August 2003

GOWANUS CANAL BENTHIC SAMPLING DATA DOCUMENTATION

GOWANUS CANAL, NEW YORK

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BENTHIC SAMPLING DATA DOCUMENTATION
GOWANUS CANAL, NEW YORK

SECTIONS

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BENTHIC SAMPLING REPORT

GOWANUS CANAL BENTHIC SAMPLING
FIELD TRIP REPORT

TO: Pamela A. Lynch, Project Biologist (USACE)

FROM: Dave Santillo, Supervisory Biologist (NEA)
Keith Brewer, Senior Biologist (NEA)

SUBJECT: Summary of the April 29 and 30, 2003
Benthic Sampling Event

CC: Project File: CS 200, DO-018

April 29, 2003 – Day 1

7:00 am	The team consisting of Ms. Pamela Lynch (USACE), Mr. Keith Brewer (NEA), and boat crew from the USACE Baltimore District began organizing for sampling event.
8:00 am	Arrived at first site, GC3-29 to begin sampling. Air temperature was in the low 80's. Winds were out of the northwest at 0-5 knots.
11:00 am	Sampling of the first 15 sites was completed and began mob back to dock.
12:20 pm	Returned to dock and QA/QC was performed. Samples were sealed in buckets with formalin solution.

A total of 15 sites were sampled and two replicates at each site were taken. All the sites were accessed from boat launched from marina located at the northwest side of President Street. Hydrolab data was recorded at each site while sampling was conducted.

April 30, 2003 Day 2

7:00 am	The team arrived at marina and began organizing for sampling event.
8:00 am	Arrived at sample site GC3-10 and began sampling. Temperature reached into the mid 80's and winds were out of the NW at 0-5 knots. Tide was rising and low tide was predicted to be at approximately 9:00 am.
10:50 am	Sampling was completed and 2 buckets containing 29 intertidal benthos samples were sealed. The hydrolab was deployed at each site during the sampling.

Summary: A total of 29 sites were sampled and samples were sealed in two 5-gallon buckets. Hydrolab data were collected during both days. The benthos samples were shipped to Atlantic Reference Centre, Huntsman Marine Science Centre, 1 Lower Campus Road, St. Andrews, New Brunswick, Canada, for analysis.

The attached Microsoft Excel file of lab results, indicate the following:

- Columns represent samples as per provided information. Rows are taxa, with abundances for respective samples. Rows without abundance data represent higher taxa to which identified taxa belong. Last column and row represent total taxon abundance and sample abundance, respectively. A total of 7,841 specimens among 37 taxa were identified.
- The following samples contained oil/tar residue (that made sorting difficult): 8a and b, 13a and b, 15a and b, 16a and b, 17a and b, 22a and b, 26a and b, 29a and b, and 37a and b.
- In terms of total taxon numbers, a and b replicate samples are comparable except for samples 1, 4, and 5 where the a sample consists of higher diversity of species.
- Nematoda was the most abundant species collected. A total of 5,325 specimens was collected in 26 out of a 29 sample sites (including duplicates) and consists of 67.9% of the total catch. The second most abundant species was the oligochaeta worm with 861 specimens collected in 26 out of 29 sample sites (including duplicates) and consists of 11.0% of the total catch. The third most abundant species was the polychaeta worm *Capitella capitata* with 760 specimens collected in 13 out of 29 sample sites (including duplicates) and consists of 9.7% of the total catch.

BENTHIC DATA

Gowanus Benthic Data

Taxon/sample	1a	1b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	13a	13b	15a	15b	16a	16b	17a	17b	18a	18b	19a	19b	21a	21b	22a	22b	23a	23b	26a	26b	29a	29b	30a	30b	31a	31b	32a	32b	33a	33b	34a	34b	35a	36a	36b	37a	37b	38a	38b	Total in all samples
Cnidaria: Anthozoa: Actiniaria:																																																											
Edwardsia (LPIL)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nematoda (LPIL)	2	0	3	16	9	3	4	1	0	0	12	4	7	7	13	53	4	1	0	0	1	5	57	84	2	3	14	1	928	1346	8	12	85	21	152	19	70	837	57	7	5	2	1	12	19	6	563	817	12	10	10	8	3	5	4	0	0	5325
Annelida: Oligochaeta (LPIL)	4	1	2	15	25	9	10	4	1	1	5	38	2	2	1	16	0	0	0	0	1	2	75	107	1	3	12	2	88	171	3	2	24	8	33	3	28	44	22	4	1	0	1	0	20	19	15	3	9	4	6	4	8	0	2	0	0	861
Annelida: Polychaeta:																																																											
Capitellidae:																																																											
Capitella capitata	16	65	0	0	3	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3	0	1	0	2	0	0	0	0	0	0	2	0	0	0	22	228	244	45	5	2	0	0	0	0	102	15	1	2	0	0	0	0	0	0	0	760
Mediomastus (LPIL)	27	4	12	36	11	13	16	8	0	1	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2	7	8	1	0	6	6	0	16	5	0	0	0	0	192
Heteromastus filiformis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Cossuridae:																																																											
Cossura longocirrata	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4
Cirratulidae (LPIL)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Chaetozone (LPIL)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Caulliriella (LPIL)	0	0	8	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	15
Glyceridae:																																																											
Glycera americana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Nereididae																																																											
Neanthes succinea	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	5	0	1	0	0	0	1	0	0	0	0	0	0	12
Orbiniidae:																																																											
Leitoscoloplos robustus	4	2	1	7	15	2	3	1	1	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	38	19	1	1	3	9	2	8	5	0	0	0	0	133
Pectinariidae																																																											
Pectinaria gouldii	1	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	7
Polynoidae:																																																											
Harmothoe (LPIL)	0	1	3	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	10
Sabellidae:																																																											
Fabricia sabella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Spionidae:																																																											
Polydora cornuta	1	0	1	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	5	0	0	0	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0		3	0	0	18	0	0	0	0	0	0	0	0	0	0	37
Spiophanes bombyx	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Streblospio benedicti	1	0	10	12	0	0	0	0	0	1	1	19	2	0	7	31	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0	0	0	0	6	57	0	8	19	2	10	32	2	1	0	0	0	0	0	229
Phyllodocidae:																																																											
Eteone heteropoda	0	0	2	0	1	0	0	0	0	0	0	0	0	1	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	26	1	0	0	2	2	0	0	0	0	0	44
Mollusca:																																																											
Archeogastropoda: Acmaeidae:																																																											
Tectura testudinalis	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Neogastropoda: Nassariidae:																																																											
Nassarius (=Ilyanassa) obsoletus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4	0	0	8
Retusidae:																																																											
Acteocina canaliculata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Pelecypoda:																																																											
Tellinidae:																																																											
Tellina agilis	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Mytilidae																																																											
Mytilus edulis	1	0	21	0	4	3	5	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	44
Crustacea:																																																											
Cumacea: Leuconidae																																																											
Leucon sp. (not *L. americanus*)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Isopoda:																																																											
Limnoriidae:																																																											
Limnoria lignorum	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Idoteidae: *Edotea triloba*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Amphipoda:																																																											
Aoridae:																																																											
Unciola dissimilis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0	0	4
Corophiidae:																																																											
Corophium insidiosum	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	3	0	0	2	0	0	9	23	0	0	1	0	0	0	0	3	35	15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103
Gammaridae:																																																											
Gammarus mucronatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Ischyroceridae:																																																											
Jassa marmorata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
Mysida: Mysidae																																																											
Neomysis americana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Decapoda: Caridea: Palaemonidae:																																																											
Palaemonetes vulgaris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Crangonidae:																																																											
Crangon septemspinosa	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Brachyura: Xanthidae:																																																											
Eurypanopeus depressus	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pisces: Pleuronectidae																																																											
Pseudopleuronectes americanus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total taxa present	15	6	16	6	13	7	7	7	2	4	5	6	4	4	7	9	1	1	0	0	3	4	5	5	3	4	2	2	5	5	2	2	4	2	2	2	3	6	5	5	4	3	6	5	9	9	10	6	6	9	10	6	6	3	5	0	1	7841

WATER QUALITY DATA

APRIL 29-30, 2003

Log File Name : 42903-1 and 43003-1
Setup Date (MMDDYY) : 042903 and 043003
Gowanus Canal Benthos

Station	Date MMDDYY	Time HHMMSS	Temp degC	pH units	SpCond mS/cm	Salin ppt	DO %Sat	DO mg/l	Redox mV	Depth meters	Turb NTU	Batt volts
GC3-1	43003	95350	8.81	8.20	39.7	25.3	7.7	0.76	350	10.5	61.1	14.2
	43003	95425	9.21	8.21	35.6	22.4	7.7	0.77	342	6.5	59.7	14.2
	43003	95450	10.27	8.19	31.9	19.9	7.8	0.77	340	0.9	17.7	14.2
GC3-4	43003	92825	9.14	8.17	36.2	22.9	7.7	0.76	348	7.5	5.9	14.4
	43003	92900	9.52	8.20	33.4	20.9	8.2	0.82	344	2.4	33.0	14.4
	43003	92905	10.03	8.19	32.4	20.2	8.2	0.81	343	0.9	28.2	14.4
GC3-5	43003	101700	9.09	8.18	36.2	22.8	7.5	0.74	345	7.6	0.0	14.1
	43003	101745	9.56	8.20	33.7	21.1	7.8	0.77	341	3.7	22.5	14.1
	43003	101805	10.27	8.20	32.3	20.2	20.5	2.02	339	0.6	11.2	14.1
GC3-6	43003	84830	8.74	8.19	38.9	24.8	7.7	0.76	314	12.0	61.3	14.7
	43003	84855	8.89	8.22	37.3	23.7	7.9	0.79	313	6.9	18.6	14.7
	43003	84920	9.92	8.19	32.6	20.4	8.0	0.79	310	1.2	12.2	14.7
GC3-7	43003	82945	9.27	8.13	35.4	22.3	8.0	0.80	330	7.5	8.2	14.8
	43003	83005	9.44	8.14	34.5	21.7	8.2	0.82	328	3.0	12.7	14.9
	43003	83015	9.83	8.14	33.0	20.6	8.3	0.82	327	0.9	12.2	14.8
GC3-8	42903	102935	8.51	8.32	37.5	23.8	8.5	0.85	283	9.6	23.3	13.7
	42903	103000	8.81	8.32	35.5	22.4	9.1	0.91	281	5.4	22.9	13.7
	42903	103020	10.55	8.26	30.4	18.8	9.3	0.91	278	0.7	20.6	13.7
GC3-9	42903	101850	8.50	8.24	37.0	23.4	8.3	0.83	278	7.5	0.0	13.9
	42903	101940	9.05	8.27	34.0	21.4	9.1	0.91	265	3.6	18.1	13.9
	42903	102000	9.87	8.21	30.6	18.9	9.7	0.97	262	0.4	14.9	13.9
GC3-10	43003	75015	8.72	7.99	37.3	23.6	11.9	1.19	334	8.0	18.4	15.6
	43003	75035	9.43	8.05	34.6	21.7	11.8	1.17	330	4.1	12.4	15.5
	43003	75050	9.77	8.04	33.2	20.8	11.9	1.18	328	1.0	11.7	15.6

Log File Name : 42903-1 and 43003-1
Setup Date (MMDDYY) : 042903 and 043003
Gowanus Canal Benthos

Station	Date MMDDYY	Time HHMMSS	Temp degC	pH units	SpCond mS/cm	Salin ppt	DO %Sat	DO mg/l	Redox mV	Depth meters	Turb NTU	Batt volts
GC3-11	42903	100830	9.51	8.17	33.2	20.8	8.7	0.87	253	3.3	2.1	13.9
	42903	100850	9.99	8.16	31.0	19.2	9.3	0.93	245	1.0	17.6	13.9
	42903	100855	10.16	8.16	30.7	19.0	8.9	0.88	245	0.7	21.0	13.9
GC3-13	42903	95850	9.56	8.15	33.5	21.0	8.9	0.89	252	3.3	0.0	14.0
	42903	95905	9.63	8.14	32.4	20.2	9.1	0.90	242	1.7	6.6	14.2
	42903	95910	10.08	8.16	30.7	19.0	9.8	0.98	239	0.3	9.9	14.0
GC3-15	42903	94355	9.81	8.19	31.9	19.9	9.1	0.90	269	1.7	0.0	14.1
	42903	94420	9.99	8.16	30.9	19.2	9.3	0.93	263	0.4	28.7	14.2
GC3-16	42903	95135	9.38	8.18	34.3	21.5	8.8	0.88	256	4.2	28.1	14.1
	42903	95205	9.87	8.18	31.8	19.8	8.9	0.89	239	0.9	33.2	14.1
GC3-17	42903	93530	9.42	8.18	34.1	21.4	8.5	0.85	253	4.1	11.2	14.1
	42903	93550	9.67	8.18	32.9	20.6	8.7	0.86	241	2.5	14.3	14.1
	42903	93600	10.15	8.19	30.7	19.0	9.2	0.91	238	0.5	12.6	14.1
GC3-18	42903	92520	9.46	8.18	33.5	21.0	8.2	0.82	290	3.5	0.0	14.2
	42903	92545	9.75	8.19	32.1	20.0	8.5	0.85	270	1.9	10.3	14.3
	42903	92600	10.33	8.18	30.4	18.9	8.6	0.85	268	0.9	11.3	14.2
GC3-19	42903	91705	9.82	8.18	31.6	19.7	8.3	0.83	286	2.2	9.2	14.3
	42903	91725	10.25	8.17	30.6	19.0	8.7	0.86	280	0.8	47.2	14.3
GC3-21	42903	90610	9.59	8.20	33.4	20.9	7.9	0.79	287	1.5	0.0	14.4
	42903	90630	9.71	8.20	32.6	20.4	8.5	0.84	279	0.7	1.0	14.4
GC3-22	42903	85630	10.07	8.18	31.2	19.4	7.9	0.79	287	1.3	0.0	14.5
	42903	85700	9.98	8.16	31.1	19.3	8.5	0.85	283	0.7	5.7	14.5

Log File Name : 42903-1 and 43003-1
Setup Date (MMDDYY) : 042903 and 043003
Gowanus Canal Benthos

Station	Date MMDDYY	Time HHMMSS	Temp degC	pH units	SpCond mS/cm	Salin ppt	DO %Sat	DO mg/l	Redox mV	Depth meters	Turb NTU	Batt volts
GC3-23	42903	84735	10.09	8.13	31.9	19.9	8.2	0.81	275	1.5	25.1	14.6
	42903	84755	9.85	8.12	31.1	19.3	8.5	0.85	267	0.7	26.9	14.6
GC3-26	42903	83635	9.36	8.21	34.0	21.3	8.3	0.83	271	3.0	20.8	14.6
	42903	83700	9.54	8.18	32.8	20.5	8.6	0.86	261	0.7	58.8	14.6
GC3-29	42903	74020	9.24	7.90	34.5	21.7	9.7	0.97	364	2.3	42.2	15.4
	42903	74125	9.15	8.17	34.4	21.6	10.5	1.05	317	0.8	224.0	15.4
GC3-30	42903	80545	9.27	8.21	33.1	20.7	8.4	0.84	289	1.6	0.0	15.0
	42903	80610	9.26	8.22	33.1	20.7	8.8	0.88	281	0.6	33.1	15.0
GC3-31	43003	75830	9.36	8.07	35.0	22.0	9.0	0.90	324	5.5	23.0	15.4
	43003	75850	9.52	8.10	34.3	21.5	9.2	0.92	322	2.9	11.8	15.4
	43003	75915	9.91	8.05	32.8	20.5	9.3	0.92	321	1.0	8.9	15.3
GC3-32	43003	80925	9.77	8.04	33.2	20.7	8.6	0.85	333	1.9	0.0	15.1
	43003	80945	9.85	8.06	32.9	20.6	8.4	0.83	331	0.8	0.0	15.1
GC3-33	43003	102915	9.44	8.18	34.1	21.4	8.0	0.80	335	3.2	0.0	14.0
	43003	102925	9.62	8.18	33.4	20.9	8.1	0.80	333	1.8	1.9	14.0
	43003	102940	9.96	8.17	32.8	20.5	8.0	0.80	332	0.9	10.2	14.0
GC3-34	43003	100700	9.22	8.19	35.6	22.5	7.6	0.76	348	8.4	2.2	14.2
	43003	100730	9.65	8.20	33.2	20.8	7.6	0.76	344	5.0	23.6	14.1
	43003	100740	10.28	8.21	32.0	19.9	8.1	0.80	343	0.9	19.7	14.1
GC3-35	43003	94230	8.80	8.22	40.5	25.9	7.6	0.74	349	12.6	0.0	14.3
	43003	94315	9.36	8.23	34.0	21.3	7.6	0.75	344	7.7	36.2	14.3
	43003	94325	9.60	8.23	31.3	19.4	8.2	0.82	342	0.9	26.8	14.3

Log File Name : 42903-1 and 43003-1
Setup Date (MMDDYY) : 042903 and 043003
Gowanus Canal Benthos

Station	Date MMDDYY	Time HHMMSS	Temp degC	pH units	SpCond mS/cm	Salin ppt	DO %Sat	DO mg/l	Redox mV	Depth meters	Turb NTU	Batt volts
GC3-36	43003	91915	9.61	8.16	33.6	21.1	7.8	0.78	349	3.0	3.5	14.4
	43003	92000	10.00	8.15	32.8	20.5	7.9	0.78	346	1.1	10.7	14.4
GC3-37	43003	90030	9.73	8.16	33.2	20.8	8.0	0.79	323	1.8	1.2	14.6
	43003	90100	9.87	8.13	32.5	20.3	8.0	0.79	319	0.8	9.1	14.6
GC3-38	43003	83740	8.92	8.16	36.7	23.2	9.8	0.98	321	7.6	2.3	14.8
	43003	83830	9.31	8.17	34.6	21.8	8.2	0.81	318	4.3	11.4	14.8
	43003	83850	9.86	8.16	32.9	20.6	8.3	0.82	317	0.9	9.9	14.8

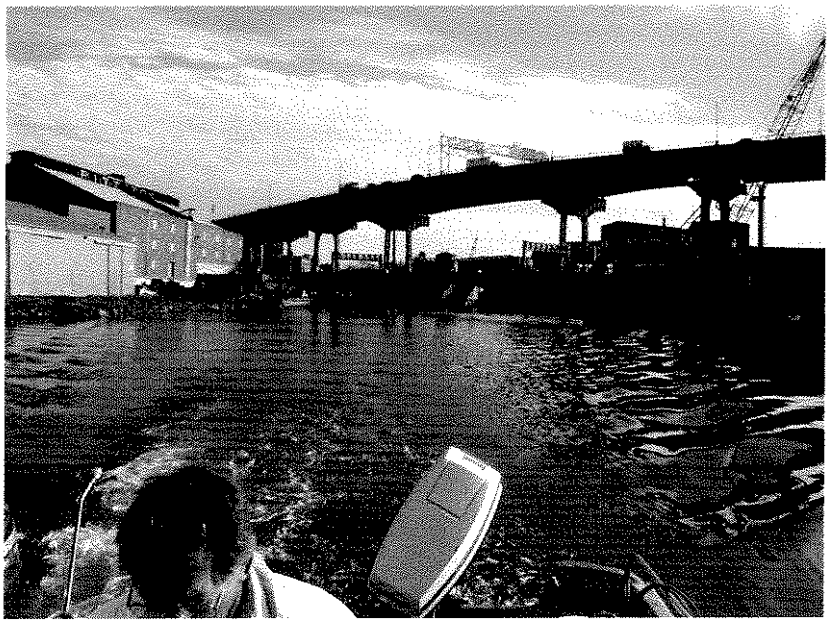
Key:
Temp (temperature) - degree Celsius
SpCond (Specific Conductivity) - milliSiemens per centimeter
Salin (Salinity) - parts per thousand
DO (Dissolved Oxygen) - percent saturation
DO (Dissolved Oxygen) - milligram per liter
Redox - millivolt
Depth - meter
Turb (Turbidity) - nephelometric turbidity unit
Batt (Battery) - volt

PHOTO DOCUMENTATION

NORTHERN ECOLOGICAL ASSOCIATES, INC.

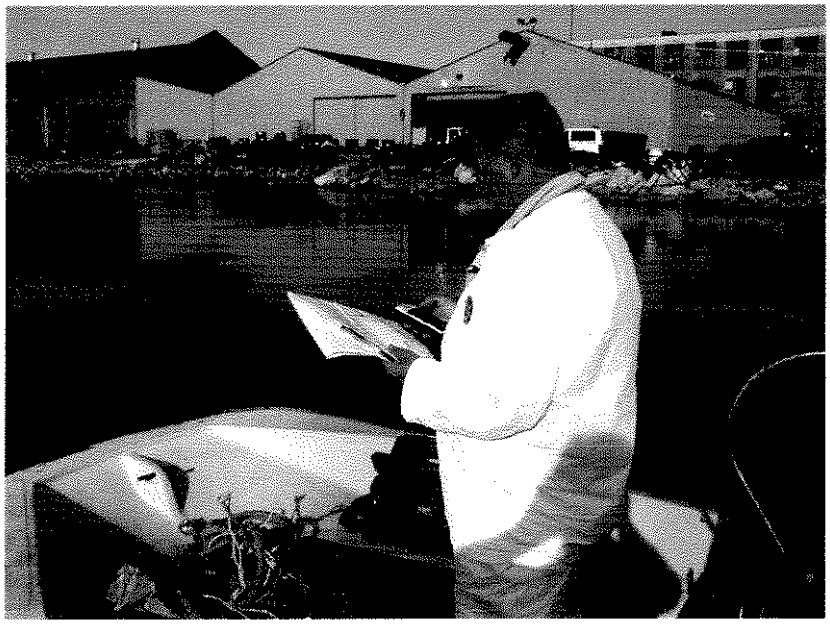
PHOTOGRAPHIC RECORD

Company: U.S. Army Corps of Engineers
Project: Gowanus Canal Benthic Sampling



Photographer: Pam Lynch
Date: April 29, 2003
Photo No.: 1
Direction: East

Comments:
Mobilizing to site GC3-30 by boat. Two watercraft were tied up side by side for sampling. One vessel was used to collect sample and the other was used to process the sample.



Photographer: Pam Lynch
Date: April 29, 2003
Photo No.: 2
Direction: North

Comments:
View of GPS coordinates being recorded. Each sample site had coordinates recorded prior to sampling.

NORTHERN ECOLOGICAL ASSOCIATES, INC.

PHOTOGRAPHIC RECORD

Company: U.S. Army Corps of Engineers
Project: Gowanus Canal Benthic Sampling

Photographer: Pam Lynch
Date: April 29, 2003
Photo No.: 3
Direction: East

Comments:
View of sample bags being filled from side of boat. Samples were taken with a petite Ponar benthic sampler.

Photographer: Pam Lynch
Date: April 29, 2003
Photo No.: 4
Direction: North

Comments:
View of sample being sieved prior to being put into sample bag. Two replicate samples were collected at each site.

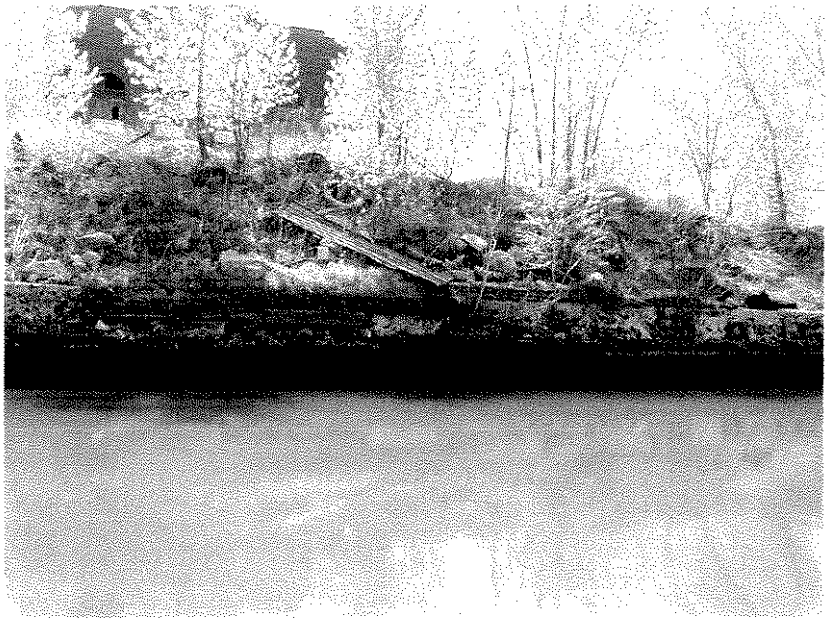
NORTHERN ECOLOGICAL ASSOCIATES, INC.

PHOTOGRAPHIC RECORD

Company: U.S. Army Corps of Engineers
Project: Gowanus Canal Benthic Sampling

Photographer: Keith Brewer
Date: April 30, 2003
Photo No.: 5
Direction: Southeast

Comments:
View of Pam Lynch coordinating sampling sites.



Photographer: Keith Brewer
Date: April 30, 2003
Photo No.: 6
Direction: South

Comments:
View of shoreline along south shore of Gowanus Canal. Bulkhead is deteriorated and shoreline shows signs of severe degradation.

FIELD LOG BOOK

NEA NYCDEP Bath (NY)

CS 200 DO 440 — 3960

Page #4

#2131

Sample #

Gaudens

Benthic Grabs Data

Sampling

	Station	Boat Depth	Date	Time	Grab Fullness	Notes on sediment texture, biogenic structures, and other items	Tide
1	GC3-29(a)	8' (2' eBH)	4/29	7:59/8:01 a.m.	1/2 full 2 grabs	lat 40° 40 47.5 W 73° 59 16.6 2 attempts for first grab. 1 fanworm in sample silty	4.4 rising (8:01)
1	GC3-29(b)	8' (2' eBH)	4/29	8:05am	1/2 grab	lat. 40° 40 47.5 W 73° 59 16.6 odor !! silty	4.4 rising (8:1)
2	GC3-30(a)	5.5' (3' eBH)	4/29	8:25am	Full	lat. 40° 40 53.9 W 73° 59 13.1 next to flapper valve silty	4.4 rising (8:19)
2	GC3-30(b)	5.5' (3' eBH)	4/29	8:27am	Full	lat 40° 40 53.9 W 73° 59 13.1 next to flapper valve silty	4.4 rising (8:21)
3	GC3-26(a)	10.5' (7' eBH)	4/29	8:52am	Full	lat 40° 40 37.8 W 73° 59 21.1 landfill debris collected in sample	4.3 falling (8:44)
3	GC3-26(b)	10.5' (7' eBH)	4/29	8:56am	Full	lat 40° 40 37.8 W 73° 59 21.1 landfill debris collected in sample	4.3 falling (8:49)
4	GC3-23(a)	5' (1.5' eBH)	4/29	9:06am	Full	lat 40° 40 27.6 W 73° 59 20.1 heavy leaf debris, only 2 hydrolab stations taken	4.2 falling 8:54
4	GC3-23(b)	5' (1.5' eBH)	4/29	9:09am	Full	lat 40° 40 27.6 W 73° 59 20.1 heavy leaf debris only 2 hydrolab stations taken silty	4.2 falling 8:57
5	GC3-22(a)	4.7' (1.8' eBH)	4/29	9:14am	Full	lat 40° 40 29.6 W 73° 59 25.8 served out to a very small amt.	4.1 falling 9:06
5	GC3-22(b)	4.7' (1.8' eBH)	4/29	9:16am	Full	lat 40° 40 29.6 W 73° 59 25.8 served out to a very small amt.	4.1 falling 9:08
6	GC3-21(a)	8.5' (2.5' eBH)	4/29	9:24am	Full	lat 40° 40 32.2 W 73° 59 27.8 Only 2 hydro-labs taken	4.1 falling 9:12
6	GC3-21(b)	8.5' (2.5' eBH)	4/29	9:27am	Full	lat 40° 40 32.2 W 73° 59 27.8 Only 2 hydro-labs taken	4.1 falling 9:12
7	GC3-19(a)	8.2' (4' eBH)	4/29	9:31am	Full	lat 40° 40 31.4 W 73° 59 35.7 2 hydro-labs served to nothing	3.9 falling 9:24
7	GC3-19(b)	8.2' (4' eBH)	4/29	9:34am	Full	lat 40° 40 31.4 W 73° 59 35.7 2 hydro-labs served to nothing	3.9 falling 9:24

Prepared Aug 25, 1995

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Page #2

Gowanus

Benthic Grabs Data

Sample #	Station	Boat Depth	Date	Time	Grab Fullness	Notes on sediment texture, biogenic structures, and other items	Tides
8	GC3-18a	13.9'	4/29	9:42am	full	lat 40° 40 34.6 w 73° 59 38.6 gravel to 3rd attempt	9:40 3.9 falling
9	GC3-18b	13.9'	4/29	9:45am	full	lat 40° 40 34.0 w 73° 59 37.6 sandy gravel	9:40 3.9 falling
11	GC3-17(a)	13.8' (10' path)	4/29	9:51am	full	lat 40° 40 31.7 w 73° 59 42.4	9:45 3.7 falling
12	GC3-17(b)	13.8' (10' path)	4/29	9:51am	full	lat 40° 40 31.7 w 73° 59 42.4	9:45 3.7 falling
13	GC3-15(a)	12.6	4/29	10:10am	full	lat 40° 40 29.8 w 73° 59 44.3 nothing in sample	10 3.4 falling
14	GC3-15(b)	12.6	4/29	10:12am	full	lat 40° 40 29.8 w 73 59 44.3 nothing in sample	10 3.4 falling
16	GC3-16(a)	5.7'	4/29	10:02am	2 grabs made a 1/2	lat 40° 40 28.1 w 73 59 40.2 full of debris/human debris	9:55 3.5 falling
17	GC3-16(b)	5.7'	4/29	10:05am	full	lat 40° 40 28.1 w 73 59 40.2 full of debris/human debris	9:55 3.5 falling
18	GC3-13(a)	11.9'	4/29	10:16am	full	lat 40° 40 43.8 w 73 59 49.9	10:10 3.3 falling
19	GC3-13(b)	11.9'	4/29	10:18am	full	lat 40° 40 43.8 w 73 59 49.9	10:10 3.3 falling
20	GC3-11(a)	13' (9' path)	4/29	10:25am	full	lat 40° 40 15.2 w 73 59 55.7	10:18 3.2 falling
21	GC3-11(b)	13' (9' path)	4/29	10:28am	full	lat 40° 40 15.2 w 73 59 55.7	10:18 3.2 falling
23	GC3-9(a)	24.7	4/29	10:35am	full	lat 40° 40 07.5 w 74.00 01.3	10:24 3.0 falling
24	GC3-9(b)	24.7	4/29	10:37am	full	lat 40° 40 07.5 w 74.00 01.3	10:24 3.0 falling
25	GC3-8a	32.5	4/29	10:48am	full	lat 40° 40 02.0 w 74 00 04.8	10:30 2.9 falling
26	GC3-8b	32.5	4/29	11 am	full	lat 40° 40 02.0 w 74 00 04.8	10:30 2.9 falling

Prepared Aug 25, 1995

Sheet #3

Gowanus
Benthic Grabs Data

Sample #

Depth taken from Hydrolab after main loaded

#	Station	Boat Depth	Date	Time	Grab Fullness	Notes on sediment texture, biogenic structures, and other items	Tides
16	GC-3 10(a)	~~26.2'~~ (8M)	4/30	8:05am	full	100' from actual set location (due South) 40° 40 10.7 W 73° 59 55.9	7:54 4.1 rising
16	GC-3 10(b)	26.2'	4/30	8:08am	2/3rd's full	100' from actual set location (due South) 40° 40 10.7 W 73° 59 55.9	7:54 4.1 rising
17	GC-3 31(a)	(5.4M)	4/30	8:17am	1/2	40° 40 07.5 W 73° 59 56.9	8:06 4.2 rising
17	GC-3 31(b)	17.3'	4/30	8:20am	full	40° 40 07.5 W 73° 59 56.9	8:06 4.2 rising
18	GC-3 32(a)	~~[illegible]~~ (1.9M)	4/30	8:32am	sample to rocky 2 attempts to fill	moved very far inland, area not far "out" see new line on map. 40° 40 04.9 W 74° 00 04.9	8:18 4.2 rising
18	GC-3 32(b)	6.2'	4/30	8:38am	sample to rocky Full (8 attempts moved)	see previous notes, moved out bit Jellyfish in water [illegible] yeah 40° 40 04.5 W 74° 00 04.9	8:18 4.2 rising
19	GC-3 7(a)	(7.5M)	4/30	8:42am	Full	40° 40 02.3 W 74° 00 10.8 Site selected for BSC in cores Sand !!	8:30 4.2 rising
19	GC-3 7(b)	24.6'	4/30	8:46am	Full	40° 40 02.3 W 74° 00 10.8 Site selected for BSC in cores Sand !!	8:30 4.2 rising
20	GC-3 38(a)	7.6(M)	4/30	8:52am	Full	40° 40 04.6 W 74 00 20.5 sediment is gravel	8:48 4.3 rising
20	GC-3 38(b)	24.9'	4/30	8:54am	Full	40° 40 04.6 W 74 00 20.5 sediment is gravel + concrete	8:48 4.3 rising
21	GC-3 6(a)	(12M)	4/30	9:00am	Full	mussel hash 40° 39 57.7 W 74 00 24.6	8:54 4.3 rising
21	GC-3 6(b)	39.4'	4/30	9:02am	Full	mussel hash 40° 39 57.7 W 74 00 24.6	8:54 4.3 rising
22	GC-3 37(a)	~~[illegible]~~ (1.8M)	4/30	9:15am	Full	40° 40 14.1 W 74 00 18.5 very fine silt + wood debris SNAILS @	9:12 4.3 ~~rising~~
22	GC-3 37(b)	~~[illegible]~~ 5.9'	4/30	9:17am	Full	40° 40 14.1 W 74 00 18.5 very fine silt + wood debris American eel ??	9:12 4.3
	X	X	X	X	X	X X X X X X X X	X

Prepared Aug 25, 1995

Next ↓

Sheet #4

Gowanus
Benthic Grabs Data

Depth taken from Hydrolab after downloading

Sample #	Station	Boat Depth	Date	Time	Grab Fullness	Notes on sediment texture, biogenic structures, and other items	Tides
22	GC-3 36(a)	3(M)	4/30	9:32am	full	40° 40 06.6 W 74 00 31.7 wood debris, fine sediment	9:24am 4.2 falling
23	GC-3 36(b)	9.8'	4/30	9:34am	full	40° 40 06.6' W 74 00 31.7 wood debris, fine sediment	9:24am 4.2 falling
24	GC-3 4(a)	(7.5m)	4/30	9:46am	full	40° 39 53.7 W 74 00 45.4 live mussels, silty	9:30 4.2 falling
25	GC-3 4(b)	24.6'	4/30	9:46am	full	40° 39 53.7 W 74 00 45.4 live mussels, silty	9:30 4.2 falling
15	GC-3 35(a)	~~5.0~~ 2.6m	4/30	10:02am	full	CONTROL - only 1 sample taken	X
35	GC-3 35(b)	46.3'	4/30	X	X	CONTROL X X	X
26	GC 3 1(a)	10.5(m)	4/30	10:12am	full	40° 39 38.5 W 74° 00 56.4 sieved to nothing	10 3.8 falling
26	GC 3 1(b)	34.4'	4/30	10:15am	full	40° 39 38.5 W 74° 00 56.4 sieved to nothing	10 3.8 falling
27	GC-3 34(a)	(8.4m)	4/30	10:23am	full	40° 39 35.4 W 74° 00 29.4 sieved to nothing	10:18 3.6 falling
27	GC-3 34(b)		4/30	10:25am	full	40° 39 35.4 W 74° 00 29.4 sieved to nothing	10:18 3.6 falling
28	GC-3 5(a)	(7.6m)	4/30	10:32am	full	40° 39 53.1 W 74° 00 28.3	10:24 3.5 falling
28	GC-3 5(b)		4/30	10:37am	full	40° 39 53.1 W 74° 00 28.3	10:24 3.5 falling
29	GC-3 33(a)	(3.2)	4/30	10:46am	full	40° 39 49.4 W 74° 00 00.5	10:30 3.3 falling
29	GC-3 33(b)		4/30	10:50am	full	40° 39 49.4 W 74° 00 00.5	10:30 3.3 falling
	X	X	X	X	X	X X X X	X

Prepared Aug 25, 1995

END

end sampling effort.