Site: New Bedford
Date: 11/15/94
Other: 57722

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

8/17/88

Howard T. Weir
Leslie S. Ritts
Morgan, Lewis & Bockius
1800 M. Street, N.W.
Washington, D.C. 20036

Paul G. Galvani
Roscoe Timmier, Jr.
Ropes & Gray
225 Franklin Street
Boston, MA 02210

Daniel J. Gleason
Mary K. Ryan
Nutter, McClennan & Fish
One International Place
Boston, MA 02110-2699

David A. McLaughlin
Michael J. McGlone
McLaughlin & Folan
448 County Street
New Bedford, MA 02740

Verne W. Vance, Jr.
Foley, Hoag & Eliot
One Post Office Square
Boston, MA 02109

Re: United States et al. v. AVX et al.,
No. 83-3882Y (D. Mass)

Counsel:

Enclosed for your information are copies of the consent schedule for the New Bedford Harbor Pilot Study, and a preliminary data report for the Dike Construction phase of the project.

Yours Sincerely,

Charles C. Bering
Assistant Regional Counsel

cc: Ellen Mahan
Nancy Preis
Frank Ciavattieri

SDMS DocID 57722

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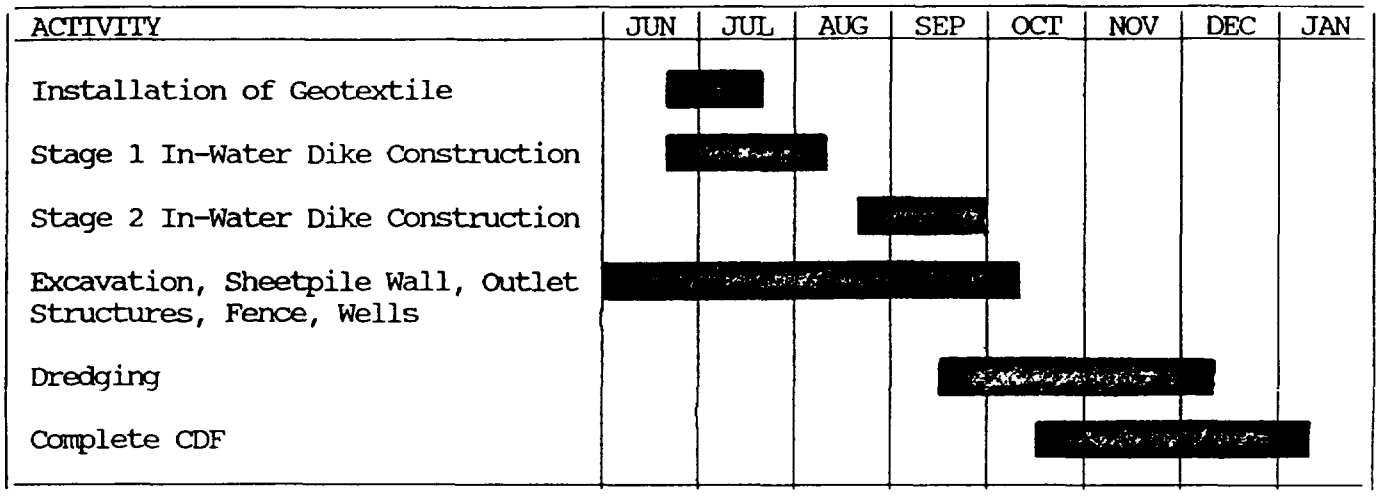
NEW BEDFORD HARBOR SUPERFUND PROJECT
PILOT STUDY CONSTRUCTION SCHEDULE



NOTE:

1. Installation of geotextile will require 10-15 work days. Fabric to be installed in three sections. Stage 1 dike construction may be carried out concurrently with geotextile installation.

2. Stage 1 in-water dike construction will require 20-30 work days.

3. Consolidation period between Stage 1 and Stage 2 dike construction estimated to be between 15 and 30 days.

4. Stage 2 in-water dike construction will require 12-20 work days.

5. Consolidation period between the completion of Stage 2 in-water dike and the start of dredging estimated to be between 15-30 days.

6. Sheetpile wall, outlet structures, fence and monitoring wells to be installed prior to the start of dredging. Monitoring wells to be sampled 3 times prior to the start of dredging.

7. Dredging will be carried out over 65 days period. Approximately 30 days of scheduled downtime included in this period.

8. Completion of CDF will involve placing stone protection and disposing of debris in the secondary cell.

Preliminary Results of Chemical and Biological Monitoring of the Dike Construction Phase of the New Bedford Harbor Pilot Project

July 21, 1988

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Research Laboratory
South Ferry Road
Narragansett, R.I. 02882

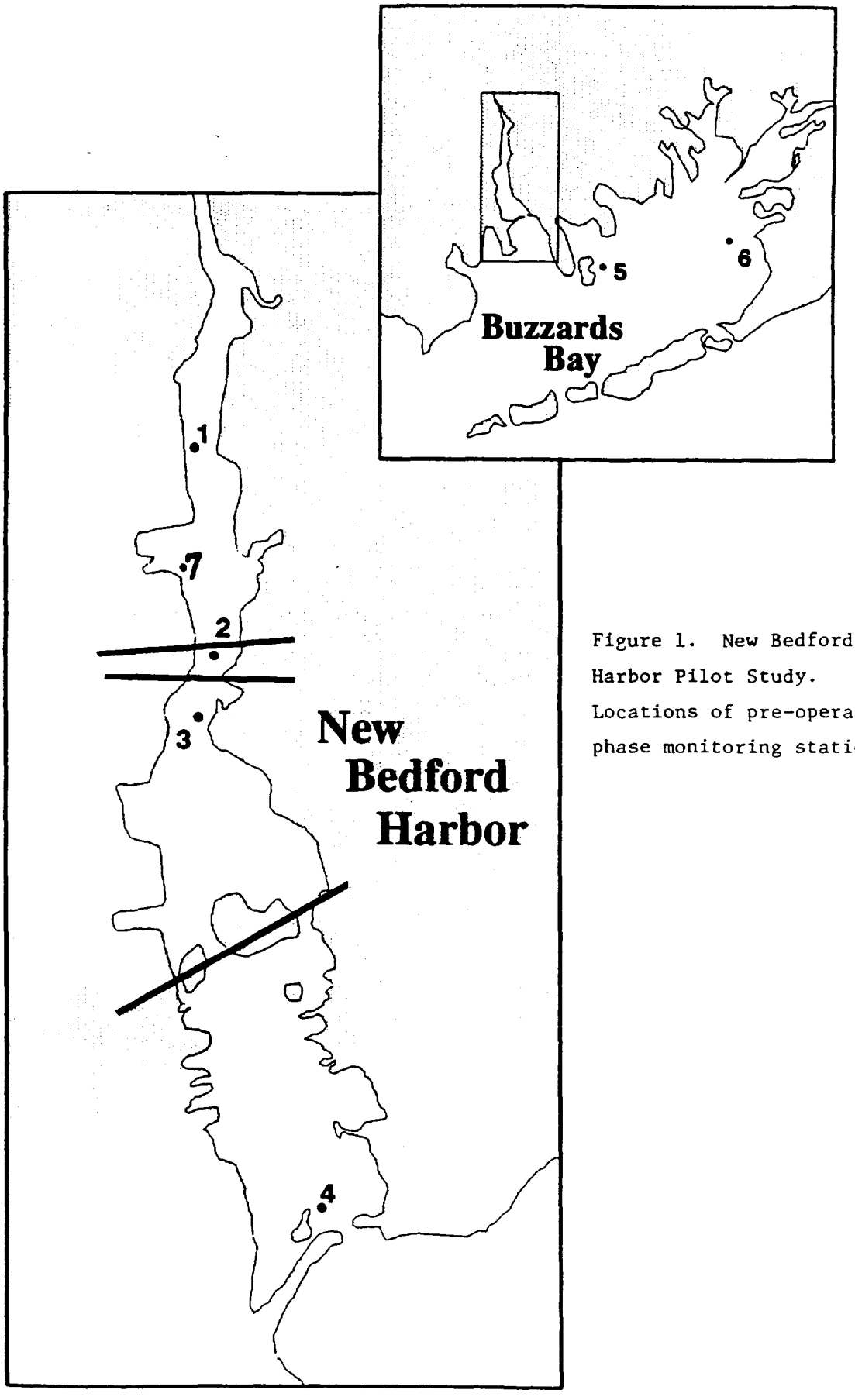


Figure 1. New Bedford Harbor Pilot Study. Locations of pre-operational phase monitoring stations.

Table 2. Monitoring program endpoints and the numerical decision criteria requiring temporary or permanent cessation of any operational phase or an increase in sampling or sample processing. (These numerical decision criteria will be revised as additional preoperational monitoring data become available.)

Endpoint	Time to obtain first value	New Bedford Harbor Station Location: Above Cove (NBH-1)	Coggeshall St. Bridge (NBH-2)		Hurricane Barrier (NBH-4)
Water					
		Flood	Ebb		
Suspended solids (mg/l)	2-4 hr	53	32		
Water Chemistry					
			Ebb (ug/l)	Net Transport (kg)	Ebb (ug/l)
PCB (total)	24 hr		3.2 * 1.3 **	1.7/cycle * 0.7/cycle **	0.3 **
Cd	24 hr		9.3 ***		9.3 ***
Pb	24 hr		5.6 ***		5.6 ***
Cu	24 hr		9.8 **		5.4 **
Mussel PCB Tissue Residues (ug/g)					
7-day exposure	10 days		90 *		14 *
28-day exposure	30 days		190 *		27 *
Biological Responses					
Acute (% Survival)			Ebb		
Fish Mysids Mussels Sea Urchins (% Fert.) Plants	All tests monitored daily		Mortality > 20% of Control value for two species or > 50% for one species **		
Chronic Effects					Ebb ****
Fish (dry wt., mg)	8 days				20% (40%)
Mysids (dry wt., mg) (reproduction)	8 days				20% (40%) 50% (100%)
Mussels:					
Scope for growth (J/h)	8 days				7.5 J/h (15 J/h)
Shell growth (mm)	28 days				50% (100%)
Sea Urchin (% Fert.)	1 day				25% (50%)
Plant (# cystocarps)	8 days				50% (100%)

* This value requires that the decision criteria committee evaluate the monitoring data, and other information related to the operation, prior to resumption of operations on the next day.

** This value requires that the sample be collected again. If exceeded twice for an individual species, the decision criteria committee must evaluate the monitoring data, and other information related to the operation, prior to resumption of operations on the next day.

*** U.S EPA water quality criterion; criteria continuous concentration.

**** This value represents a statistically and biologically significant reduction from control values. A significant reduction in two endpoints, or a 2X reduction in one endpoint (in parentheses), requires that the decision criteria committee evaluate the monitoring data, and other information related to the operation, prior to resumption of operations on the next day.

CONCLUSIONS

SUSPENDED SOLIDS

* No significant increase in suspended solids at any station.

* No correlation between suspended solids and PCB concentrations ($r=0.05$).

WATER CHEMISTRY

* No trend in PCB concentrations over time at Stations NBH-1, NBH-7, or NBH-4.

* There is a trend towards increased PCB concentrations at Station NBH-2 in Ebb water samples (2 values $\geq$ 2X). PCB concentrations in Flood water samples remained relatively constant over time. Again, no correlation between PCBs and suspended sediment at NBH-2 ($r=-0.24$).

* Ratio of Aroclor 1242/1254 at Station 2 increased during operational phase, consistent with release of dissolved PCBs. Correlation between this ratio and PCBs at NBH-2 ($r=0.76$).

(CONCLUSIONS CONT.)

MUSSEL CHEMISTRY

* PCB concentrations in mussels, which integrate exposure over time, did not increase at Station NBH-2 during the first 7 days of the operation when compared to the 7 day Pre-operational exposures. This suggests no increase in bioavailability of PCBs during this period.

BIOLOGICAL RESPONSES

* No biological effects (acute or chronic) were observed in any species during the first 7 days of the operation. However, test methodologies were not identical to the pre-operational tests due to scheduling changes in dike construction.

SUMMARY

Despite a trend towards increasing ebb tide PCB concentrations at NBH-2 since the initiation of dike construction, biological monitoring has shown no simultaneous adverse biological effects to date.

RECOMMENDATIONS

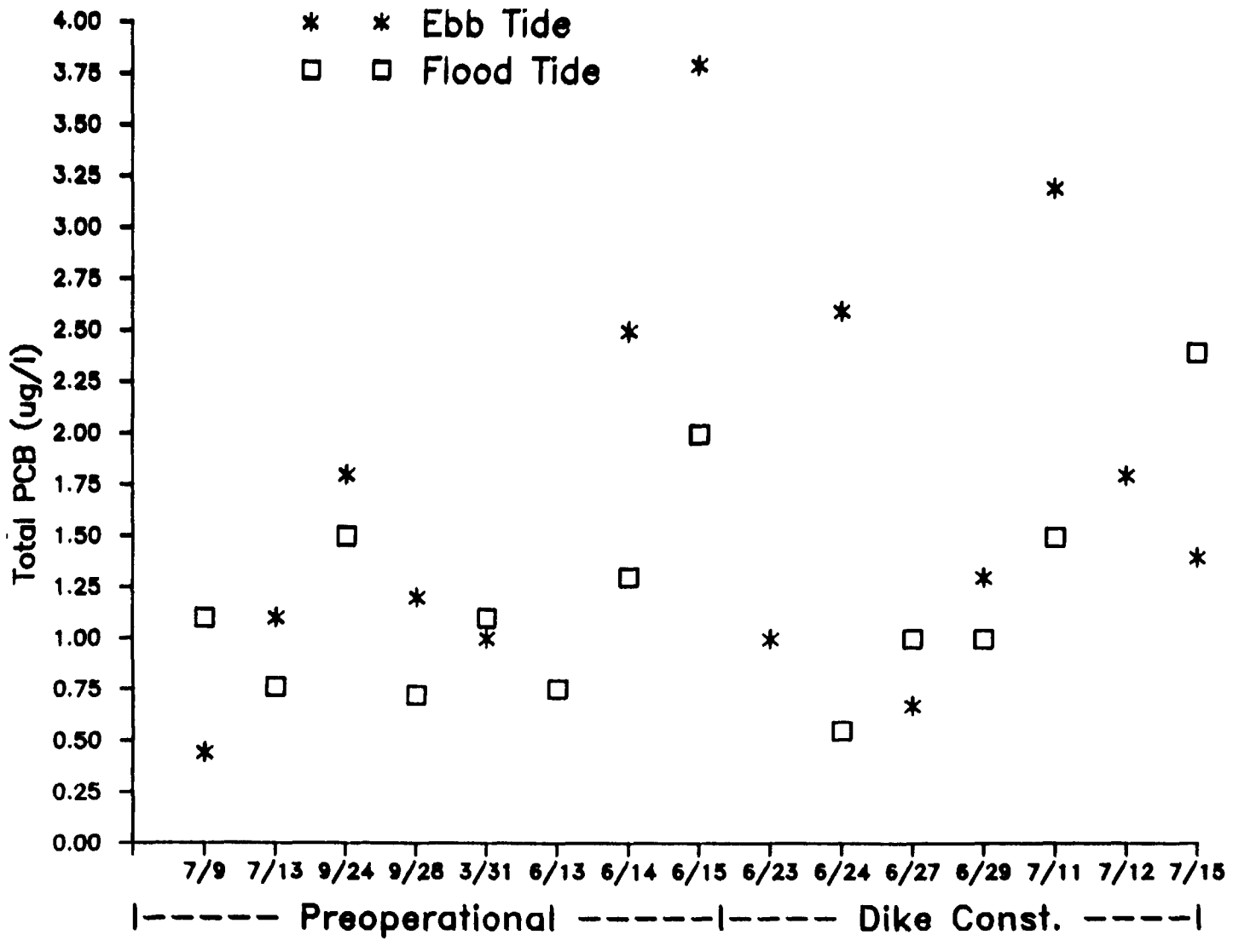
* The absence of consistently elevated chemical concentrations above the Decision Criteria values, and the lack of biological effects to date, suggests that the project should continue.

* We recommend that additional unplanned biological and chemical monitoring be conducted:

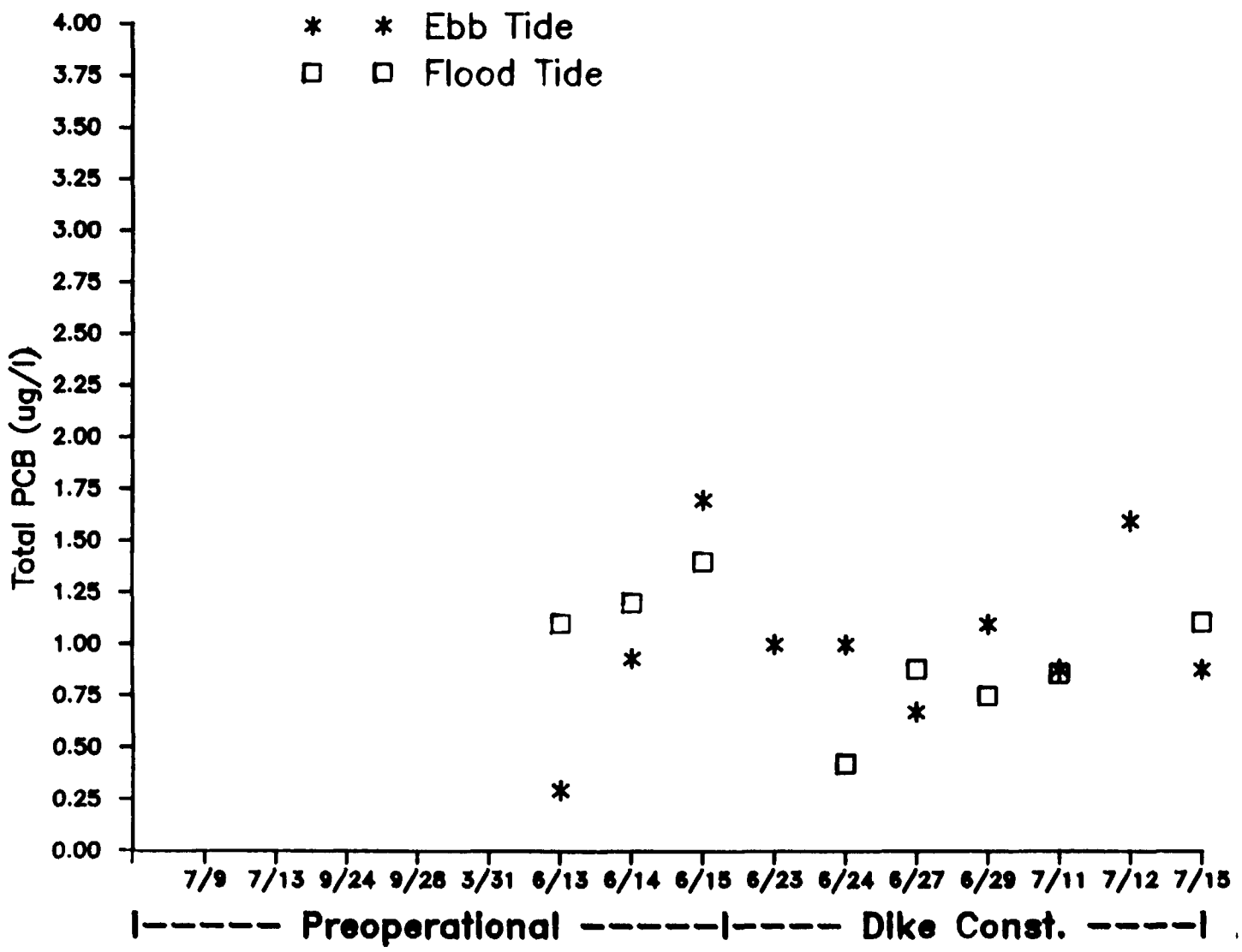
  - during the construction of the north-south leg of the dike to monitor the effects of this phase of the operation,

  - periodically after the dike is finished to monitor the decline of PCB concentrations to pre-operational levels.

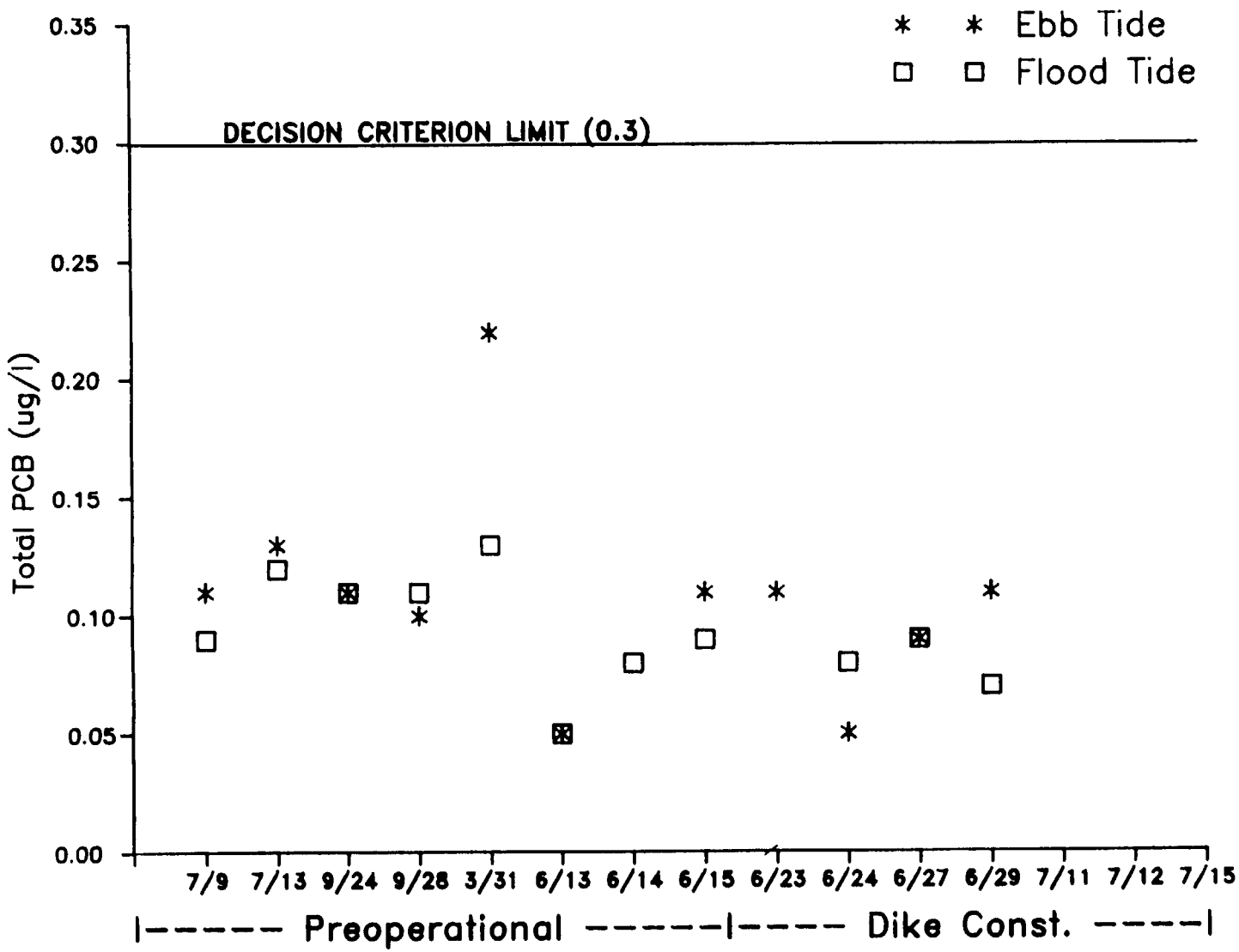
PCB concentrations in water samples collected at NBH-1



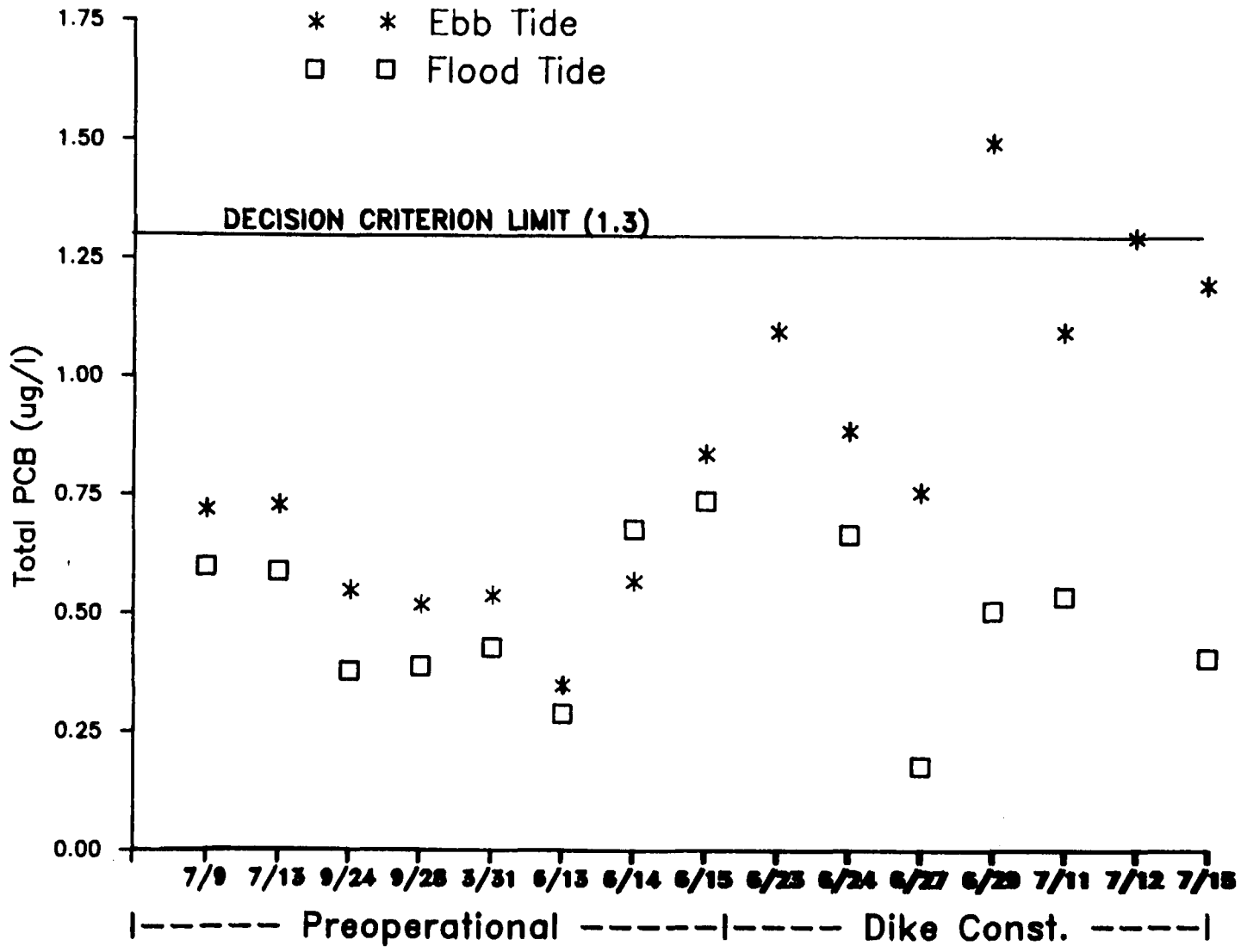
PCB concentrations in water samples collected at NBH-7



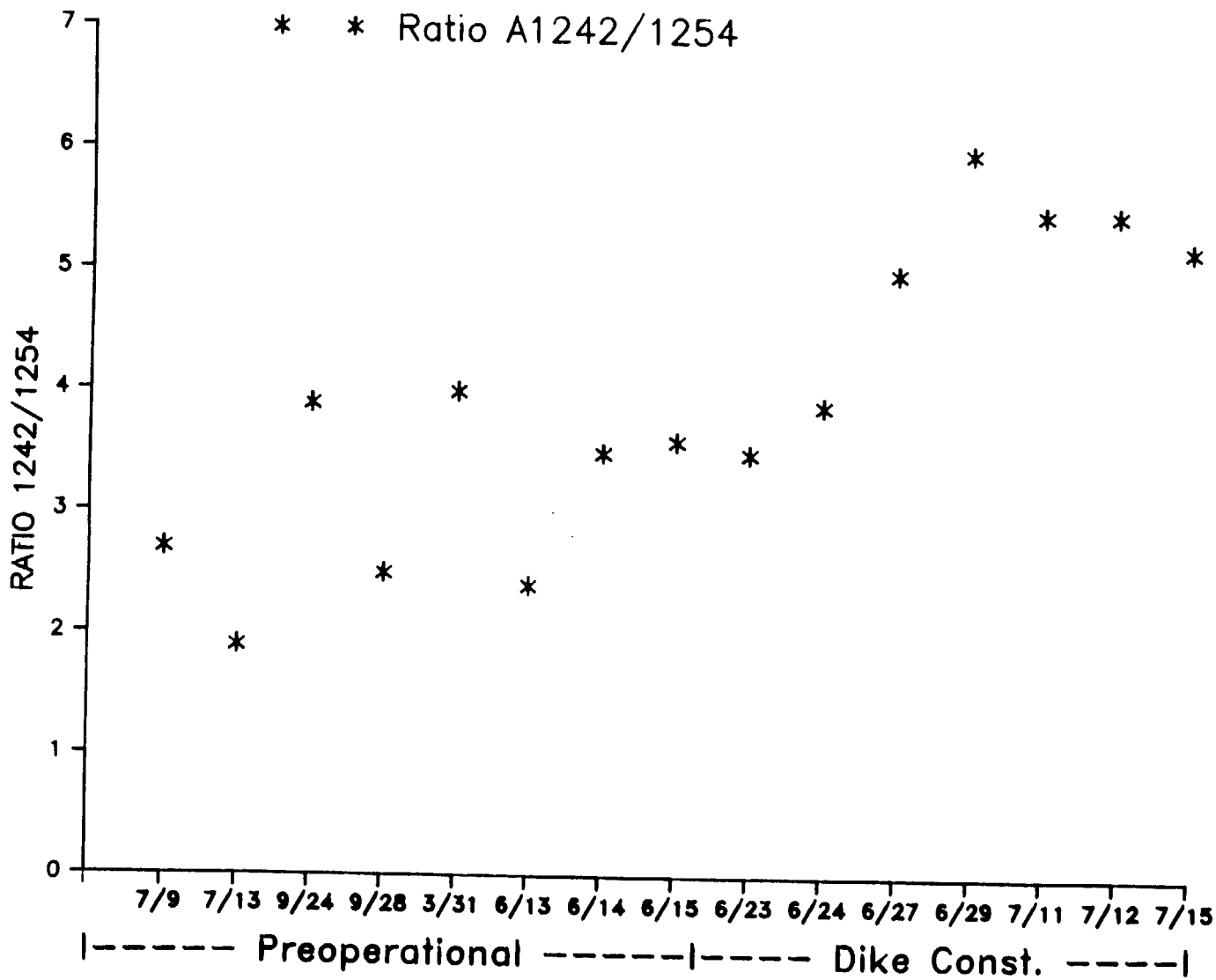
PCB concentrations in water samples collected at NBH-4



PCB concentrations in water samples collected at NBH-2



Ratio of Aroclor 1242/1254 in Ebb water samples at NBH-2



PCB concentrations in Ebb water samples collected in NBH

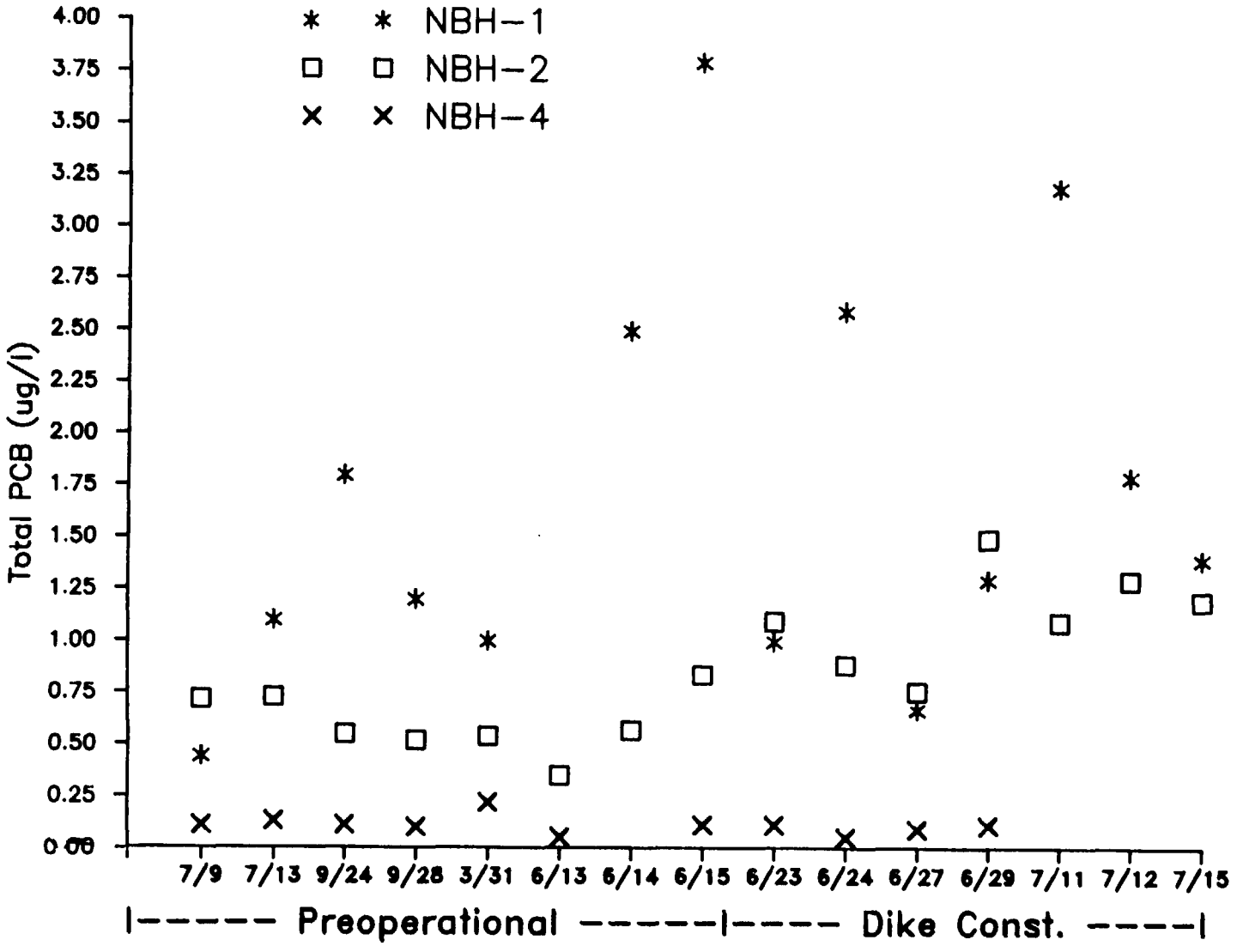


Table 1. Summary of acute and chronic biological responses after exposure to water collected from NBH during the first 7 days of the dike construction phase of the Pilot Project. In addition, mussel tissue residue PCB concentrations are listed.

	Acute Response (% Survival)		
Test organism	NBH-2 (Ebb)	NBH-4 (Ebb)	NBH-5
Fish	96	96	96
Mysid	90	90	90
Champia	100	100	0 *
Mussel **	100	100	100

	Chronic Response		
Test Organism	NBH-2 (Ebb)	NBH-4 (Ebb)	NBH-5
Fish (Dry wt.)	2.65	2.69	2.73
Mysids ***			
Mussels (SFG) **	4.3	10.	5.1
Champia ***			

Mussel PCB Tissue Residues (ug/g)	Pre-operational	Dike Construction
7-day exposure	45.7	46.7

* All control plants died.

** Continuous exposure.

*** Because of condition of organisms, they did not meet the minimum 7-day test criteria.