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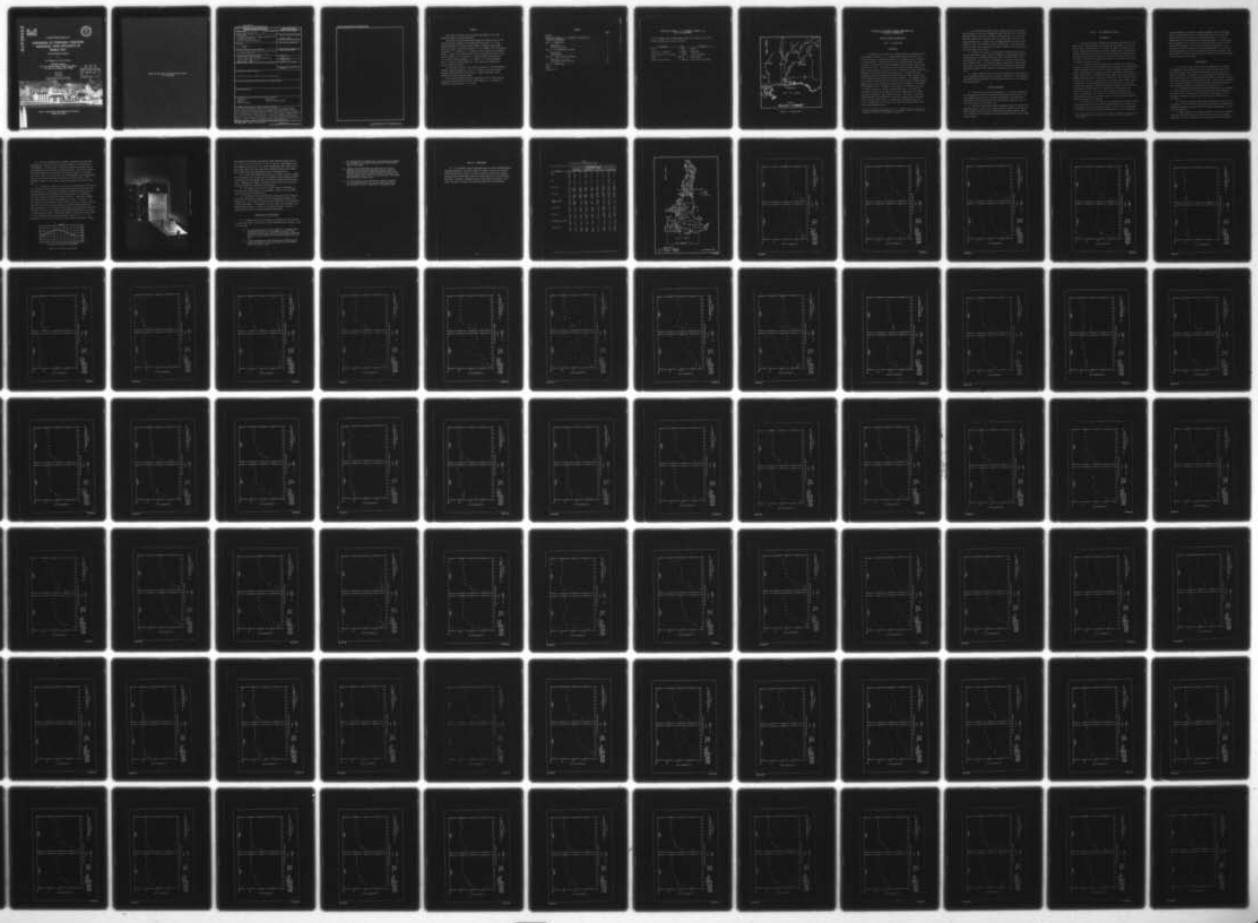

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DISPERSION OF PROPOSED THEODORE INDUSTRIAL PARK EFFLUENTS IN MOBILE BAY

Hydraulic Model Investigation

by

R. C. Berger, Jr., and M. J. Trawle

Hydraulics Laboratory
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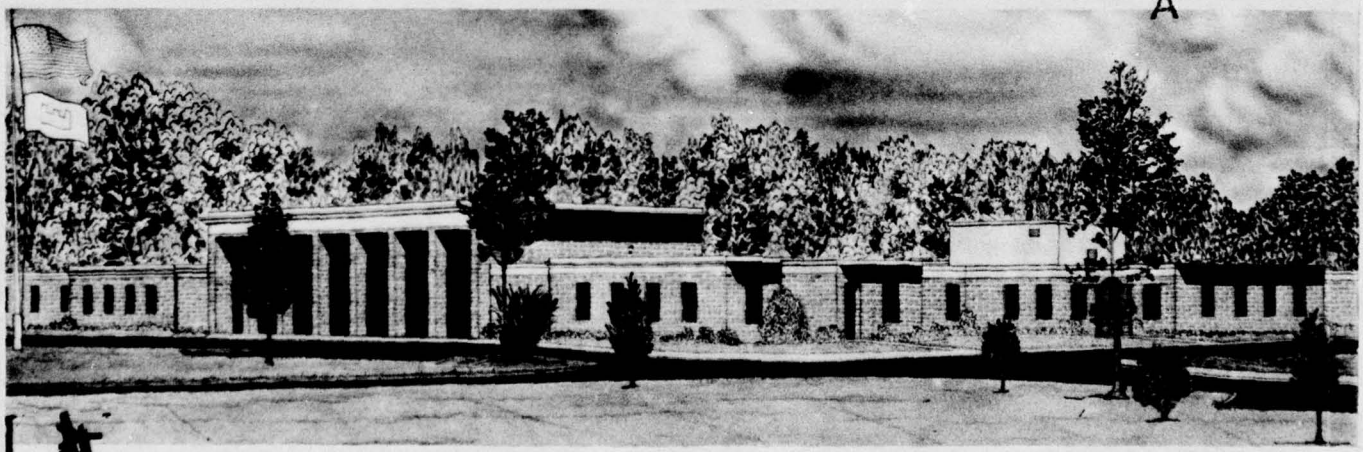

Prepared for South Alabama Regional Planning Commission
Mobile, Ala. 36601

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

An existing comprehensive physical model that correctly reproduced tides, tidal currents, and density currents throughout the entire Mobile Bay was used to determine the distribution characteristics in Mobile Bay of effluents from four possible discharge locations. This office made no attempt to analyze the results of the dye dispersion tests or draw any conclusions from these results. The dyes used in these model tests were conservative and so did not decay with time. Therefore, appropriate decay rates should be applied to the model test data as a basis for predicting prototype conditions.

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PREFACE

This study and report were requested and funded by the South Alabama Regional Planning Commission.

The study was conducted during November and December 1976 in the existing Mobile Bay Model in the Hydraulics Laboratory, U. S. Army Engineer Waterways Experiment Station (WES), Vicksburg, Mississippi, under the general supervision of Messrs. H. B. Simmons, Chief, Hydraulics Laboratory; F. A. Herrmann, Jr., Assistant Chief, Hydraulics Laboratory; and R. A. Sager, Chief, Estuaries Division; and under the direct supervision of Messrs. R. A. Boland, Jr., Chief Interior Channel Branch; M. J. Trawle, Project Manager; R. C. Berger, Jr., Project Engineer; and J. S. Ashley, senior technician. This report was prepared by Messrs. Berger and Trawle.

Mr. Don Brady served as the Project Director for the South Alabama Regional Planning Commission. Mr. J. R. Duncan of the South Alabama Regional Planning Commission and Messrs. Trawle and Berger of WES planned and coordinated this study.

The Director of WES during the performance of this study and the preparation and publication of this report was COL J. L. Cannon, CE. Technical Director was Mr. F. R. Brown.

CONTENTS

CONVERSION FACTORS, U. S. CUSTOMARY TO METRIC (SI) UNITS OF MEASUREMENT

U. S. customary units of measurement used in this report can be converted to metric (SI) units as follows:

Multiply	By	To Obtain
feet	0.3048	metres
miles (U. S. statute)	1.609344	kilometres
square miles (U. S. statute)	2.589988	square kilometres
acres	4046.856	square metres
cubic feet per second	0.02831685	cubic metres per second

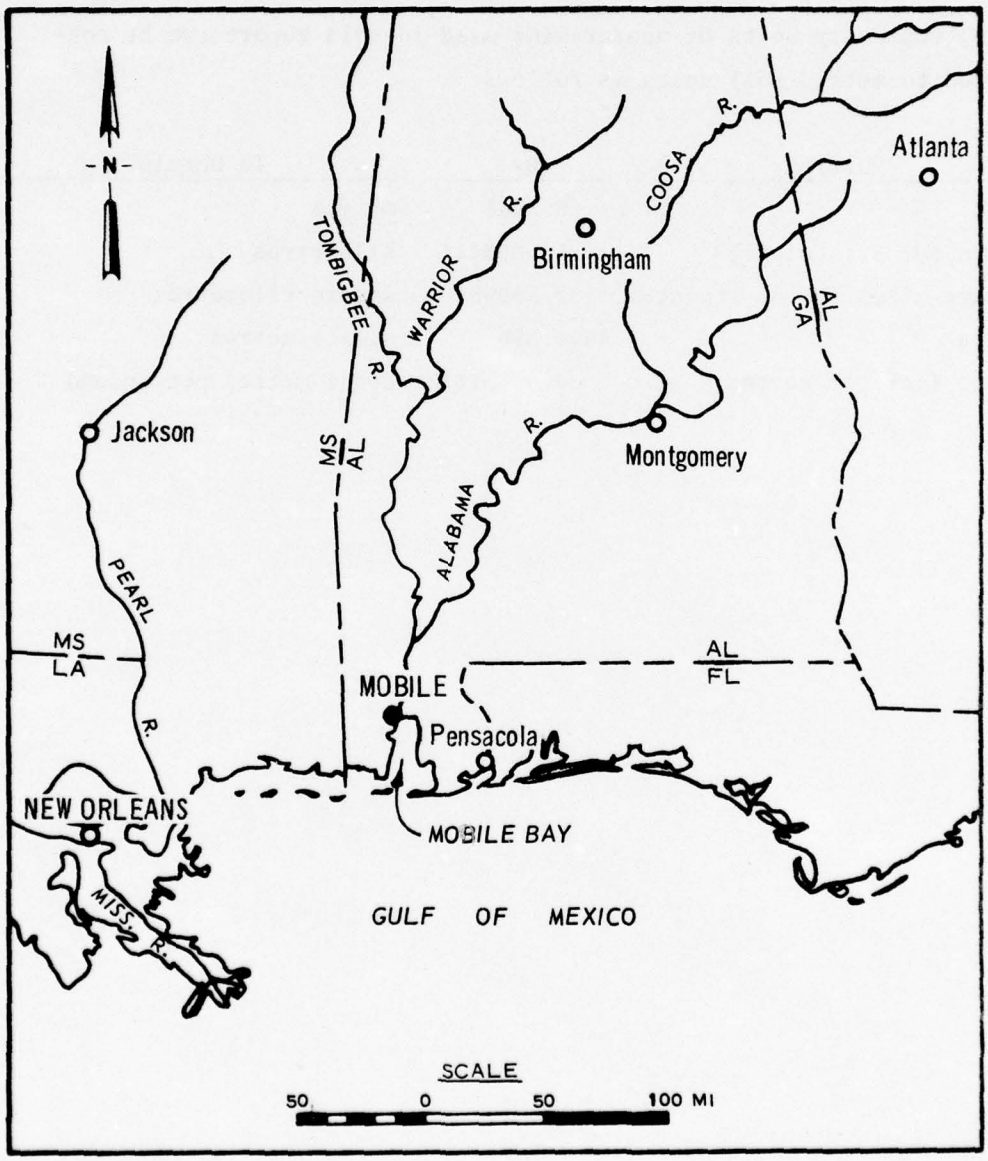

Figure 1. Vicinity map

DISPERSION OF PROPOSED THEODORE INDUSTRIAL PARK EFFLUENTS IN MOBILE BAY

Hydraulic Model Investigation

PART I: INTRODUCTION

Background

1. Mobile Bay, located in the southwestern part of Alabama on the Gulf of Mexico (Figure 1), is a roughly pear-shaped estuary 30 miles* long and varying in width from 8 miles at its northern end to 20 miles in its lower portion. The bay covers an area of approximately 392 square miles and is relatively shallow throughout with an average natural depth of about 9 to 10 ft. The entrance to the bay from the Gulf of Mexico is about 3 miles wide and is 46 miles west of Pensacola, Florida, and 104 miles northeast of the mouth of the Mississippi River. Streams and rivers flowing into the bay provide fresh water, and tidal flows provide saline water from Mississippi Sound and the Gulf of Mexico. The greatest influx of freshwater enters the bay from the Mobile River which is formed approximately 40 miles north of Mobile, Alabama, by the junction of the Alabama and Tombigbee Rivers. The Mobile River flows in a southerly direction for some 45 river miles before entering Mobile Bay. The river has a watershed of almost 43,650 square miles that includes most of Alabama, northeast Mississippi, and northwest Georgia. Other major tributaries entering Mobile Bay include the Tensaw River, Spanish River, Apalachee River, and the Blakely River. The Apalachee and Blakely Rivers are straits originating in the Tensaw River, while the Spanish River originates from the Mobile River.

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*A table of factors for converting U. S. customary units of measurement to metric (SI) units is presented on page 3.

2. All of Mobile Bay and at least a portion of each of the tributaries feeding the bay are influenced by tidal fluctuations. Mobile Bay generally has one tide cycle in about a 25-hr period, or one lunar day. The tidal range varies from less than 1 ft during neap tides to 2.5 ft during spring tides. A normal tide following predicted elevations with respect to time is considered a rarity in Mobile Bay, since prevailing winds are quite often responsible for water surface elevations and circulation patterns within the bay.

3. In 1965, the Mobile City Industrial Development Board and the Alabama State Docks jointly acquired a federally owned ammunition depot and established the Theodore Industrial Park. This industrial park is located about 2.5 miles south of the Mobile city limits on the western shore of Mobile Bay. The original purchase included 1826 acres of land; dock, water, and fire protective facilities; and a number of buildings. Additional acreage has been bought to increase the area to about 4000 acres.

4. Future effluents from the Theodore Industrial Park are planned to be discharged through an outfall located in Mobile Bay. The industrial park effluents and eventually some municipal effluents will be discharged through the outfall.

Purpose and Scope

5. The objective of this investigation is to provide information for predicting the effluent dispersion characteristics from each of the four proposed outfall sites now under consideration. The dispersion characteristics of each proposed site could then be evaluated to aid in the final selection of the best site.

6. This was accomplished by the continuous release of conservative fluorescent dye at each of the proposed outfall locations in the physical model of Mobile Bay located at the Waterways Experiment Station and by the collection and measurement of dye concentration samples taken throughout the model.

PART II: THE COMPREHENSIVE MODEL

Description

7. The physical model of Mobile Bay reproduced approximately 1073 square miles of the prototype, including about 268 square miles of the Gulf of Mexico from Pine Beach on the east to about the western end of Dauphin Island and offshore to the -70-ft* contour (msl); all of Mobile and Bon Secour Bays; a portion of Mississippi Sound; and the Mobile and Tensaw Rivers and adjacent marshes to the junction of the two rivers at Mt. Vernon, some 40 miles upstream from Mobile. The limits of the area reproduced are shown in Plate 1.

8. The model was of the comprehensive fixed-bed type, molded in concrete to conform to 1972 prototype conditions except for the navigation channel from deep water in the Gulf of Mexico, which was constructed to project dimensions (40-ft depth) or to 1972 conditions, whichever was deeper. Additionally, the proposed Theodore Ship Channel and associated dredged material disposal island was installed to a 40-ft depth and 400-ft-width (see Plate 1). Construction was to linear scale ratios, model to prototype, of 1:1000 horizontally and 1:100 vertically, using the Alabama Grid Coordinate System for horizontal control. Other pertinent scale ratios, derived from the Froudian laws of similitude, were: slope 10:1; velocity 1:10; time 1:100; discharge 1:1,000,000; and volume 1:100,000,000. The salinity scale ratio for the study was 1:1. One prototype tidal cycle (diurnal tide) of 24 hr and 50 min was reproduced in the model in 14.904 min.

9. Verification of the model, or the adjustment of tides, currents, and salinities to agree with similar phenomena observed in nature, was accomplished in three interrelated phases. Phase 1 involved adjustment of the model until tidal elevations and phases for normal astronomical

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* All elevations (el) cited herein are in feet referred to mean sea level (msl).

tides throughout the model were in proper agreement with corresponding tides in the prototype; phase 2 involved adjustment of the model until current velocities and directions in the model agreed with similar measurements in the prototype for the same conditions of tide and upland flow; and phase 3 was the salinity verification which ensured that the mixing and dispersion of salt water in the model corresponded to the prototype for similar conditions of tide and freshwater flow. No prototype dye dispersion data were available for verification purposes, and consequently, dispersion, other than that evidenced by salinity gradients, was not confirmed in the model.

Appurtenances

10. The tidal action in the model was reproduced by a primary tide generator located adjacent to the limit of the model ocean and a secondary tide generator located in Mississippi Sound at the western limit of the model. Basically, the tide generators in the Mobile Bay model produce the tide by pumping salt water from the sumps at a constant rate while controlling the return gravity flow to the sump by an automatic valve (primary generator) or automatic tailgate (secondary generator) whose automatic movement is controlled by an adjustable cam.

11. The Mobile and Tensaw River inflow systems were each equipped with constant head tanks and sufficient flow meters (three for Mobile River and two for Tensaw River) for the precise measurement of the respective freshwater inflows required at the model cutoff point at Mt. Vernon.

12. Permanently mounted point gages, graduated to 0.001 ft (0.10 ft prototype), were installed on the model at locations corresponding to prototype recording tide gage locations to obtain measurements of water surface elevations.

13. Water samples for subsequent analysis to obtain dye concentrations were drawn into collection vials by suction from a vacuum pump connected to a central manifold, which in turn was connected to tubes

running to each station. Samples were obtained simultaneously at all depths and stations throughout the desired sections of the model.

14. Gulf and Mississippi Sound source salinity concentrations in the saltwater sumps were determined by chemical titration. The titration equipment consisted of silver nitrate and potassium chromate, a graduated burette for measuring the volume of silver nitrate, pipettes for measuring the volume of samples used, and sample jars in which to perform the titration. The potassium chromate was used as an end-point indicator in the titration process. The method consisted of adding a known concentration of silver nitrate solution to a known volume of the water sample obtained from the model sump; the amount of silver nitrate required to precipitate the salt contained in the sample was then converted to salinity in parts per thousand (ppt), total salts.

15. The model was completely enclosed in a shelter to protect it and its appurtenances from the weather to permit uninterrupted operation.

16. More detailed accounts of the model description, verification, and some model appurtenances may be found in WES Technical Report H-75-13, "Mobile Bay Model Study; Effects of Proposed Theodore Ship Channel and Disposal Areas on Tides, Currents, Salinities, and Dye Dispersion," R. J. Lawing, R. A. Boland, and W. H. Bobb, September 1975.*

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* Hereafter referred to as Mobile Bay Model Study Report I.

PART III: MODEL TESTS AND RESULTS

Description of Tests

18. Test conditions. The model conditions during this test were as follow:

a. Gulf tide range of 2.3 ft measured at Dauphin Island gage (Figure 2).

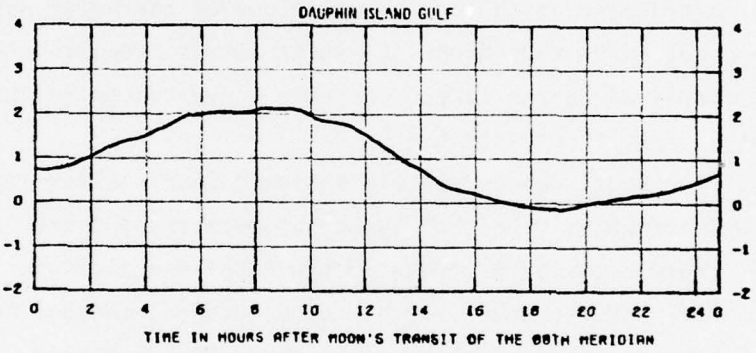


Figure 2. Dauphin Island gulf tide curve

b. Total freshwater inflow was 12,000 cfs at Mt. Vernon, 7200 cfs of which was introduced into the Mobile River and the remainder, 4800 cfs, in the Tensaw River.

c. Source salinity of 30 ppt.

d. Initial dye concentration of 1,000,000 parts per billion (ppb).

e. Continuous dye release at the bottom depth of each injection site of 20 cfs (prototype) corresponding to 34 cc/min (model).

f. The density of the initial dye solution was adjusted to equal that of the average salinity at the point of injection.

19. Test procedures. The model starting procedure was the same as described in the Mobile Bay Model Study Report 1. The model was run 32 complete cycles to achieve salinity stability before the start of any dye release.

20. The dye was mixed using 40 grams of powdered dye mixed with enough water to yield 40 liters of final solution, a concentration of 1,000,000 ppb. The water used to make this solution was drawn prior to the scheduled dye release from the injection point. Since water density varies with salinity concentration, the water was drawn at a constant rate over a tidal cycle so that the dye solution density was approximately equal to the average receiving water density at that station. This procedure ensured on the average a neutrally buoyant dye release to the model.

21. Injection was made at two locations simultaneously by utilizing two injection systems and two dyes, Uranine and Pontacyl Brilliant Pink, which fluoresce at sufficiently different wavelengths to make each dye concentration easily distinguishable from each other. All injection points and station locations are shown in Plate 1. Injection locations A-1-A and A-5-A were tested simultaneously, as were A-2 and A-3. The dye releases were initiated at hour 0 of the tital cycle (about two hours after local low water) after at least 32 cycles of model operation to achieve stability. The injections were made at the bottom depth and were continuous for 50 cycles. Samples were drawn simultaneously by means of a vacuum sampling system at high water (about hr 10) and low water (about hr 22) at the Fowl River tide gage (Figure 3) for sta 1, 3, 5, 7, T1 through T5, TSC, S4, S5, S7, S10, S12, S14, and M1 through M27. Samples

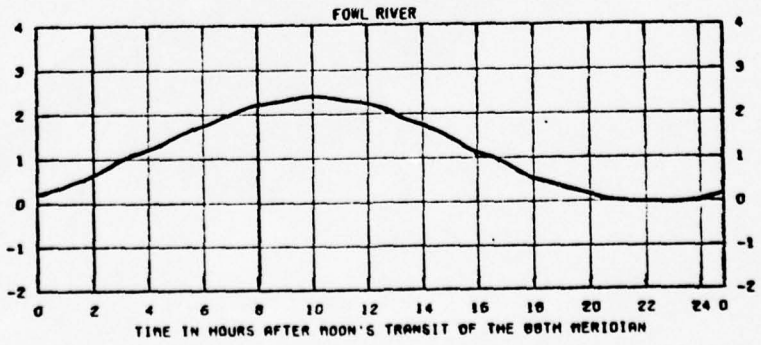


Figure 3. Fowl River tide curve

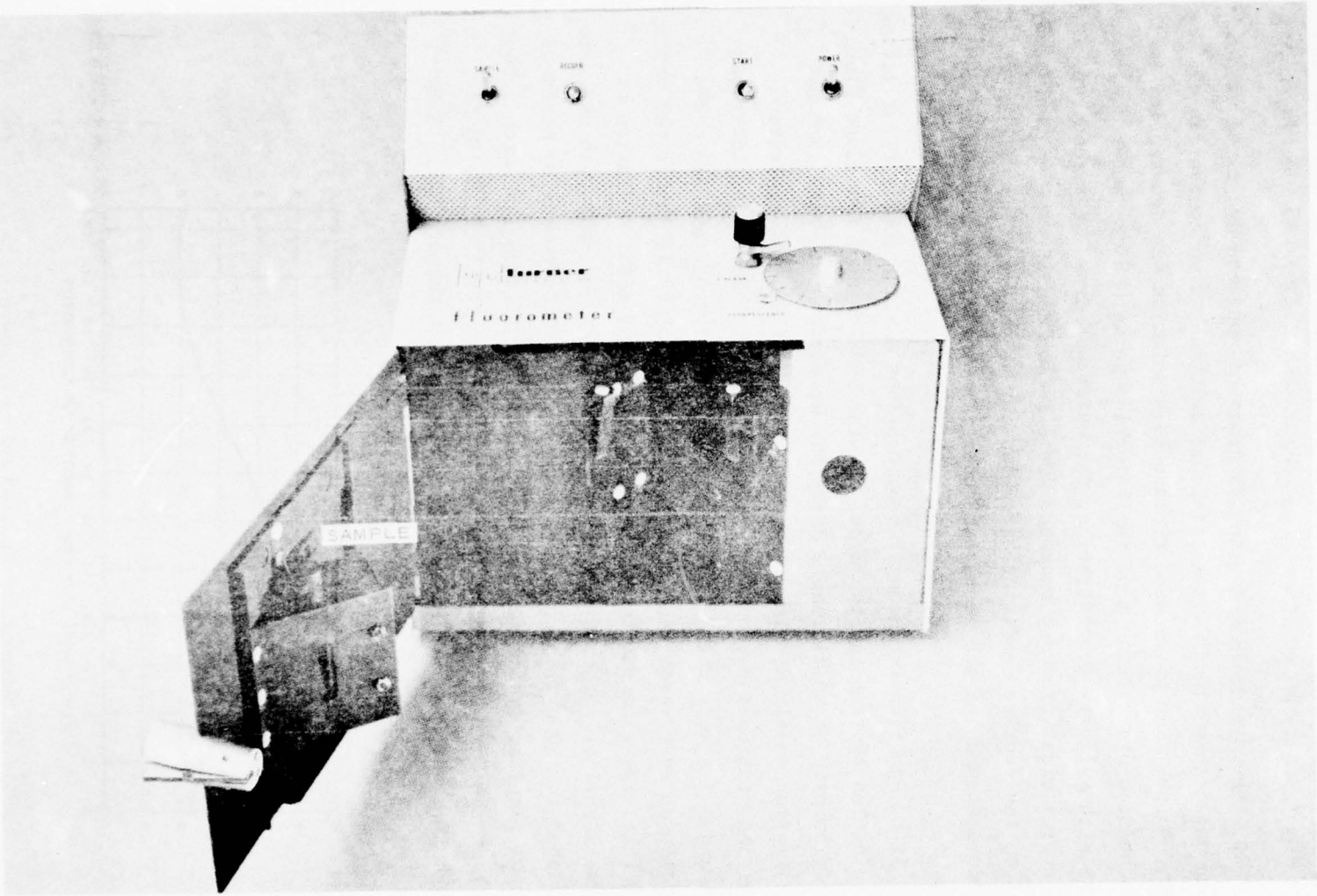


Figure 4. Turner Fluorometer

were taken at the surface and bottom at these stations during cycles 1, 3, 5, 7, 9, 12, 15, 20, 25, 30, 35, 40, 45, and 50. Supplemental data were taken at cycles 20, 30, 40, and 50 during high water (about hr 10) at sta HB1, HB2, Fowl River, Dog River, Theodore Turning Basin, Mobile River, Raft River, Apalachee-Tensaw Rivers, and Tensaw River.

22. At the time of high water prior to releasing the dyes, samples were obtained at both surface and bottom depths at each sampling station to determine the "background" dye concentration remaining from previous tests. Subsequently, samples obtained from each station were adjusted to remove respective background concentrations.

23. The samples were allowed to reach a stable temperature of 74°F and were later analyzed in a fluorometer (Figure 4) to determine their respective dye concentrations.

24. Calibration tests indicated that Pontacyl Brilliant Pink dye raised the concentration computed from the fluorometer reading of the Uranine dye by 5 percent of the Pontacyl Brilliant Pink dye concentration in that same sample. An adjustment for this effect was included in the data reduction process. Uranine dye concentration had no effect on Pontacyl Brilliant Pink dye concentration measurements.

Discussion of Test Results

25. A summary of the steps involved in reducing the raw test data to final form shown in the station time-concentration plots (Plates 2-173) is as follows:

a. The dye concentration of each sample was determined from measurements obtained by a fluorometer by use of the functional relationship between dye concentration and meter reading evaluated during the calibration process for both dyes.

b. The dye concentrations were corrected by subtracting the background concentration (dye detected at each location prior to starting a test).

c. The concentration of Uranine dye in each sample was reduced by 5 percent of the Pontacyl Brilliant Pink concentration found in the sample.

d. Graphs of dye concentration in parts per billion as a function of time for each observation station depth at high-water and low-water slacks were prepared using time in tidal cycles after initiation of the dye release as the abscissa and the log of b or c as the ordinate. The results are presented in Plates 2-173.

e. The same procedures were followed for samples collected at the supplemental stations, except that these results are presented in Table 1 instead of in graphical form.

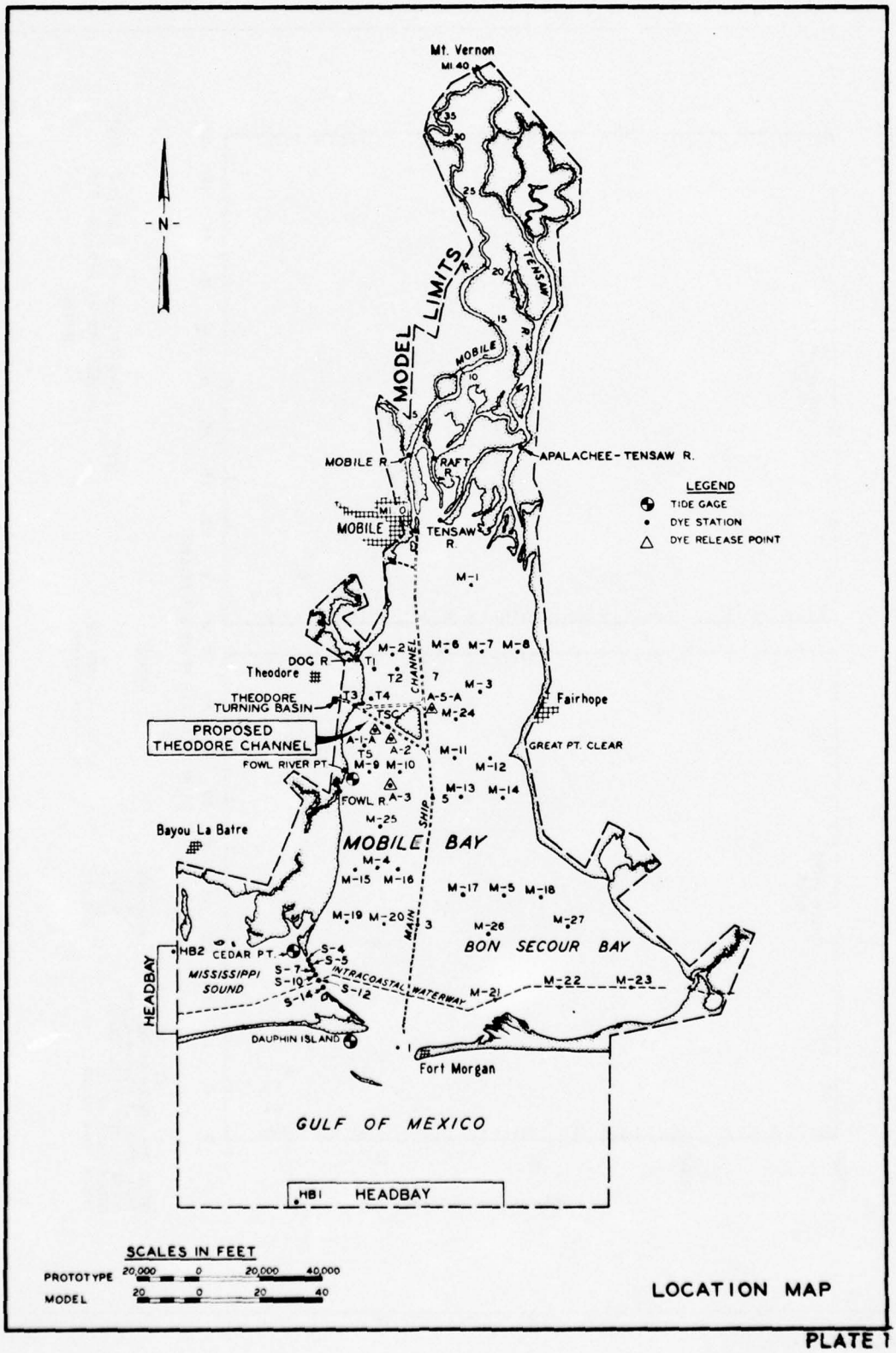
PART IV: CONCLUSIONS

26. In accordance with the agreement with the South Alabama Regional Planning Commission, this office made no attempt to analyze the results of the dye dispersion tests or draw any conclusions from these results. The dyes used in these model tests were conservative and so did not decay with time. Therefore, appropriate decay rates should be applied to the model test data as a basis for predicting prototype concentrations.

Table 1

Dye Concentration at Supplemental Stations

Station	Cycle	Dye Concentration (ppb)							
		Dye Release Points							
		A-1-A		A-5-A		A-2		A-3	
		Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
HB1	20	--	--	--	--	7	--	25	--
	31	15	--	15	--	5	--	13	--
	40	37	--	34	--	15	--	35	--
	50	40	--	36	--	22	--	45	--
HB2	20	--	--	--	--	3	--	20	--
	31	9	--	8	--	9	--	27	--
	40	16	--	13	--	11	--	20	--
	50	23	--	17	--	17	--	27	--
Fowl River	20	--	--	--	--	561	409	397	397
	31	1469	493	1049	259	649	466	443	410
	40	1521	1022	714	434	775	696	344	416
	50	1381	684	681	334	490	423	318	318
Dog River	20	--	--	--	--	927	1043	285	259
	31	795	1023	1342	1183	682	717	292	266
	40	1042	1154	811	844	686	716	266	285
	50	1325	1323	1084	1115	597	623	226	233
Theodore Turning Basin	20	--	--	--	--	233	15	63	11
	31	1169	34	1123	31	694	27	233	22
	40	1366	39	972	1004	684	45	292	22
	50	1581	81	924	55	746	29	305	16
Mobile River	20	--	--	--	--	9	226	13	207
	31	23	373	154	745	30	347	32	253
	40	24	413	103	566	50	266	60	233
	50	60	479	204	616	8	237	9	181
Raft River	20	--	--	--	--	13	240	12	118
	31	41	402	279	944	72	448	90	207
	40	50	387	218	616	64	340	92	200
	50	48	500	191	665	148	5	148	6
Apalachee Tensaw River	20	--	--	--	--	0	16	3	15
	31	12	51	60	312	5	76	6	102
	40	13	24	46	110	9	31	11	33
	50	12	34	26	84	3	11	3	13
Tensaw River	20	--	--	--	--	17	371	19	181
	31	49	412	364	924	23	408	22	213
	40	82	574	697	307	76	350	99	194
	50	55	605	261	795	10	166	11	156


Mt. Vernon
MI 40
35
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5
N
MODEL LIMITS
TENSAW R.
MOBILE R.
MOBILE
RAFT R.
APALACHEE - TENSAW R.
LEGEND
TIDE GAGE
DYE STATION
DYE RELEASE POINT
MOBILE
TENSAW R.
M-1
M-2
M-6
M-7
M-8
DOG R
Theodore
T1
T2
7
M-3
CHANNEL
A-5-A
M-24
THEODORE TURNING BASIN
T3
T4
Fairhope
PROPOSED THEODORE CHANNEL
T5C
A-1-A
A-2
M-11
GREAT PT. CLEAR
FOWL RIVER PT.
M-9
M-10
M-12
FOWL R.
A-3
M-13
M-14
5
M-25
SHIP
Bayou La Batre
MOBILE BAY
M-4
M-15
M-16
M-17
M-5
M-18
M-19
M-20
3
M-26
M-27
HB2
CEDAR PT.
S-4
S-5
BON SECOUR BAY
MISSISSIPPI SOUND
S-7
S-10
S-14
S-12
INTRACOASTAL WATERWAY
M-21
M-22
M-23
HEADBAY
DAUPHIN ISLAND
1
Fort Morgan
GULF OF MEXICO
HB1
HEADBAY
SCALES IN FEET
PROTOTYPE
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MODEL
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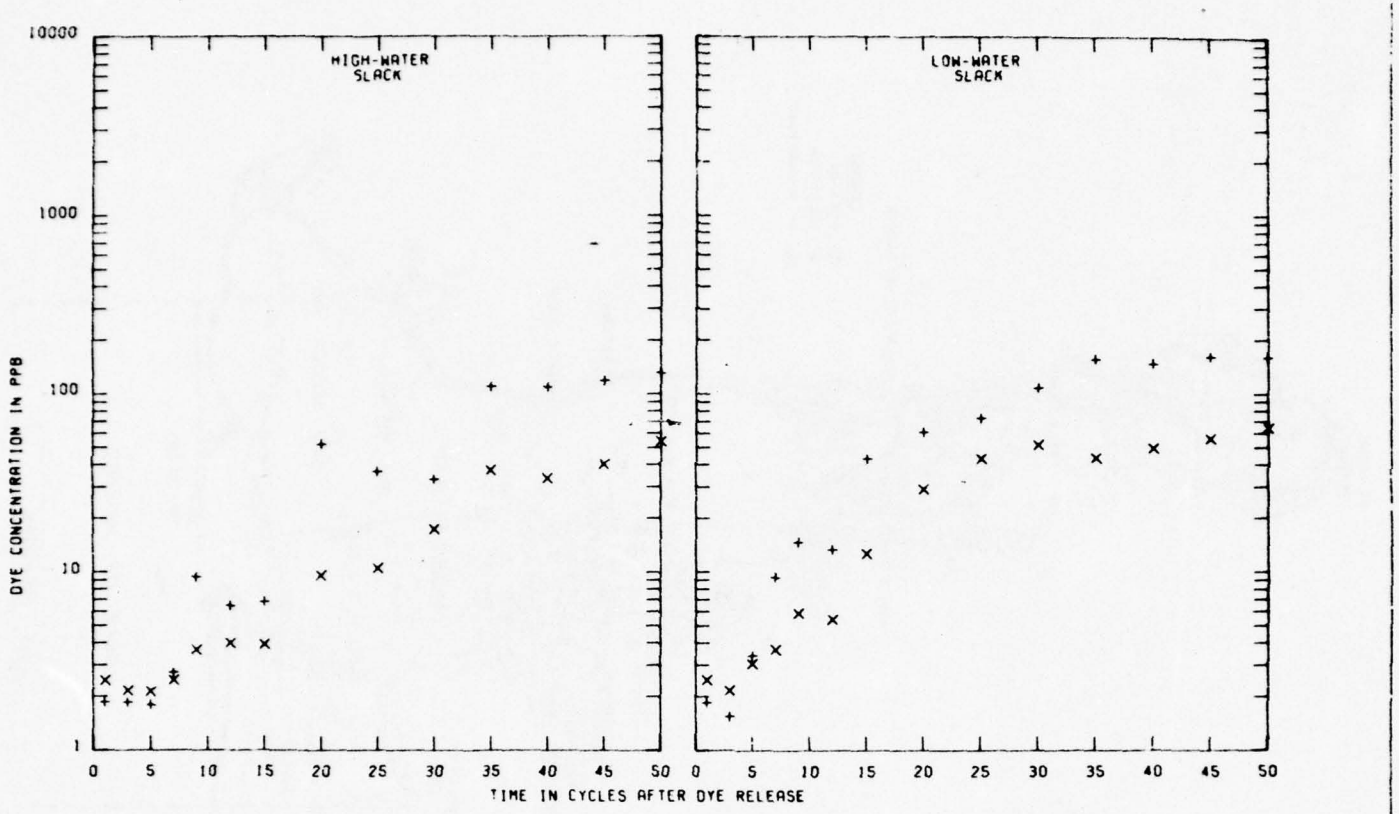
LOCATION MAP

PLATE 1

PLATE 2



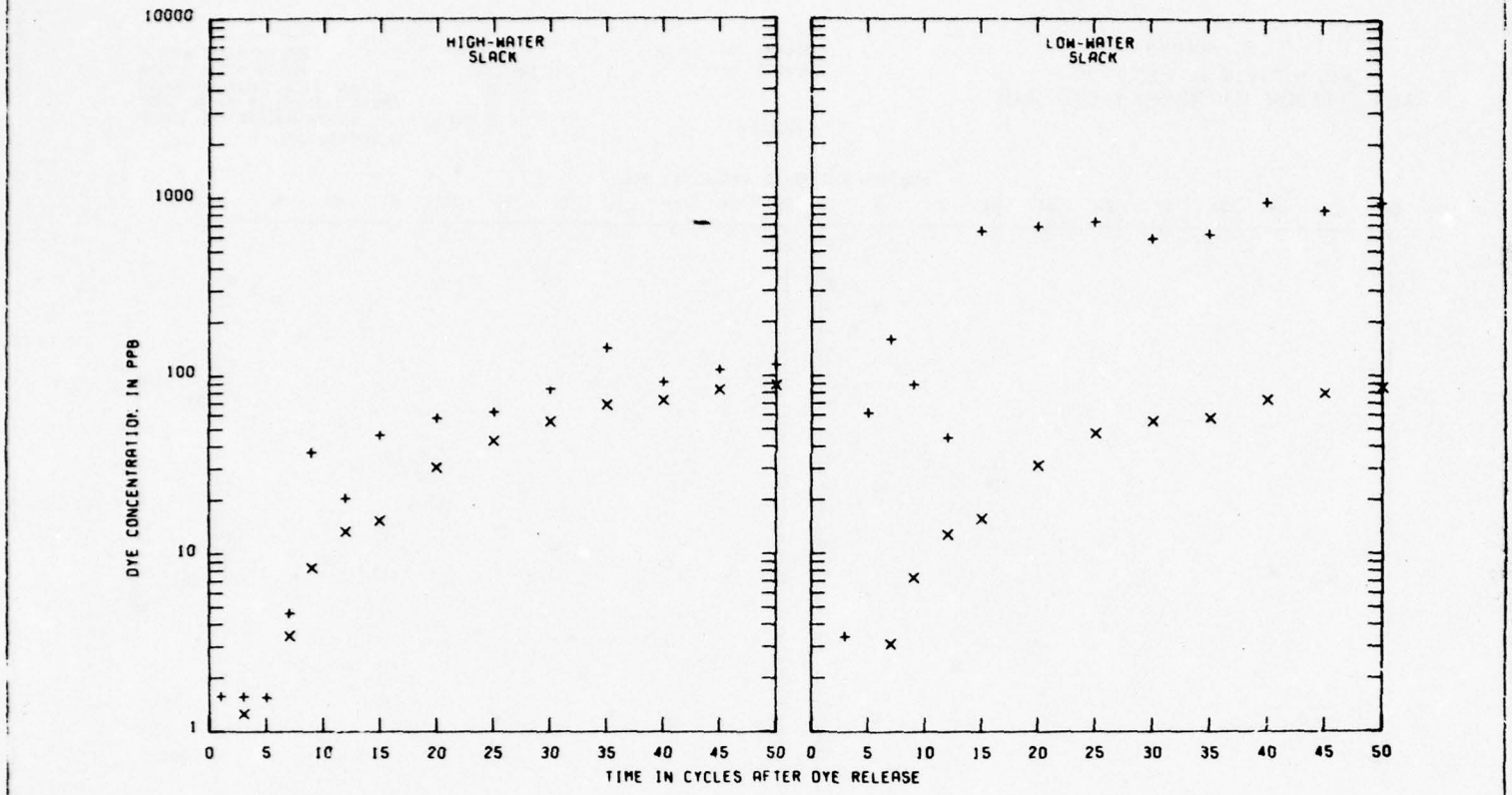
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —··—·· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION 1



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

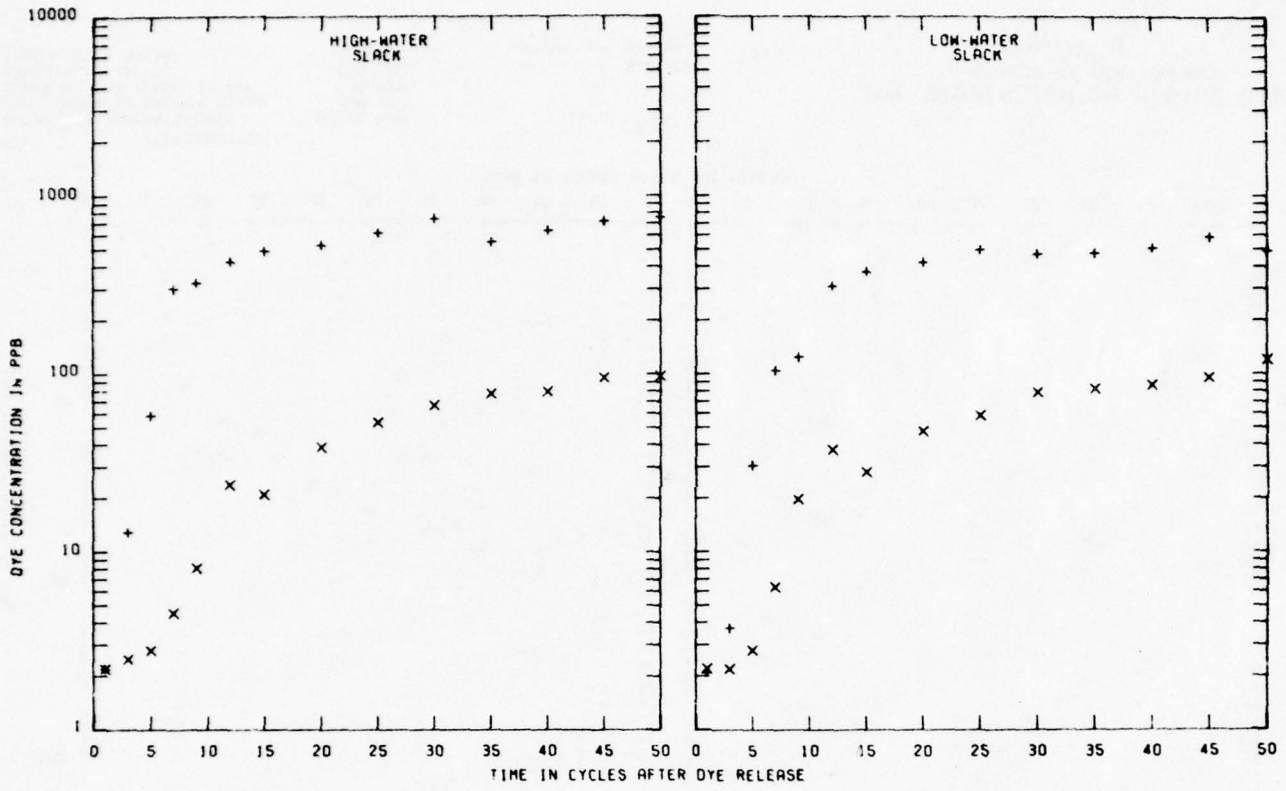
LEGEND

+ —·— SURFACE
× ·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION 3

PLATE 3

PLATE 4



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
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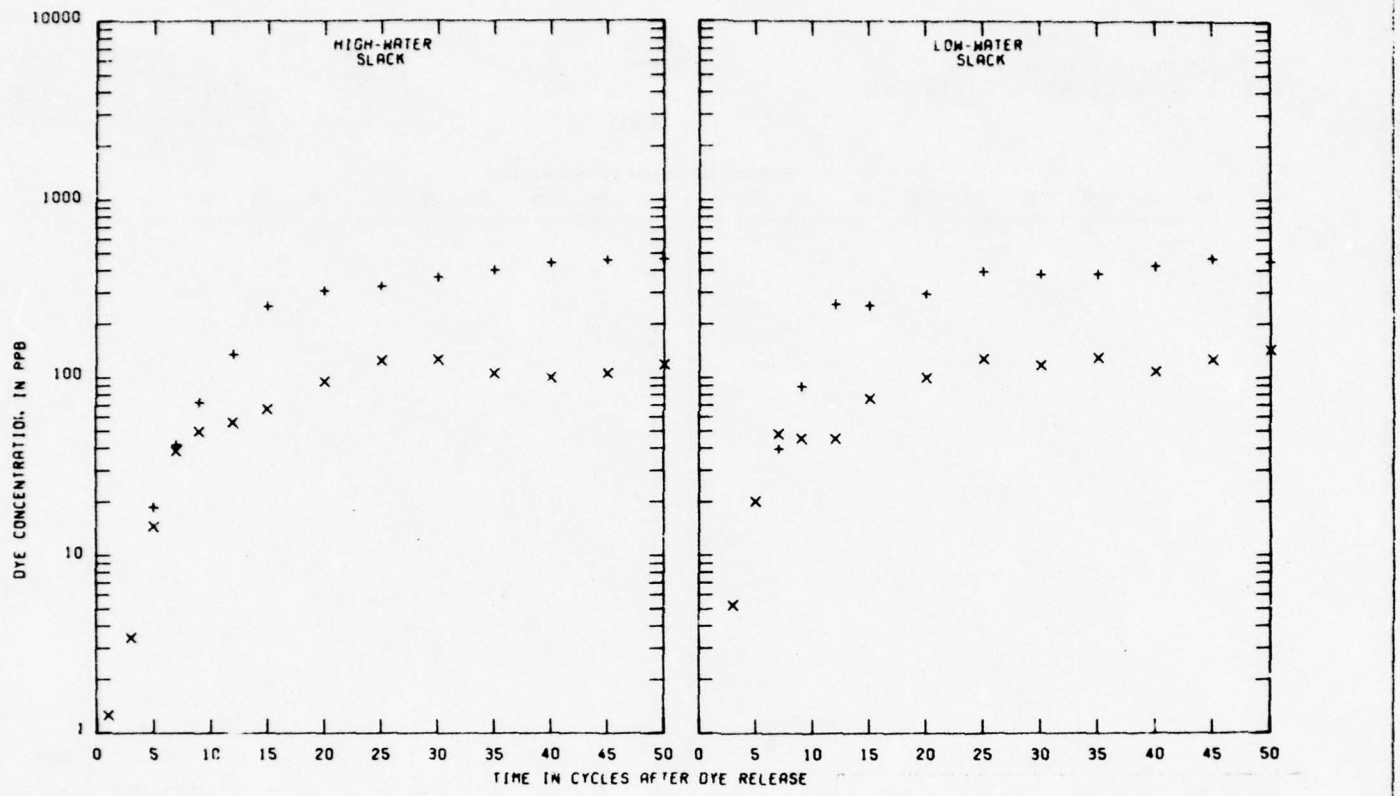
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION 5



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

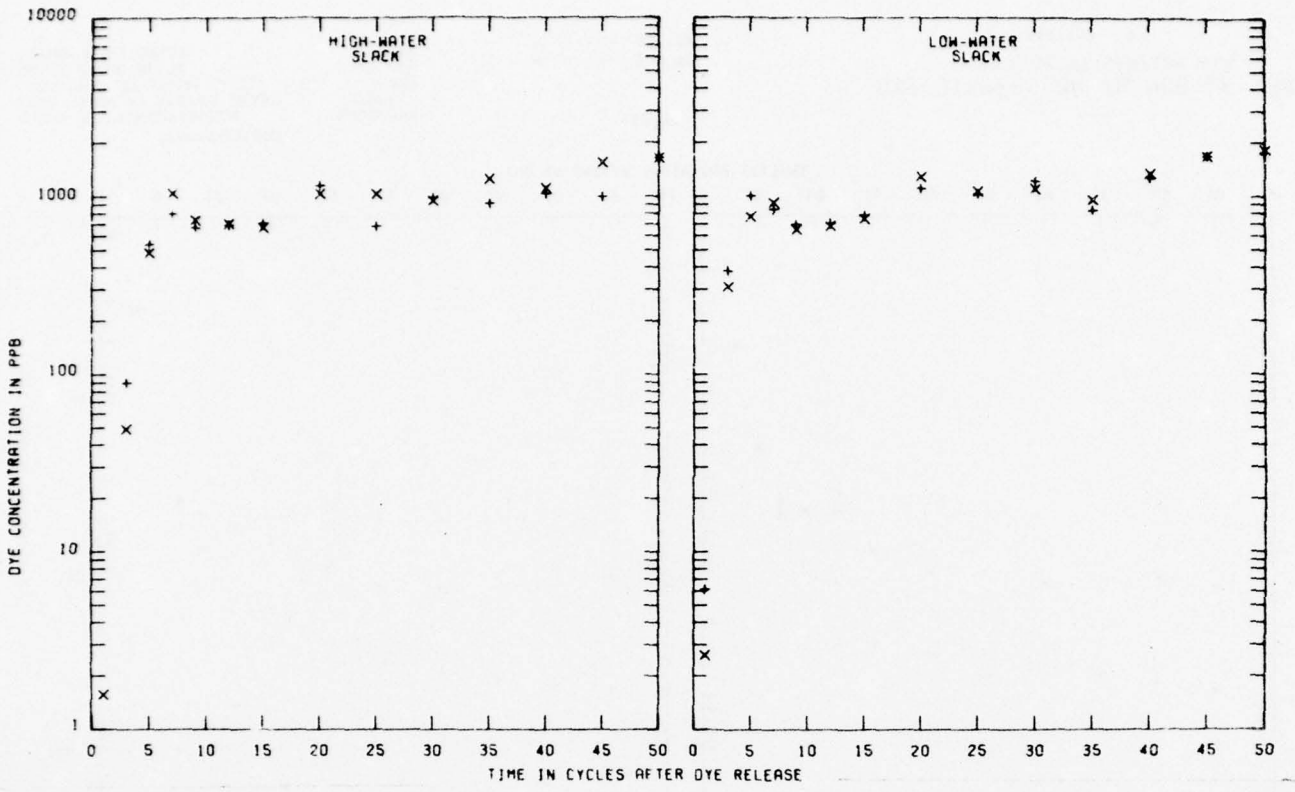
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION 7

PLATE 5

PLATE 6



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

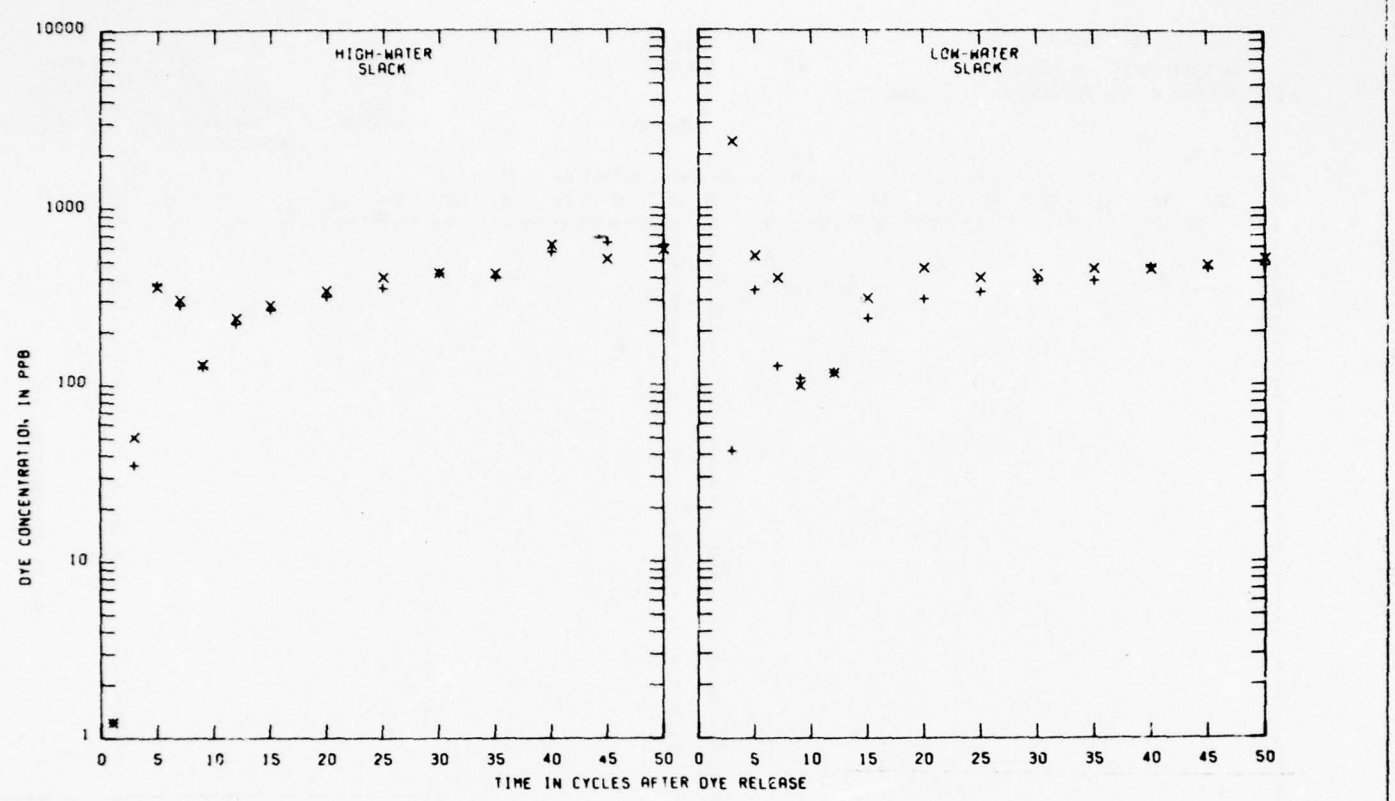
LEGEND

+ —·— SURFACE
× ·-·- BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION T1



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

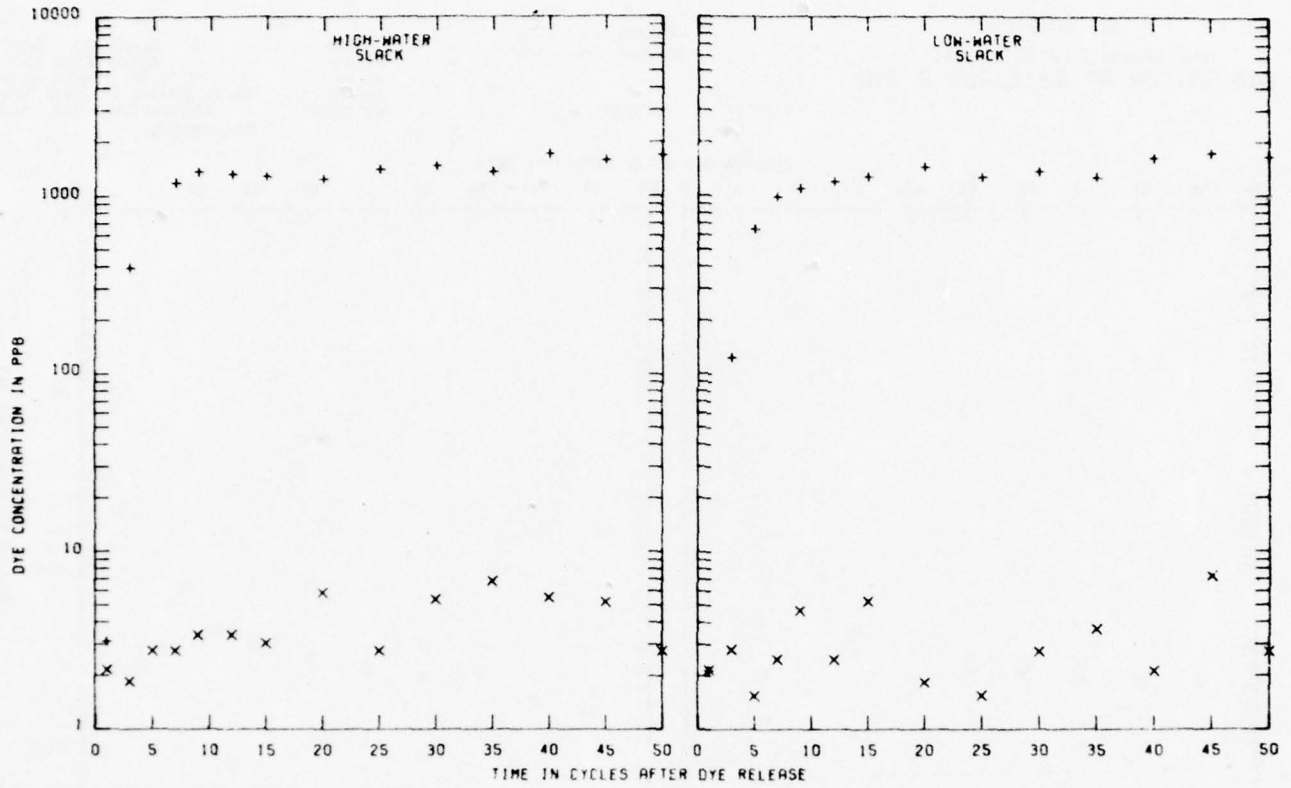
LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION T2

PLATE 7

PLATE 8



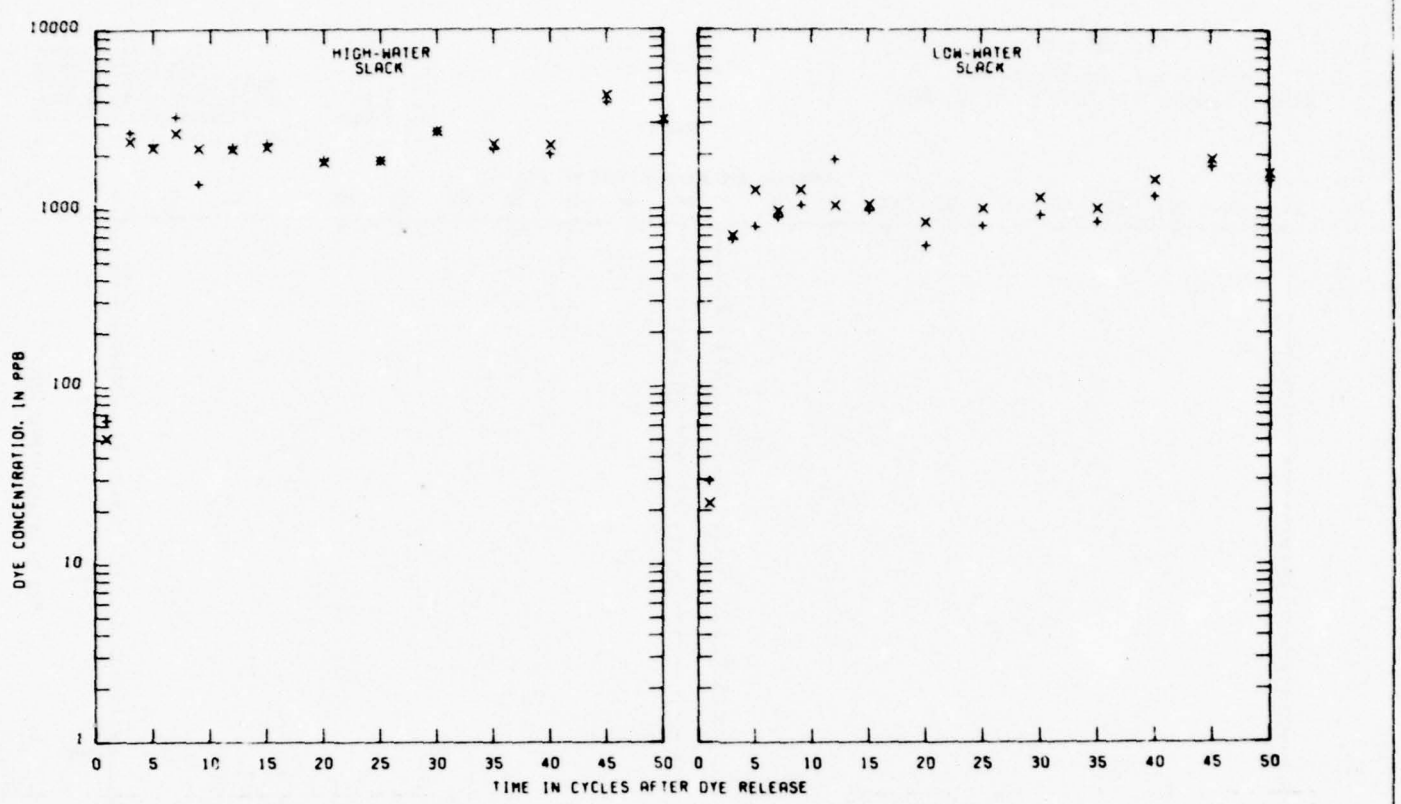
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION AIA
STATION 13



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

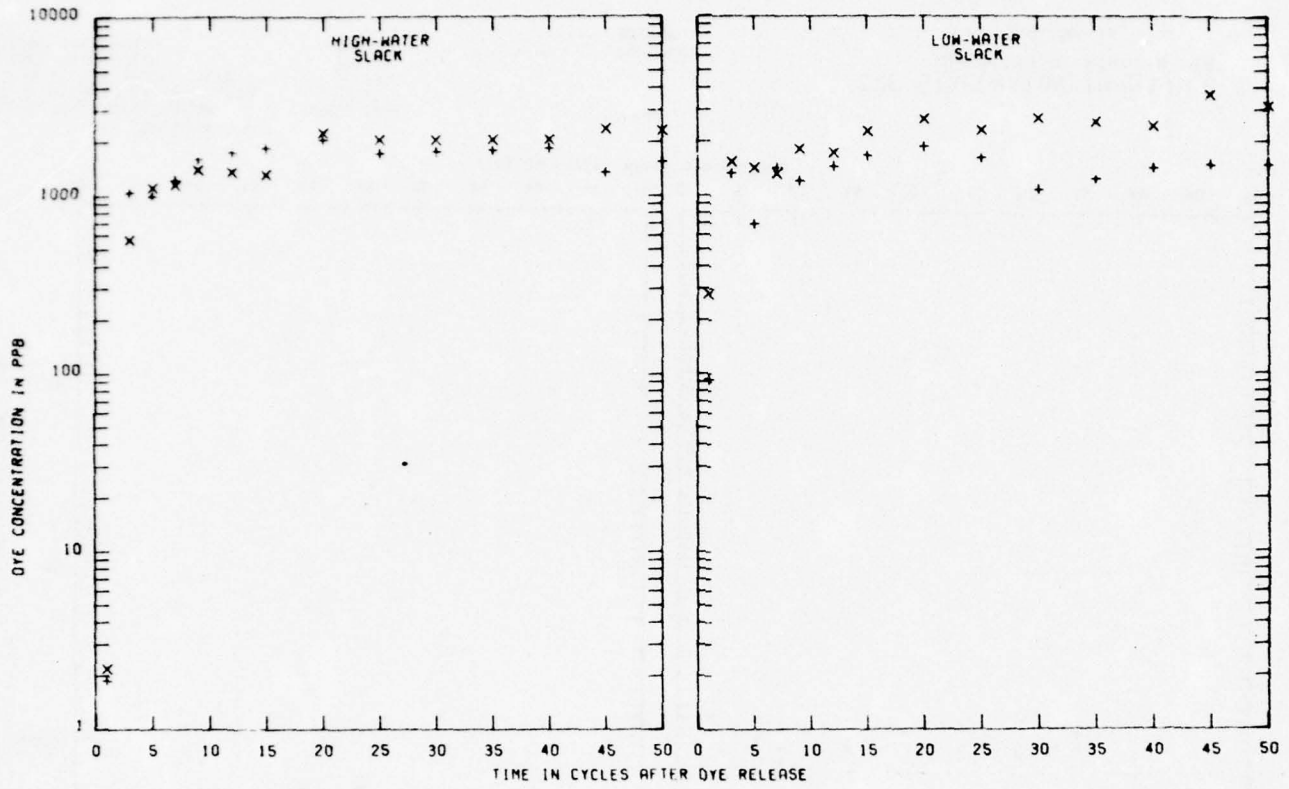
LEGEND

+ —·— SURFACE
× ···· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION T4

PLATE 9

PLATE 10



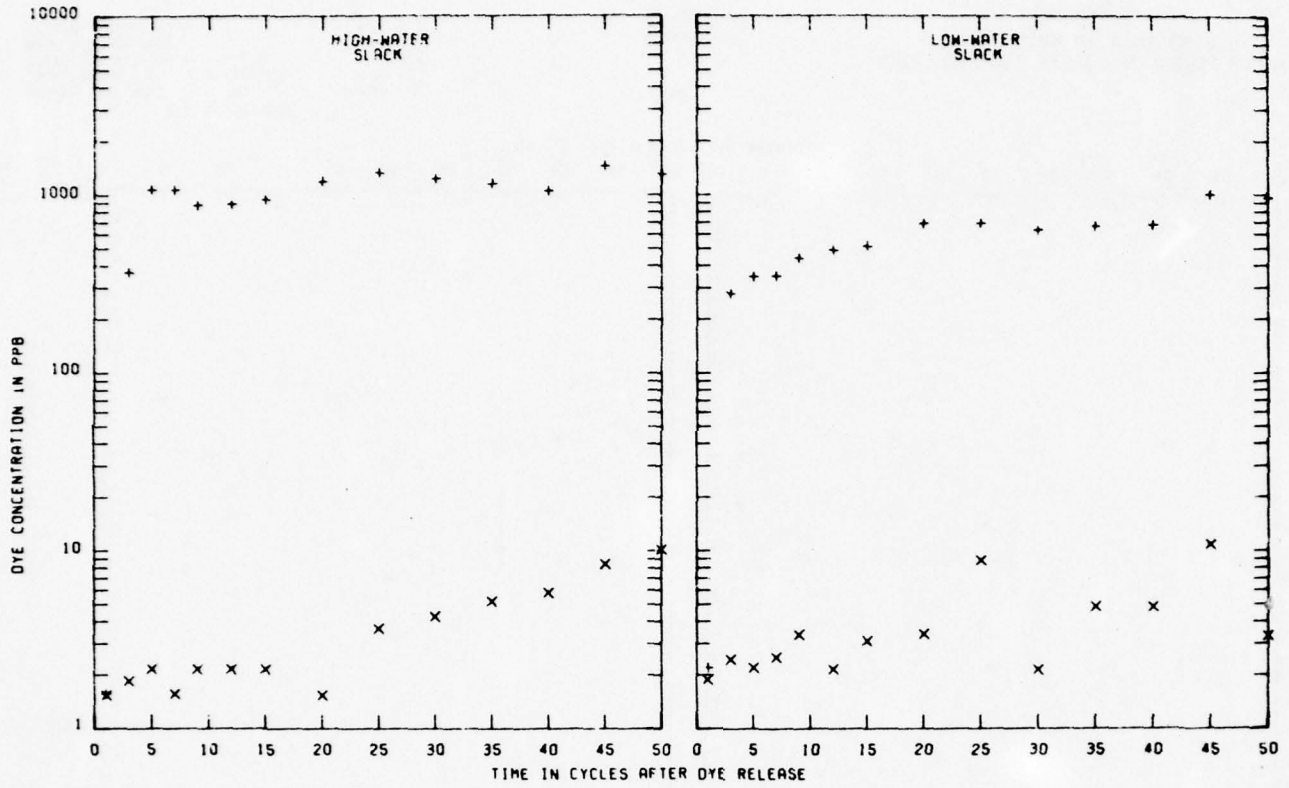
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ ——— SURFACE
× ——— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION AIA
STATION T5



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× —·— BOTTOM

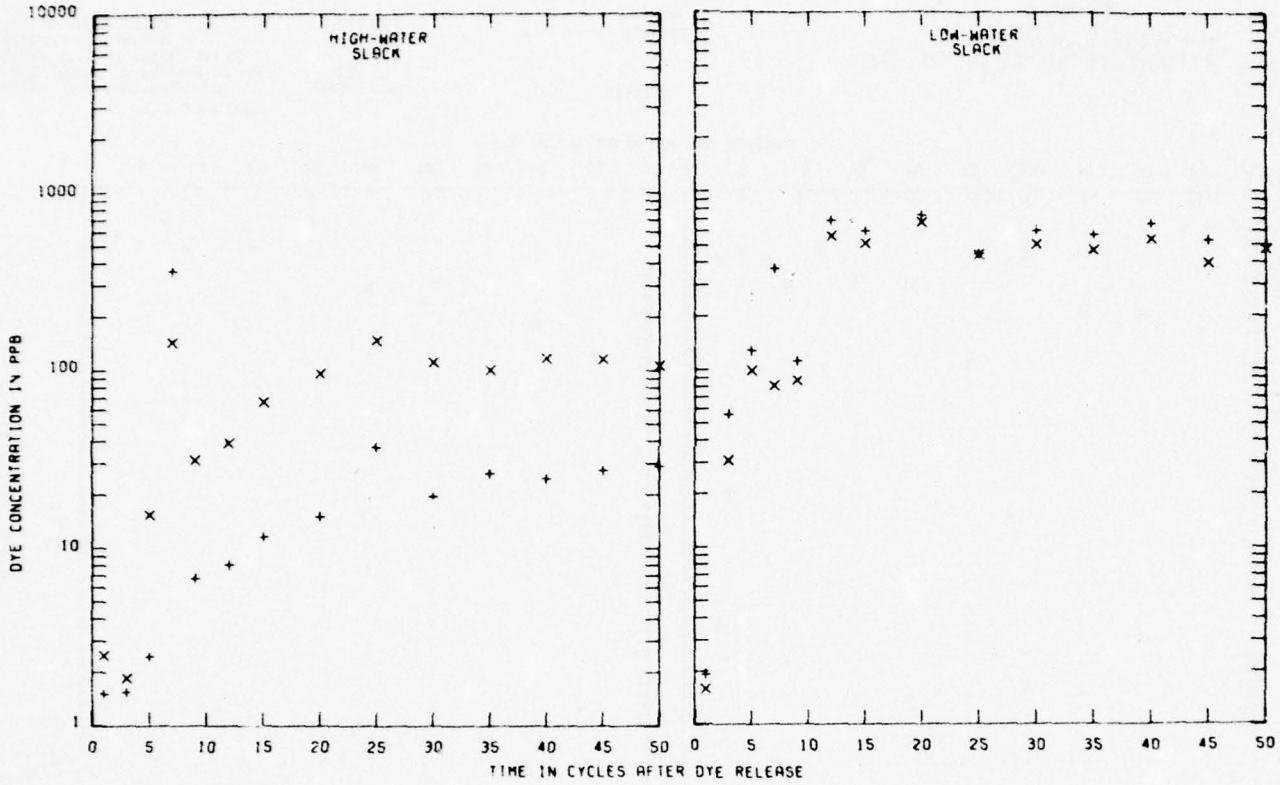
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION TSC

PLATE 11

PLATE 12



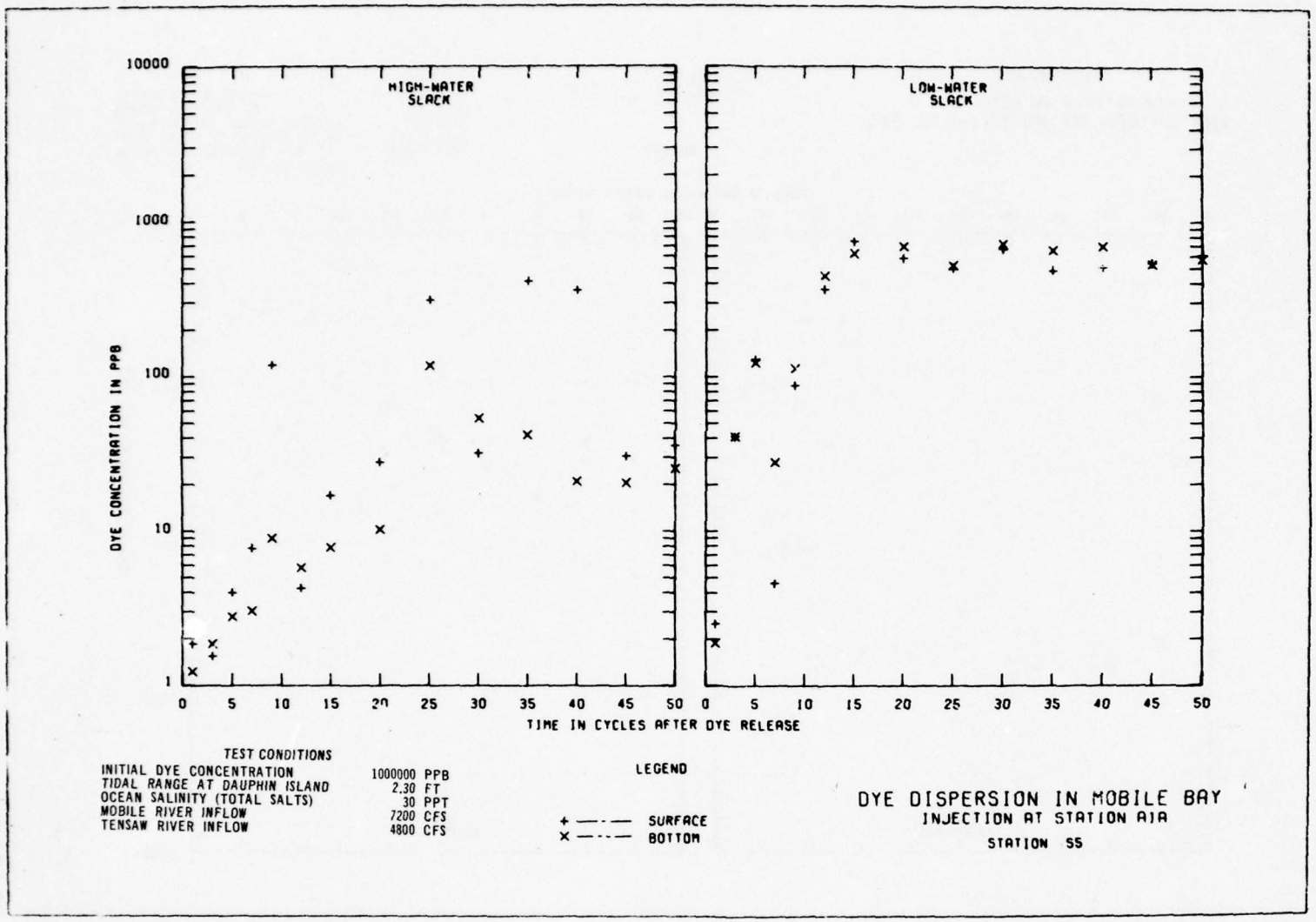
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× — - — BOTTOM

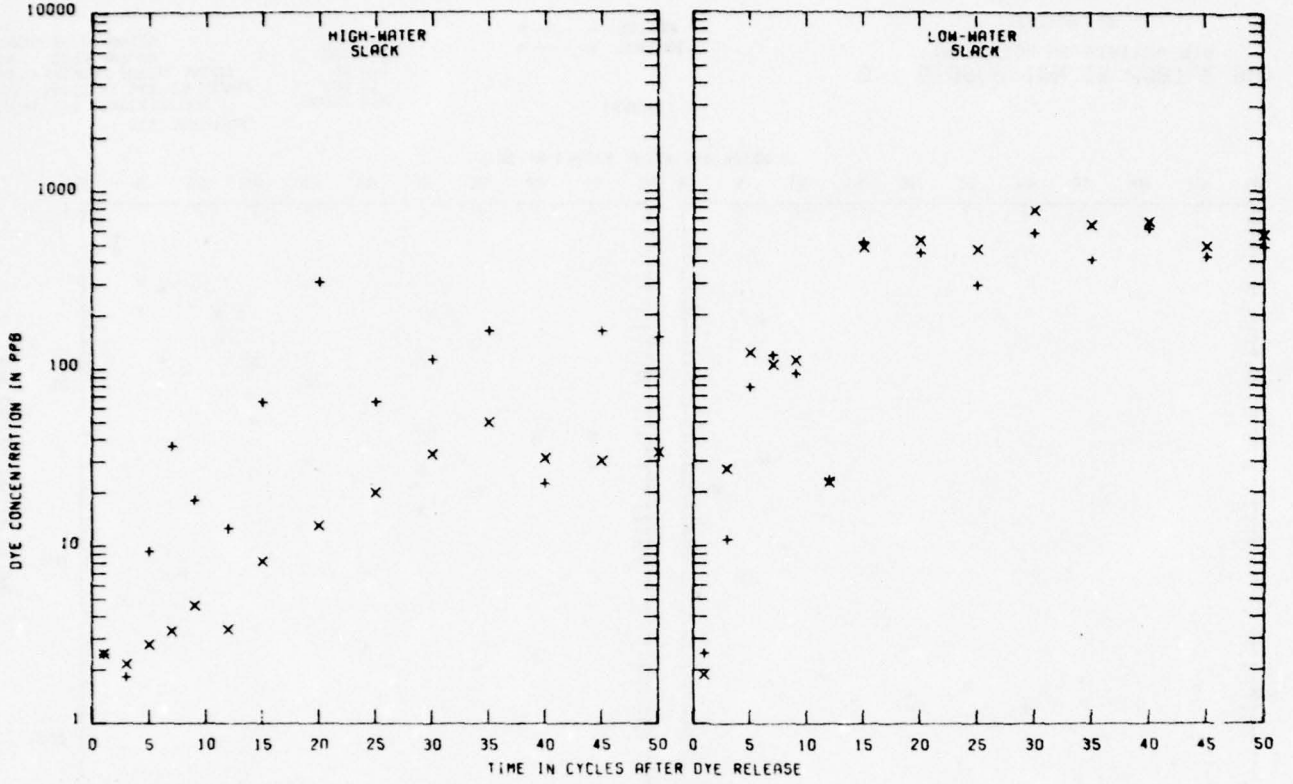
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION S4



DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION AIA
STATION 55

PLATE 13

PLATE 14



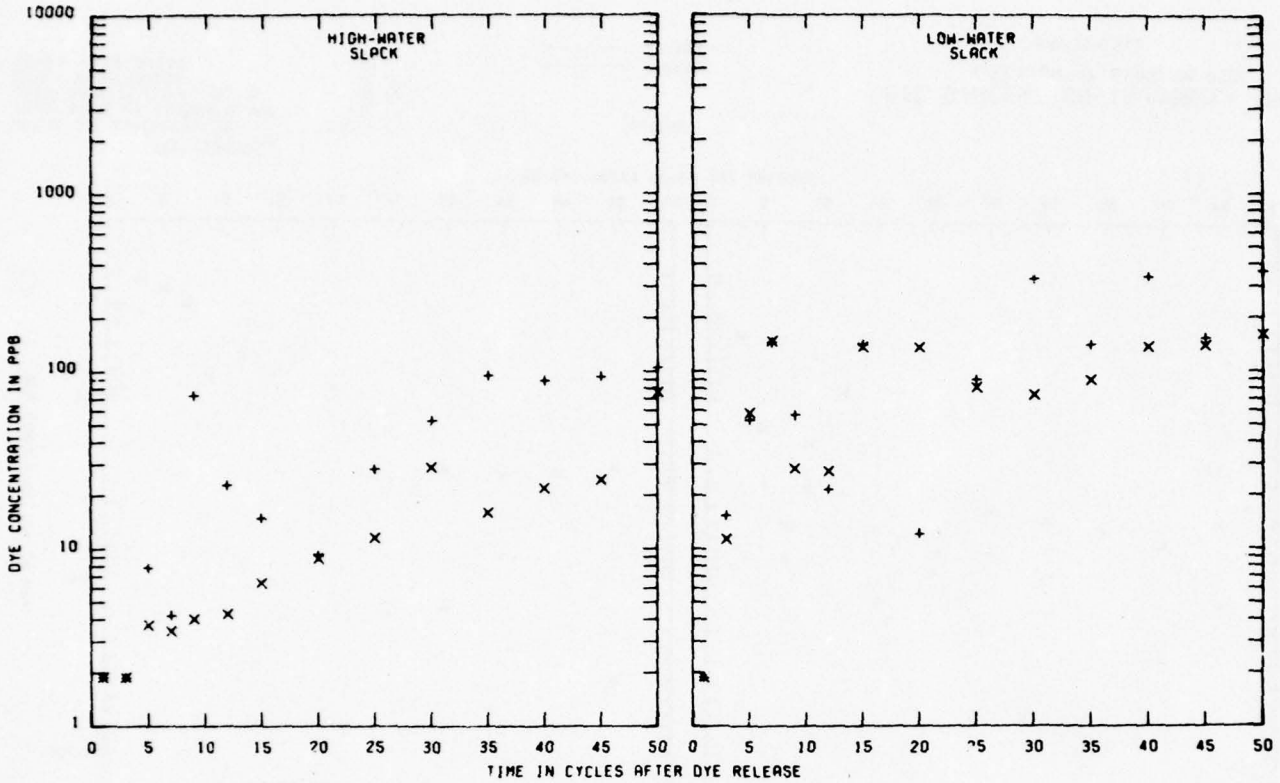
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION S7



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

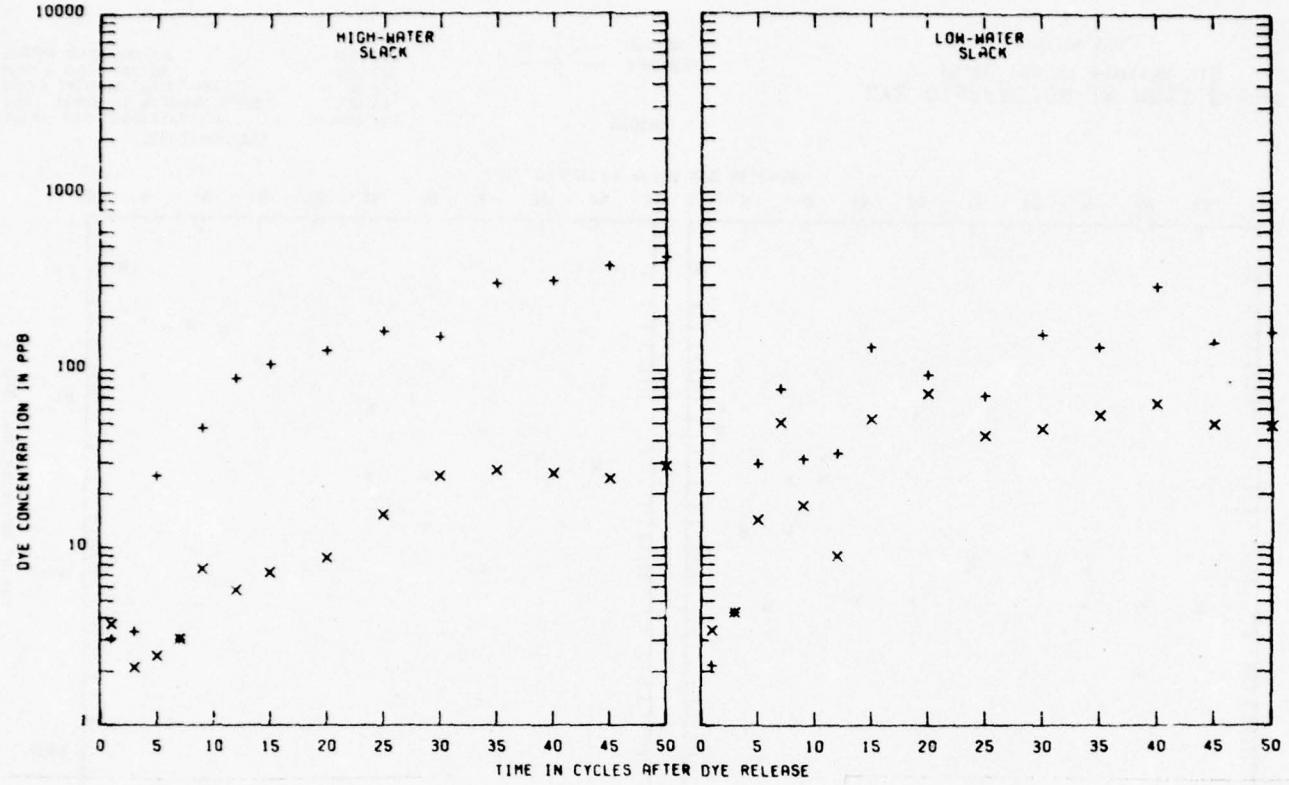
LEGEND

+ —·— SURFACE
× —··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION 61A
STATION S10

PLATE 15

PLATE 16



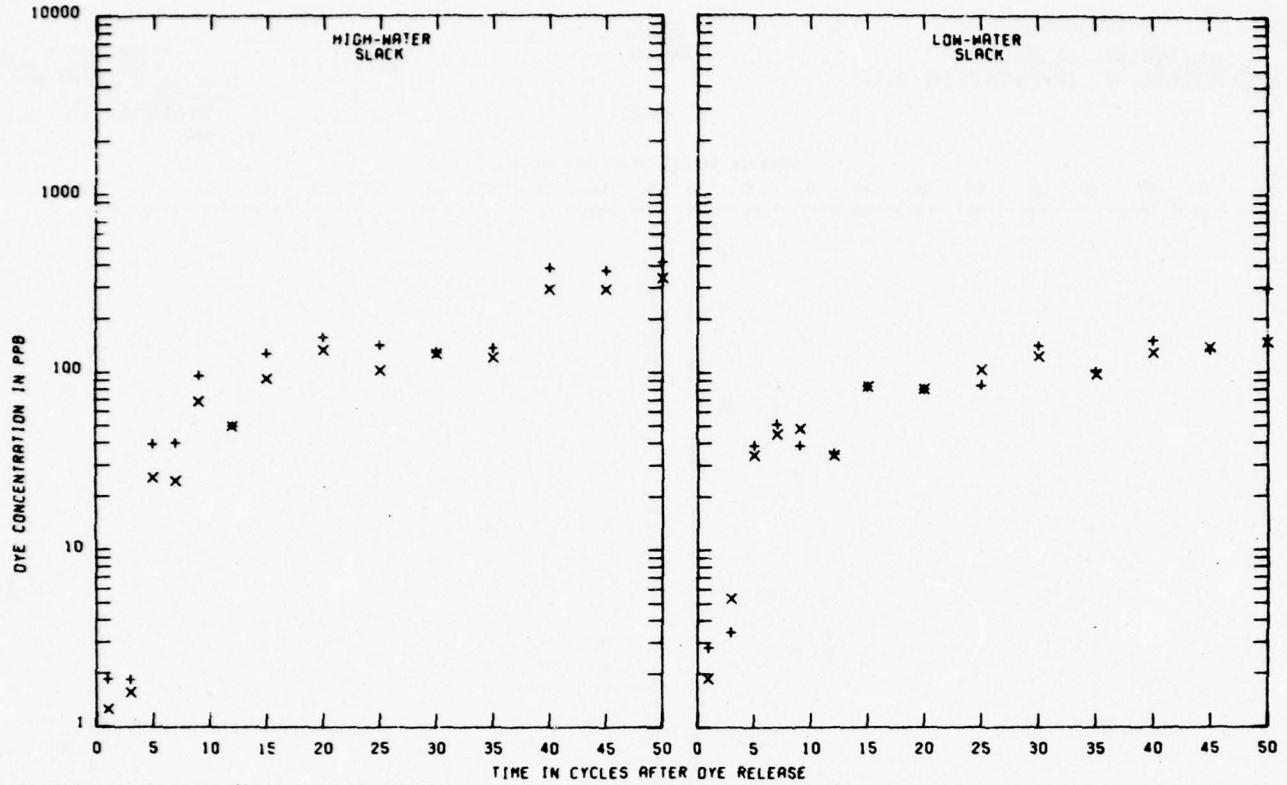
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION S12



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

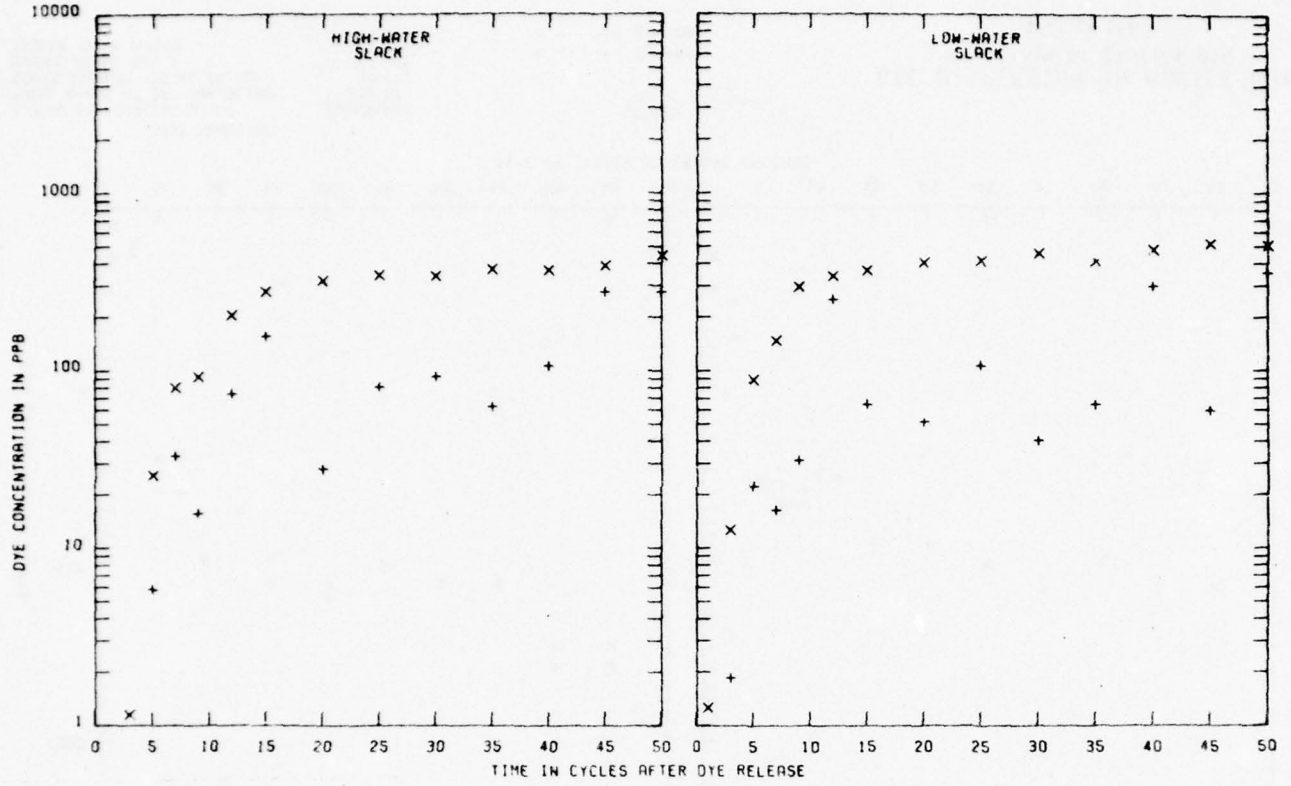
LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION S14

PLATE 17

PLATE 18



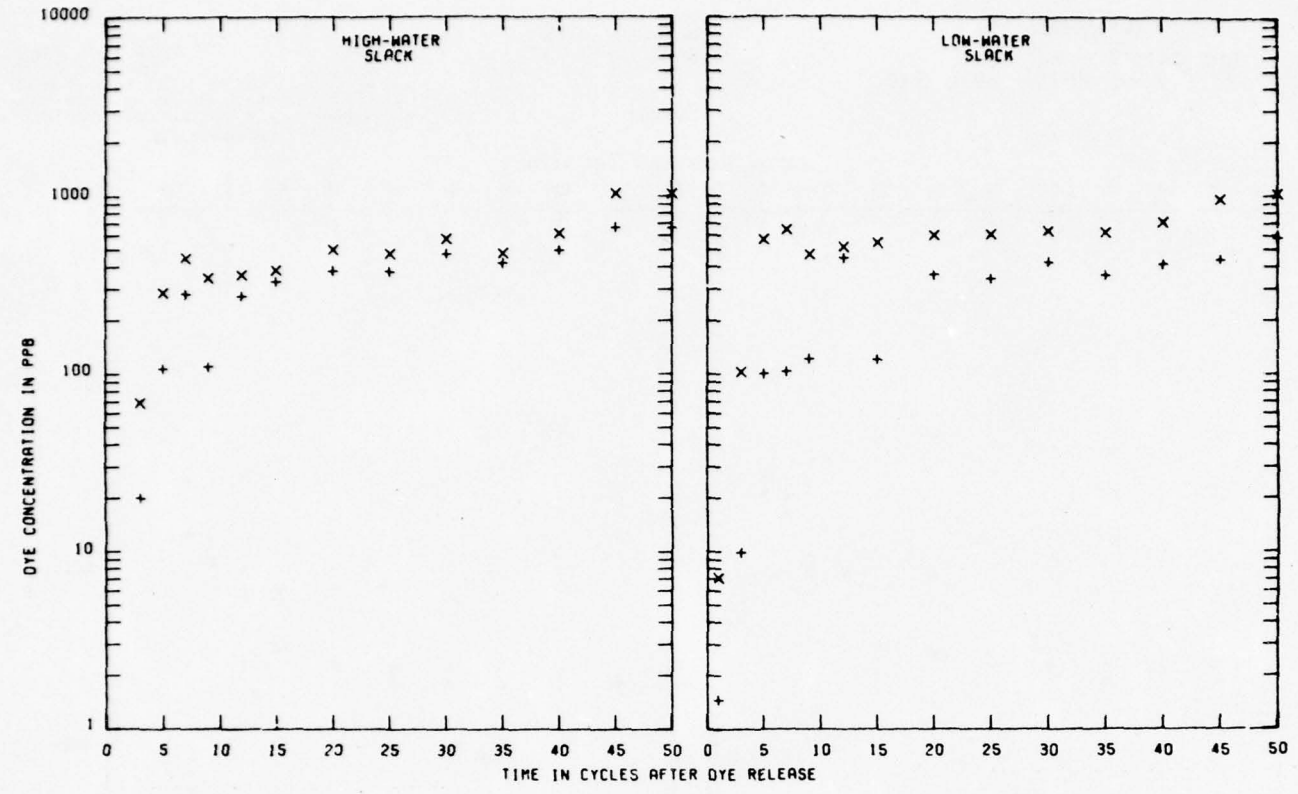
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M1



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

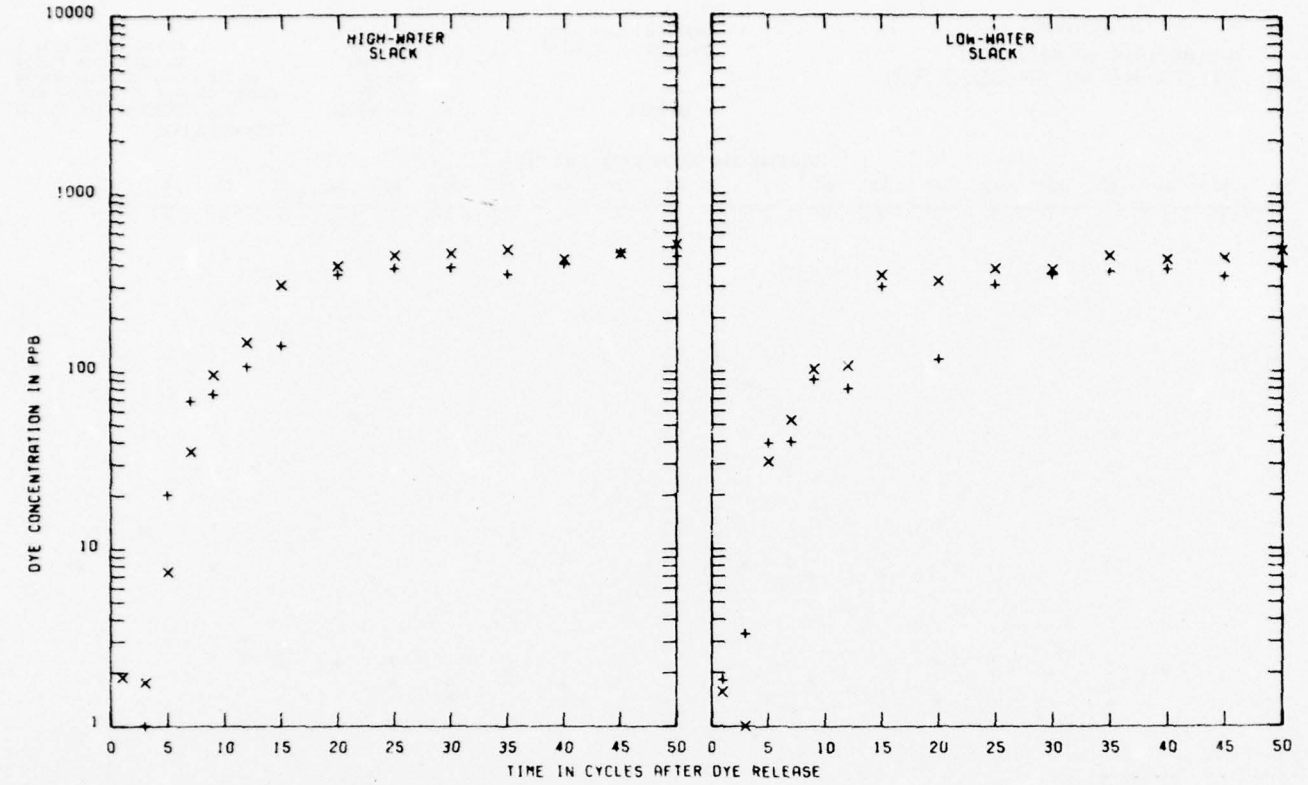
LEGEND

+ —·— SURFACE
× —··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M2

PLATE 19

PLATE 20



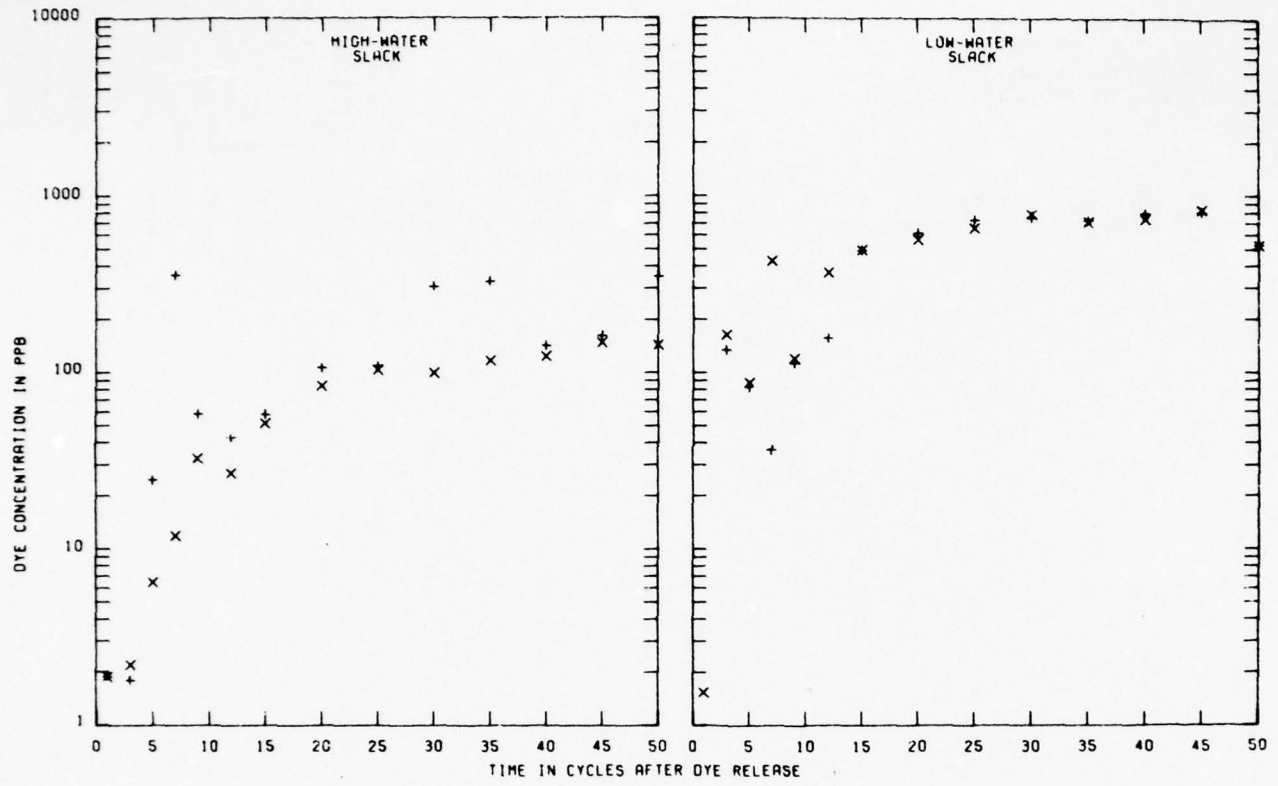
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M3



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

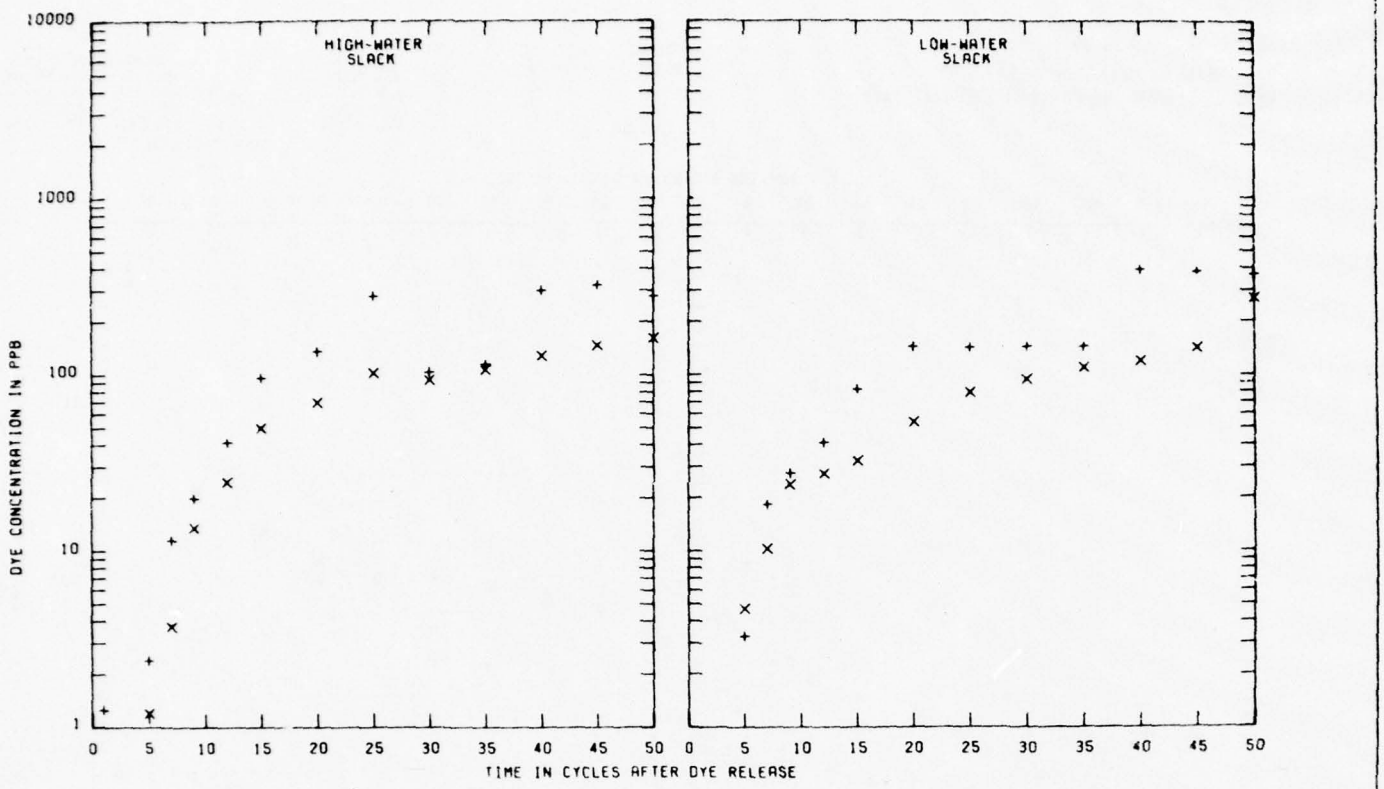
LEGEND

+ —·— SURFACE
× ·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M4

PLATE 21

PLATE 22



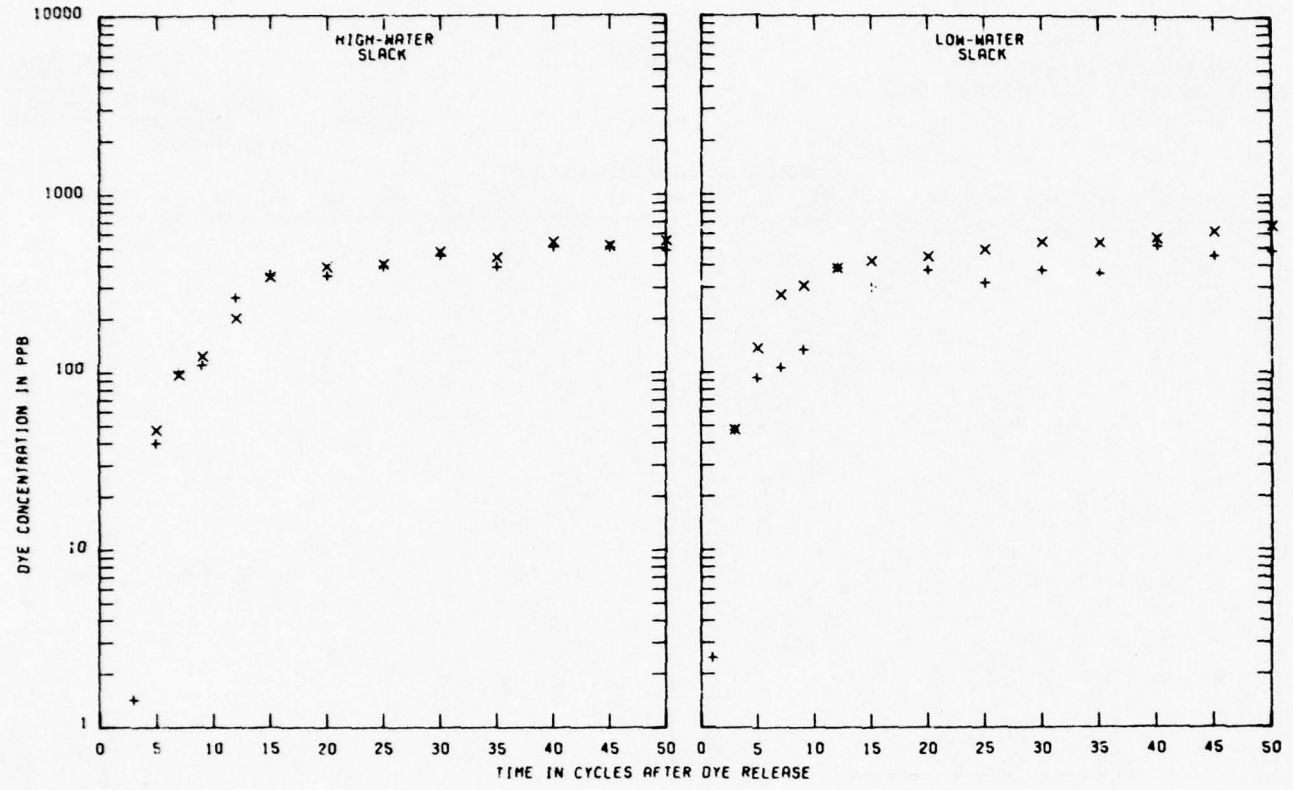
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M5



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT *DAUPHIN ISLAND*	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

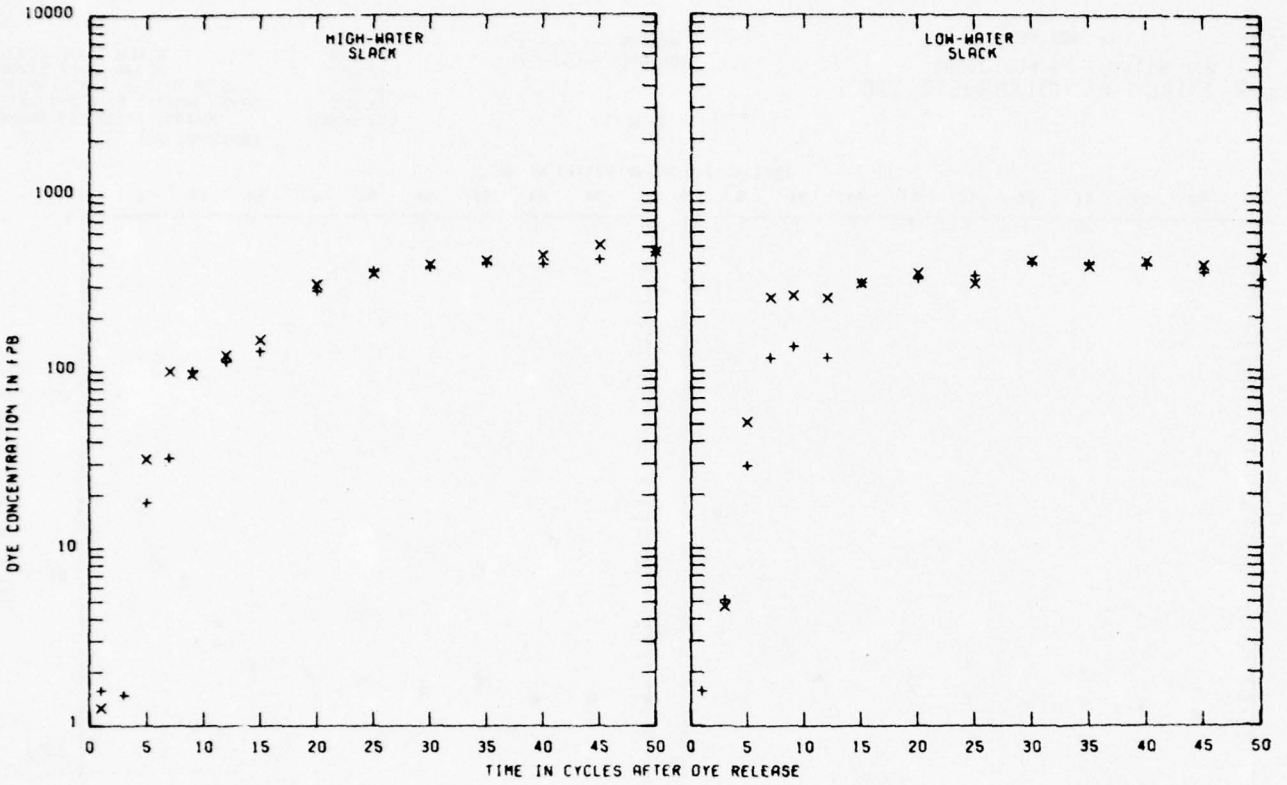
LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M6

PLATE 23

PLATE 24



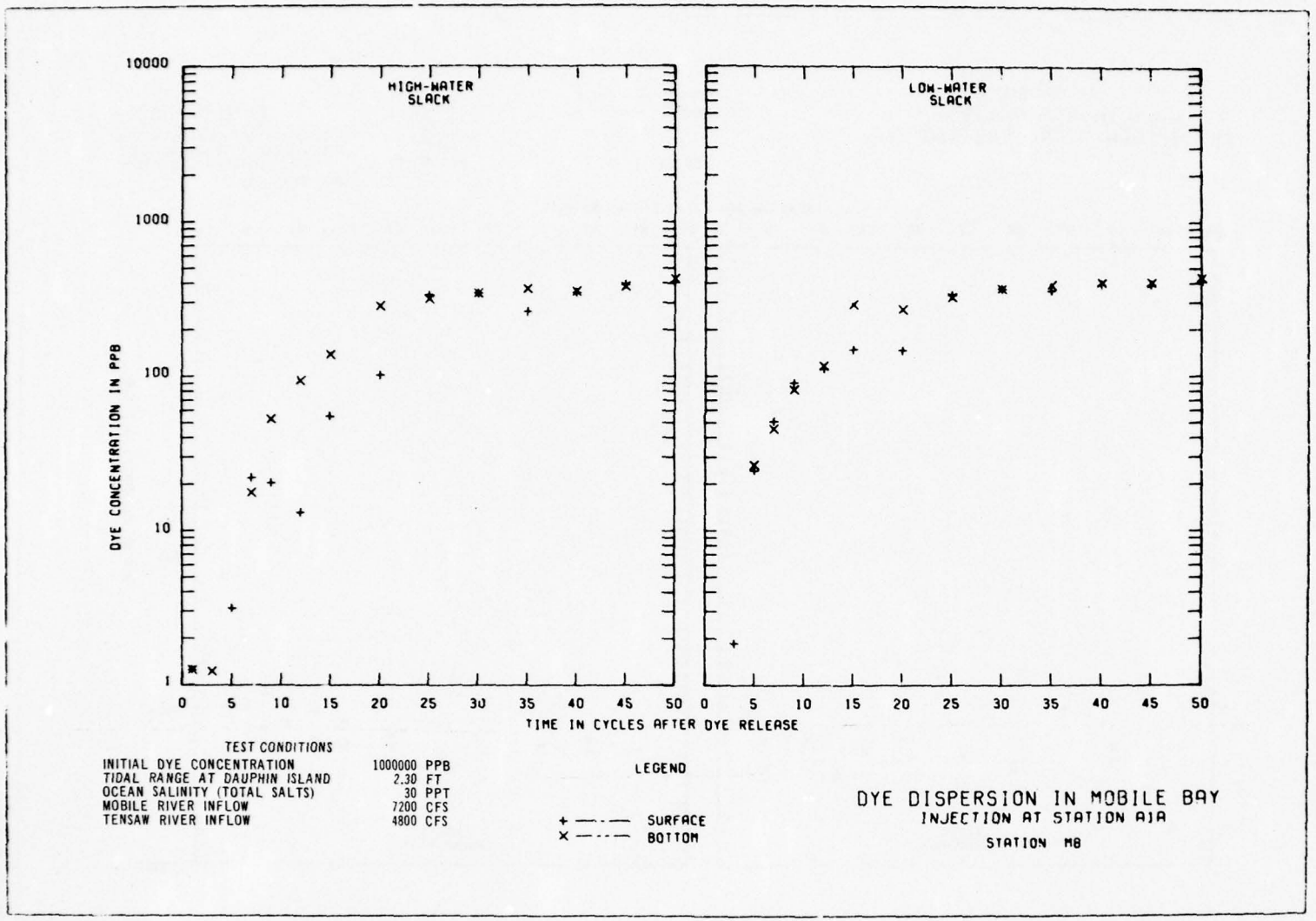
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× - - - BOTTOM

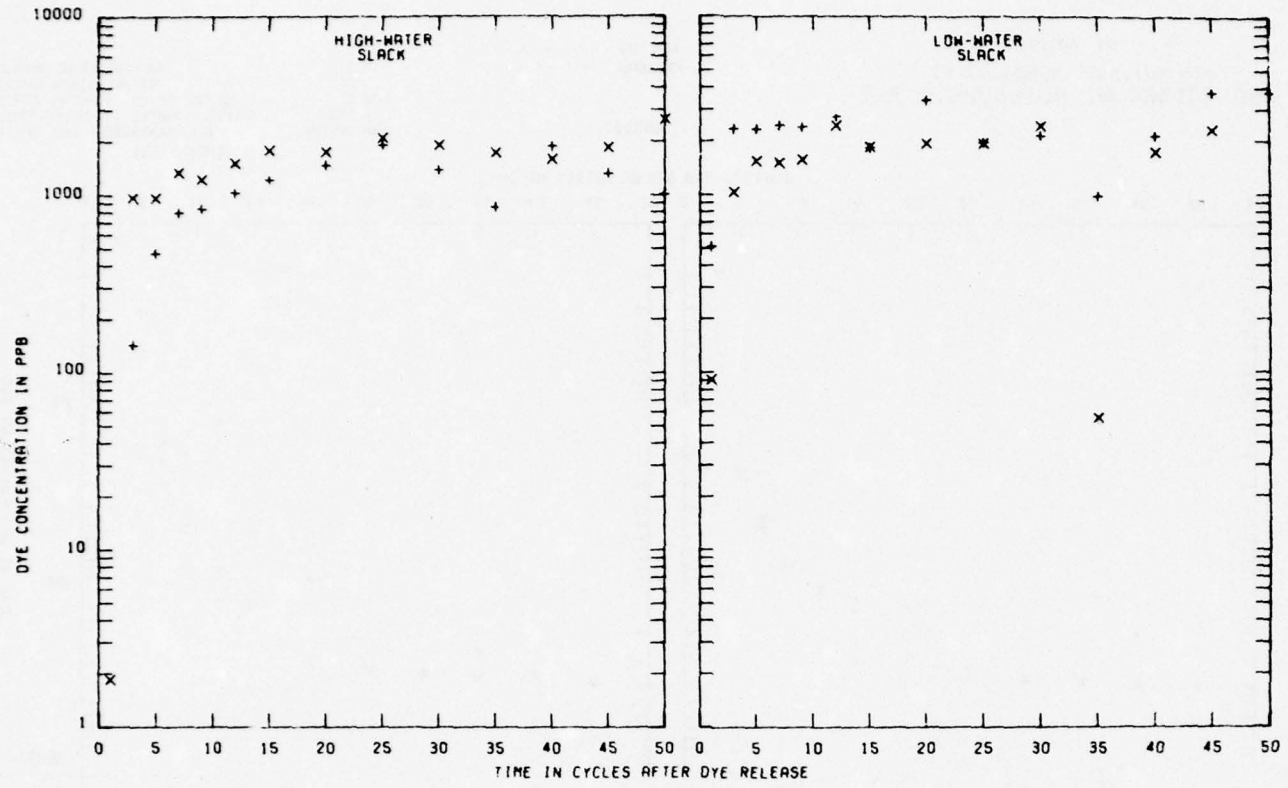
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M7



DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M8

PLATE 25

PLATE 26



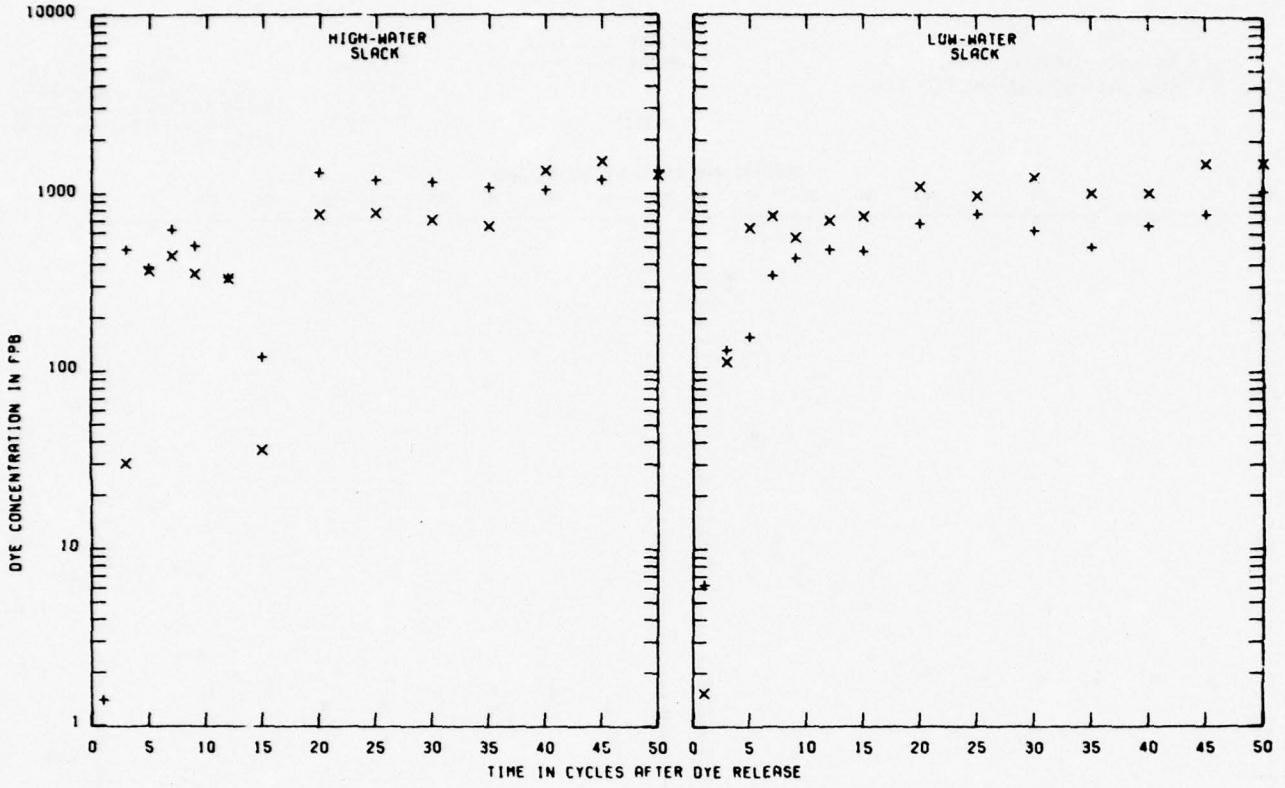
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION AIA
STATION MS



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

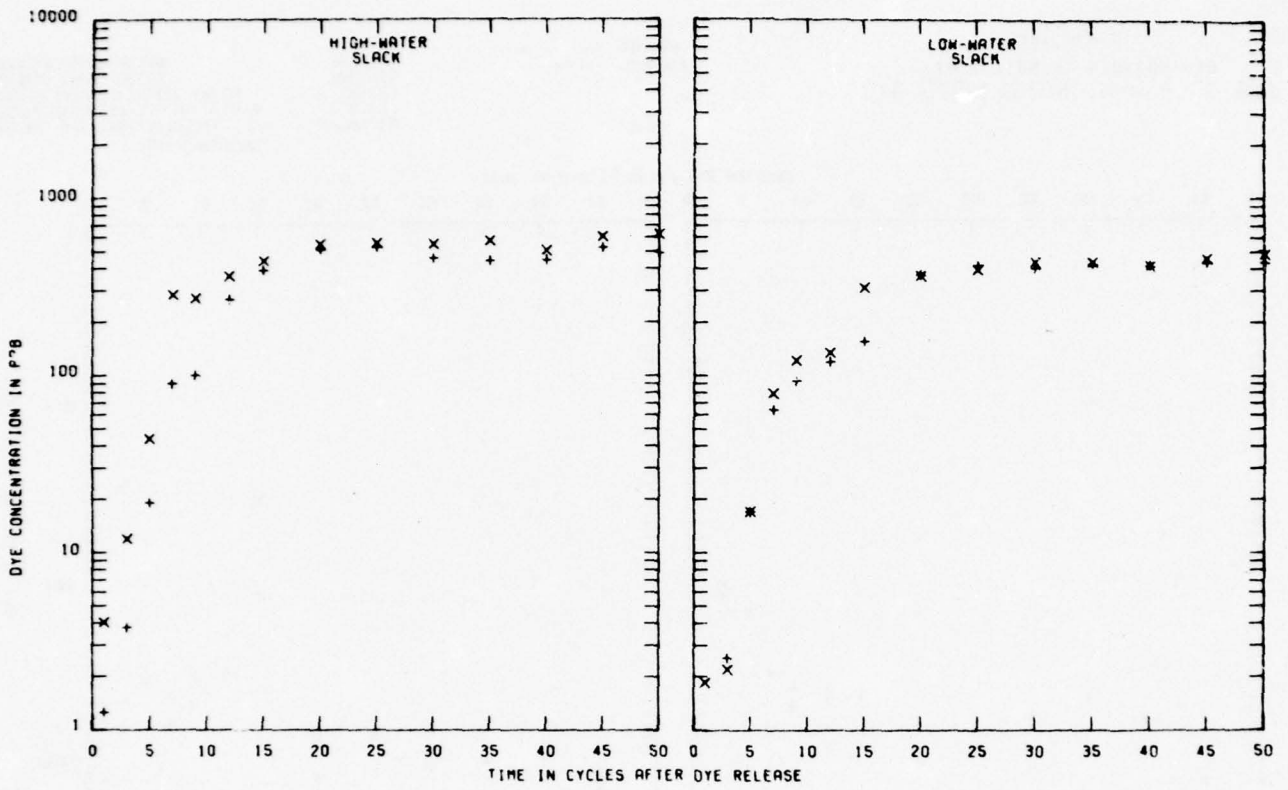
LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M10

PLATE 27

PLATE 28



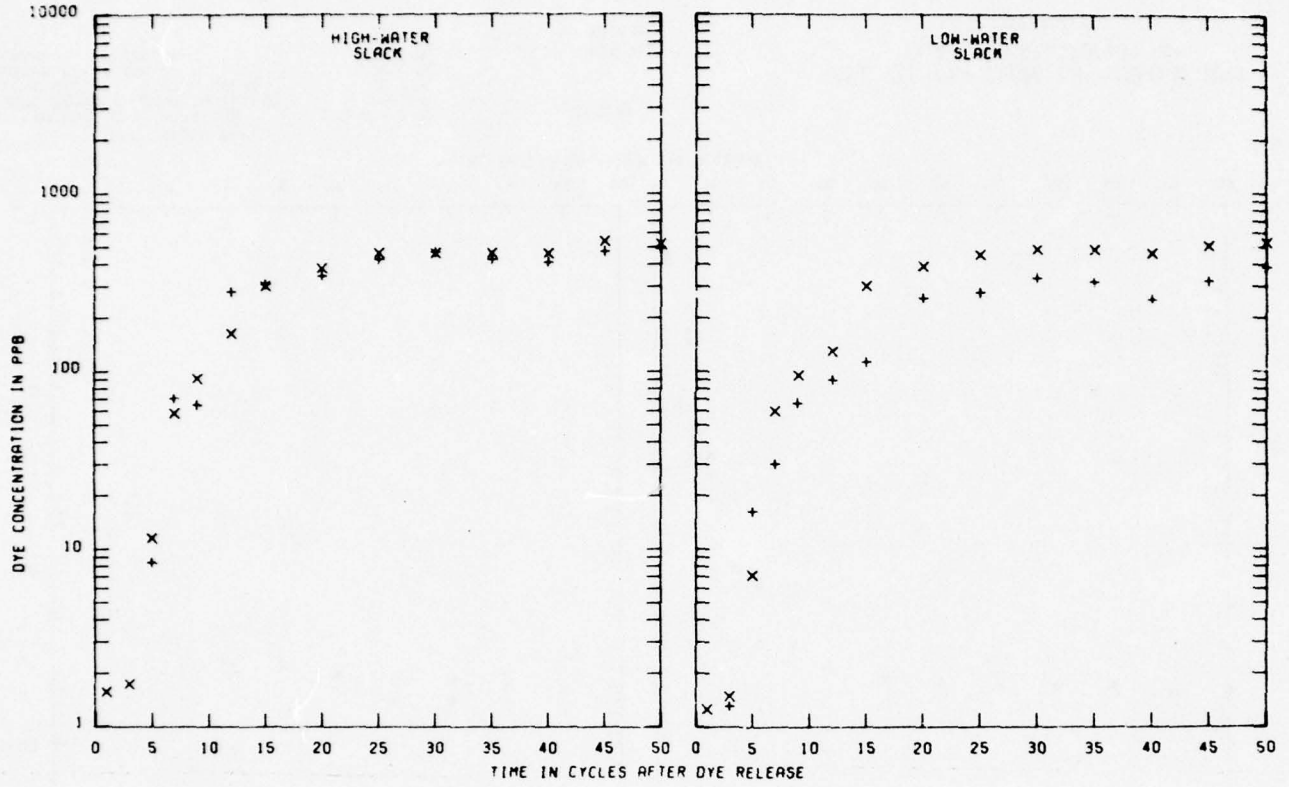
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M11



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× — - — BOTTOM

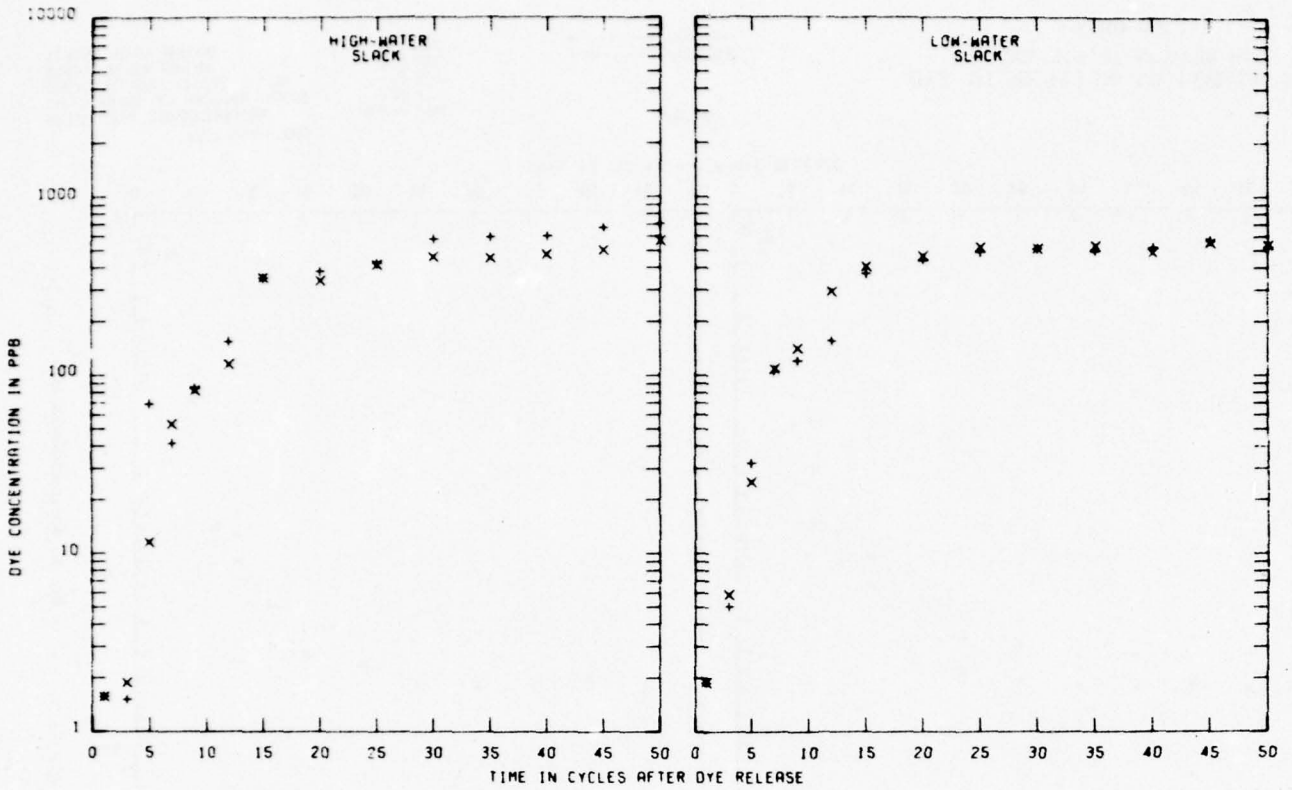
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION M12

PLATE 29

PLATE 30



TEST CONDITIONS

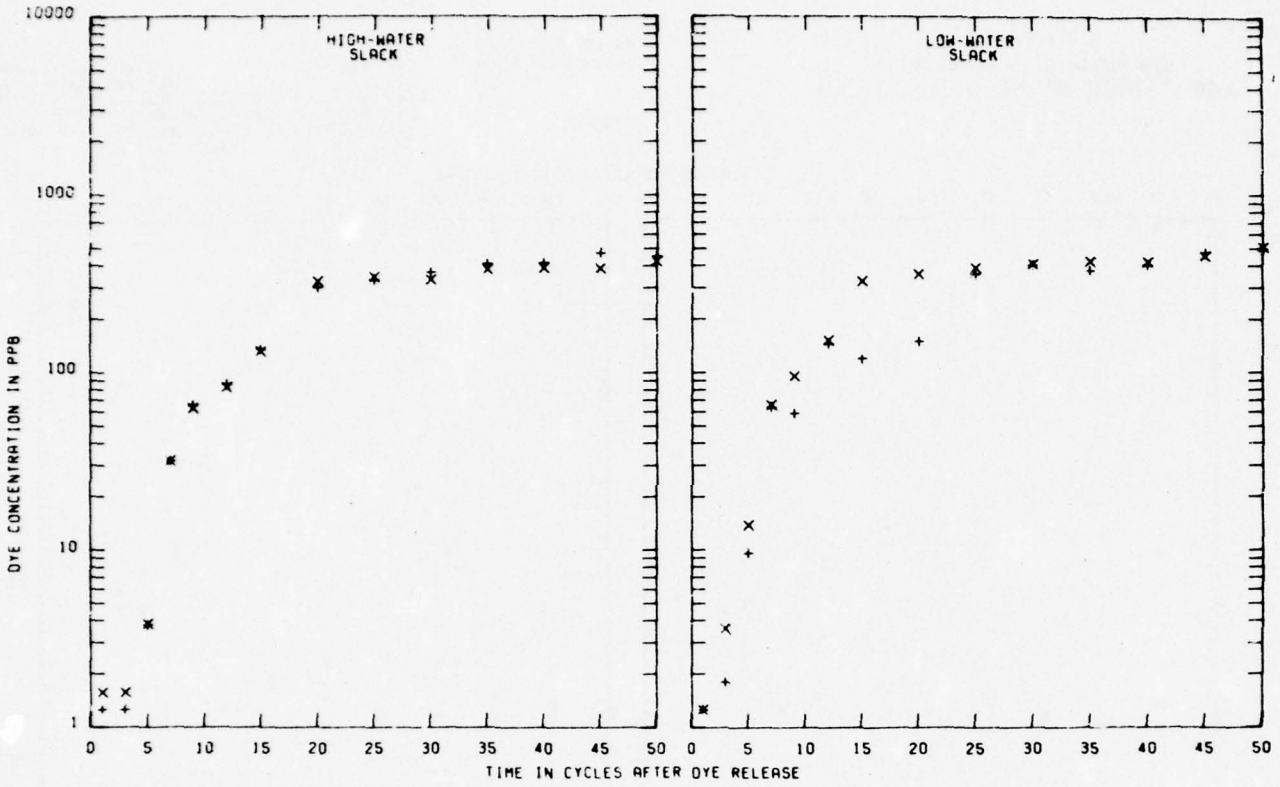
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A

STATION M13



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

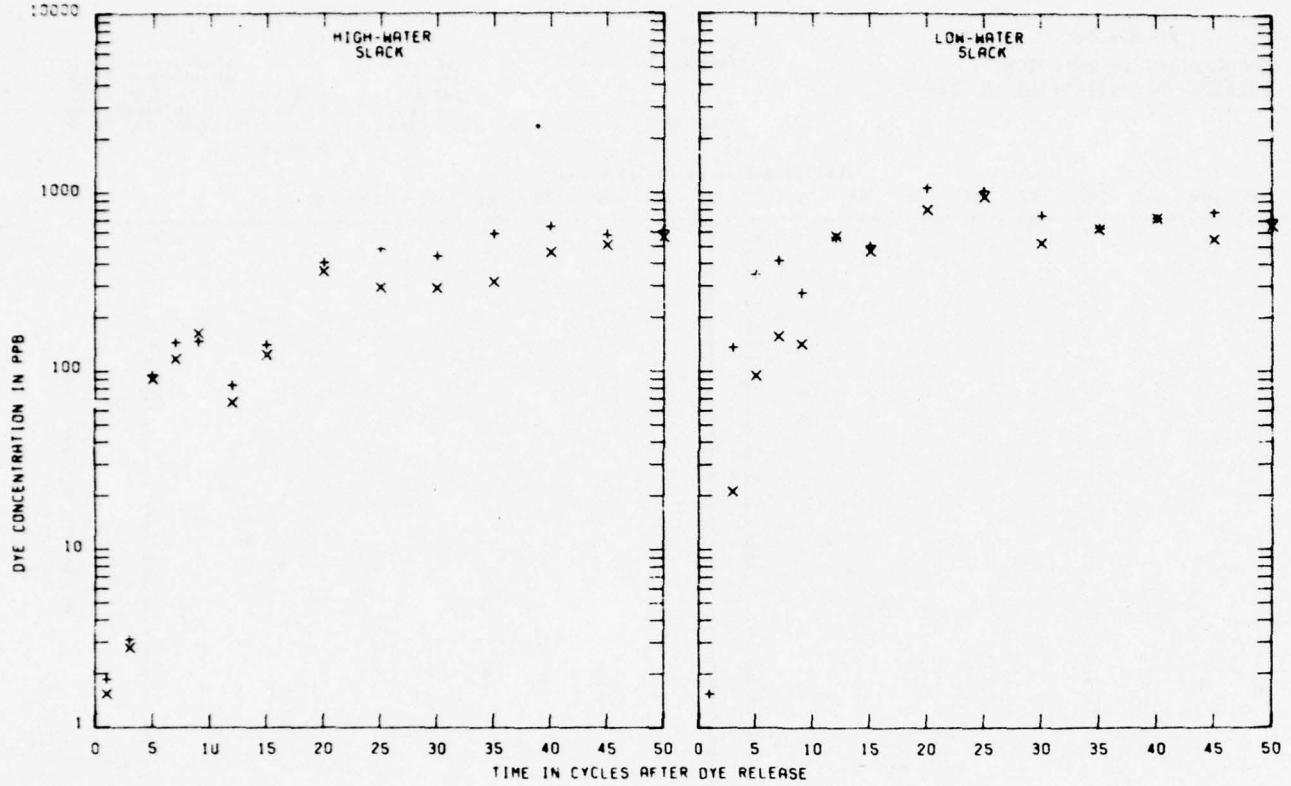
LEGEND

\+ —·— SURFACE
× ·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M14

PLATE 31

PLATE 32



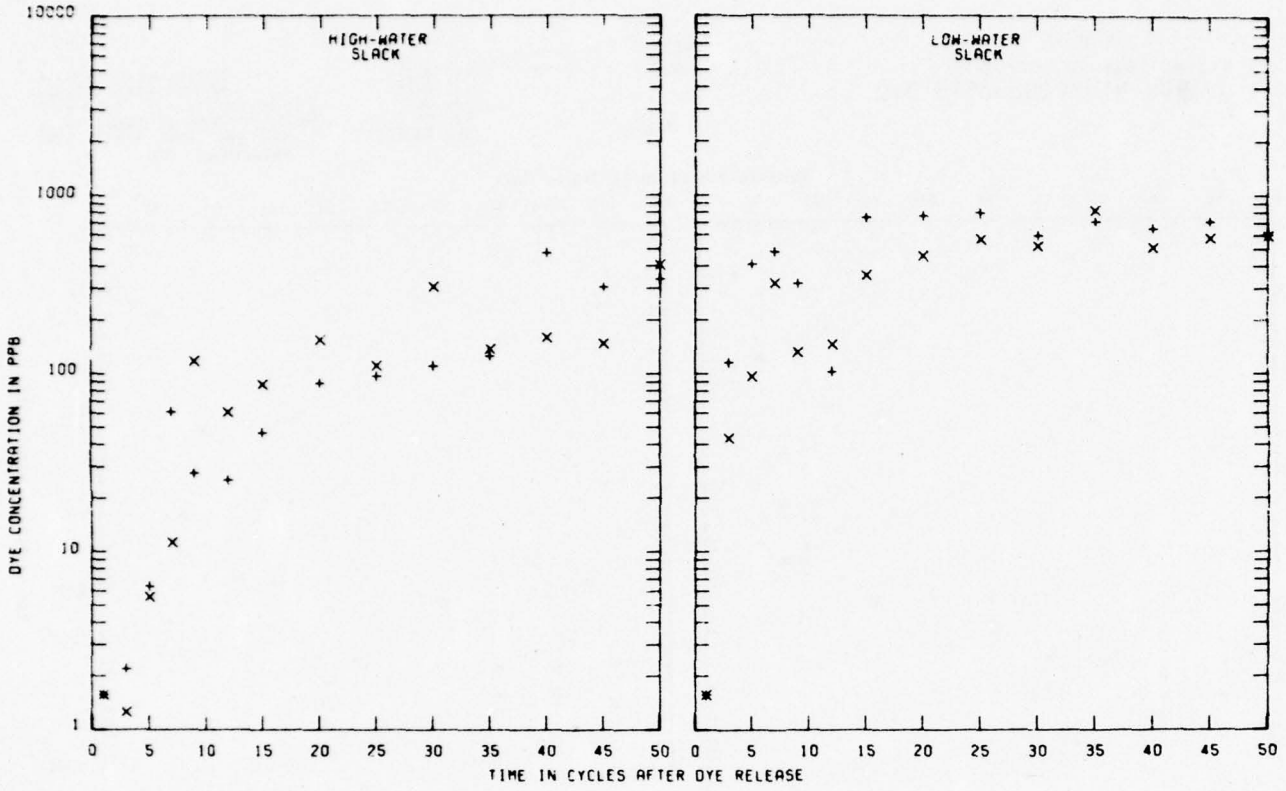
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M1S



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× —·— BOTTOM

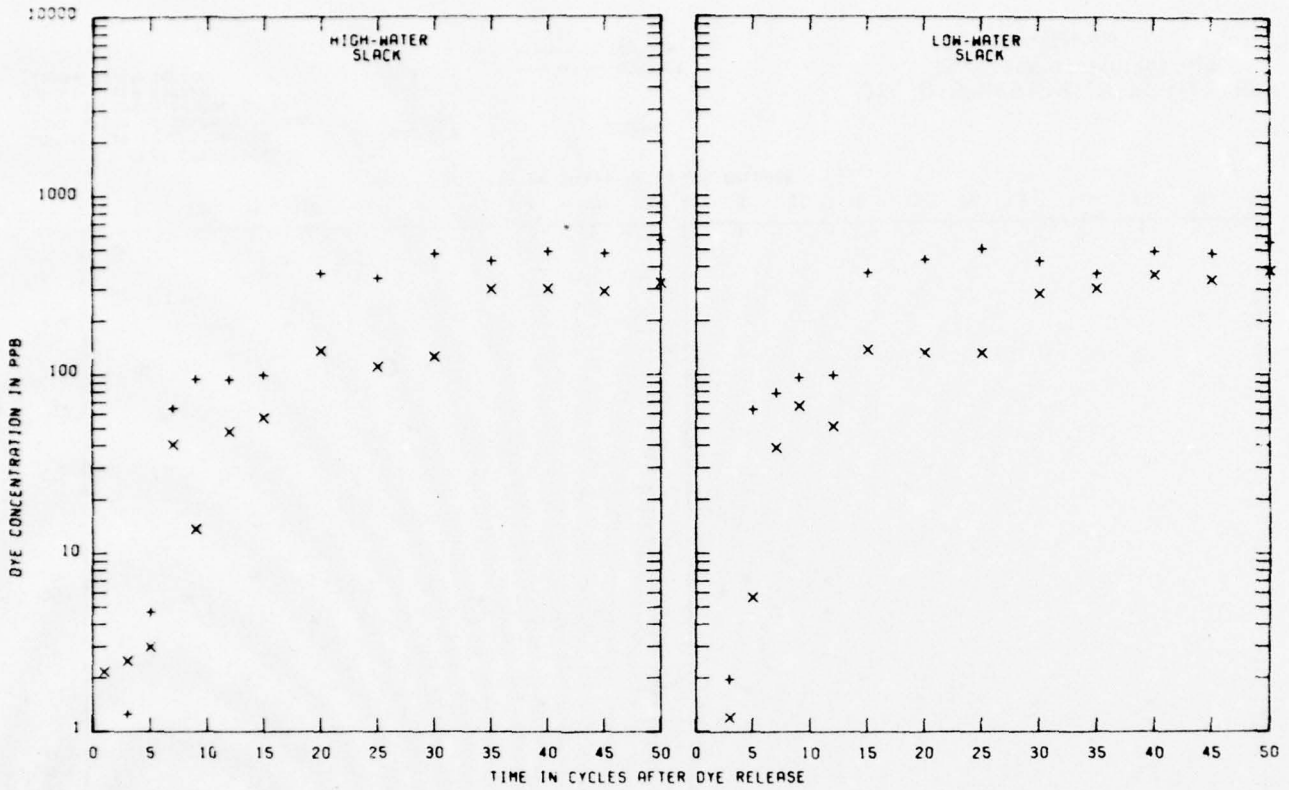
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION M16

PLATE 33

PLATE 34



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

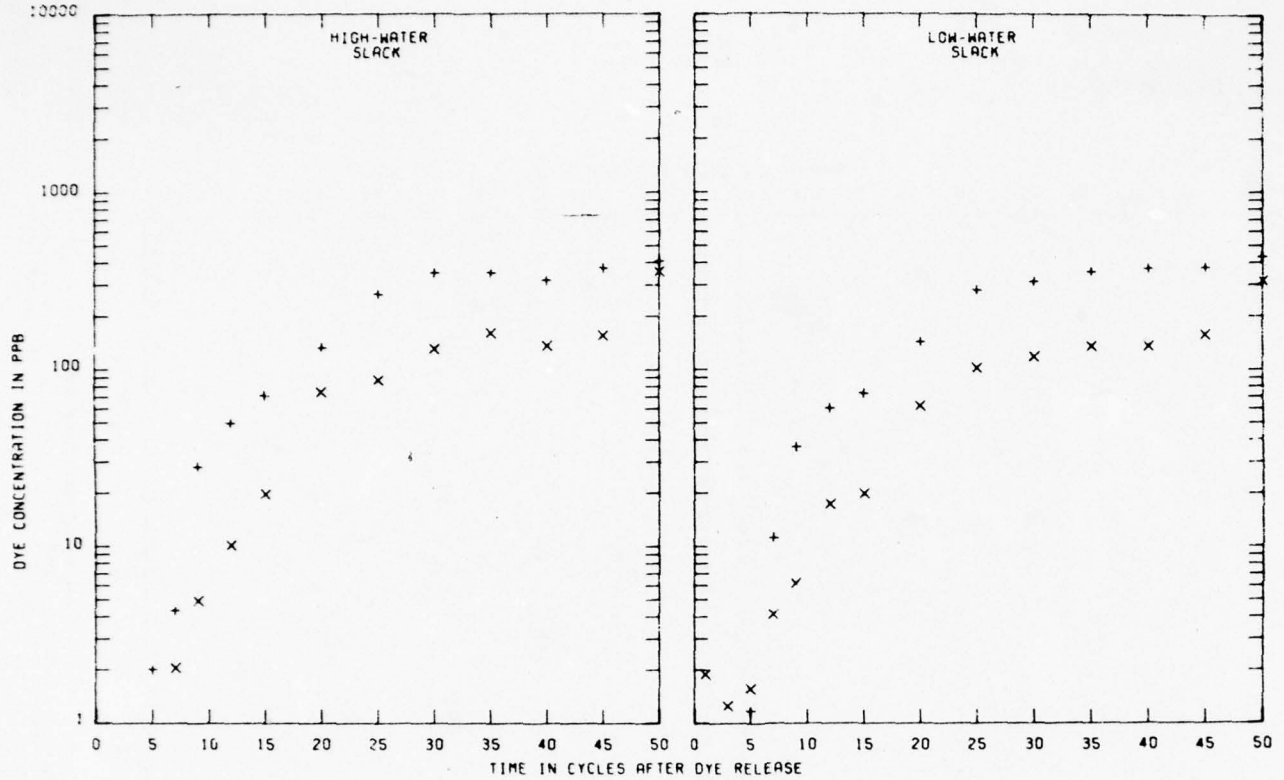
\+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION M17



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× —·—·— BOTTOM

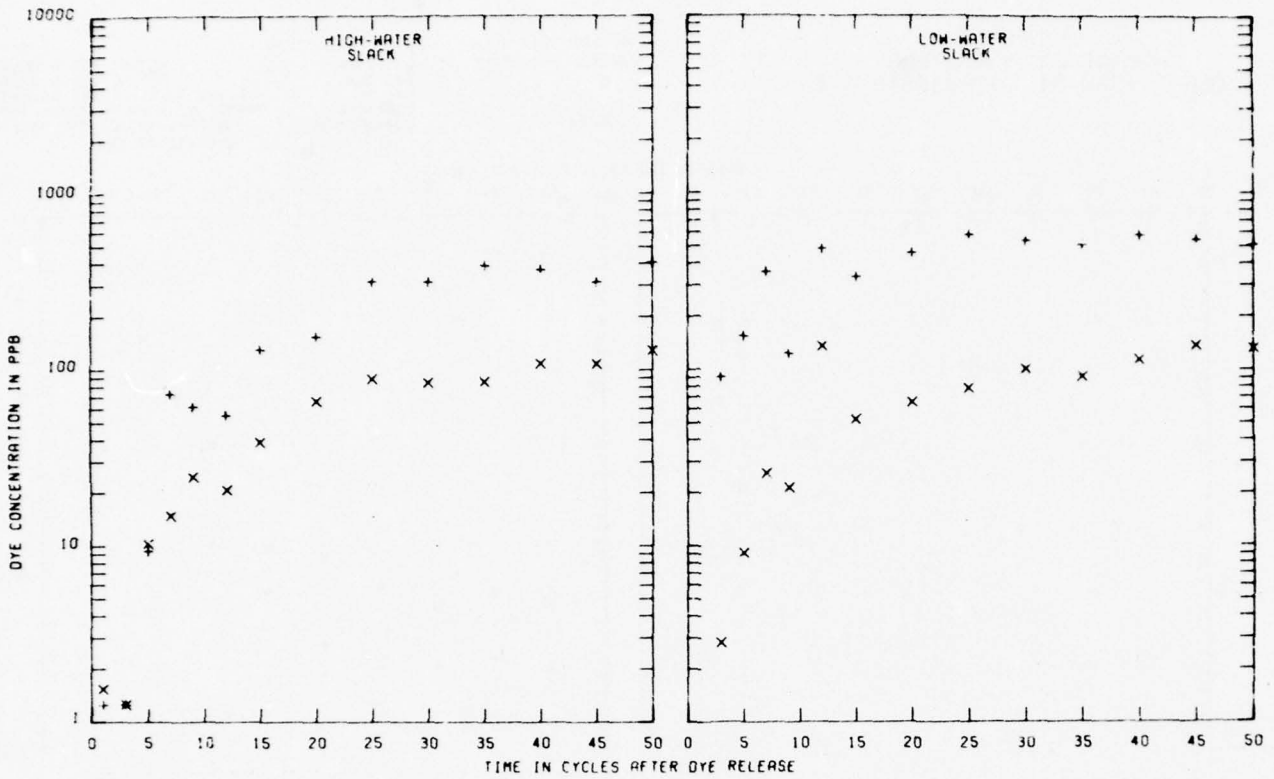
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION M18

PLATE 35

PLATE 36



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

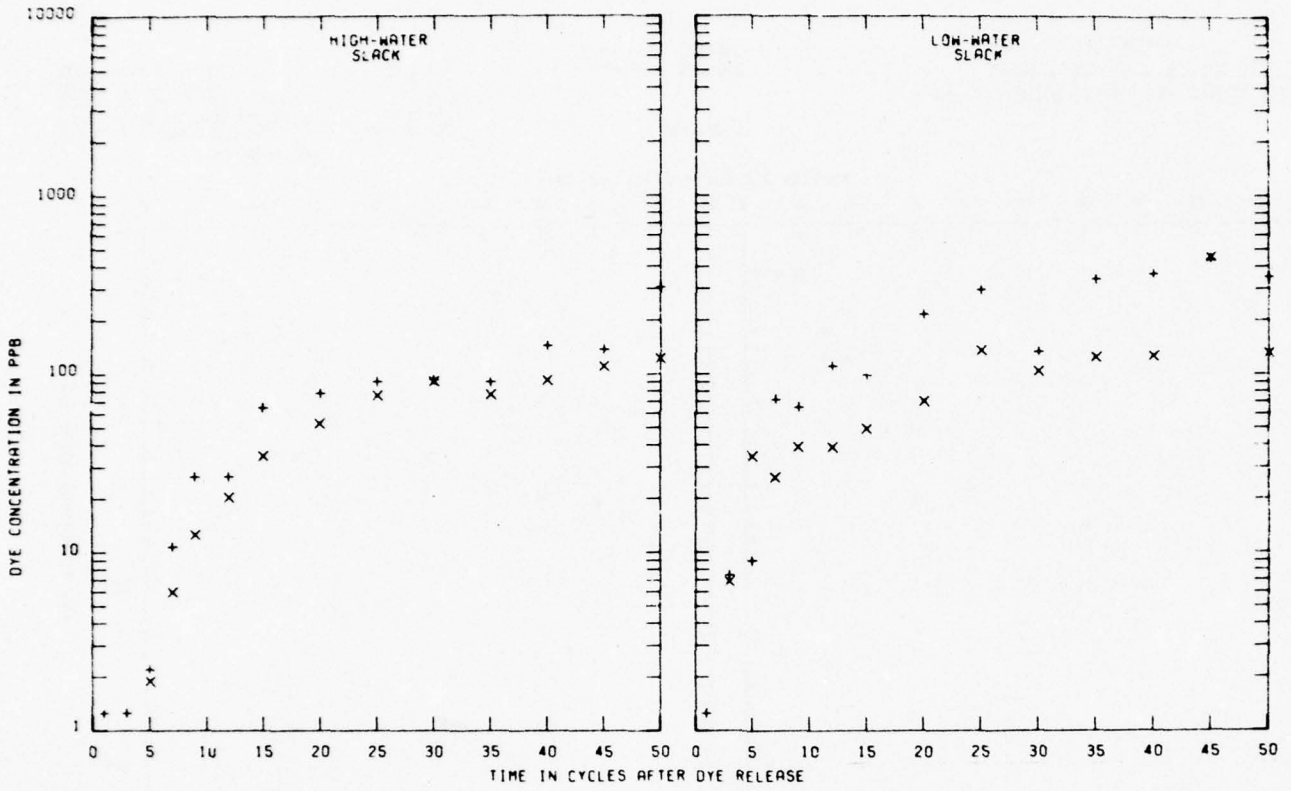
LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A1A

STATION M13



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

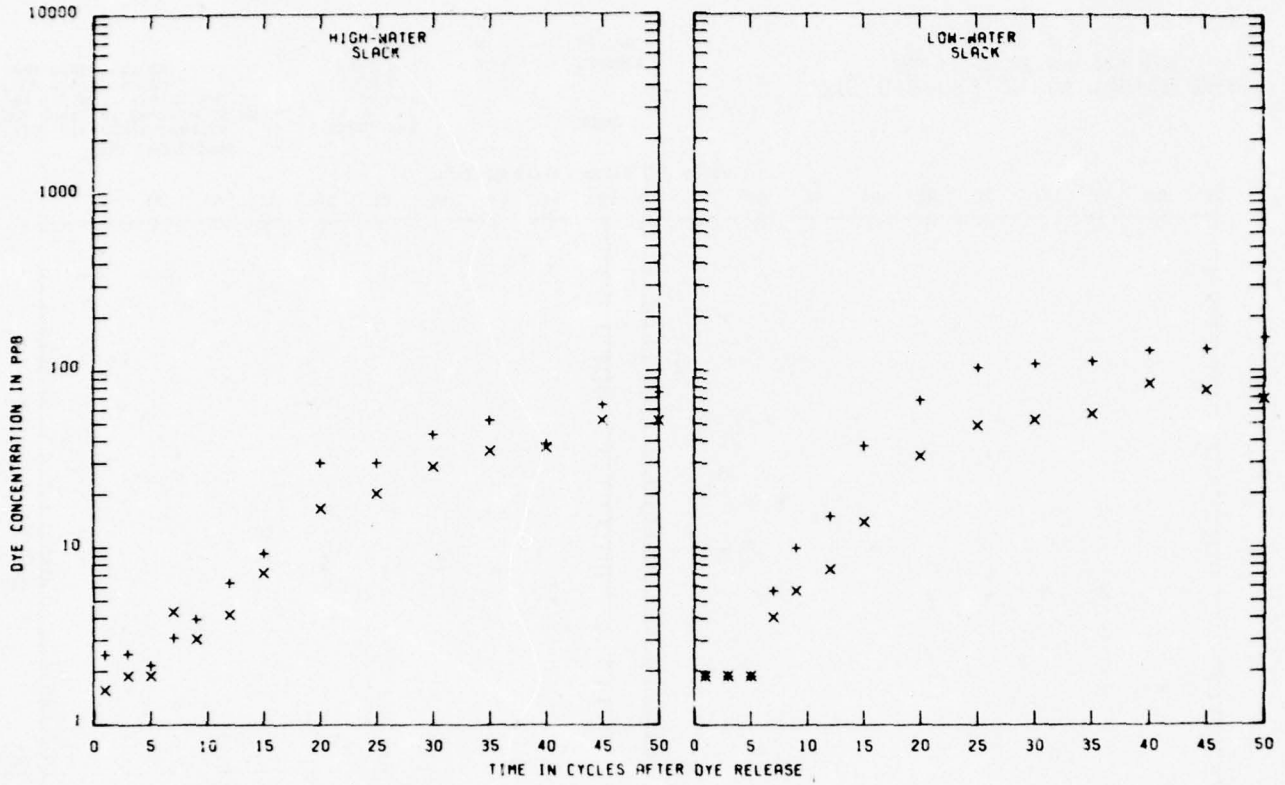
LEGEND

+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M20

PLATE 37

PLATE 38



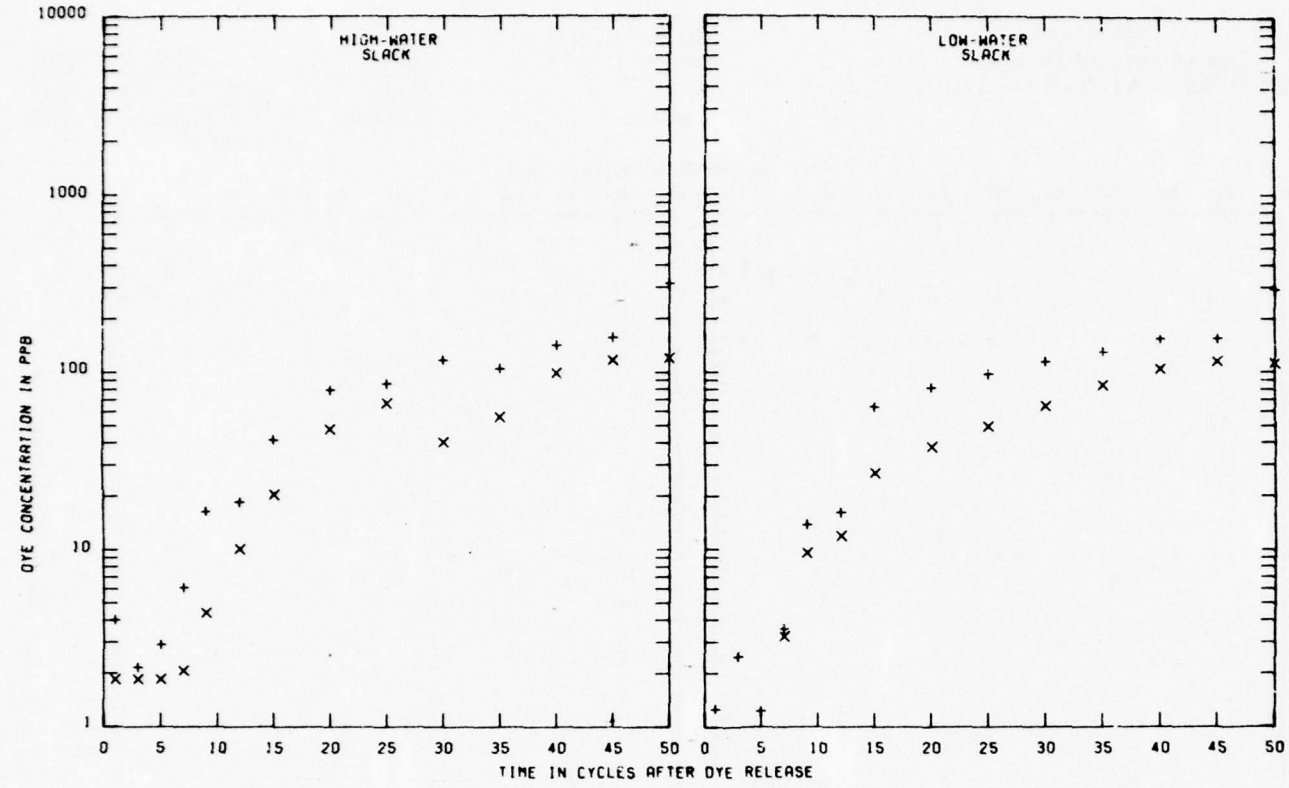
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M21



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

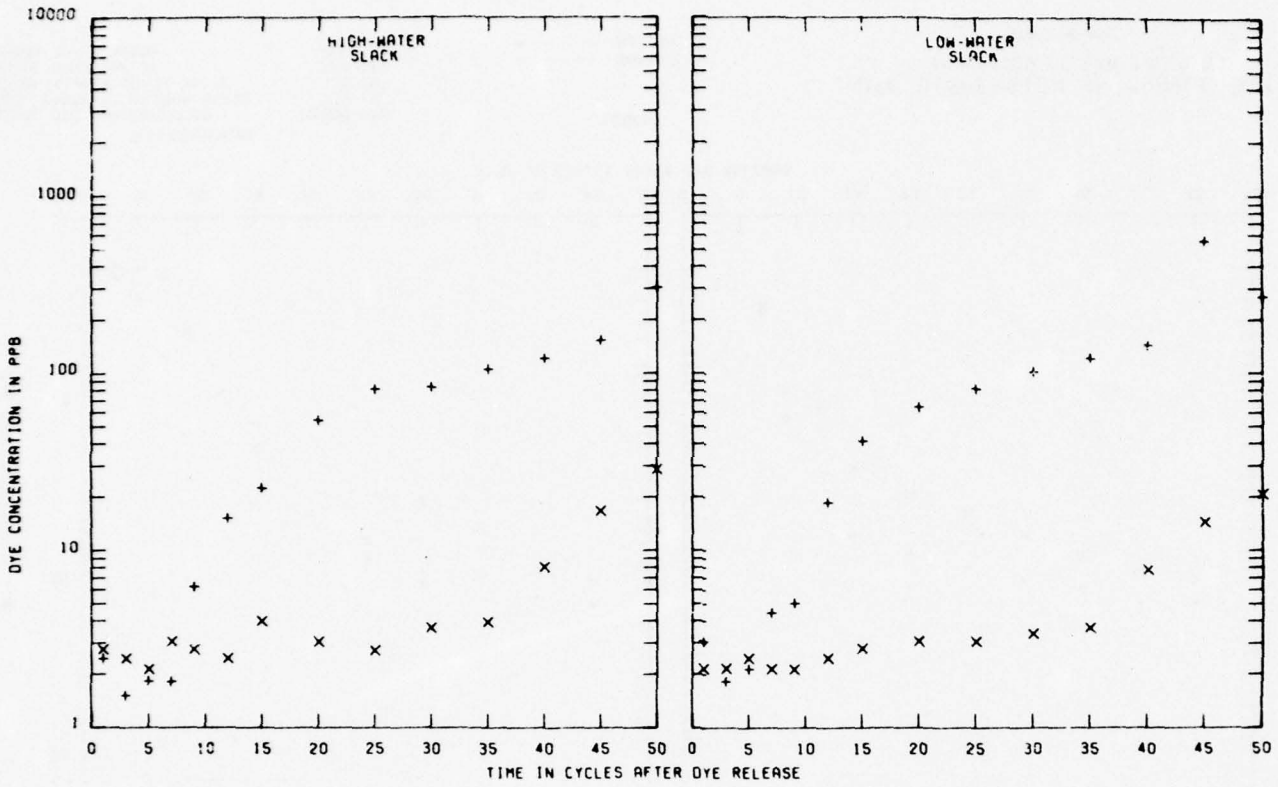
LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M22

PLATE 39

PLATE 40



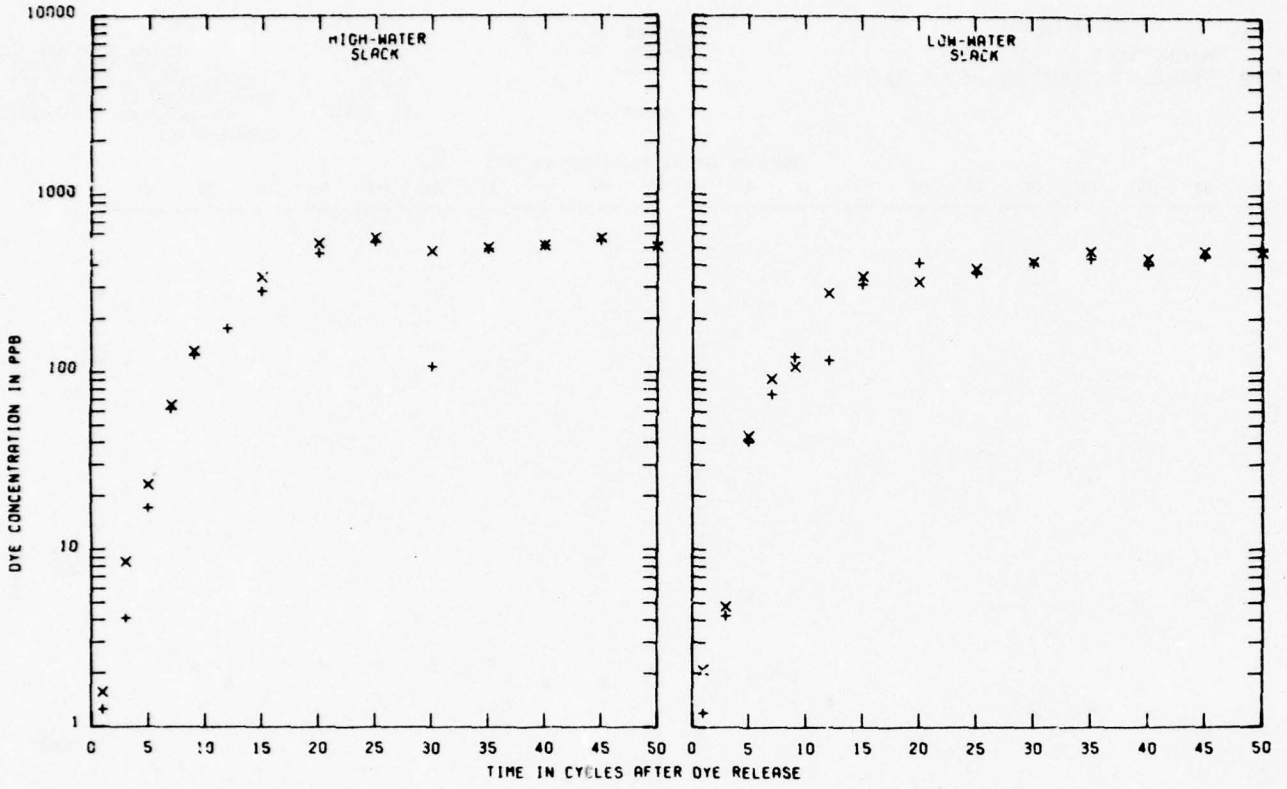
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M23



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

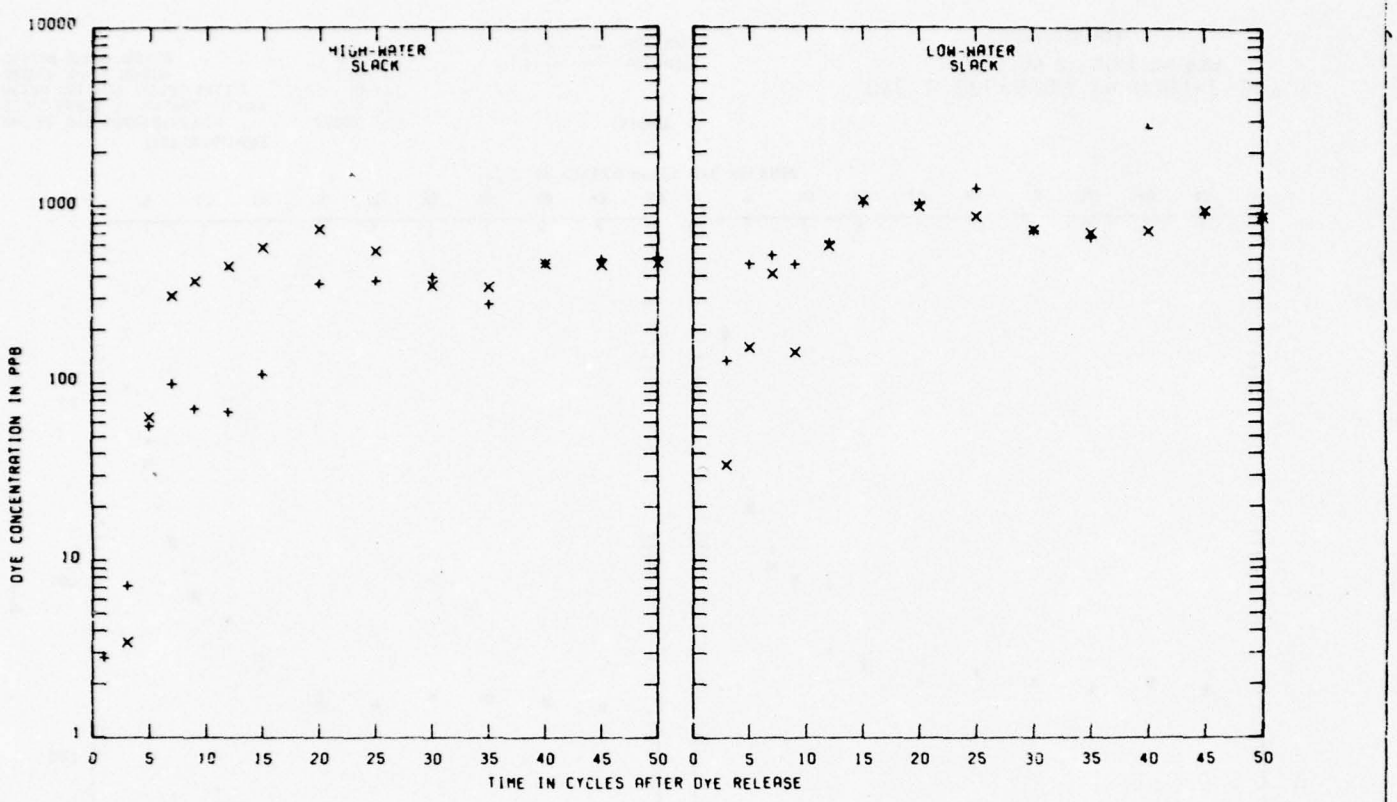
LEGEND

+ —·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M24

PLATE 41

PLATE 42



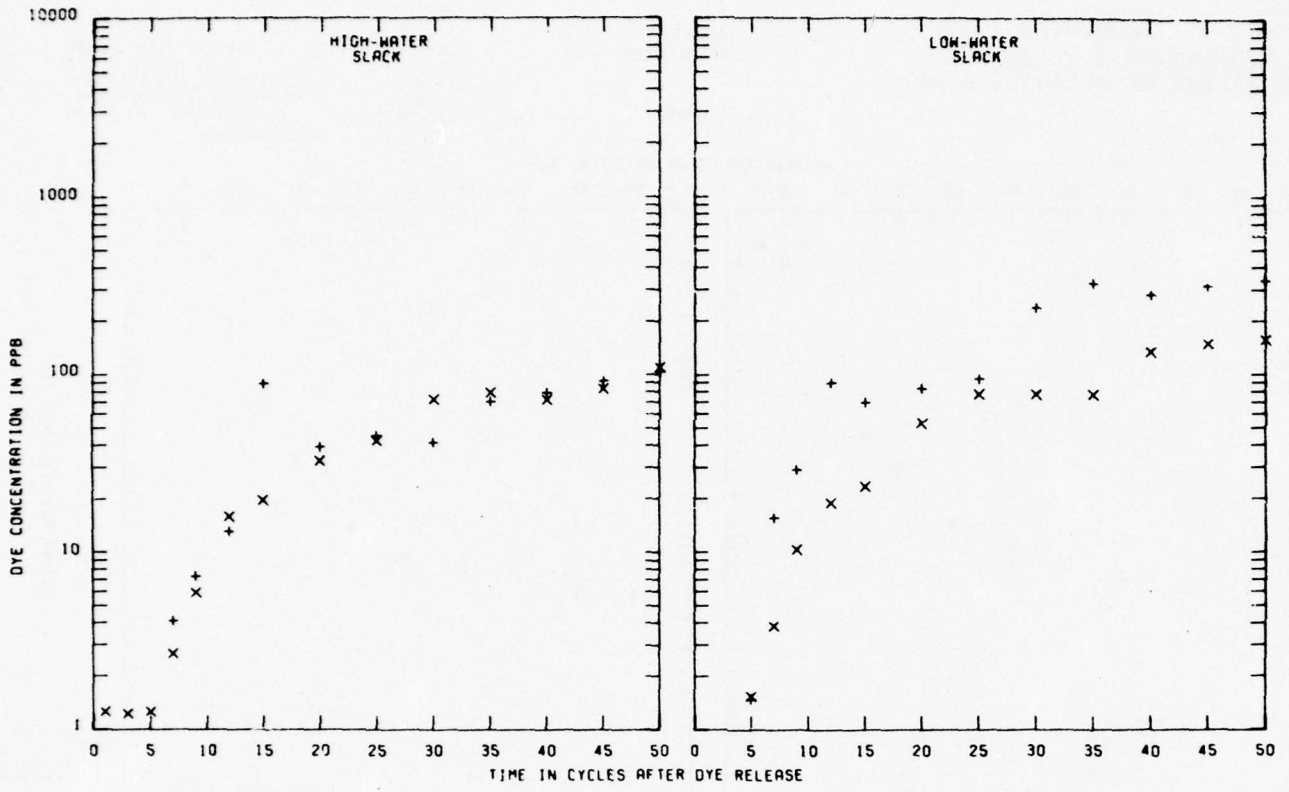
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M25



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

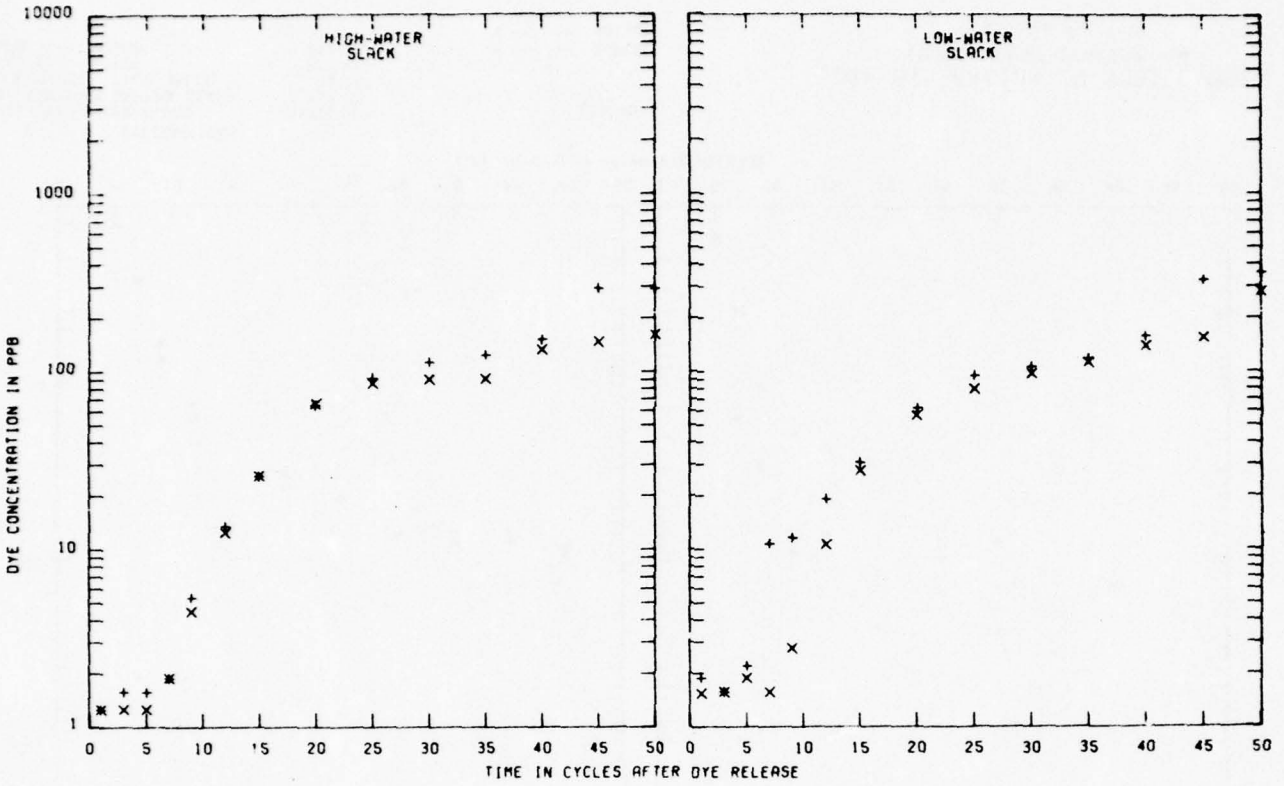
LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M26

PLATE 43

PLATE 44



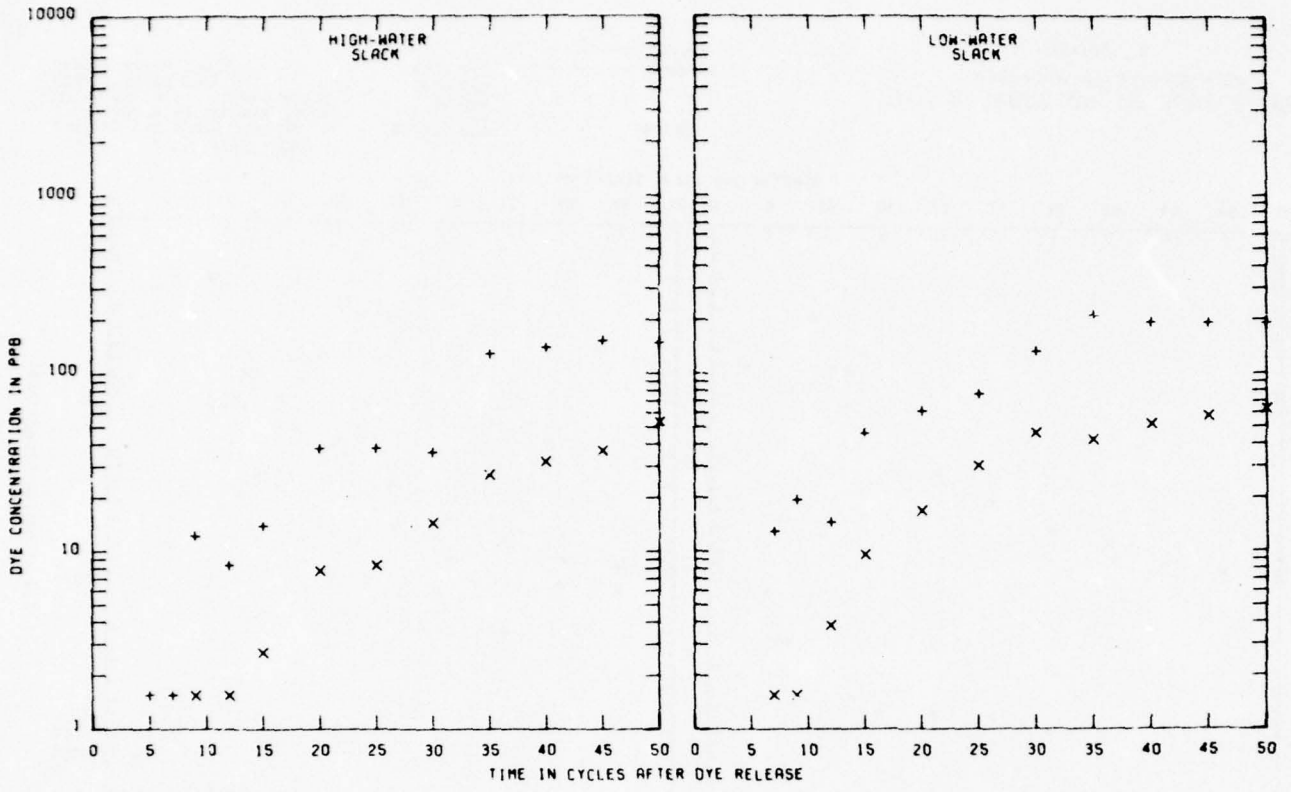
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A1A
STATION M27



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ —·—·— SURFACE

× —·—·— BOTTOM

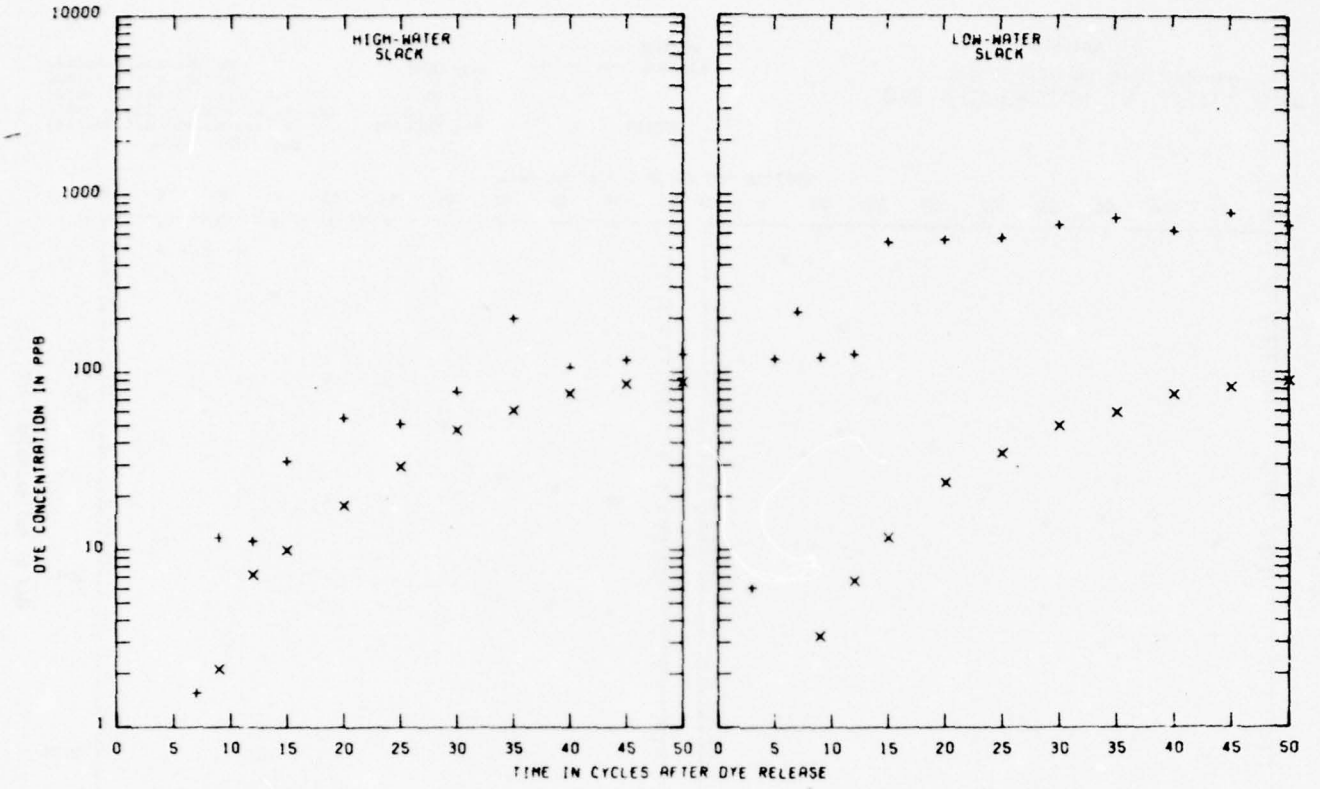
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A5A

STATION 1

PLATE 45

PLATE 46



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION ASA

STATION 3

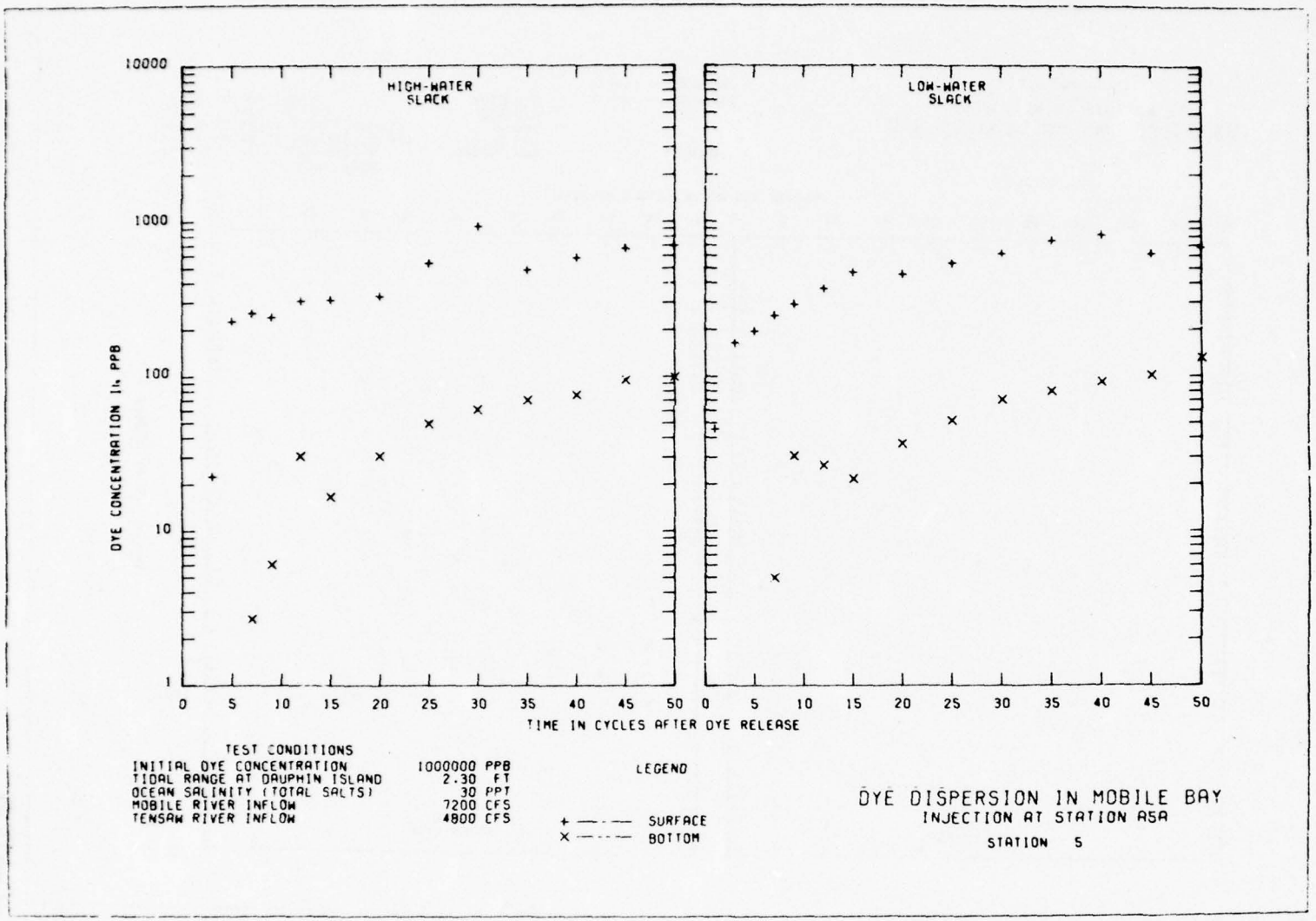
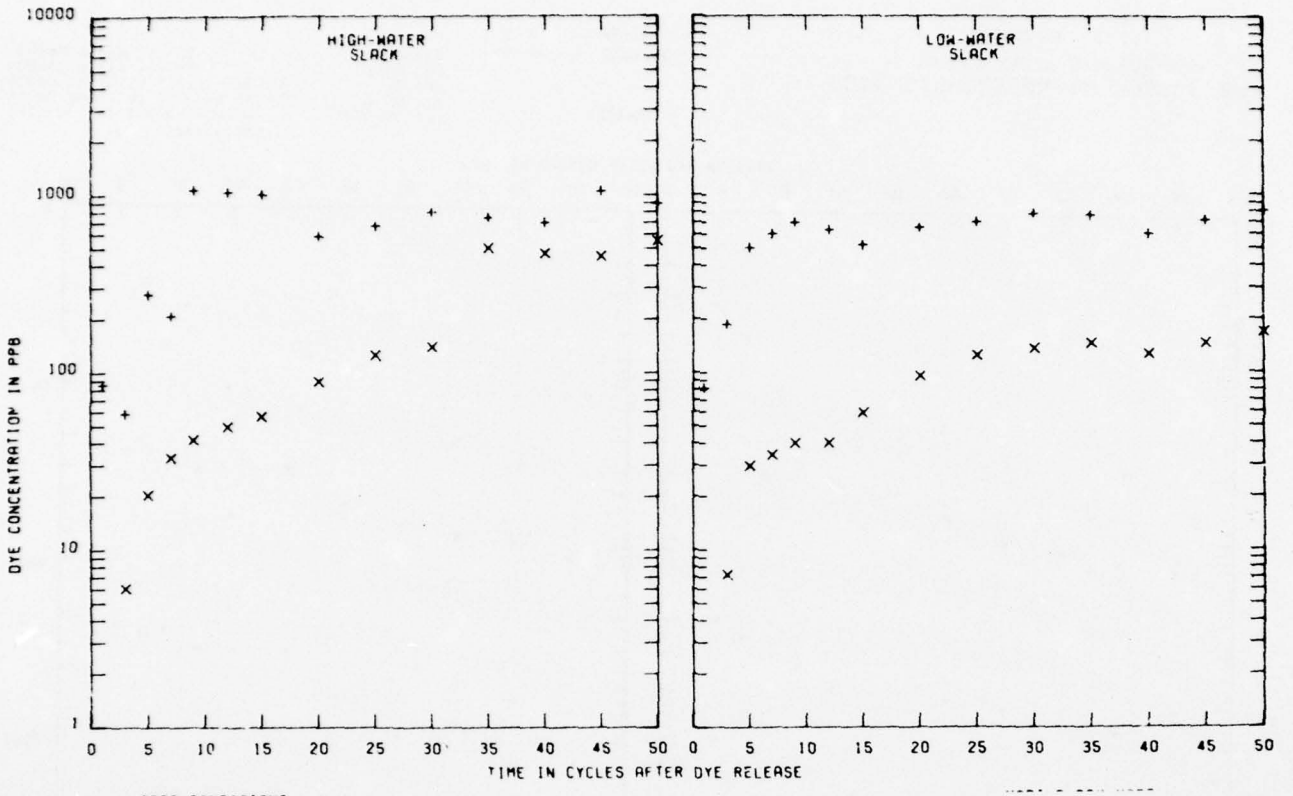

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION 5

PLATE 47

PLATE 48



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION 7

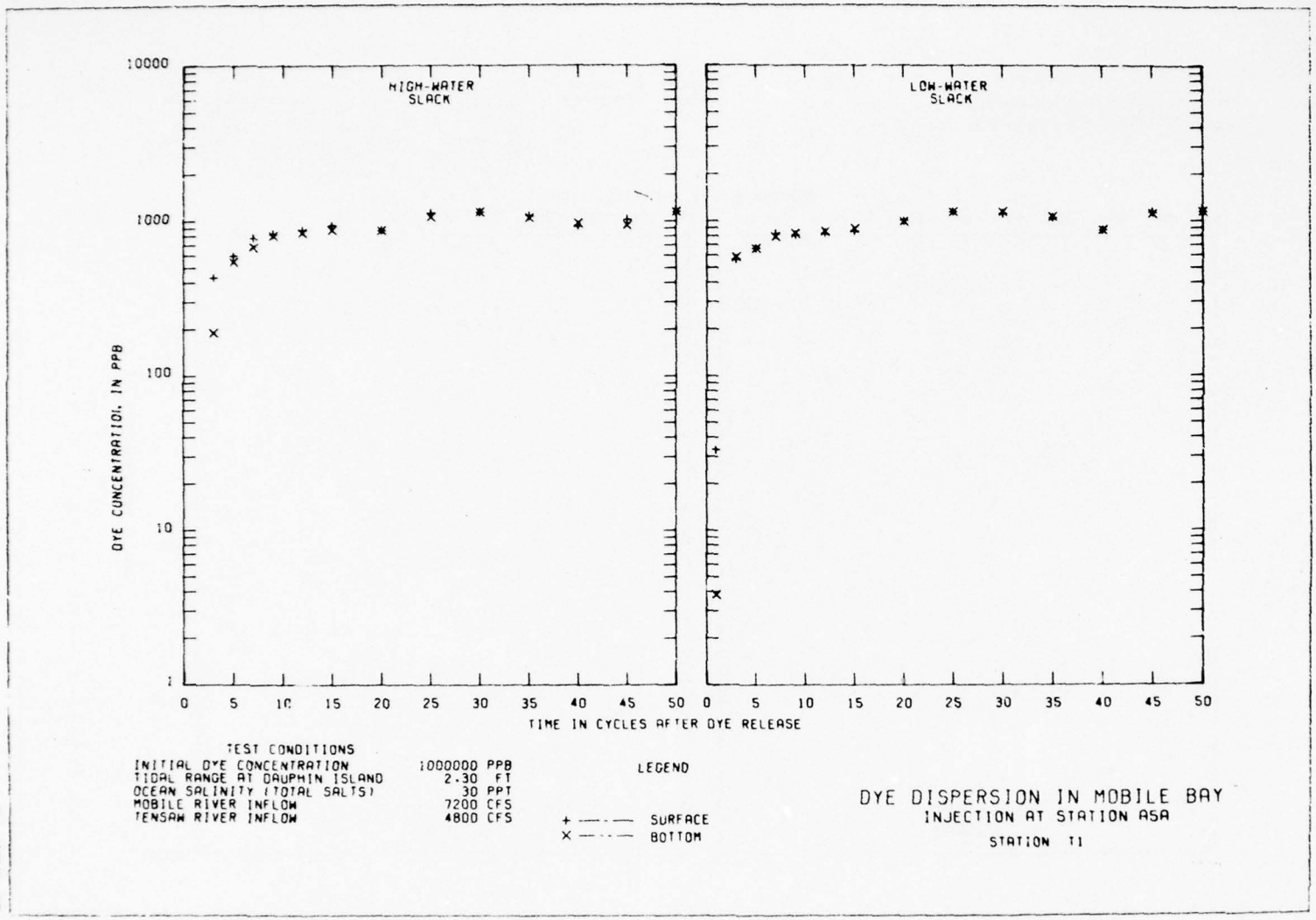
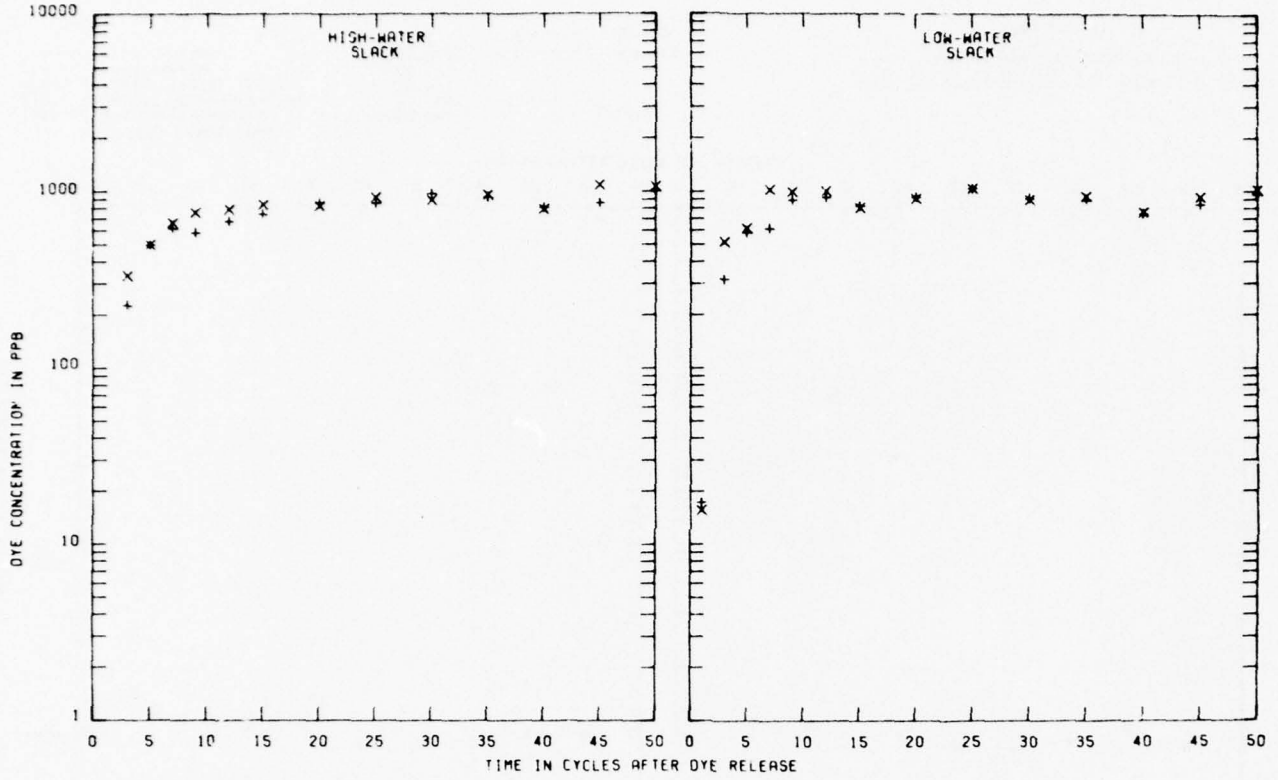

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION, IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION T1

PLATE 49

PLATE 50



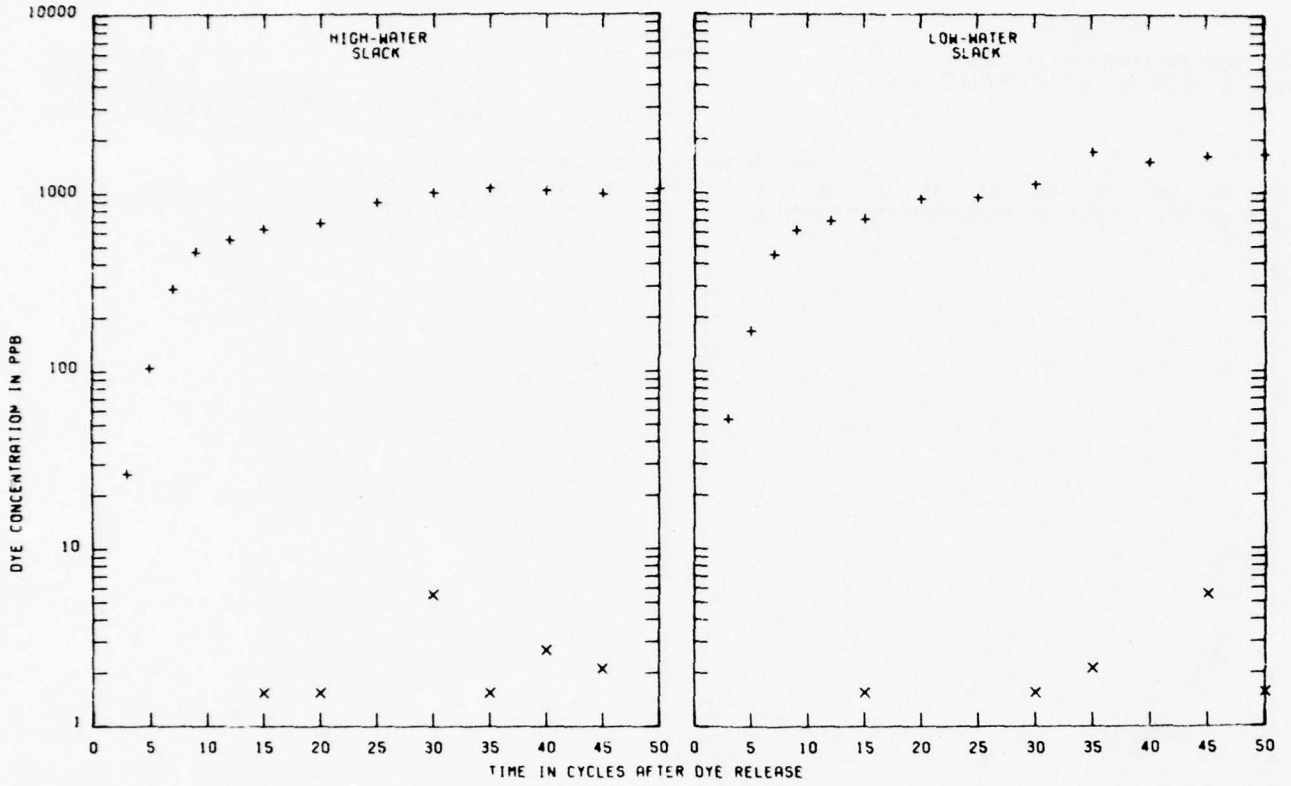
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× ····· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION T2



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

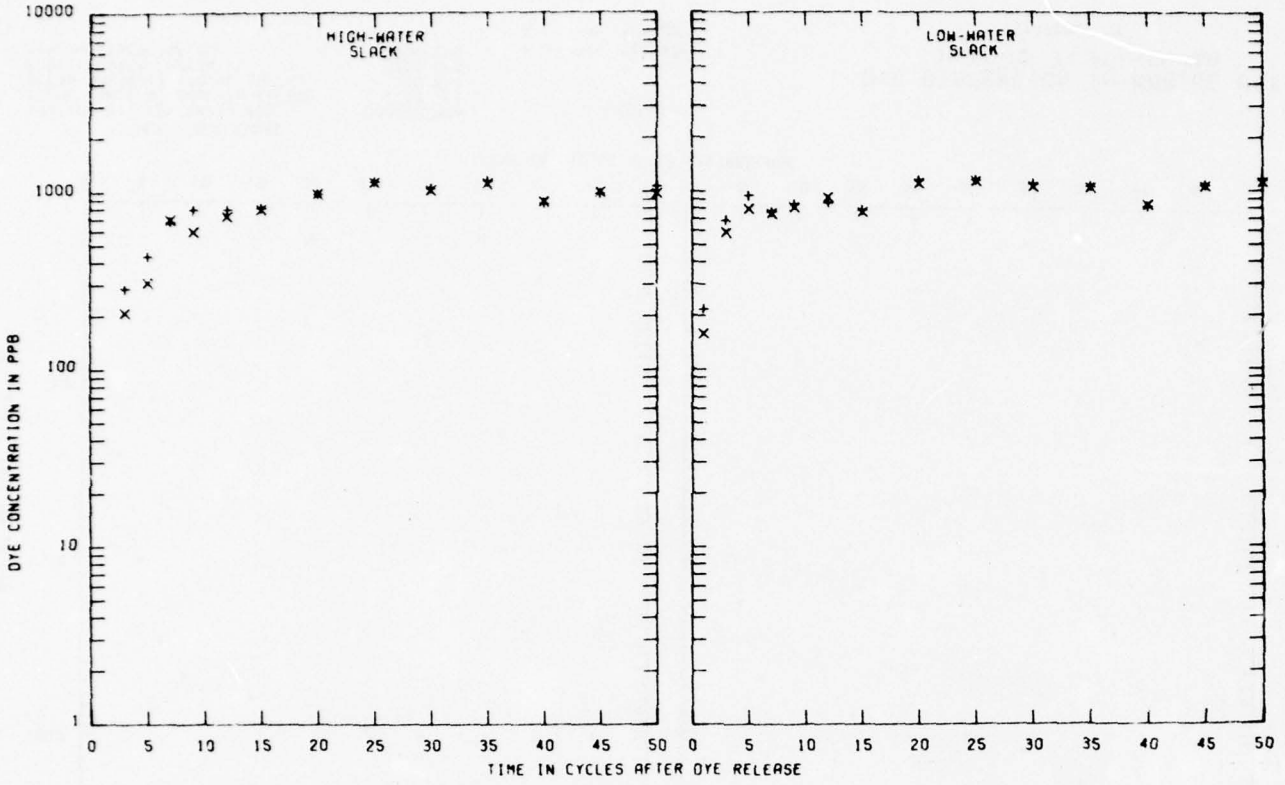
LEGEND

+ —·—·— SURFACE
× - - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION T3

PLATE 51

PLATE 52



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	36 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION T4

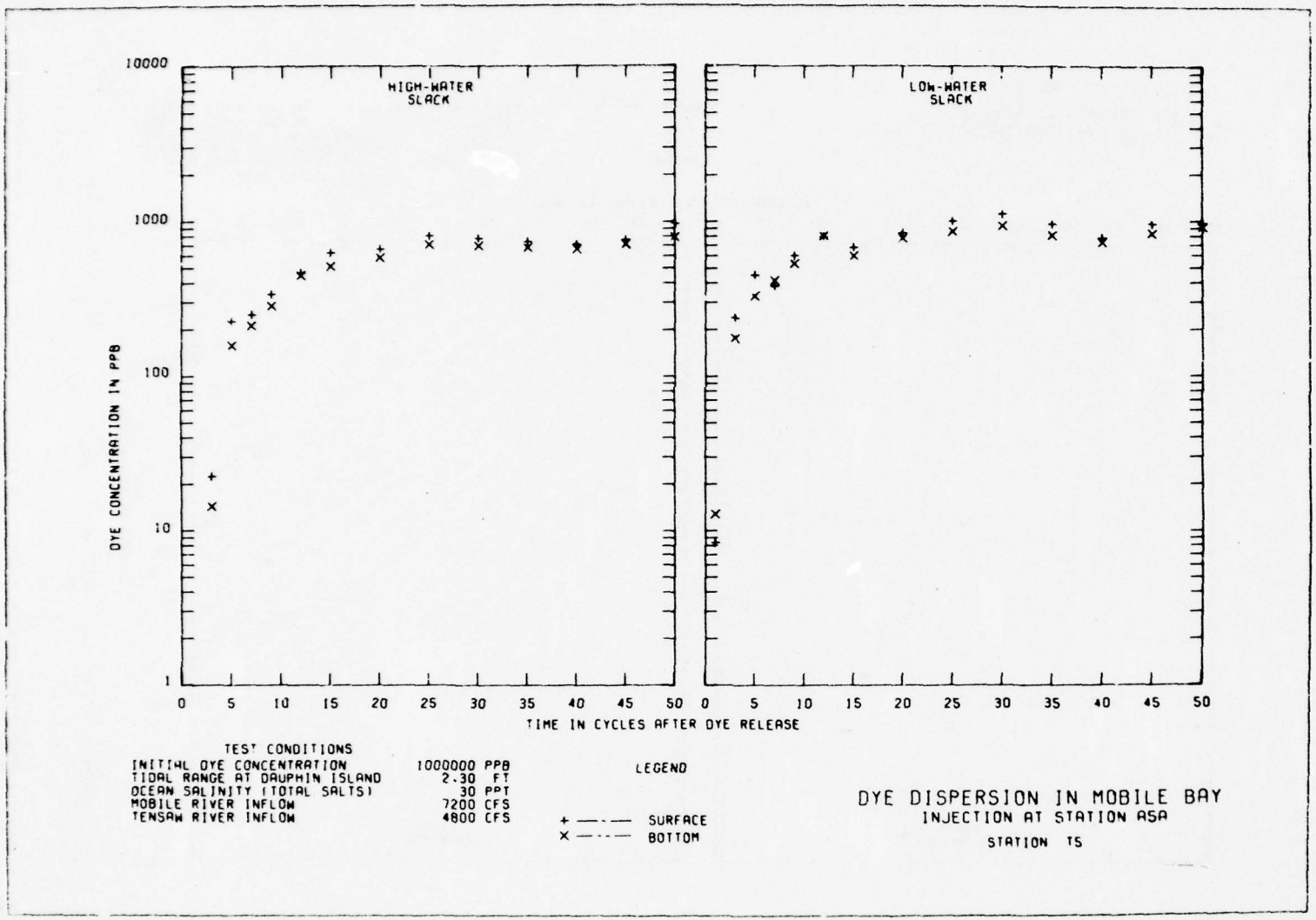
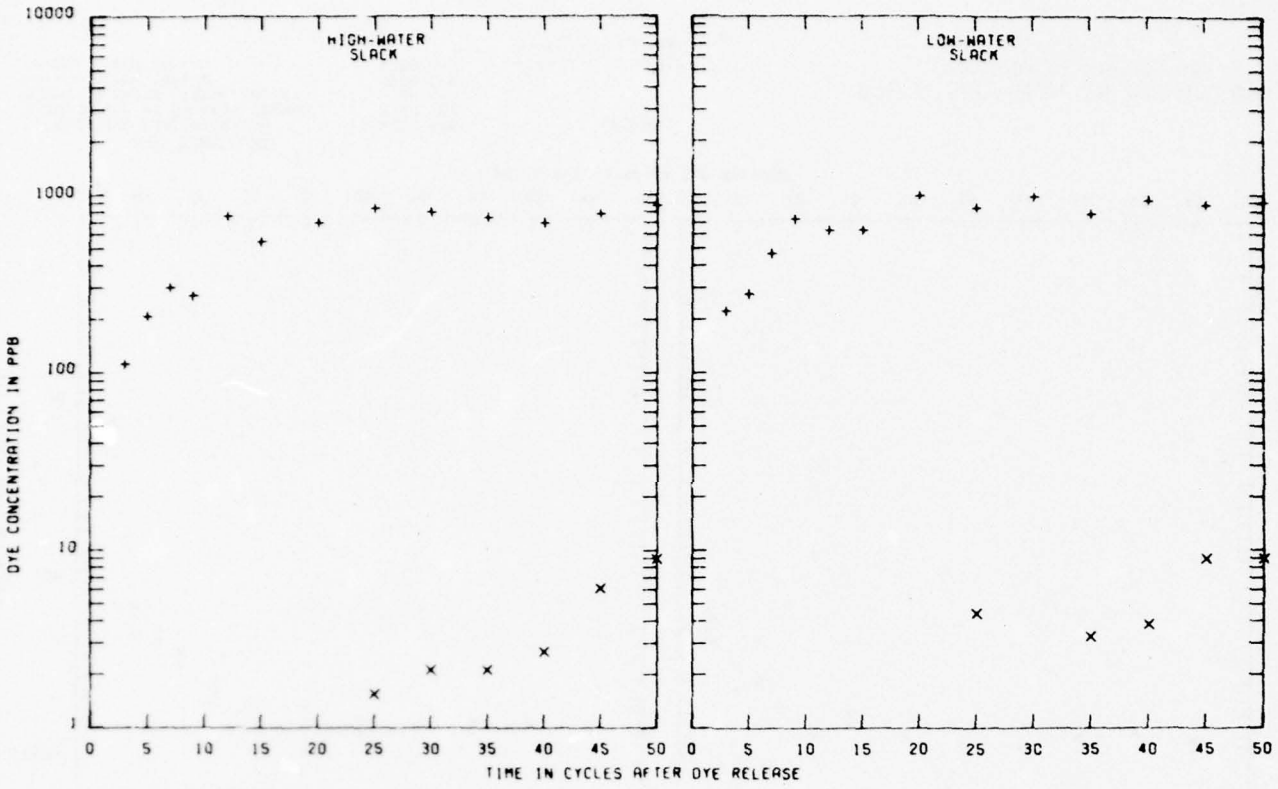

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION T5

PLATE 53

PLATE 54



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

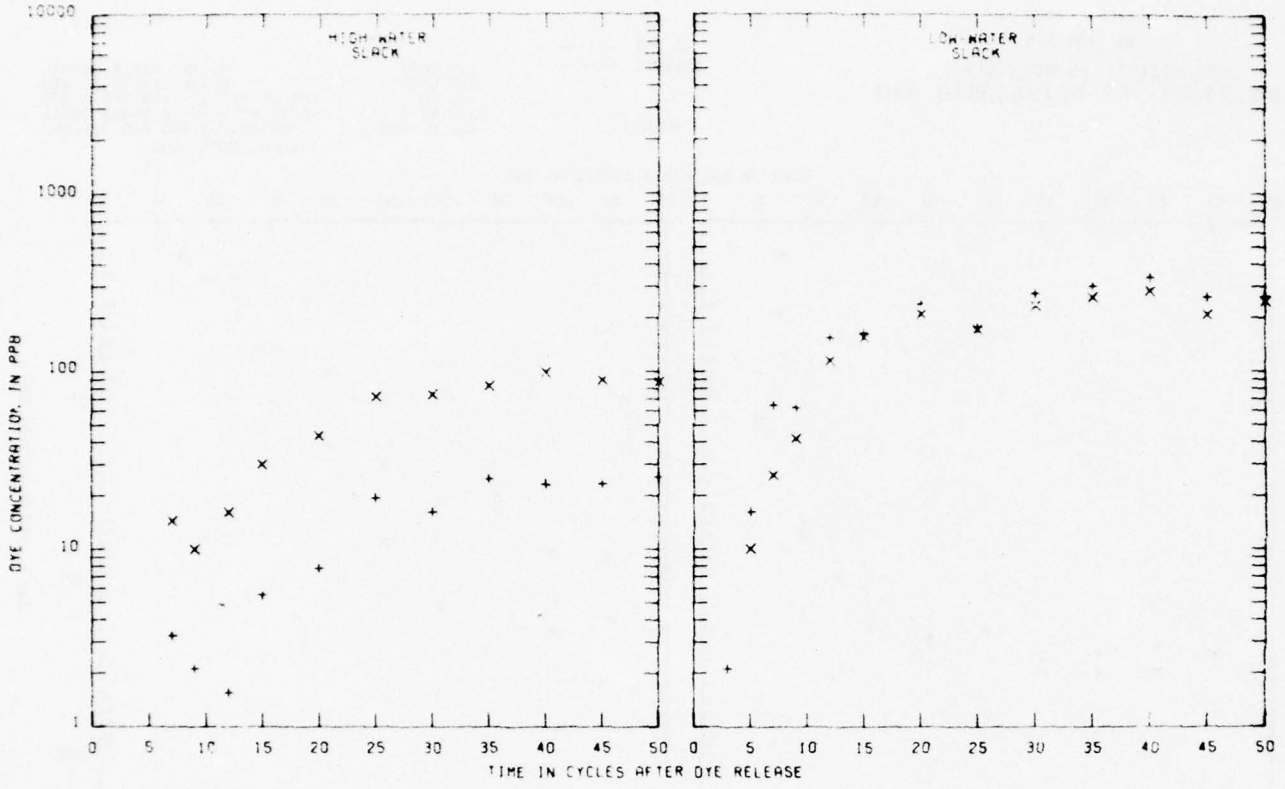
+ —·— SURFACE

× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A5A

STATION TSC



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× —·—·— BOTTOM

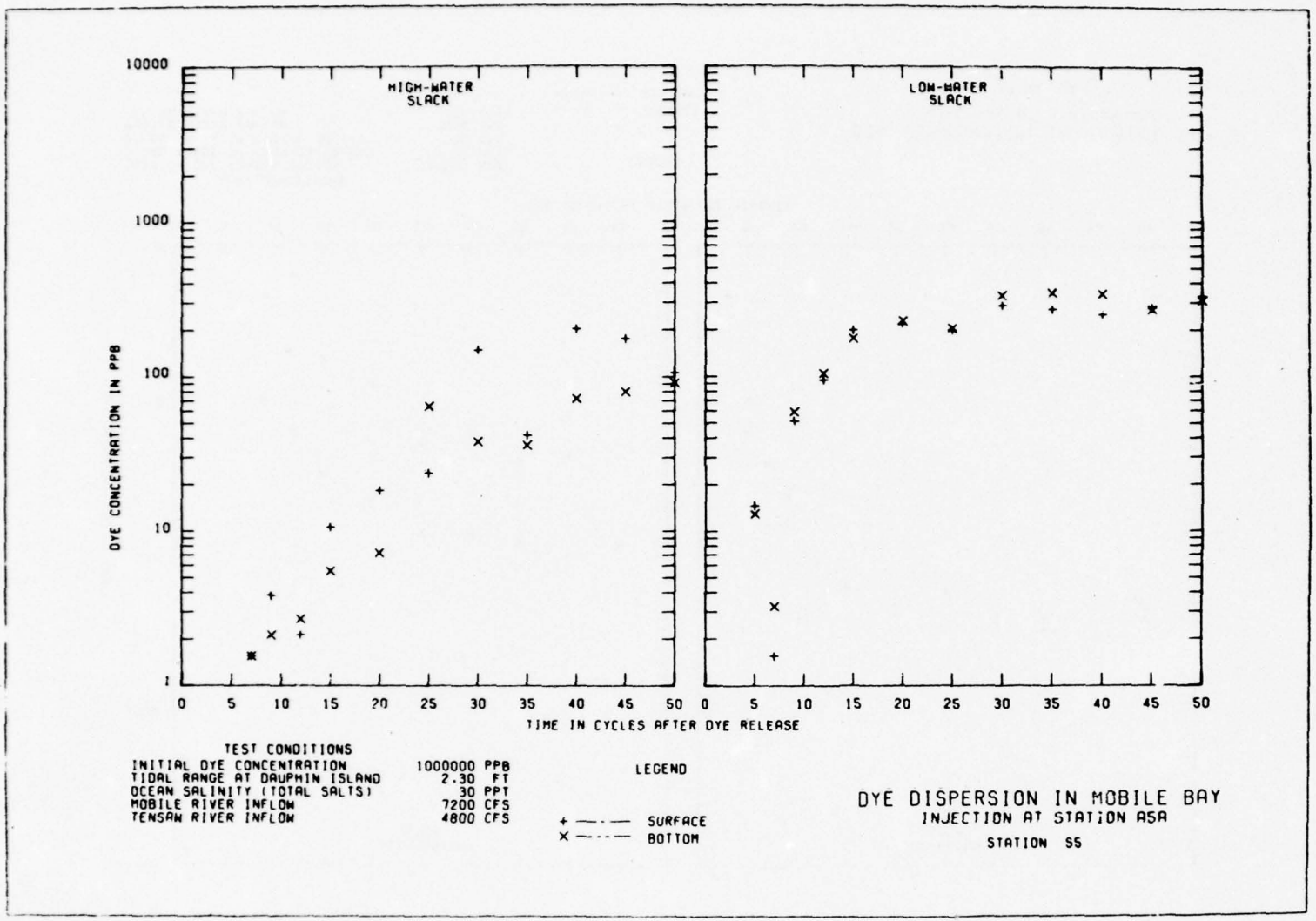
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A5A

STATION S4

PLATE 55

PLATE 56


HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION S5

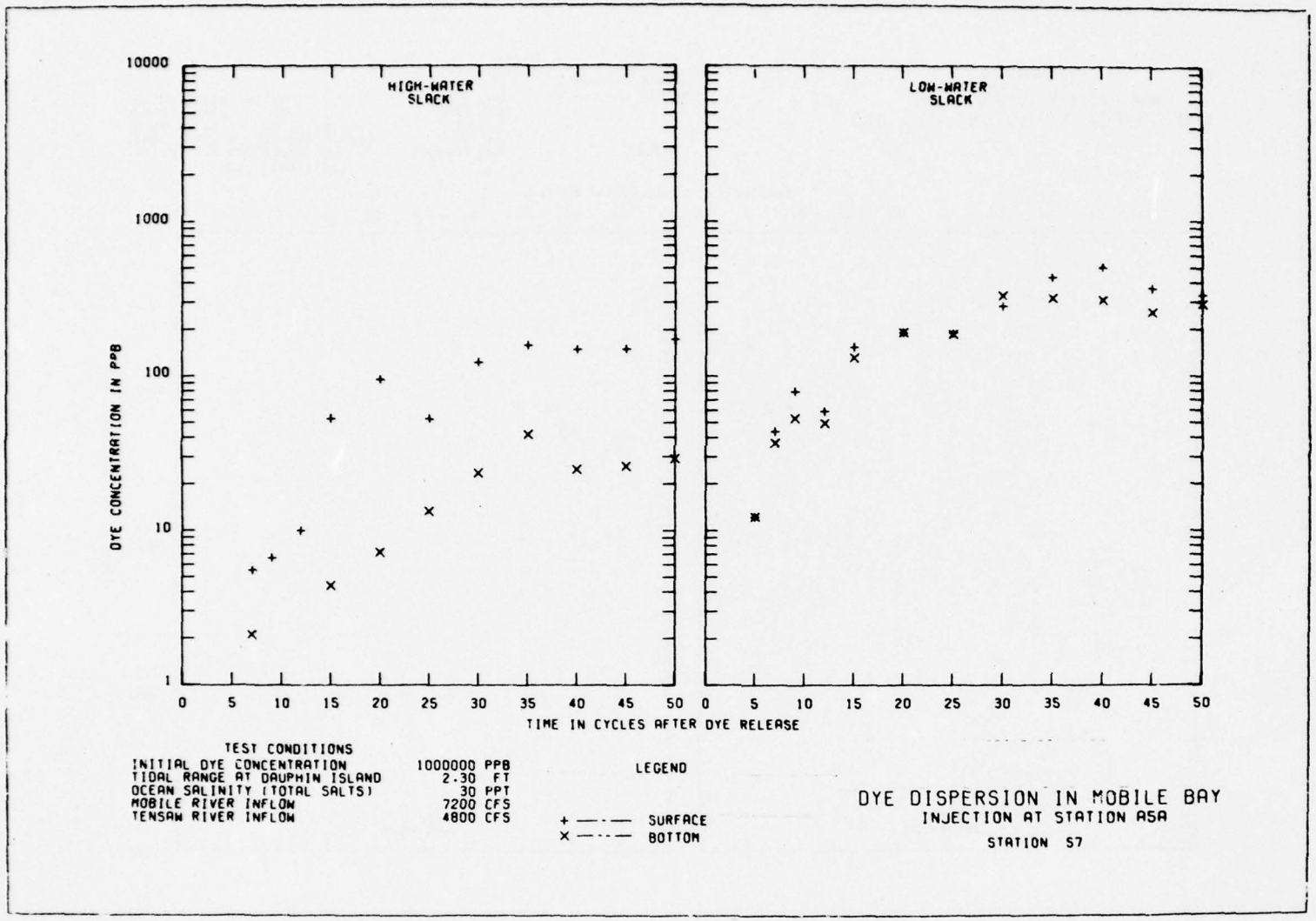
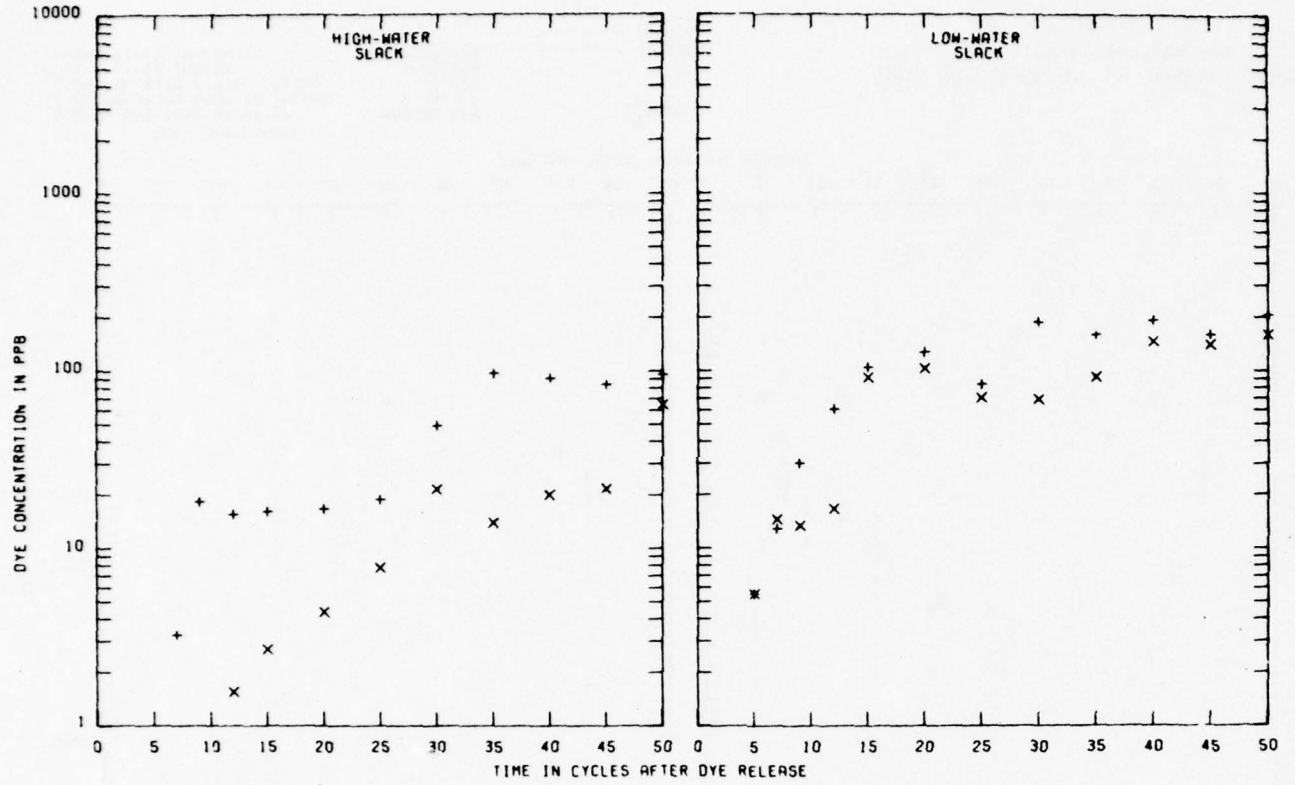

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ —·— SURFACE
× ···· BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION S7

PLATE 57

PLATE 58



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× ·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA

STATION S10

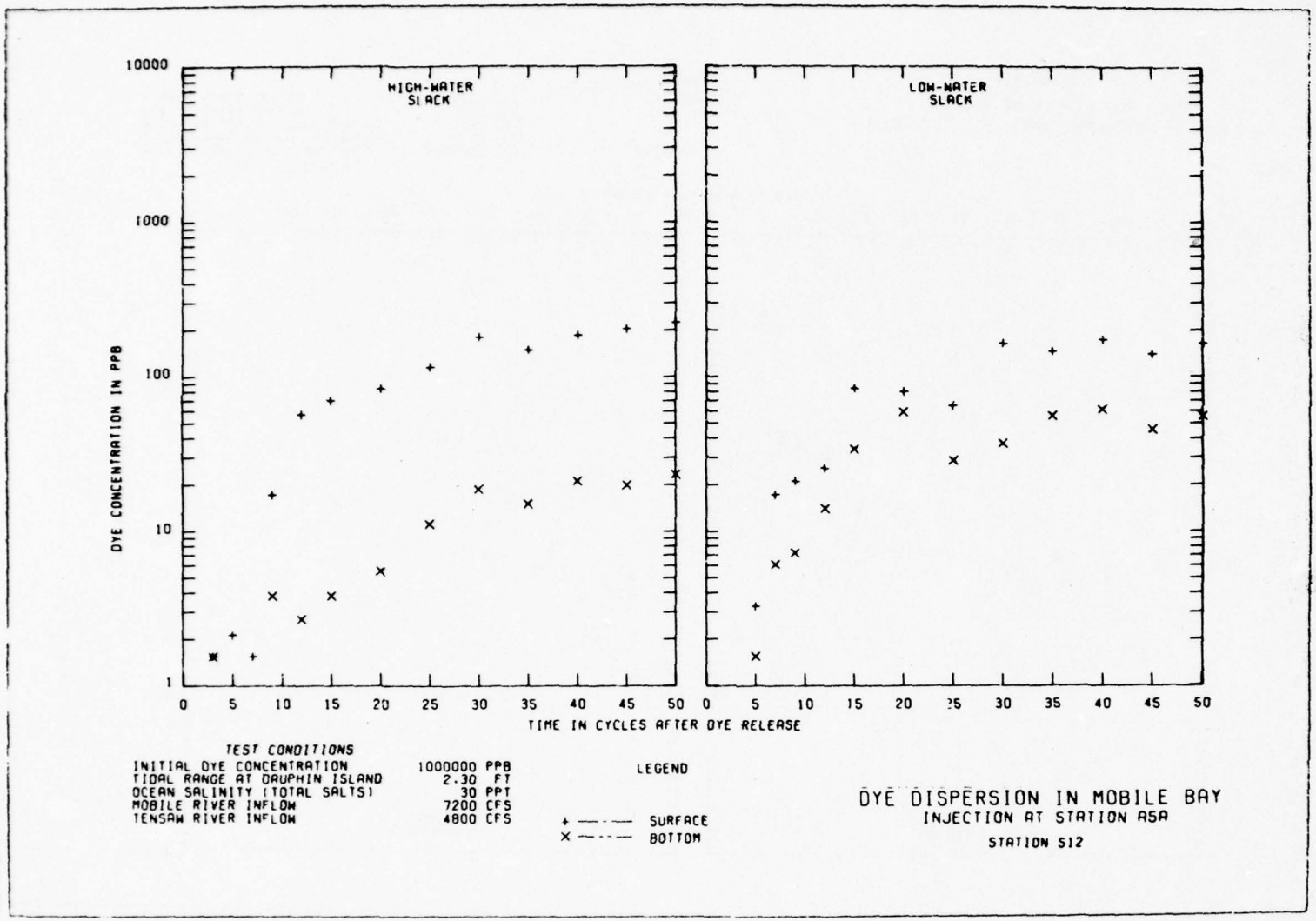
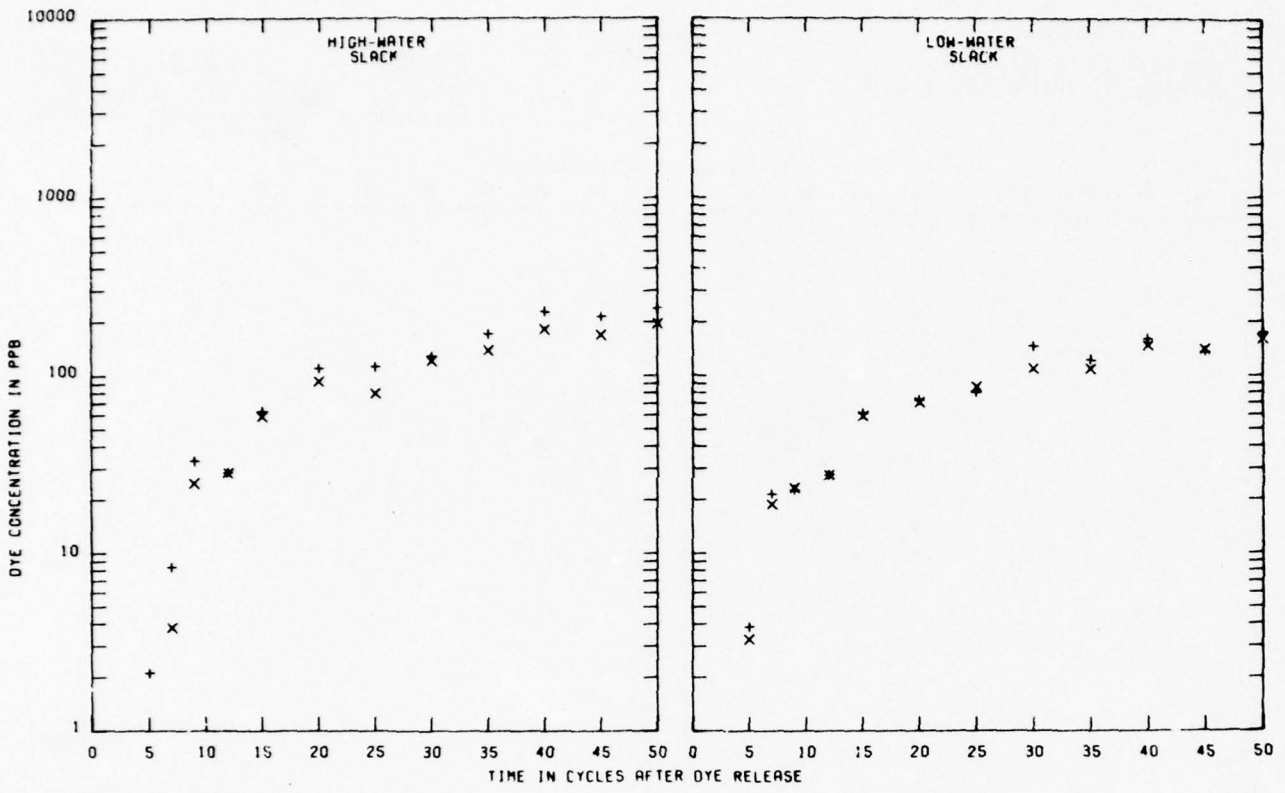

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION S12

PLATE 59

PLATE 60



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× ·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION 514

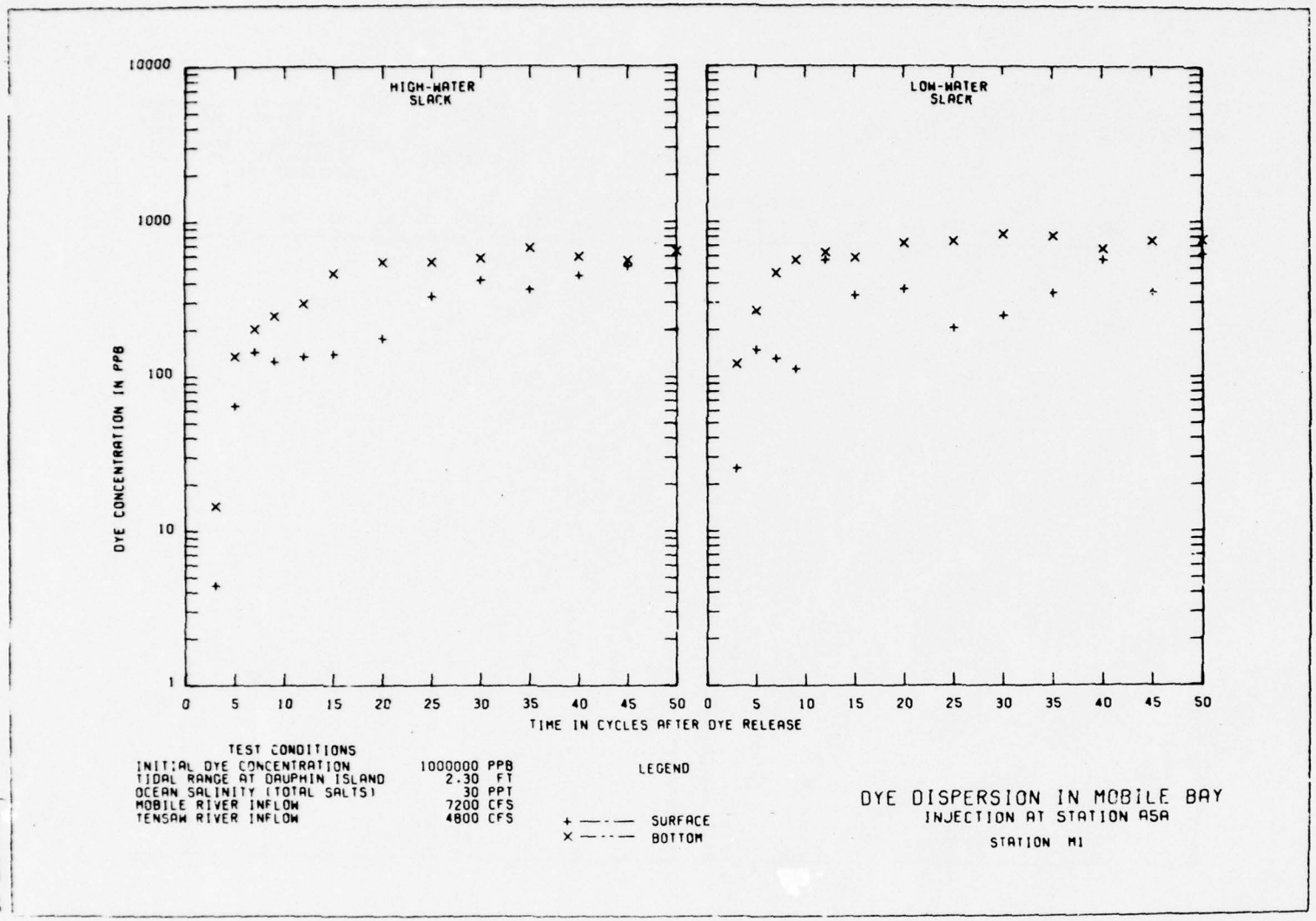
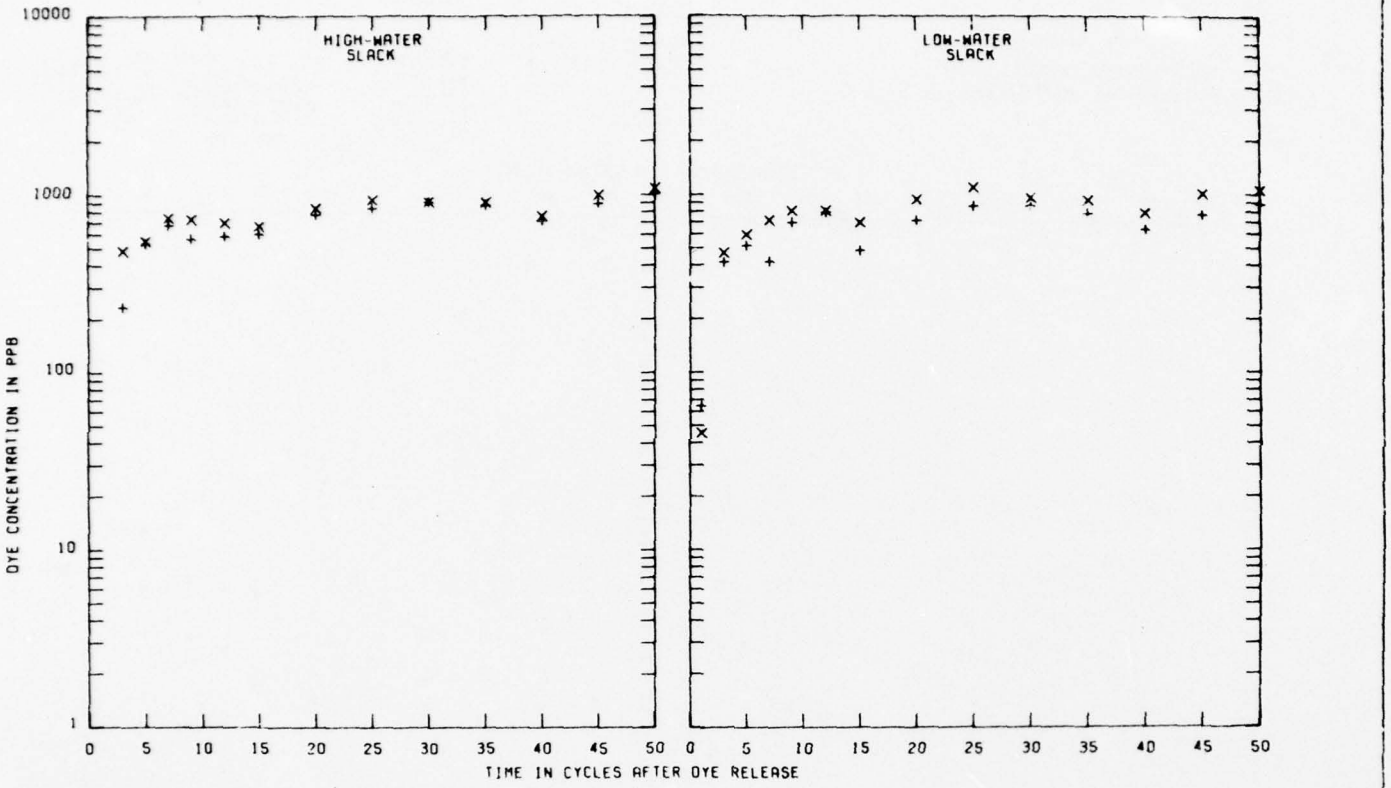

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M1

PLATE 61

PLATE 62



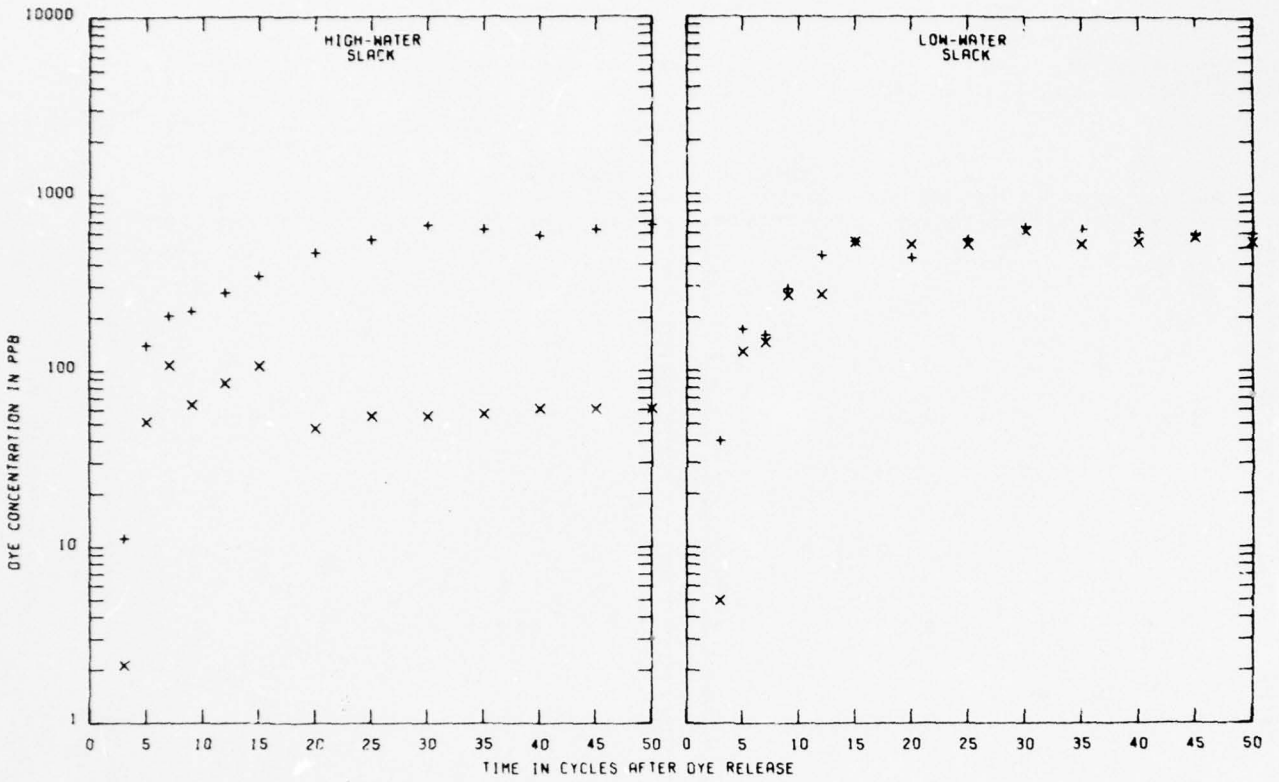
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M2



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× — — — BOTTOM

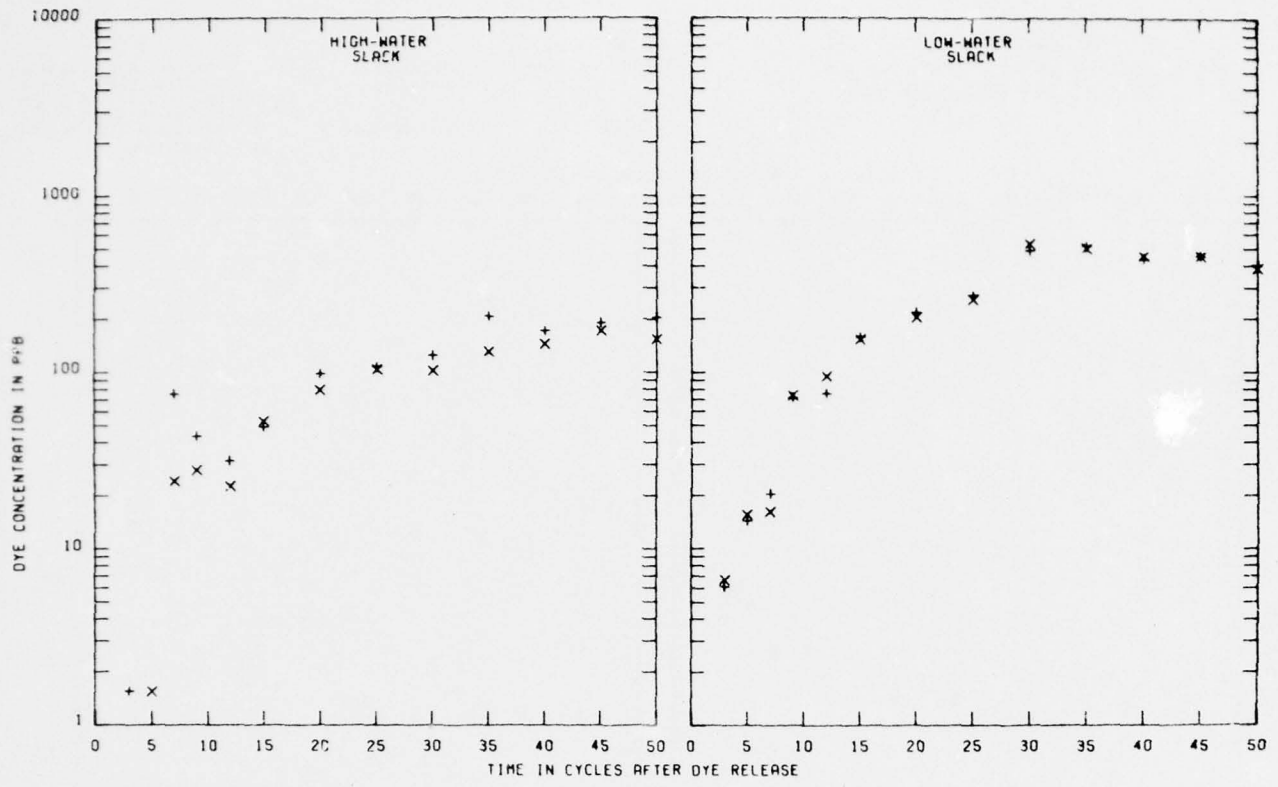
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A5A

STATION M3

PLATE 63

PLATE 64



TEST CONDITIONS

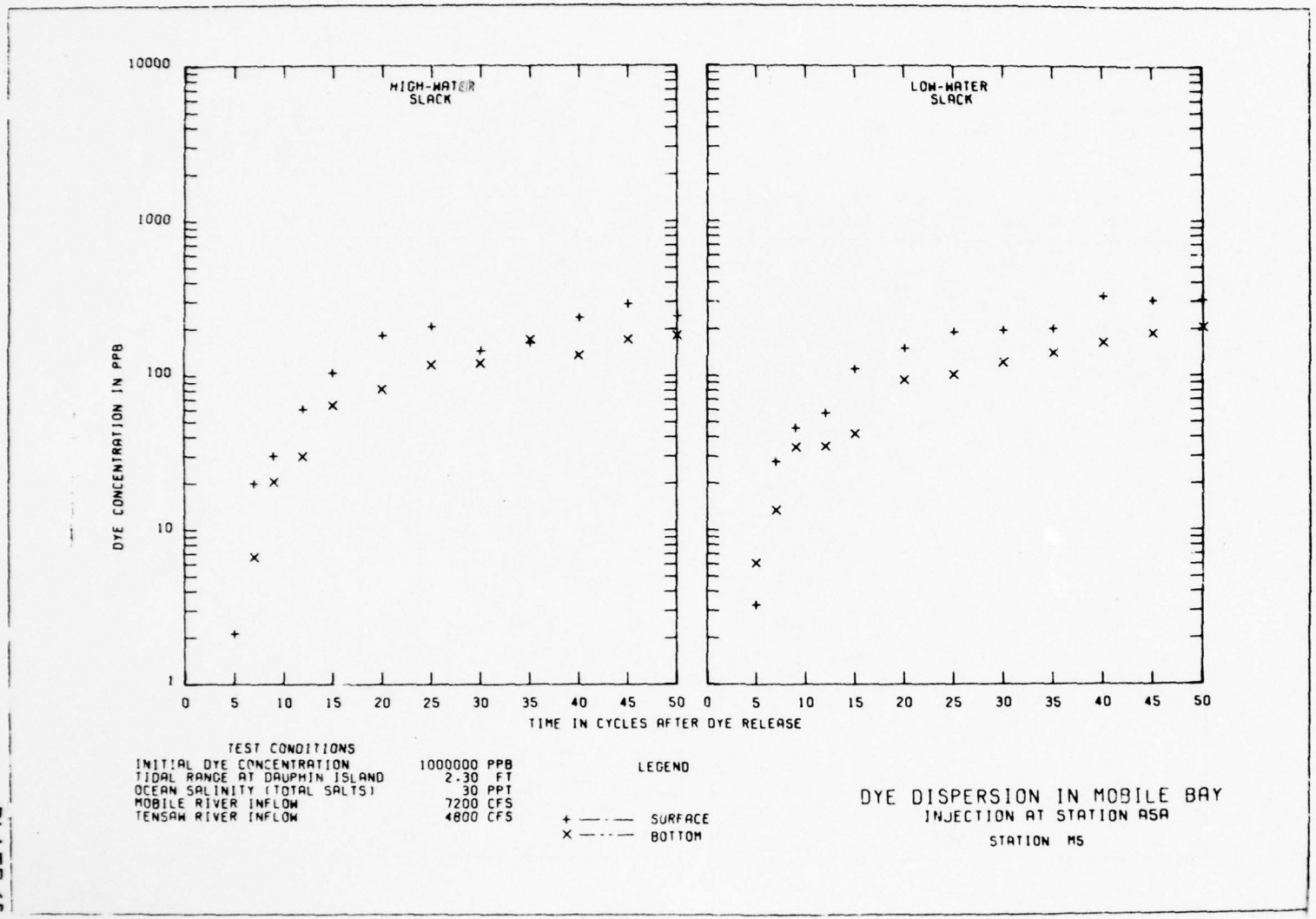
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ ——— SURFACE
× - - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA

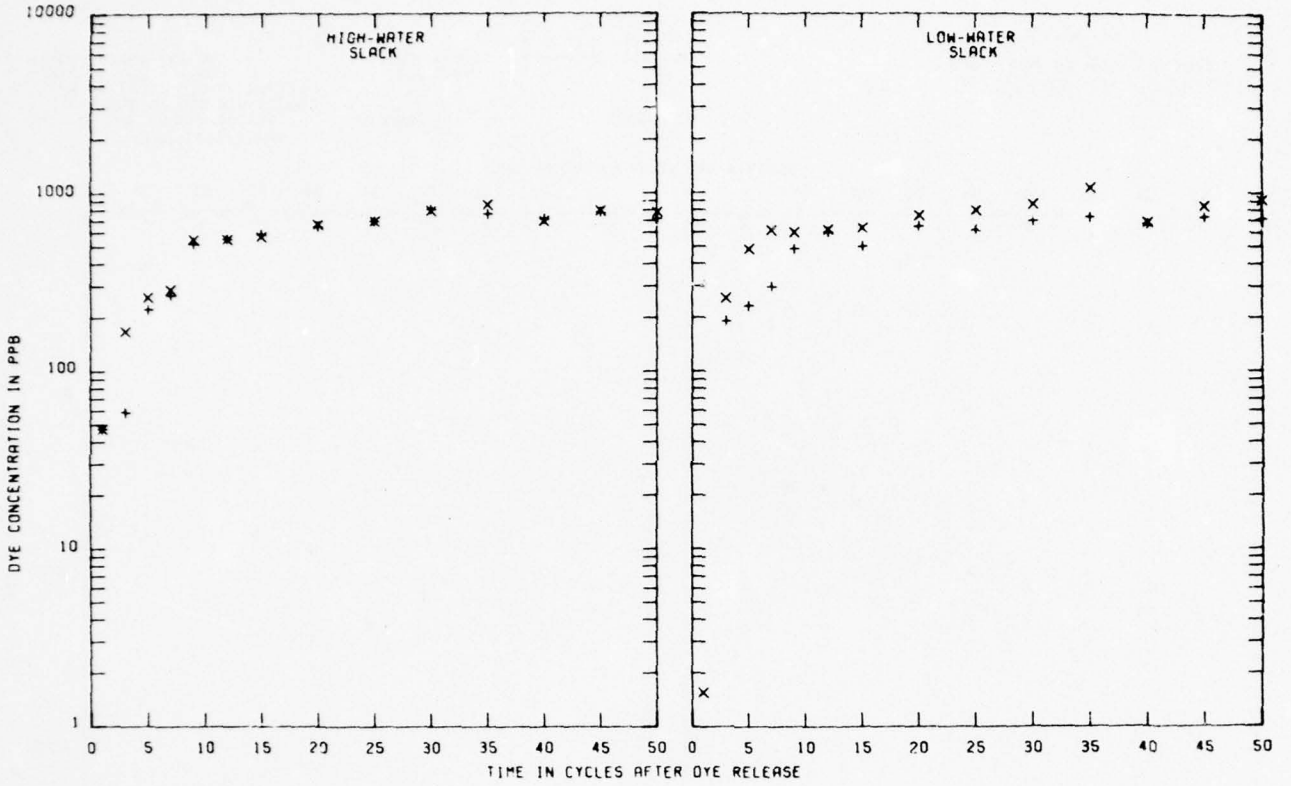
STATION M4



DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M5

PLATE 65

PLATE 66



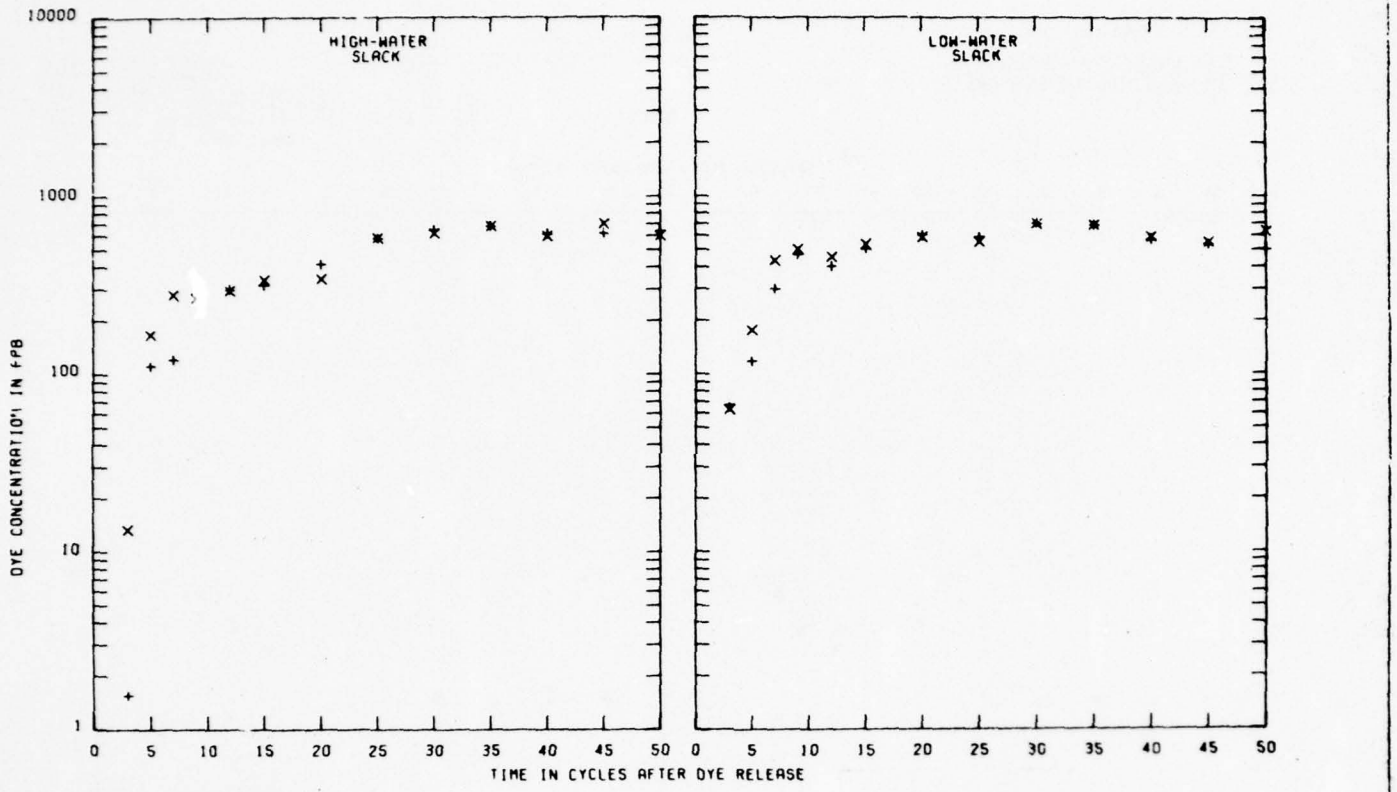
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× ——— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M6



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

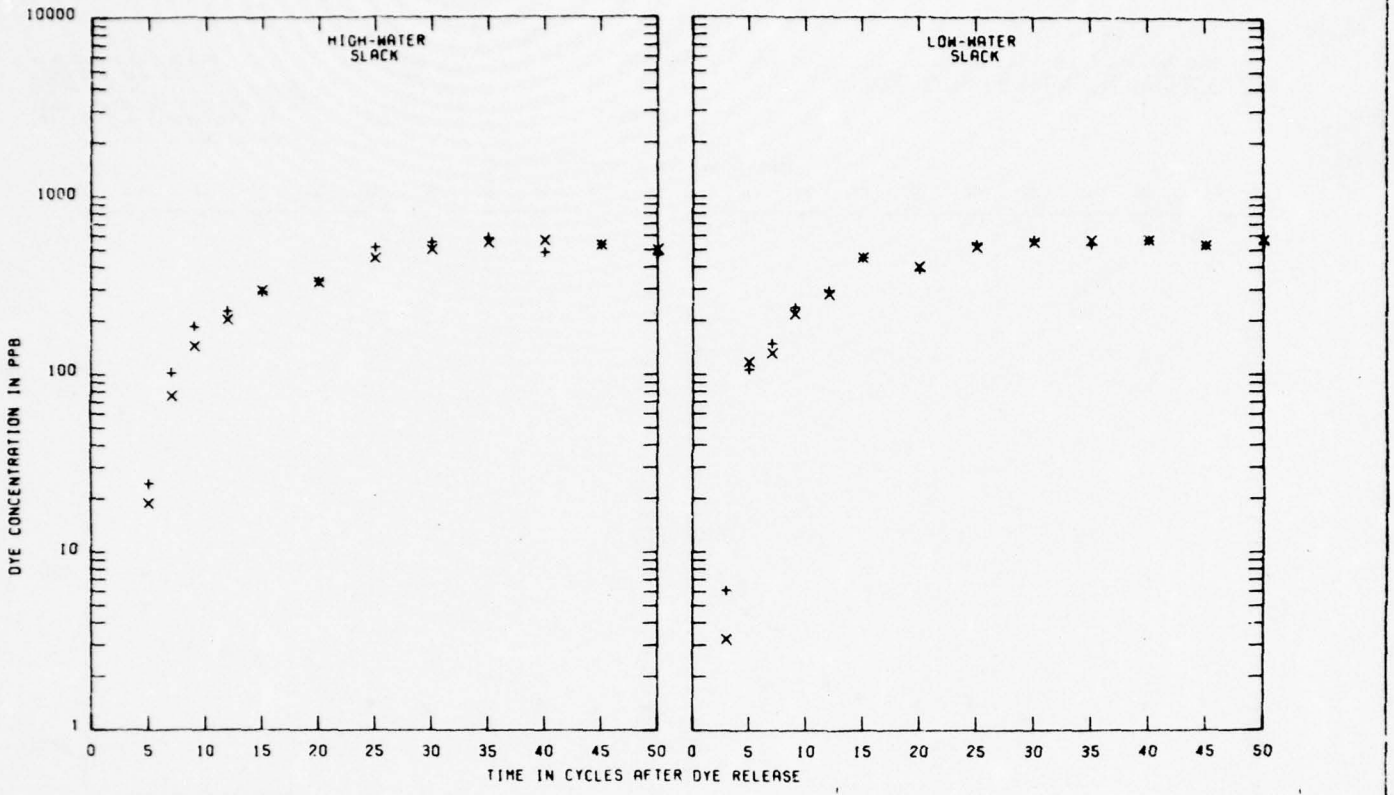
LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M7

PLATE 67

PLATE 68



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M8

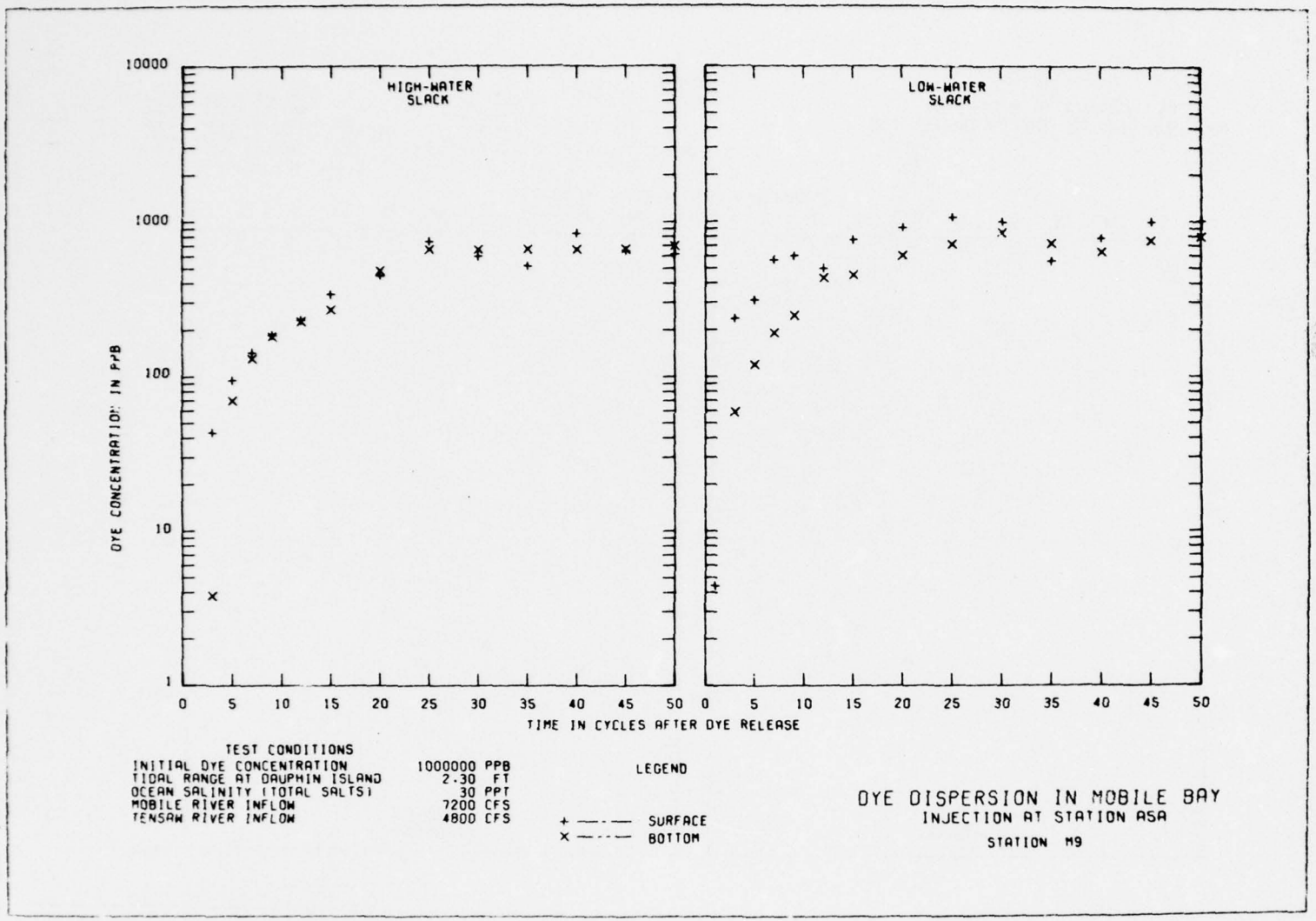
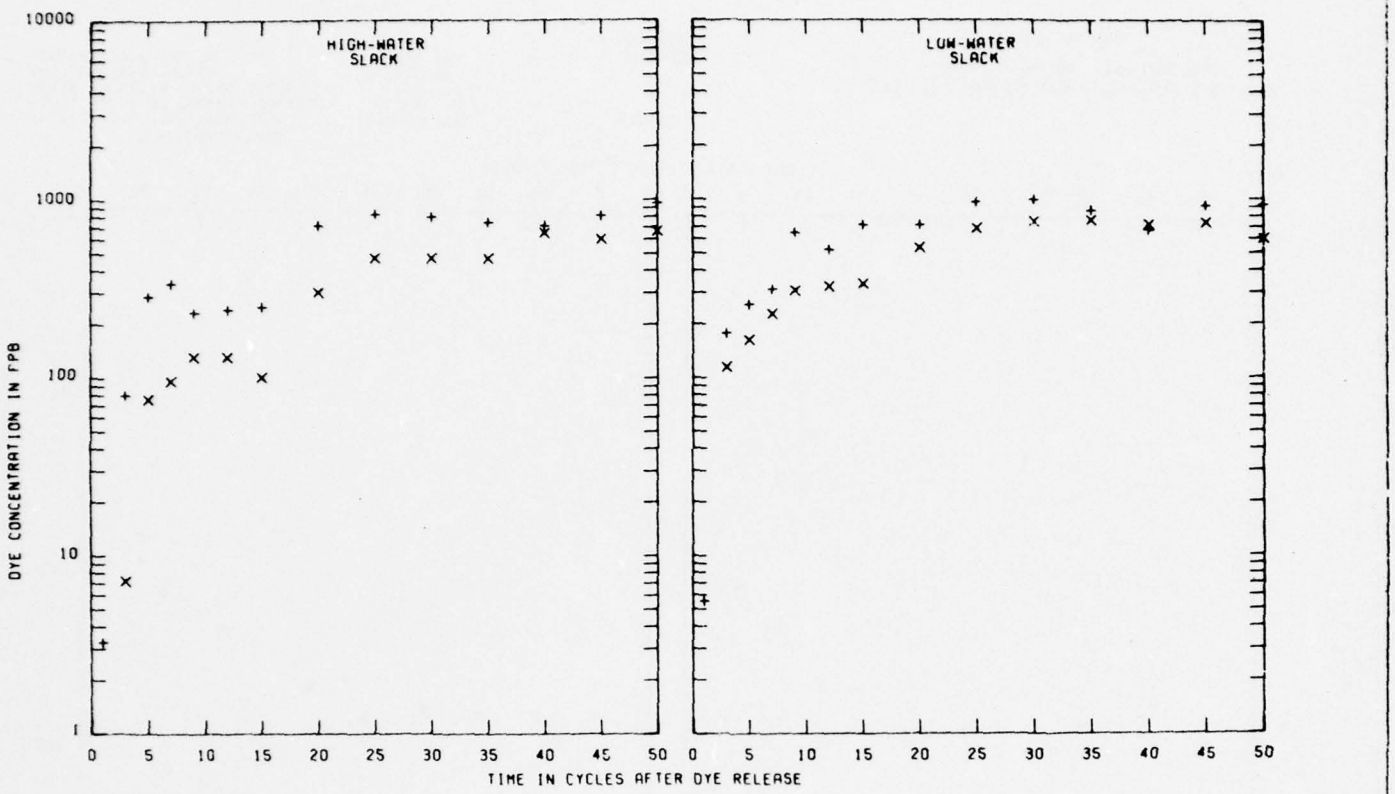

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
SURFACE
BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M9

PLATE 69

PLATE 70



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—· SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M10

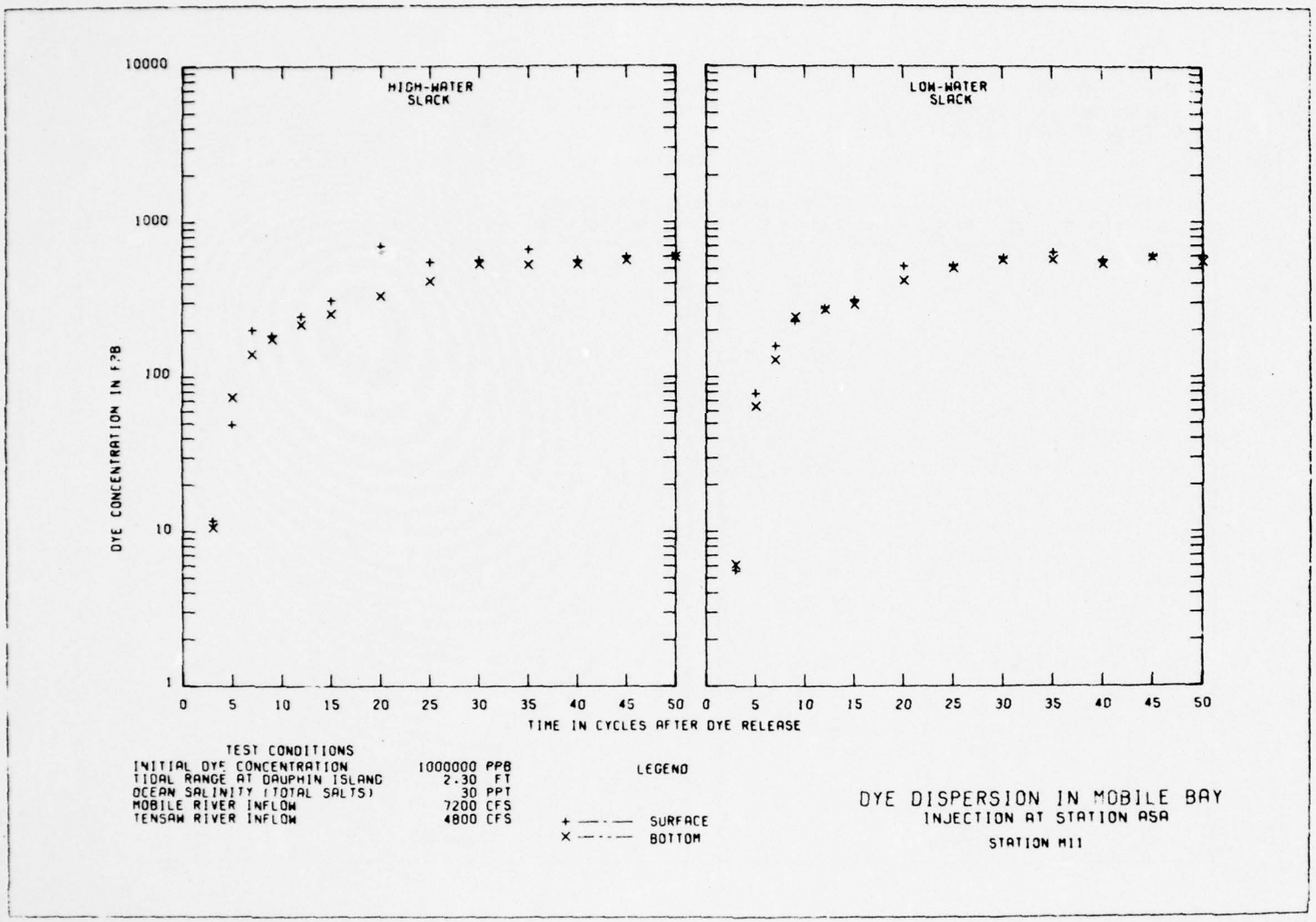
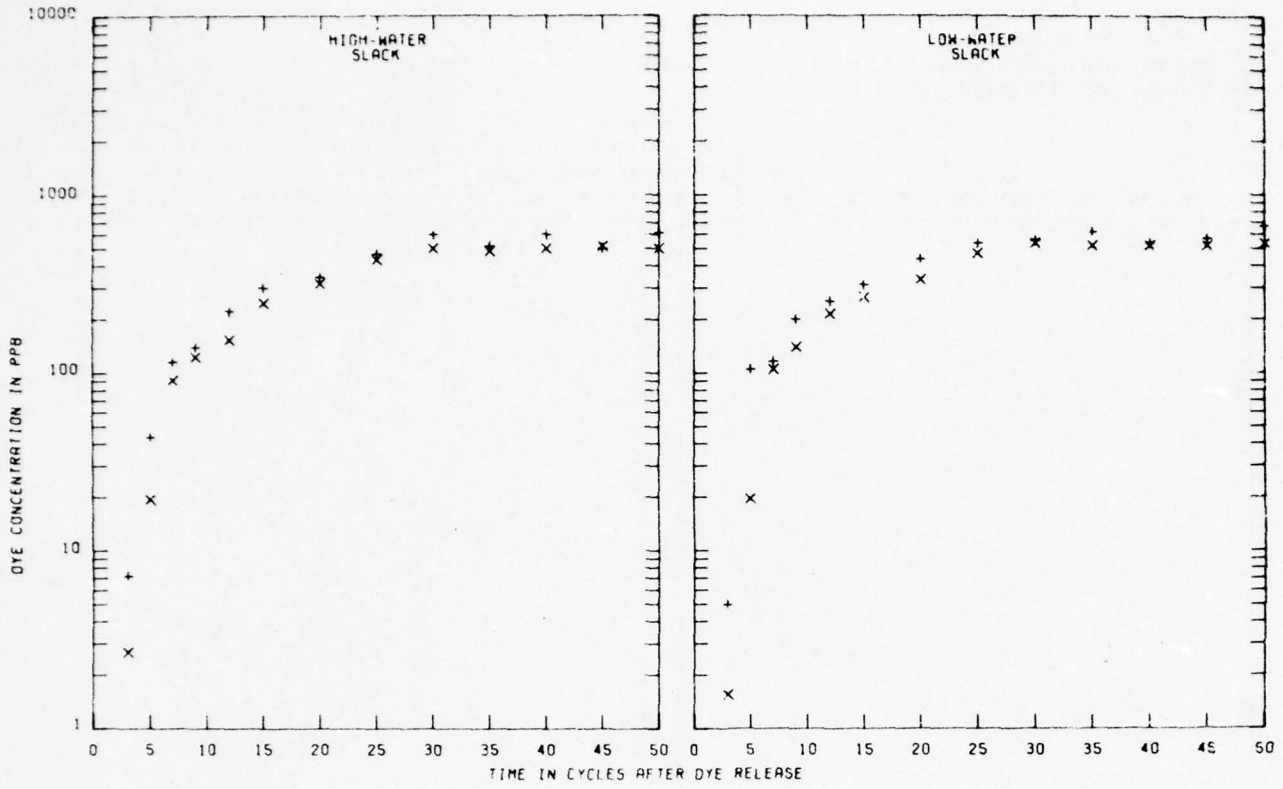

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M11

PLATE 71

PLATE 72



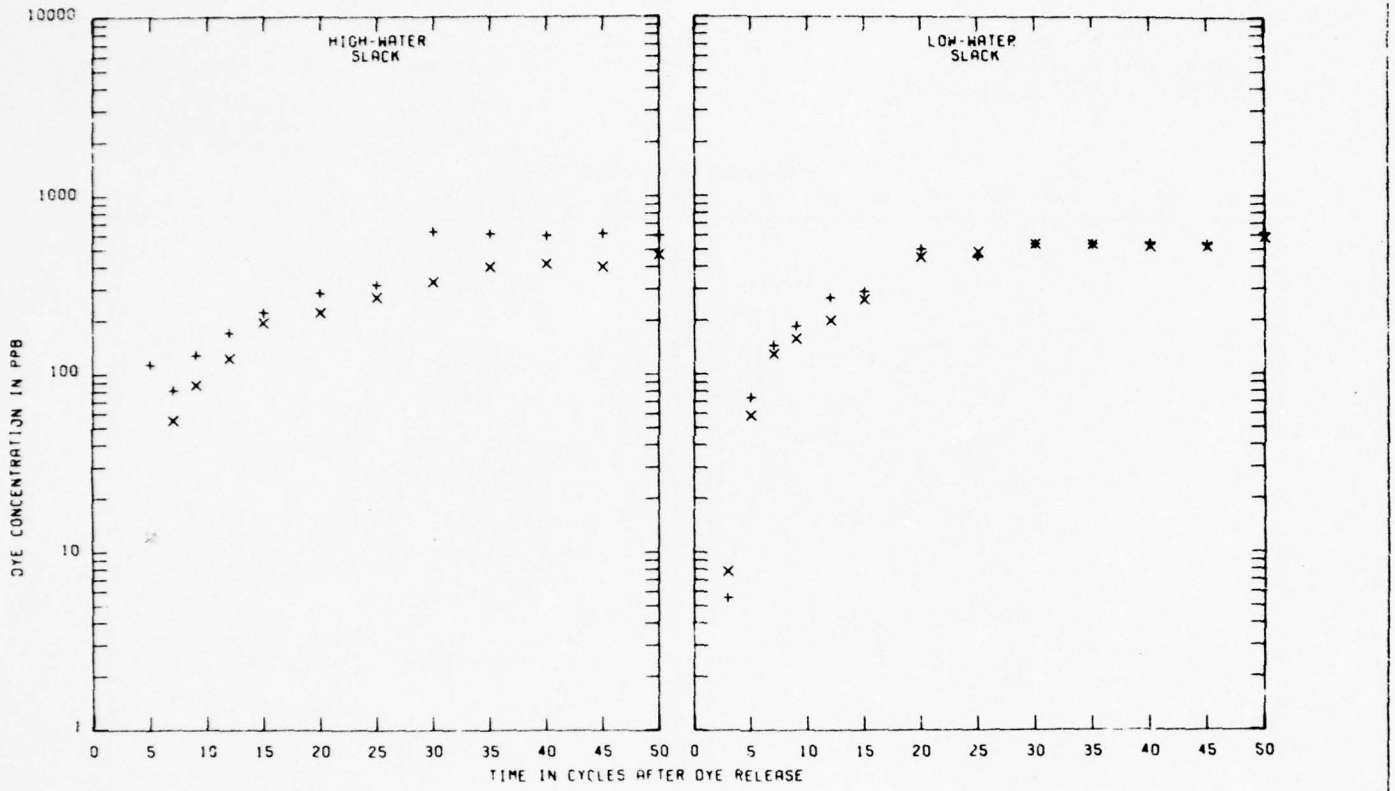
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M12



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× ------ BOTTOM

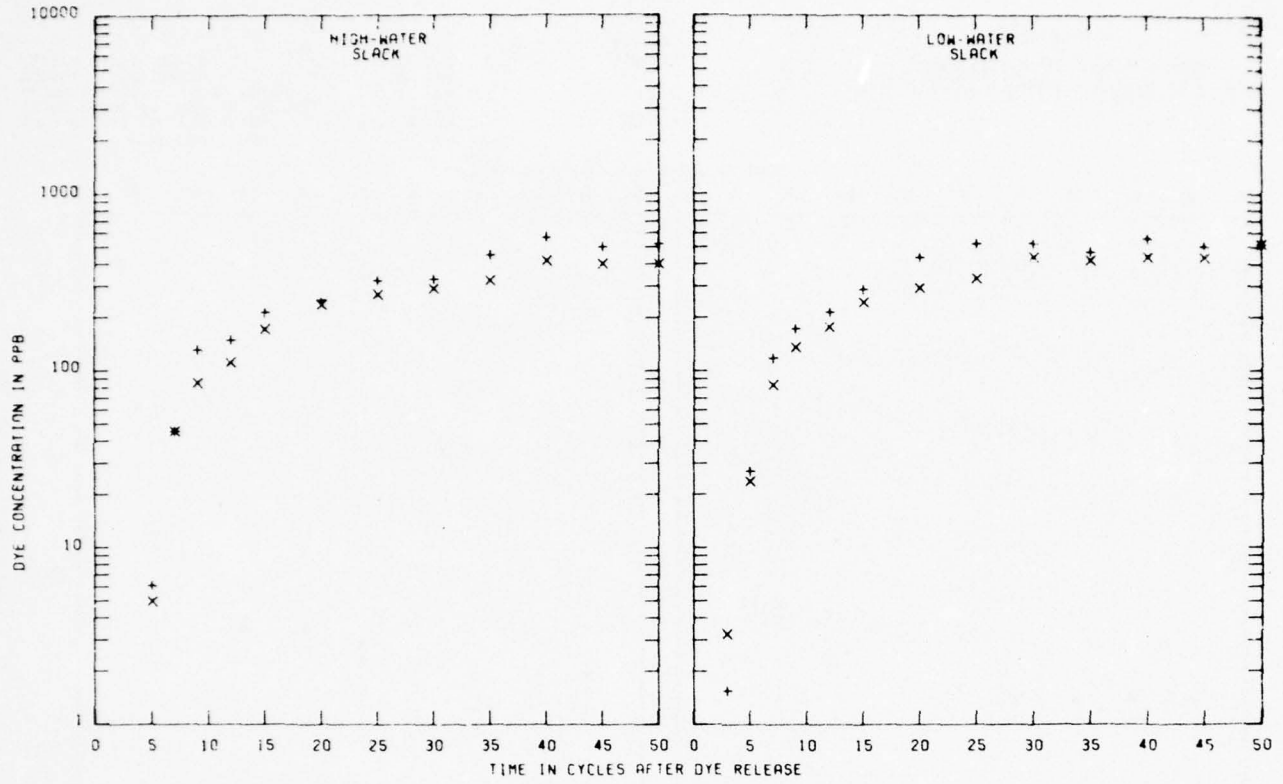
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A5A

STATION M13

PLATE 73

PLATE 74



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

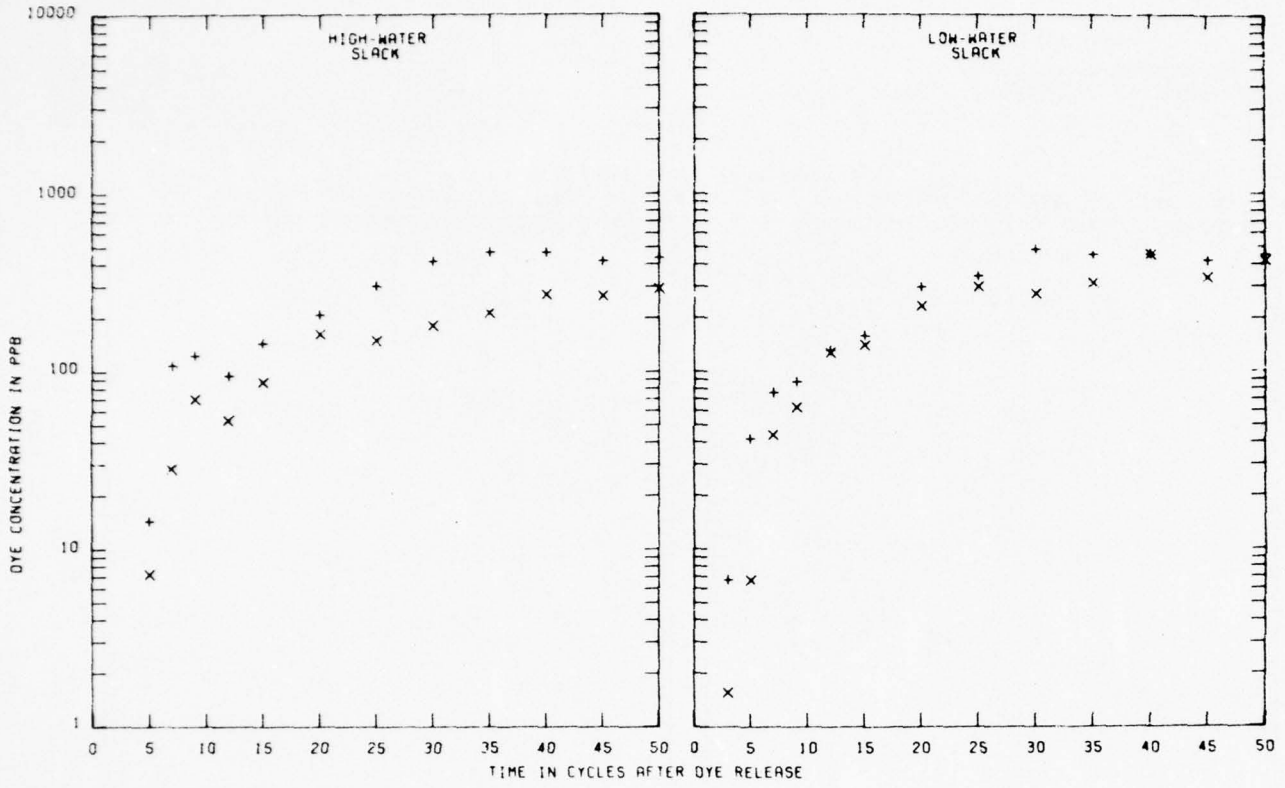
+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION ASA

STATION M14



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× - - - BOTTOM

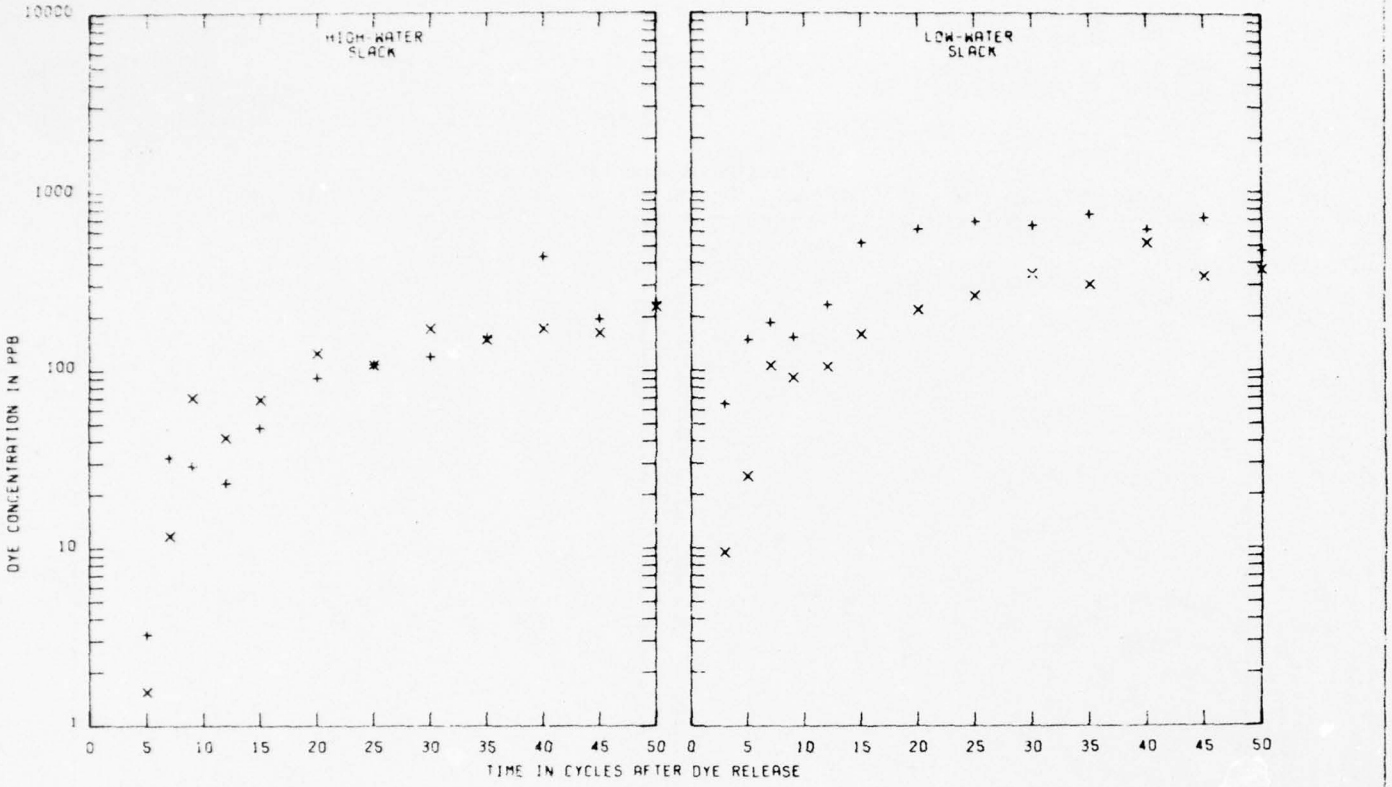
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A5A

STATION M15

PLATE 75

PLATE 76



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

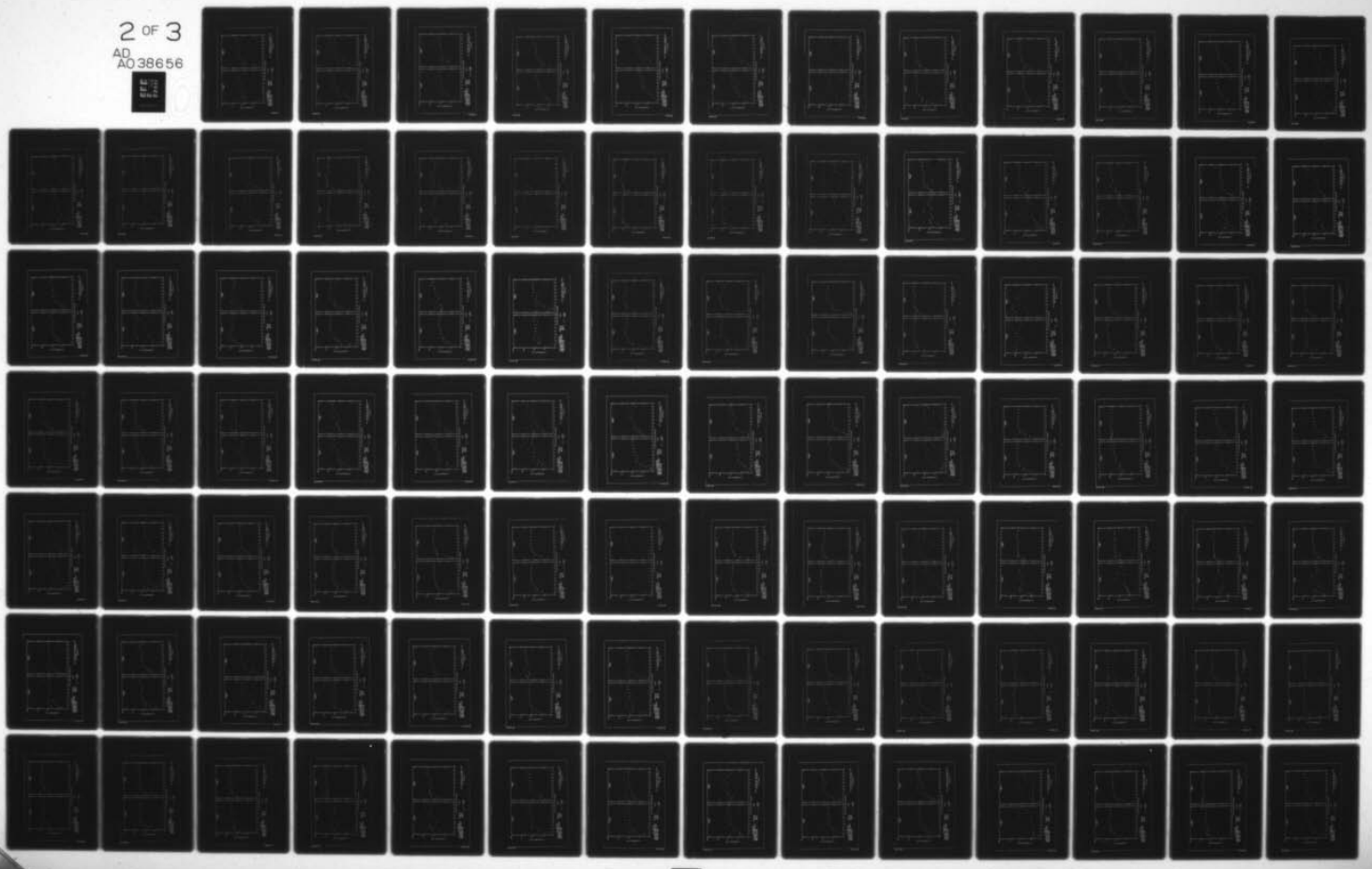
× — — — BOTTOM

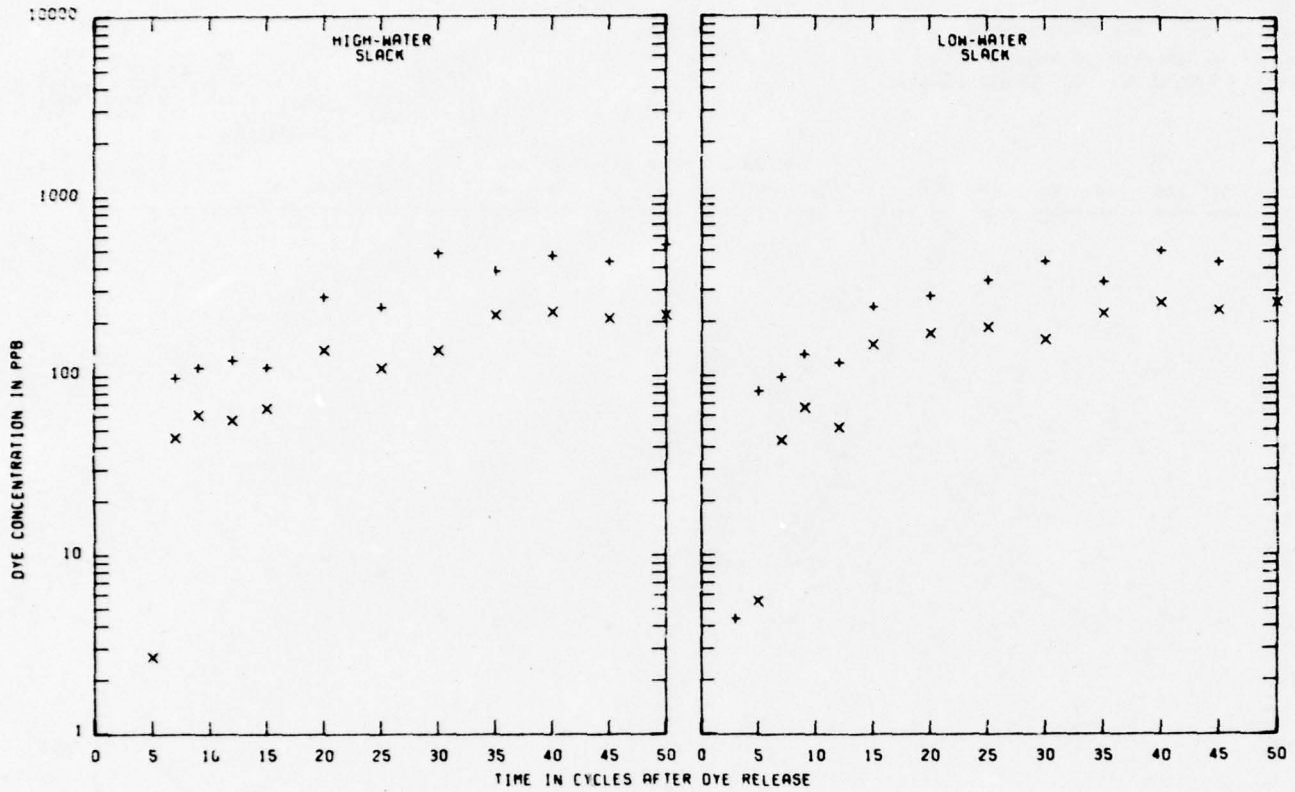
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M16

AD-A038 656 ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MISS F/G 13/2
DISPERSION OF PROPOSED THEODORE INDUSTRIAL PARK EFFLUENTS IN MO--ETC(U)
MAR 77 R C BERGER, M J TRAWLE

UNCLASSIFIED WES-MP-H-77-3 NL

2 OF 3
AD
AD 38656





TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

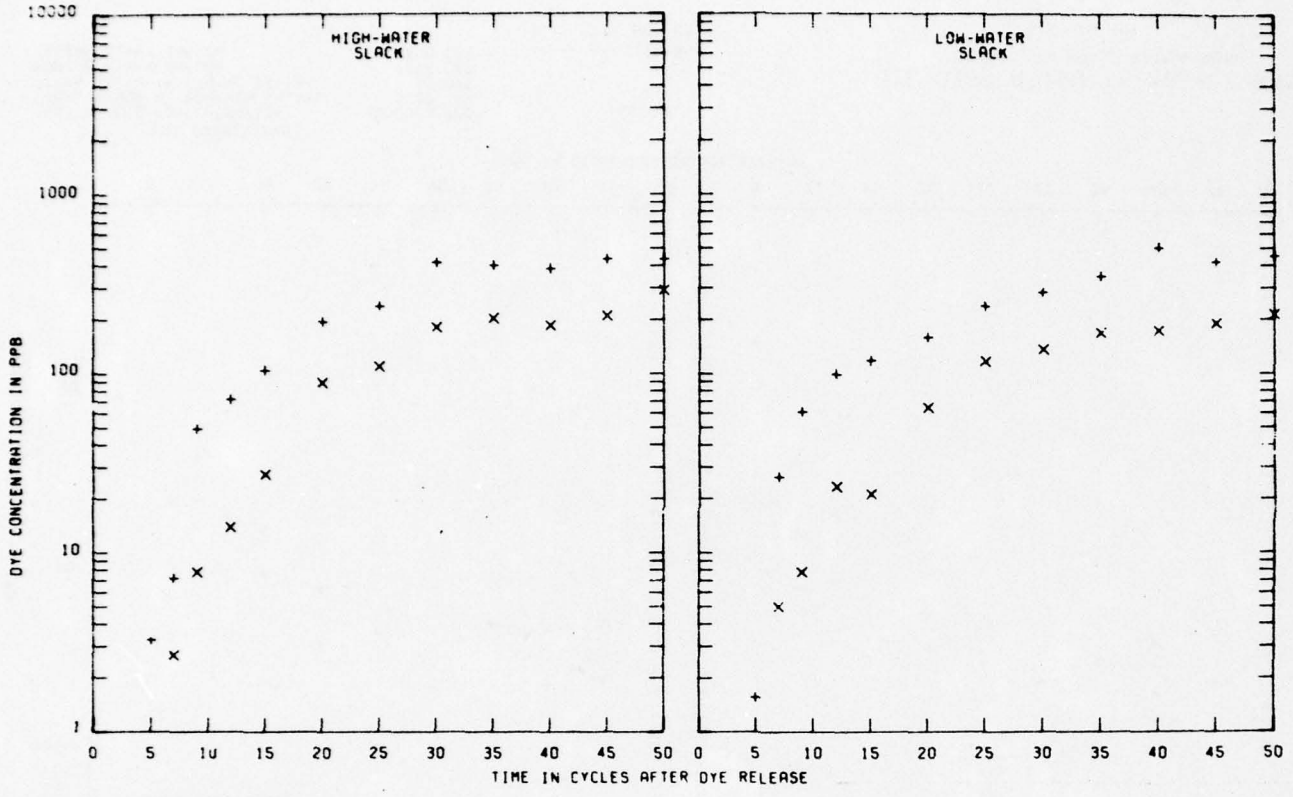
LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M17

PLATE 77

PLATE 78



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —··—··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION MIB

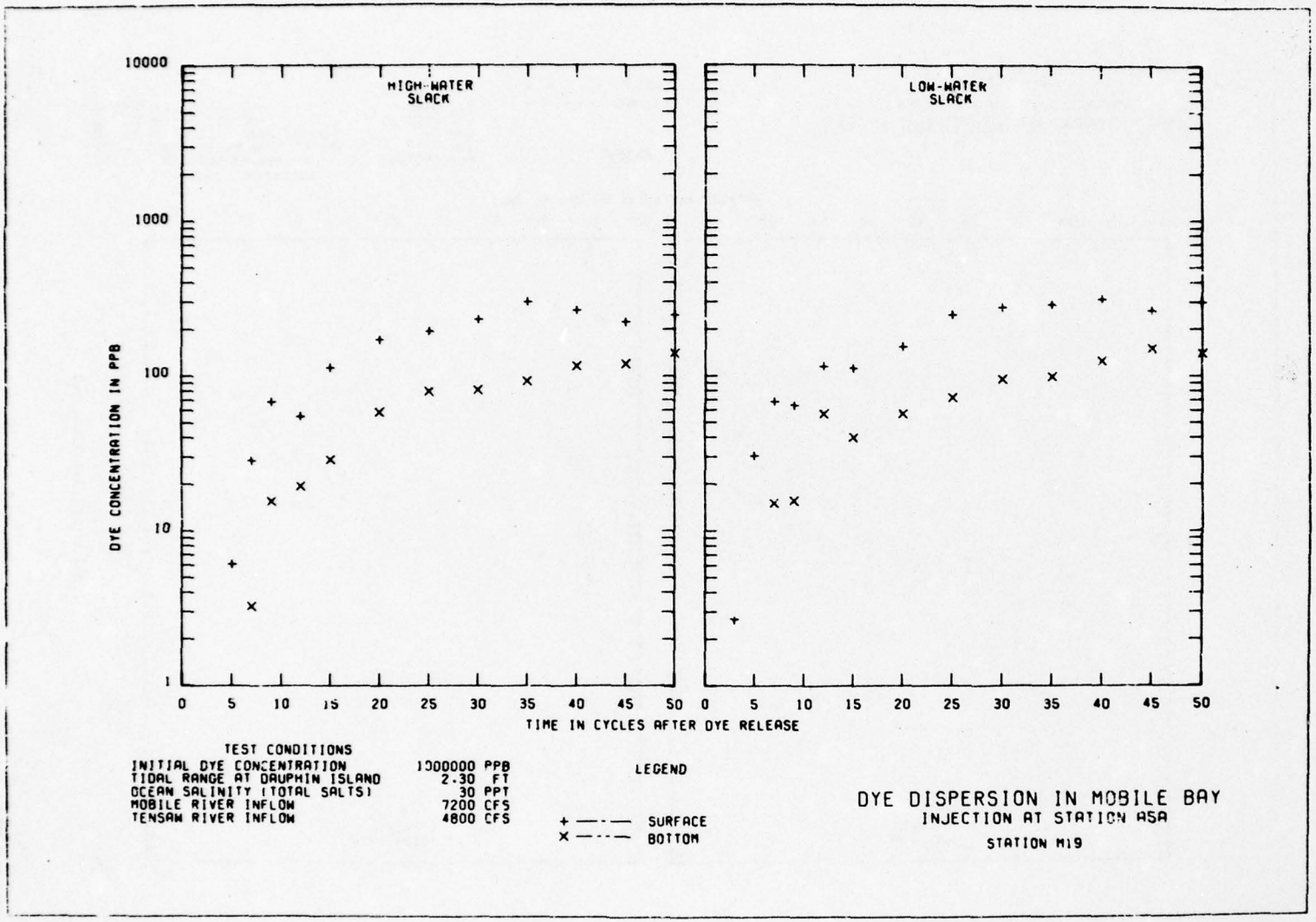
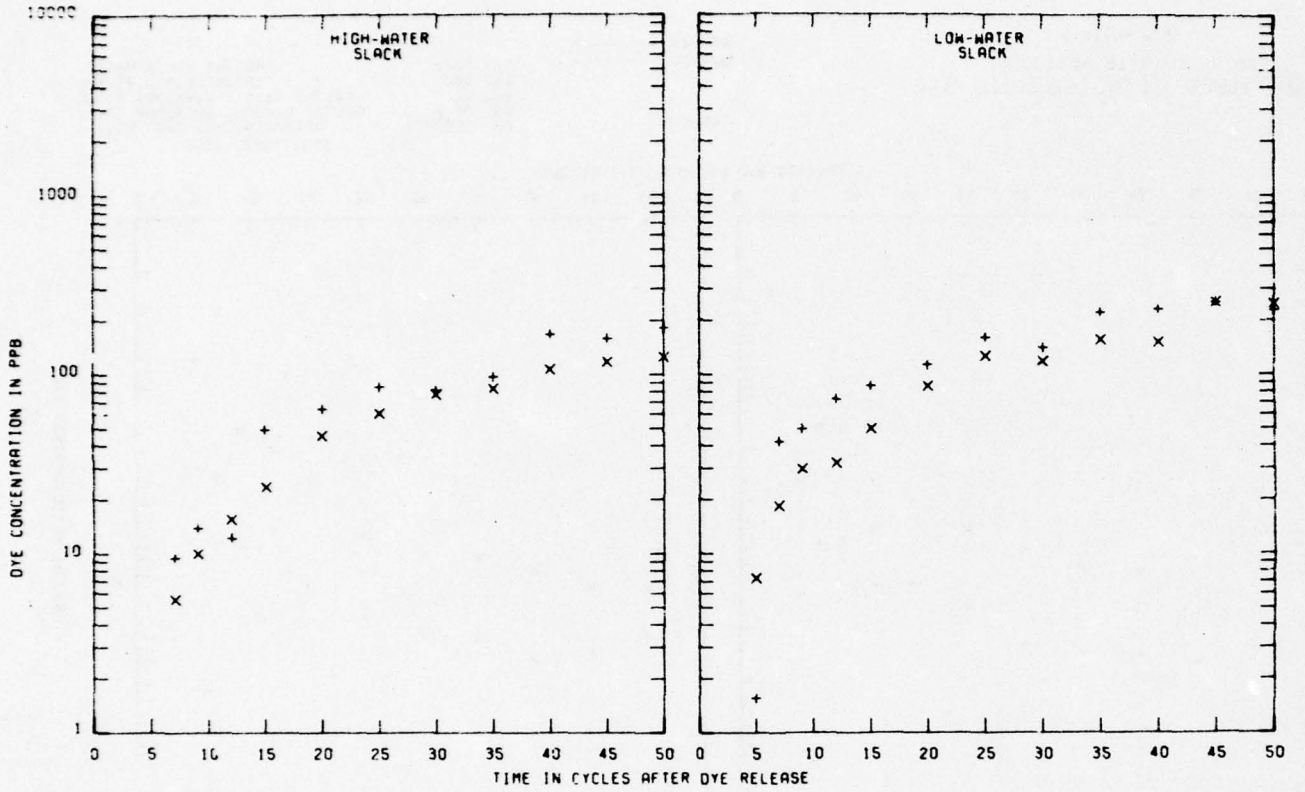

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
SURFACE
BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M19

PLATE 79

PLATE 80



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× ——— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M20

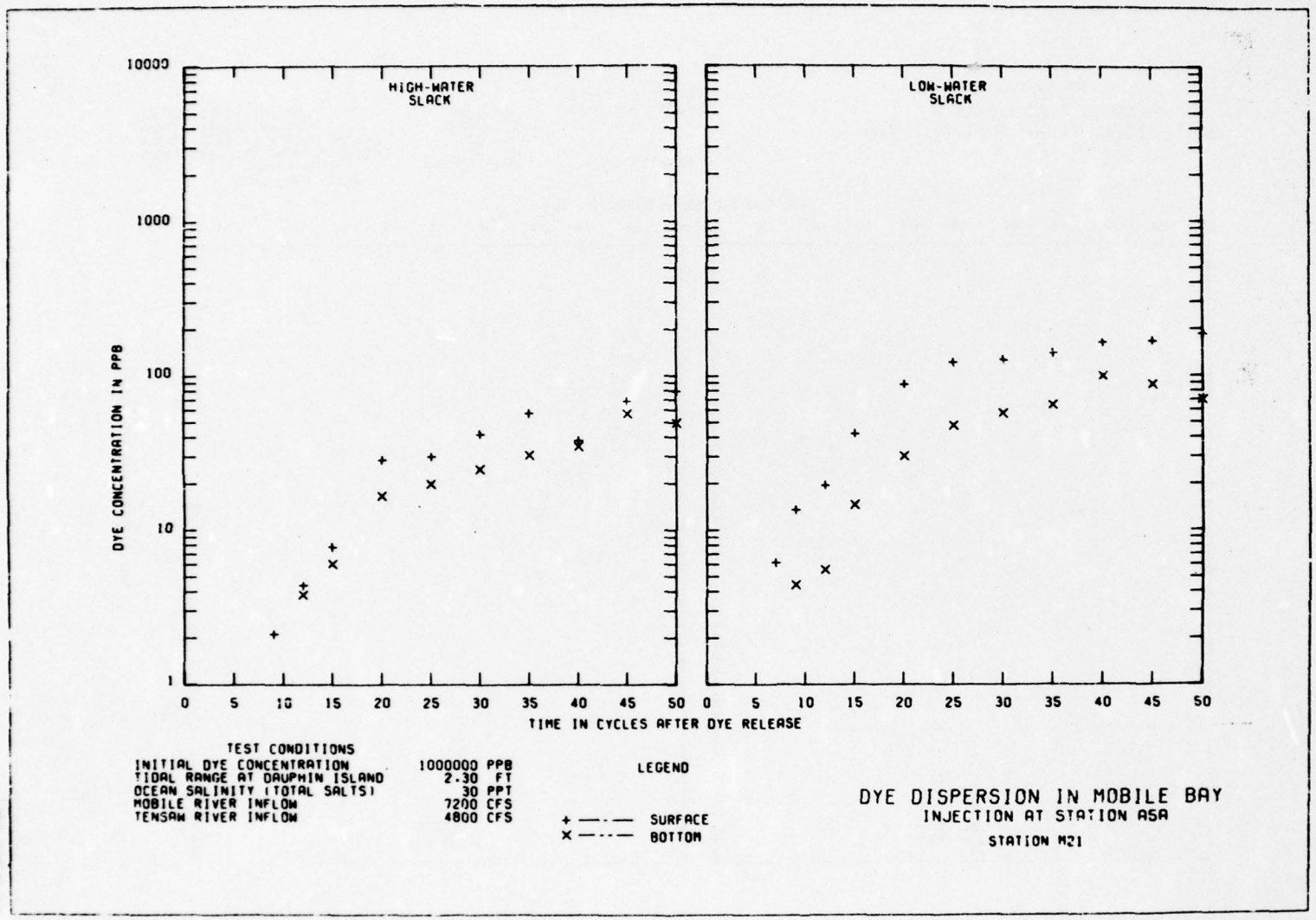
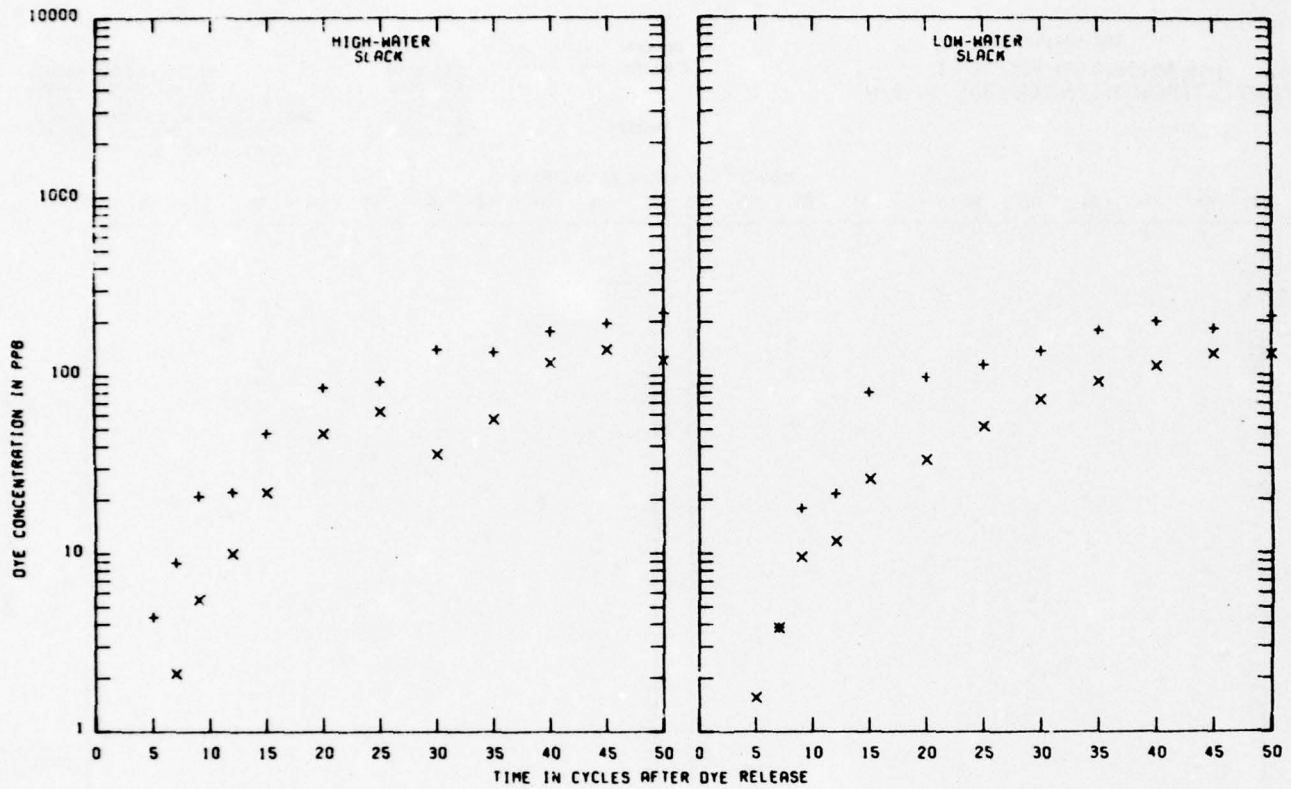

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M21

PLATE 81

PLATE 82



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M22

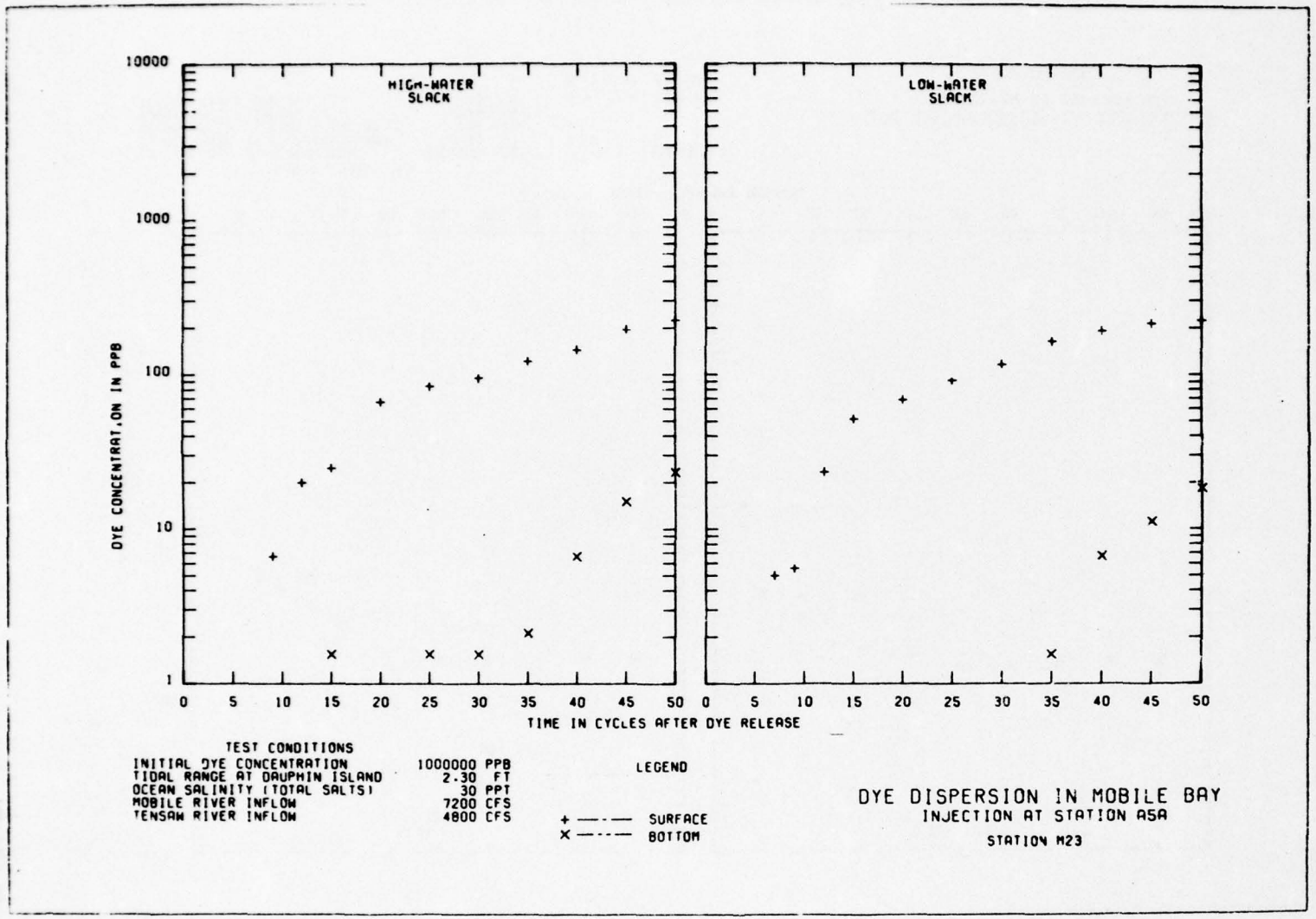
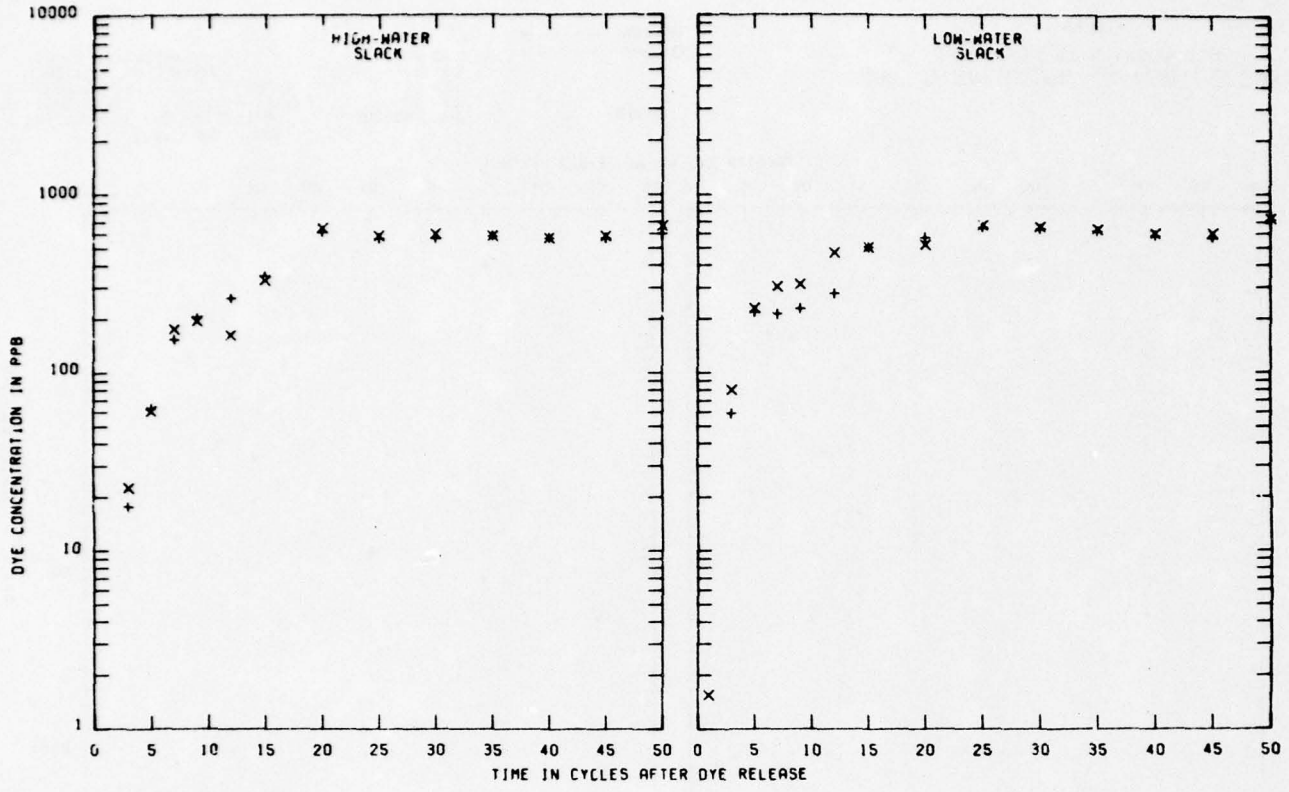

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M23

PLATE 83

PLATE 84



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M24

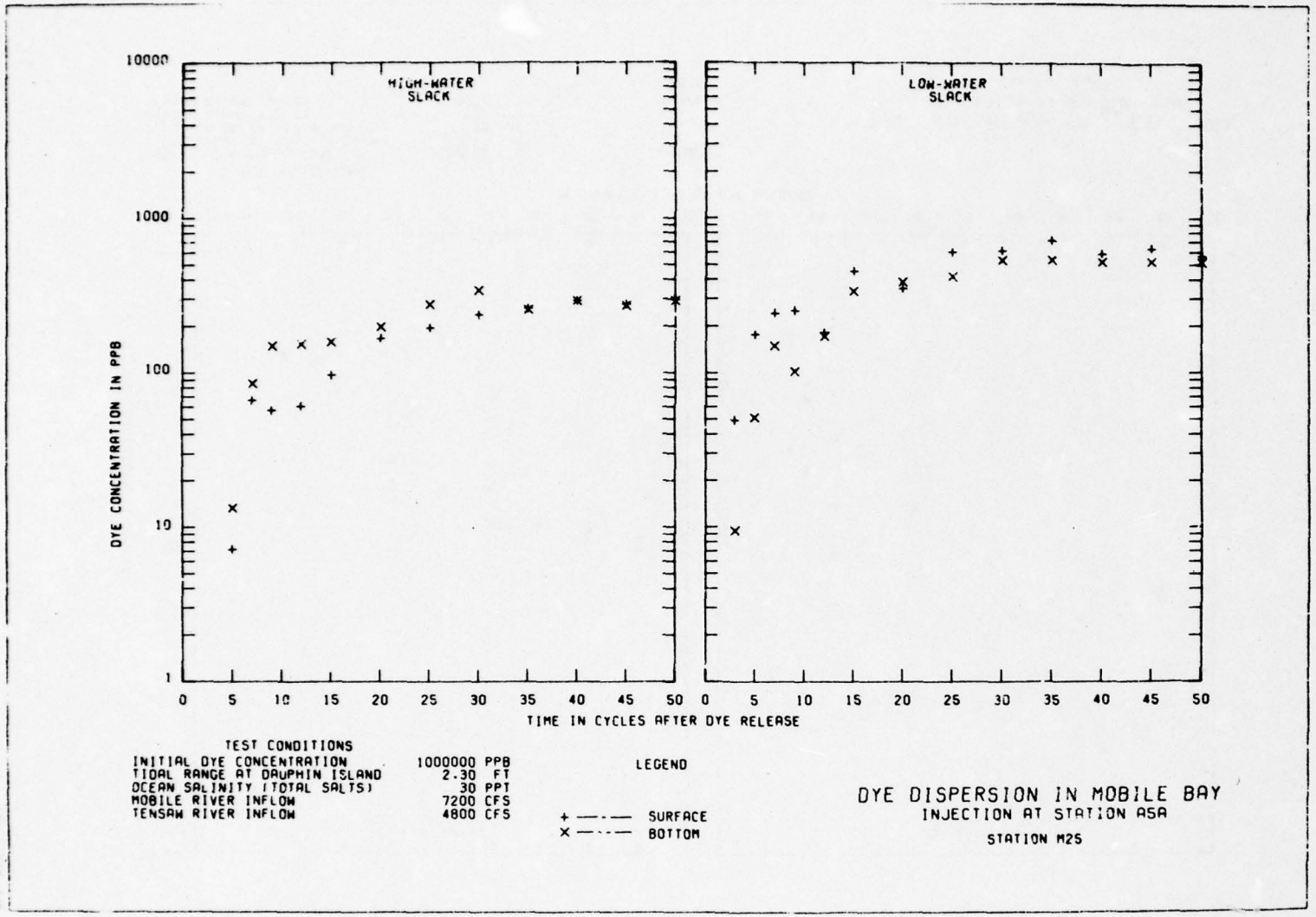
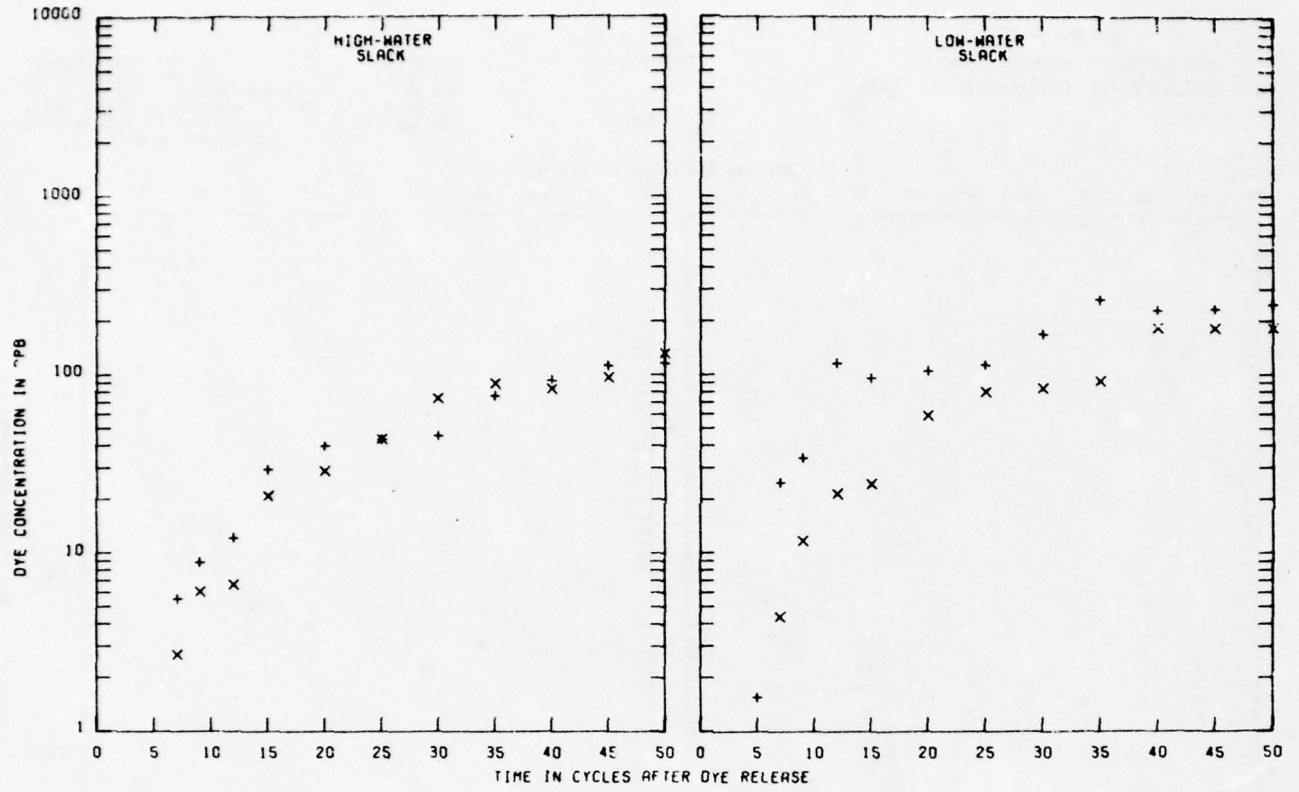

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ —·— SURFACE
× —·— BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M25

PLATE 85

PLATE 86



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A5A
STATION M26

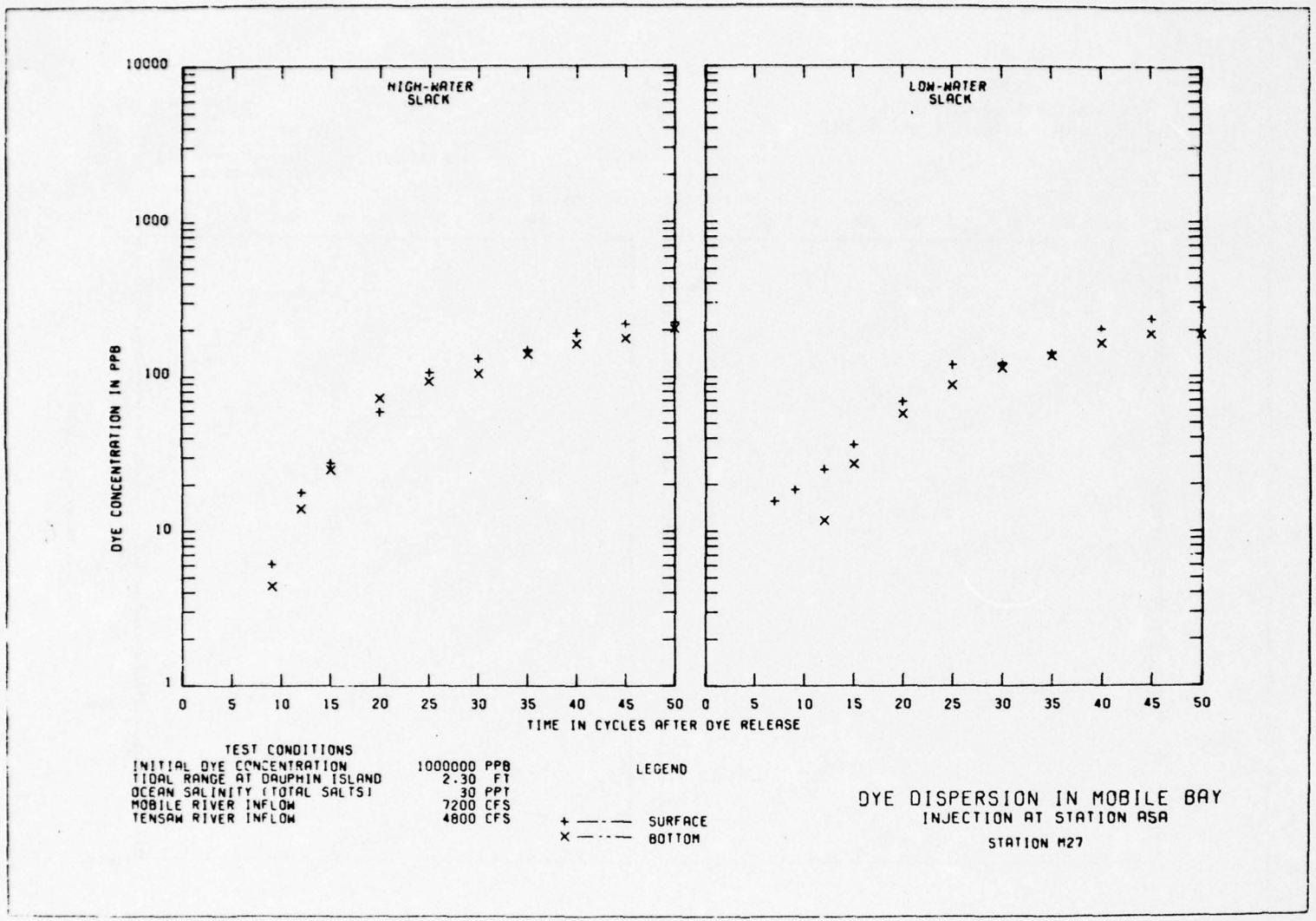
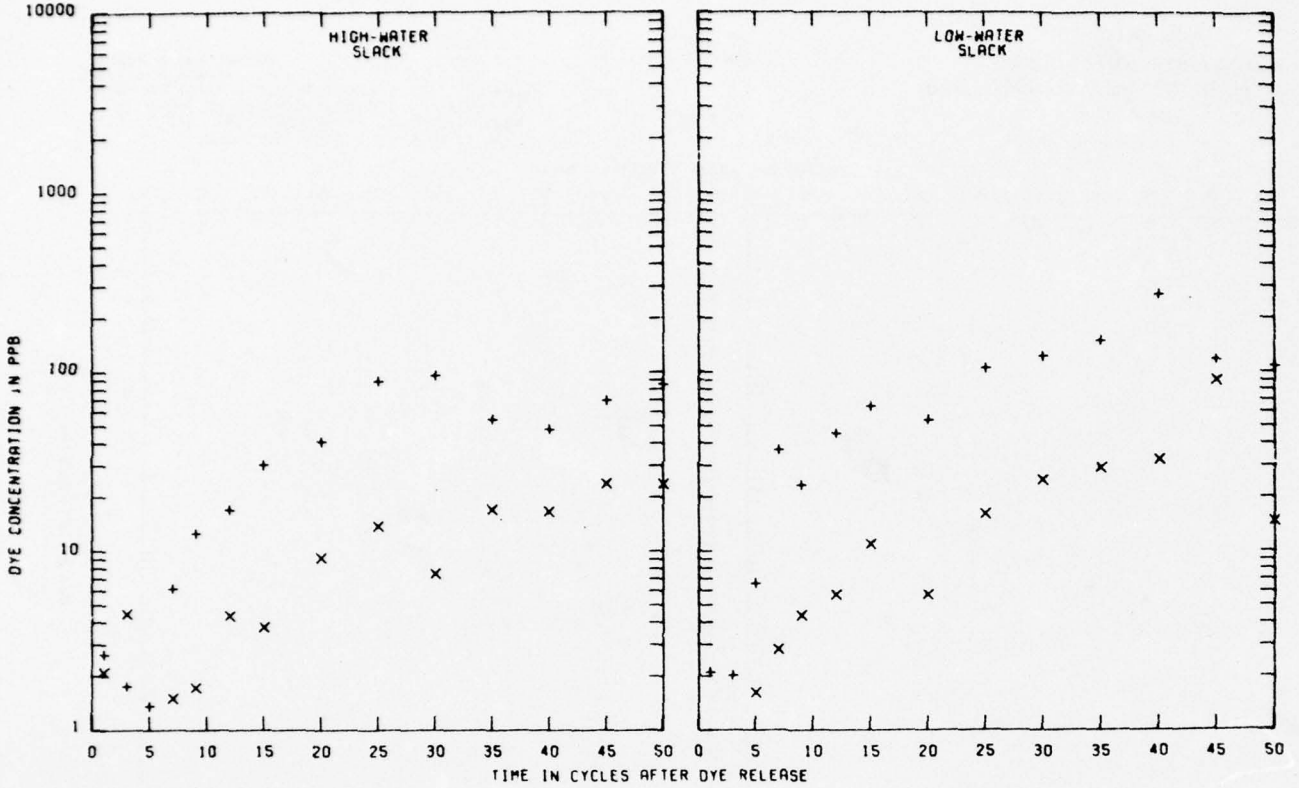

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION ASA
STATION M27

PLATE 87

PLATE 88



TEST CONDITIONS

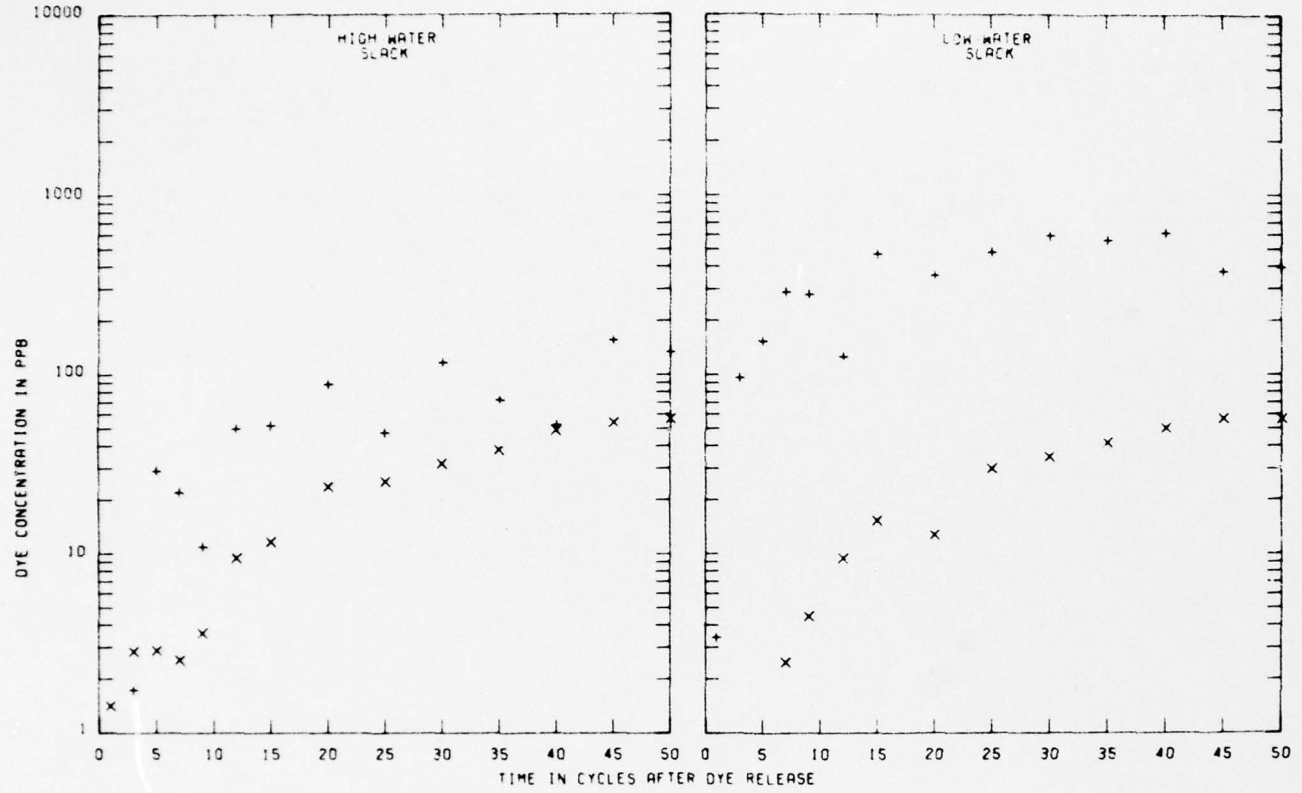
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION 1



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× - - - BOTTOM

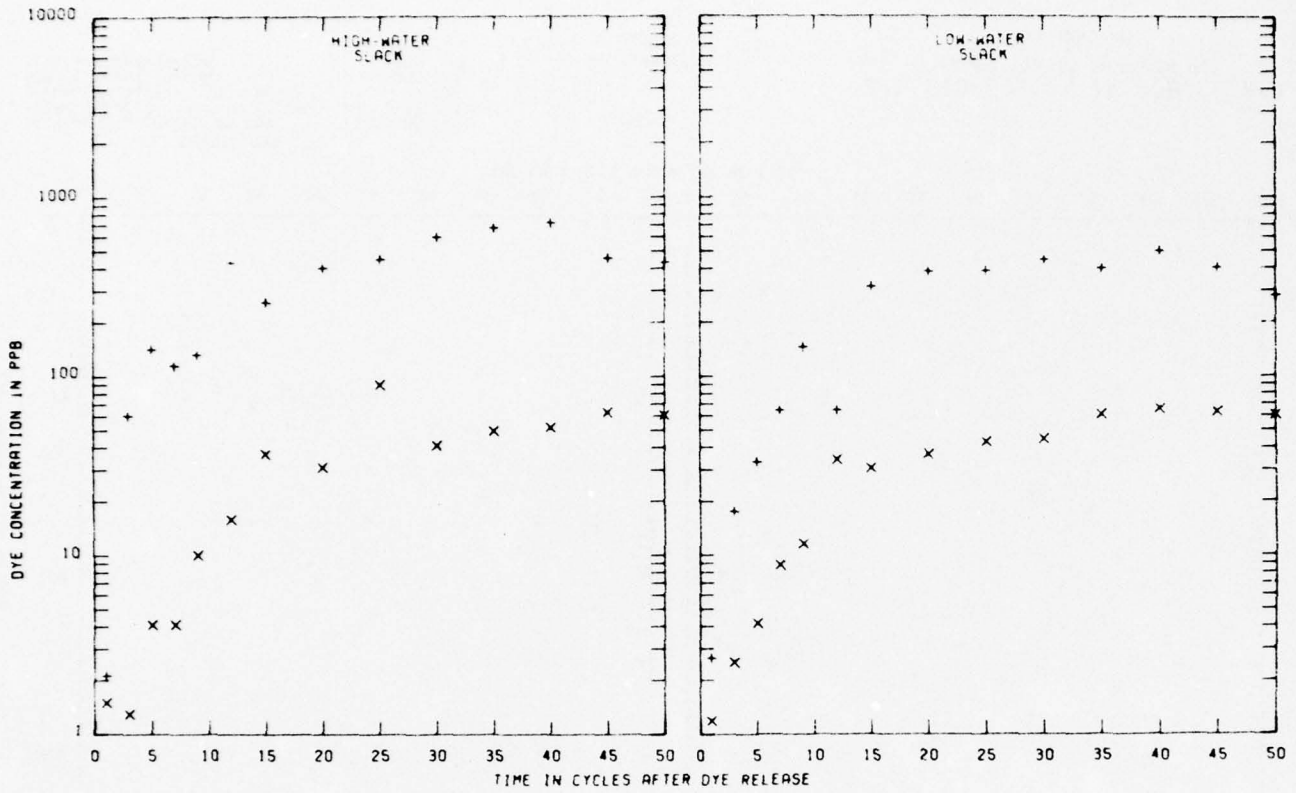
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A2

STATION 3

PLATE 89

PLATE 90



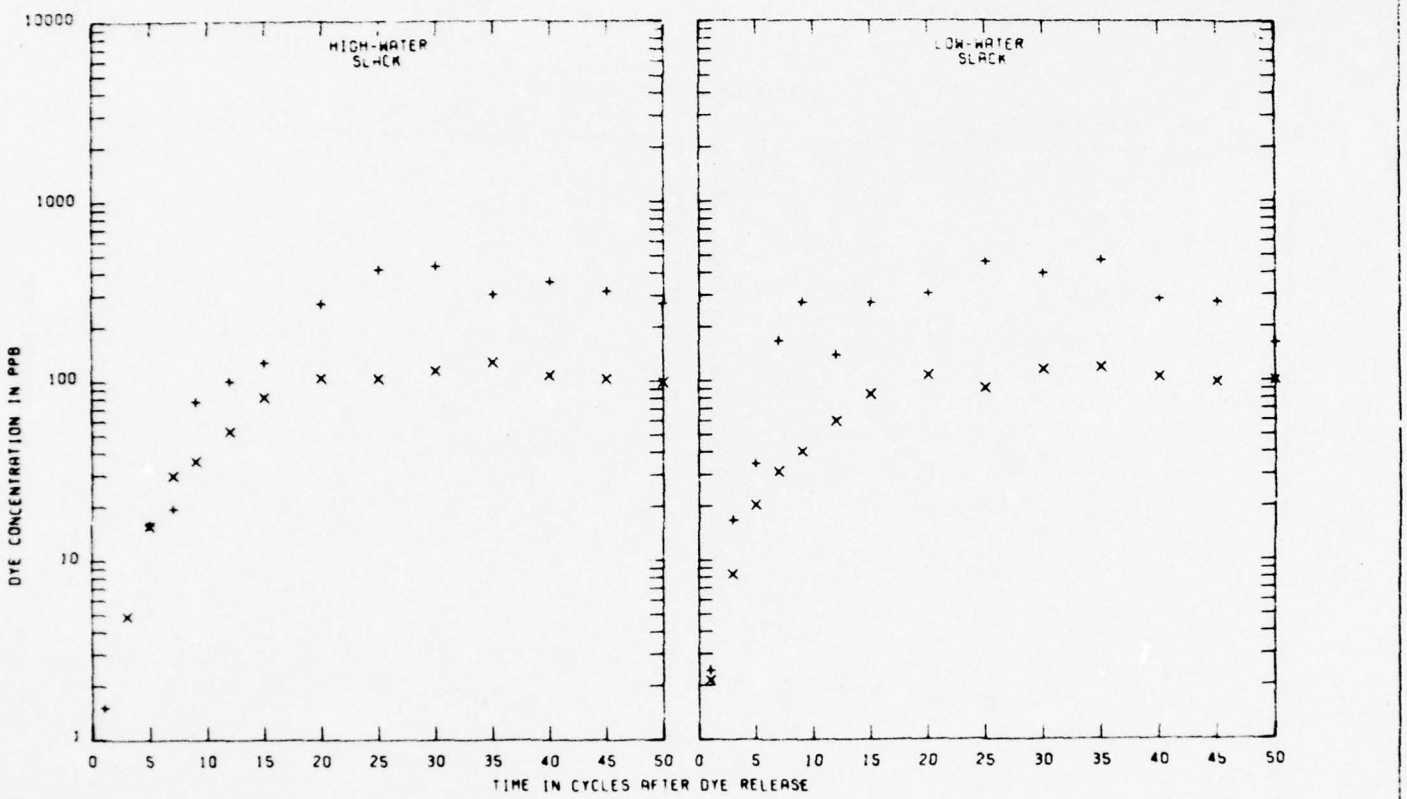
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× ·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION 5



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

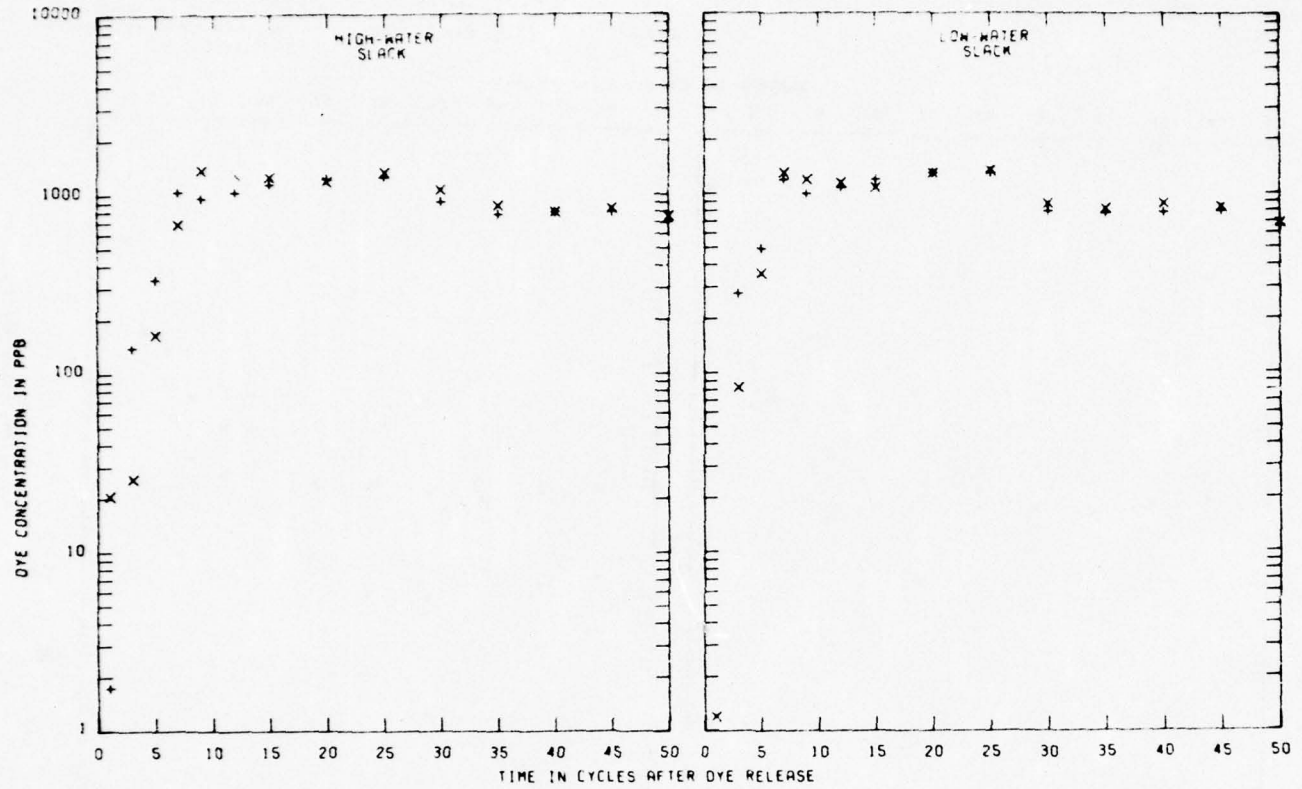
+ — · — · — SURFACE

× — · — · — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION 7

PLATE 91

PLATE 92



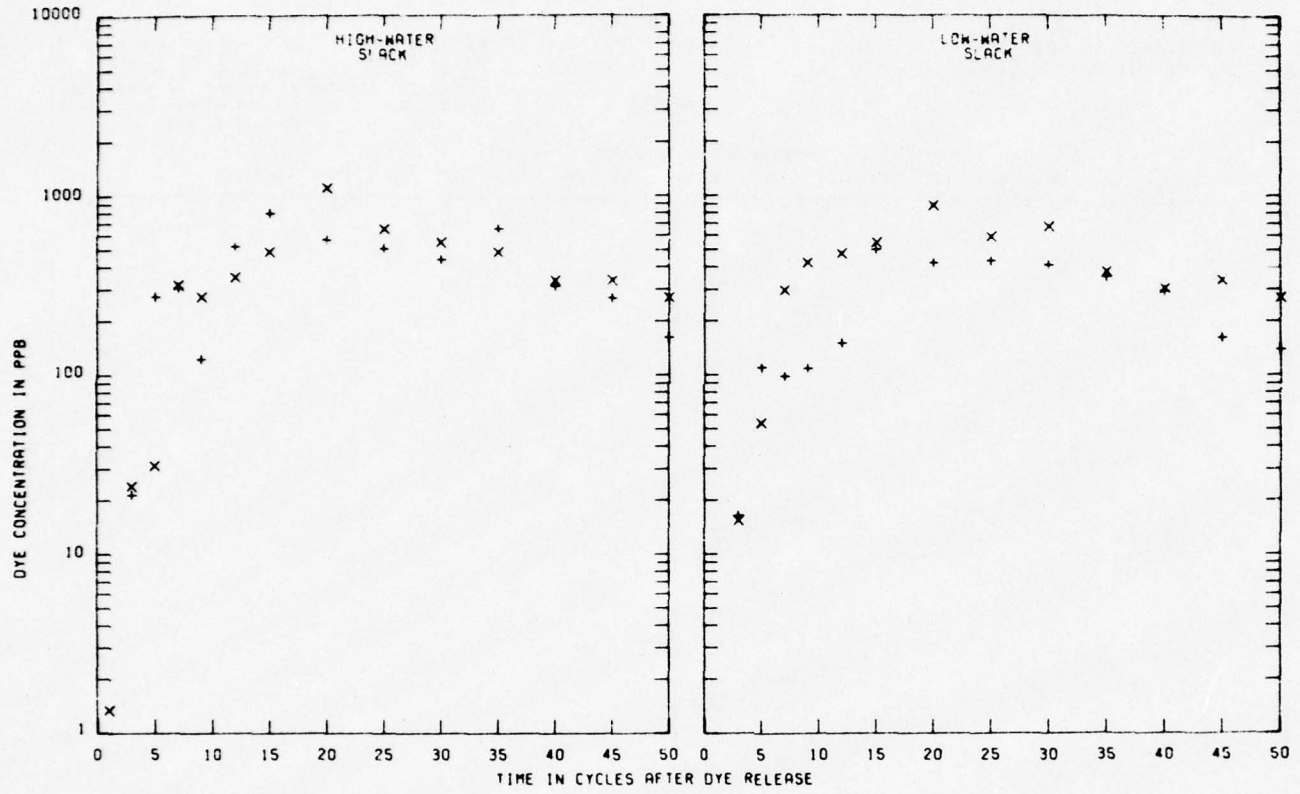
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ ——·—— SURFACE
× ——·—— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION T1



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —— SURFACE

× - - - BOTTOM

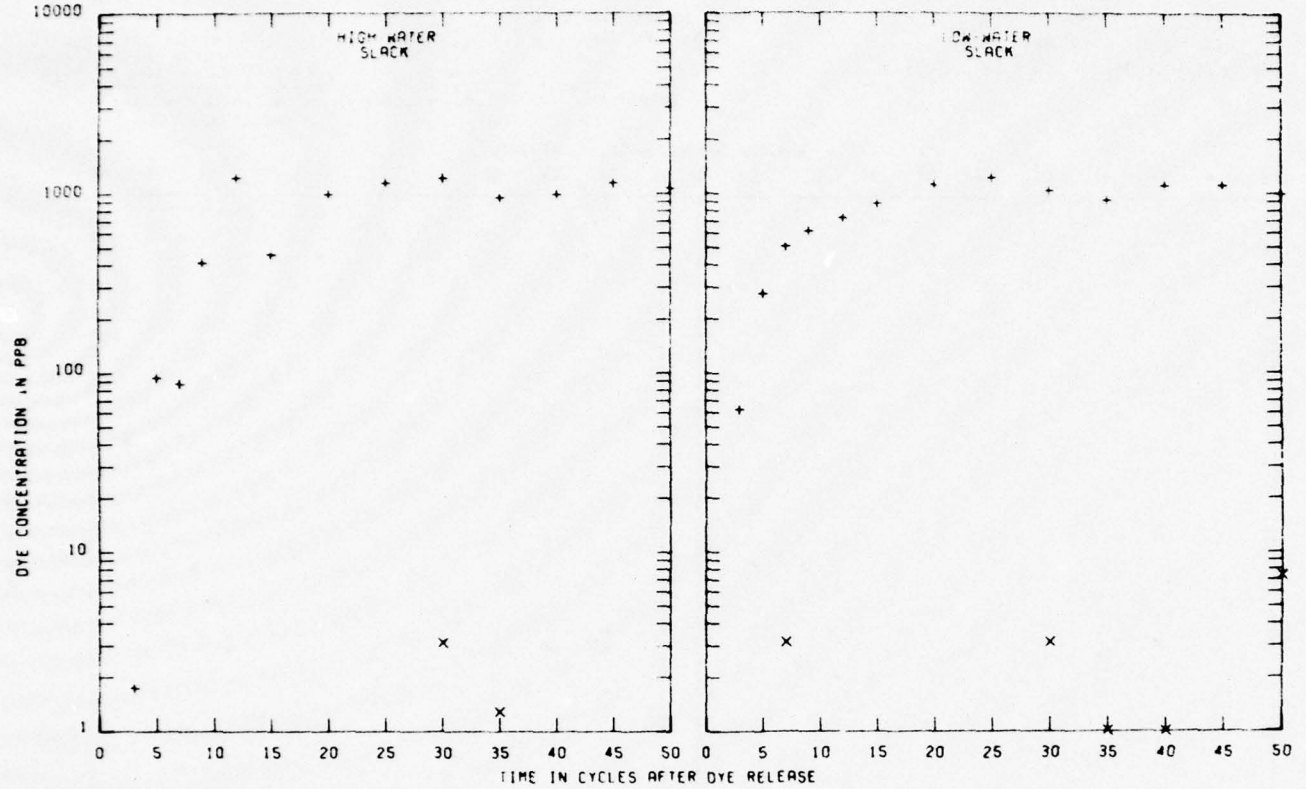
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A2

STATION T2

PLATE 93

PLATE 94



TEST CONDITIONS

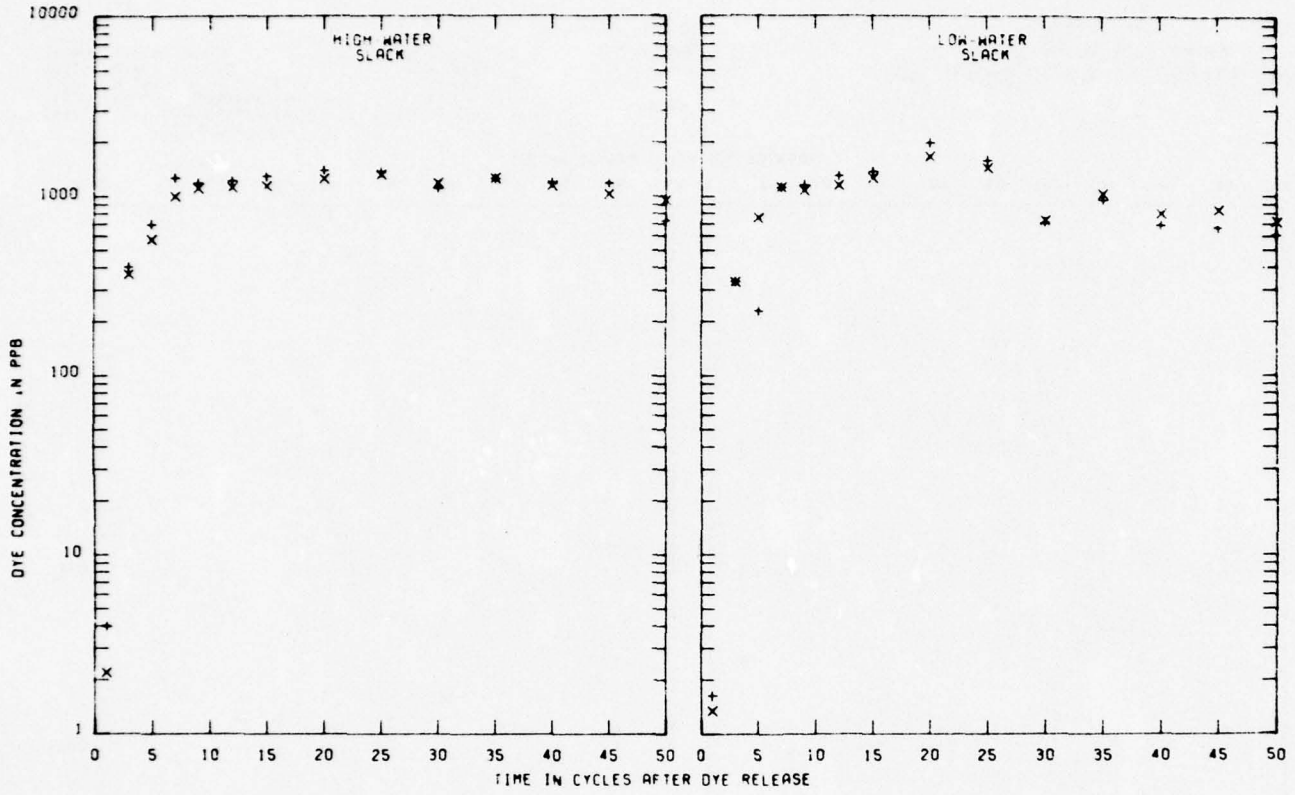
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× —··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION T3



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× —·—·— BOTTOM

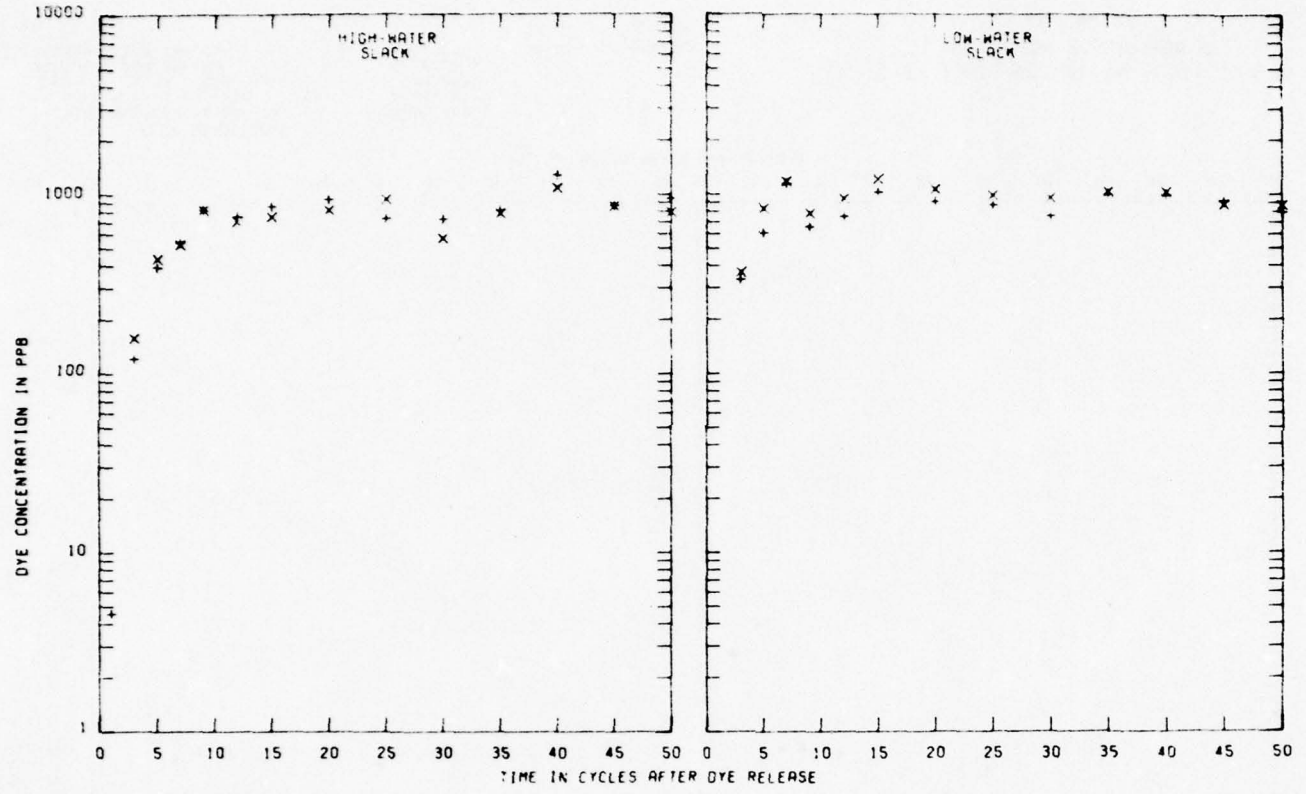
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A2

STATION T4

PLATE 95

PLATE 96



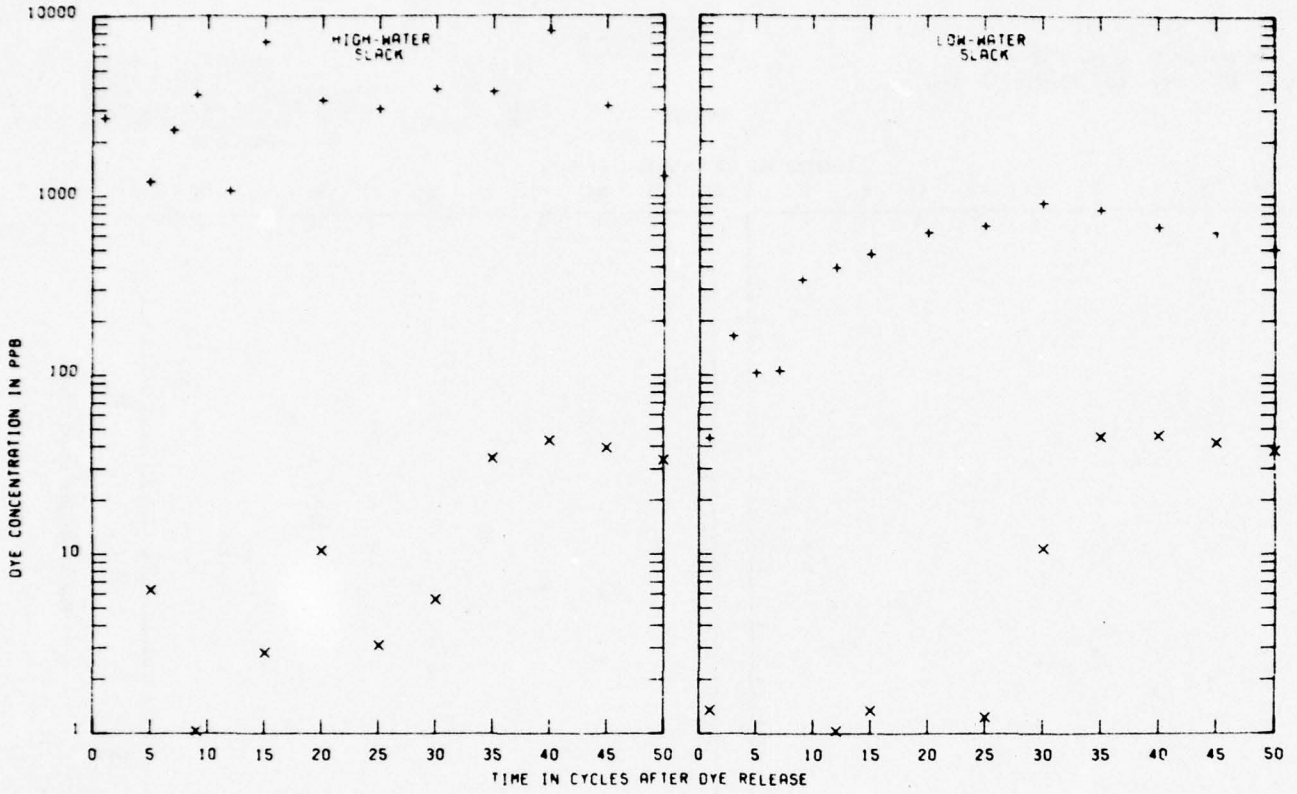
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION T5



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× ·-·- BOTTOM

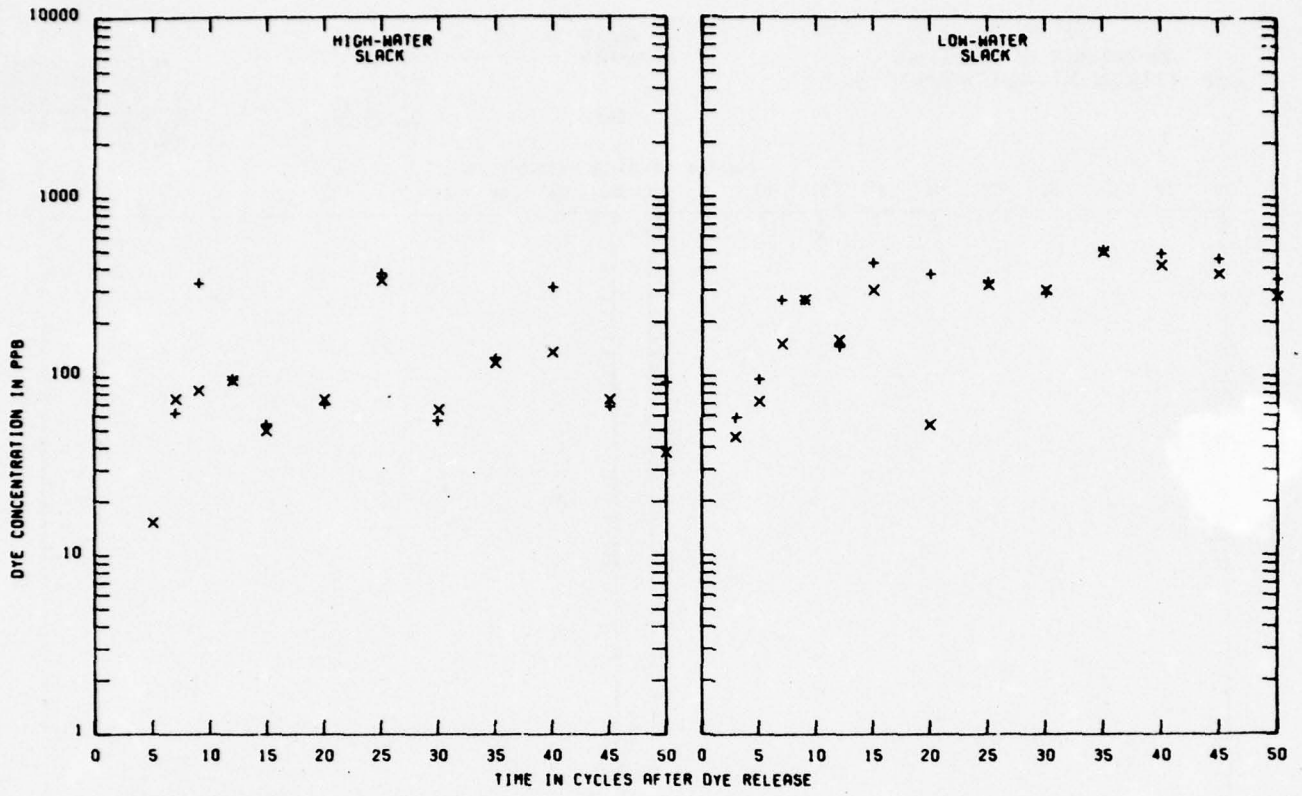
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A2

STATION TSC

PLATE 97

PLATE 98



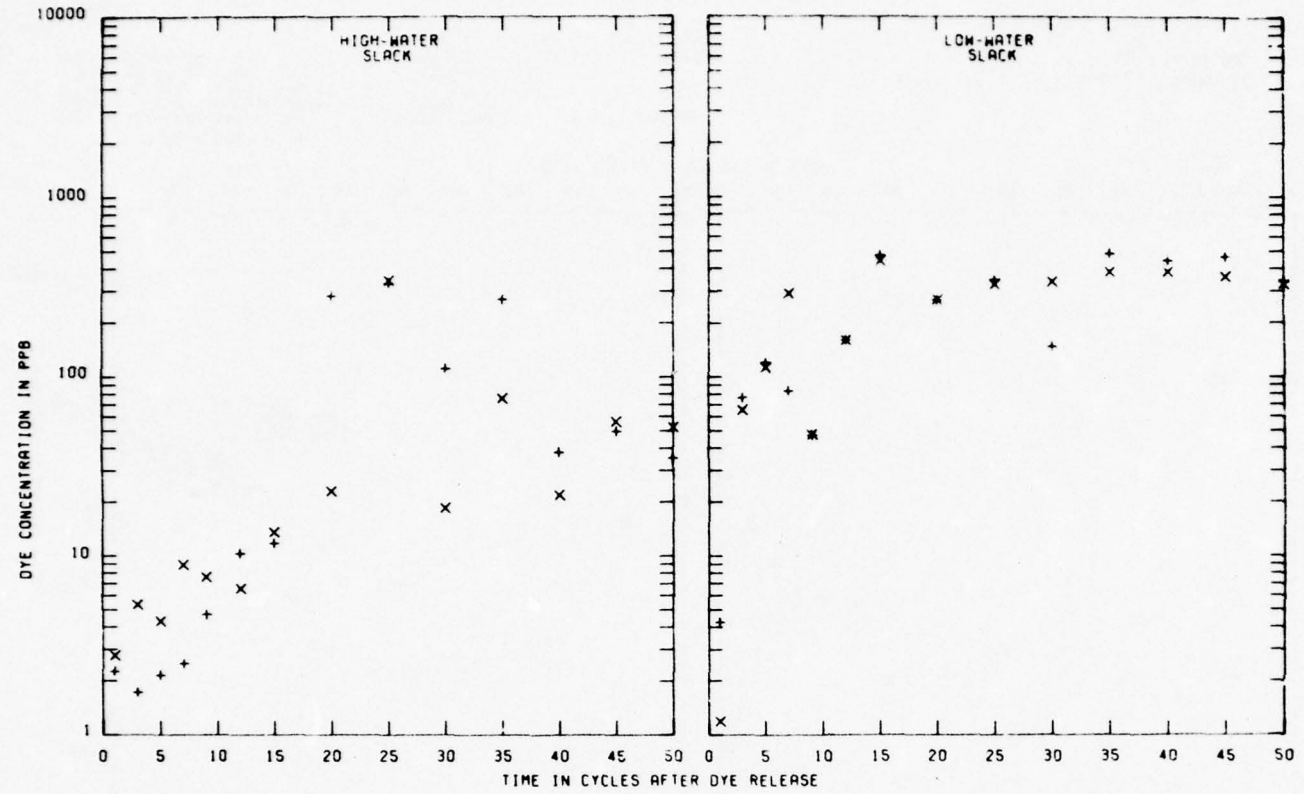
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION S4



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

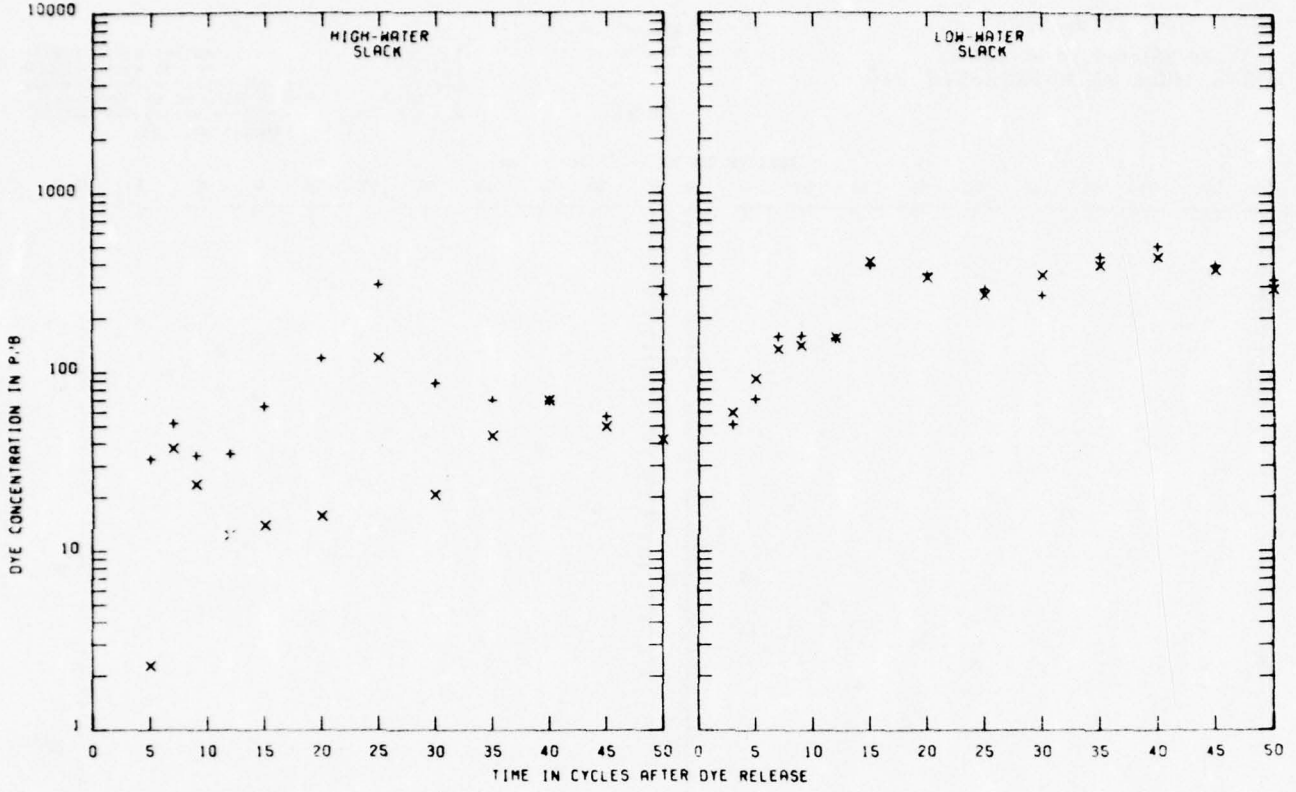
LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION S5

PLATE 99

PLATE 100



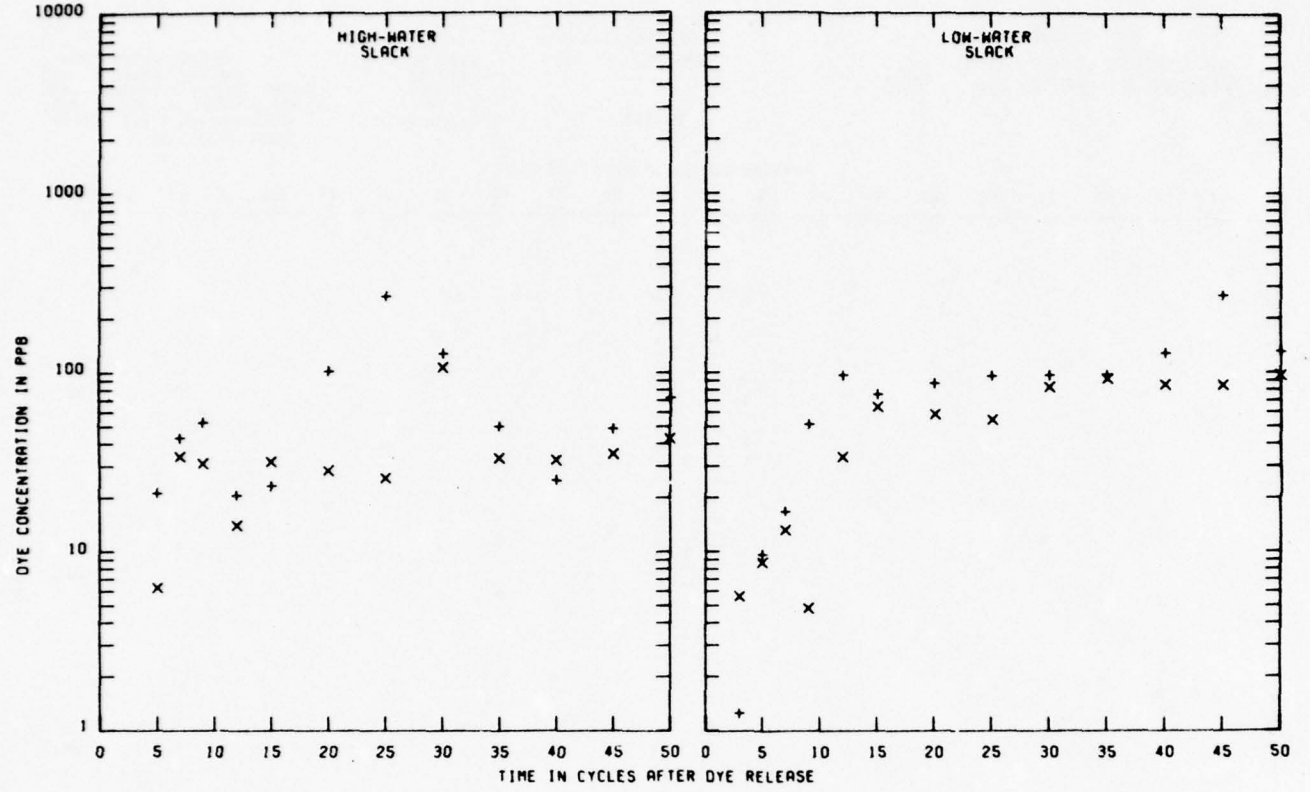
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION S7



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

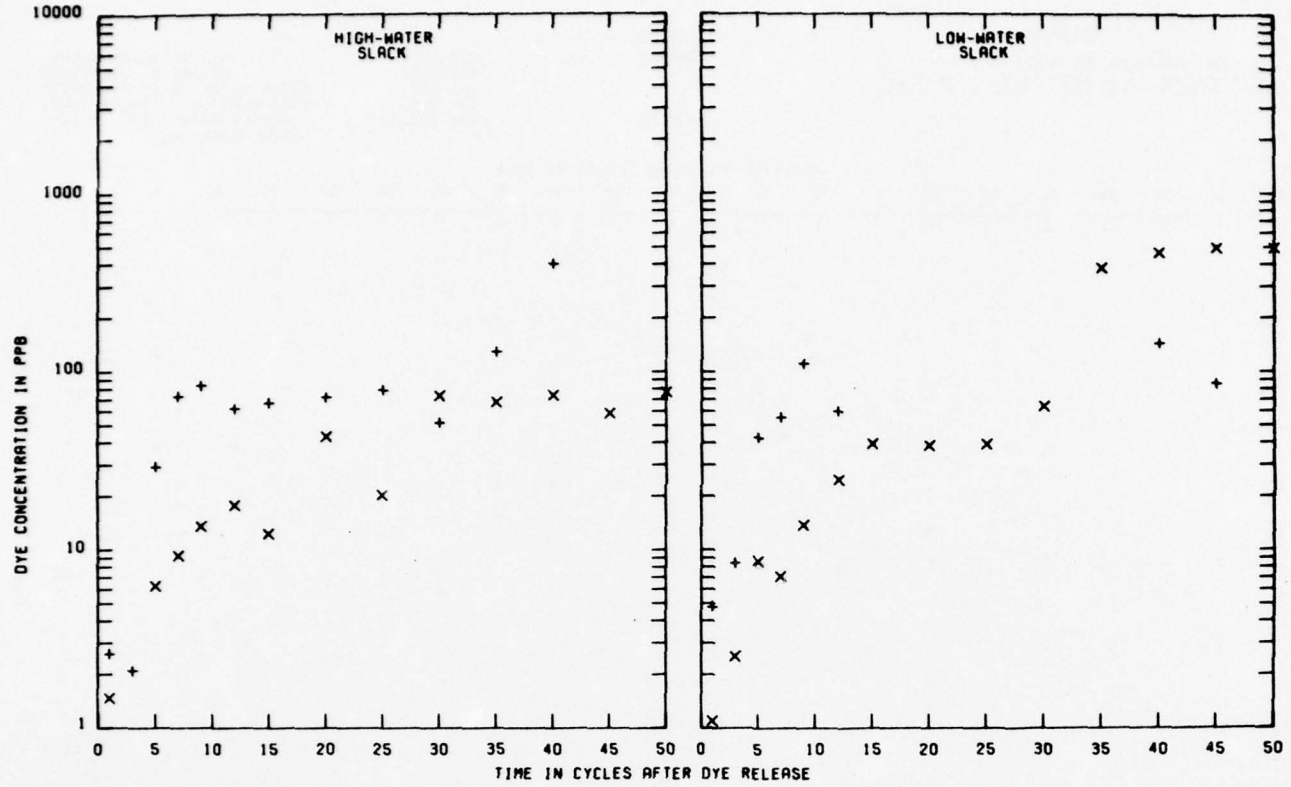
LEGEND

+ —·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION S10

PLATE 101

PLATE 102



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION S12

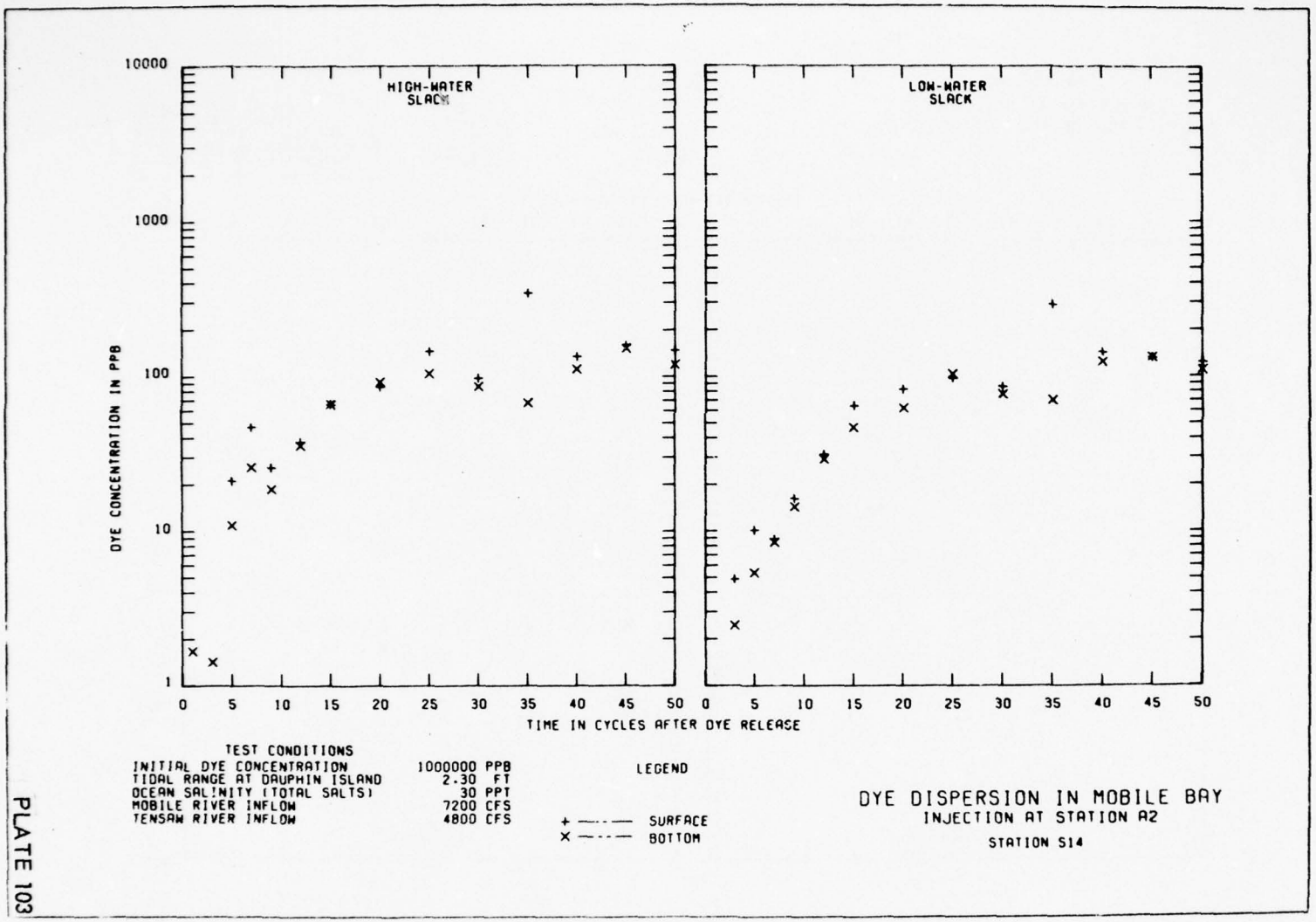
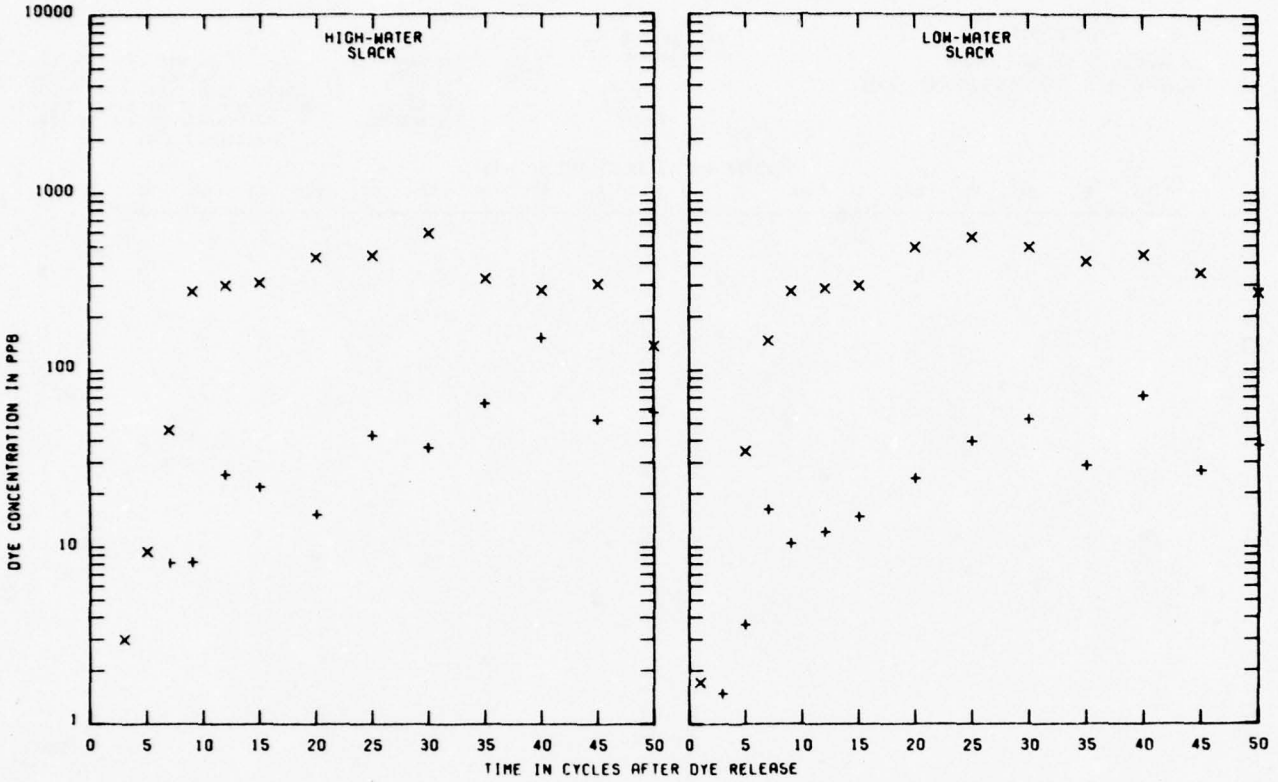

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ SURFACE
× BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION S14

PLATE 103

PLATE 104



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A2

STATION M1

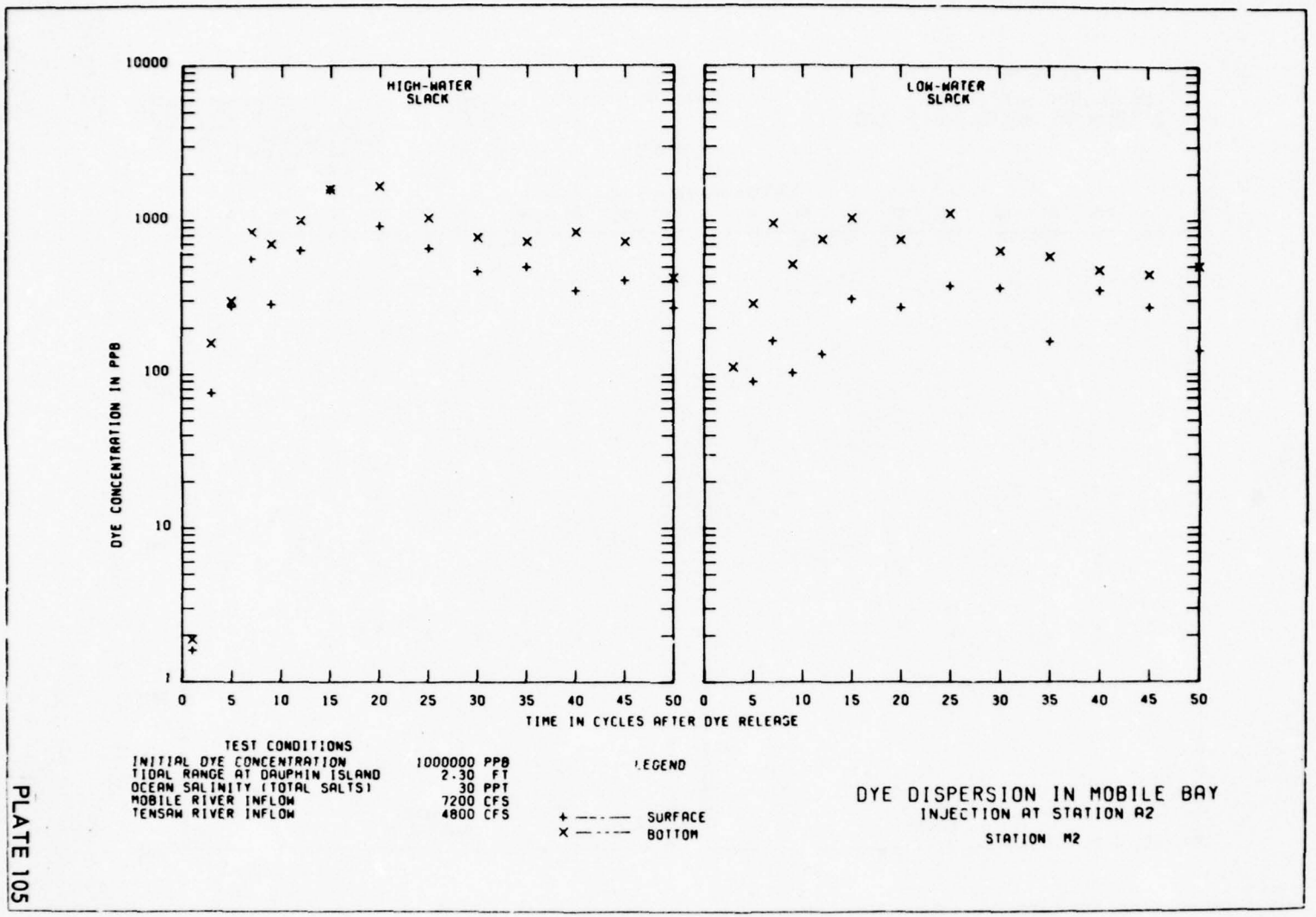
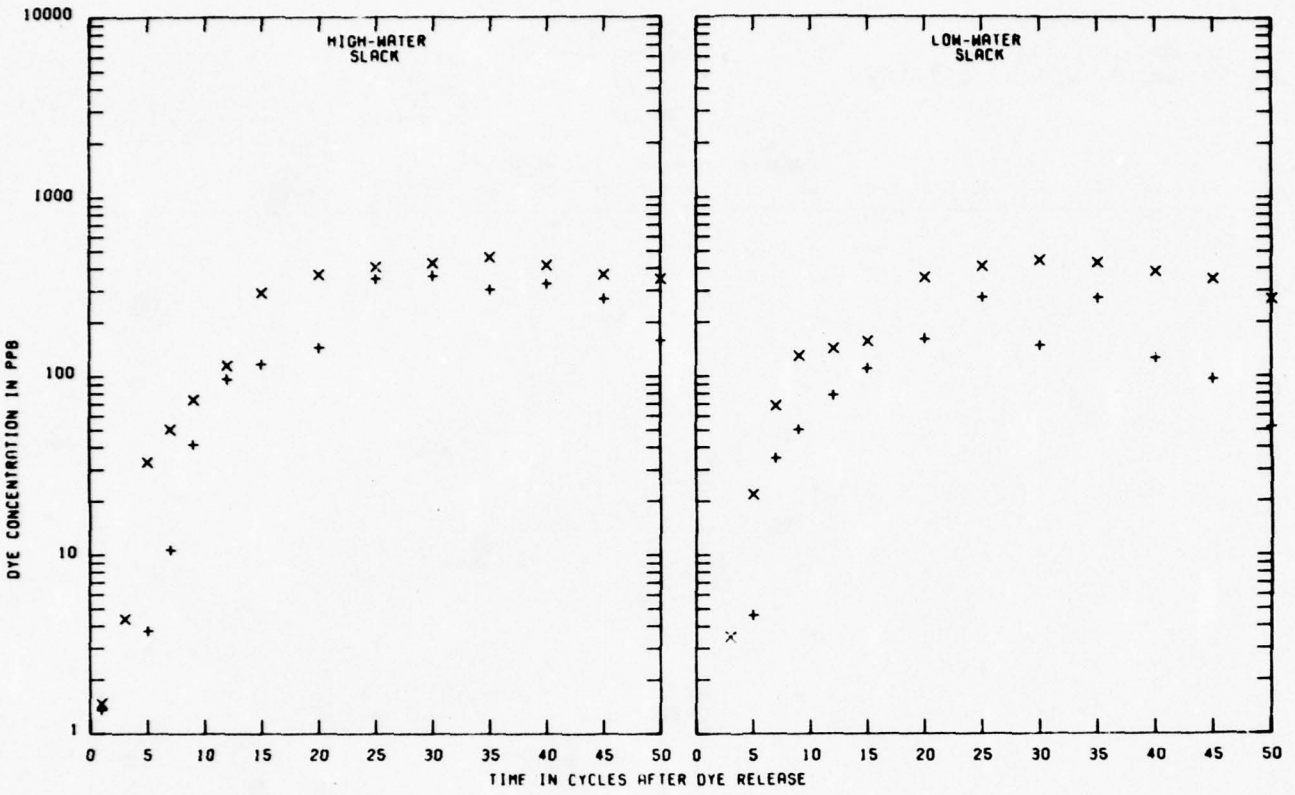

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
+ ---- SURFACE
× ---- BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M2

PLATE 105

PLATE 106



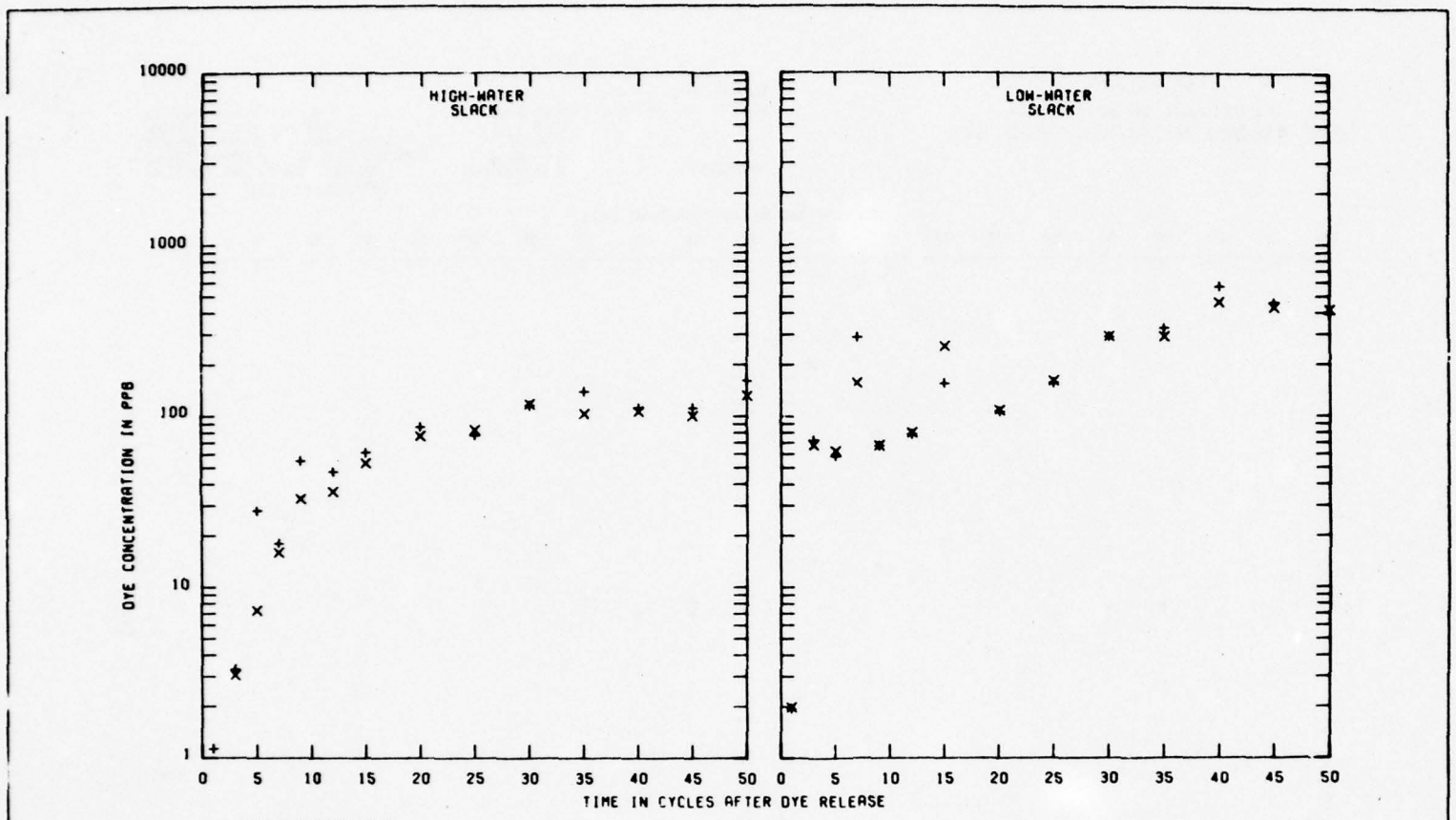
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M3



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

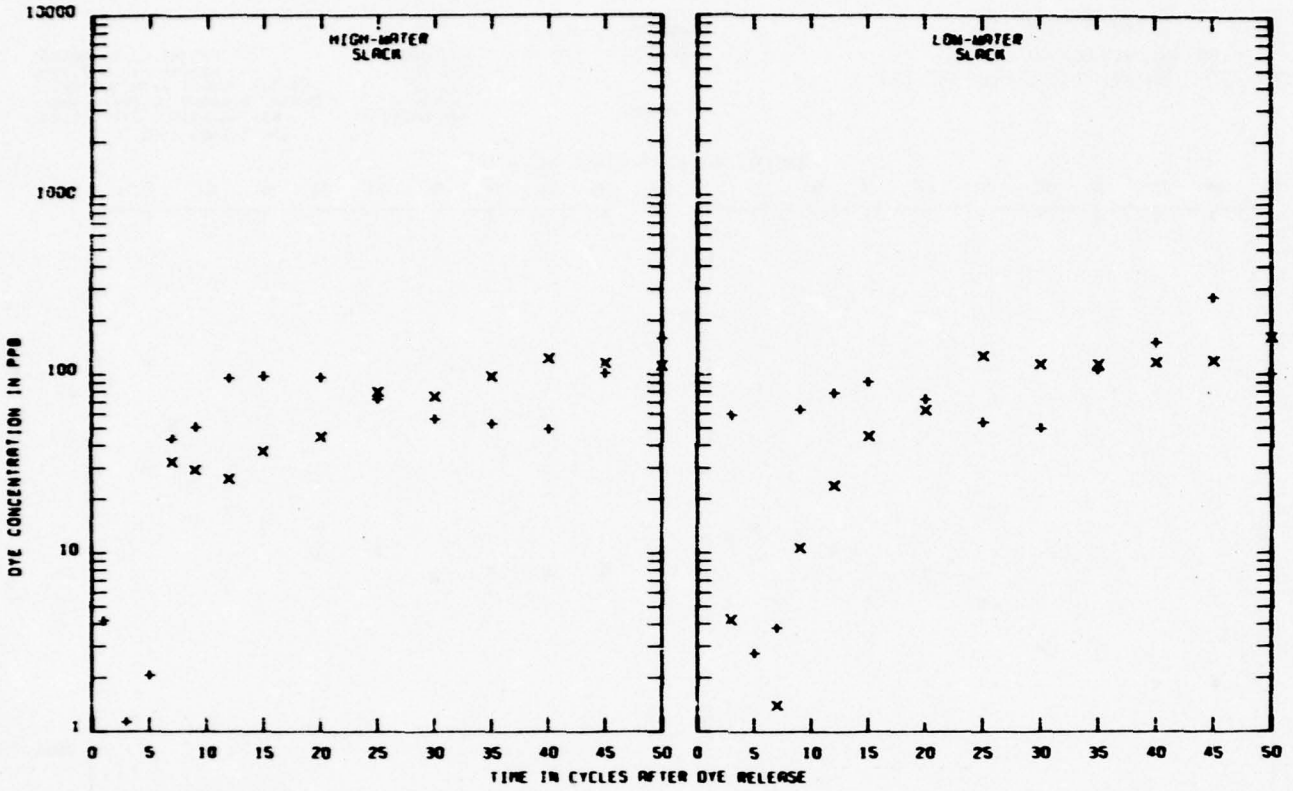
LEGEND

+ —·— SURFACE
× —··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M4

PLATE 107

PLATE 108



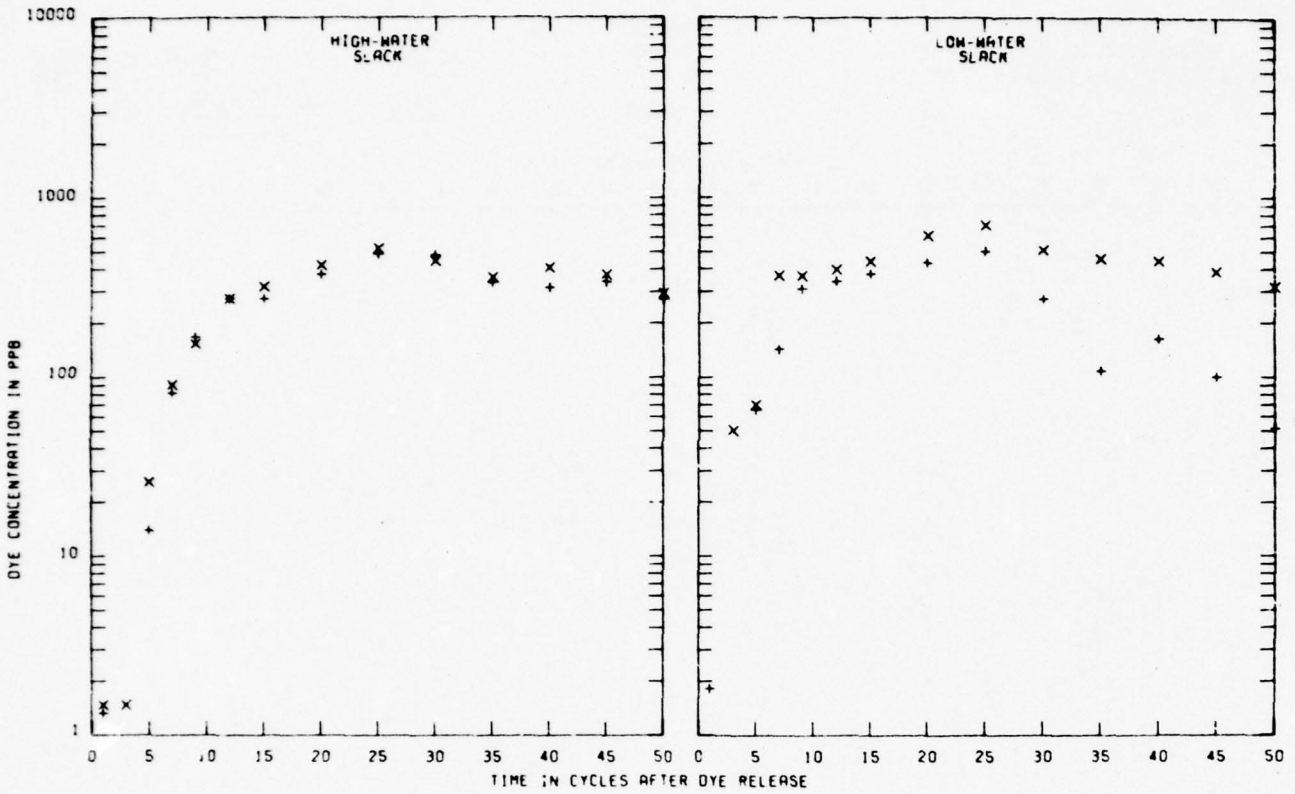
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION MS



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

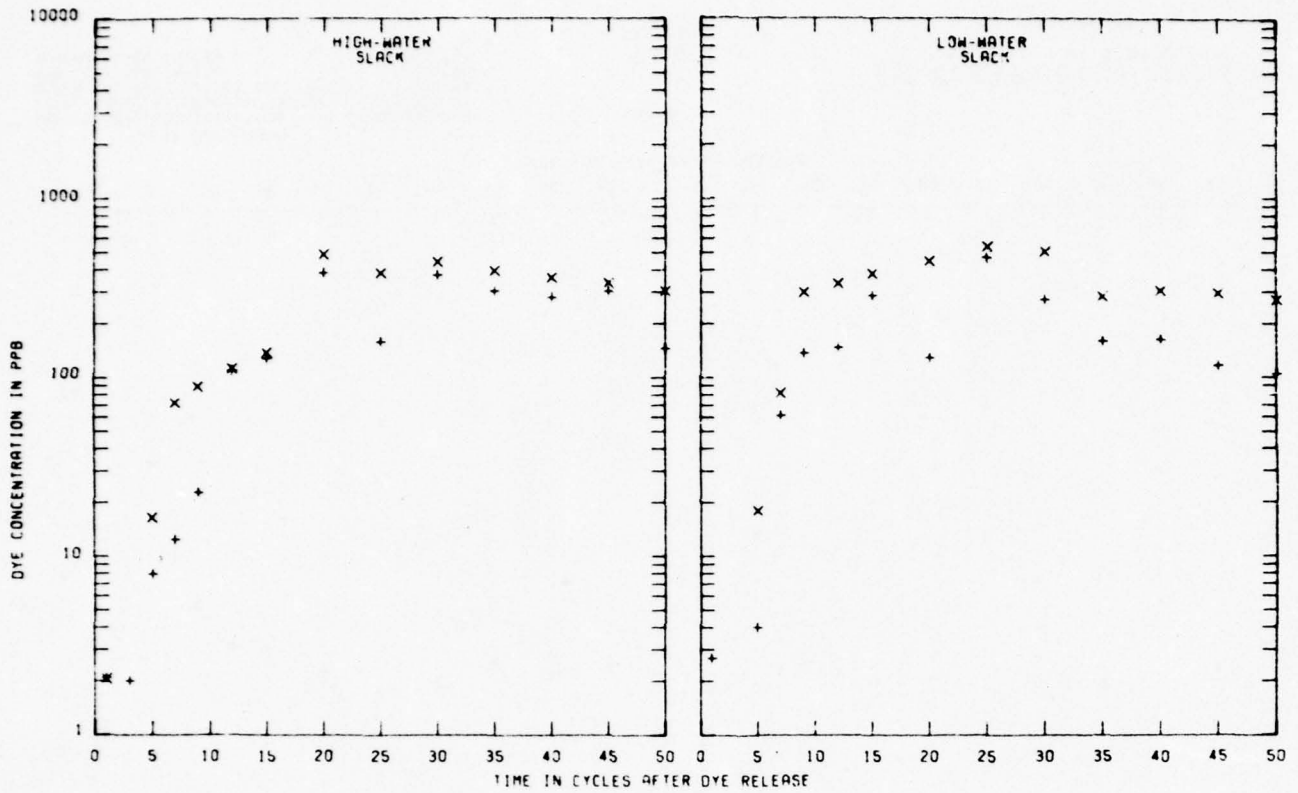
+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M6

PLATE 109

PLATE 110



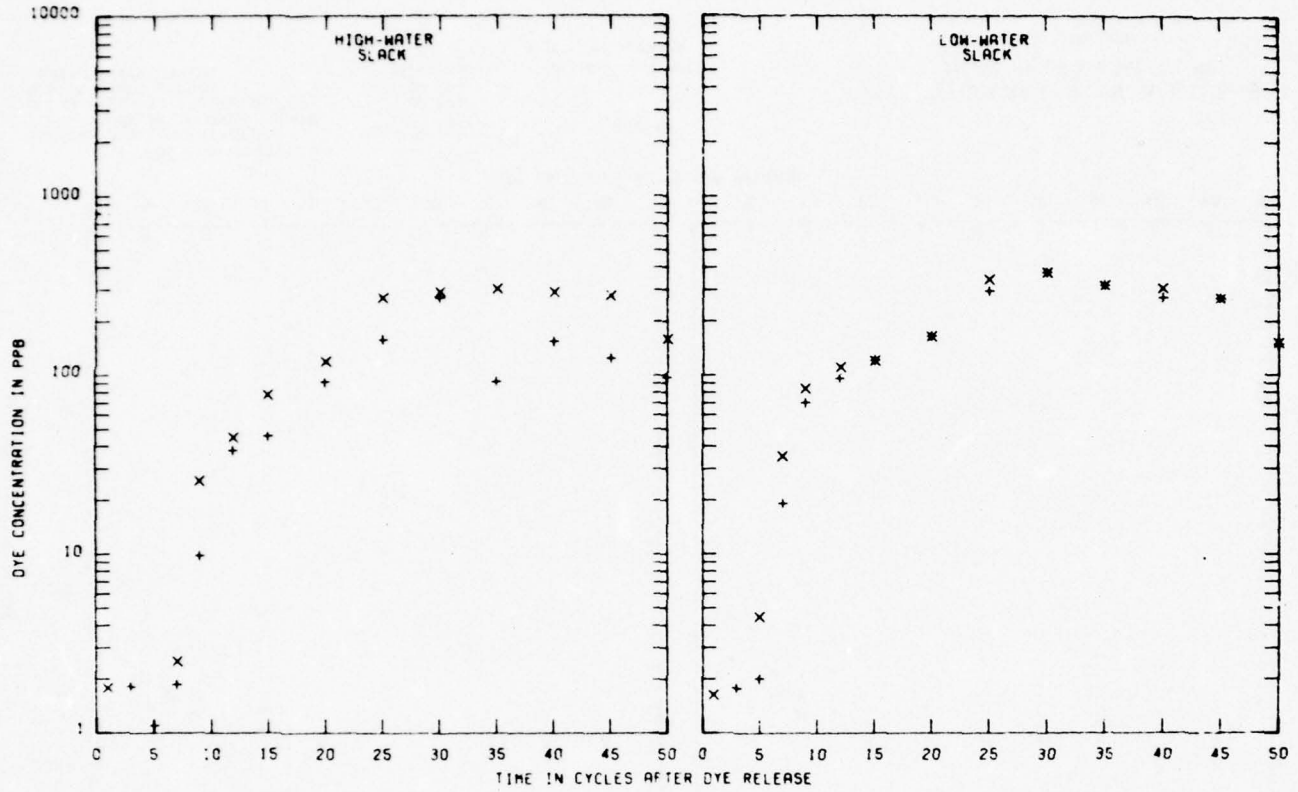
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M7



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

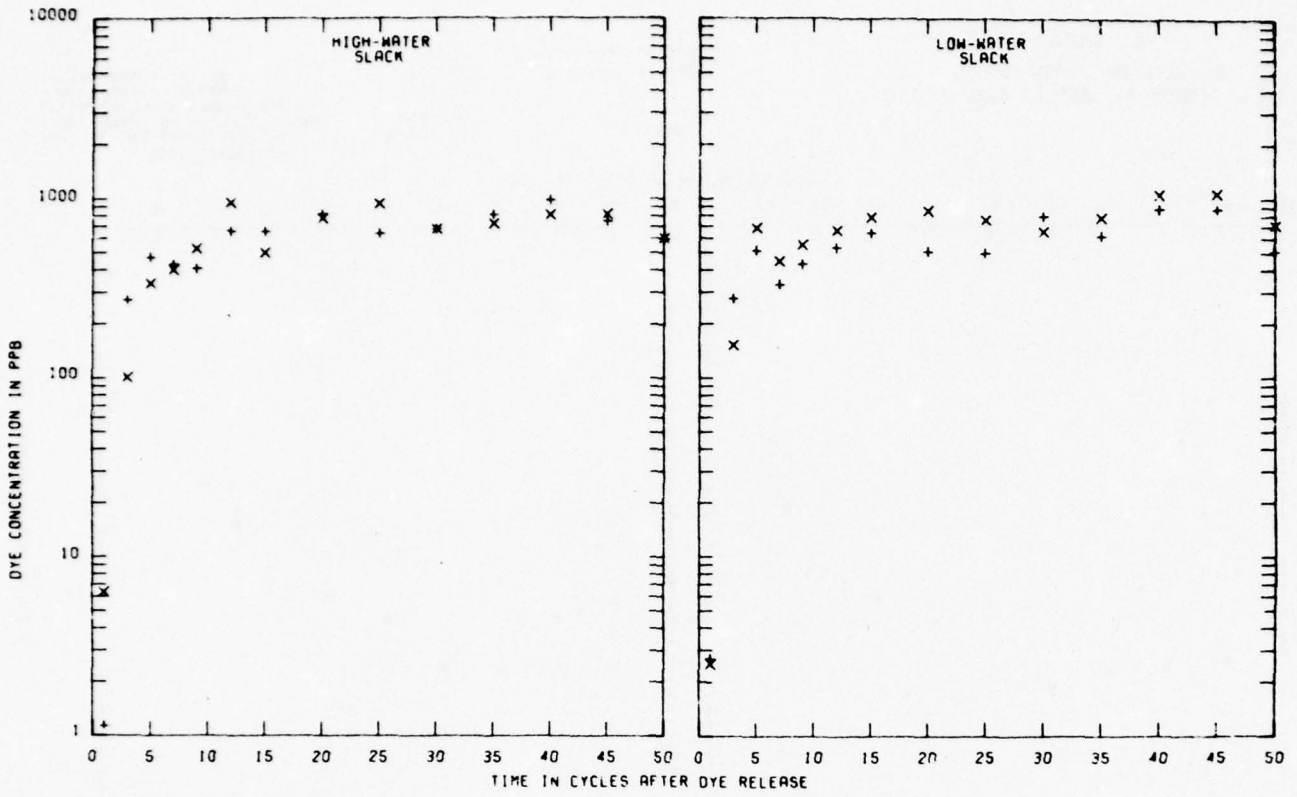
LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M8

PLATE 111

PLATE 112



TEST CONDITIONS

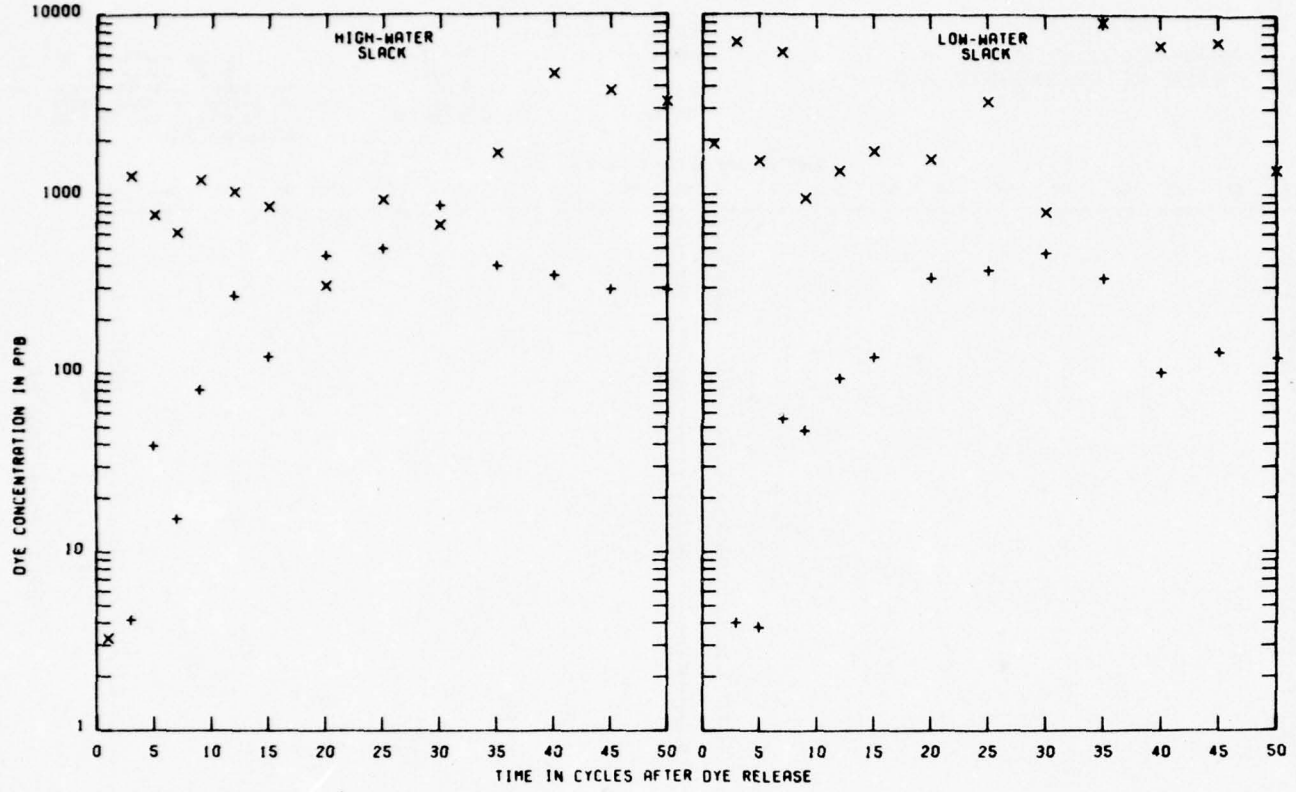
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ ——·—— SURFACE

× ——·—— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M9



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

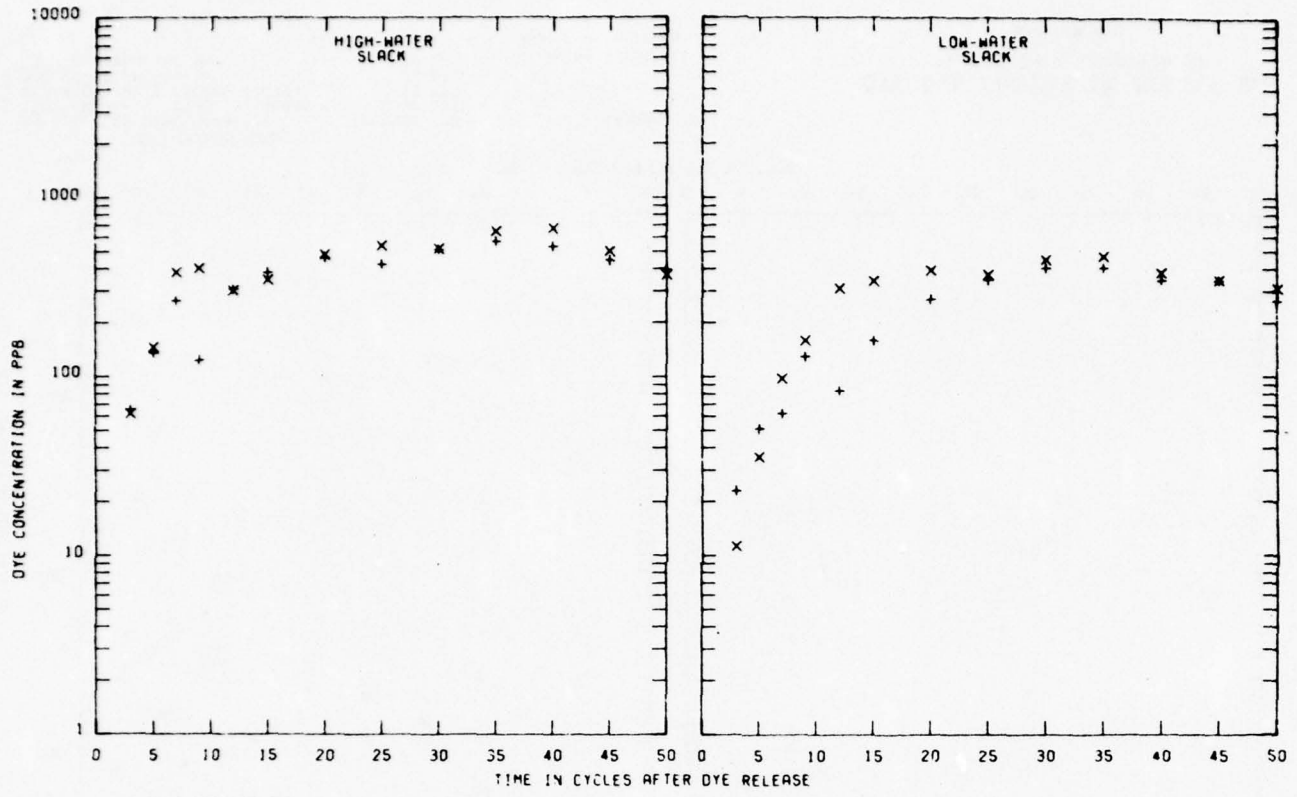
LEGEND

+ ---·— SURFACE
× ---·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M10

PLATE 113

PLATE 114



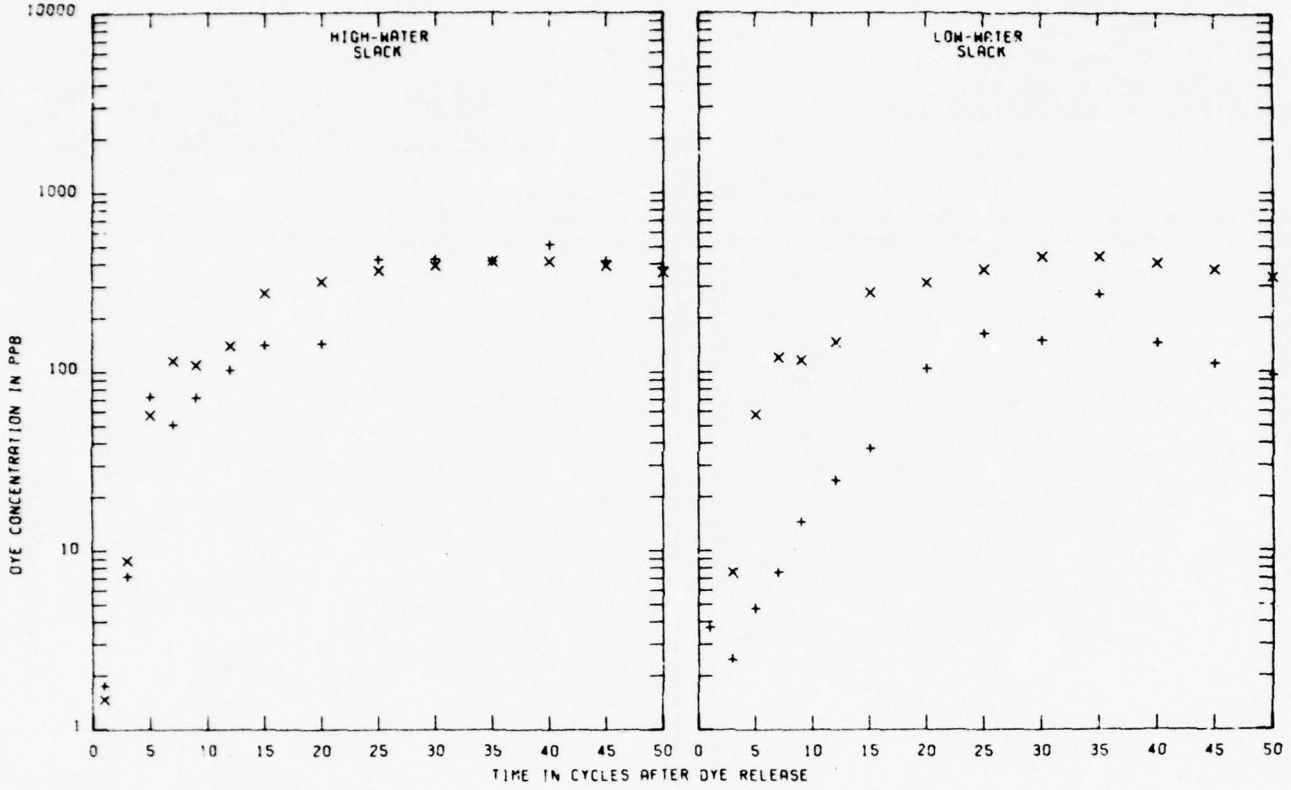
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× - - - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M11



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

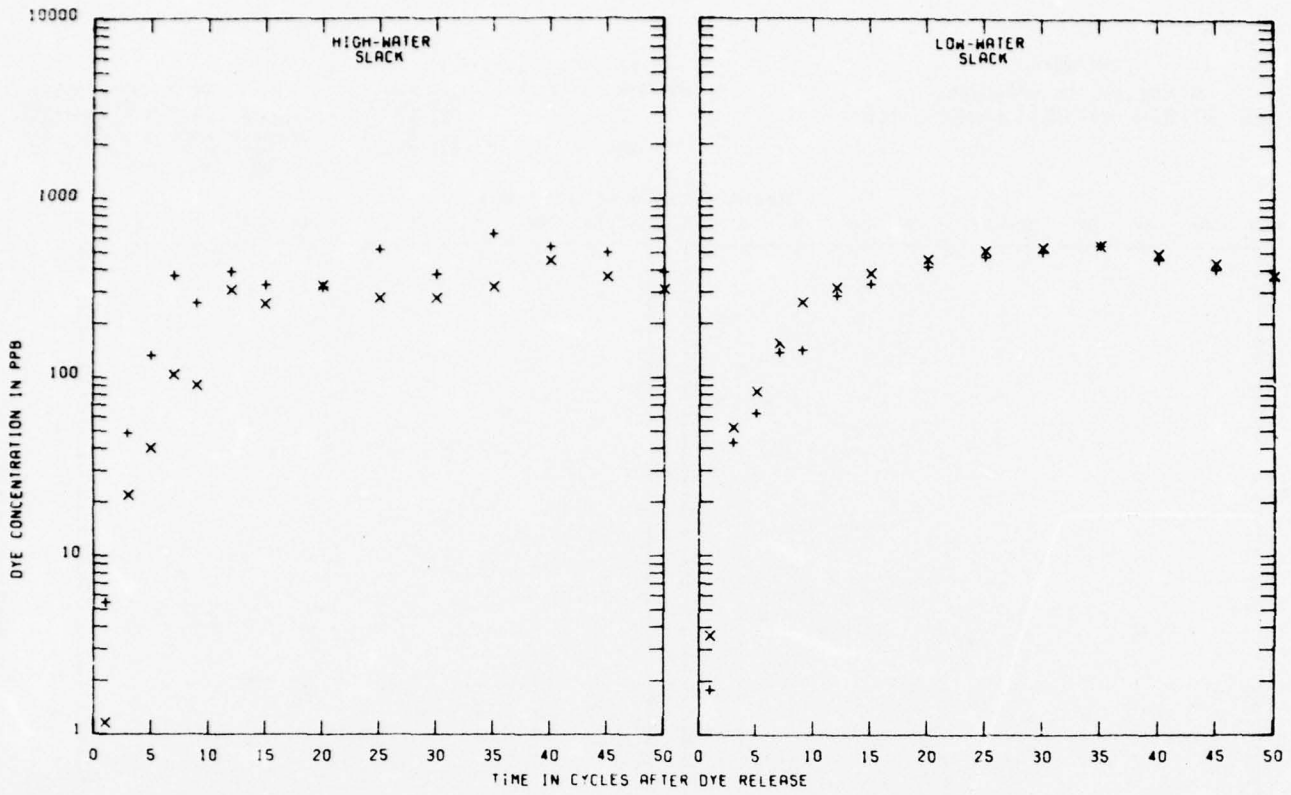
LEGEND

+ ——·—— SURFACE
× ——·—— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M12

PLATE 115

PLATE 116



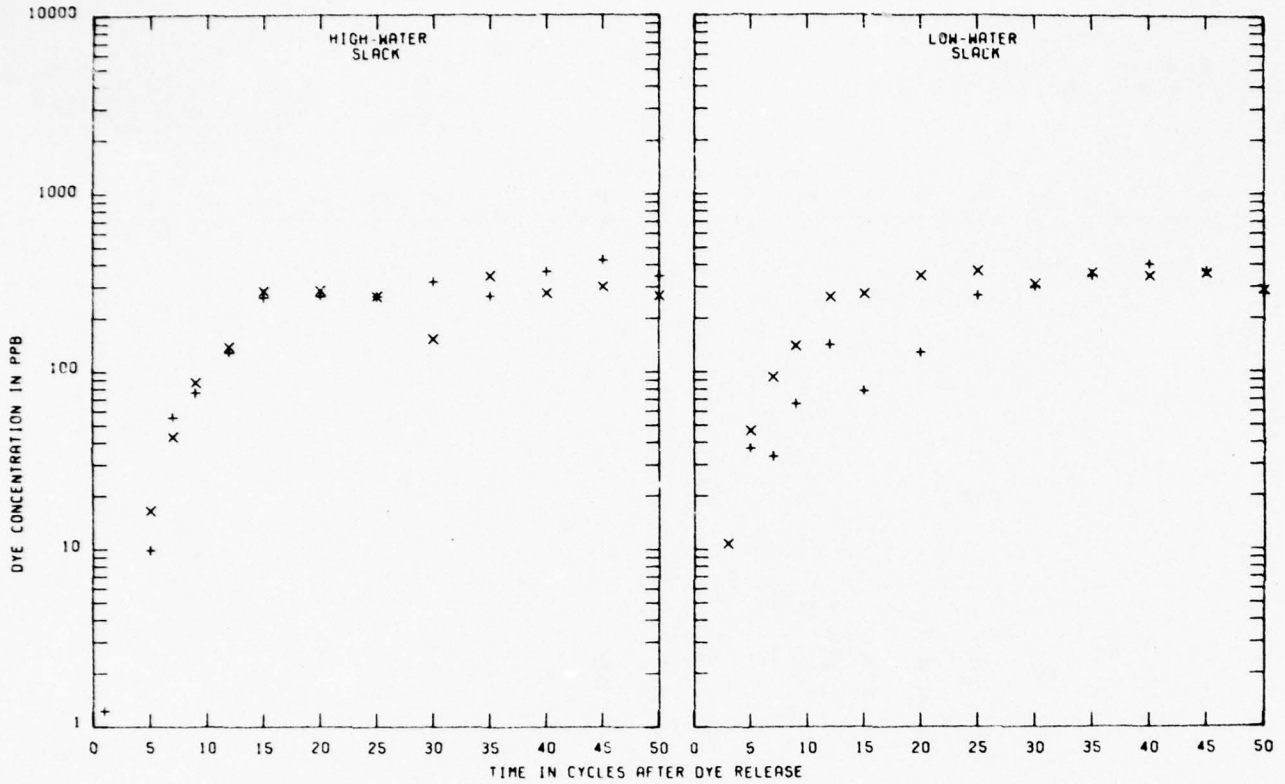
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M13



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

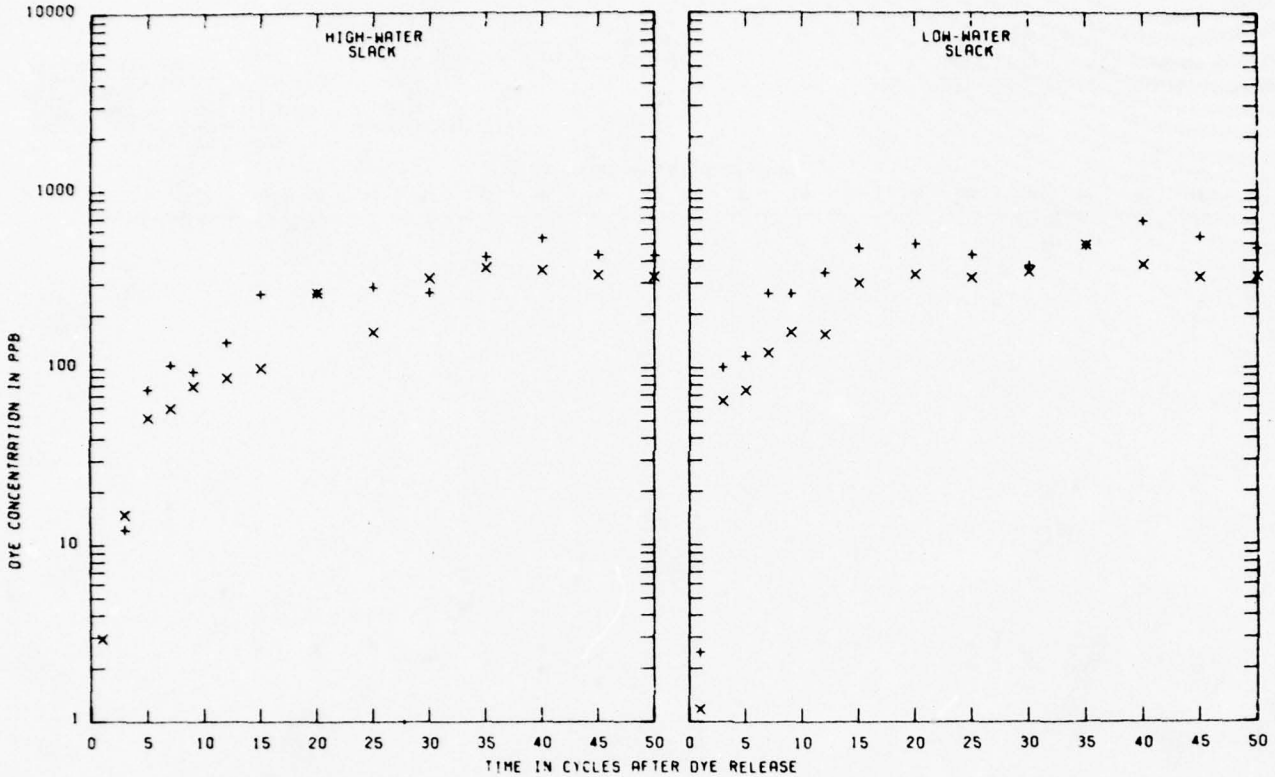
LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M14

PLATE 117

PLATE 118



TEST CONDITIONS

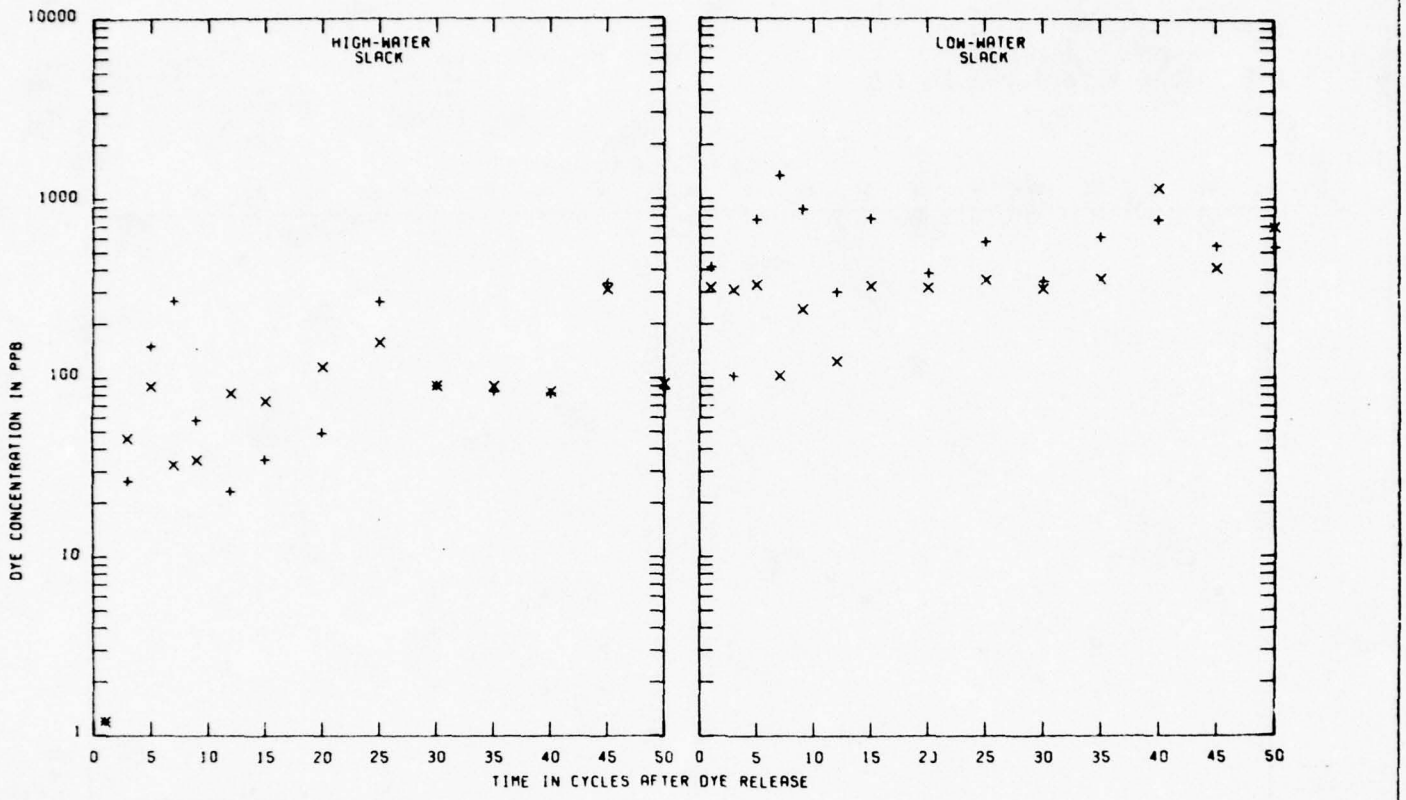
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× — - — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M15



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ —·—·— SURFACE

× —·—·— BOTTOM

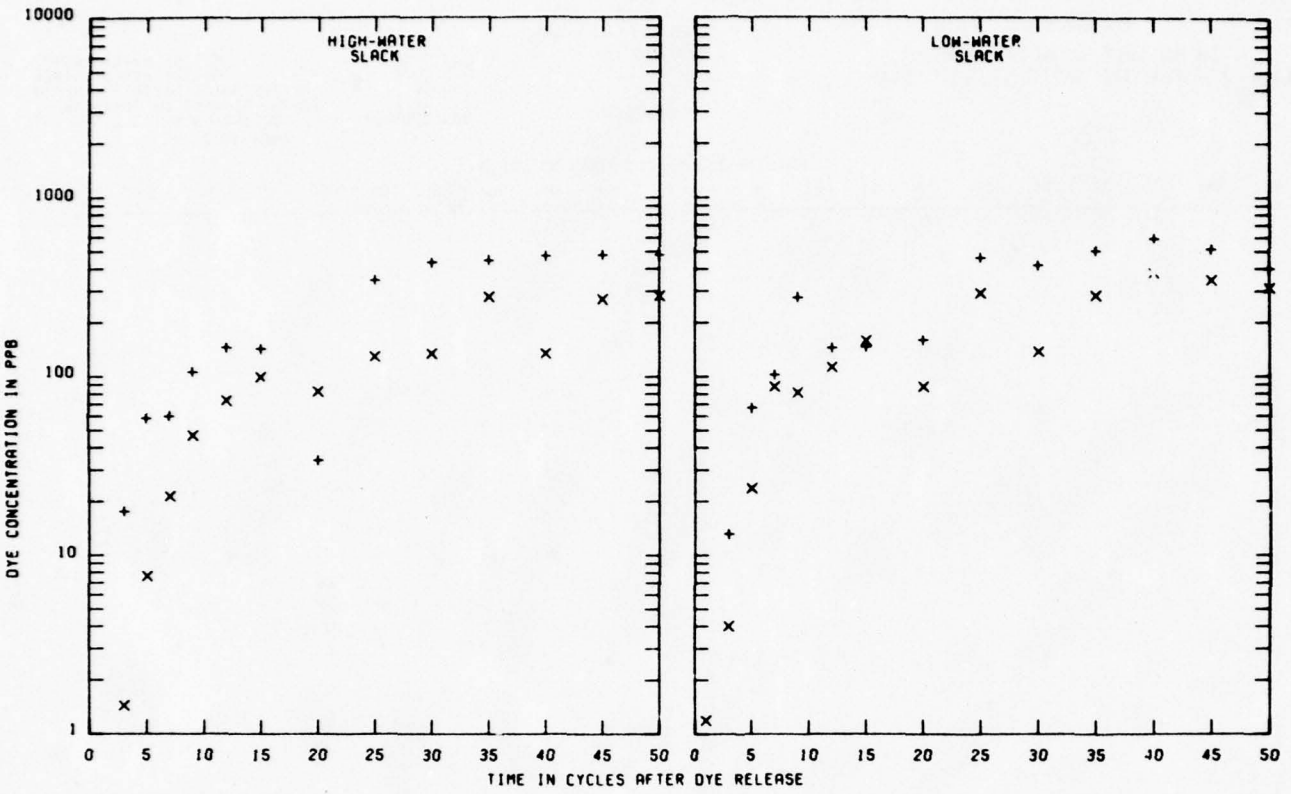
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A2

STATION M16

PLATE 119

PLATE 120



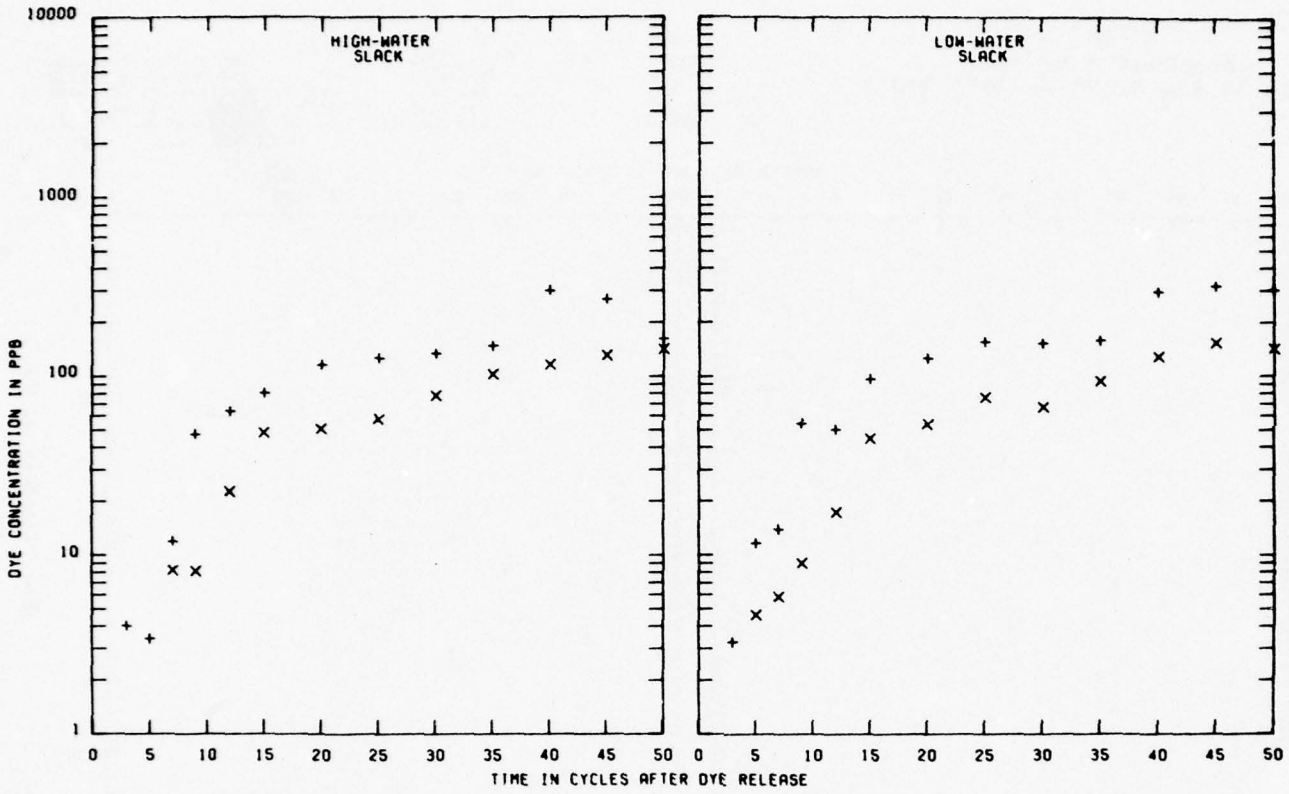
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M17



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

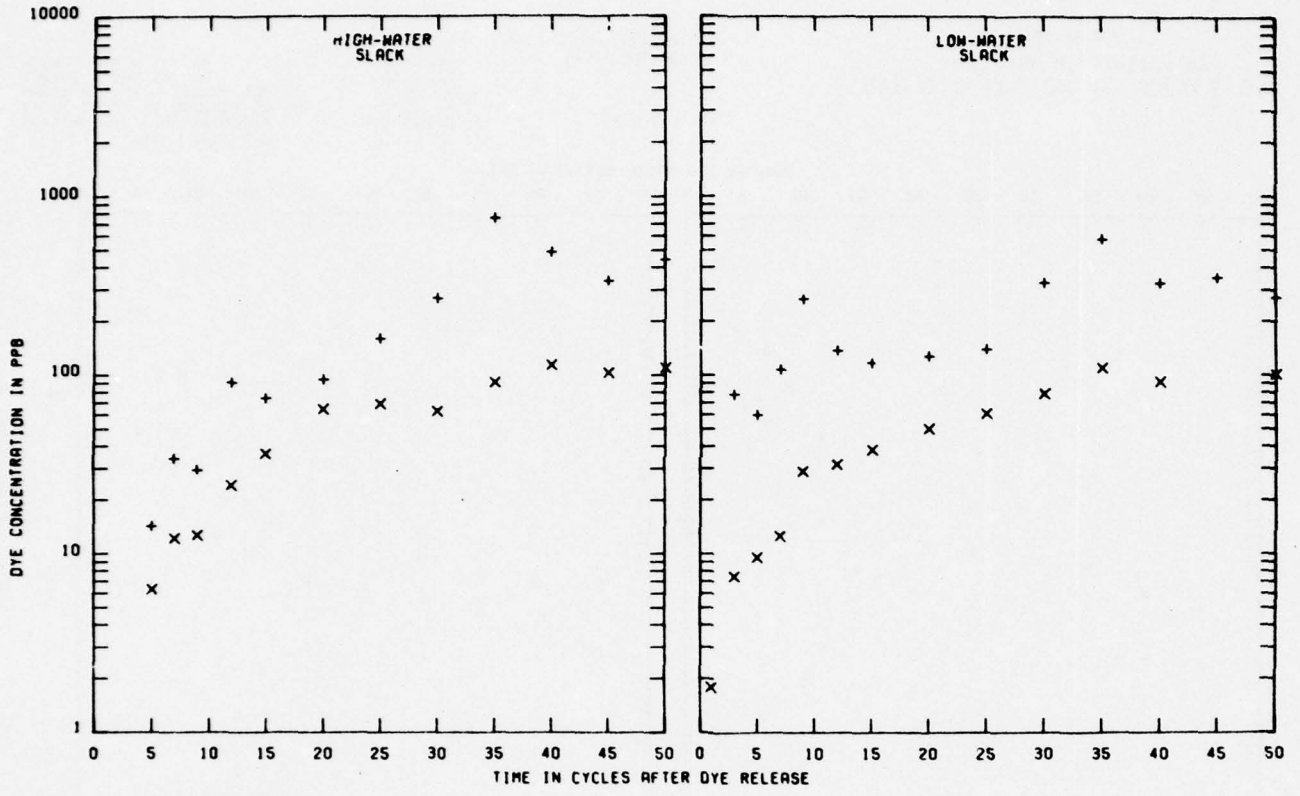
LEGEND

+ —·— SURFACE
× ·-·- BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M18

PLATE 121

PLATE 122



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M19

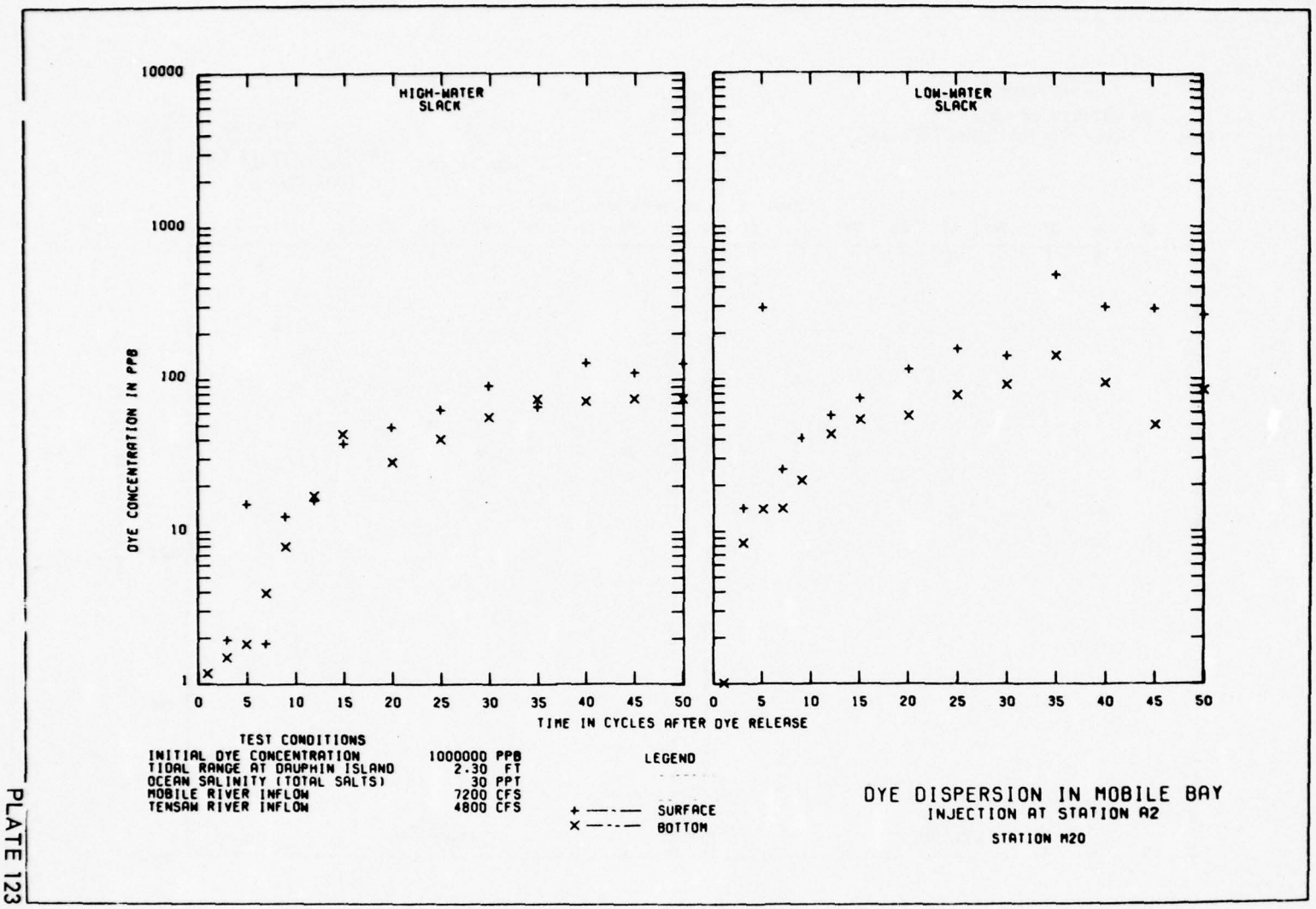
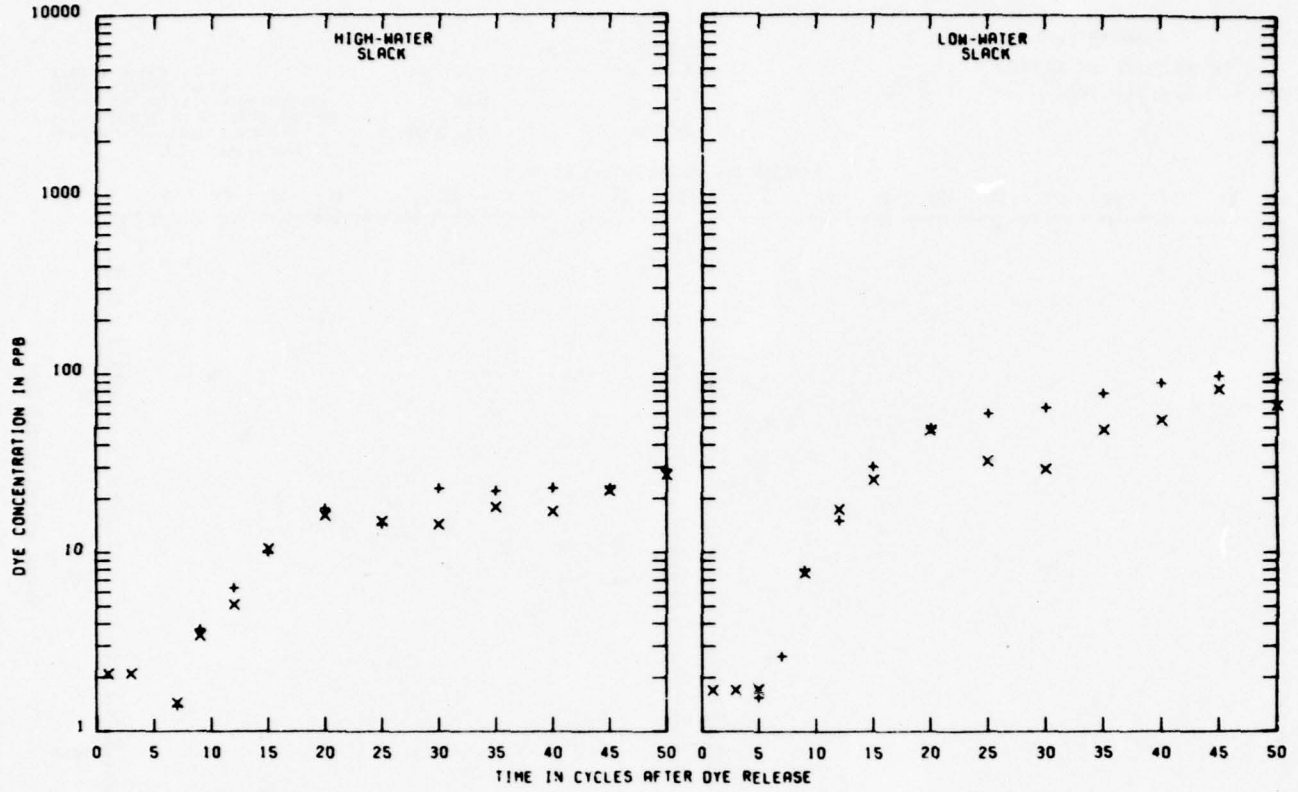

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
SURFACE
BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M20

PLATE 123

PLATE 124



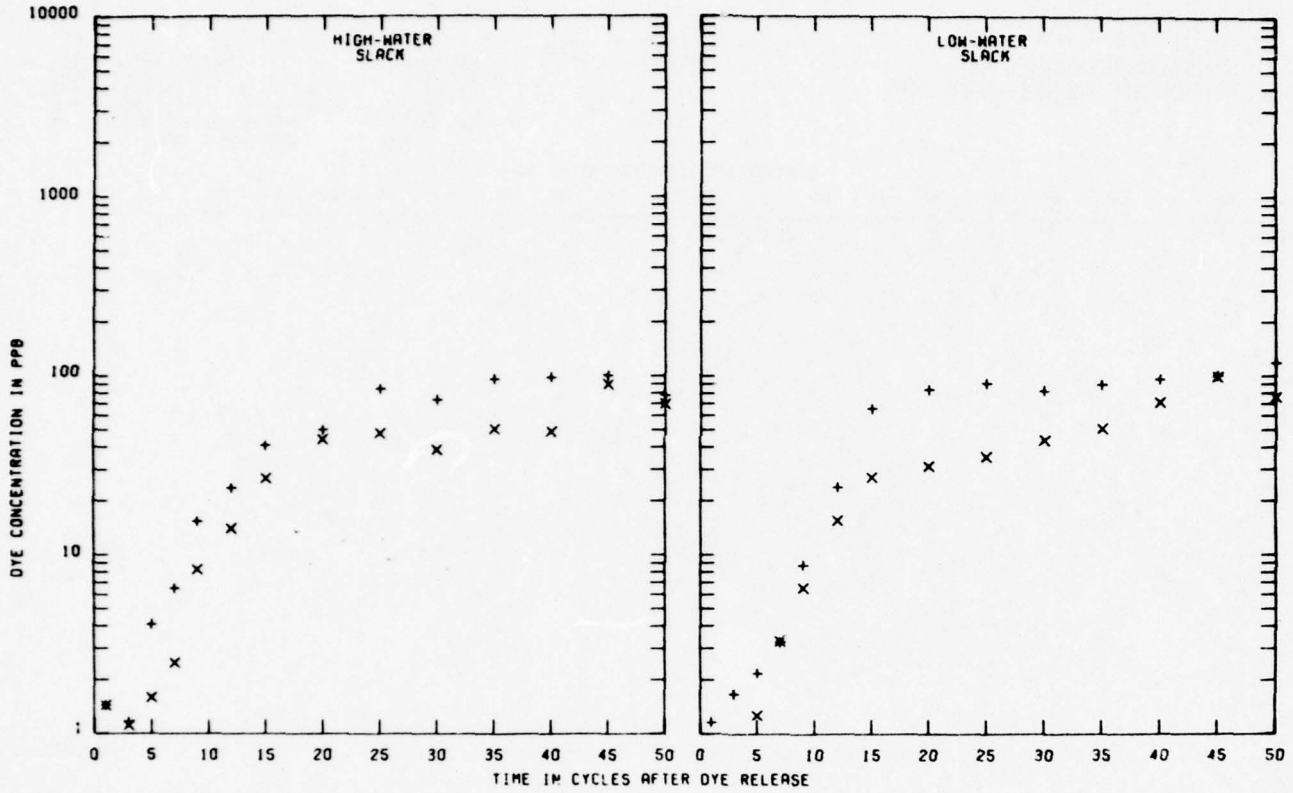
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M21



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

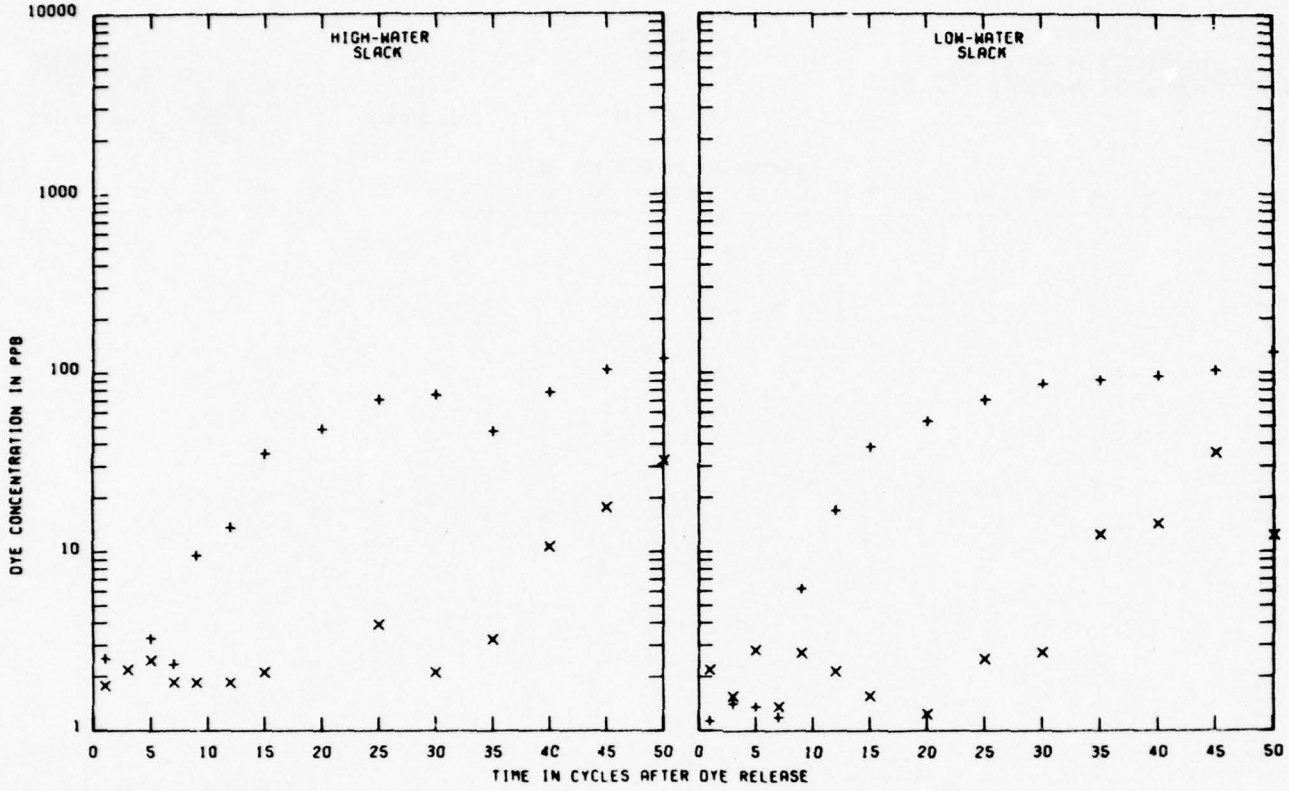
LEGEND

+ —·— SURFACE
× — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M22

PLATE 125

PLATE 126



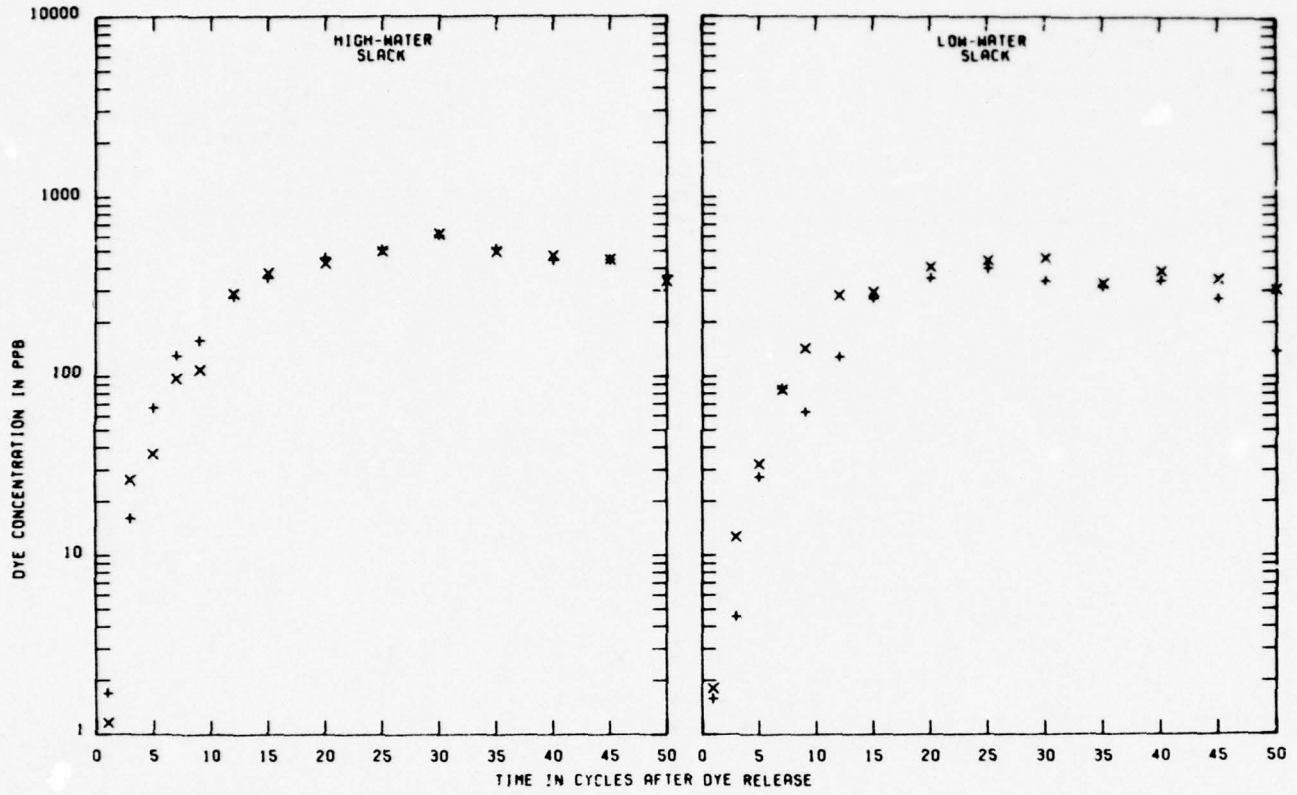
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M23



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

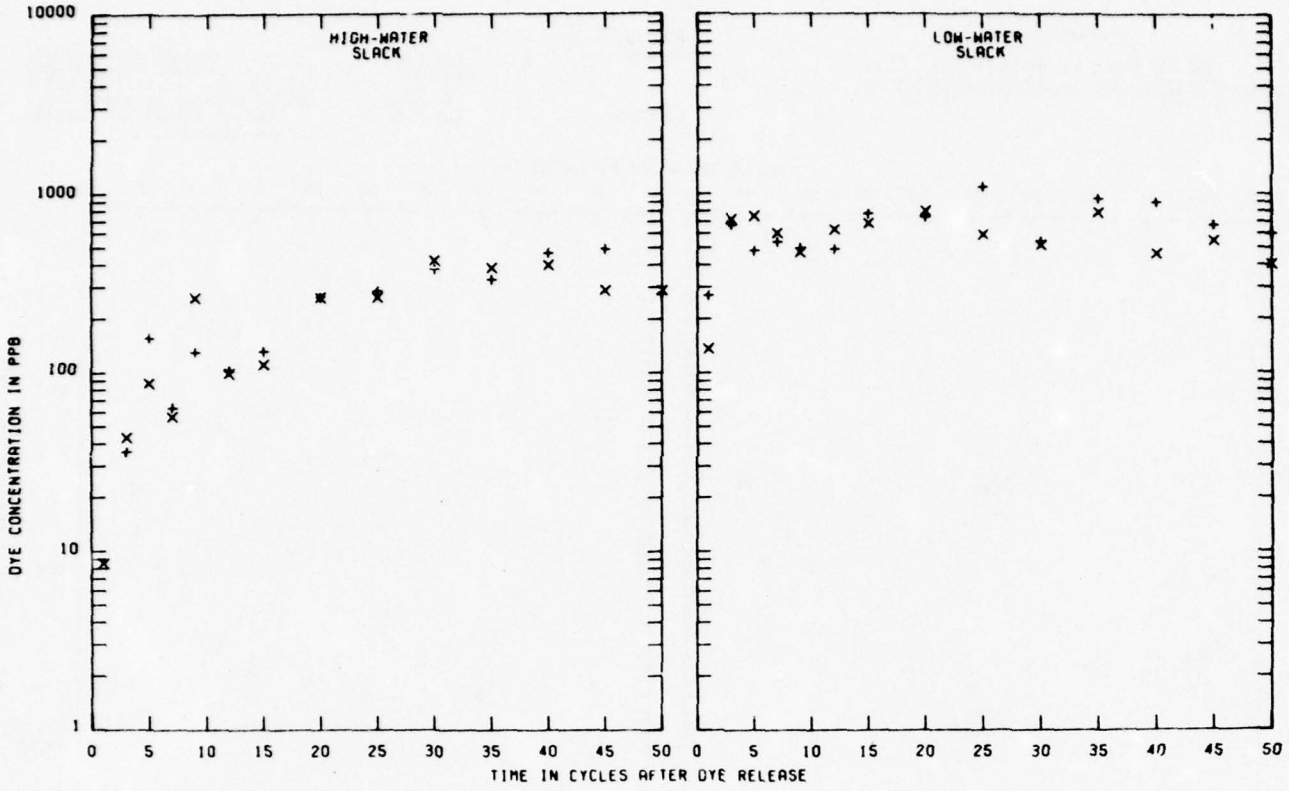
LEGEND

+ —·—·— SURFACE
× - - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M24

PLATE 127

PLATE 128



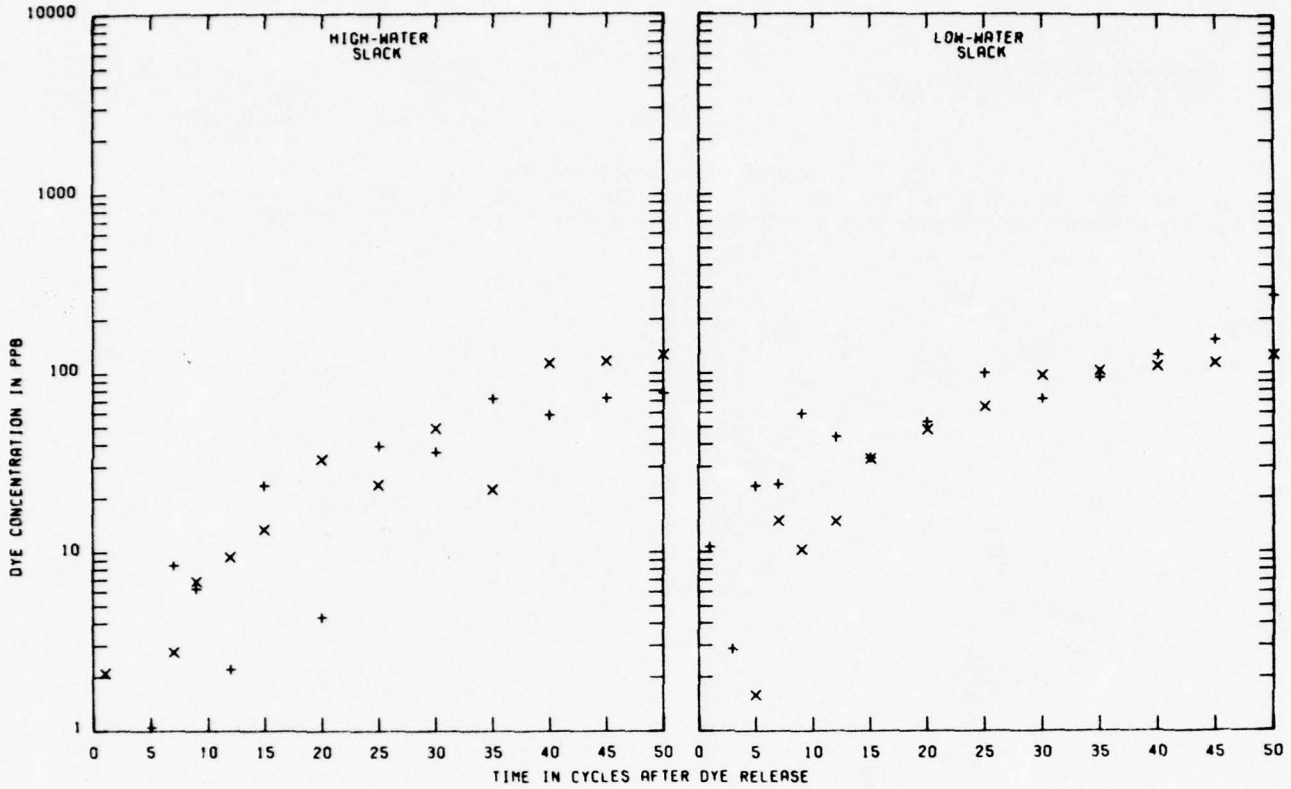
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4600 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M25



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

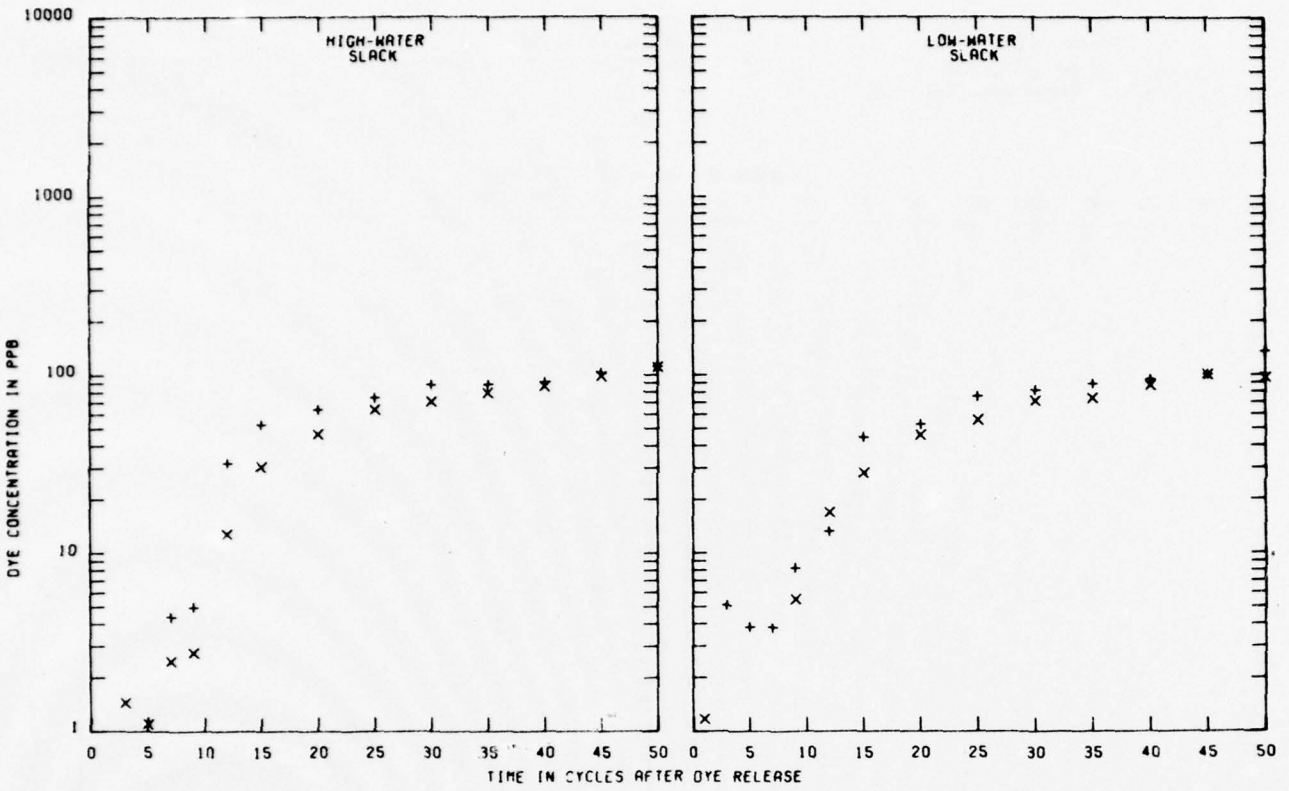
+ —·— SURFACE

× —··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M26

PLATE 129

PLATE 130



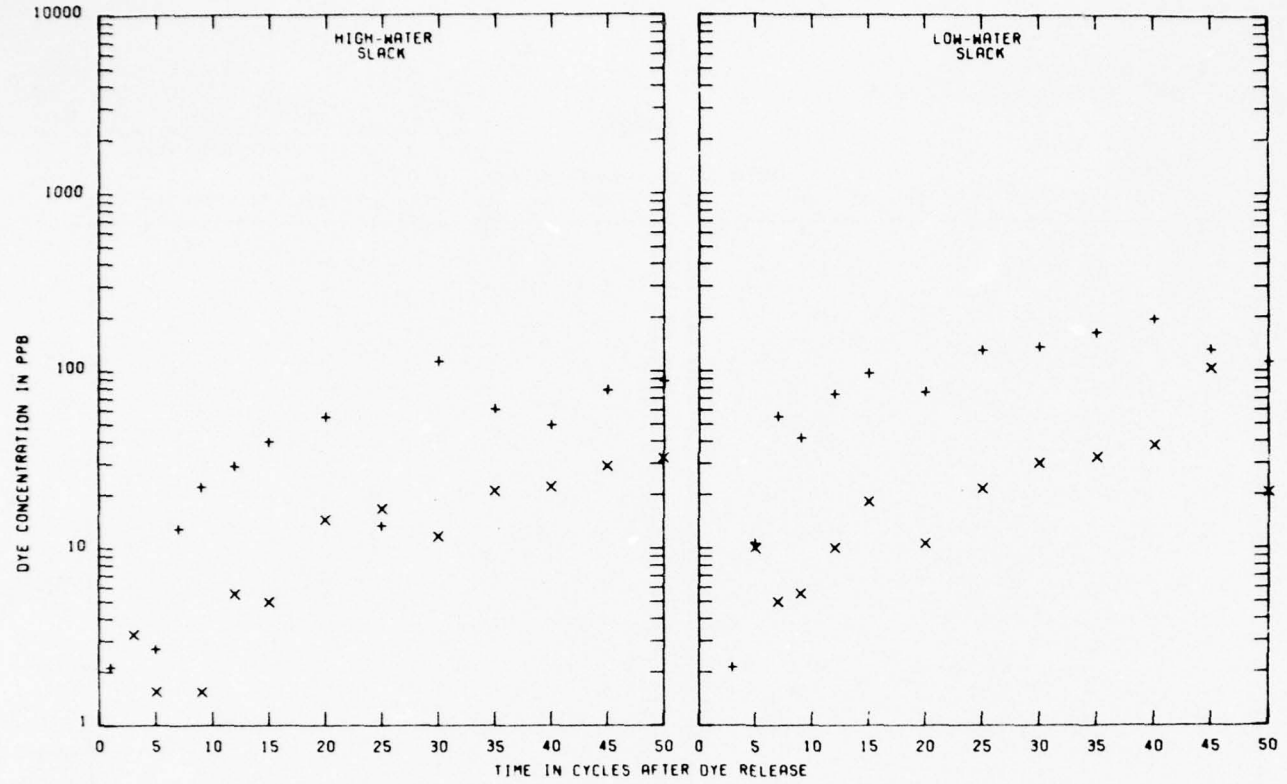
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A2
STATION M27



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

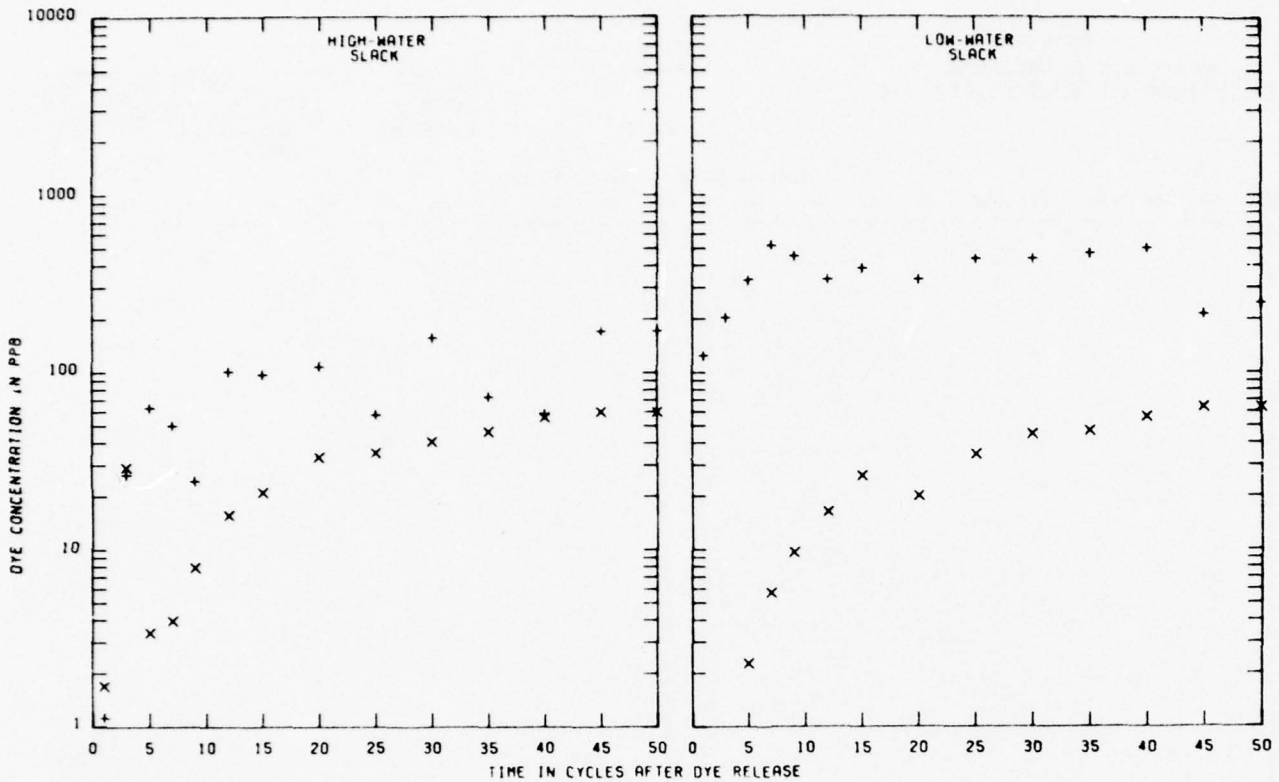
LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION 1

PLATE 131

PLATE 132



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

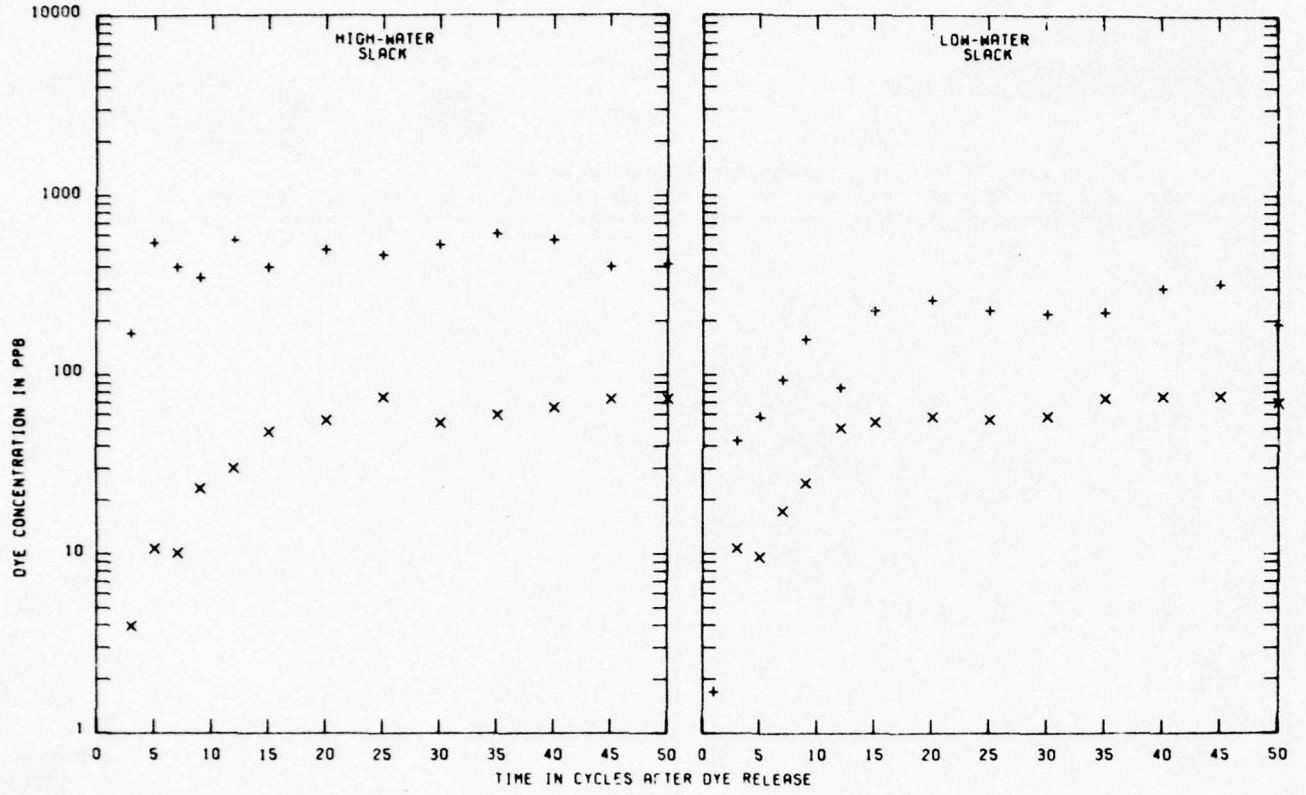
LEGEND

+ —·— SURFACE

× —··— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3

STATION 3



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

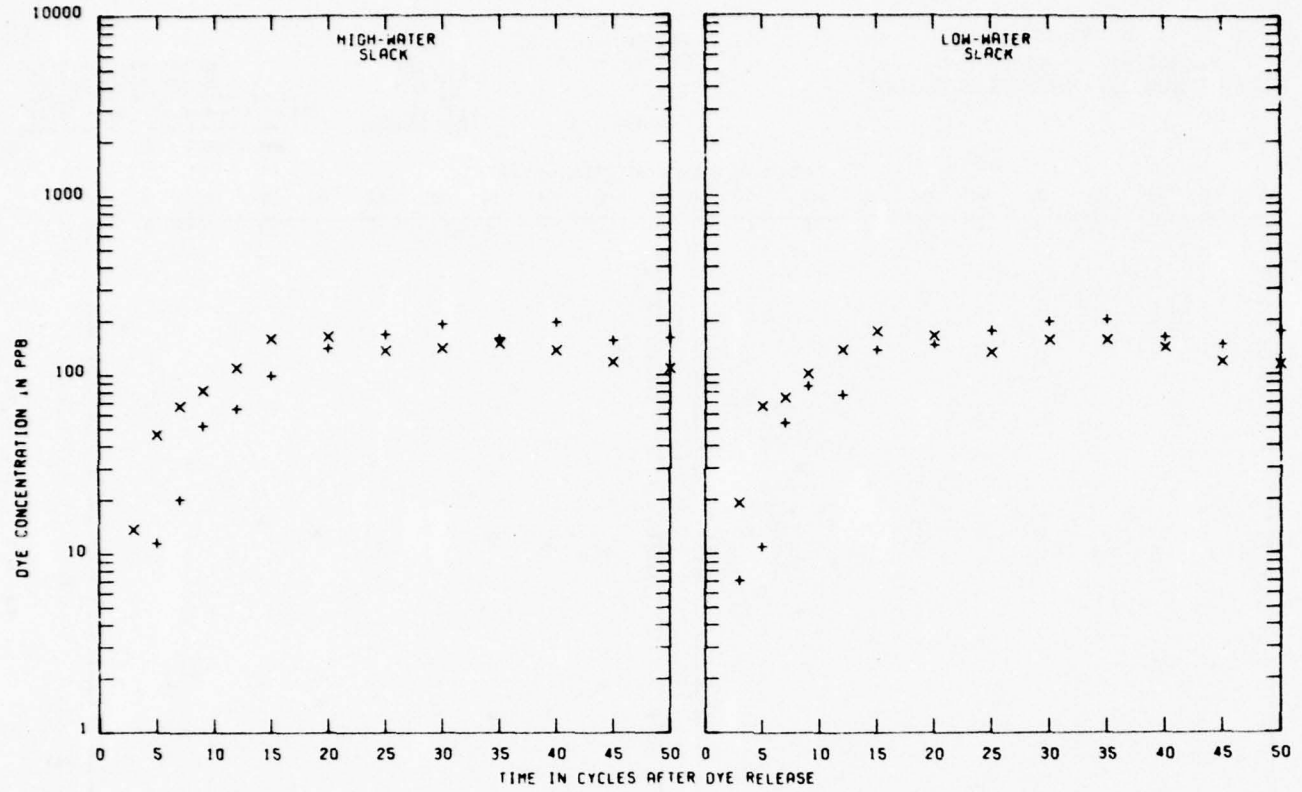
LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION 5

PLATE 133

PLATE 134



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

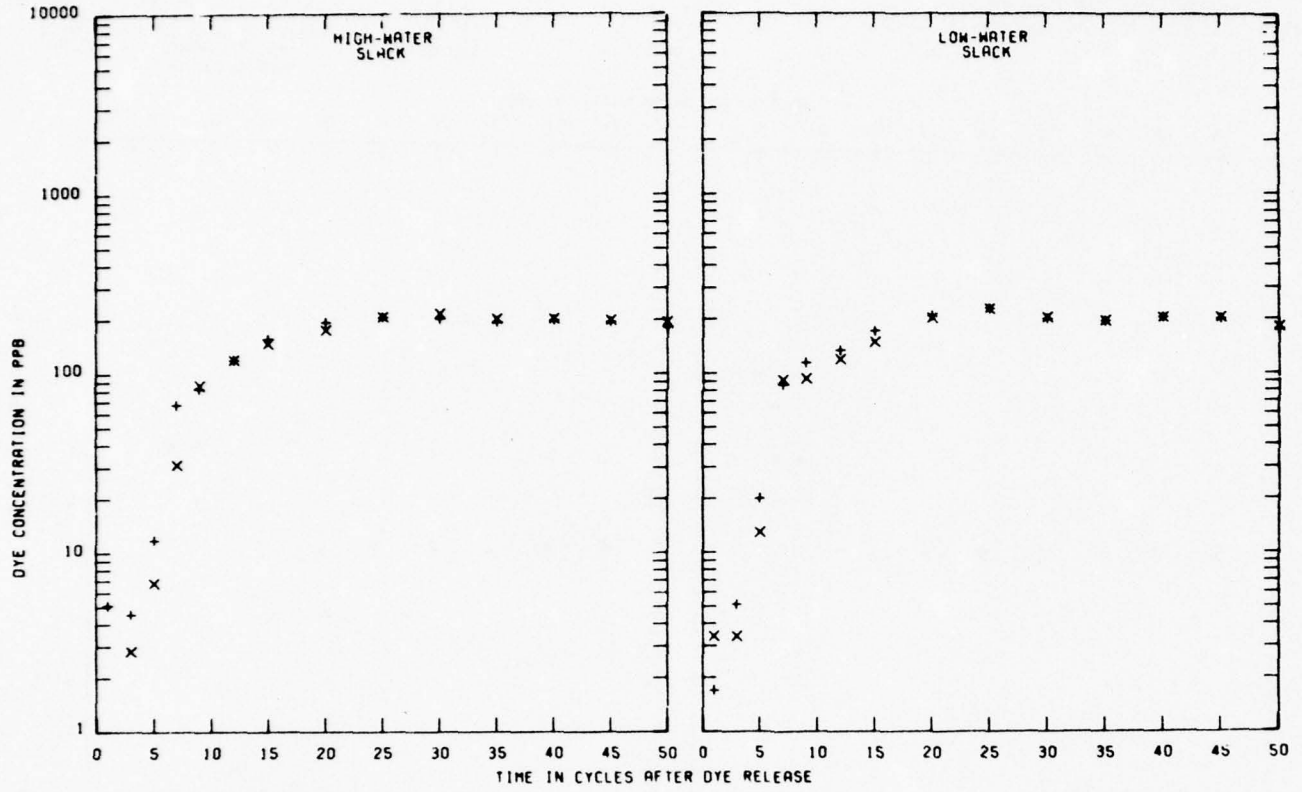
+ —·— SURFACE

× ---- BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION 7



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× —·—·— BOTTOM

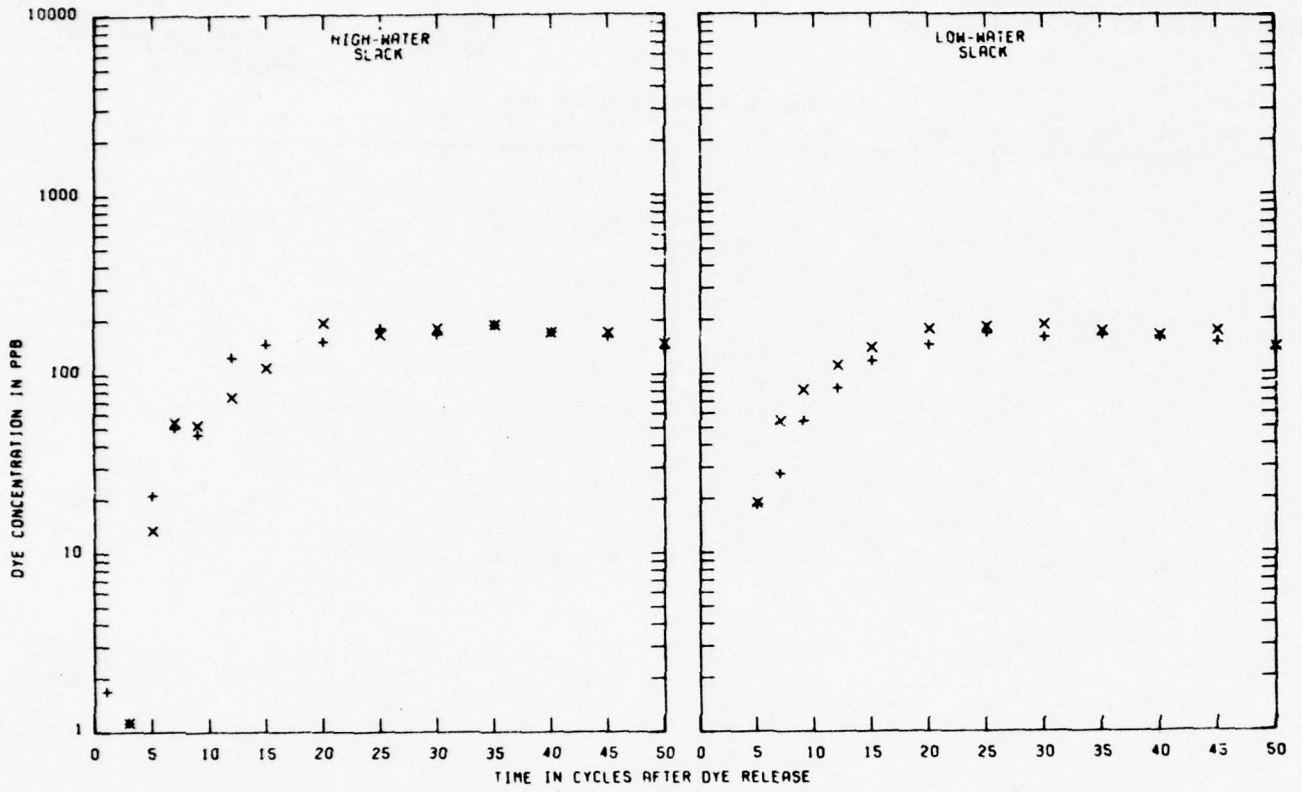
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION T1

PLATE 135

PLATE 136



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

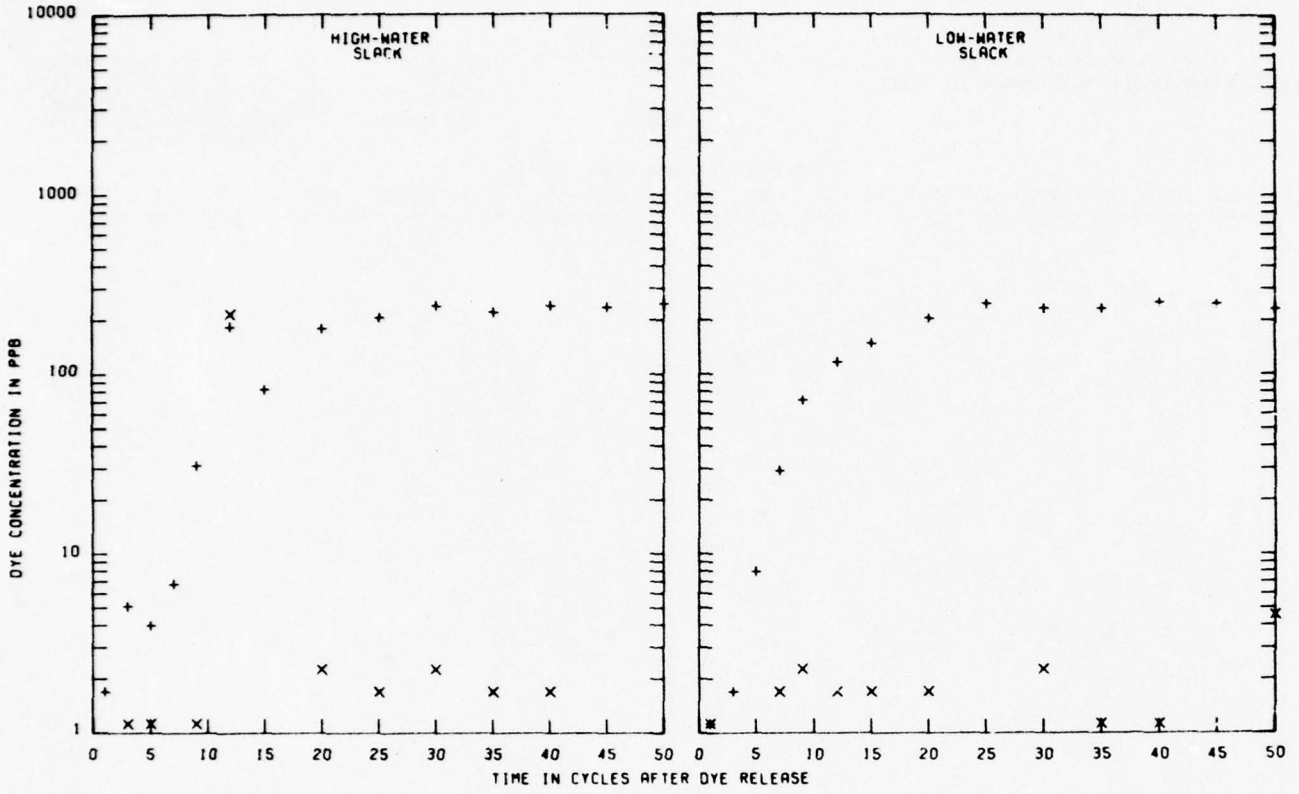
+ —·—·— SURFACE

× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION T2



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

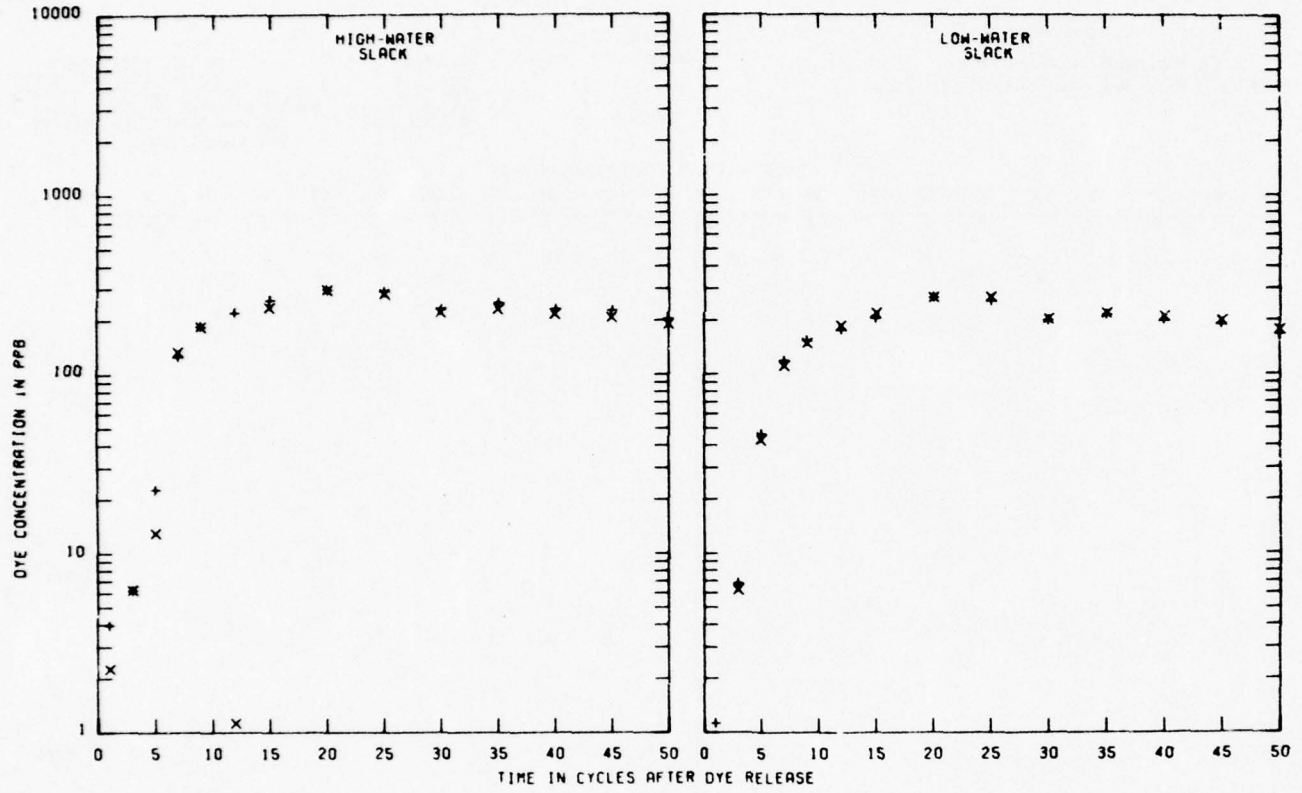
LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION T3

PLATE 137

PLATE 138



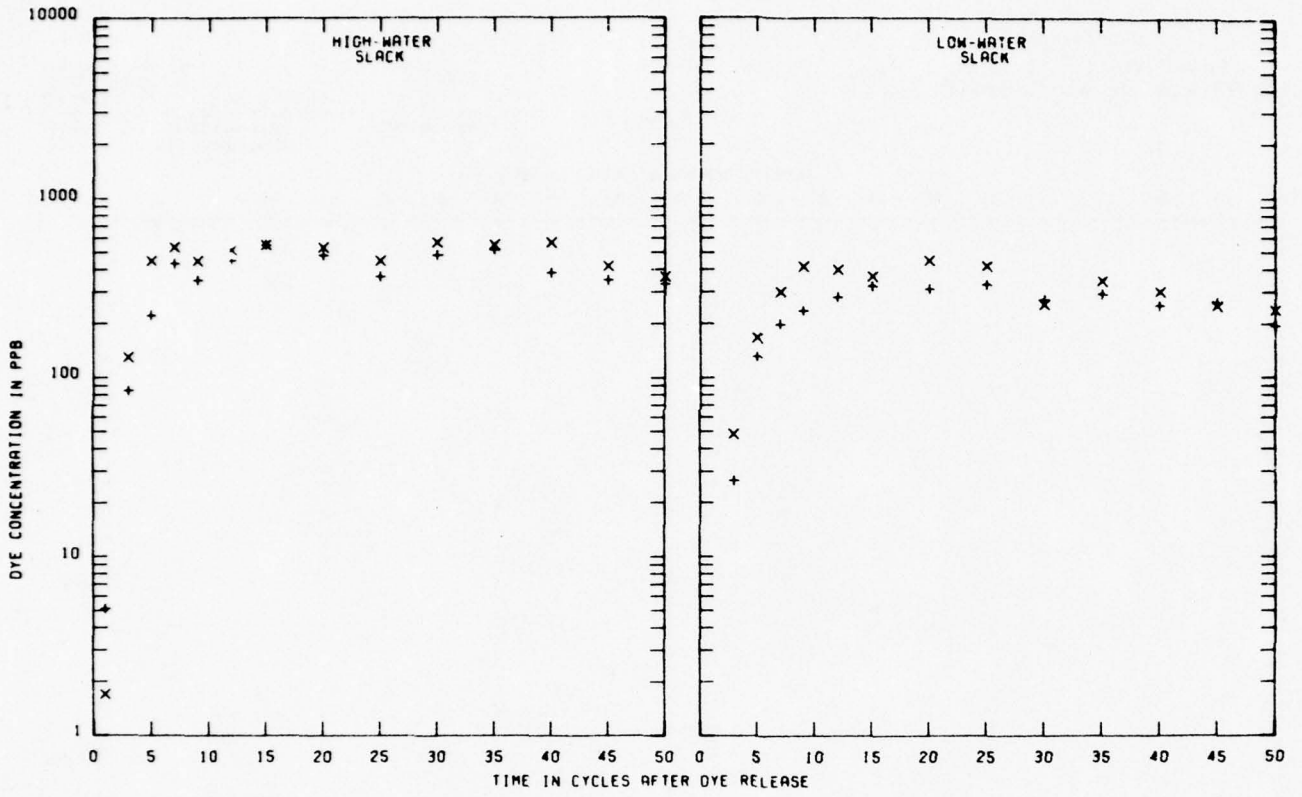
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION T4



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

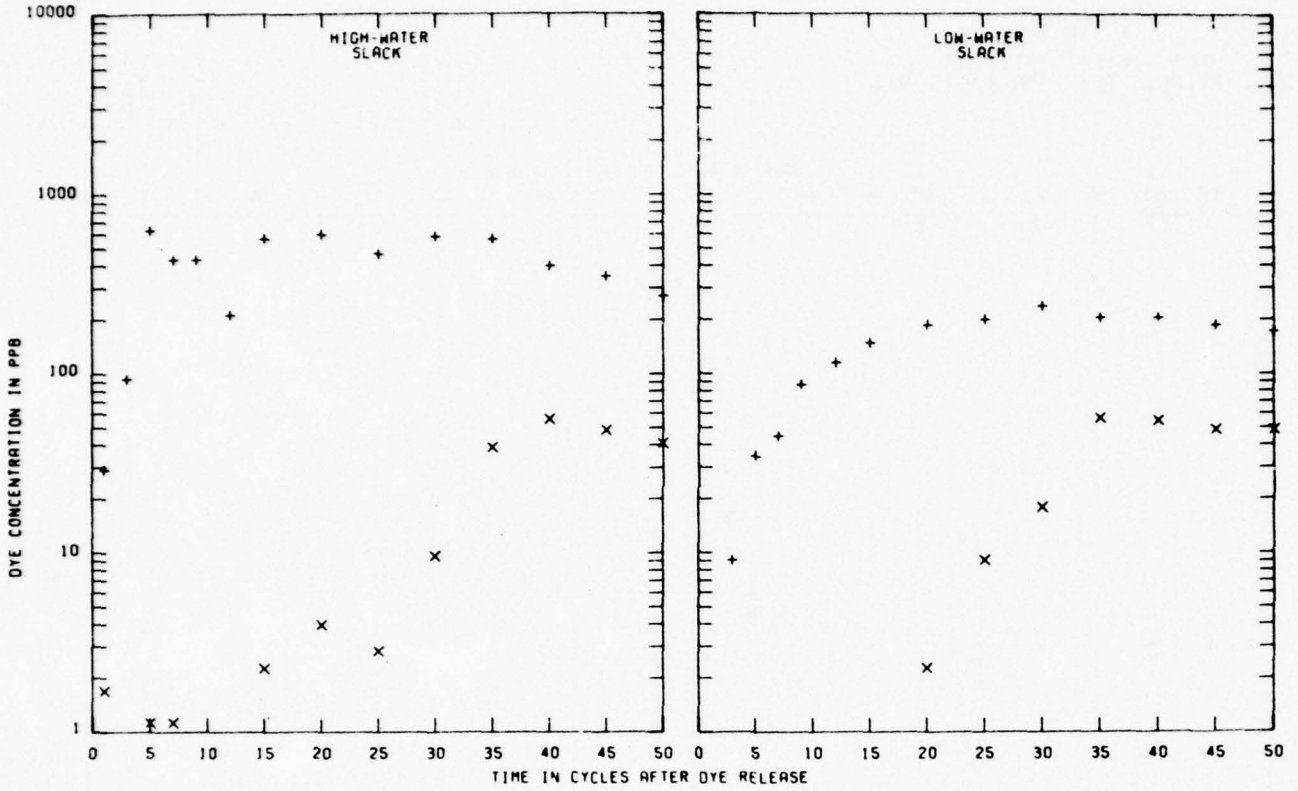
LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION T5

PLATE 139

PLATE 140



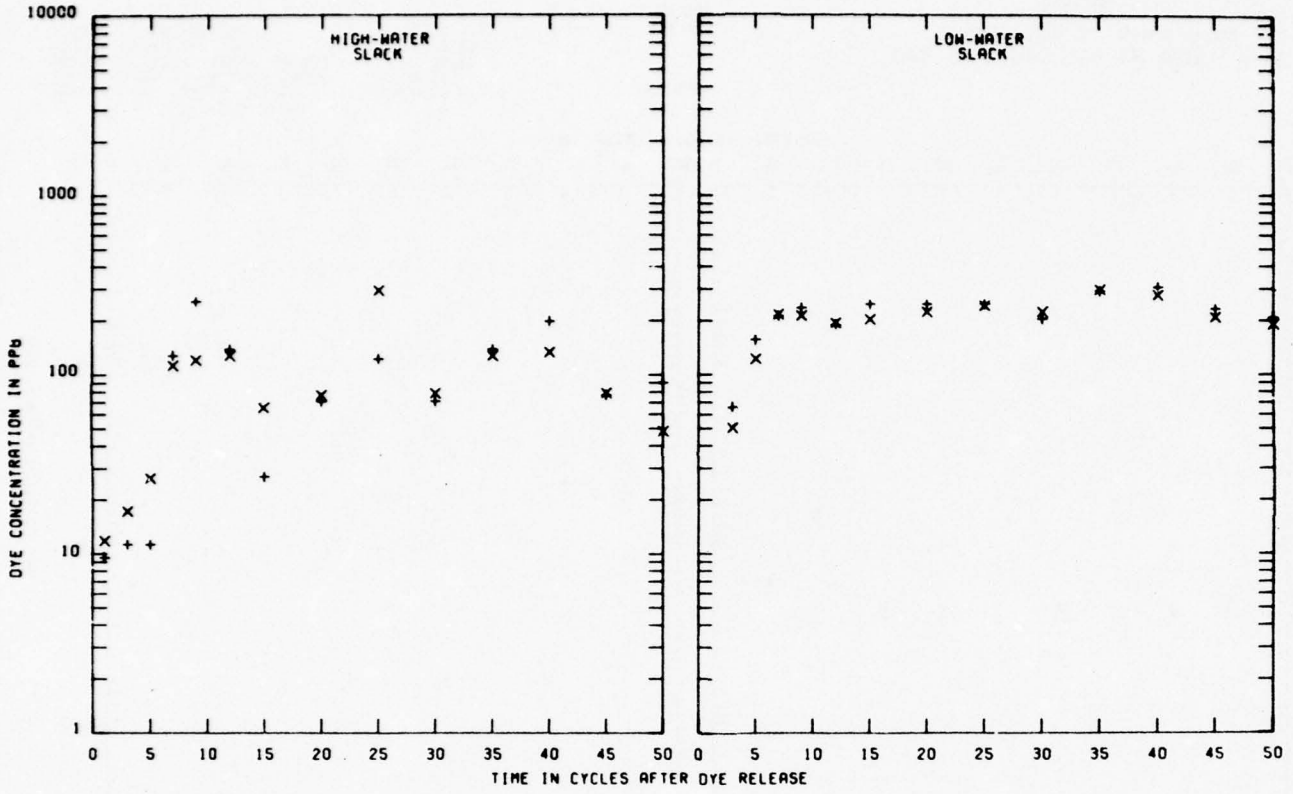
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× — · — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION TSC



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

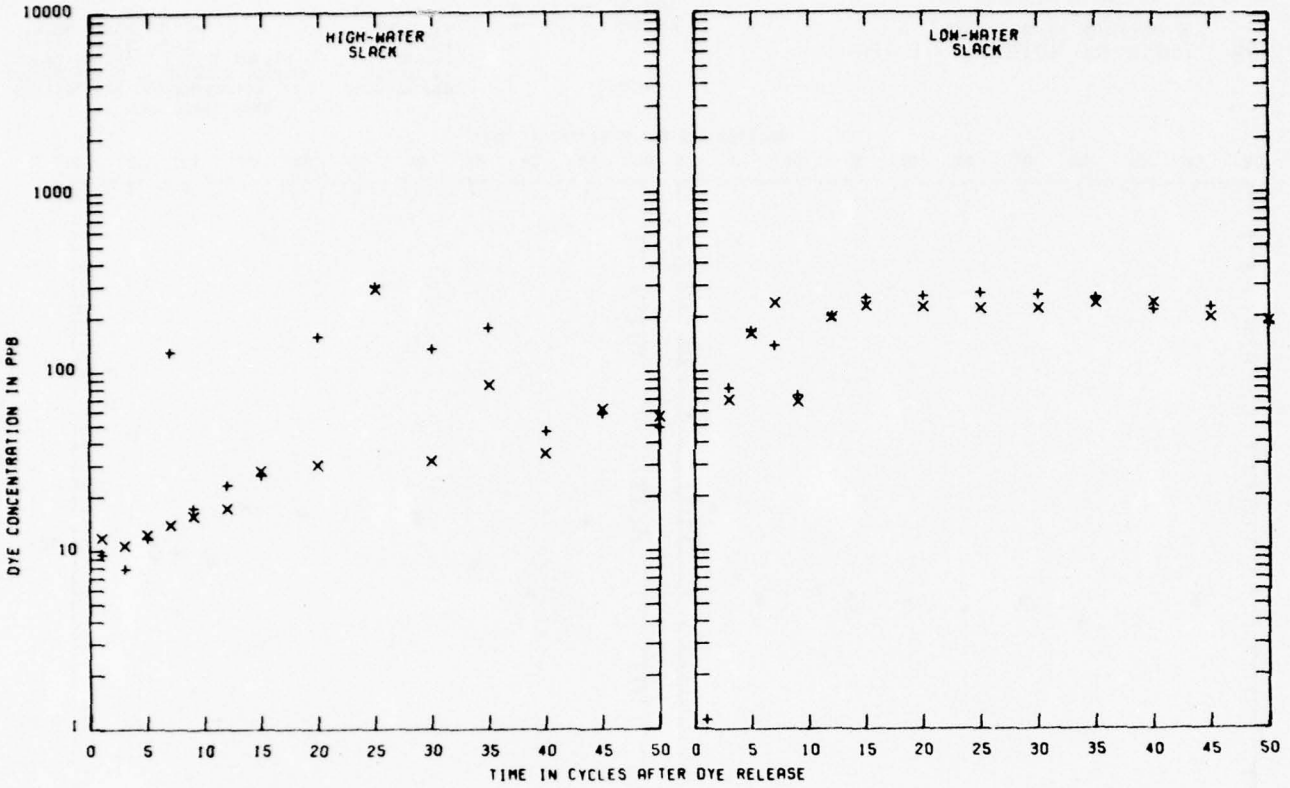
LEGEND

+ —·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION S4

PLATE 141

PLATE 142



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

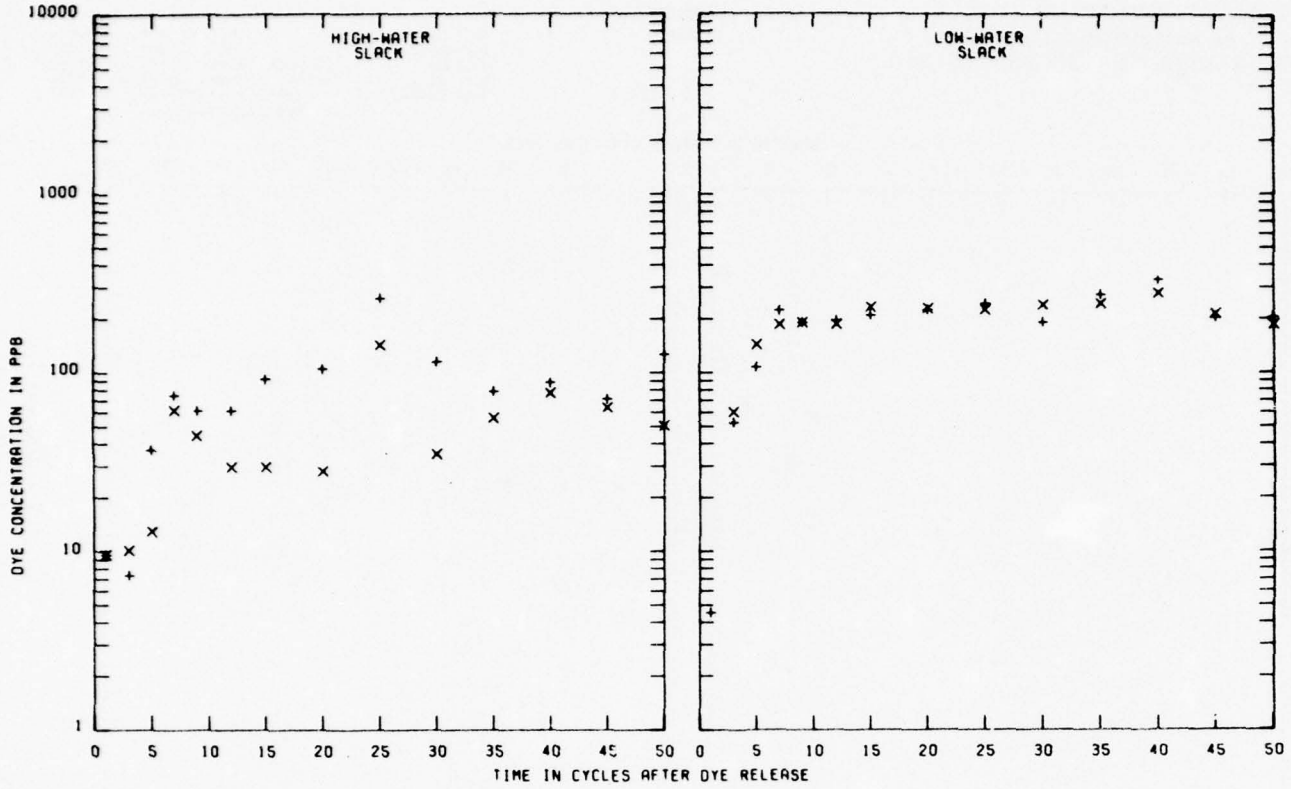
\+ —·— SURFACE

× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION S5



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

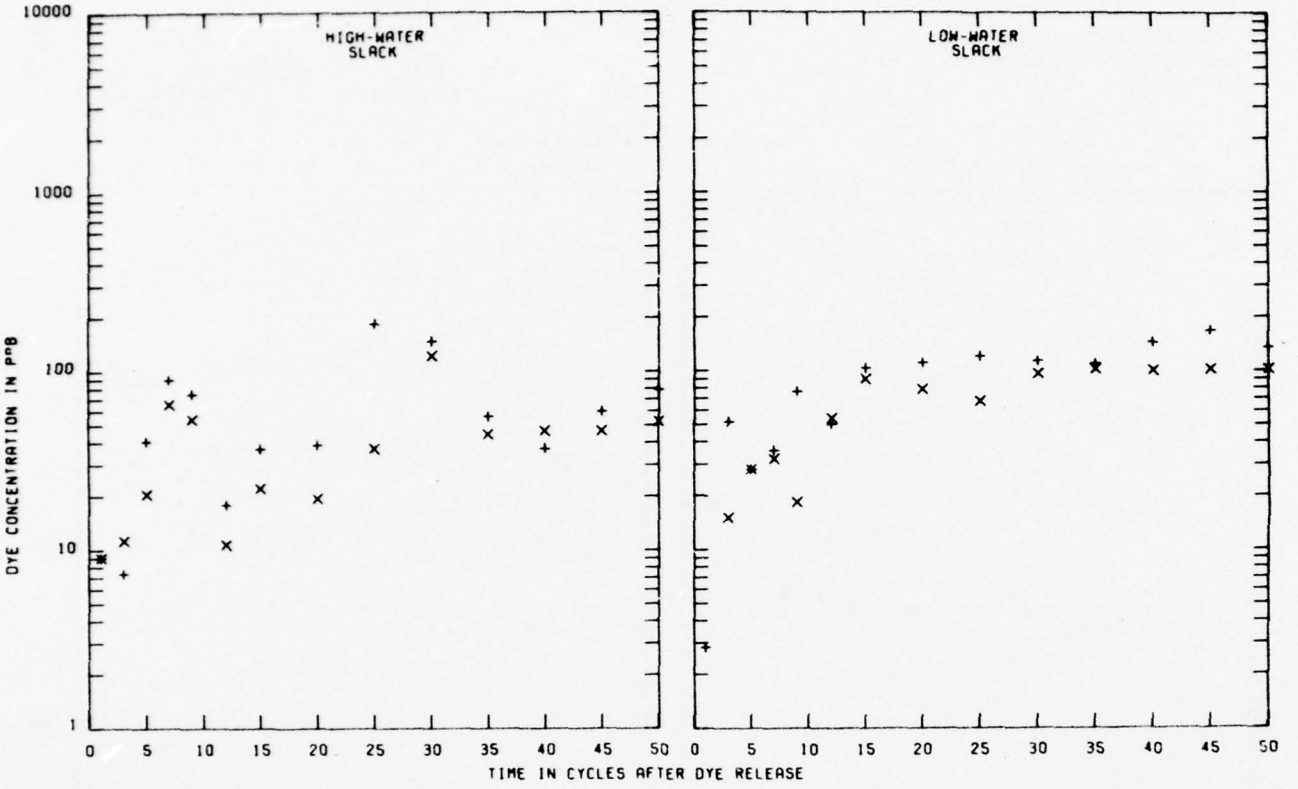
LEGEND

+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION S7

PLATE 143

PLATE 144



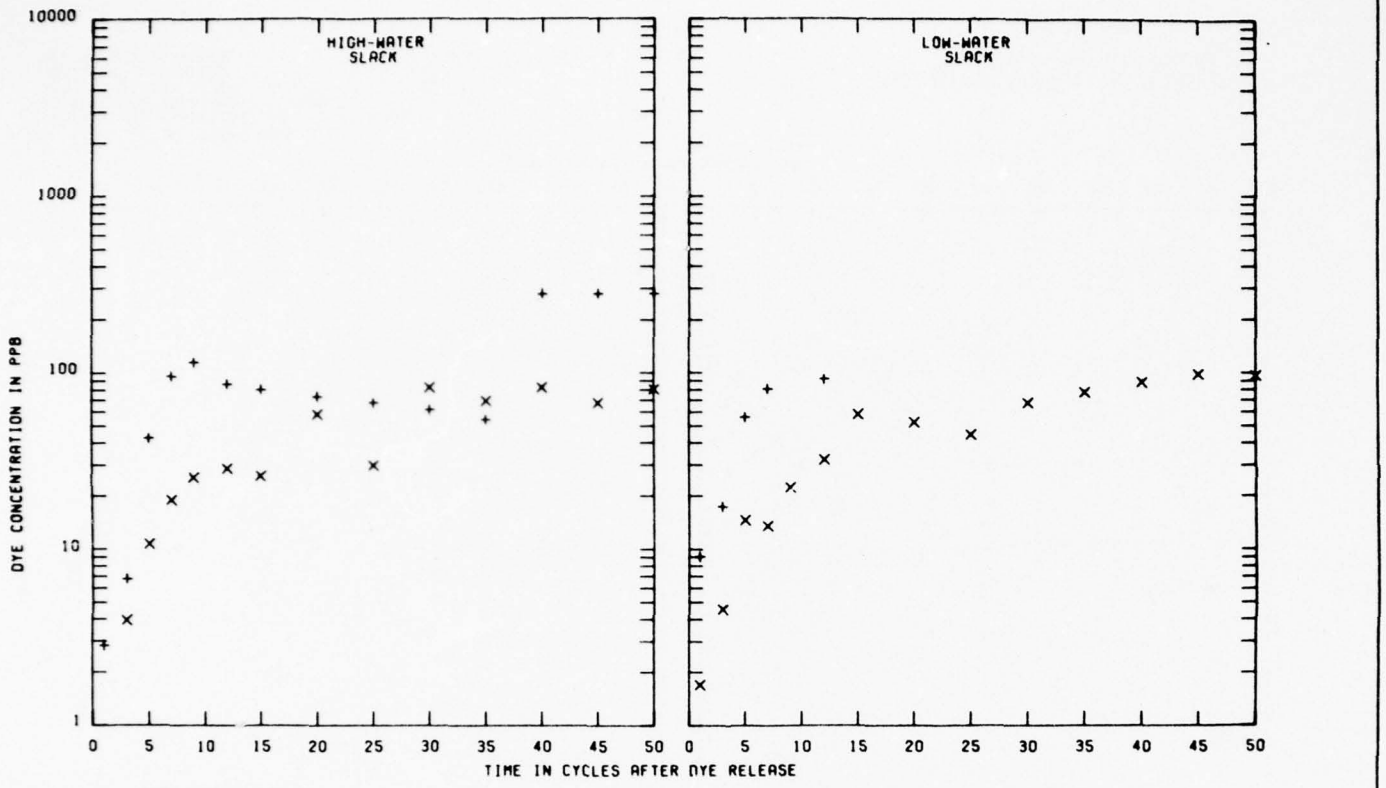
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION S10



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

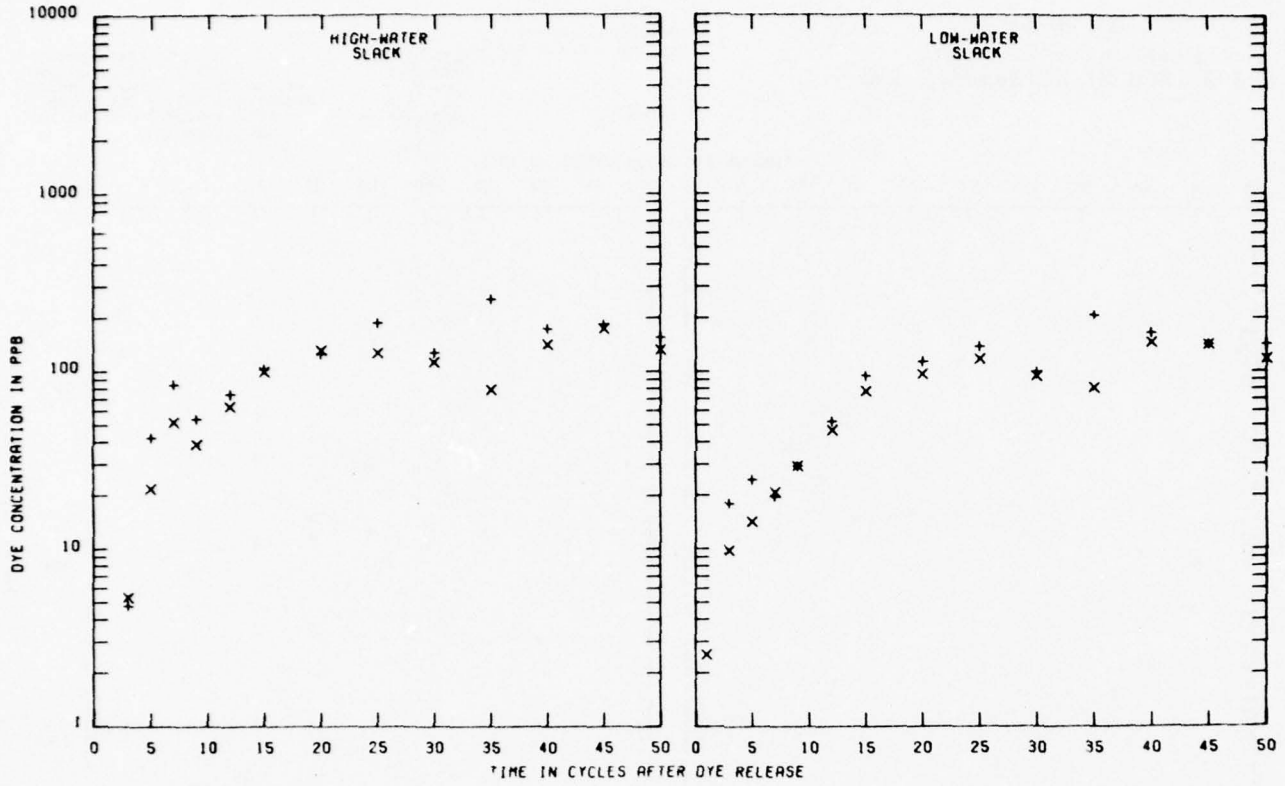
LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION S12

PLATE 145

PLATE 146



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

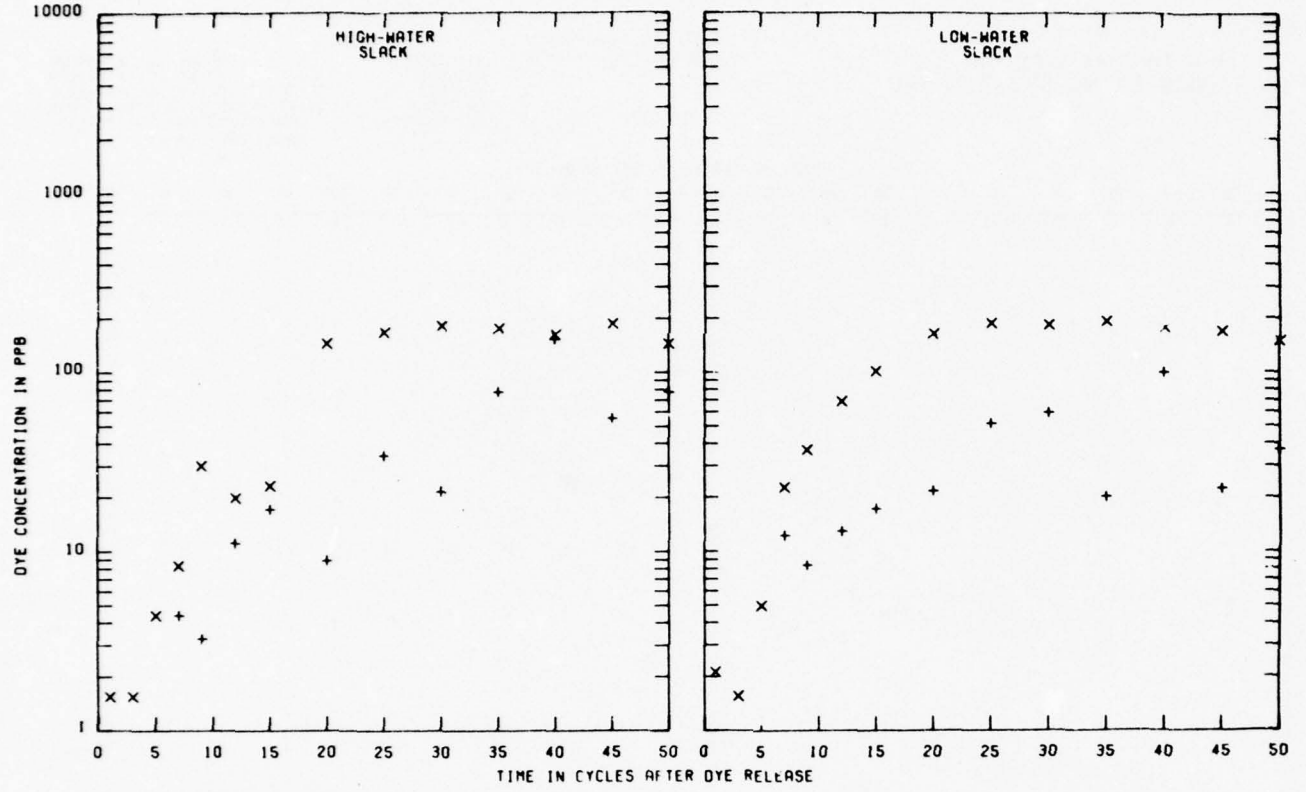
+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION S14



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

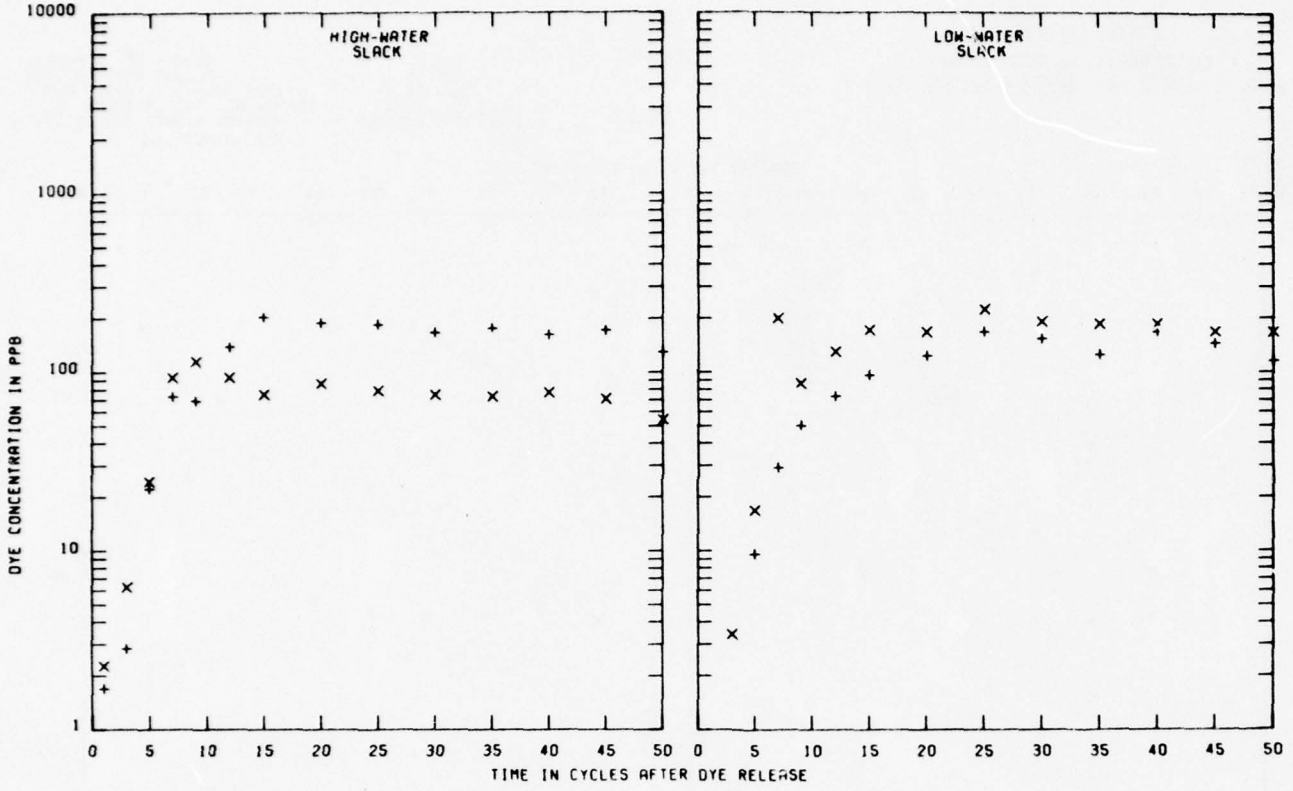
LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M1

PLATE 147

PLATE 148



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

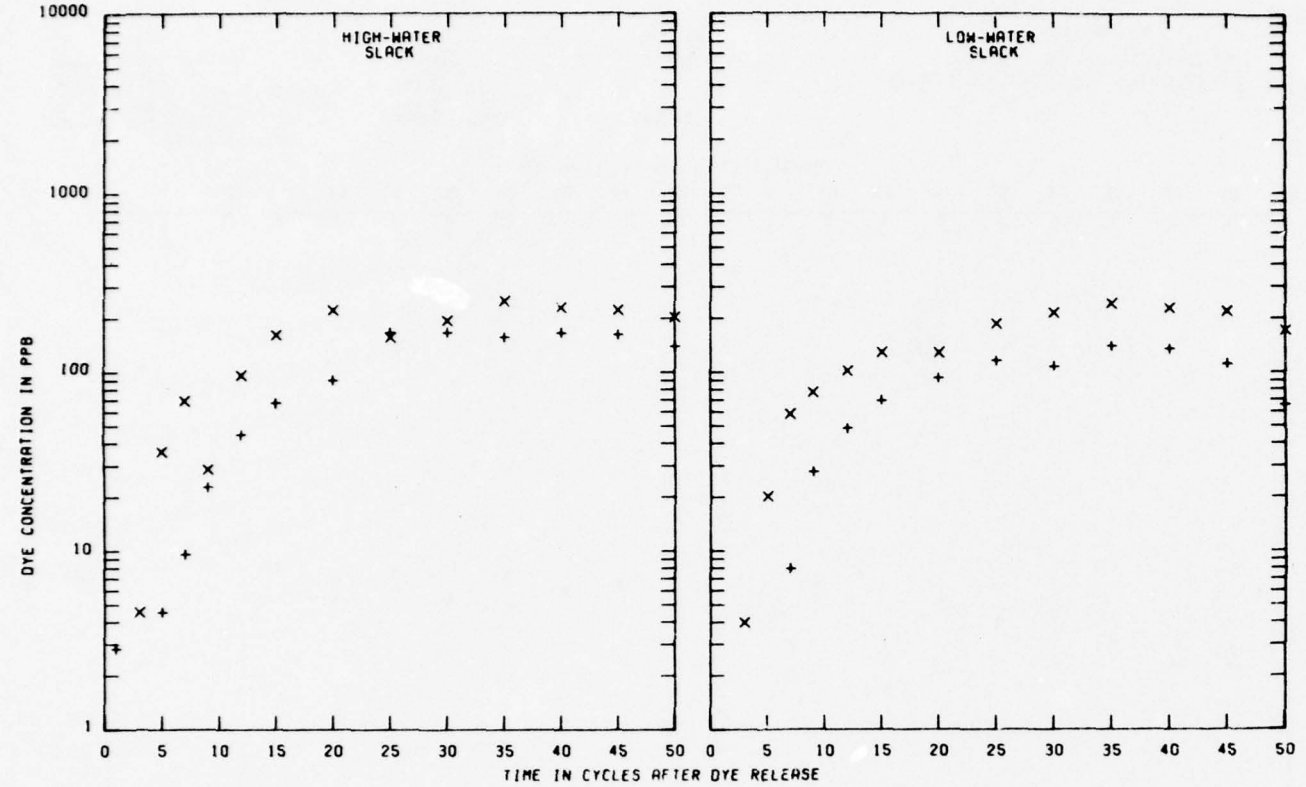
+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M2



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

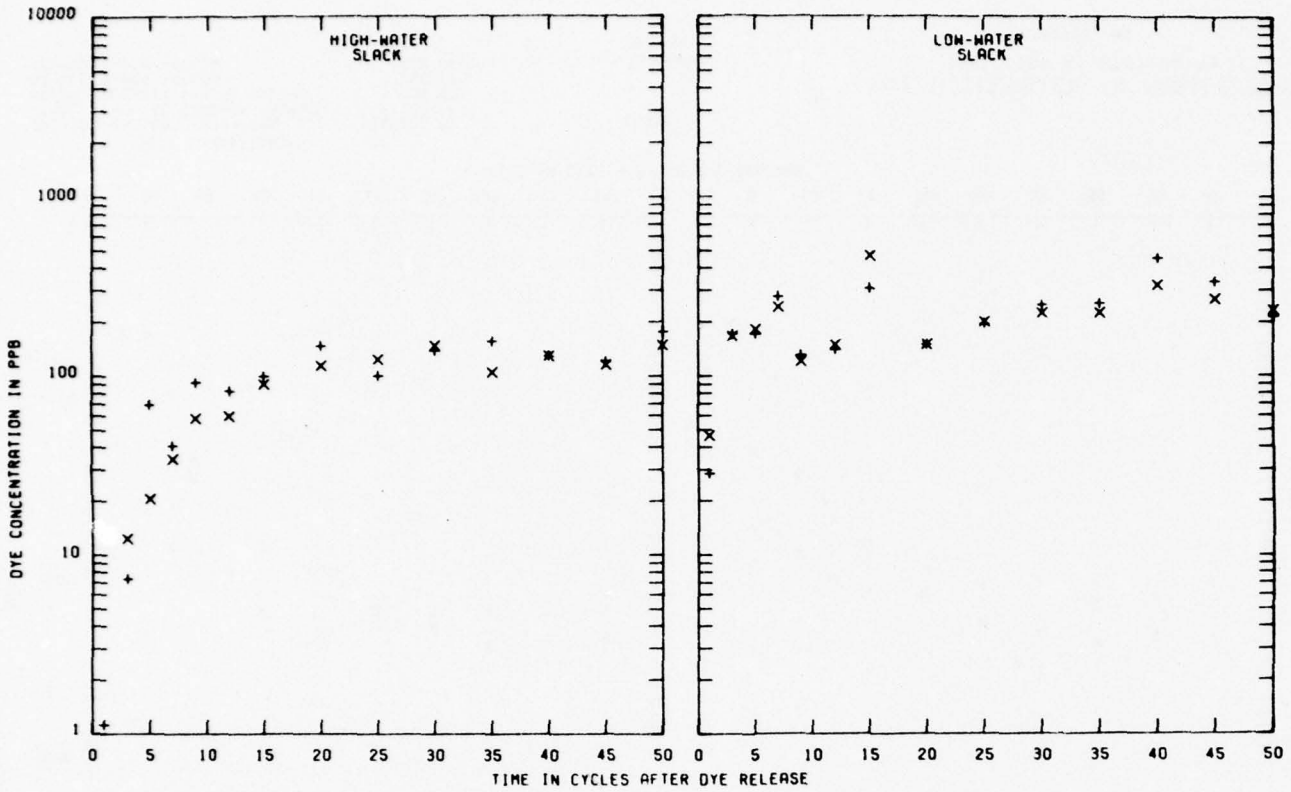
LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M3

PLATE 149

PLATE 150



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M4

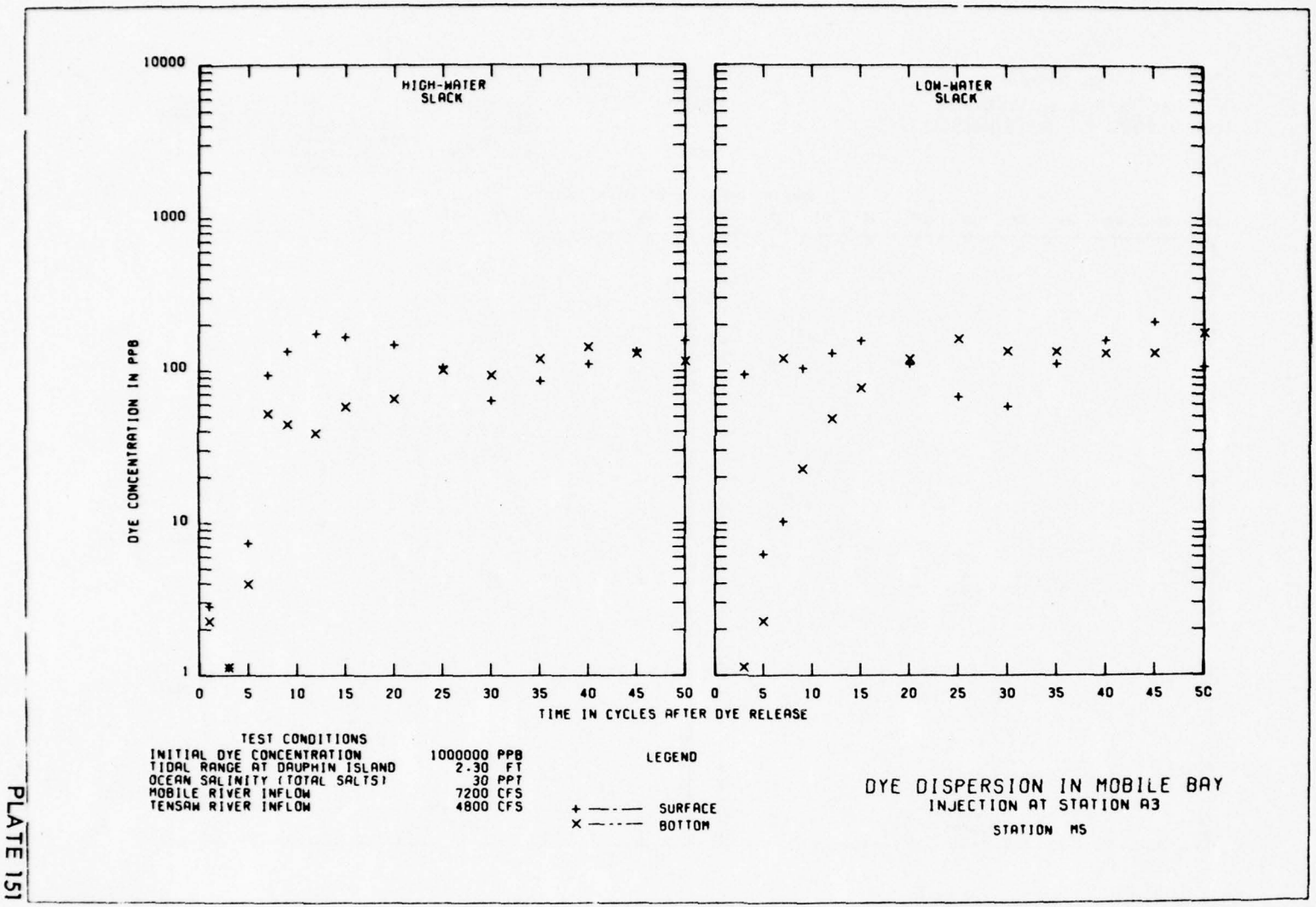
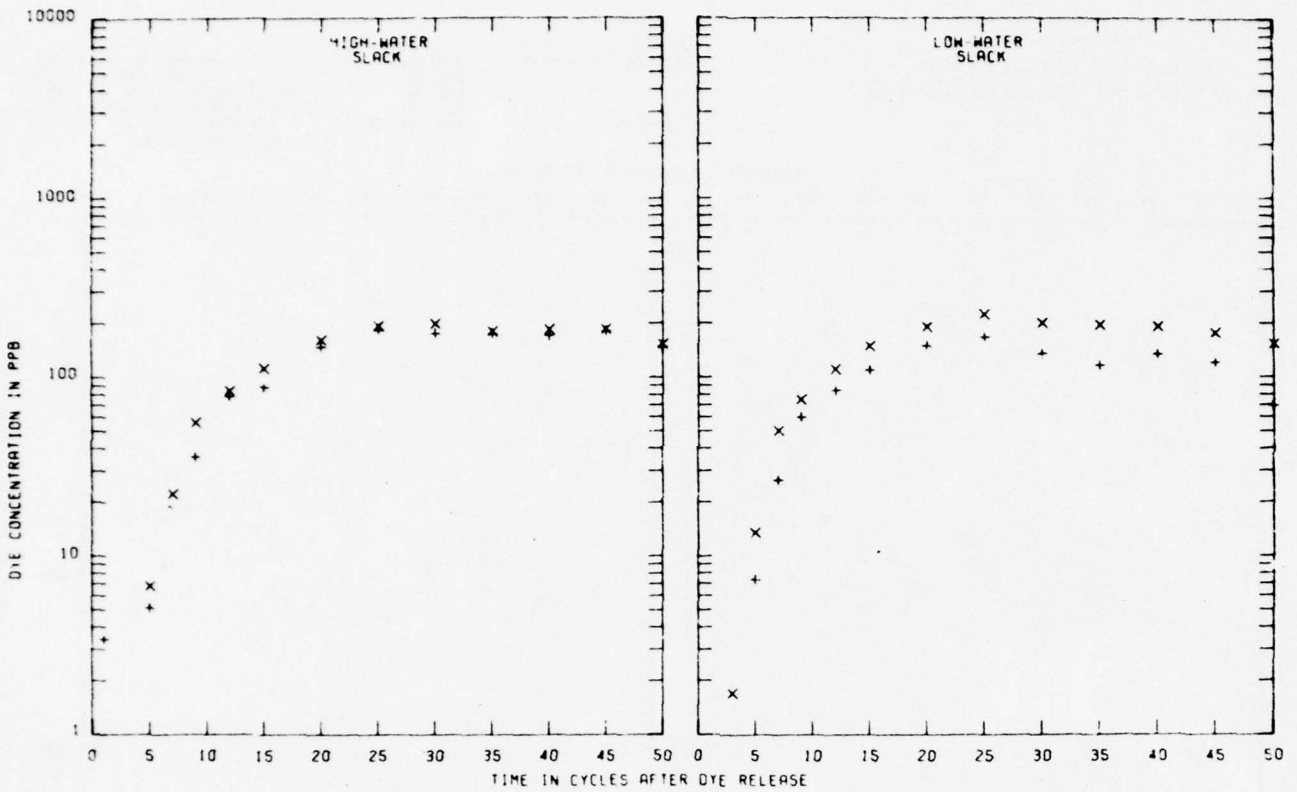

HIGH-WATER SLACK
LOW-WATER SLACK
DYE CONCENTRATION IN PPB
10000
1000
100
10
1
0 5 10 15 20 25 30 35 40 45 50
TIME IN CYCLES AFTER DYE RELEASE
TEST CONDITIONS
INITIAL DYE CONCENTRATION 1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND 2.30 FT
OCEAN SALINITY (TOTAL SALTS) 30 PPT
MOBILE RIVER INFLOW 7200 CFS
TENSAW RIVER INFLOW 4800 CFS
LEGEND
SURFACE
BOTTOM
DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION MS

PLATE 151

PLATE 152



TEST CONDITIONS

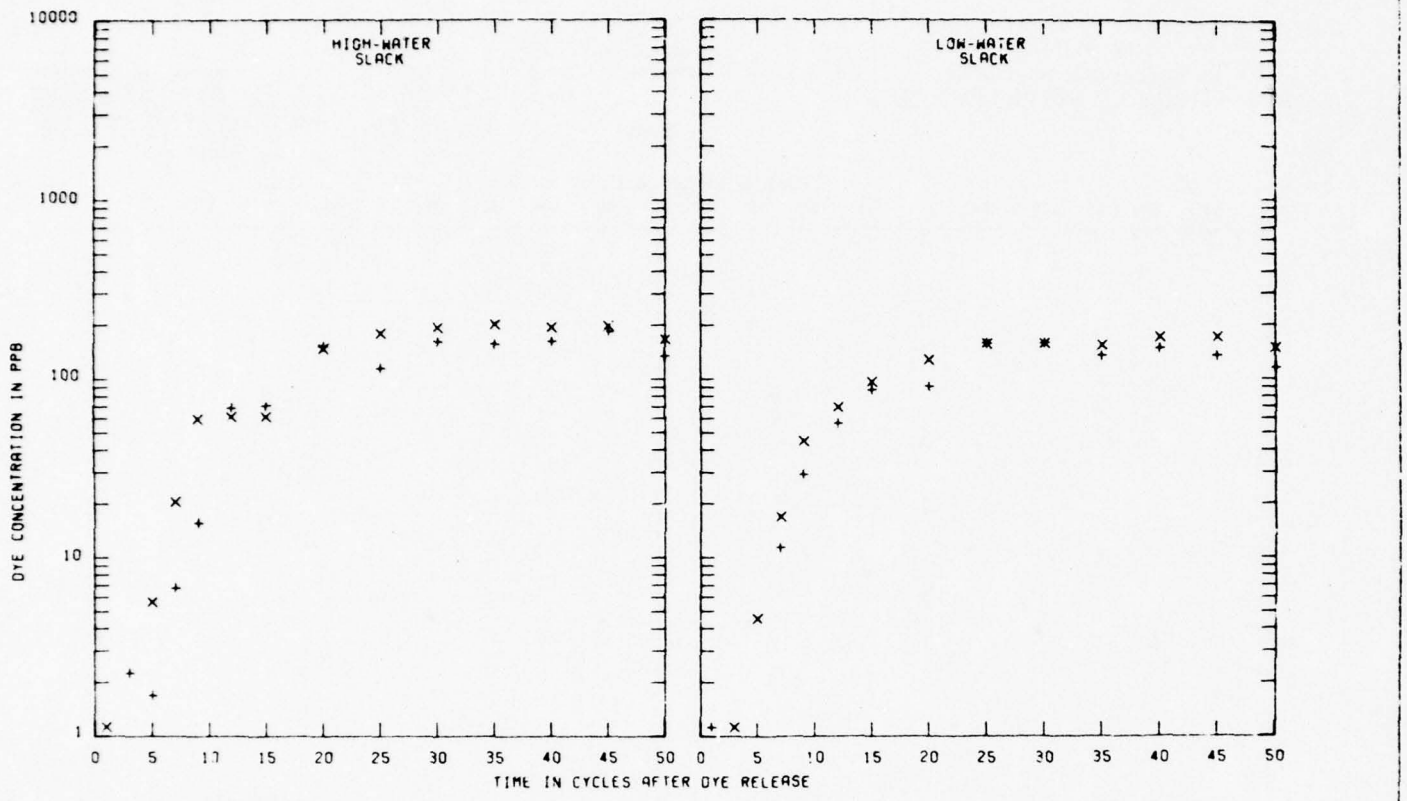
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ ——— SURFACE

× ——— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M6



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

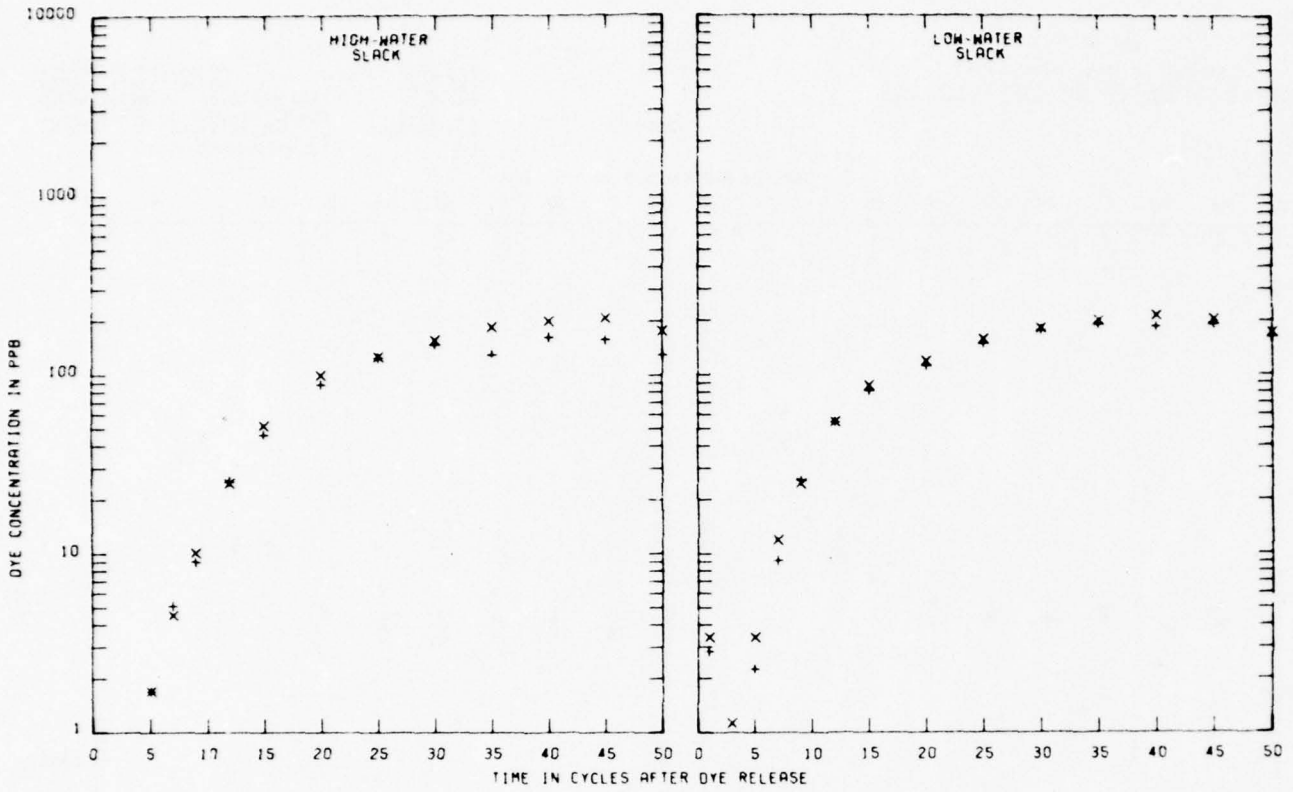
\+ —·—·— SURFACE

× — - — - — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M7

PLATE 153

PLATE 154



TEST CONDITIONS

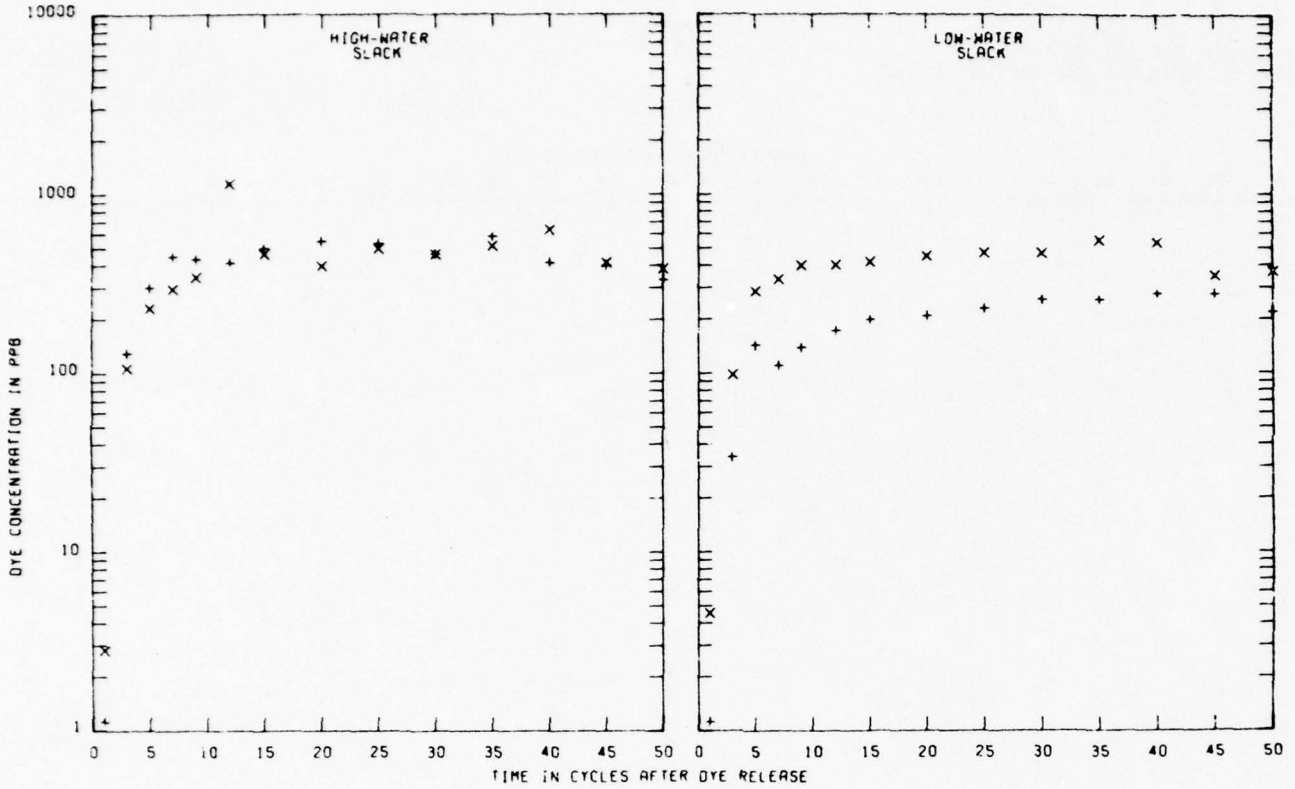
INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION MB



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

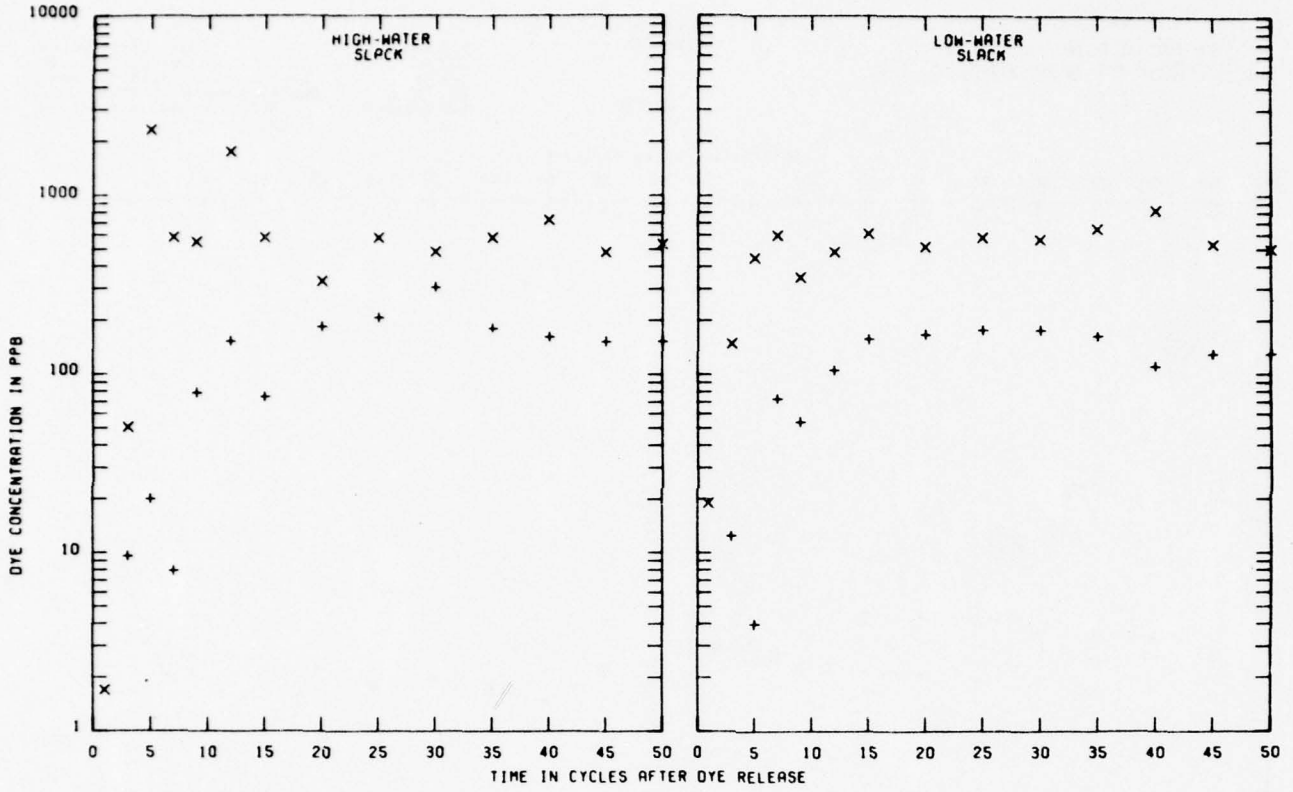
+ —·—·— SURFACE

× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M9

PLATE 155

PLATE 156



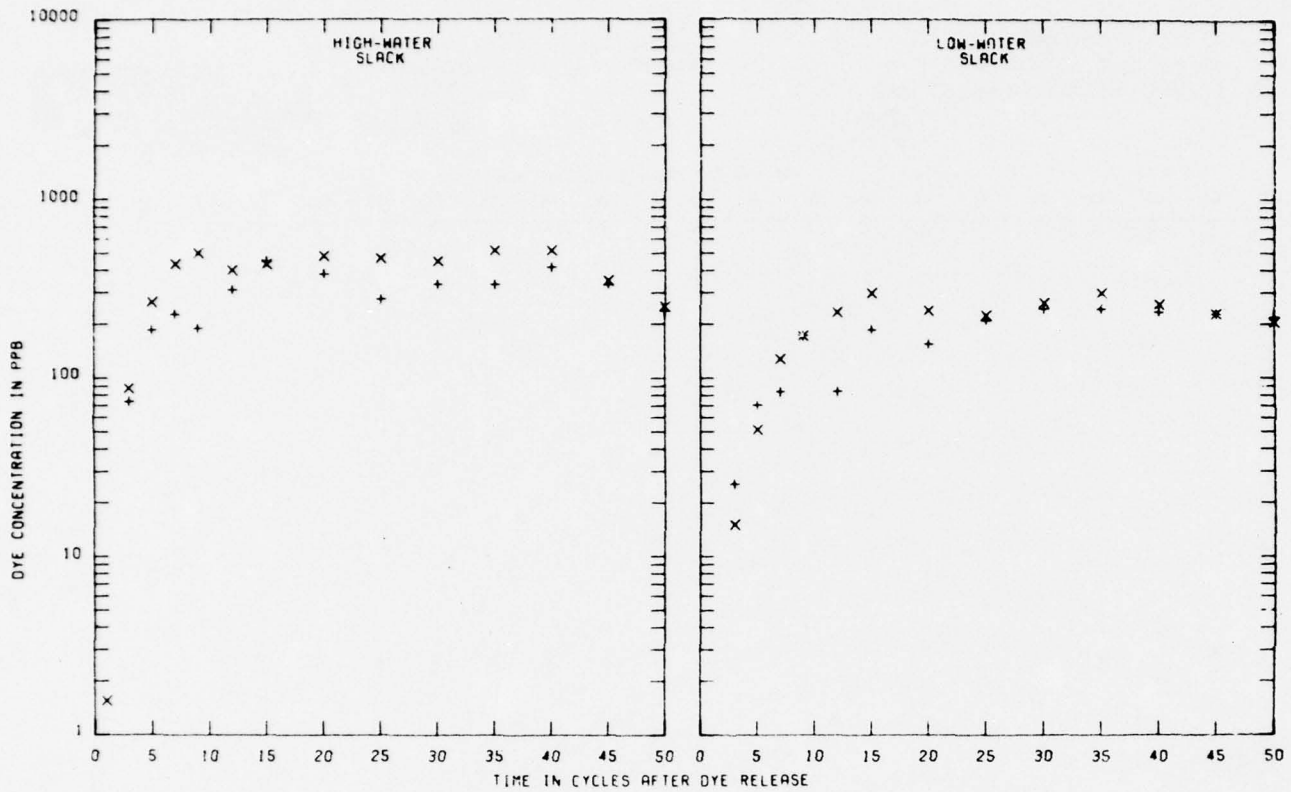
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—· SURFACE
× - - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M10



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ — — — SURFACE

× — — — BOTTOM

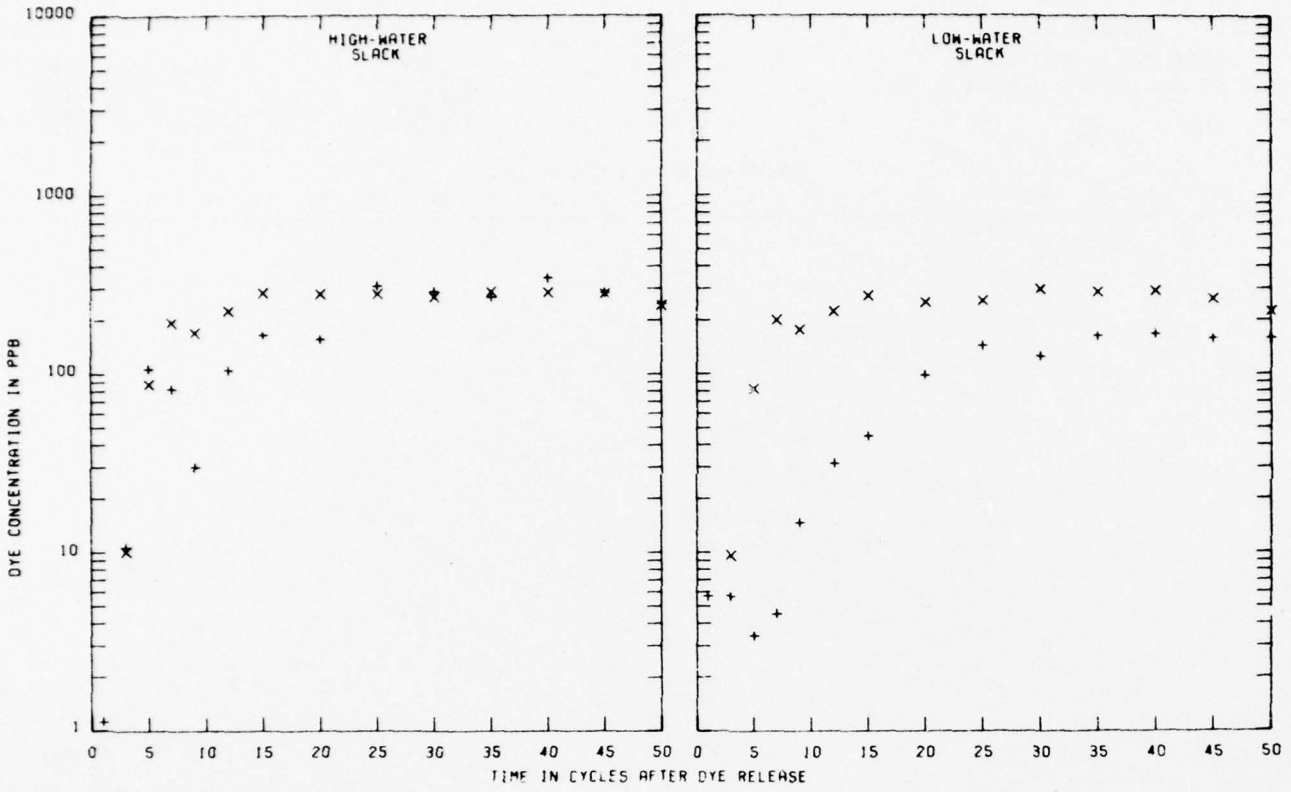
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M11

PLATE 157

PLATE 158



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

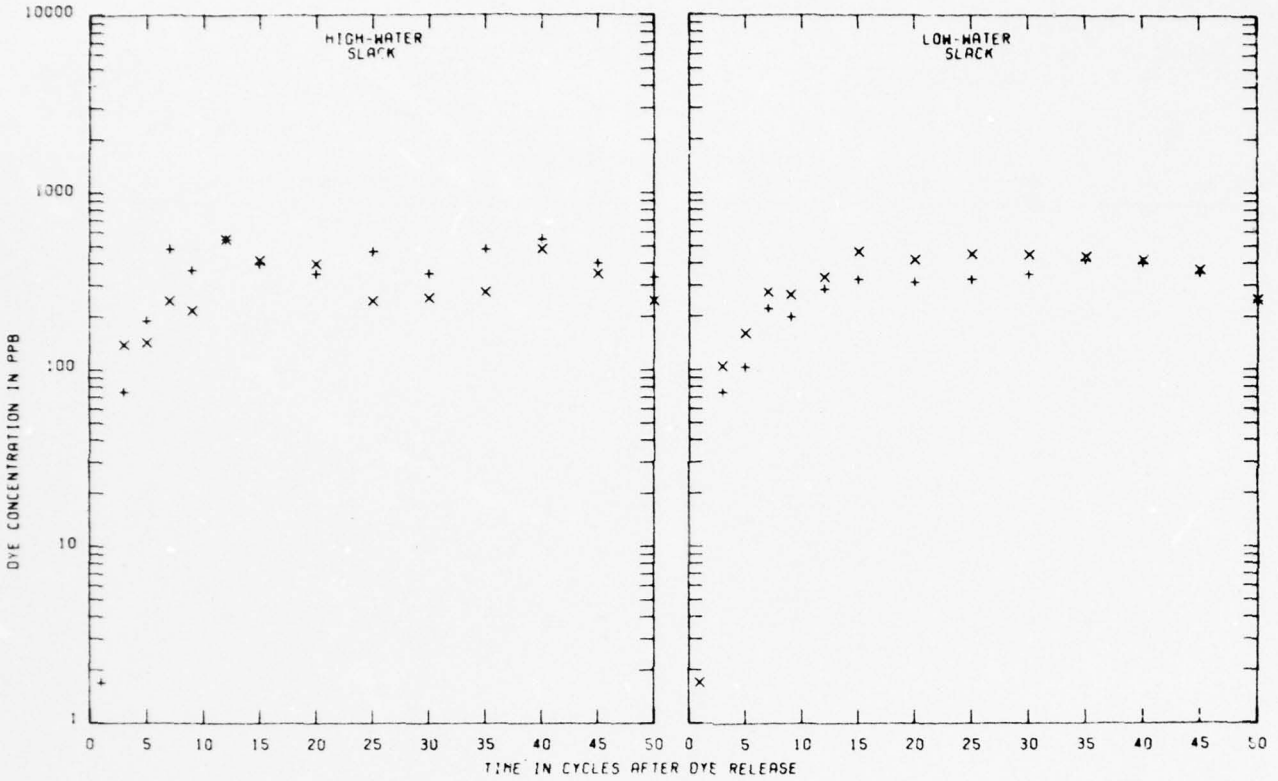
+ —·—·— SURFACE

× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M12



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2-30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× — — — BOTTOM

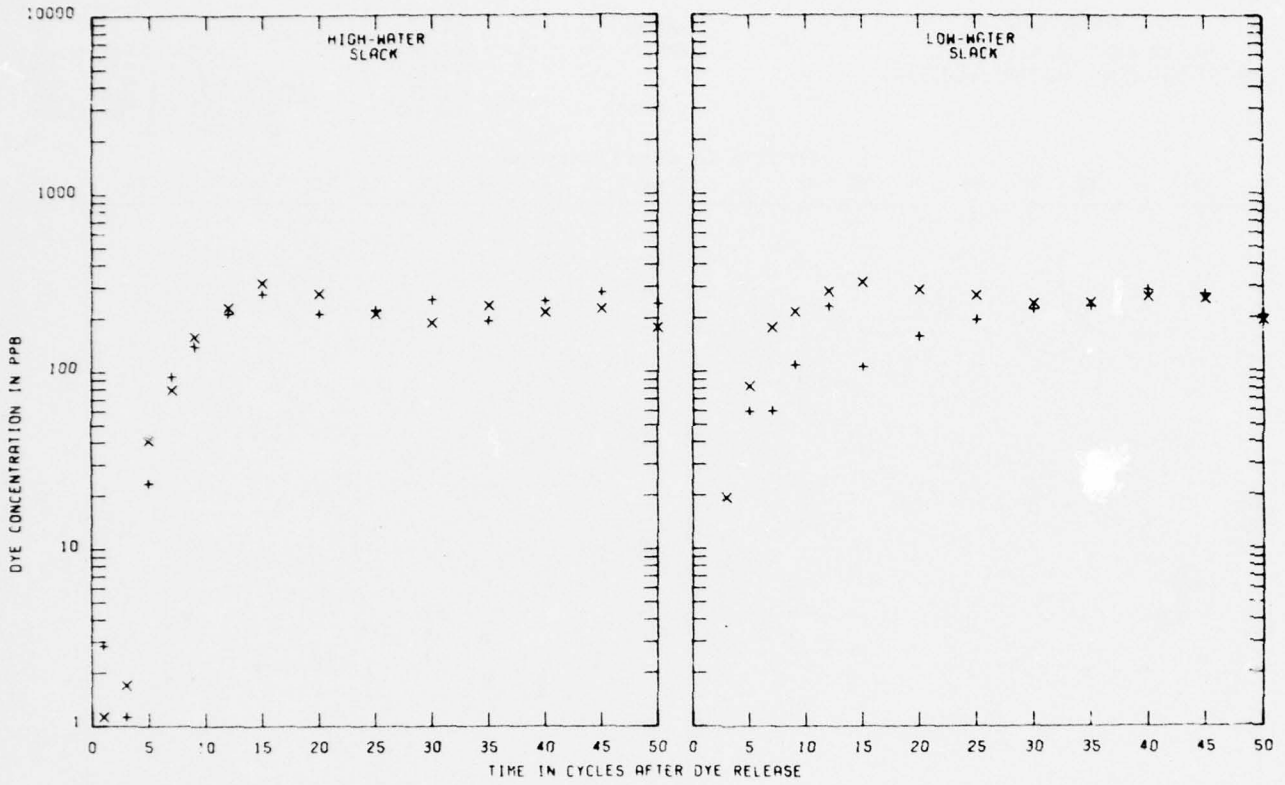
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M13

PLATE 159

PLATE 160



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

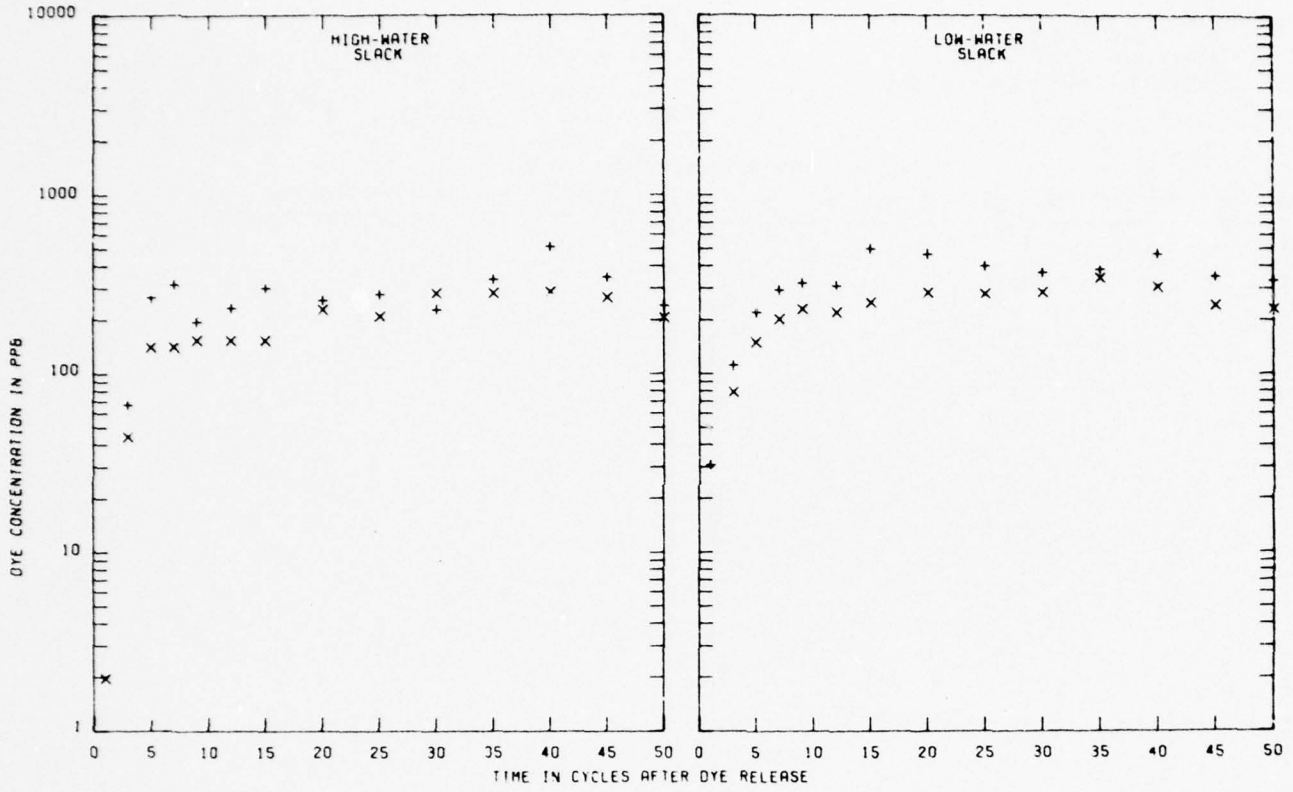
LEGEND

+ ——·—— SURFACE
× ——·—— BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M14



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE

× ·—·— BOTTOM

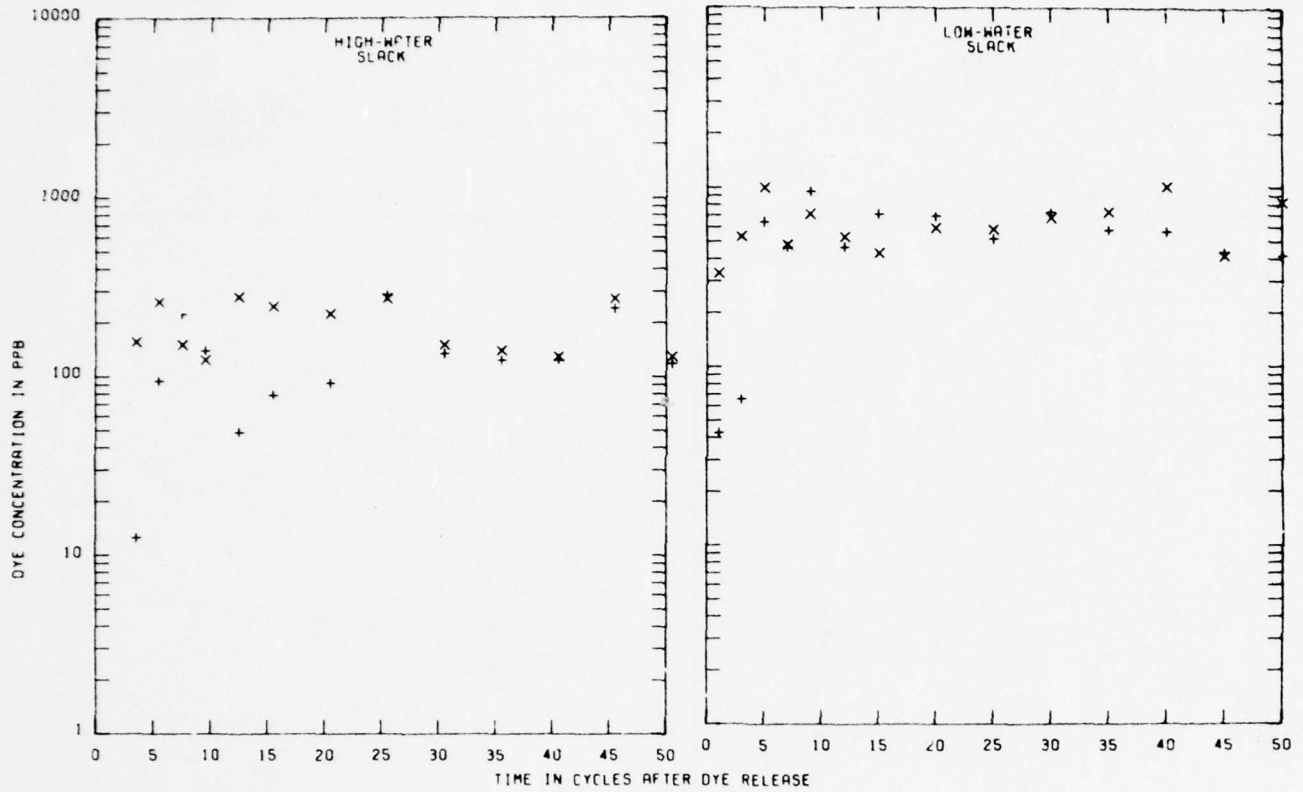
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M15

PLATE 161

PLATE 162



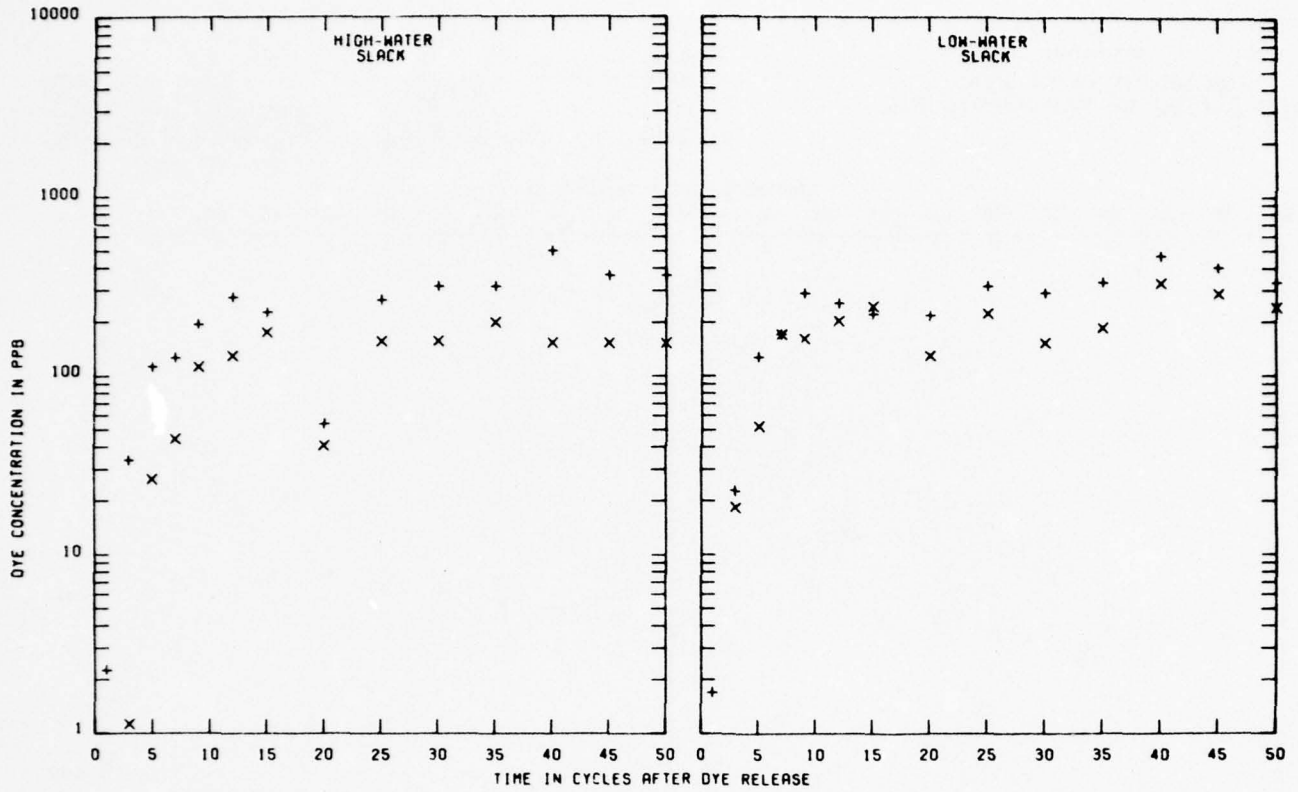
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M16



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

\+ —·—·— SURFACE

× — — — BOTTOM

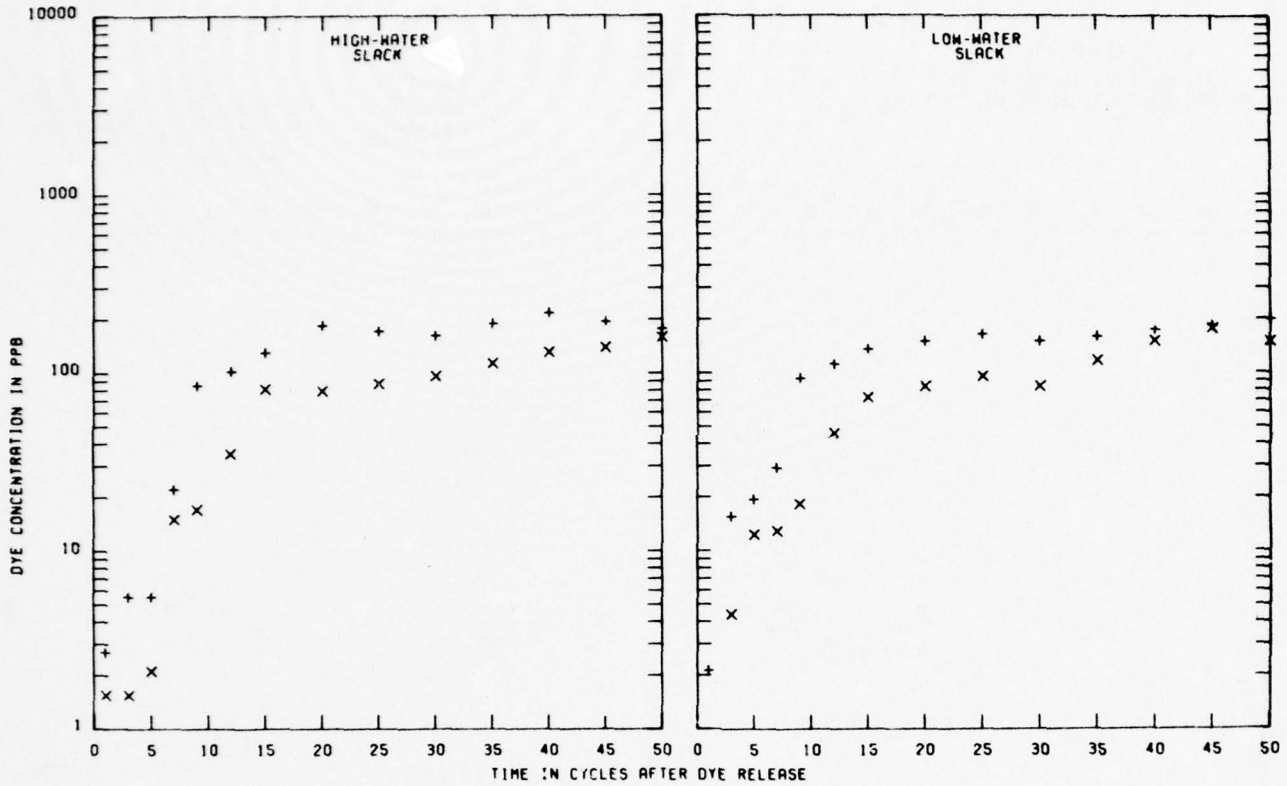
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M17

PLATE 163

PLATE 164



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

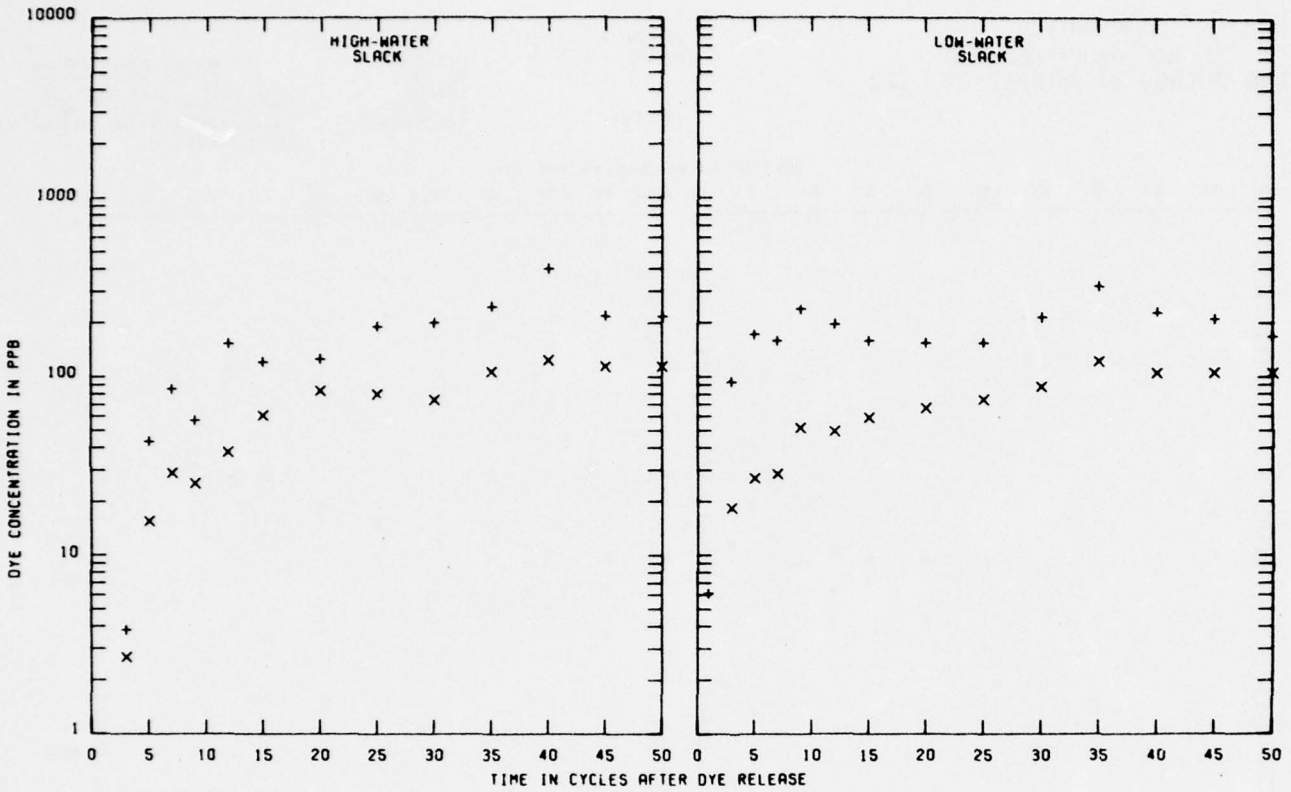
+ —·—·— SURFACE

× — — — BOTTOM

DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M18



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

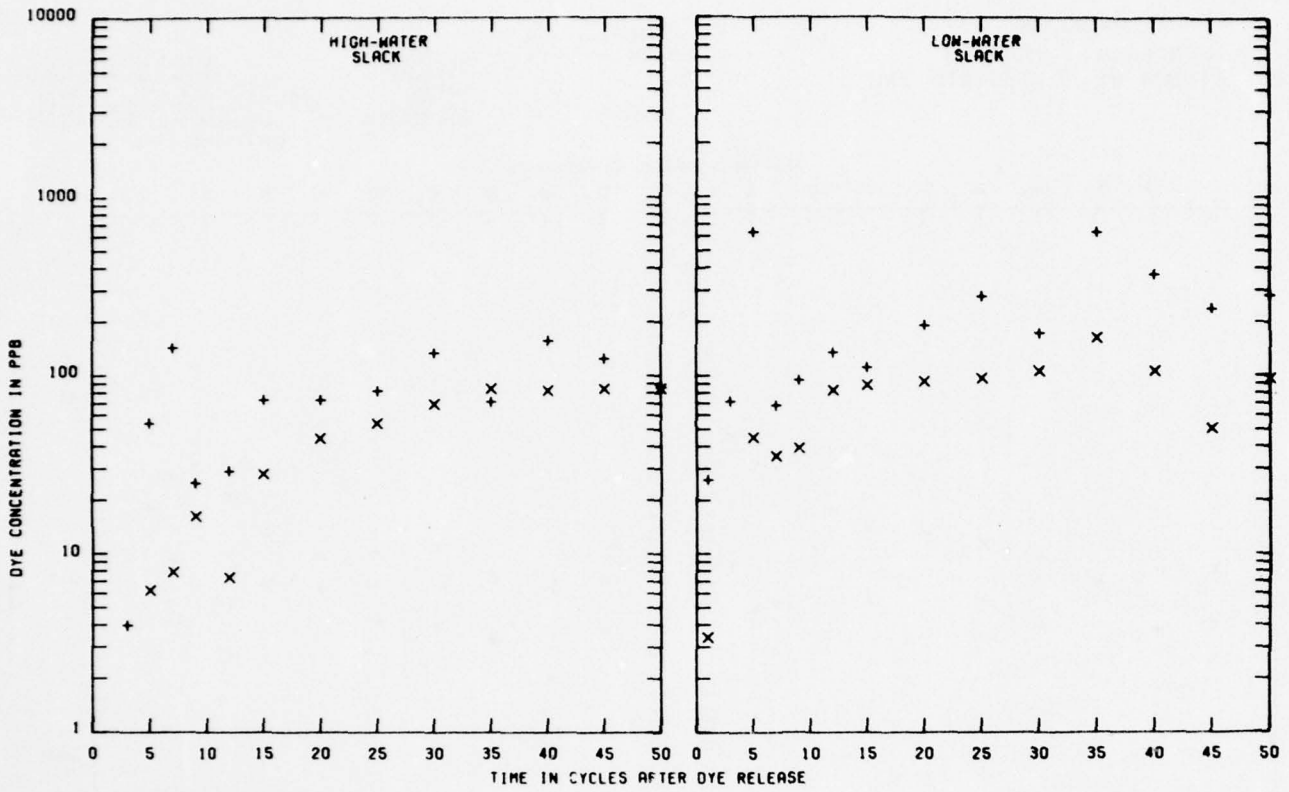
LEGEND

+ —·— SURFACE
× – – – BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M19

PLATE 165

PLATE 166



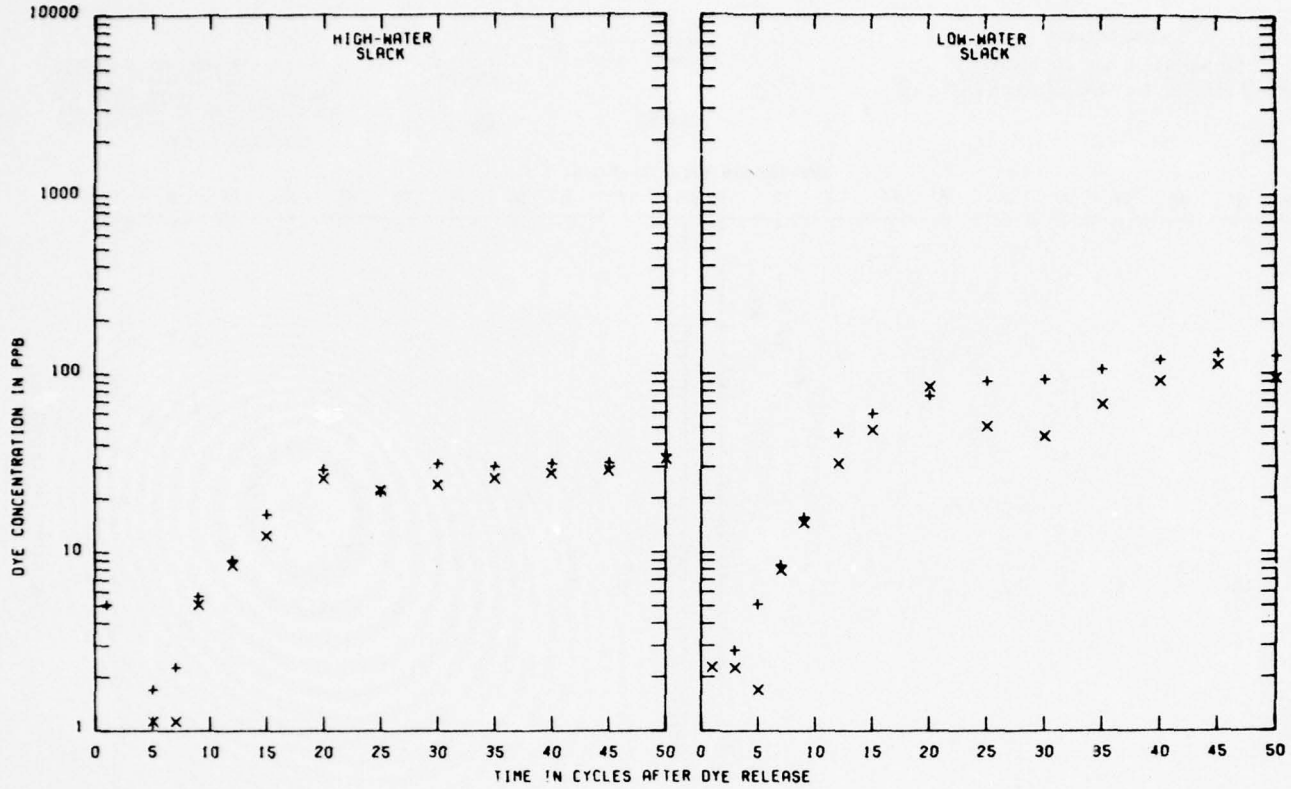
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M20



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE

× — — — BOTTOM

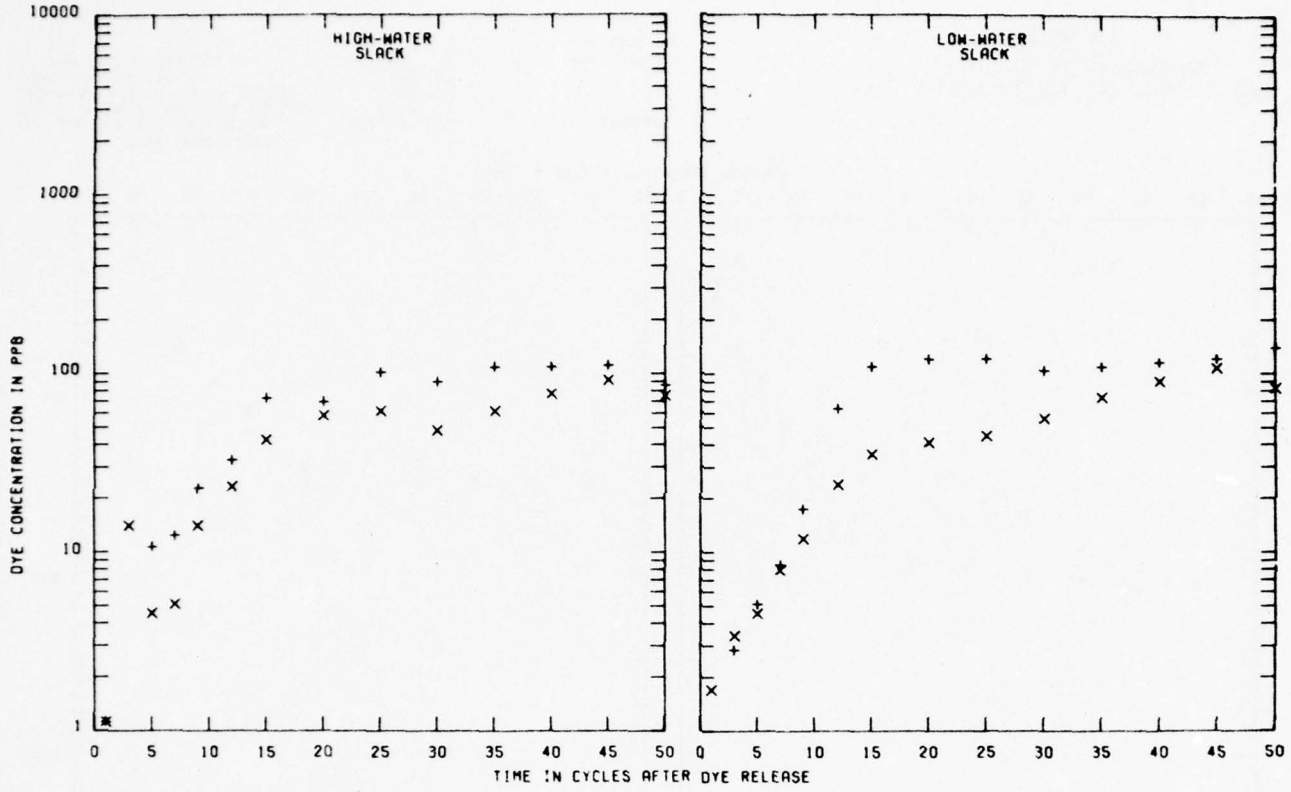
DYE DISPERSION IN MOBILE BAY

INJECTION AT STATION A3

STATION M21

PLATE 167

PLATE 168



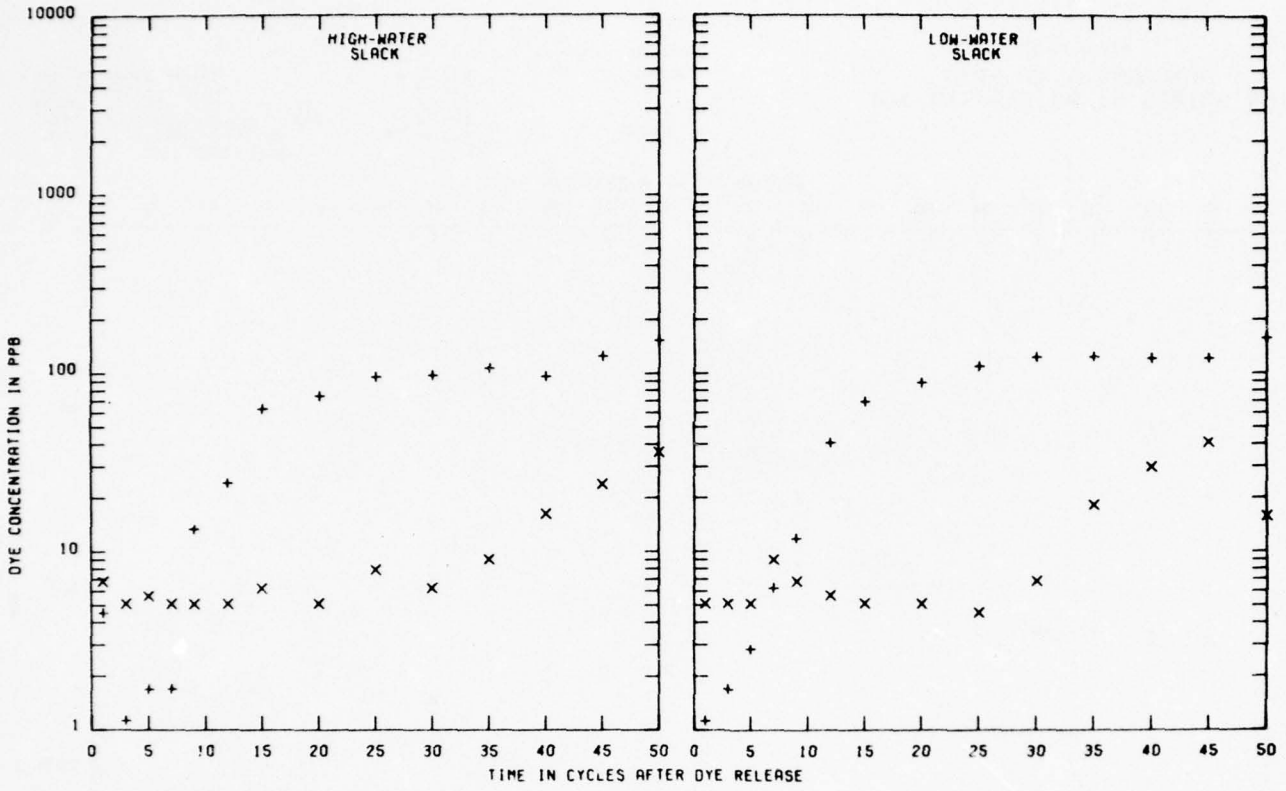
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ ——·—— SURFACE
× ——·—— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M22



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

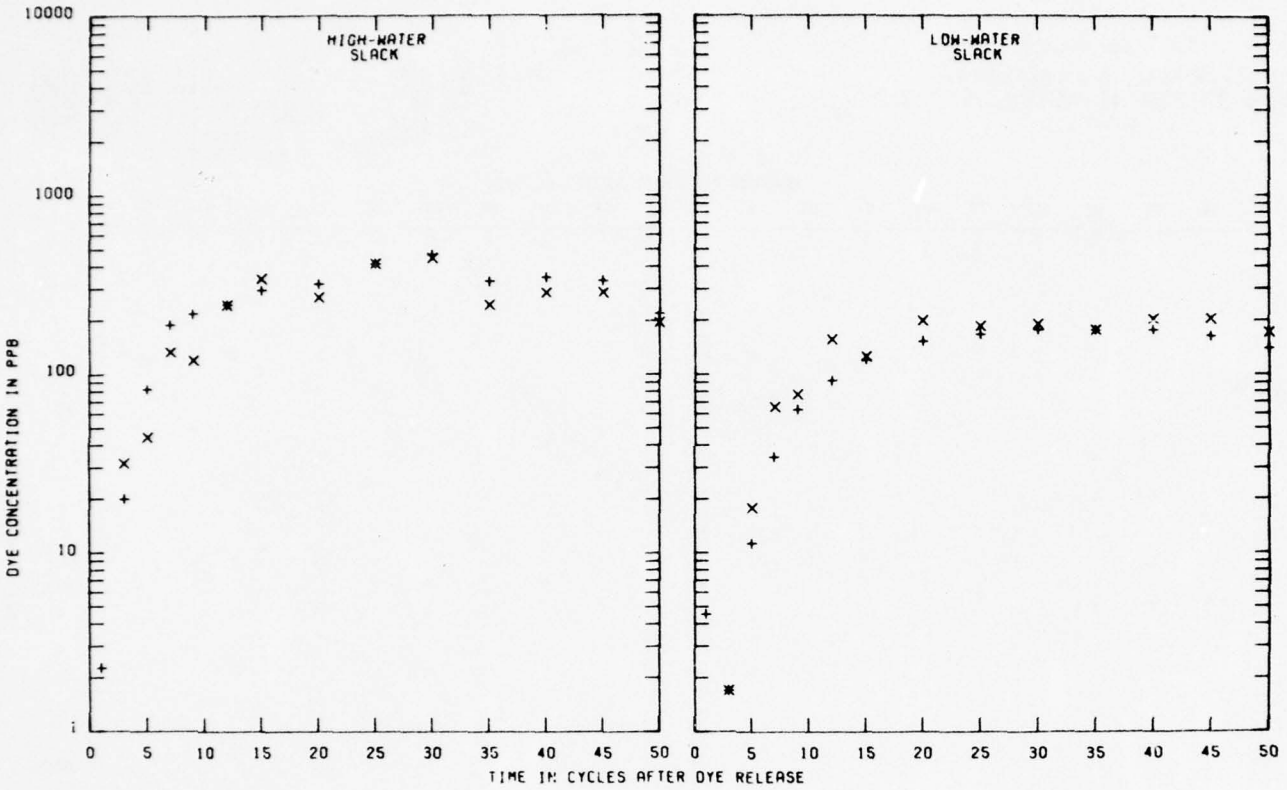
LEGEND

+ —·—· SURFACE
× —·—· BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M23

PLATE 169

PLATE 170



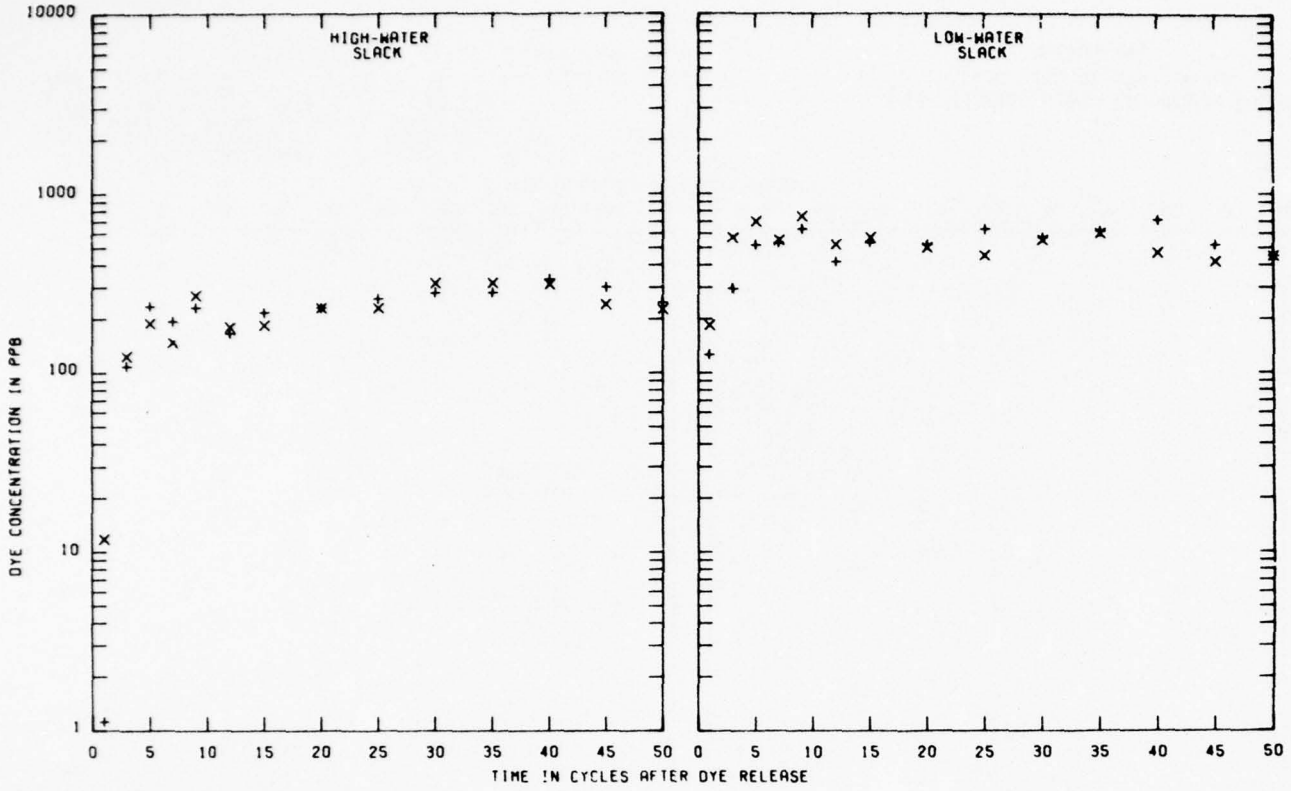
TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× - - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M24



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

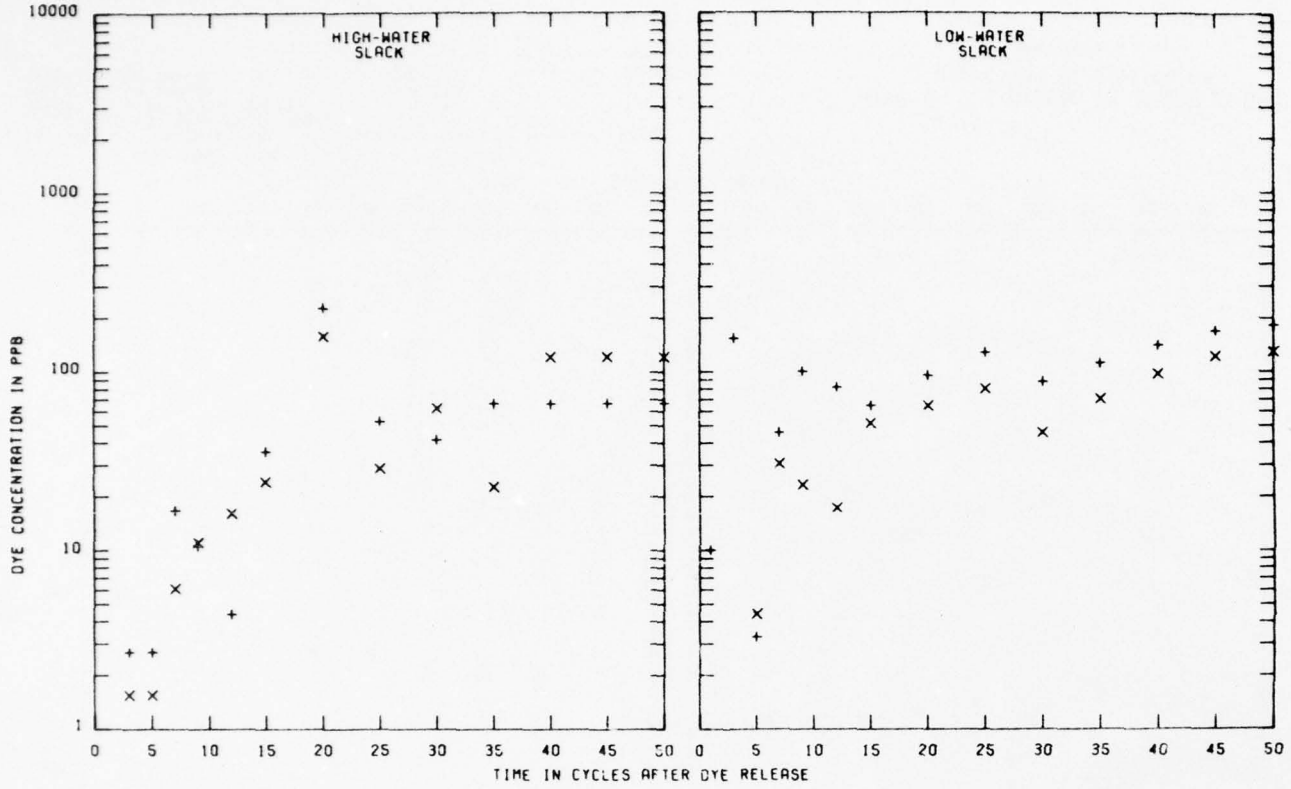
LEGEND

+ —·— SURFACE
× —·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M25

PLATE 171

PLATE 172



TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·—·— SURFACE
× —·—·— BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M26

AD-A038 656 ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MISS F/G 13/2
DISPERSION OF PROPOSED THEODORE INDUSTRIAL PARK EFFLUENTS IN MO--ETC(U)
MAR 77 R C BERGER, M J TRAWLE

UNCLASSIFIED WES-MP-H-77-3 NL

3 OF 3
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A038656

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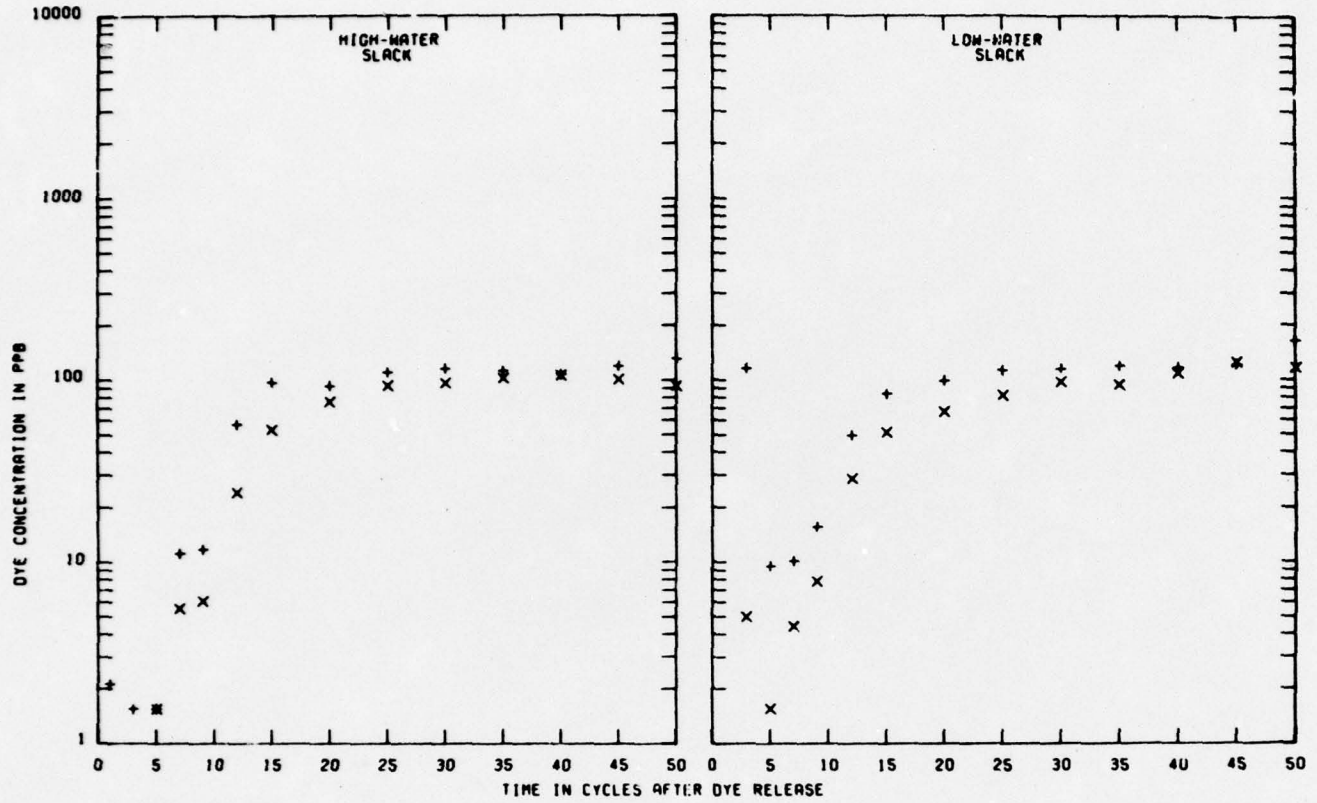

TEST CONDITIONS

INITIAL DYE CONCENTRATION	1000000 PPB
TIDAL RANGE AT DAUPHIN ISLAND	2.30 FT
OCEAN SALINITY (TOTAL SALTS)	30 PPT
MOBILE RIVER INFLOW	7200 CFS
TENSAW RIVER INFLOW	4800 CFS

LEGEND

+ —·— SURFACE
× - - - BOTTOM

DYE DISPERSION IN MOBILE BAY
INJECTION AT STATION A3
STATION M27

PLATE 173

In accordance with ER 70-2-3, paragraph 6c(1)(b), dated 15 February 1973, a facsimile catalog card in Library of Congress format is reproduced below.

Berger, Rutherford C

Dispersion of proposed Theodore Industrial Park effluents in Mobile Bay; hydraulic model investigation, by R. C. Berger, Jr., and M. J. Trawle. Vicksburg, U. S. Army Engineer Waterways Experiment Station, 1977.

1 v. (various pagings) illus. 27 cm. (U. S. Waterways Experiment Station. Miscellaneous paper H-77-3)

Prepared for South Alabama Regional Planning Commission, Mobile, Ala.

1. Dispersion. 2. Effluents. 3. Hydraulic models. 4. Mobile Bay. 5. Theodore Industrial Park. I. Trawle, Michael J., joint author. II. South Alabama Regional Planning Commission. (Series: U. S. Waterways Experiment Station, Vicksburg, Miss. Miscellaneous paper H-77-3)
TA7.W34m no.H-77-3