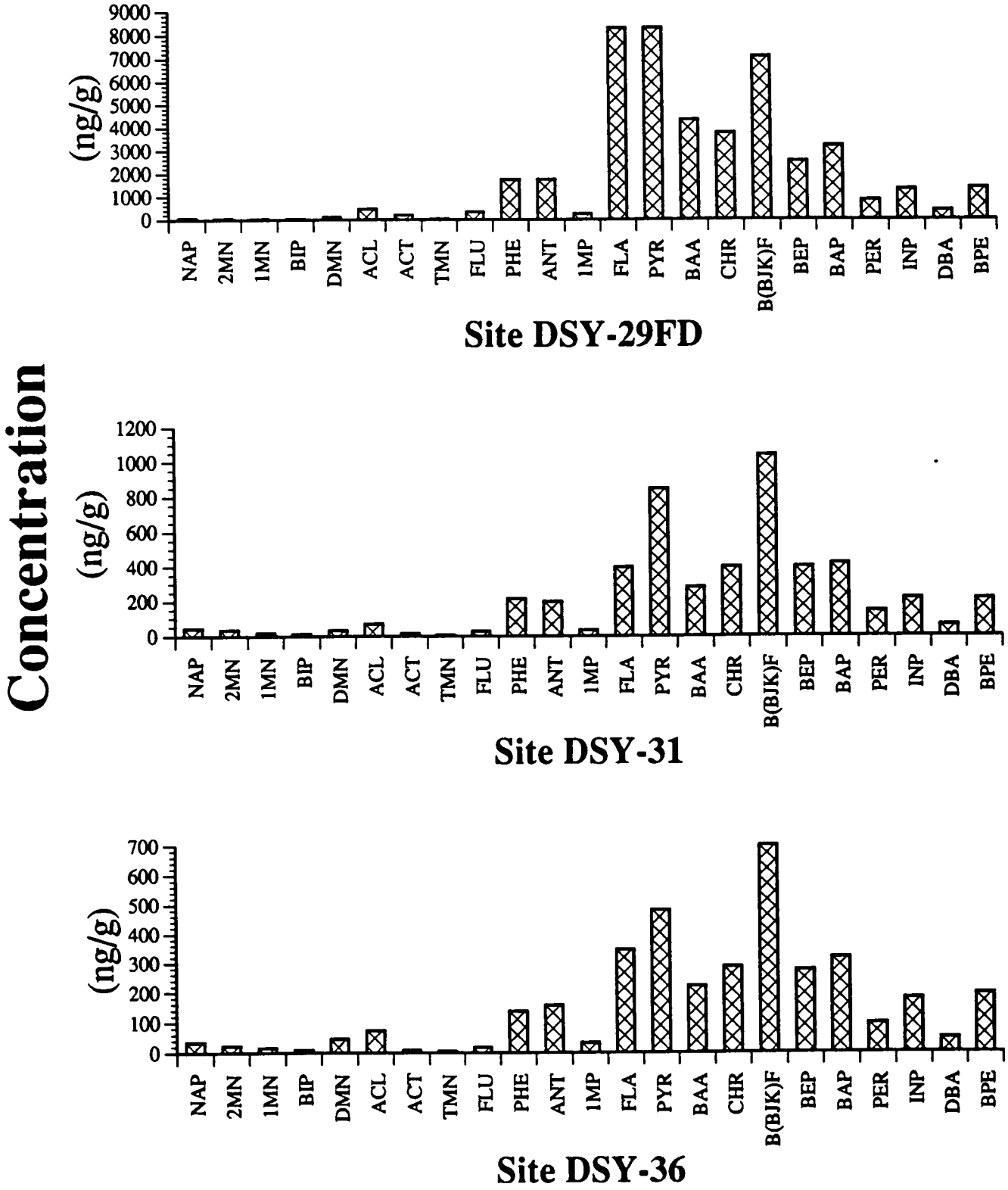


Figure 4. Concentration (ng/g dry wt. sediment) of PAH components in surface sediments(0-18cm) from Derecktor Shipyard.

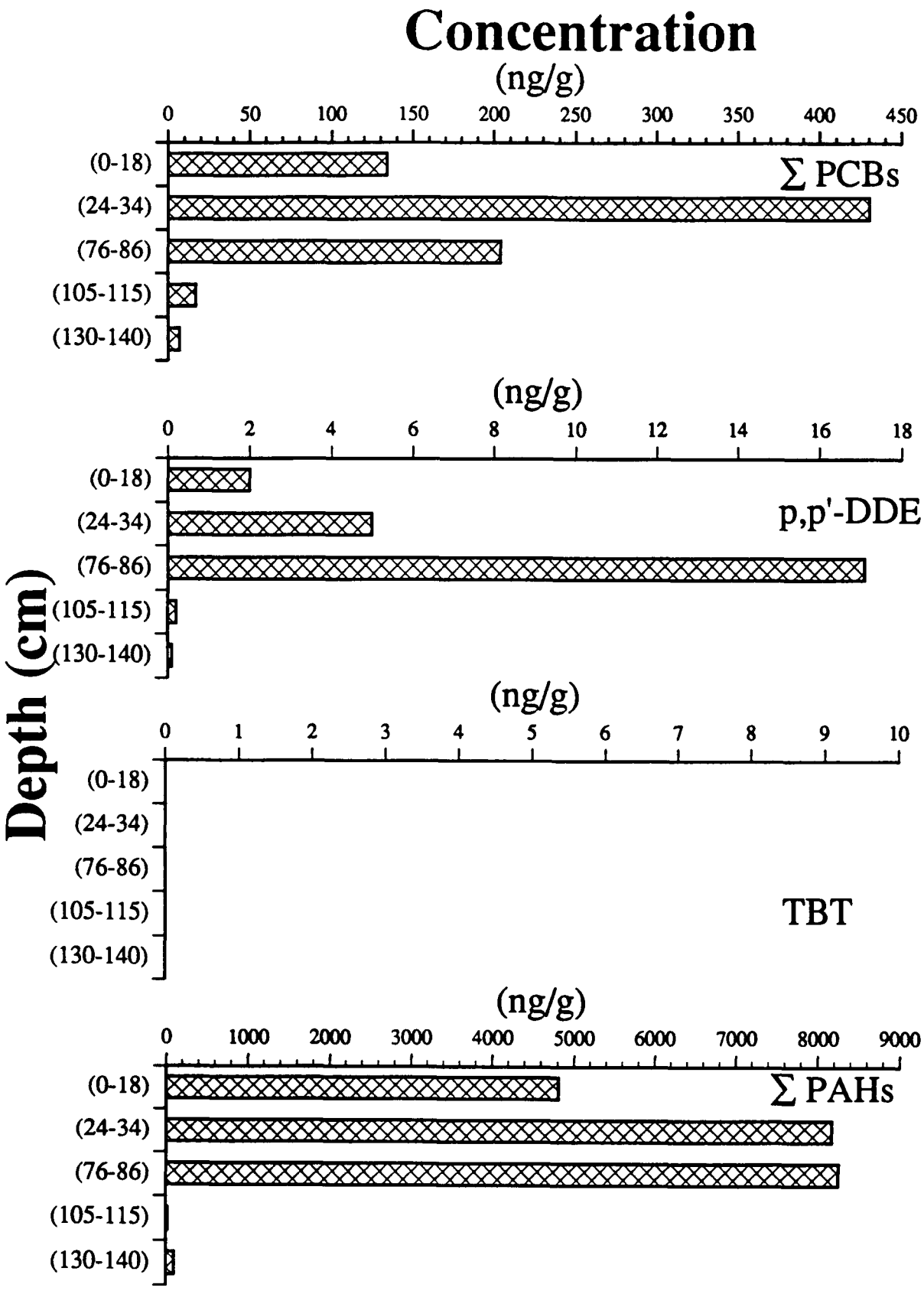


Figure 5. Concentration (ng/g dry wt. sediment) of organic contaminants in Site DSY-28 sediment core from Derecktor Shipyard.

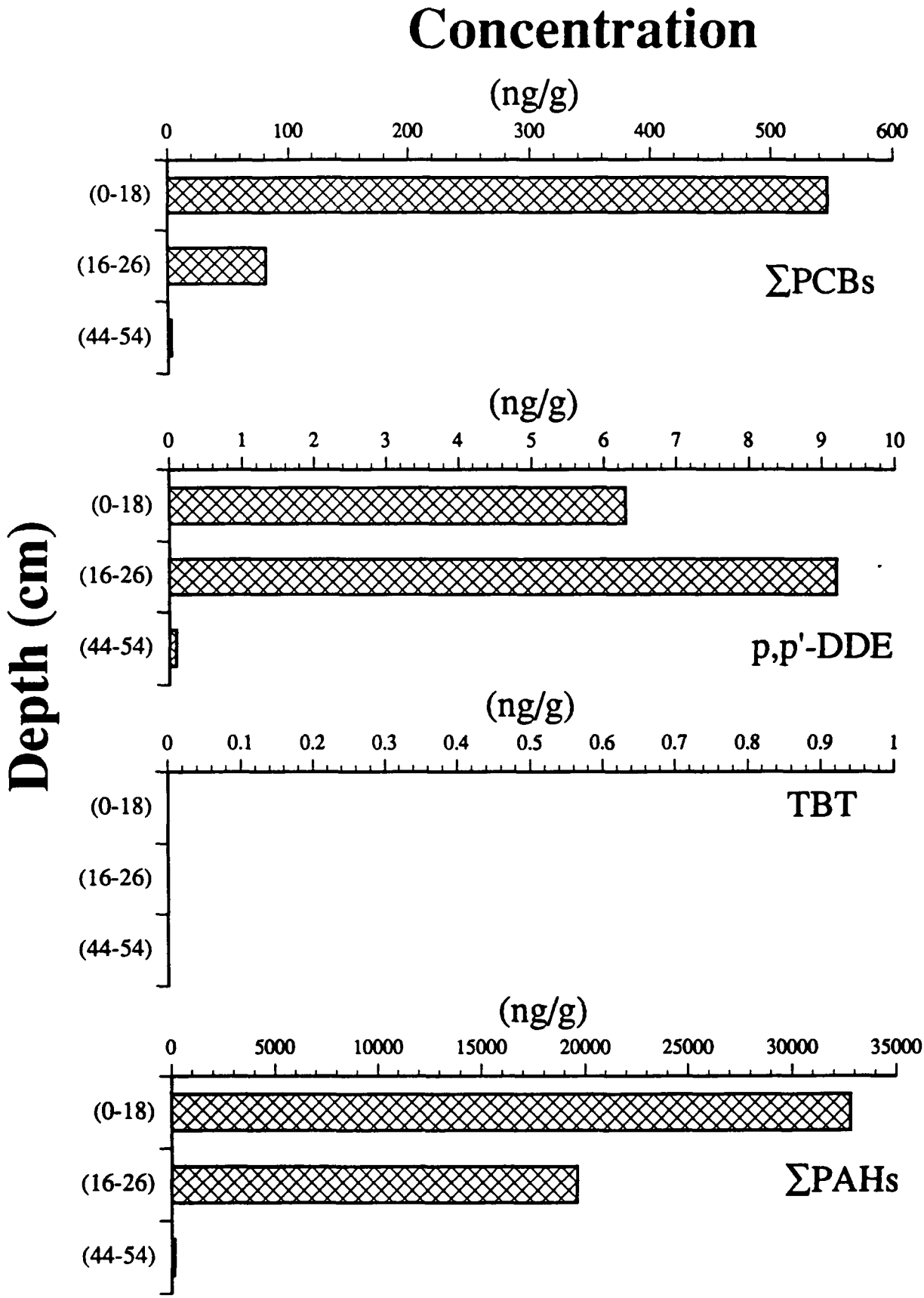


Figure 6. Concentration (ng/g dry wt. sediment) of organic contaminants in Site DSY-29 sediment core from Derecktor Shipyard.

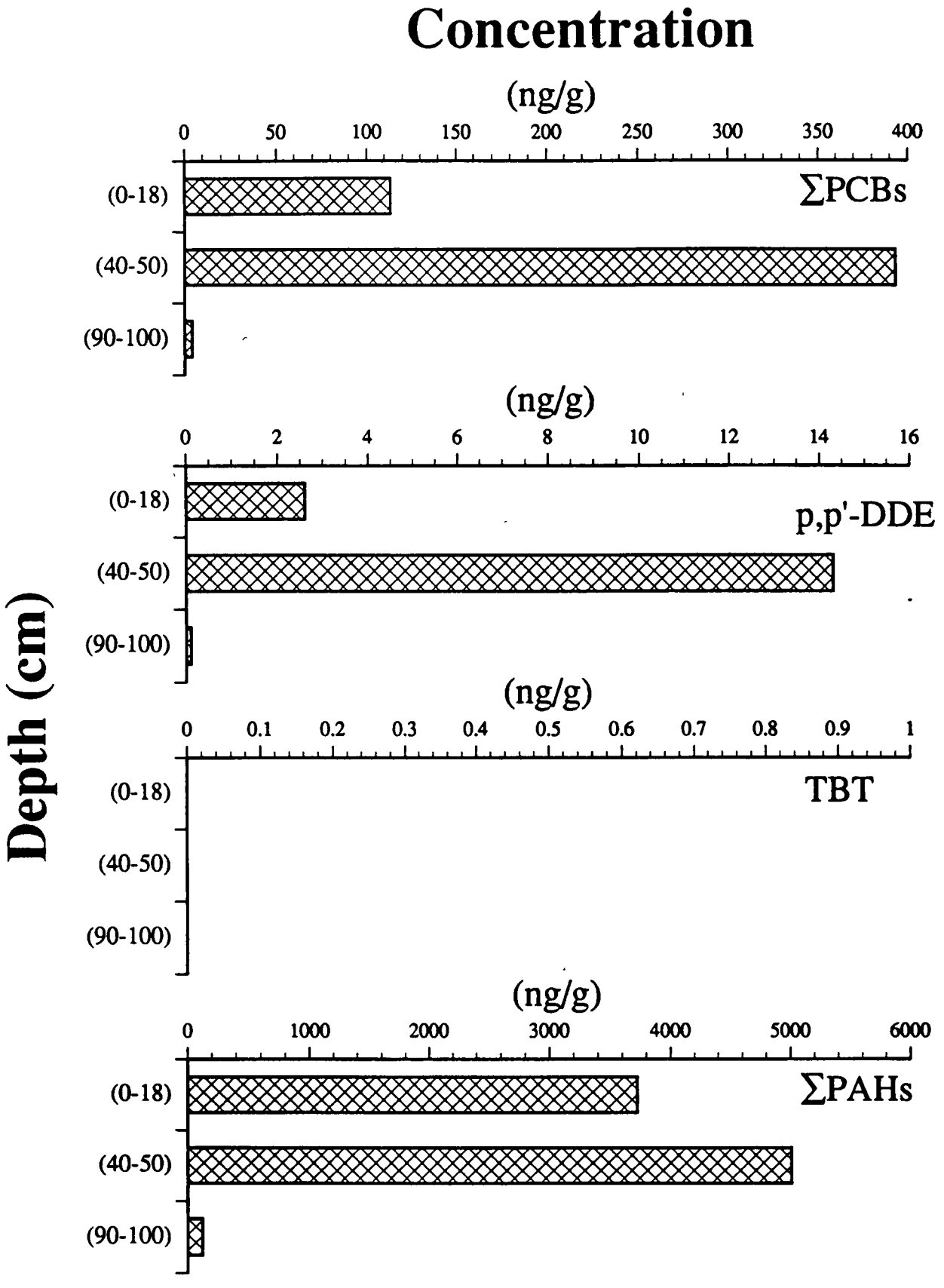
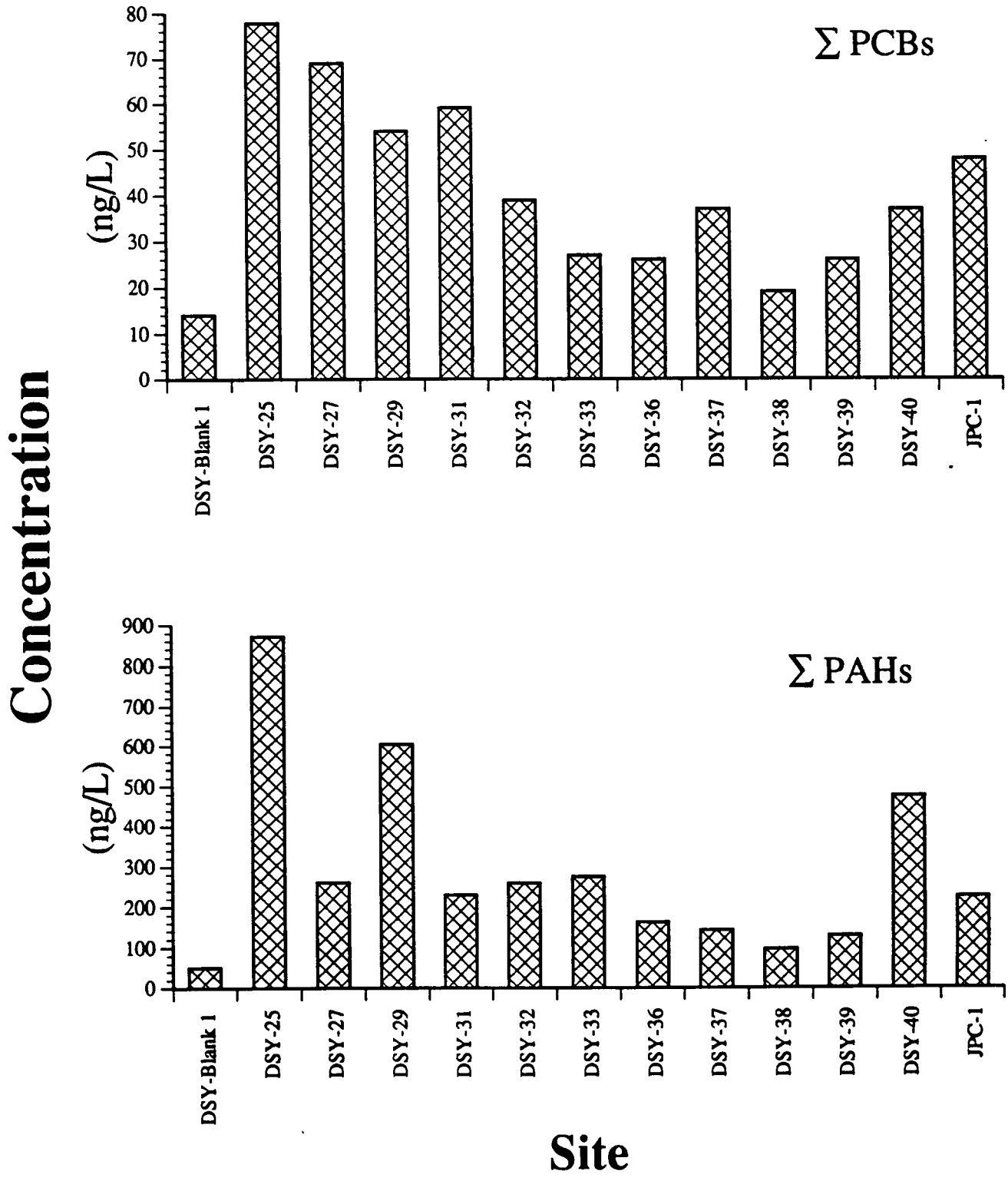


Figure 7. Concentration (ng/g dry wt. sediment) of organic contaminants in Site DSY-36 sediment core from Derecktor Shipyard.



Figur 8. Concentration (ng/L elutriate) of organic contaminants in elutriate samples from Derecktor Shipyard.

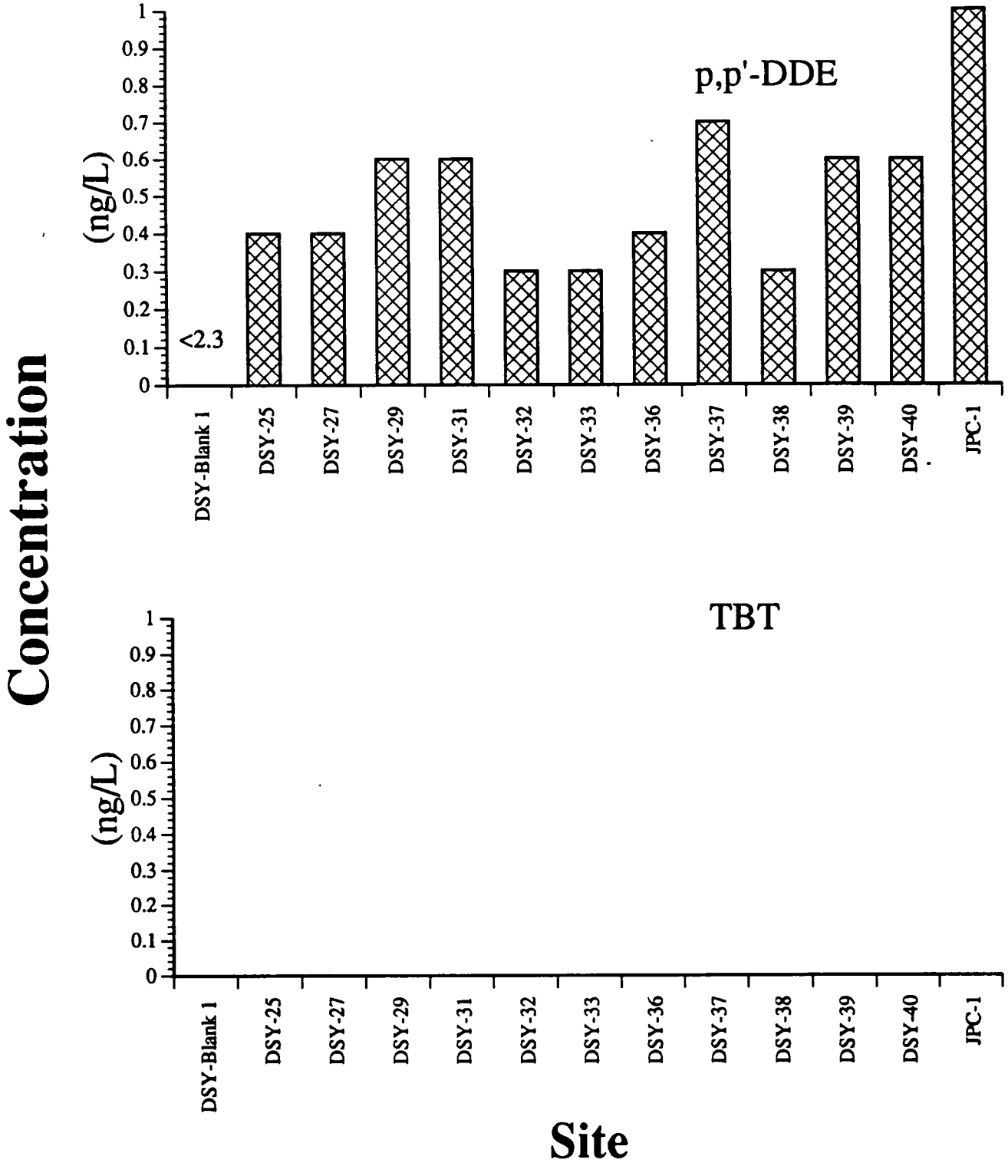


Figure 8(cont'd). Concentration (ng/L elutriate) of organic contaminants in elutriate samples from Derecktor Shipyard.

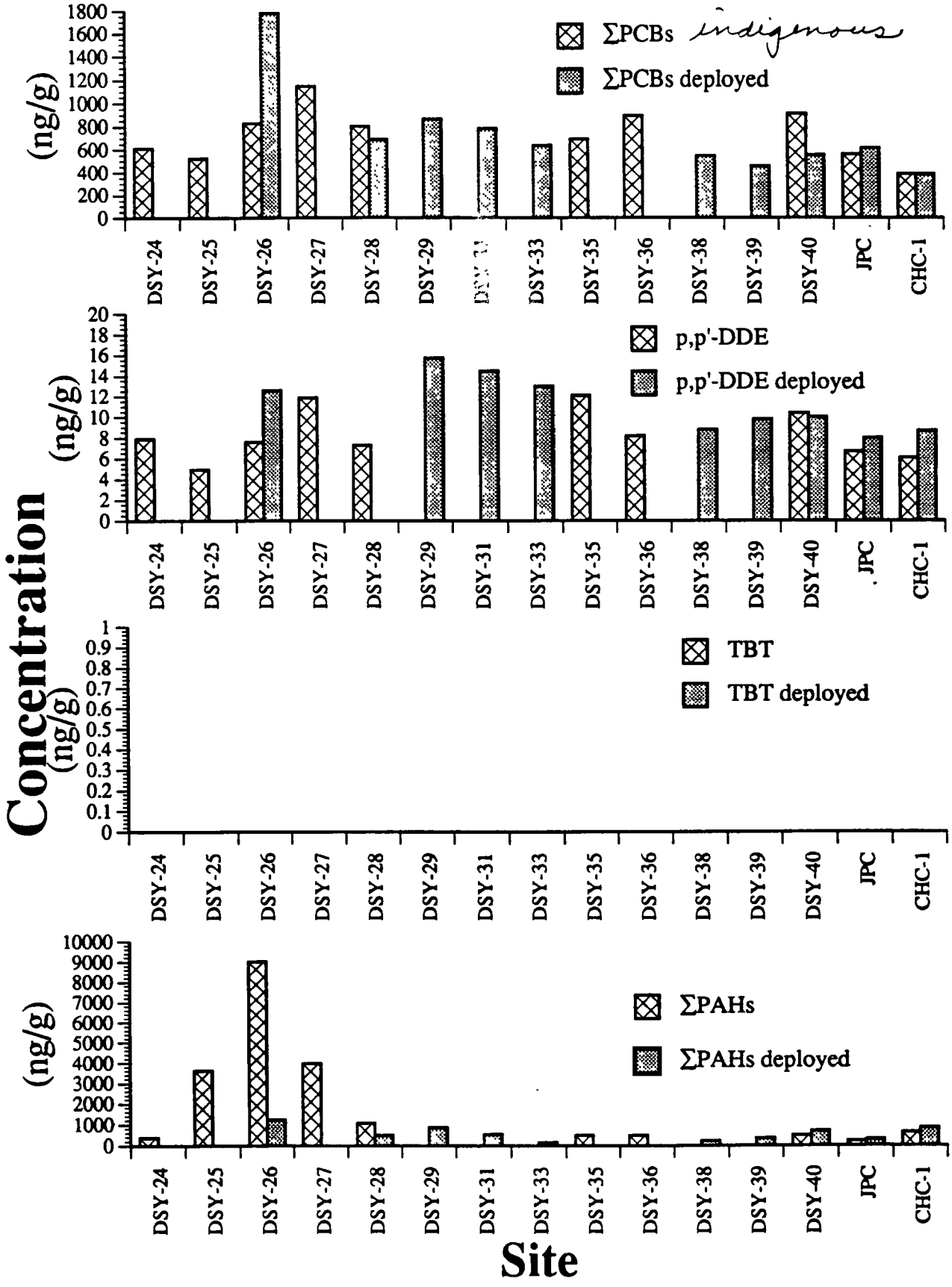


Figure 9. Concentration (ng/g dry wt. tissue) of organic contaminants in indigenous and deployed blue mussels from Derecktor Shipyard.

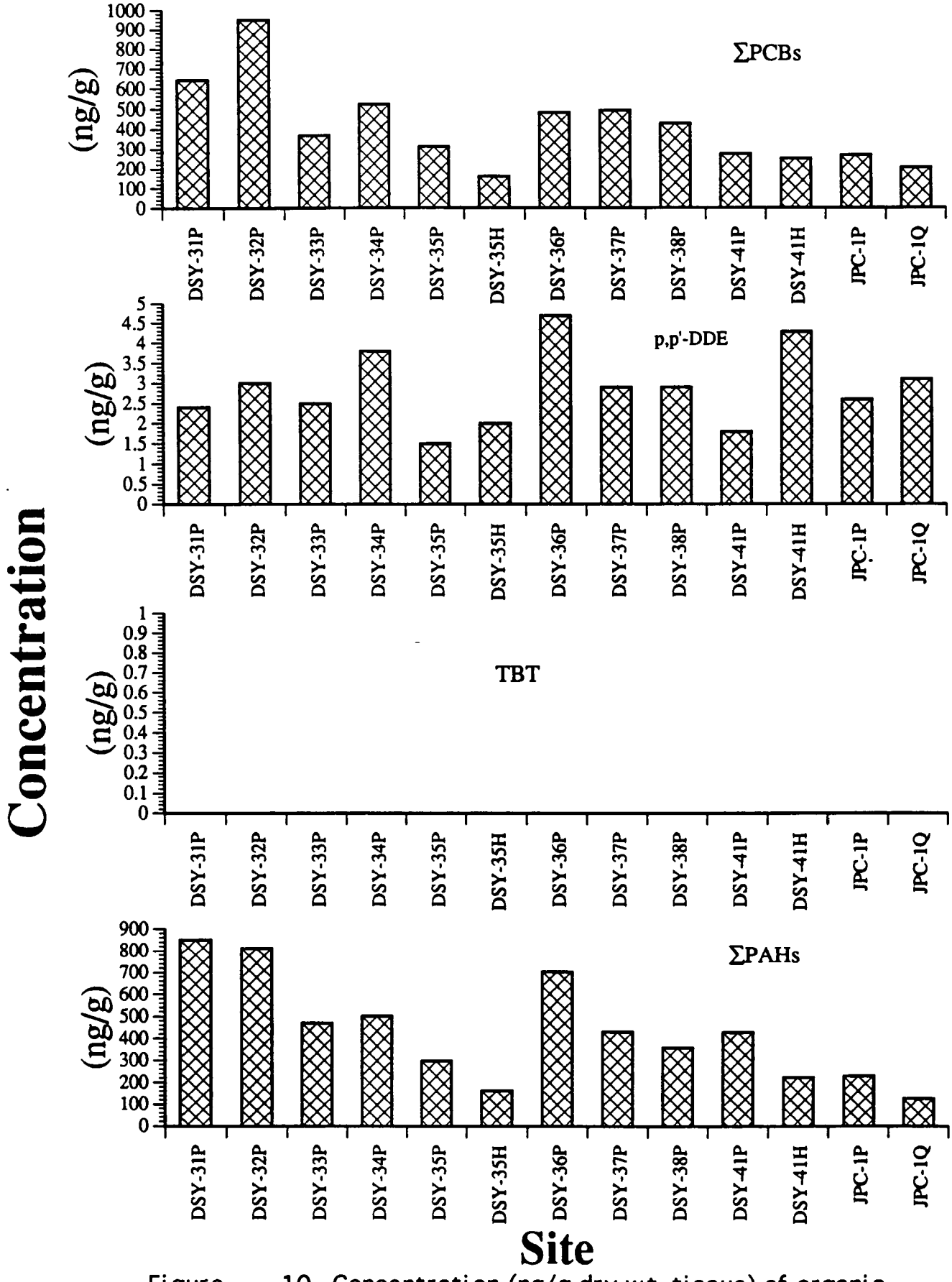


Figure 10. Concentration (ng/g dry wt. tissue) of organic contaminants in Pitar and clams from Derecktor Shipyard. (P=Pitar; H=hardshell clam; Q= Quahog.)

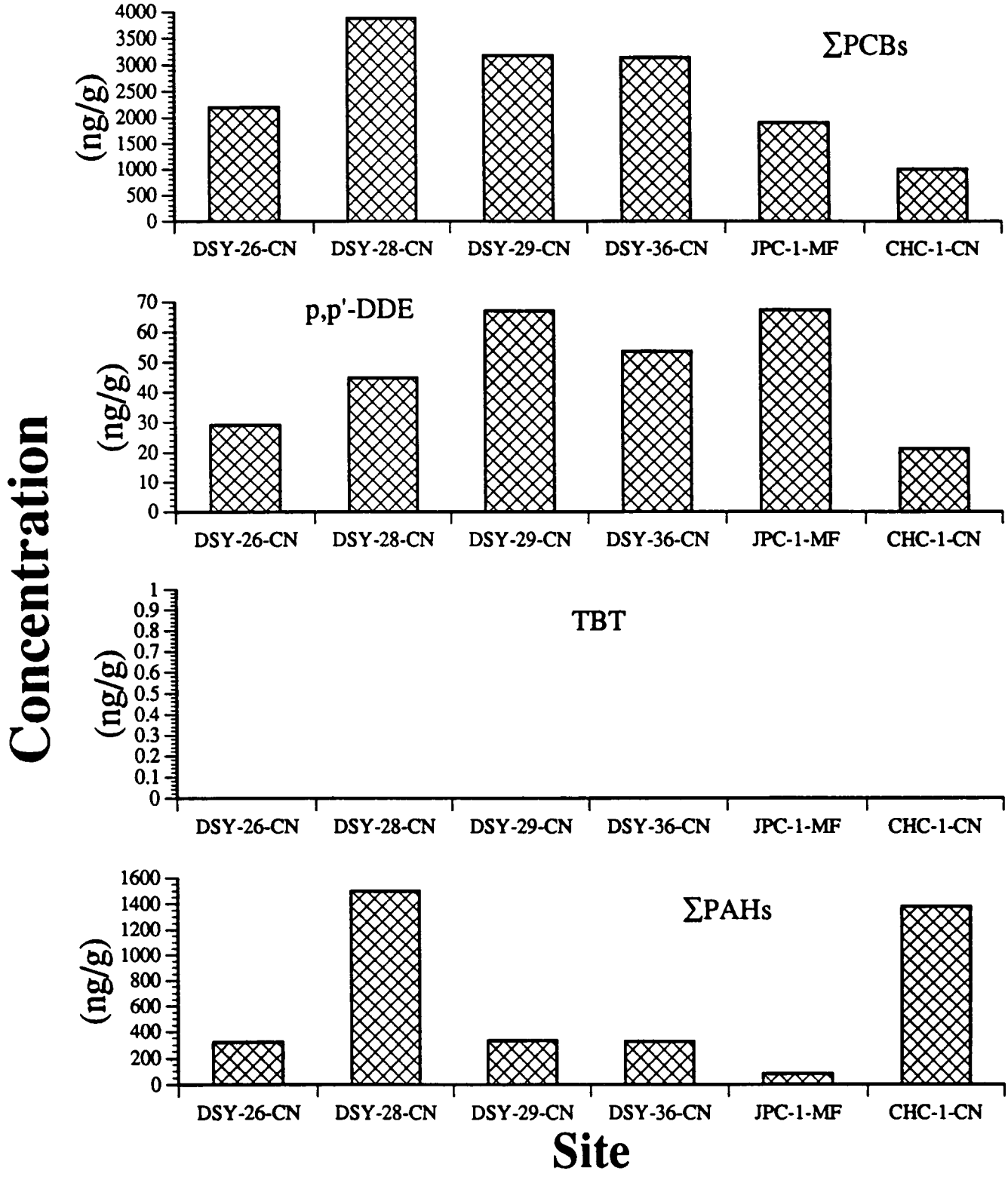


Figure 11. Concentration (ng/g dry wt. tissue) of organic contaminants in fish tissue from Derecktor Shipyard. (CN=Cunner;MF=Mummichogs.)

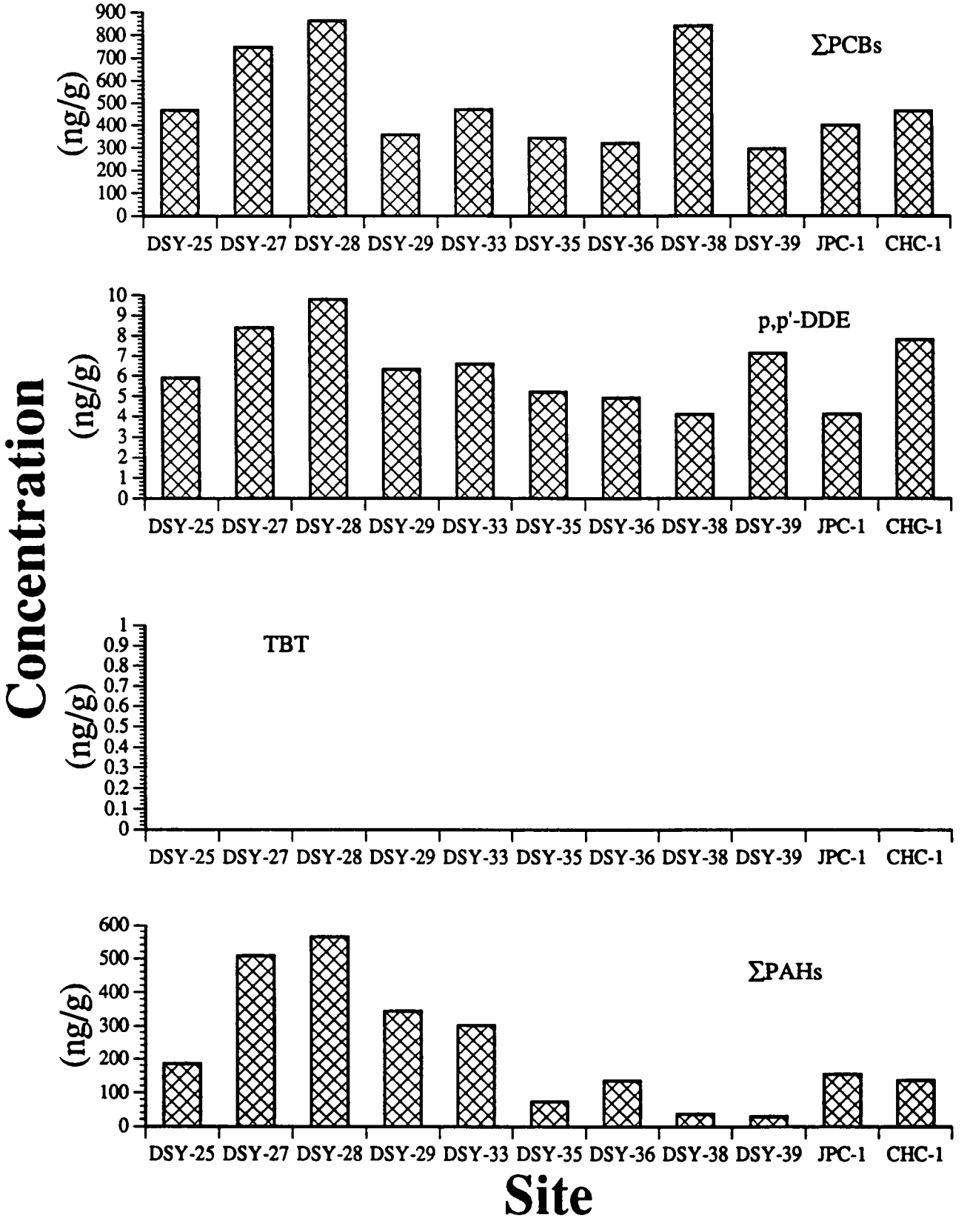
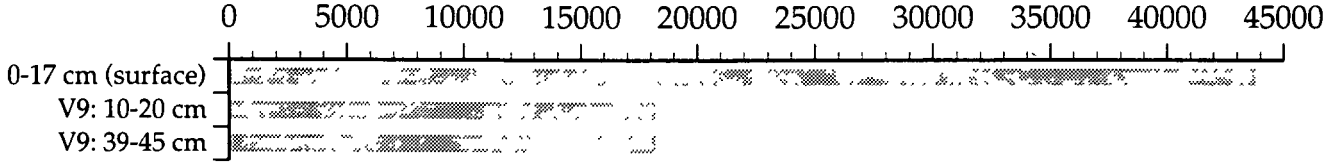


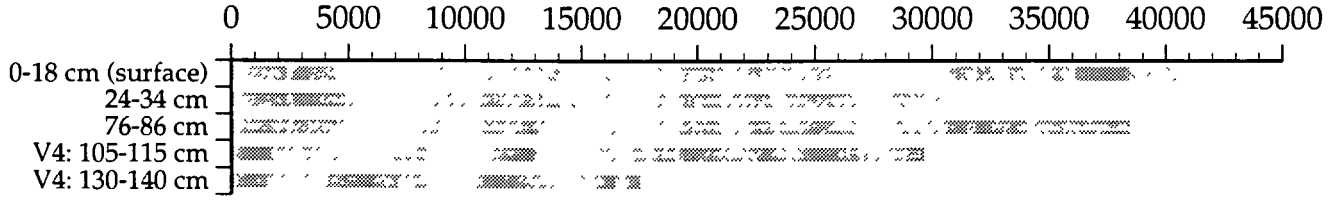
Figure 12. Concentration (ng/g dry wt. tissue) of organic contaminants in lobster muscle tissue from Derecktor Shipyard.

Derecktor Shipyard/Coddington Cove: Concentration of Aluminum (μg/g) in Sediment Cores

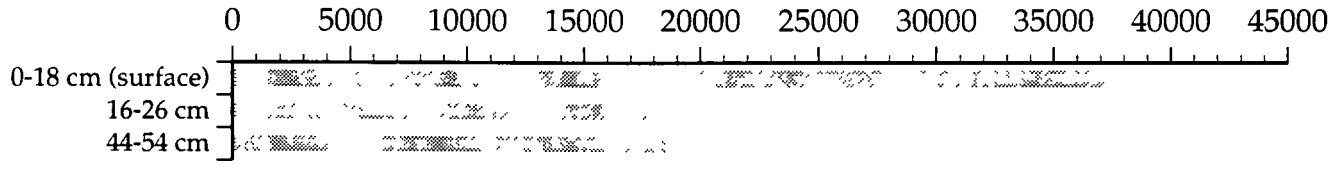
Station 27 (including vibracore V-9)



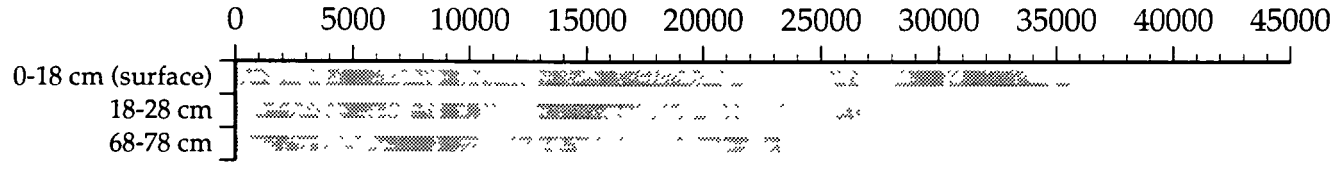
Station 28 (including vibracore V-4)



Station 29

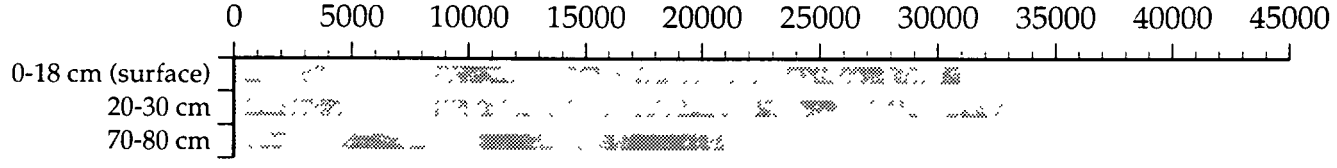


Station 30

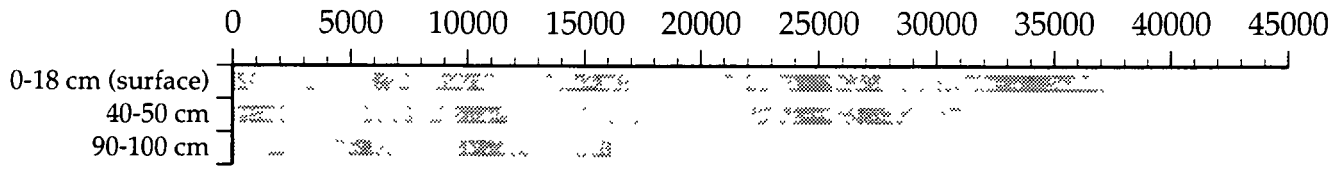


Station 31

Station 34

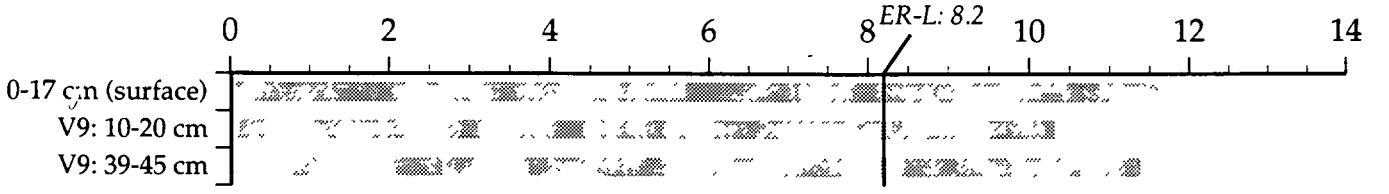


Station 36

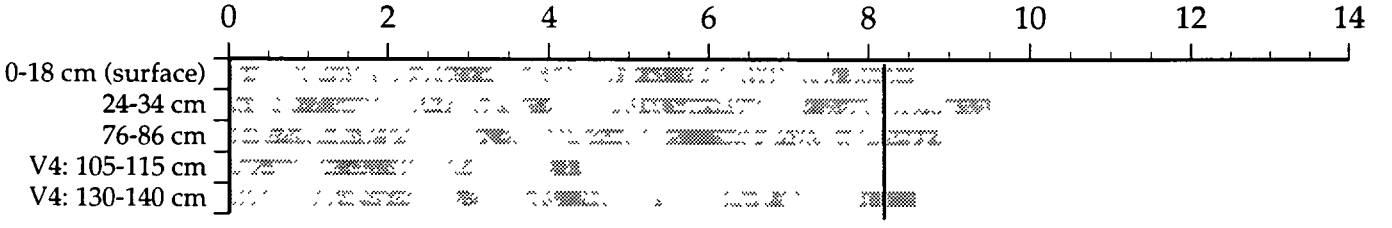


Derecktor Shipyard/Coddington Cove: Concentration of Arsenic (µg/g) in Sediment Cores

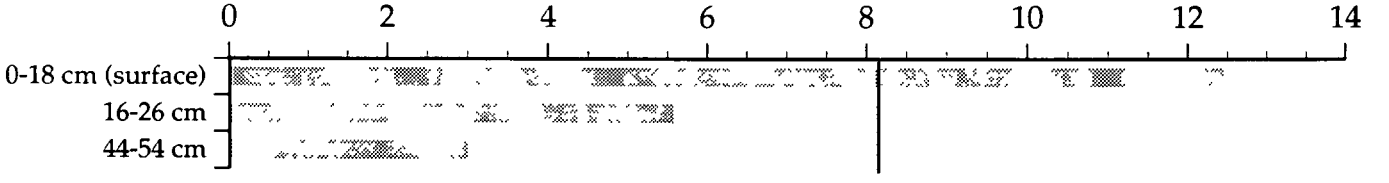
Station 27 (including vibracore V-9)



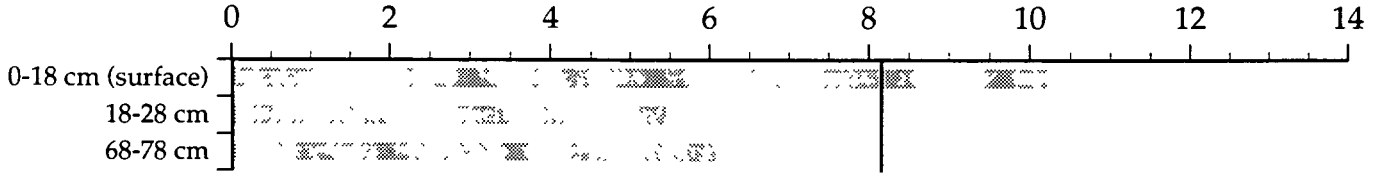
Station 28 (including vibracore V-4)



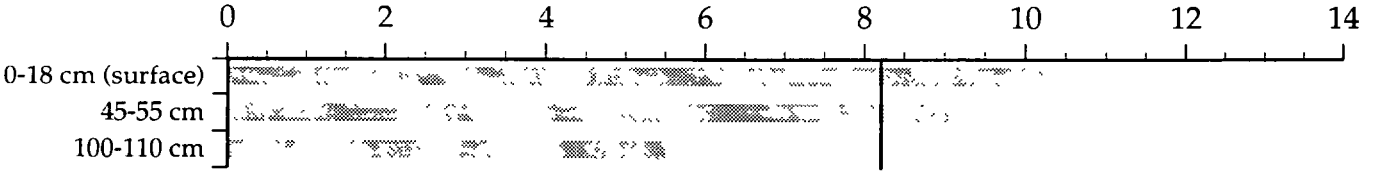
Station 29



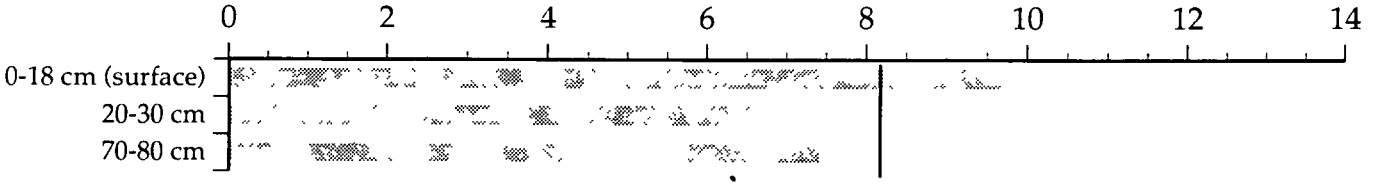
Station 30



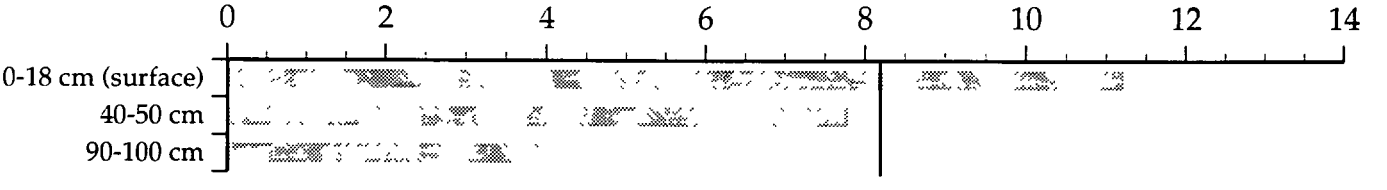
Station 31



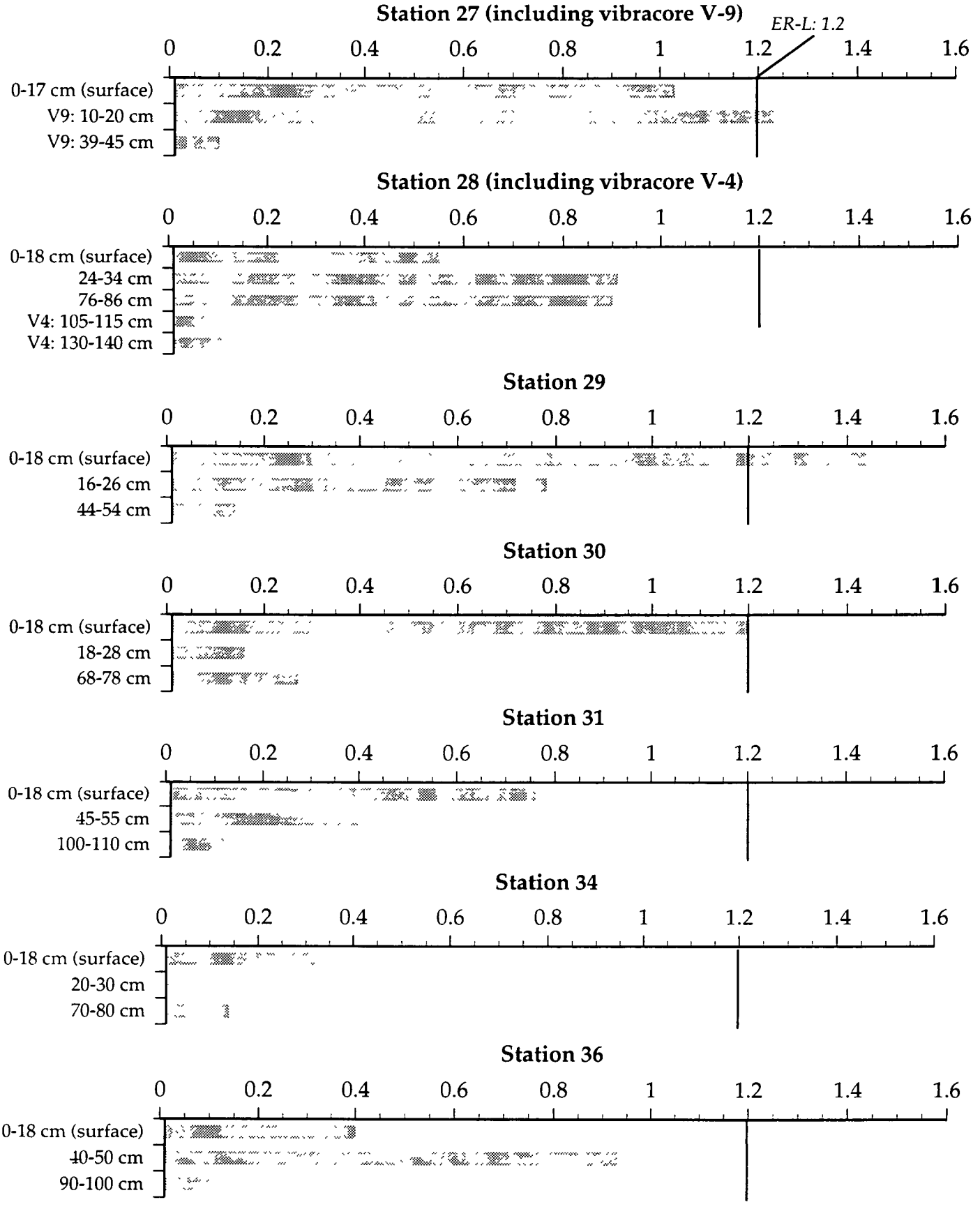
Station 34



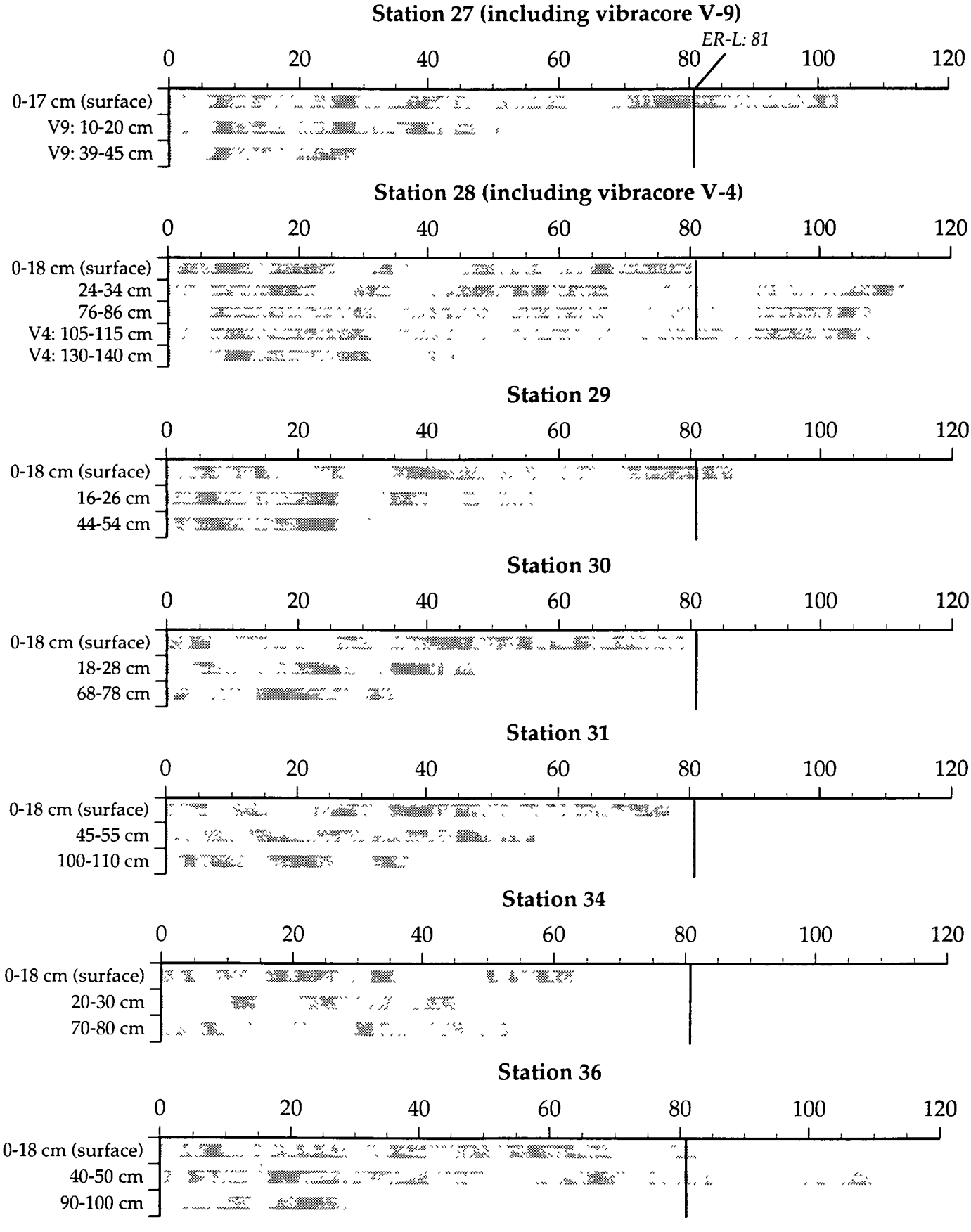
Station 36



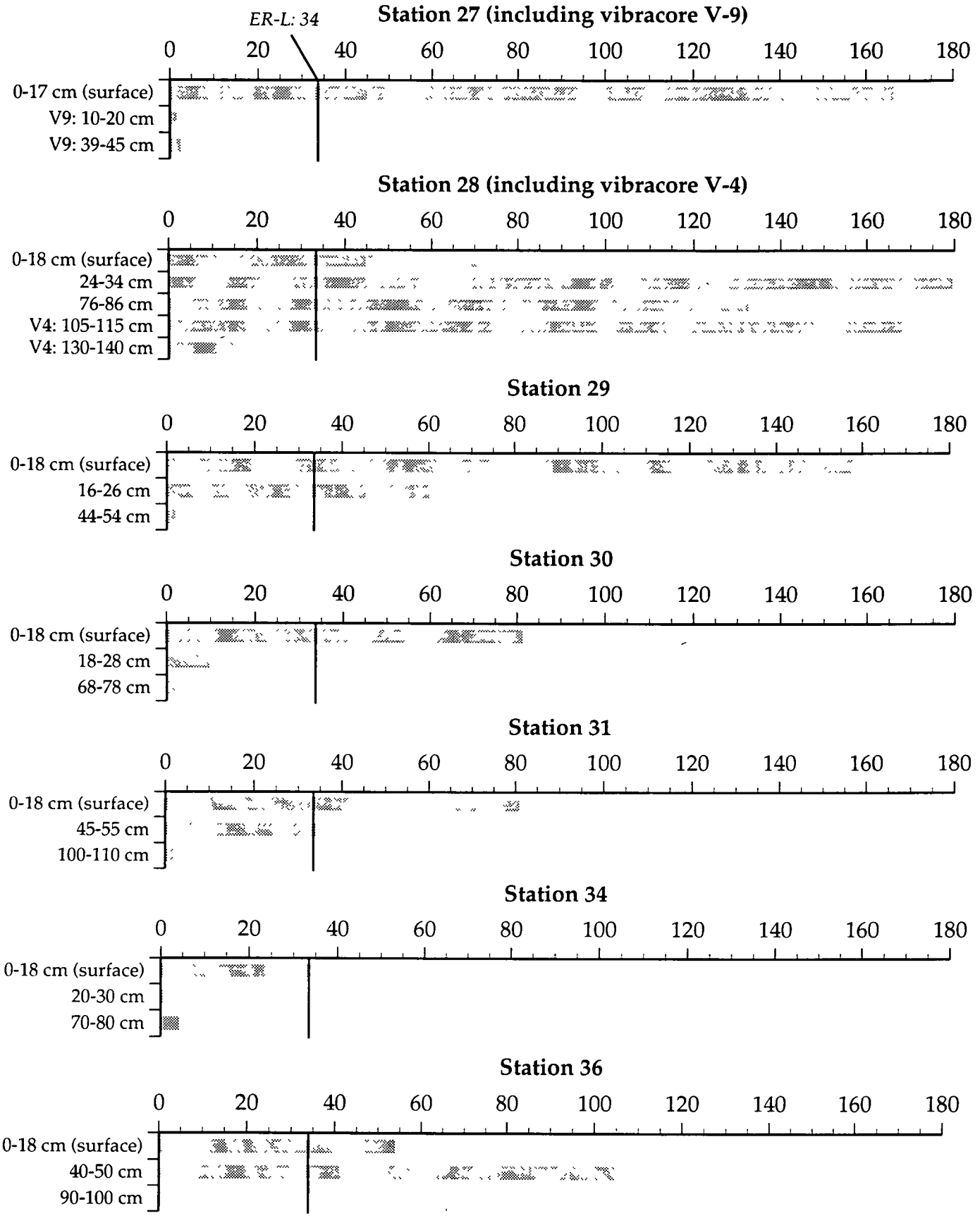
Derecktor Shipyard/Coddington Cove: Concentration of Cadmium (µg/g) in Sediment Cores



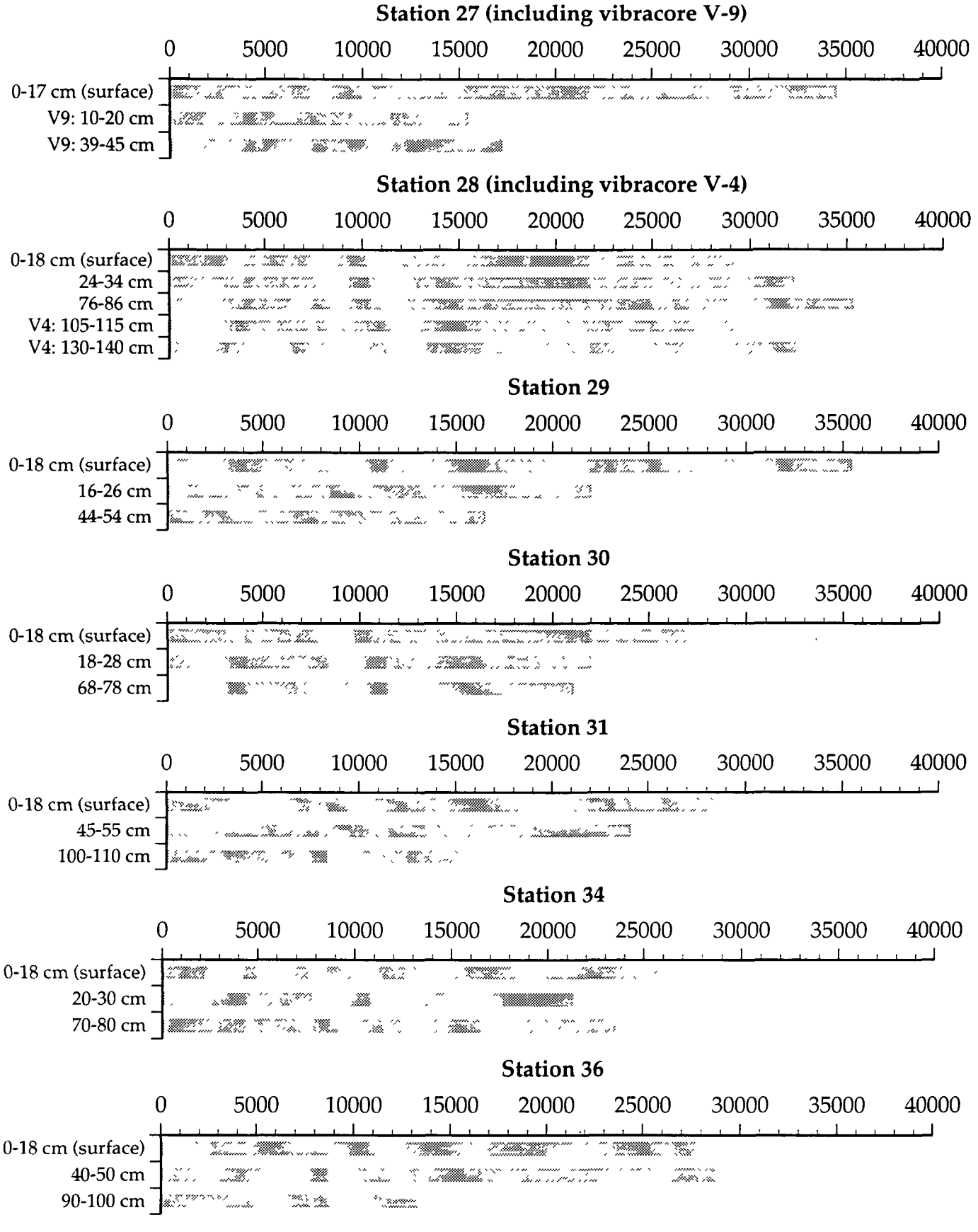
Derecktor Shipyard/Coddington Cove: Concentration of Chromium (µg/g) in Sediment Cores



Derecktor Shipyard/Coddington Cove: Concentration of Copper (µg/g) in Sediment Cores

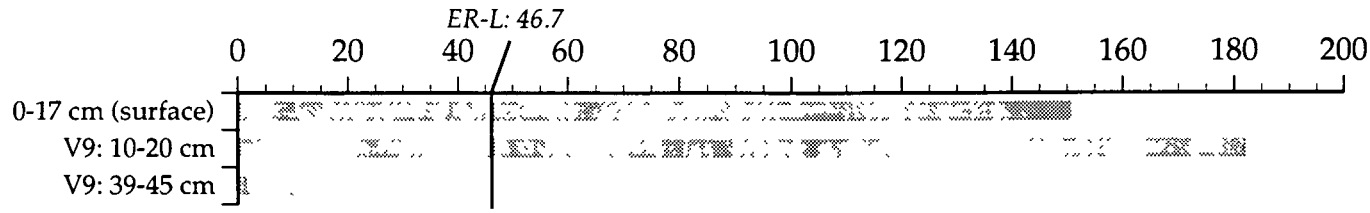


Derecktor Shipyard/Coddington Cove: Concentration of Iron (μg/g) in Sediment Cores

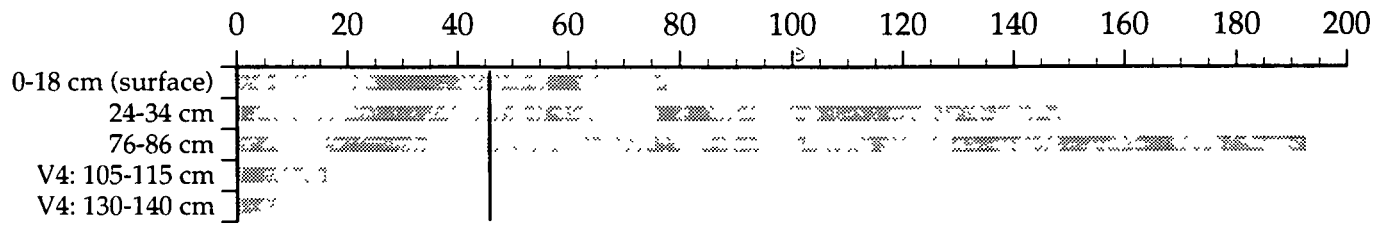


Derecktor Shipyard/Coddington Cove: Concentration of Lead (µg/g) in Sediment Cores

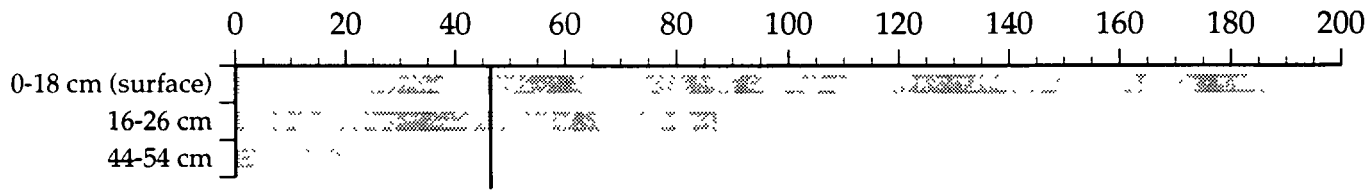
Station 27 (including vibracore V-9)



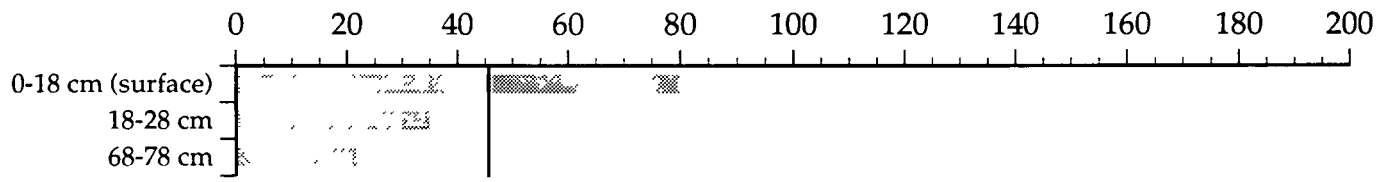
Station 28 (including vibracore V-4)



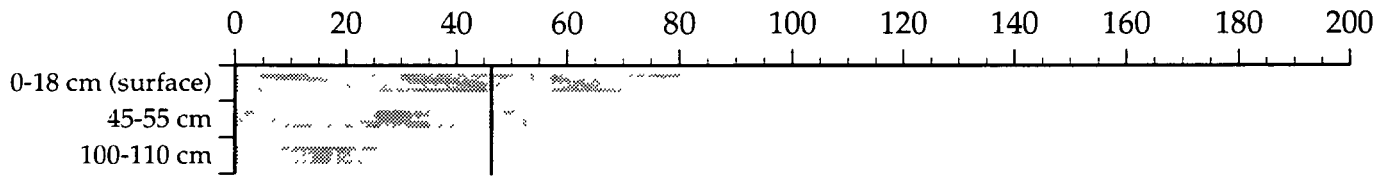
Station 29



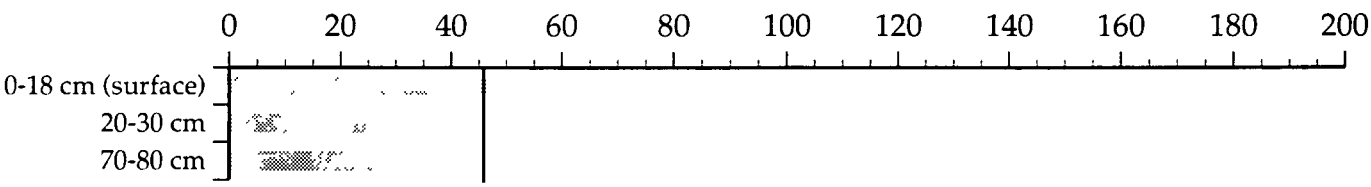
Station 30



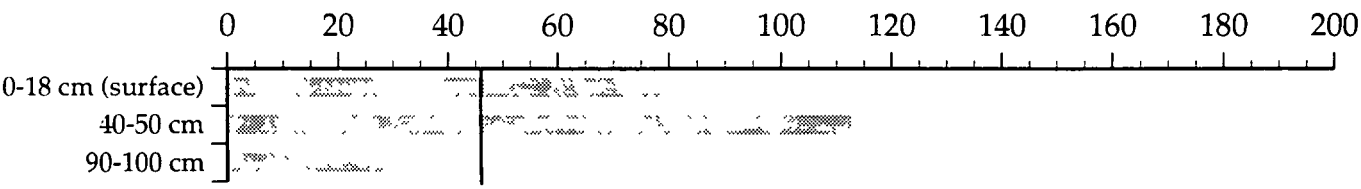
Station 31



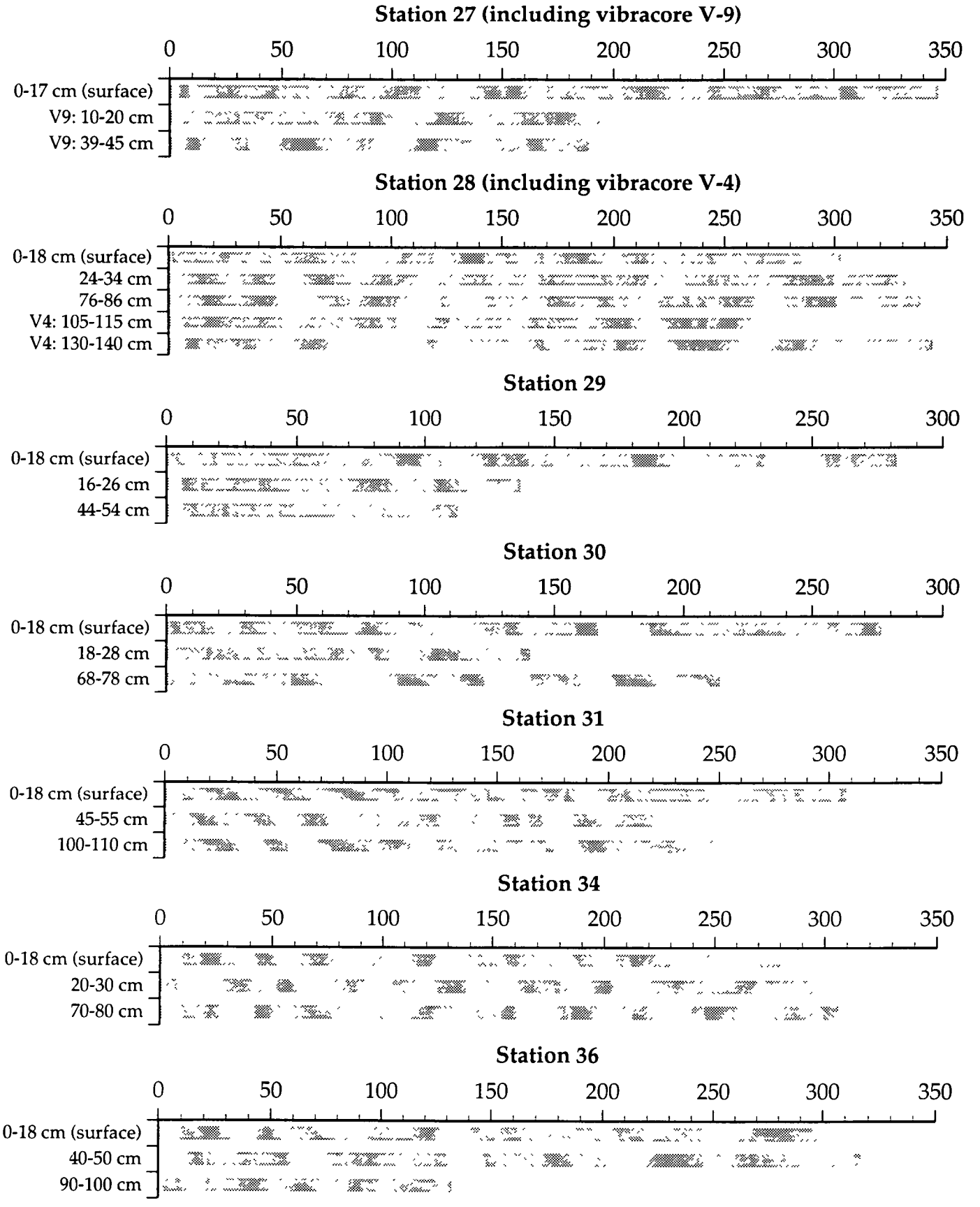
Station 34



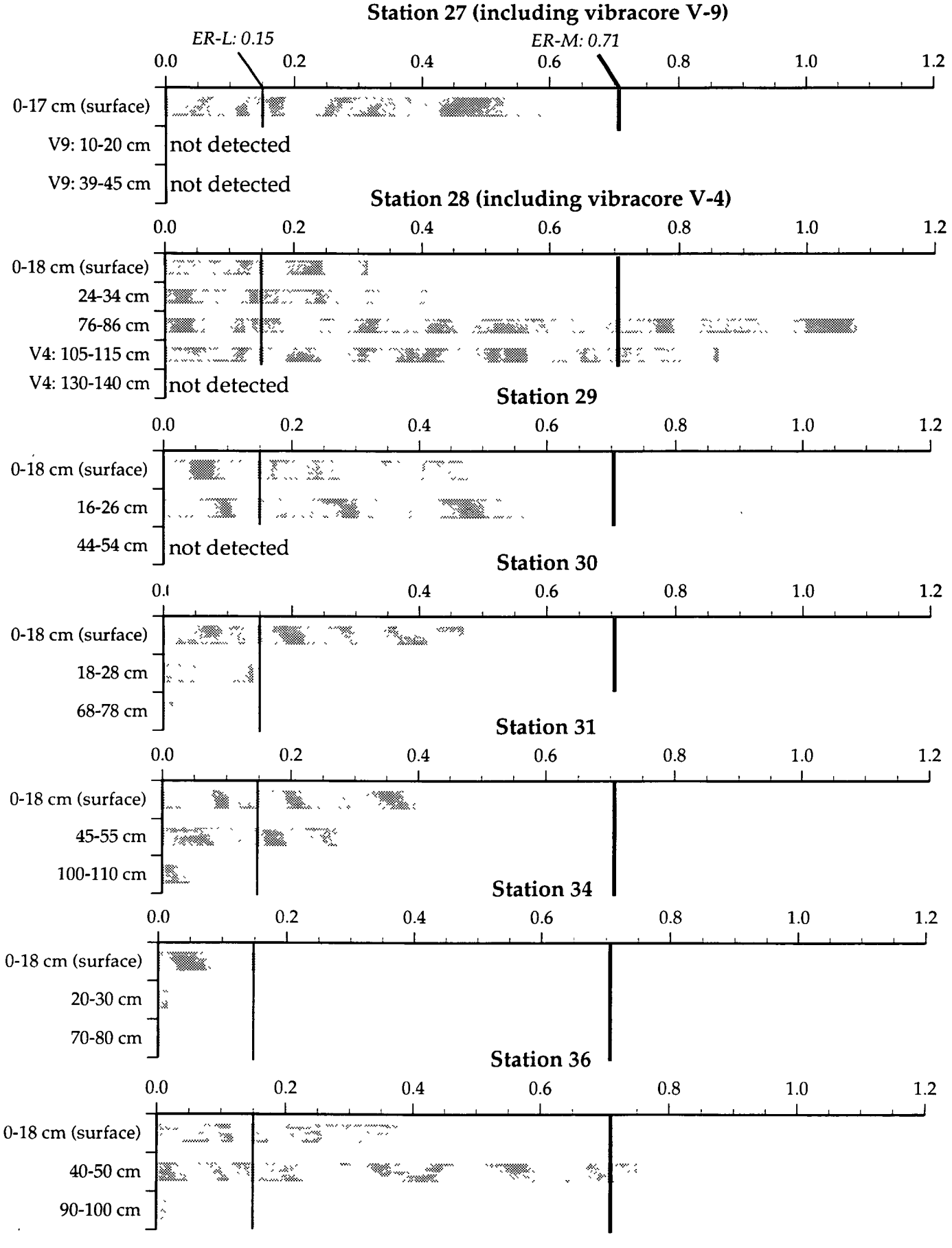
Station 36



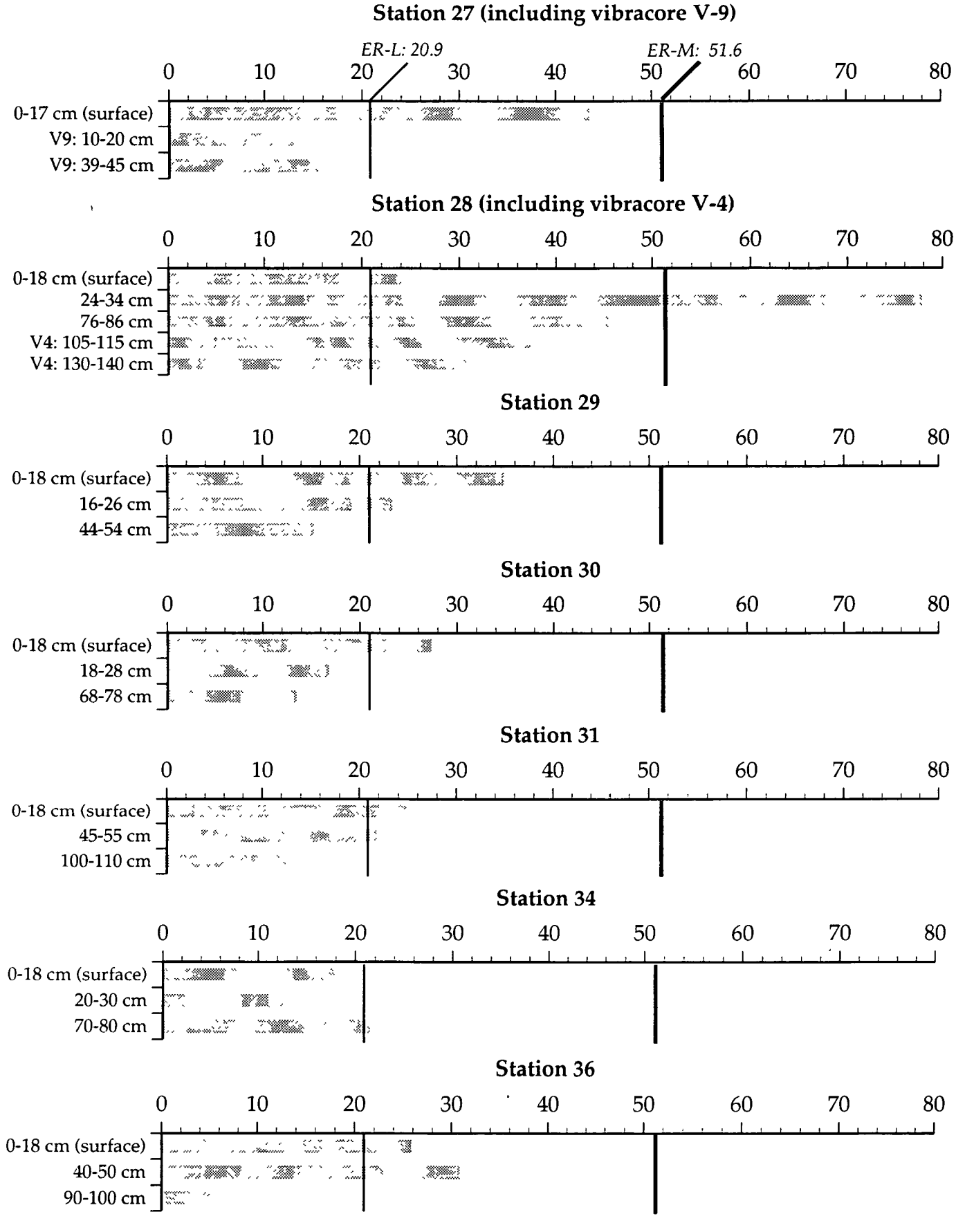
Derecktor Shipyard/Coddington Cove: Concentration of Manganese (μg/g) in Sediment Cores



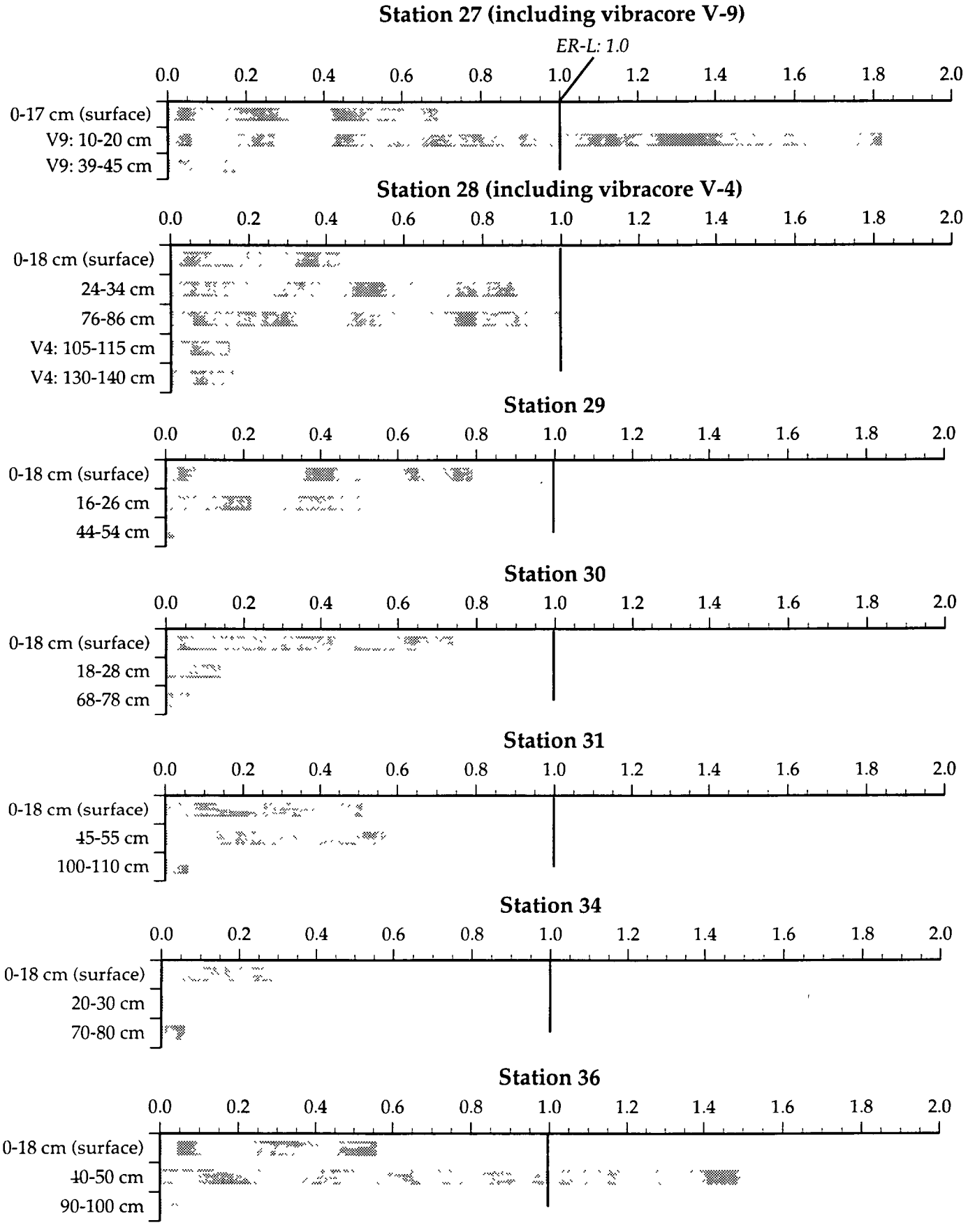
Derecktor Shipyard/Coddington Cove: Concentration of Mercury (µg/g) in Sediment Cores



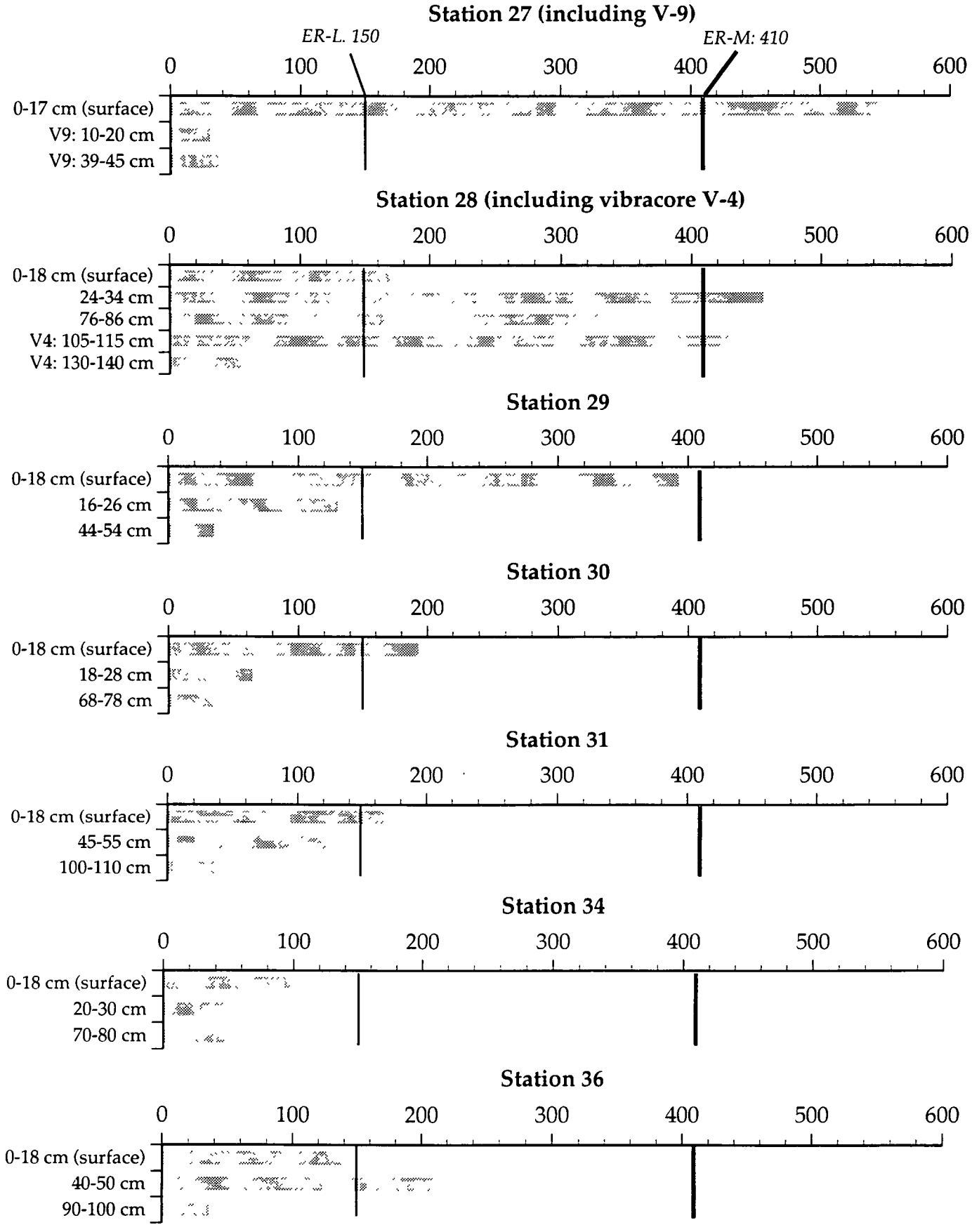
Derecktor Shipyard/Coddington Cove: Concentration of Nickel (µg/g) in Sediment Cores

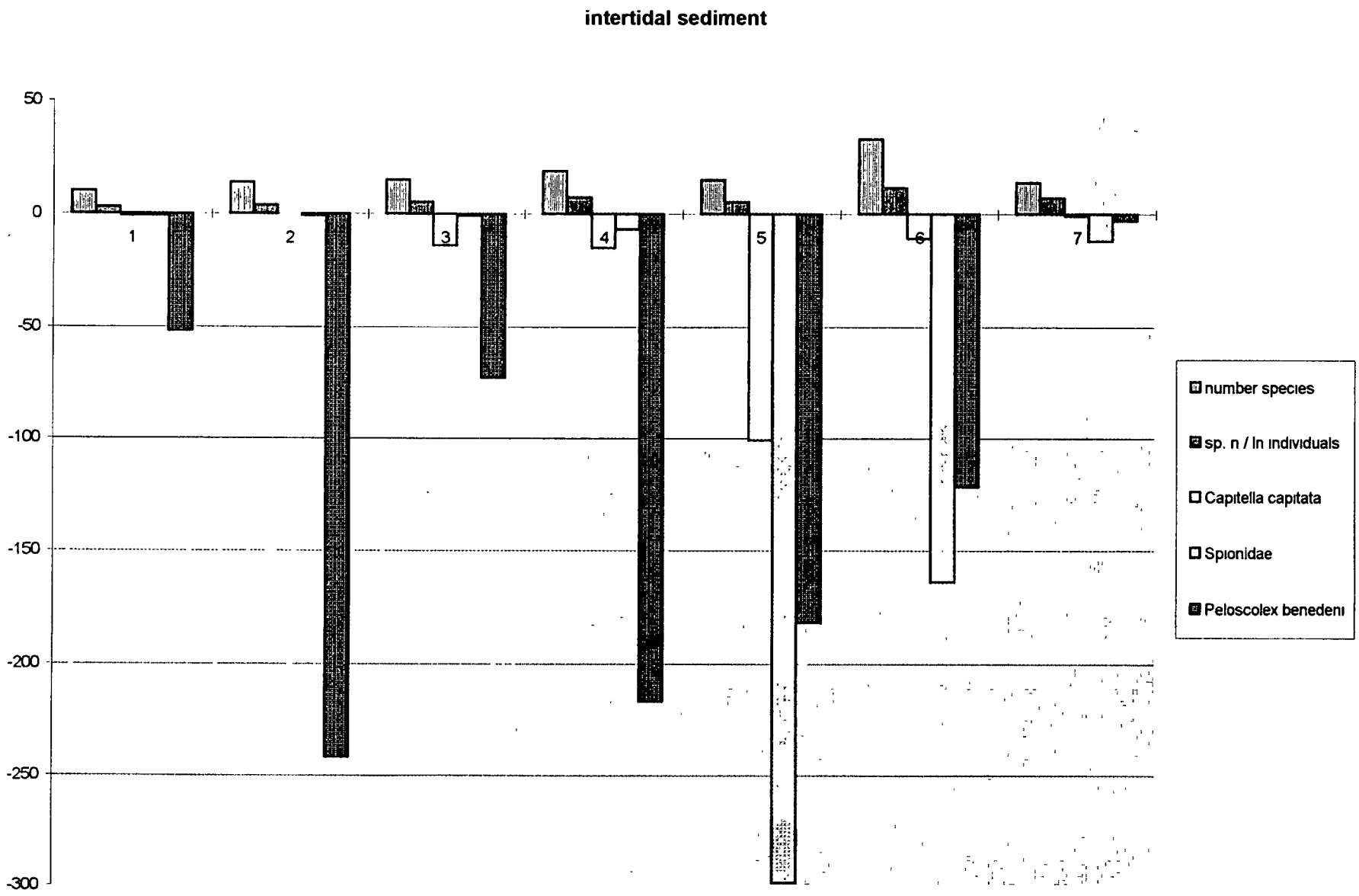


Derecktor Shipyard/Coddington Cove: Concentration of Silver (µg/g) in Sediment Cores



Derecktor Shipyard/Coddington Cove: Concentration of Zinc (µg/g) in Sediment Cores

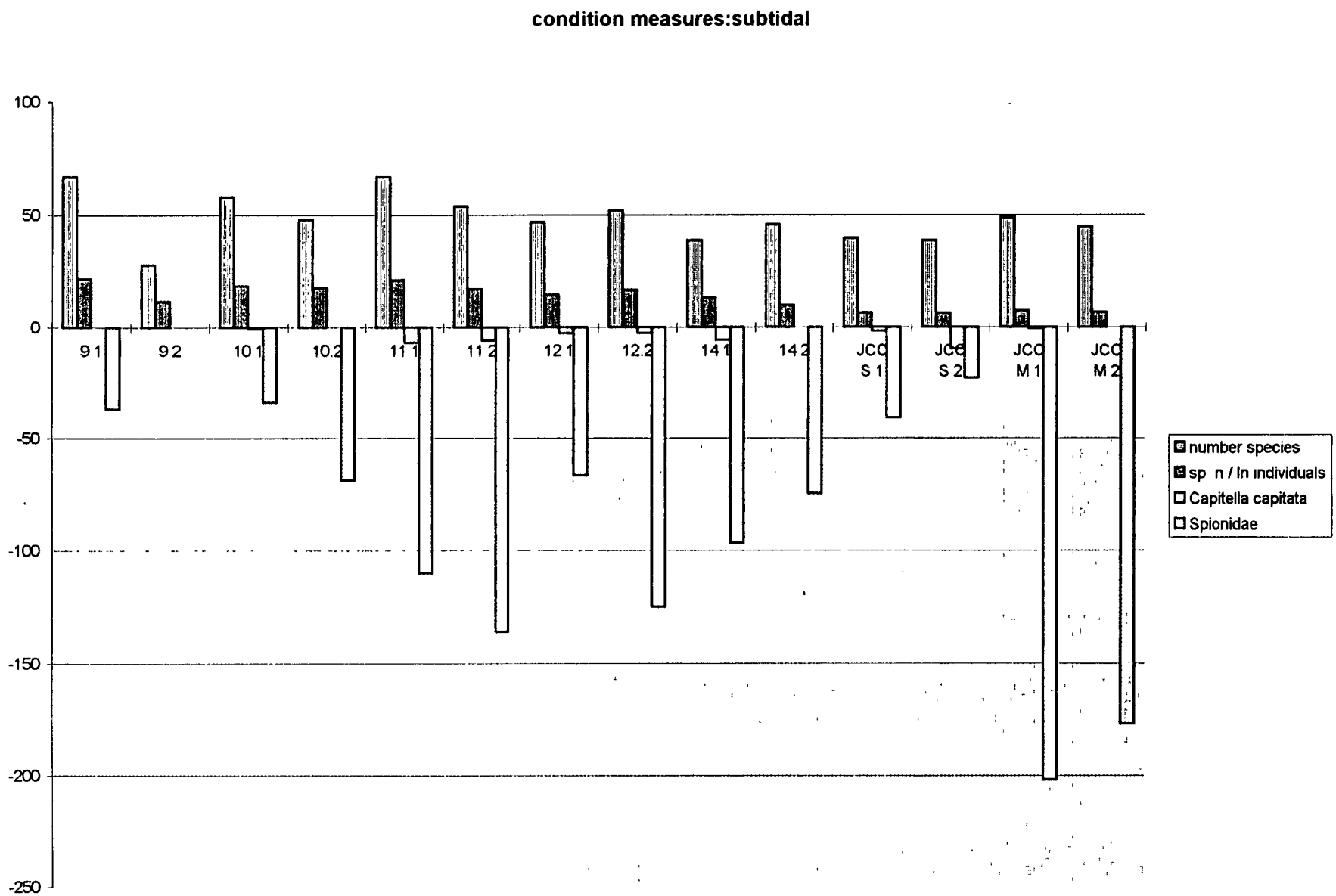




McALLISTER POINT BENTHIC INVERTEBRATES

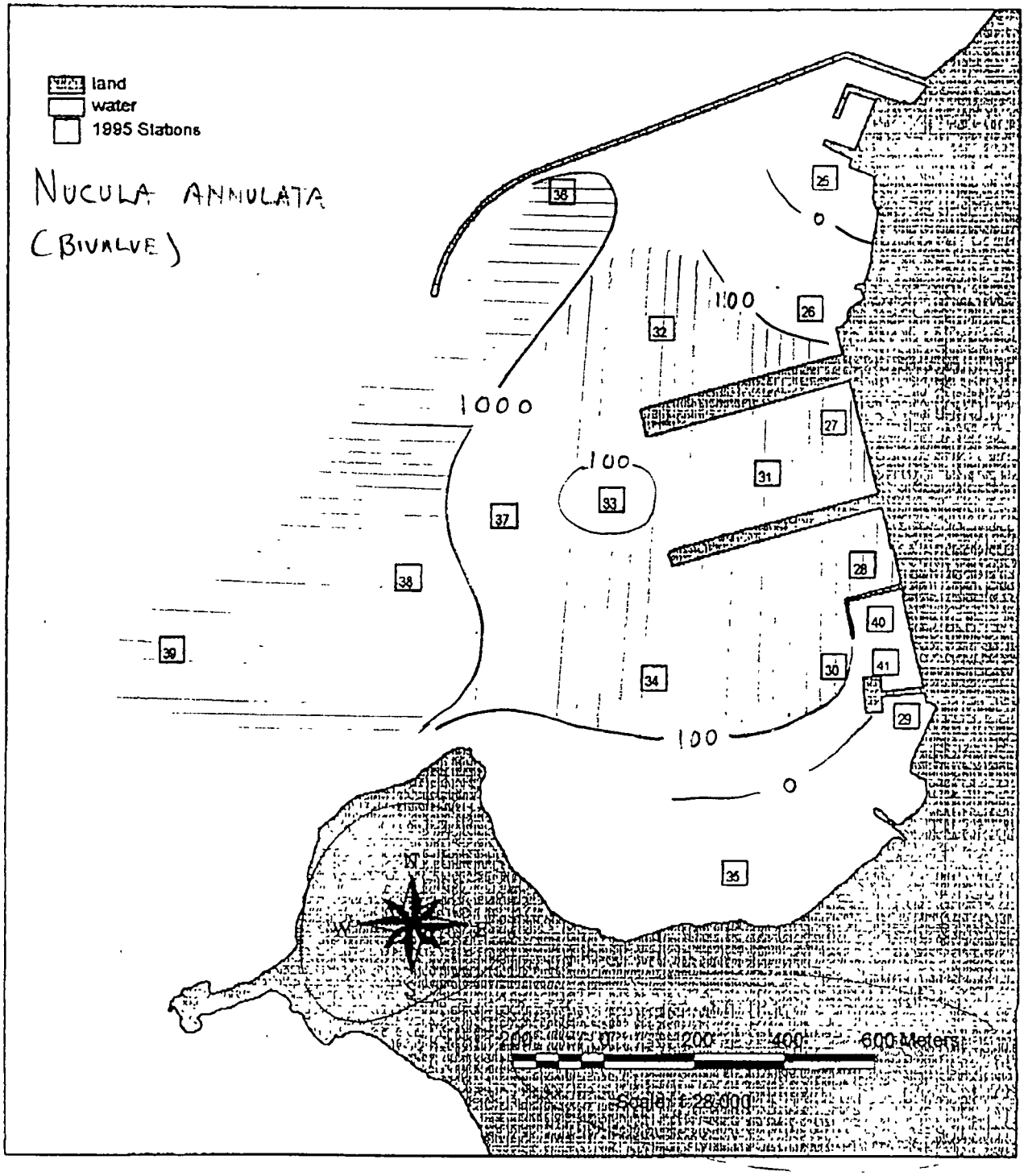
S.Pt 2

Sheet1 Chart 4

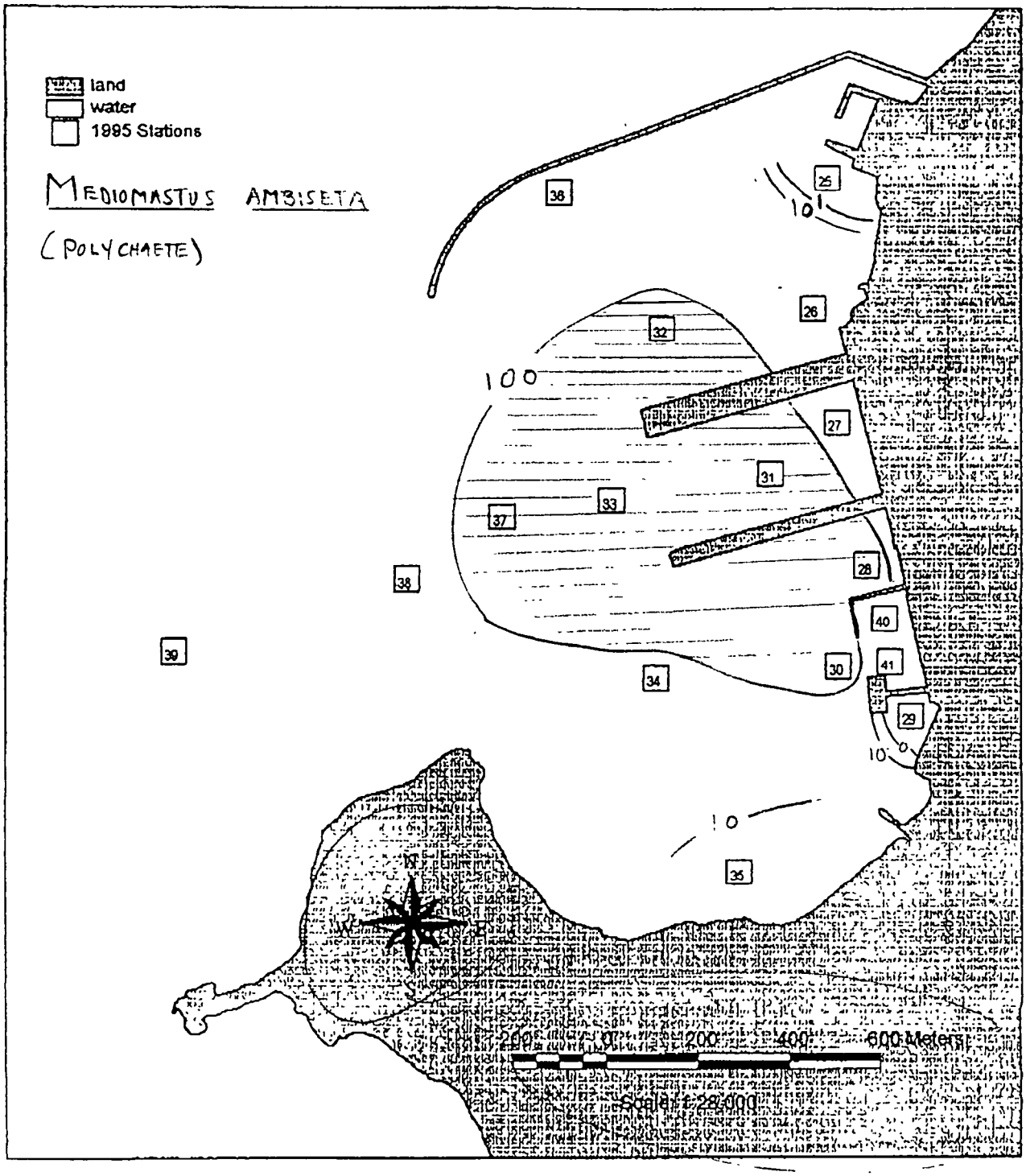


McALLISTER POINT BENTHIC INVERTEBRATES

S. Pratt 3

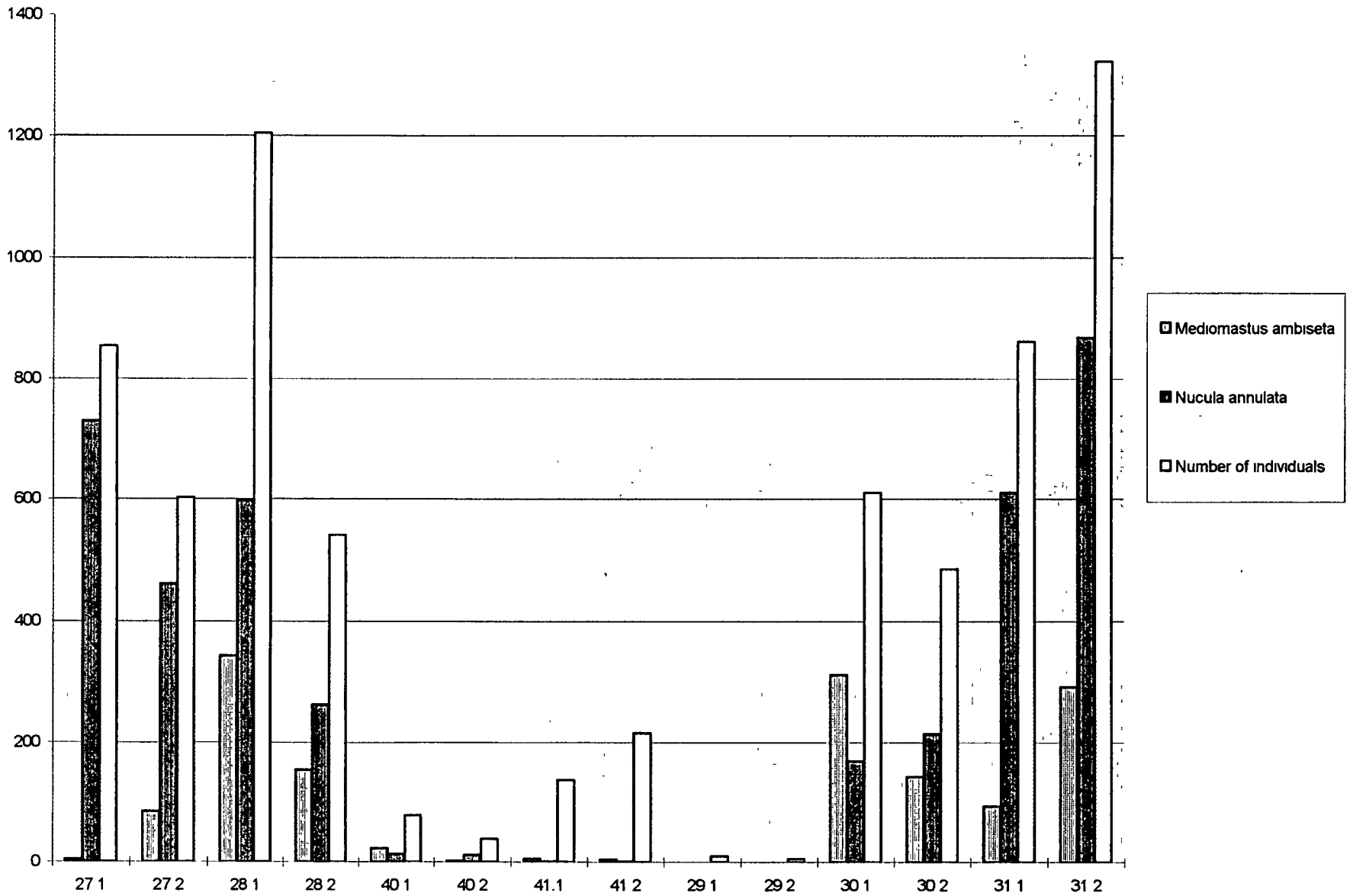

land
water
1995 Stations
NUCULA ANNULATA
(BIVALVE)
1000
100
0
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
N
200 0 200 400 600 Meters
Scale 1:2,000

S. Pratt 4


land
water
1995 Stations
MEDIOMASTUS AMBISETA
(POLYCHAETE)
100
10
10
10
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
200 0 200 400 600 Meters
Scale 1:22,000

S. Pratt J

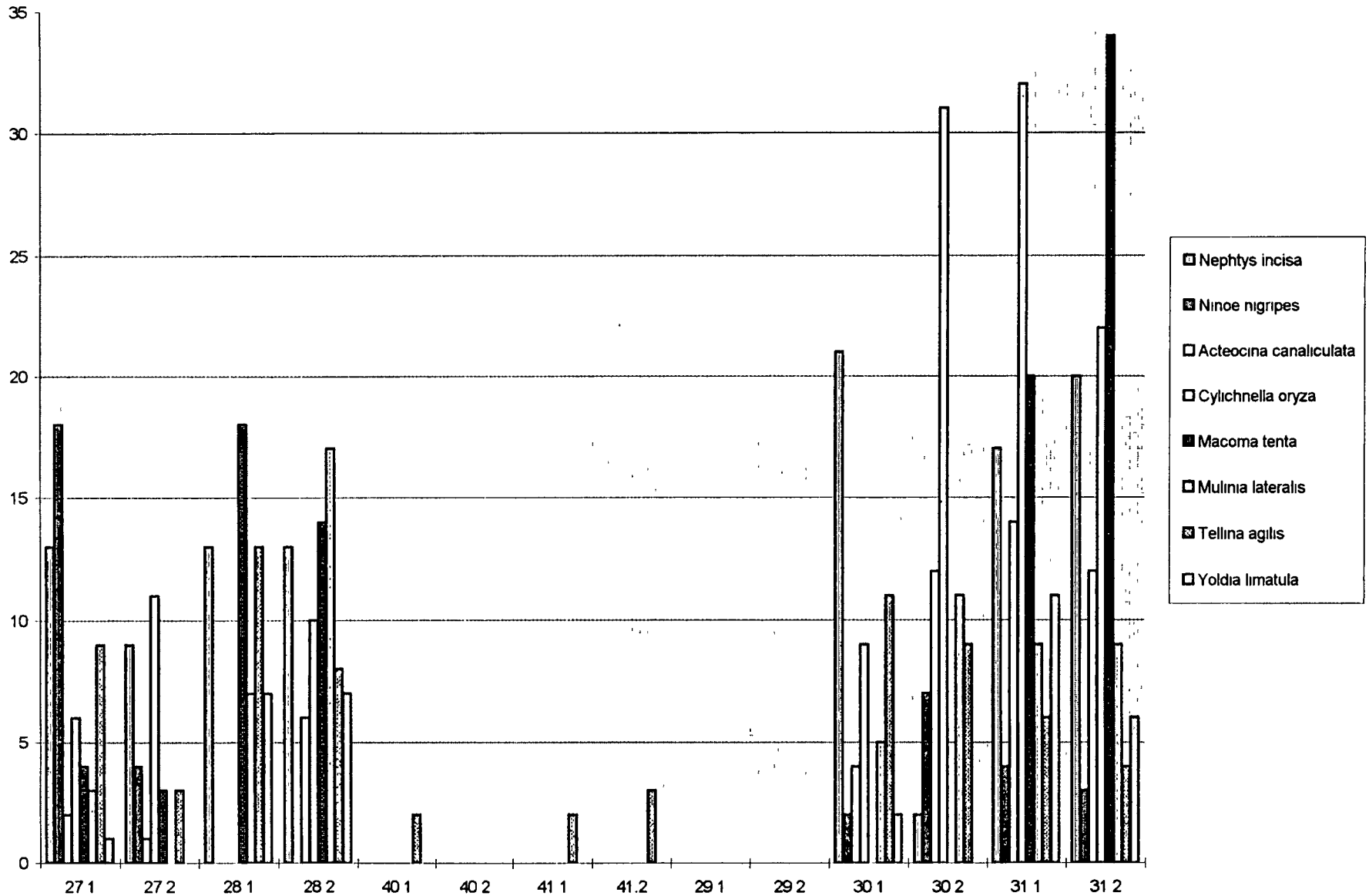
Sheet1 Chart 5



CODDINGTON COVE BENTHIC INVERTEBRATES : NUMBER OF ORGANISMS IN NEARSHORE SILTY SAMPLES (STA 40, 41 DIRECTOR INNER, 29 DIRECTOR SOUTH) Page 1 2 DOMINANT SPECIES AND TOTAL INDIVIDUALS

S. Pratt 6

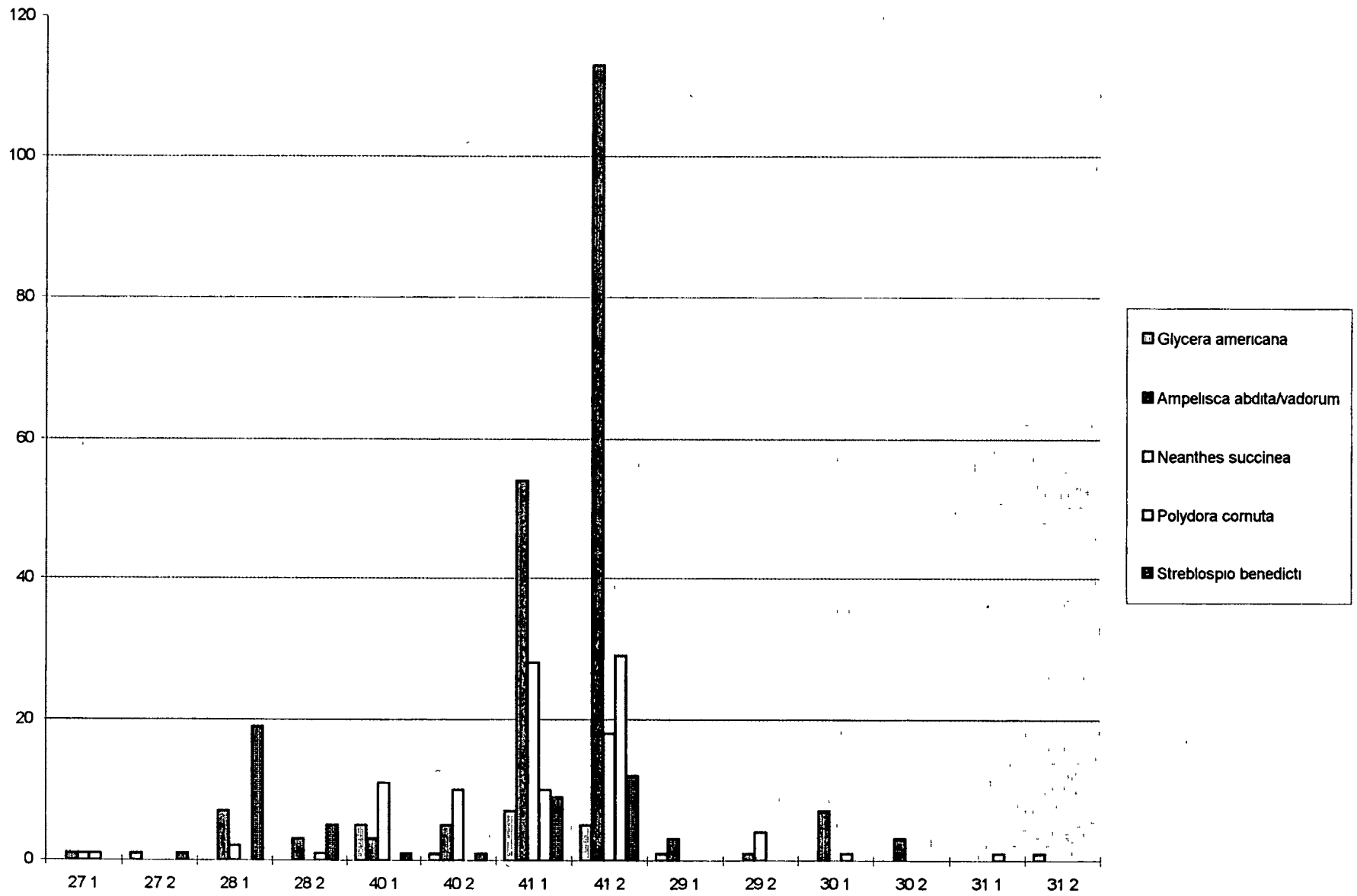
Sheet1 Chart 4



CODDINGTON COVE BENTHIC INVERTEBRATES: NUMBER OF NON-TOLERANT SPECIES IN NEARSHORE SILT SAMPLES (STA 40, 41 DEPRESSOR INDEX, 29 DEPRESSOR INDEX) & SUBDOMINANT SPECIES

S. Pratt 7

Sheet1 Chart 2



CODDINGTON COVE BENTHIC INVERTEBRATES : NUMBER OF TOLERANT SPECIES IN NEARSHORE SILTY SAMPLES (STA 40,41 DEMONSTRATION CONER, 29 DIRECTOR SOUTH