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VIA HAND DELIVERY

June 23, 2011

Frank Melbourn
Water Resource Control Engineer
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

**Re: In the Matter of: Tentative Cleanup and Abatement Order No. R9-2011-0001
Reply Submissions by San Diego Gas & Electric Company**

Dear Mr. Melbourn:

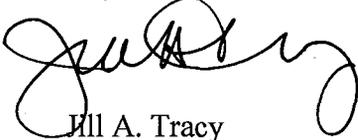
Pursuant to the Third Amended Order of Proceedings in this matter, enclosed herewith is San Diego Gas & Electric Company's further supplement to the Administrative Record in the above-referenced proceedings, consisting of copies of the following documents:

1. Letter to Harold E. Miller from R. M. Paul, dated December 14, 1951, with attached report from the Department of Fish and Game;
2. Memorandum to File from BAB dated January 11, 1998 re: Site Inspection;
3. Memorandum to Lloyd A. Schwartz from Sandor Halvax dated May 22, 1997 re: Environmental Projects Update;
4. Storm Drains Spill Report from Marty Fischer dated September 22, 1989;
5. Incident Report dated April 22, 1991;
6. Summary of Violations Questioned by Southwest Marine – 6/18/92-11/17/93;
7. Incident Report dated May 30, 1992;
8. Summary of Violations Questioned by Southwest Marine – 11/17/93-6/16/95.

Frank Melbourn
San Diego Regional Water Quality Control Board
June 23, 2011
Page 2

As a courtesy, also enclosed is a DVD containing text-searchable, electronic copies of the
aforementioned documents. Please contact me if there are any questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jill A. Tracy". The signature is fluid and cursive, with a large loop at the end.

Jill A. Tracy
Senior Counsel

cc: All Designated Parties (letter only)

EARL WARREN
GOVERNOR

SETH GORDON
DIRECTOR



STATE OF CALIFORNIA

Department of Fish and Game

Ferry Building
San Francisco, California
December 14, 1951

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COMMISSIONERS
E. F. PAYNE, PRESIDENT
LOS ANGELES
HARVEY E. HASTAIN
BRAWLEY
WILLIAM J. SILVA
MODESTO
PAUL DENNY
A
CARL WENTE
SAN FRANCISCO

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San Diego Regional Water Pollution Control Board
3441 University Avenue
San Diego 4, California

Attention: Mr. Harold E. Miller, Executive Officer

Gentlemen:

Under the terms of investigation Number 52-9-1, the Department of Fish and Game undertook an investigation to determine the extent and character of bottom deposits in San Diego Harbor and to make an evaluation of the effects of pollution on the aquatic life in the Bay.

The following report is a summary of conditions that were encountered during field work carried out in August and September of 1951.

Very truly yours,

R. M. PAUL
Bureau of Fish Conservation

RMP:jg

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C O N T E N T S (Continued)

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I.
INTRODUCTION

Object: The object of this investigation was to determine the location and extent of sludge beds in San Diego Harbor and, if possible, the effects of the sludge beds on the benthic marine invertebrates of the region. The field work for this study was done on 9, 10, 13, 14 August, 1951.

Location: (Figure 1) San Diego Bay is located in San Diego County, California between 32° 36' and 32° 41' North Latitude and 117° 4' and 117° 15' West Longitude. It is a fairly large bay offering some apparently unique hydrographic conditions (USNR Project No. 1). It covers an area of about 519×10^6 square feet at mean low water (USNR Project No. 1, Appendix 3). The bay is shallow, generally not exceeding a depth of 60 feet near the entrance and 2-5 feet at the blind southern end.

DEFINITIONS

Sludge: An industrial or domestic sludge bed is herein defined as an area of very soft fine organic or inorganic mud, possessing toxic characteristics which exclude the presence of benthic marine invertebrates. The composition of the sludge usually betrays its origin; off machine works the sludge is filled with oil, off fish canneries it contains a high percentage of fish scales, off domestic sewers it consists almost entirely of finely particulate organic matter. In every instance, except one, it was black in color and gave off an

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offensive sulfide odor.

II.

MATERIALS AND METHODS

In this study, the investigators were generously given the use of the Scripps Institution of Oceanography buoy boat and the assistance of a boat operator.

Bottom samples were collected with an "orange peel" grab (Figure 2) which was also loaned to us by the Scripps Institution of Oceanography. This grab covered about 100 inches area and took about 200 cc of sample, penetrating approximately 10 inches into the bottom. Hence the material collected could be studied from a quantitative standpoint.

Chlorinity determinations were made by the Mohr method (see Project No. 52-4-6, Horvath and Menzies). Dissolved oxygen determinations consisted of a modified Winkler (ibid). Temperature readings were taken at the surface, using a centigrade thermometer sensitive to 0.10 degrees.

The transparency (Secchi) was measured by using a Secchi disk. Readings are recorded in feet.

Two important regions of the harbor were not studied, (1) Glorietta Bay on Coronado Island, and (2) much of South San Diego Bay where the depth was too shallow to permit entrance of the vessel.

III.

GENERAL DISTRIBUTION OF DISSOLVED OXYGEN, TEMPERATURE, TRANSPARENCY,
AND CHLORINITY OF THE WATER IN SAN DIEGO BAY

Figures 3-4

Dissolved oxygen: The amount of dissolved oxygen in the surface water was found to be high (6.0-6.7 ppm) in the northern part of the harbor and equally high in the southern part of the harbor (5.8-6.4 ppm). The central part of the harbor showed lower values of dissolved oxygen, particularly in the areas of heavy industry and suspected pollution (3.0-4.8 ppm). It is interesting to note that Unit 11-5 (USNR Project No. 1, Figure 3) did not obtain similar results, that is, they found a gradual decline in dissolved oxygen from the entrance (5.8 ppm) to the southern end of the bay. Their measurements, however, were taken largely in the center of the channel and at a significant distance from the regions of heavy industrial activity. The low dissolved oxygen values in the industrial area can be accounted for only by the presence of pollution in the industrial areas with the utilization of the dissolved oxygen at a faster rate than it is replaced by photosynthesis, mixing, and diffusion. This drop in dissolved oxygen in the region of industrial activity is shown clearly on Figure 4.

Temperature: The surface temperatures correspond directly to the results obtained by Unit 11-5 (USNR Project No. 1, Figure 2). The entrance showed the coldest temperature (16.6° C),

and the southern end of the bay the warmest temperature (24.4° C.). A high temperature of 25.9° C. was recorded in the basin at the San Diego Gas and Electric Company's outfall but as the temperatures of the surrounding area indicate, the effects of this outfall on the water of the harbor are confined largely to the basin.

Transparency: The transparency of the water was, as one would expect, greatest near the entrance of the harbor (8.0-12.0 ft.). One might expect the muddy south bay to have a lesser transparency than the central part. In general such is true if one considers the channel readings alone, however, in the pier area of the industrial region the transparency of the water (2.5-6.0 ft.) was often below that of the southern part of the bay (3.0-6.0 ft.). Thus transparency, like dissolved oxygen, provides a measure of possible areas of pollution.

Chlorinity: The chlorinity of the bay gradually increased from 18.9 in the northern part of the bay to 19.3 in the southern part of the bay. No significant variation in salinity in the regions of industrial activity of particular note or extent was recorded.

The data on which the above remarks are based are recorded in Appendix D.

IV.

LOCATION OF SLUDGE AREAS

Preliminary study: A preliminary survey of the harbor was made on 9 August, 1951. This consisted of taking bottom samples at 51 stations around the bay. The station numbers are shown on Figure 1. These samples were screened and notes were taken on the nature of the bottom and the presence or

absence of animals. This information is shown on Figures 5-6, based on data from Appendix A. The following abbreviations are used:

- CL : clay
- MS : mud and sand
- FM : fine mud
- O : no animals
- FS : fine sand
- S : sand
- H₂S : sulfide odor
- SH : shell fragments
- L : living animals
- * : location of the station

This information is diagrammatically shown on Figure 6. From this figure it is clear that deposits of fine mud exist in several regions of the harbor.

1. In the basin off Fisherman's Point.
 2. Along much of the northeast shore of the bay from the Civic Center south to Chula Vista.
 3. In the channel between the Mole Pier and Chula Vista.
- In general the channel regions and western shores of the harbor lack fine mud deposits of more than an inch.

Two natural factors possibly combine to permit the deposition of fine mud: (1) counter tidal currents within basin areas prohibiting a flushing of the bottom and resulting in an accumulation of mud, and (2) wind transported sediment-carrying water, piling the fine sediment up on the northeast shore more than elsewhere.

The dissolved oxygen content of the basins alone indicated them to be regions of exceptionally limited circulation. Adding to this picture, the effluents of industrial and domestic sewers and storm drains which are more abundant on the northeast

shore than elsewhere, the result is the production of beds of fine mud in areas of very limited circulation with the resultant conditions (or toxicants) favorable for the production of hydrogen sulfide and the destruction of benthic animal life in the sludge basins.

That the presence of hydrogen sulfide on the bottom of the basins and the absence of animal life is the result of pollution and is not a natural condition, is clearly indicated from the fact that deposits of fine mud do occur in other areas of the harbor where sewer outfalls are scarce. These mud bottoms support animal life in complete contrast to the sludge beds near sewer outfalls.

The sludge beds extend approximately 9,000 yards along the margin of the northeast shore and average possibly 200 yards out from shore, thus covering about 1,800,000 square yards of area or 5,400,000 square feet. This portion of "useable" area of the harbor bottom has conditions, originating from pollution, which are lethal to benthic marine animals. Currently, sufficient soft mud areas exist possessing animal life that it is doubted whether the pollution will result in the complete extermination of all of the soft-bottom fauna in the harbor. The exact importance of the soft-bottom animals in the economy of the Bay is not known but they contribute to the elaborate food-chains necessary for the survival of larger organisms.

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V.

EFFECT OF SLUDGE AREAS ON BENTHIC MARINE INVERTEBRATES

The effect of sludge on benthic invertebrates is not adequately known. It is known that macroscopic invertebrates are lacking from sludge. This lack might be due simply to an absence of needed food, unsuitable substrate, or to the presence of a toxic environment. An experiment was designed to determine whether sludge was toxic to selected marine invertebrates. The animals chosen were the crab Hemigrapsis oregonensis (Dana), a terebellid worm, and the slipper-shell Crepidula sp. One of each species was placed in a jar containing seawater from a sludge area. This served as the control. Another individual of the same species was placed in a jar containing bottom sludge and seawater. The results of this experiment are shown on Figure 7.

From the fact that the animals in the sludge jar died either before those in the control, or died while those in the control did not, it is obvious that the sludge does have a lethal effect on the marine invertebrates tested. The specimens tested were collected off the end of the Standard Oil Company pier, not far from a lethal sludge area and might conceivably even have developed a slight resistance to the toxicants emanating from the sludge region. All were adult specimens.

It is also apparent that the crabs are more susceptible to the toxic effects of the sludge than the Mollusca and worms, which seemed to show a similar degree of resistance.

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VI.

EXTENT OF SLUDGE BEDS IN THE "CRITICAL" AREA

The "critical" areas are those where domestic and industrial sewage currently is being discharged into the harbor in much greater volume than in other regions of the harbor. The problem here was to sample the area extensively in order to determine its extent, both laterally and channelward (Figures 8-10).

The types of bottom encountered in the area are shown on Figure 8. From this map, the most obvious feature is the restriction of the sludge area to the regions largely within the pier line. No sludge was found in the channel. Laterally, the sludge extended throughout the "critical" area without a break.

Types of bottom found at the various stations are shown on five transects taken in various directions in the "critical" area:

Transect A: shore to channel; off Beardsley Street

Transect B: shore to channel; off Kelco Company

Transect C: lateral midchannel transect, about 700 feet off shore

Transect D: lateral channel transect, about 500 feet off shore

Transect E: lateral transect within the pier line, about 60 feet off shore

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Several important relationships are brought out by this analysis. Both transects A and B show a significant drop in fine particulate matter (1.5 mm diameter, or less) when animals occur, and a corresponding increase in coarse particles (shell fragments and the like). This relationship, however, is not important in the definition of sludge because animals occurred at Station 61 where fine mud constituted 2054 cc of the volume of the sample, large particles 10 cc of the volume of the sample, and animals 4 cc of the volume of the sample. That a lethal area may consist almost entirely of sand is shown in Transect A (Station B-7) within the "critical" area. Usually, however, animals were present when sand was present.

In general, as one might expect, the amount of coarse particles increased channelward. The amount of sample animals in non-sludge areas was, however, markedly variable. Possibly one of the most interesting observations is the absence of apparent sludge-effects within only 100 feet of a lethal sludge bed (Transect A, B-4 -- B-8). A transect taken along a sludge area shows a considerable homogeneity in the amount of fine mud and sand present, the variation being only between 2-200 cc for 2064 cc of sample which is indeed not much variation considering the fact that the 2-200 cc of coarse material most often consisted of pieces of building material, oyster and mussel shells, and similar materials dropped from boats or piers. Stations along transects within the channel varied considerably in their proportions of animal, sand, and coarse particles. In general sand constituted the major portion of the substratum.

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Another interesting ecological phenomenon is clearly illustrated in this study. Over a relatively homogeneous bottom the animal population is arranged irregularly, usually in beds or associations. The reason for their being confined largely to "beds" remains unexplained. Clearly, factors other than the substrate composition influence the distribution of the organisms in such areas.

The qualitative distribution of the animals is not available at this time but will be presented in graphic form as soon as the determinations are completed.

VII.

SUMMARY * * *

1. Low dissolved oxygen records within the pier-line at the industrial areas, indicating pollution, were obtained.
2. Sludge deposits were discovered to cover an area approximately 9000 yards long and 200 yards wide.
3. Sludge beds seem to be confined to the areas within the pier-line on the eastern shore of the harbor, particularly within regions of heavy industrial activity.
4. The fact that sludge deposits were lethal to benthic marine invertebrates is indicated by the absence of animal life from sludge beds and from toximetry experiments in which the test animals died before the control animals.

5. Currently there are enough soft-bottom areas lacking pollution which support populations of benthic invertebrate life that it may be doubted whether pollution, at its current rate, will result in the complete destruction of the soft-bottom fauna of the harbor.

6. The toxic (or lethal) effects of sludge beds seem largely confined to the immediate area of these beds.

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F I G U R E S

1. San Diego Harbor Sampling Locations
 2. Photograph of "orange peel" grab
 3. Distribution of: (1) Dissolved oxygen
(2) Temperature
(3) Transparency
(4) Chlorinity
 4. Graphic Representation of a Section of Water from Station 10 (North San Diego Bay) to Fish Canneries and to Station 35 (South San Diego Bay)
 5. Analysis and Location of Bottom Samples
 6. General Location and Extent of Sludge
 7. Effect of Sludge on the Life of Selected Marine Benthic Invertebrates.
 8. Analysis of Bottom Samples in "Critical" Area
 9. Graphic Analysis of Bottom in "Critical" Area
 10. Aerial Photograph of Beardsley Street Area (1949), showing Extent of Sewage in Pier Area
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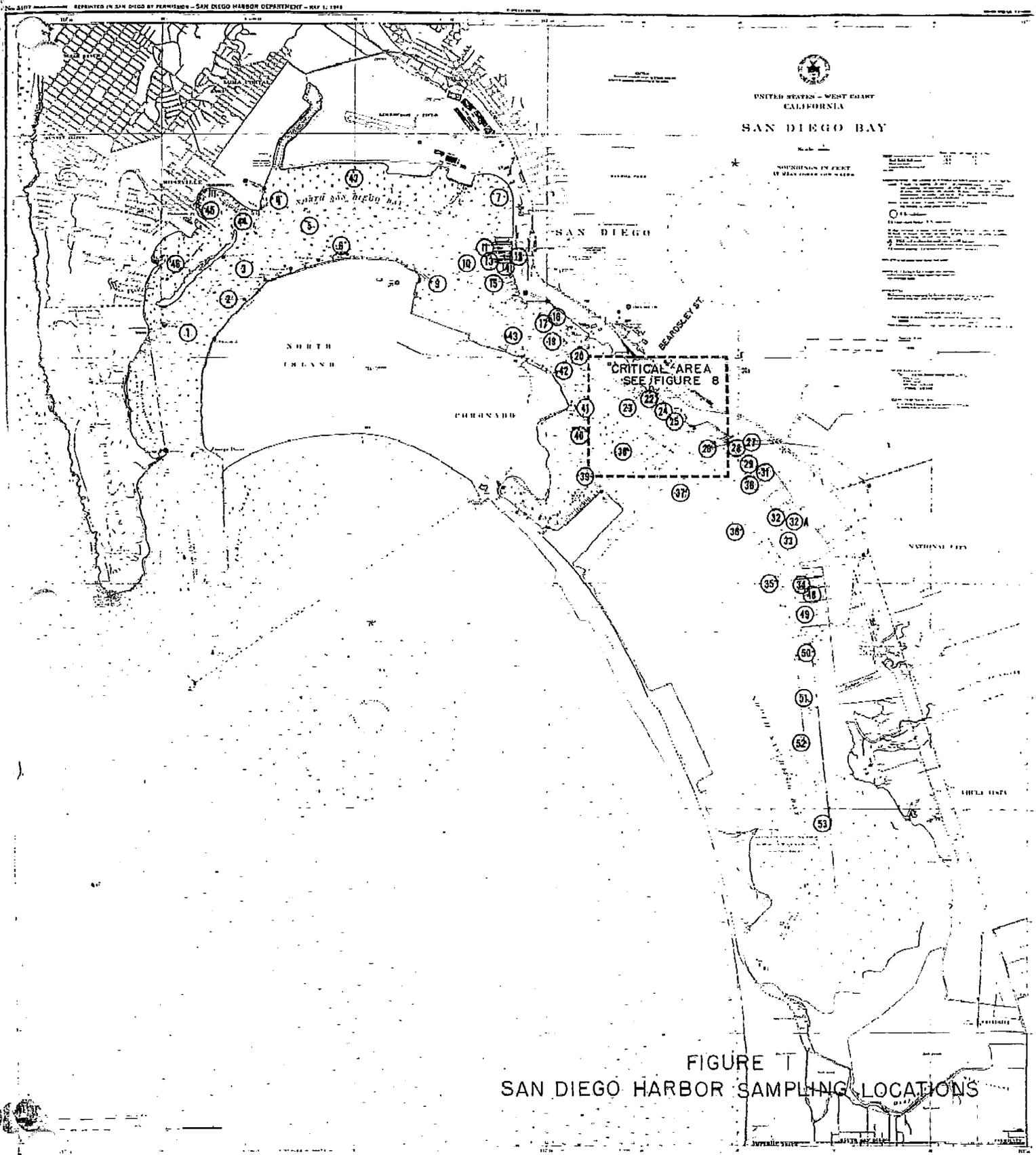


FIGURE T
 SAN DIEGO HARBOR SAMPLING LOCATIONS

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FIGURE 2 .

PHOTOGRAPH OF "ORANGE PEEL" GRAB

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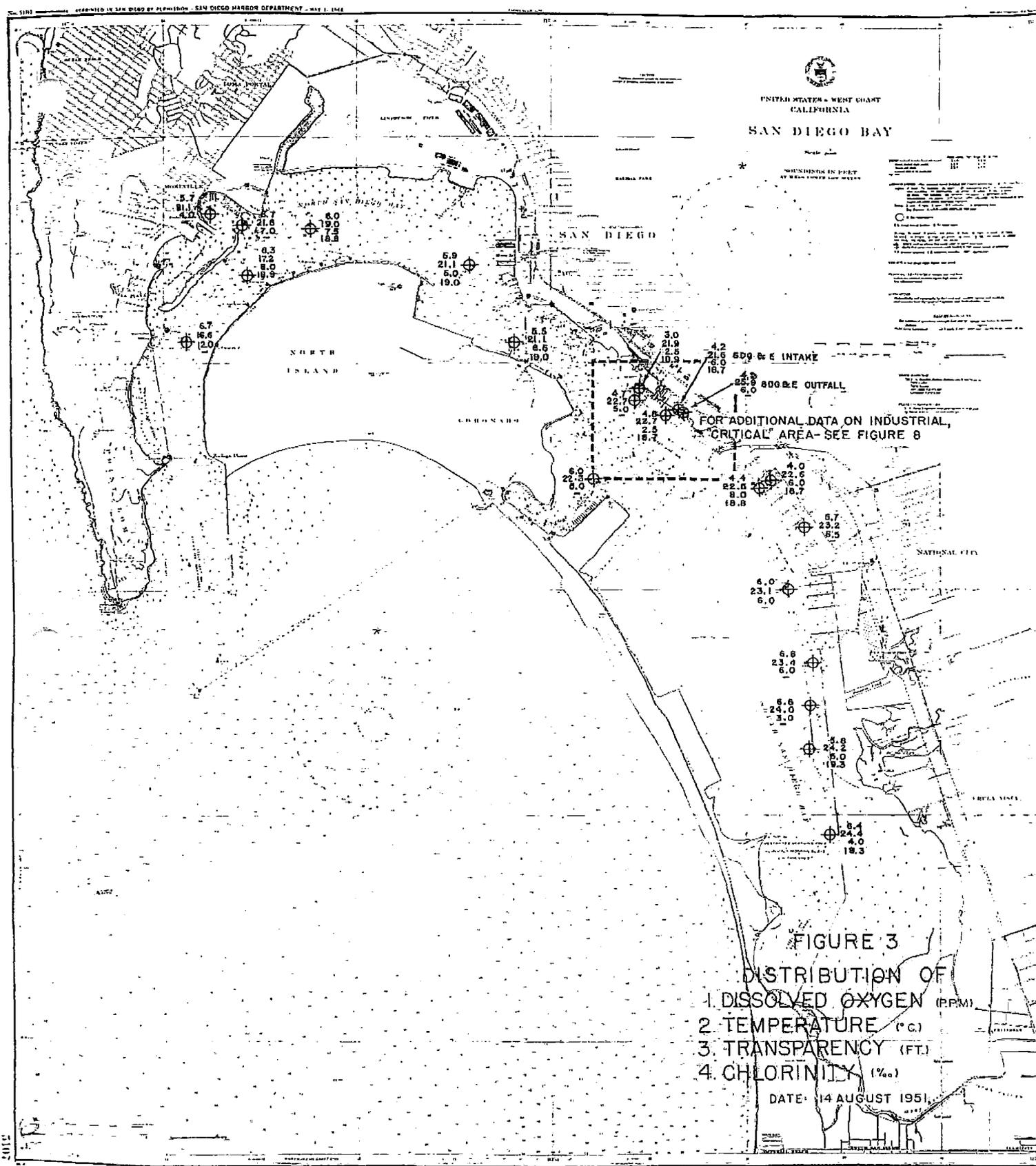
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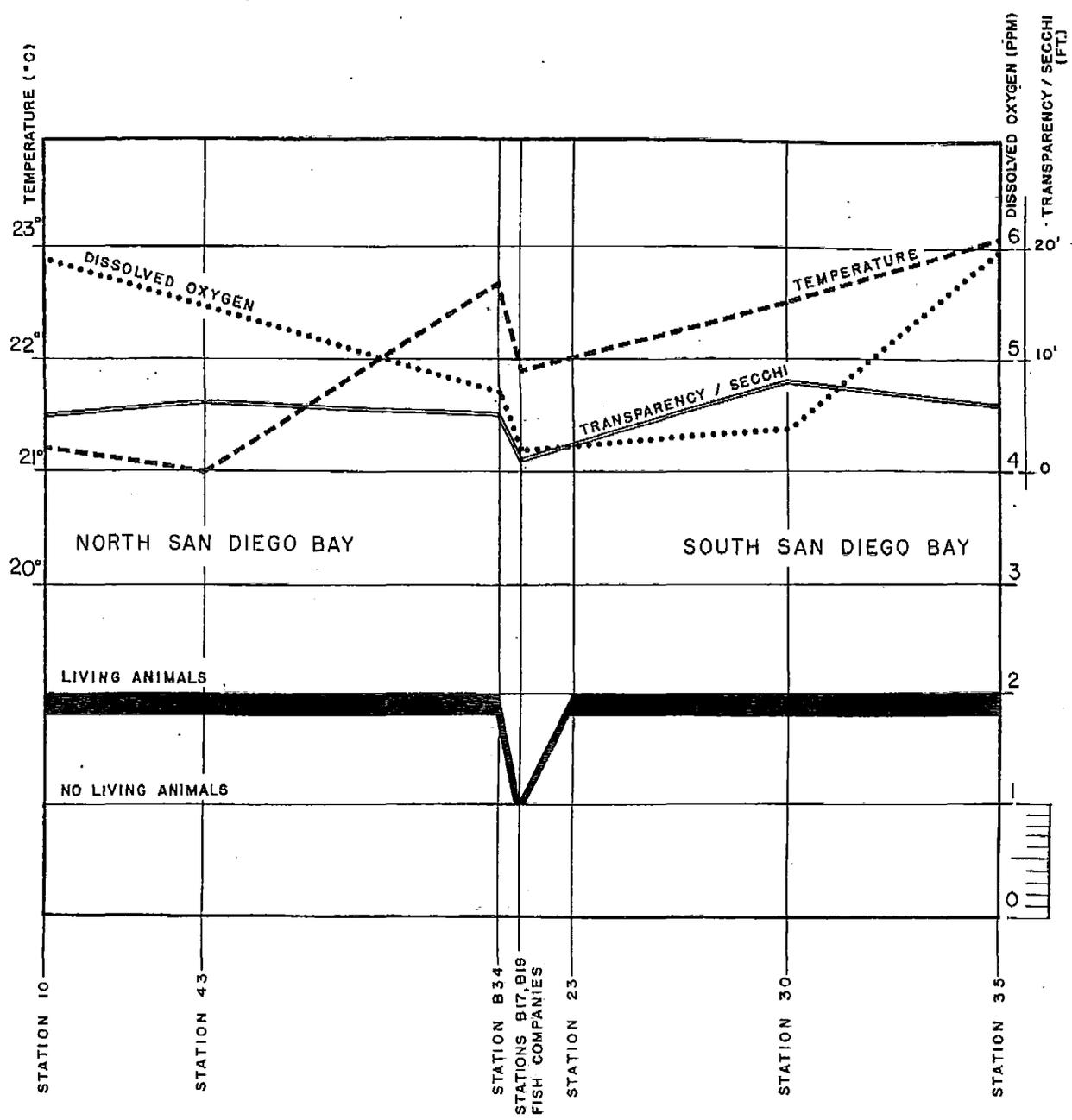


FIGURE 4. GRAPHIC REPRESENTATION OF A SECTION OF WATER FROM STATION 10 (NORTH SAN DIEGO BAY) TO FISH CANNERIES AND TO STATION 35 (SOUTH SAN DIEGO BAY)

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UNITED STATES - WEST COAST
CALIFORNIA
SAN DIEGO BAY

Scale 1:62,500

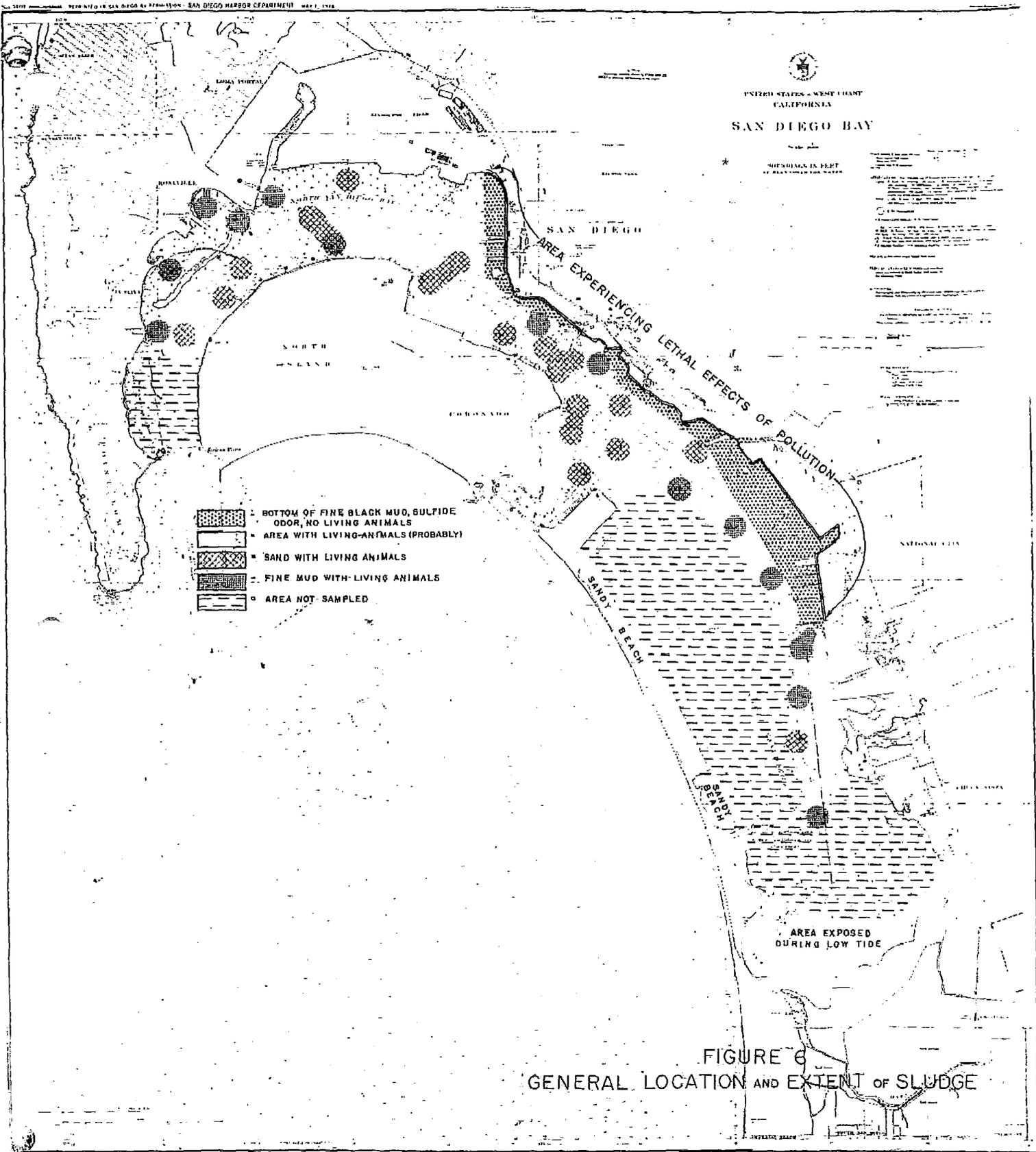
MEASUREMENTS IN FEET
AT MEAN LOW WATER

Symbol	Description
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- CL = CLAY
- FM = FINE MUD
- FS = FINE SAND
- H₂S = SULFIDE ODOR
- L = LIVING ANIMALS
- MS = MUD AND SAND
- O = NO ANIMALS
- S = SAND
- SH = SHELL FRAGMENTS
- * = LOCATION OF THE STATION

FIGURE 5
ANALYSIS AND LOCATION OF BOTTOM SAMPLES

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Figure 7

EFFECT OF SLUDGE ON THE LIFE OF SELECTED MARINE BENTHIC INVERTEBRATES

SPECIMENS TESTED	START		8-13-51		8-14-51		Finish
	8-13-51	8-13-51	8-13-51	8-13-51	8-14-51	8-14-51	8-15-51
	2:00 pm	5:00 pm	10:30 pm	7:25 am			8:00 am
Crab							
1. <u>Hemigrapsis oregonensis</u>	L L	L L	D L	- D	- -		
Crab							
2. <u>Hemigrapsis oregonensis</u>	L L	L L	D L	- L	- L		
Crab							
3. <u>Hemigrapsis oregonensis</u> (small)	L L	L L	D L	- L	- L		
Worm							
4. <u>Terebellid</u>	L L	L L	L L	L L	L L	D L	
Worm							
5. <u>Terebellid</u>	L L	L L	L L	L L	L L	L L	
Mollusk				*	*		
6. <u>Crepidula</u> on shell	L L	L L	L L	L L	L L	D L	

* Left shell, living on side of jar. D: Dead L: Living

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THIS SHEET WAS ENLARGED BY PANTOGRAPH FROM U.S. D. B. G. CHART NO. 5105 DATED 1948.

Scale: 1" = 400'

-  BOTTOM OF FINE BLACK MUD, SULFIDE ODOR, NO LIVING ANIMALS
-  AREA WITH LIVING ANIMALS (PROBABLY)
-  SAND WITH LIVING ANIMALS
-  FINE MUD WITH LIVING ANIMALS
-  * LOCATION OF B SERIES STATIONS
-  * LOCATION OF K SERIES STATIONS

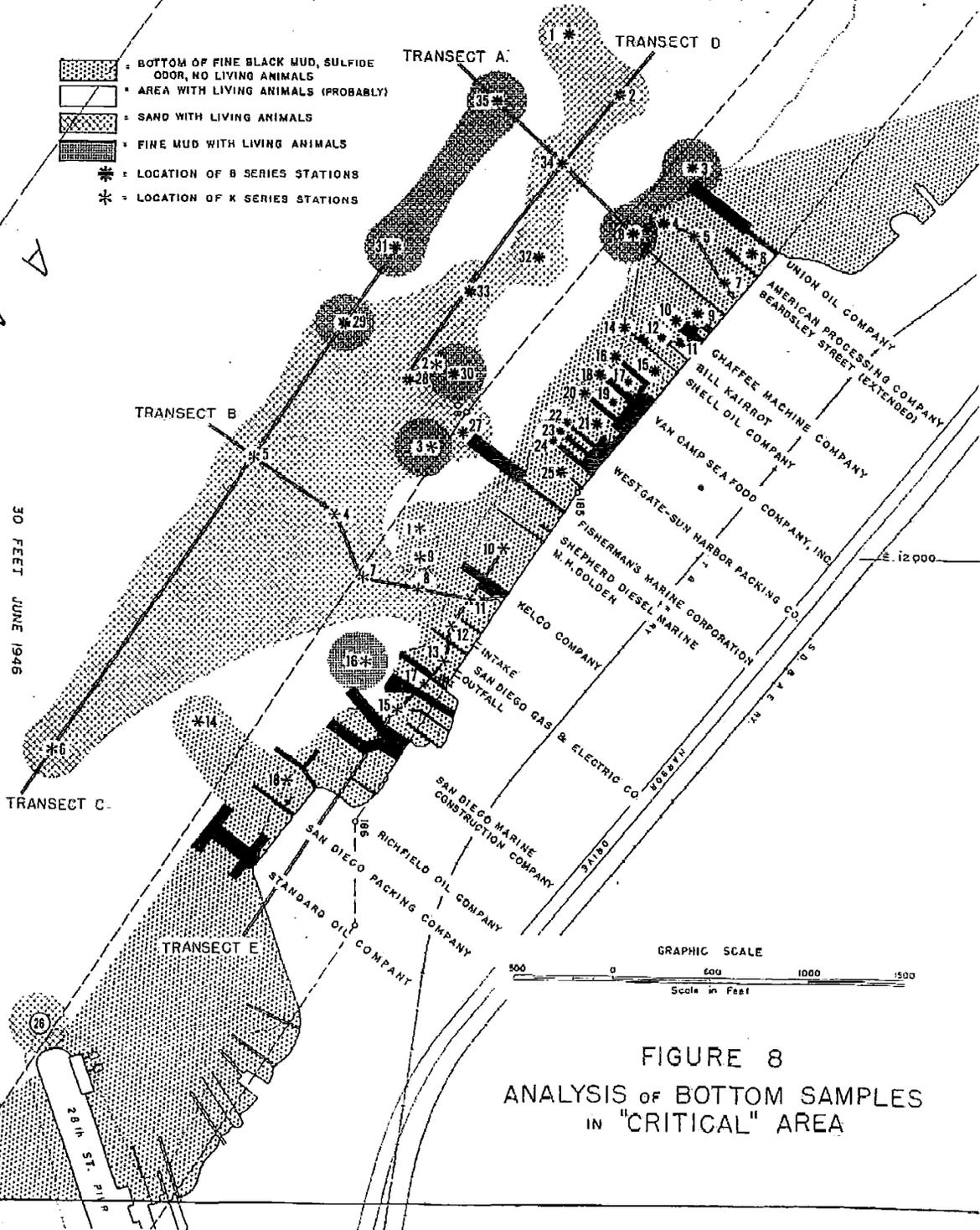


FIGURE 8
ANALYSIS OF BOTTOM SAMPLES
IN "CRITICAL" AREA

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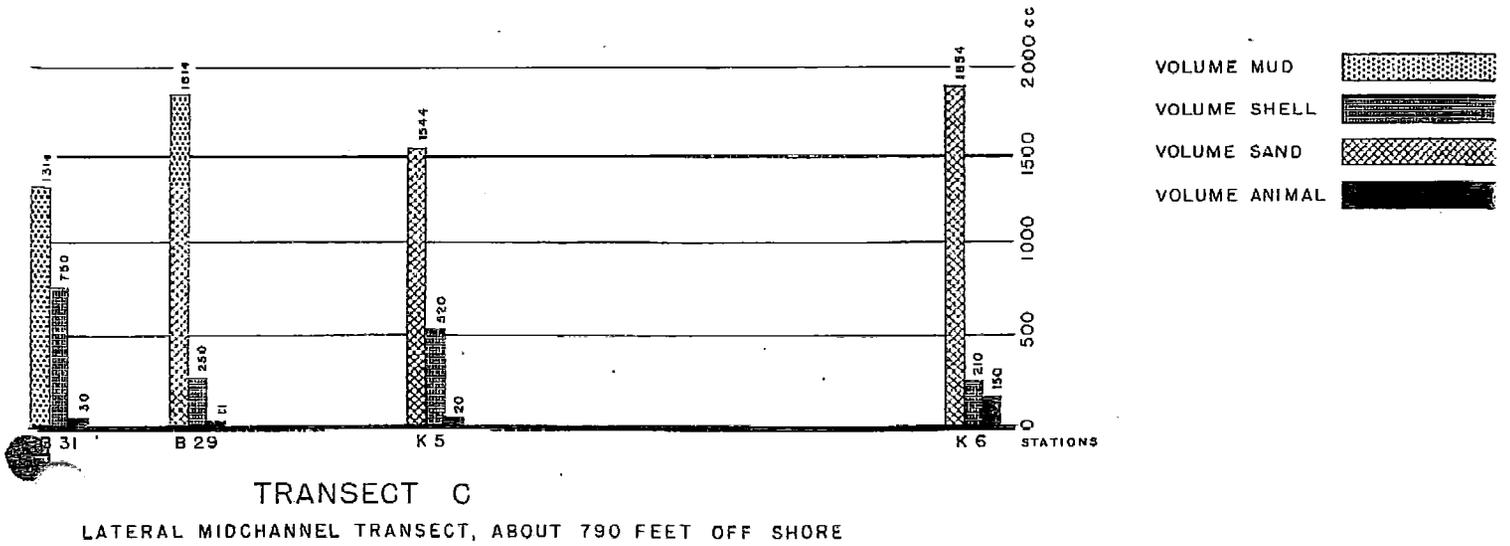
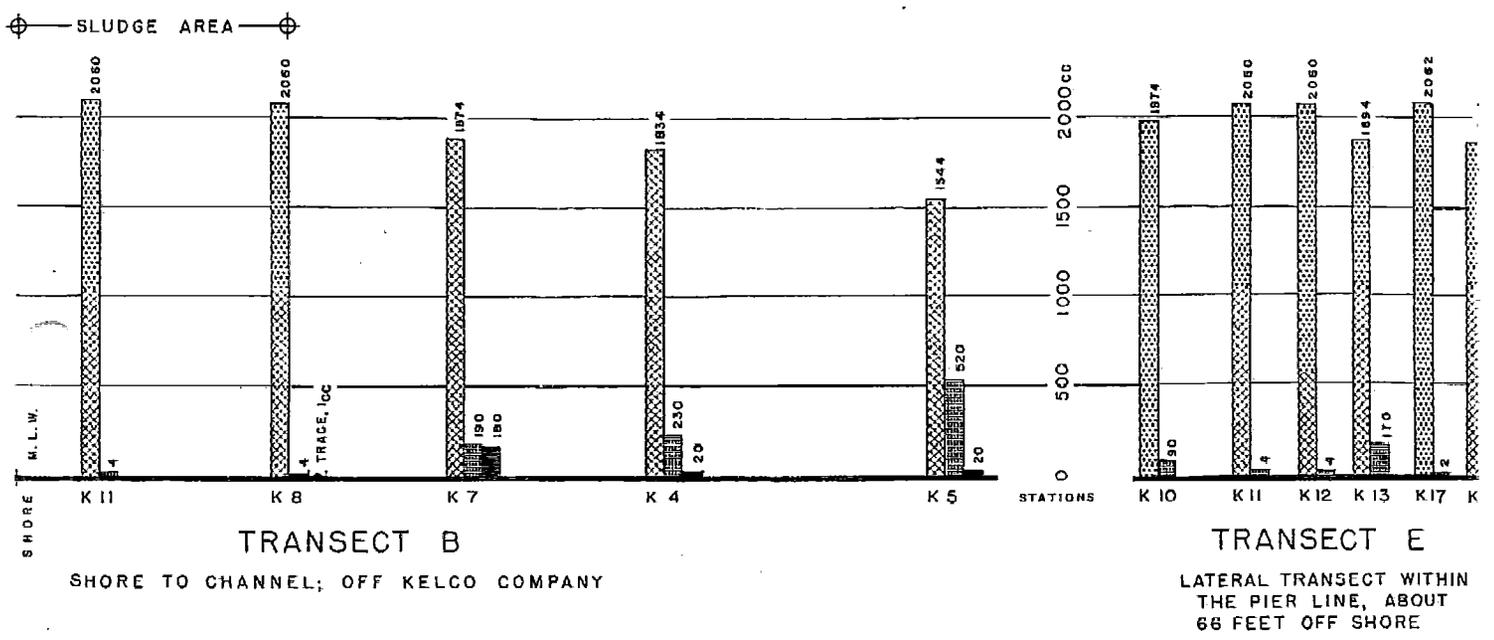
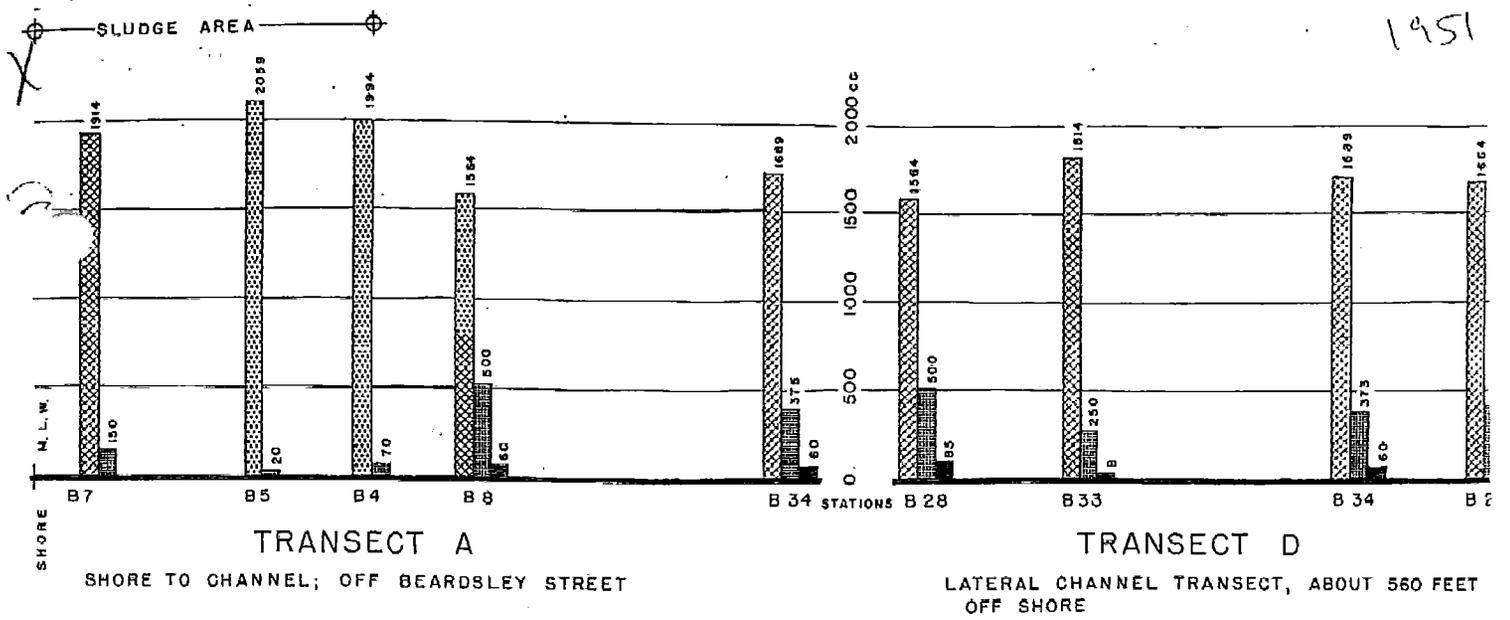


FIGURE 9. GRAPHICAL ANALYSIS OF BOTTOM IN "CRITICAL" AREA

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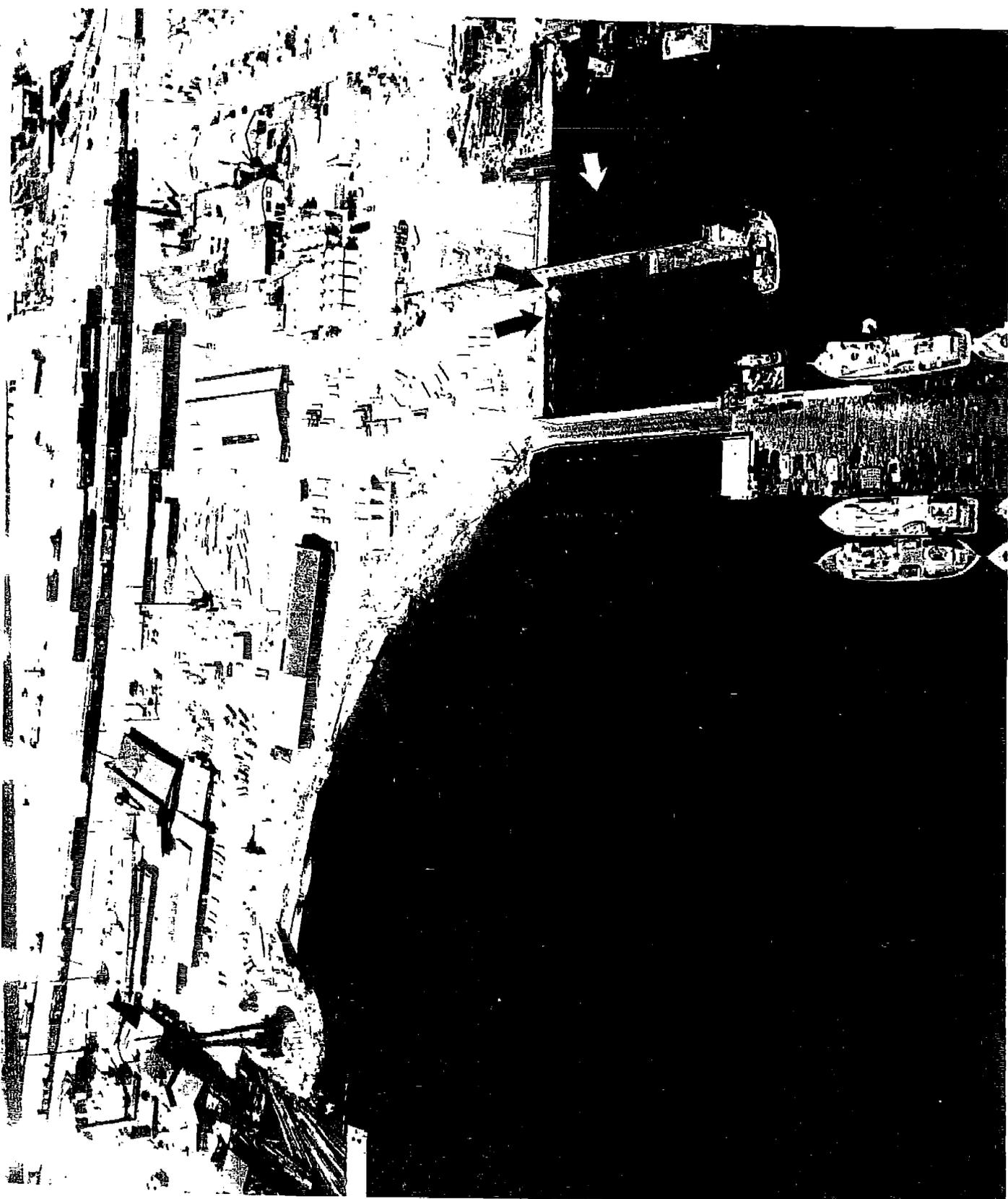
FIGURE 10

AERIAL PHOTOGRAPH OF BEARDSLEY STREET AREA (1949) showing extent of sewage (lighter gray area) in pier area. Arrows point to known sewer outfalls and storm drains. (Photo courtesy of the San Diego Harbor Department)

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FIGURE 11
Sewer Discharge Along the Industrial Section of
San Diego Bay

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FIGURE 12
Fisheries Activity off Van Camp and Westgate-Sun Harbor
Processing Plants - San Diego Bay

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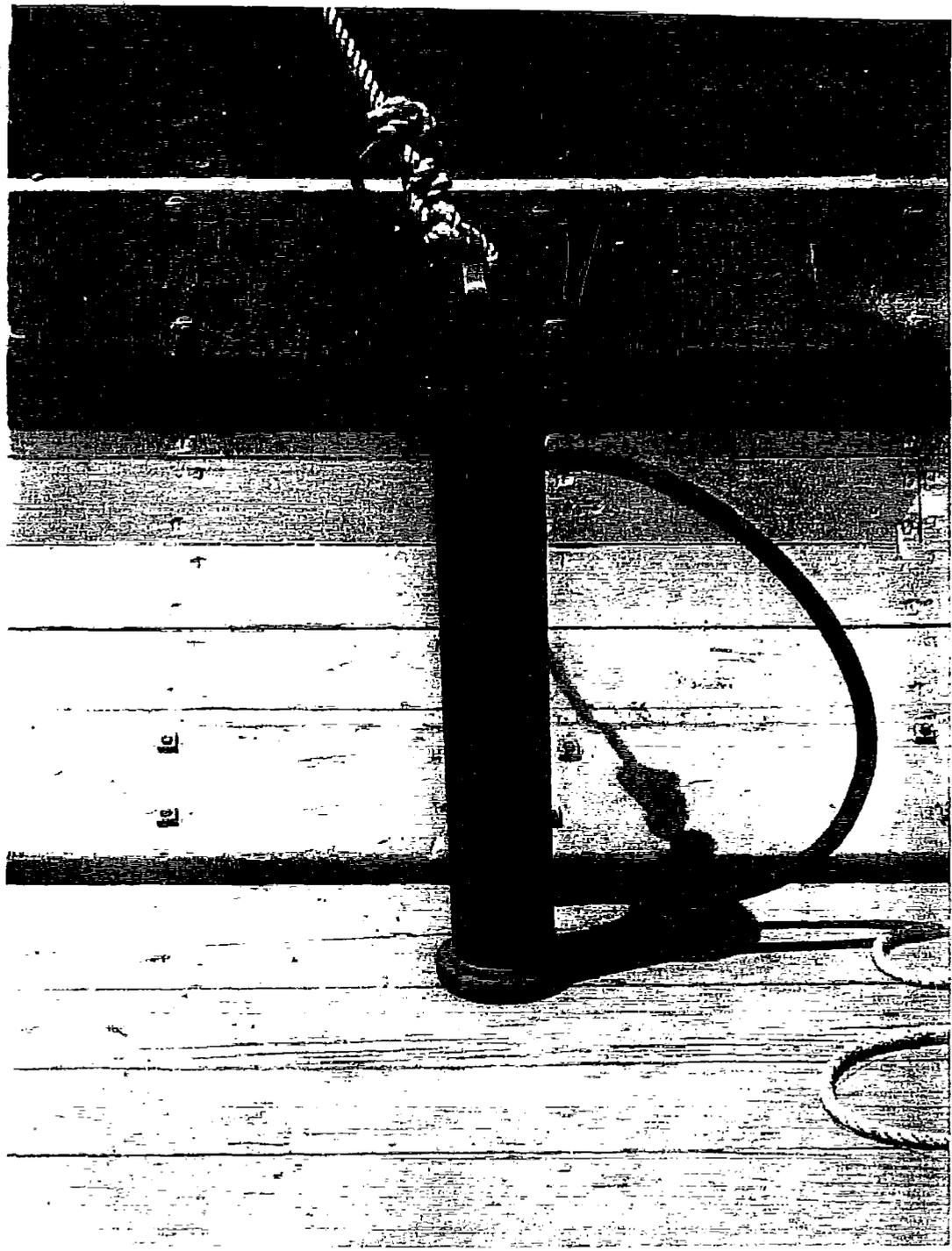
FIGURE 13

Water Depth Sampler - valves in the top and bottom seal
sample as it is drawn to the surface.

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FIGURE 14

Taking the Water Temperature - Thermometer and Bucket

X

X

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1951



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X

1951 X

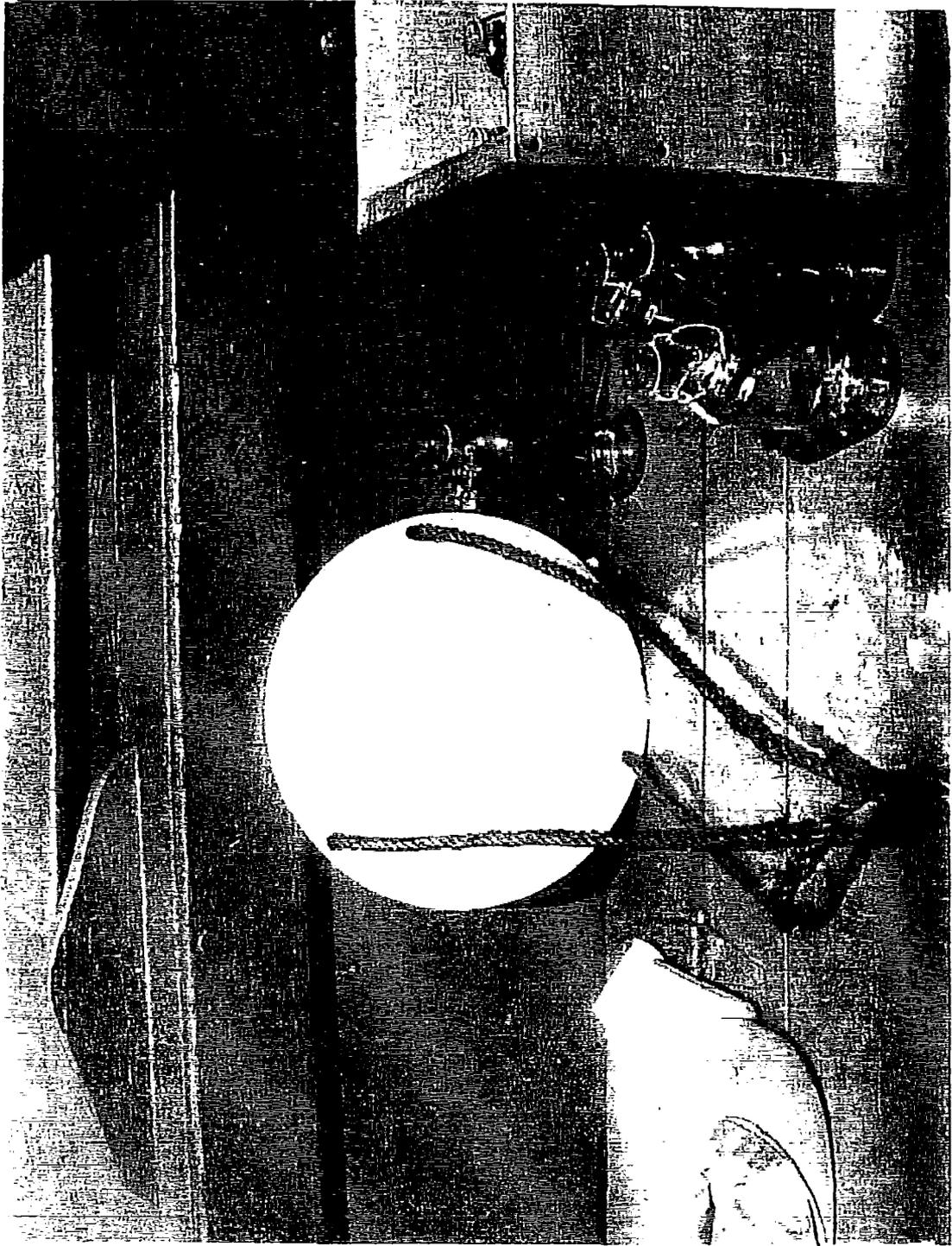
FIGURE 15

Secchi Disk - for measuring water transparency

X

X

1951 7



X



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1951

X

FIGURE 16

A Portion of the Tuna Fleet - San Diego Bay, August 1951

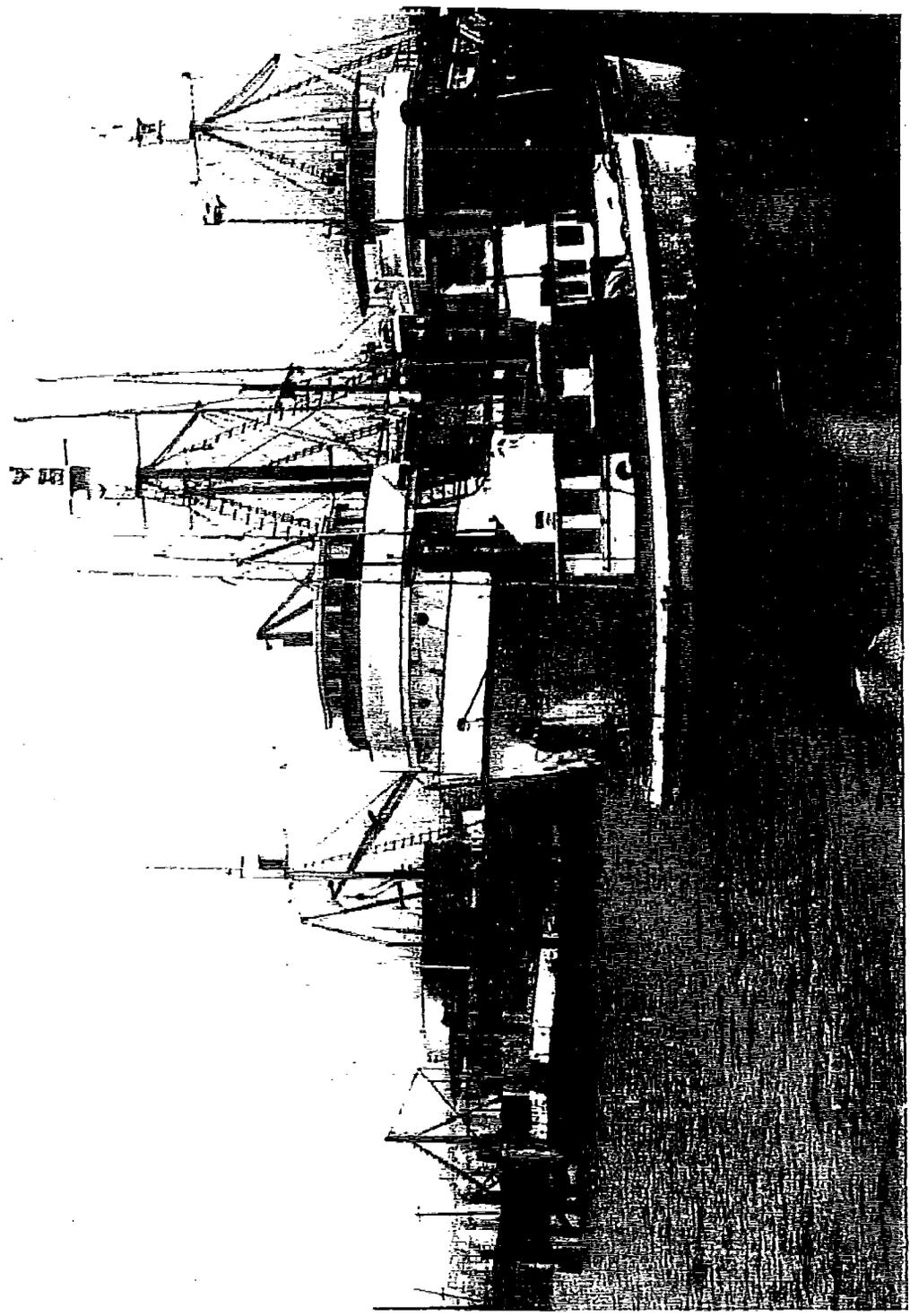
X

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1951 +

FIGURE 17

Dissolved Oxygen Testing Equipment

+

X

X

1951 X



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1951

FIGURE 18

WASHING THE MUD SAMPLE - The improvised sink is a live bait
tank - San Diego Bay

X

+

1951



1951
X

X

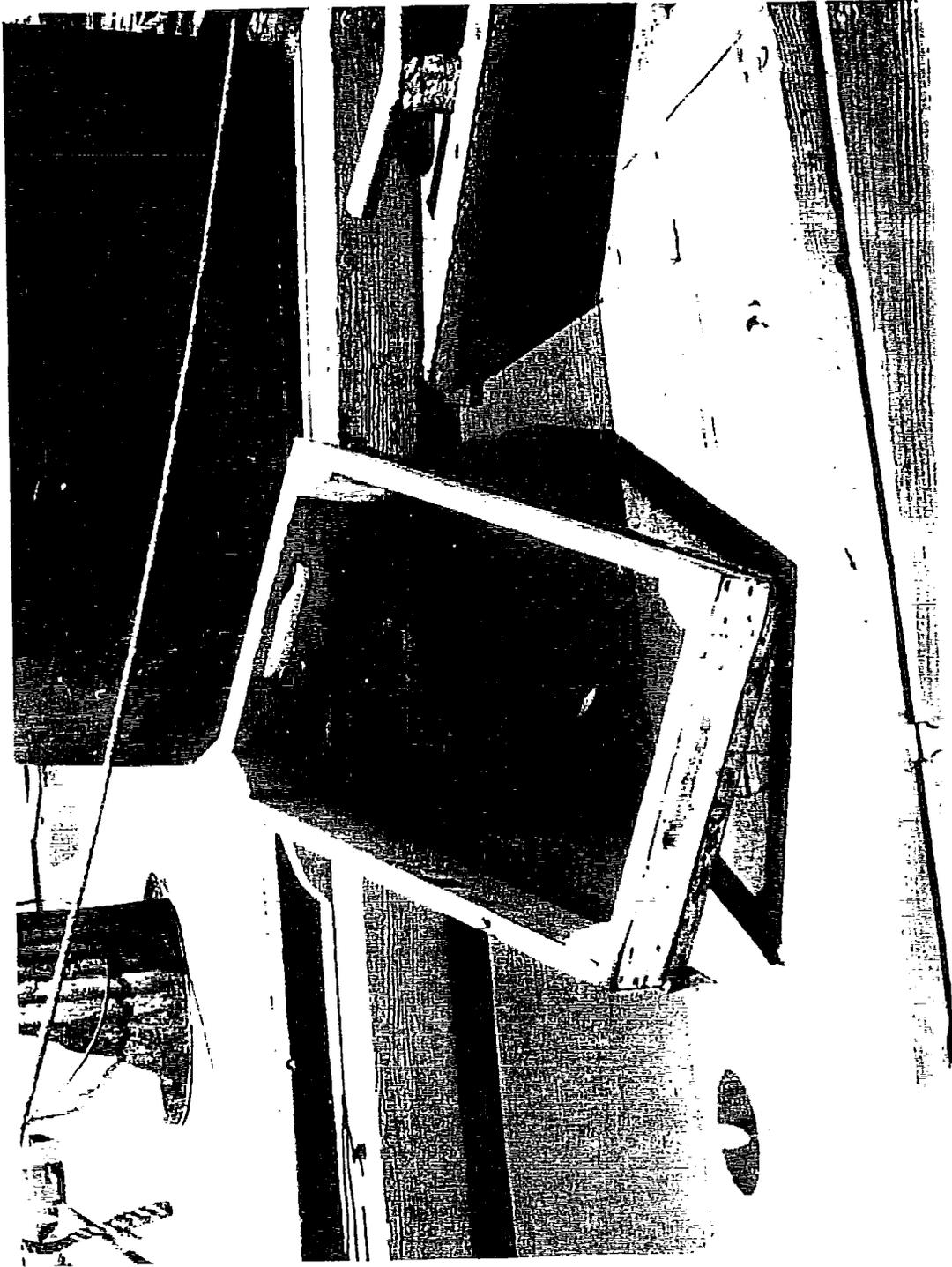
1951

FIGURE 19

Screen - for washing the mud samples

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1951



Copyright © 1951

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1951+

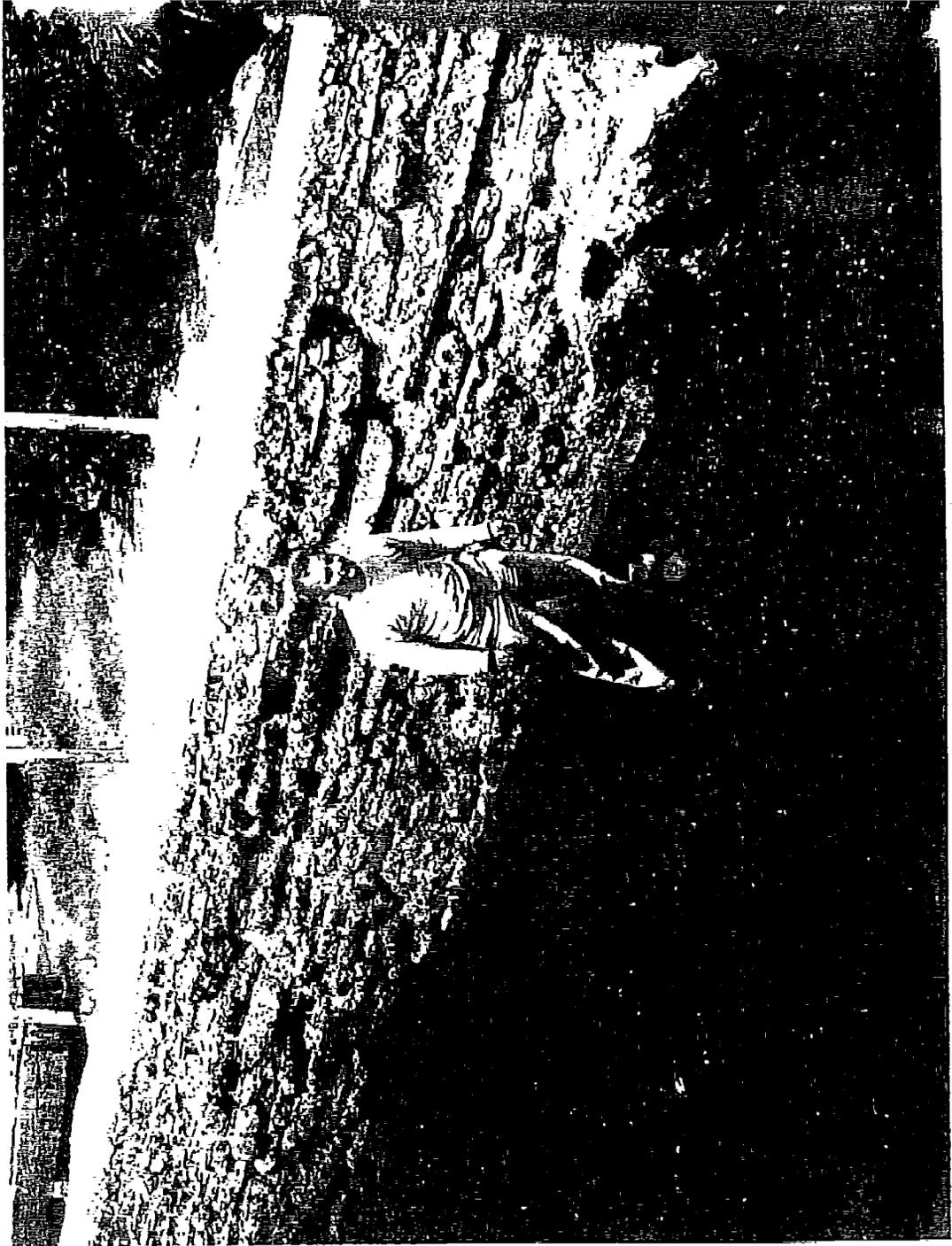
FIGURE 20

FISH SCALES SEVERAL INCHES DEEP - washed up on shore

San Diego Bay

X

1951 +



X

X

X

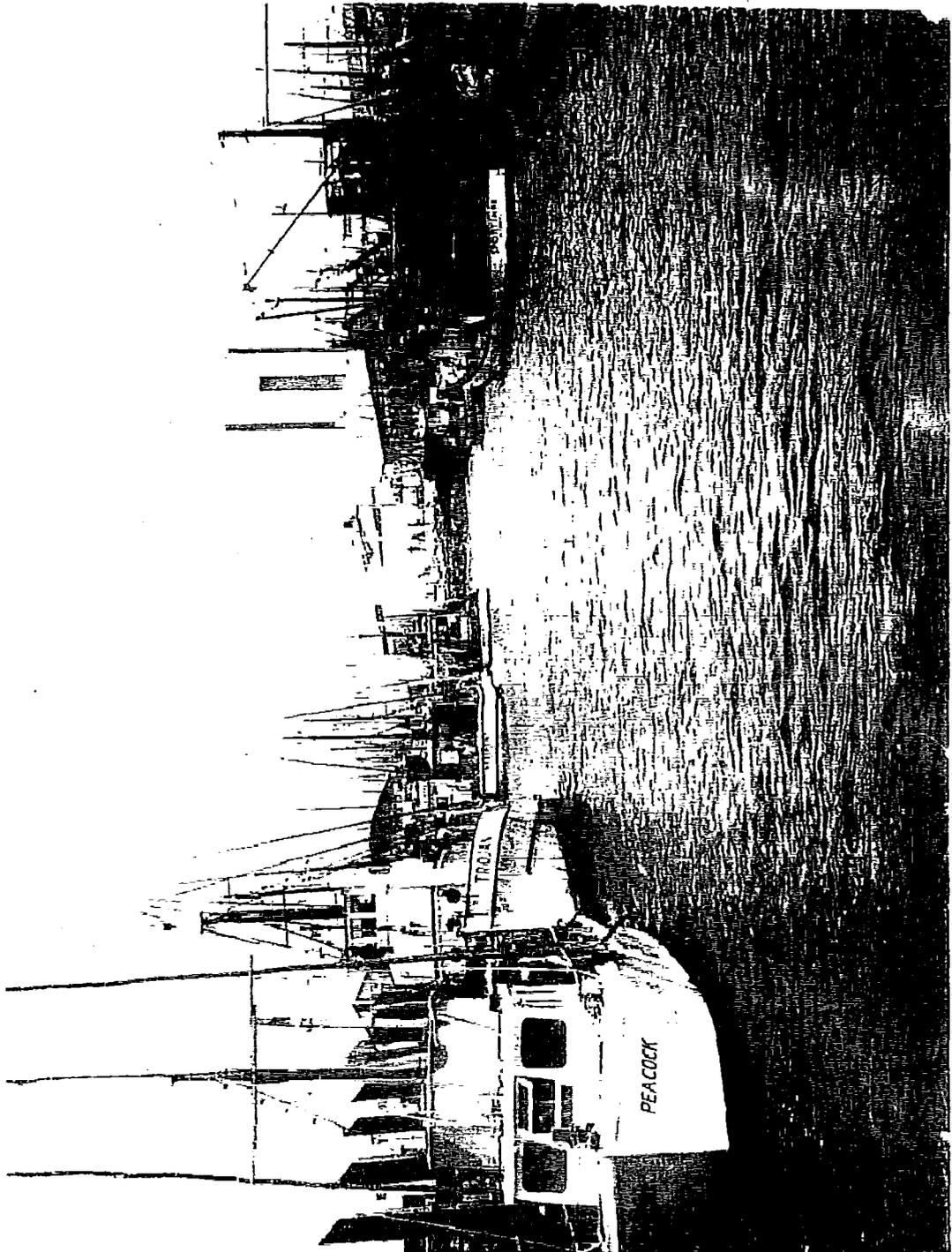
1951

FIGURE 21
FISHERIES ACTIVITY - San Diego Bay
August 1951

X

X

1951 +



+

X

X

1951 7

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- Anonymous. 1950. A Survey of San Diego Bay. Progress Report No. 1, U. S. Navy Volunteer Research Reserve Unit 11-5, 31 December, 1950. 21 pp (Mimeographed).
- Horvath, Charles, and Robert J. Menzies, 1951. The Systematics, Distribution, and Seasonal Settlement of Marine Wood-Borers in Los Angeles and Long Beach Harbors. Project No. 52-4-6, State of California, Department of Natural Resources, Division of Fish and Game. San Francisco, California.
- X
- X

1951

A P P E N D I X

- A. Preliminary Survey of San Diego Harbor
- B. Kelco Company Area Survey
- C. Beardsley Street Area Survey
- D. Physical Data: Depths, Transparency, Temperature,
Dissolved Oxygen, and Chlorinity
- E. Volumes per sample: Animals, Mud, and Coarse Matter
- F. Abundance of Marine Invertebrates near "Critical"
Areas of San Diego Harbor

X
APPENDIX A1951
PRELIMINARY SURVEY OF SAN DIEGO HARBOR - 9, 10, 13, August, 1951

Station Number	Character of Bottom
1.	Fine light gray sand, all went through mesh of bucket, worm tubes. Bryozoa.
2.	San, oil, pecten shells, worm tubes. Worms, <u>Macoma</u> -like mollusks.
3.	Darker gray sand (all went through mesh of bucket), shells, pecten shells, worm tubes.
4.	Fine, compact, gray mud - no odor. Worms, <u>Macoma</u> .
5.	Surface layer somewhat yellowish, bottom black, fine sand, shell fragments, worm tubes, <u>Phyllospadix</u> blades. Worms, <u>Chione</u> , <u>Macoma</u> , fish.
6.	Sandy, dark gray mud, oil, worm tubes, dead eel-grass roots, shells. Worms.
7.	Fine black mud, some sand (strong H ₂ S odor), paper, leaves, shells, wood. Red water (plankton?).
8.	Omit
9.	Fine black sand, little mud, sewage odor, worm tubes, shell fragments. <u>Paphia</u> .
10.	Hard-packed sand (almost clay-like), many shell fragments, worm tubes. Worms.
11.	Fine black mud (strong H ₂ S odor). No shells, nothing living.
12.	Fine black mud (H ₂ S odor), very few shell fragments.
13.	Gray sandy mud, shell fragments.
14.	Fine black mud (H ₂ S odor). No living animals.
15.	Fine almost black sand, shell fragments, worm tubes with living worms.
16.	Black goeey mud (H ₂ S odor), few shells. No animals.
17.	Mud with many living worms, shells, mostly oyster.
18.	Omit

X

1951

APPENDIX A (CONTINUED)

19. Yellowish-gray sand, worm tubes, many shell fragments.
Chione.
20. Coarse sand, shells, Plio-fossil sandstone with many shells.
Worms, Chione.
21. Omit.
22. Black mud (H₂S odor), many razor-clam and oyster shell
fragments, fish scales.
23. Fine sand, many shell fragments, Several Chione.
24. Kelco Company. H₂S odor, fine yellow brown mud.
25. Opposite San Diego Packing Company. Black mud, H₂S odor,
shell fragments. No animals.
26. Opposite 28th Street Hole. Sand with gravel and small rocks,
black mud on top, chunk sandstone, shell fragments. Worms.
27. Gas bubbles came to the surface when sampler hit the bottom.
H₂S odor, gooey mud, "algal indications", cloth, paper, few
shell fragments. No animals.
28. Fine black gooey mud, H₂S odor, dead worm tubes, tree leaves.
No living animals.
29. Black gooey mud, H₂S odor, dead worm tubes (ship-bottom
origin probably), no "kelp sludge". No animals.
30. Fine gooey gray-green mud, H₂S odor, no "kelp sludge". No
animals.
31. Fine gooey mud, H₂S odor, few shells, no kelp sludge. No
animals.
32. Granular black mud, H₂S odor, algal fragments.
- 32A. Fine dark gray gooey mud, H₂S odor, few shell fragments, few
algal fragments. No living animals.
33. Fine black gooey mud with little sand, H₂S odor, few algal
fragments, few shell fragments. No living animals.
34. Fine black gooey mud, H₂S odor, few shells. No living animals.

1951

APPENDIX A (CONTINUED)

35. Opposite FB 28. Fine black gooey mud, H₂S odor, few shell fragments.
36. Opposite FB 26. Black gooey mud, H₂S odor. One worm.
37. Opposite FB 24. Black sandy mud, foul odor, few shells, shell fragments, worm tubes. Hemigrapsis oregonensis, young spider crabs, several Macoma.
38. Opposite FB 22. Fine black sand, shell fragments. Worms, Chione.
39. Opposite FB 6. Dark fairly compact sand, some mud, shell fragments. Hemigrapsis oregonensis, numerous razor clams, worms, Macoma.
40. Sandy gray mud, few shell fragments. Razor clam, worms, Macoma nasuta.
41. Opposite FB 20. Compact fine dark blackfish sand with mud (sewage odor), oil. Razor clams, worms, worm tubes, Macoma nasuta.
42. Opposite FB 18. Sand and shells, predominately shells and fragments. Crepidula, Chione, worms.
43. Opposite FB 16. Not so fine gray sand, numerous small shell fragments, worm tubes. Inachoides tuberculata, Chione spp., Macoma nasuta, clams and worms.
44. Compact fine gray mud. Macoma, clams worms.
45. Opposite High Seas Tuna Packing Company. Lighter fine gray and yellow mud (no H₂S odor), more sand and mostly oyster shells, stingray stingers. Crabs, Hemigrapsis oregonensis, Chione, Macoma nasuta, worms.
46. Fairly compact gray sandy mud, shell fragments. Worms, shells, Callianassa.
47. Fine gray sand, worm tubes. Worms, Macoma, Paphia.
48. Between piers 11 and 12. Fine black ooze, H₂S odor, very few shell fragments, small piece of brown algae. No animals.
49. Between piers 12 and 13. Fine black ooze, H₂S odor, very few (soft and crumbly) shell fragments.

X

1951

APPENDIX A (CONCLUDED)

50. Opposite Buoy 30. Gray mud (no H₂S odor), few shell fragments. Several worms.
 51. Opposite Buoy 36. Rather compact black mud (very slight H₂S odor), few shell fragments, no sand, straw. Razor clams, worms.
 52. Opposite Buoy 31. Fine gray sand, shell fragments, stingray stinger. Worms, Chione.
 53. Opposite Buoy 96. Gooley gray mud with some sand (no odor). Razor clams, worms, Chione.
 54. Opposite Buoy 28, 200 yards offshore. Top inch of fine black mud with H₂S odor, fine sand bottom, few shells. One worm.
 55. Opposite "black can" buoy 19. Sand. Worms, Chione.
 - 55A. Just south of Campbell Station (Fisherman's Marine Company) and San Diego Rowing Club. Fine black mud, H₂S odor, very few shell fragments. No animals.
 56. USN cable area, off San Diego Rowing Club pier. An inch of top goo with H₂S odor, fine black sand bottom with few shell fragments. Several worms.
 57. West side of black can buoy 17. Solid bottom! One worm.
 58. Near shore, east of ferry crossing (San Diego & Coronado Ferry Company). Black gooley mud, strong H₂S odor. No animals.
 59. Opposite Star & Crescent Boat Company dock. Dark gray gooley mud, H₂S odor. No animals.
 60. Opposite City Hall tower. Fine gooley dark gray mud with H₂S odor, fish scales, peanut shells. No living animals.
 61. At Harbor Drive Bridge entrance to lagoon. Soft gray mud, no H₂S odor. Several worms, two Callianassa.
- X

1951

APPENDIX B

KELCO COMPANY AREA SURVEY : SAN DIEGO HARBOR - 10 AUGUST, 1951.

STATION NUMBER	LOCATION	CHARACTER OF BOTTOM
K-1	Approx. 200 yds. W of Kelco Company	Disagreeable odor. Reddish brown.
K-2	Midway between Kelco & Buoy 30	Black sand and gravel. Strong odor. Clams and worm tubes, shell fragments. Worms.
K-3	Off M. H. Golden pier	Black sand and mud, H ₂ S odor, shells, worms.
K-4	Midway between Kelco and Buoy 32	Similar to K-3. Black fairly fine sand, oily on top, shells, H ₂ S odor. Worms, <u>Chione</u> , <u>Paphia</u> .
K-5	Opposite Buoy 32	Black sand, shells, oily odor. Worms, crabs.
K-6	Midway between Buoys 33 and 34	Black sand, worm tubes, shell fragments. Crabs, worms.
K-7	Approx. 200 yds. off E bulkhead SDG&E	Oily black sand, shells, worm tubes. Worms.
K-8	Approx. 100 yds. off piers	Very fine black sand taking on a muddy character, H ₂ S odor, shell fragments. Worms.
K-9	Midway between K-8 and K-1	Black sand, strong H ₂ S odor, few shell fragments, worm tubes but no worms.
K-10	Between M. H. Golden & Kelco piers	Fine black mud, strong H ₂ S odor, few shells, algal fragments, matchsticks.
K-11	Between Kelco pier and W bulkhead	Sand with soft fine mud on top. One dead amphipod.
K-12	Between W and E bulkheads off SDG&E	Top of fine mud, bottom possibly a little sand, strong H ₂ S odor, brownish color. One piece of tarpaper, fish bone, one dead <u>Macoma</u> .

1951

APPENDIX B (CONCLUDED)

K-13	Between E bulkhead & San Diego Marine Constr. Co. pier.	Water very warm. Top of fine mud, sandy under, shells and shell fragments, very foul odor.
K-14	Between Buoy 34 and Richfield pier	Gray sand over yellow clay, many shell fragments.
K-15	Between largest of San Diego Marine Constr. Co. piers.	Top of fine black mud, sand bottom, H ₂ S odor, fish scales of several forms, few shell fragments, gravel.
K-16	Same as K-15, but at ends of piers	Fine black mud, H ₂ S odor, few shell fragments, very few fish scales. Worms.
K-17	Near shore, W. of large San Diego Marine Constr. Co. Pier	Soft black goeey mud, H ₂ S odor, very few shell fragments and very few fish scales.
K-18	Near shore, E of San Diego Marine Packing Company pier	Black goeey mud, H ₂ S odor.

1951 7

APPENDIX C

BEARDSLEY STREET AREA SURVEY : San Diego Harbor - 13 August , 1951

Station Number	Location	Character of Bottom
B-1	Opposite Buoy 29	Black coarse sand, shells, <u>Chione</u> .
B-2	Midway between Union Oil Co. pier and Buoy 29	Fine black sand, shell fragments. Worms.
B-3	Opposite Union Oil Co. pier	Fine black sand with mud, rock, shell fragments, H ₂ S odor. One worm.
B-4	Midway between Union Oil Co. and oil line pier	Soft gooey black mud, H ₂ S odor, shell fragments, fish scales and bones.
B-5	Off Beardsley Street pier	Fine black ooze, H ₂ S odor, fish scales. No living animals.
B-6	Between Beardsley St. pier and Union Oil Co. pier.	Coarse sand, H ₂ S odor. No animals.
B-7	Between oil line pier and Beardsley Street pier	Fairly coarse sand, H ₂ S odor, shell fragments, gravel, very few fish scales. No animals.
B-8	Off end of oil line pier	Fine black mud and sand, shell fragments, no discernable odor. Many worms.
B-9	Between Chaffee Mach. Co. pier and oil line pier	Fine blackish-gray ooze, combined H ₂ S and fish odor, fish scales, grass, paper, no living animals.
B-10	Off end of Chaffee Machine Co. pier	Fine black gooey ooze, paper, fish scales. No living animals.
B-11	Between Bill Kairrot pier and Chaffee Mach. Co. pier	Fine black ooze, fish scales, paper, strong H ₂ S odor.
B-12	At end of Bill Kairrot pier	Fine black mud, H ₂ S odor, fish scales and bones. No living animals.
B-13	Omit	

1951

APPENDIX C (CONTINUED)

B-14	At end of Shell Oil Co. pier	Very fine black mud, shells on bottom, strong H ₂ S odor, fish scales, shell fragments, gravel. No animals.
B-15	Between Van Camp (1) pier and Shell Oil Company pier	Fine black mud, fish scales, strong H ₂ S odor.
B-16	At end of Van Camp (1) pier	Fine black mud, H ₂ S odor, fish scales. No living animals.
B-17	Between Van Camp (1) and Van Camp (2) piers	Soft black goeey mud, shell fragments, H ₂ S odor, fish scales and bones. No living animals.
B-18	At the end of Van Camp (2) pier	Soft black goeey mud, shell fragments, H ₂ S odor, fish scales and bones. No living animals.
B-19	Between Van Camp (2) and Van Camp (3) piers	Black goeey mud with sand and some shells, strong H ₂ S odor, fish scales and bones. No living animals.
B-20	At end of Van Camp (3) pier	Soft black goeey mud, H ₂ S odor, some shell fragments, fish scales.
B-21	Between Van Camp (3) and Westgate-Sun Harbor (2) piers	Soft black mud, H ₂ S odor, fish scales and bones. No living animals.
B-22	Off end of Westgate-Sun Harbor (1) pier	Black goeey mud, much shell fragment, H ₂ S odor, fish bones and a few fish scales, gravel.
B-23	Off end of Westgate-Sun Harbor (2) pier	Gray clay with black mud top, H ₂ S odor, few fish scales, many shell fragments.
B-24	Off end of Westgate-Sun Harbor (3) pier	Soft black goeey mud, H ₂ S odor, few shell fragments, fish scales.
B-25	Between Westgate-Sun Harbor (3) and Fisher-man's Marine Corp. pier	Soft black goeey mud, H ₂ S odor, fish scales.
B-26	Omit	

1951

APPENDIX C (CONCLUDED)

B-27	Off end of Fisherman's Marine Corp. pier	Oyster shells, bone. Crabs, <u>Crepidula</u> , sea anemone, worms.
B-28	Midway between buoy 31 and Fisherman's Marine Corp. pier	Gray sand, shell fragments, gravel, worm tubes, no H ₂ S odor.
B-29	Opposite Buoy 31	Fine sand, some mud, shell fragments, no H ₂ S odor. Worms, <u>Chione</u> .
B-30	Between buoy 31 and Westgate-Sun Harbor (3) pier	Black sand with mud, gravel, shell fragments, H ₂ S odor. Worms.
B-31	Midway between buoys 30 and 31	Dark brownish-green mud, shell fragments (largely <u>Chione</u>), gravel, worm tubes. Living <u>Chione</u> , worms, crabs.
B-32	Midway between buoy 30 and Shell Oil Co. pier	Dark gray sand, much shell fragment. Worms, <u>Chione</u> .
B-33	Between Van Camp (3) pier and Station B-31	One half sample. Gray-black sand with shell fragments. Worms.
B-34	Between Stations B-2 and B-32	Blackish sand, shell fragments, worm tubes, <u>Chione</u> , crabs and worms.
B-35	Between buoys 29 and 30	Fine blackish mud top, sand bottom, shell fragments, gravel, worm tubes. <u>Chione</u> , worms.

1951

APPENDIX D

PHYSICAL DATA : DEPTH, TRANSPARENCY, TEMPERATURE, DISSOLVED
 OXYGEN, CHLORINITY : San Diego Harbor - 14 August 1951*

Station Number	Time	Depth ft.	Secchi ft.	Temperature °C. (Surface)	Dissolved Oxygen ppm		Chlorinity o/oo	
					Surf	Deep	Surf	Deep
1	8:45 am	41.0	12.0	16.6	6.7	6.4		
3	8:55 am	45.0	8.0	17.2	6.3	5.5	18.9	18.9
5	9:05 am	57.0	7.5	19.0	6.0	6.8	18.8	18.7
10	9:20 am	44.0	5.0	21.2	5.9	5.0	19.0	18.9
30	10:35 am	39.0	8.0	22.5	4.4	4.5	18.8	18.9
31	10:40 am	36.0	6.0	22.6	4.0	4.3	18.7	18.9
32A	10:50 am	32.0	6.5	23.2	5.7	4.3		
35	11:00 am	35.0	6.0	23.1	6.0	5.0		
39	12:30 pm	15.0	5.0	22.3	6.0	5.9		
43	9:30 am	45.0	6.5	21.0	5.5	5.0	19.0	18.9
44	1:30 pm	22.0	7.0	21.0	6.7	6.7		
	1:40 pm				7.4	6.2		
	1:40 pm				6.8	6.3		
45	1:25 pm	23.0	4.0	21.1	5.7	5.3		
50	11:10 am	17.5	6.0	23.4	6.8	4.8		
51	11:15 am	20.0	3.0	24.0	6.6	4.9		
52	11:20 am	27.5	5.0	24.2	5.8	6.0	19.3	19.4
53	11:30 am	16.0	4.0	24.4	6.4	5.0	19.3	19.1
K-1	10:15 am	30.0	2.5	22.7	4.8	5.2	18.9	18.8
Intake SDG&E	10:20 am	16.0	6.0	21.6	4.2	-	18.7	-
Outfall	10:25 am	18.0	6.0	25.9	4.2	-	18.9	-

* Intermittently cloudy and sunshiney.

1951-7

APPENDIX D (CONCLUDED)

Station Number	Time	Depth ft.	Secchi ft.	Temperature °C. (Surface)	Dissolved Oxygen ppm		Chlorinity o/oo	
					Surf	Deep	Surf	Deep
B-9	9:50 am	16.0	2.5	21.9	3.0	-	18.9 -	
B-10	9:52 am	18.0	2.5	21.6	4.0	4.3		
B-11	10:00 am	9.0	2.5	21.8	3.9	-	18.7	
B-19	10:05 am	20.0	1.5	21.9	4.2	4.0		
B-34	9:40 am	40.0	5.0	22.7	4.7	4.4		

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X

X

1951 X

APPENDIX E

VOLUMETRIC ANALYSIS OF BOTTOM SAMPLES

San Diego Harbor

Notes: Volume of all original samples is calculated to be 2064 cc.
 Mesh used in screening samples had a diameter of 1.5 mm.

Station Number	Volume of living animals	Volume of residue	Volume of mud and fine sand	Remarks
48	0	2 cc	2062 cc	Worm tube, and shell fragments, kelp fragments
49	0	1 cc	2063 cc	Shell fragments
50	1 cc	10 cc	2054 cc	<u>Macoma nasuta</u> and <u>Tagelus</u> shells. 1 small <u>Macoma</u> sp. and 2 worms alive.
51	10 cc	20 cc	2044 cc	Small shell fragments, worm tubes, straw. 6 <u>Solen rosaceus</u> , 6 <u>Ensis</u> , 1 <u>Macoma nasuta</u> , 1 amphipod (8 cc clams; 2 cc, 4 worms).
52	20 cc	70 cc	1994 cc	Shell fragments, 20 dead file limpets. 2 <u>Chione undatella</u> , 1 <u>Solen rosaceus</u> 1 <u>Lyonsia californica</u> , 1 <u>Patia staminea</u> , 1 sea anemone, 6 worms.
53	9 cc	10 cc	2054 cc	Living: 1 <u>Macoma nasuta</u> , 1 <u>Tagelus</u> sp., 1 worm.
61	4 cc	10 cc	2054 cc	Very few shell fragments. 4 cc worms.
K-1	0	10 cc	2054 cc	Brown kelp fragments, numerous small dead gastropods, shell fragments.
K-2	25 cc	500 cc	1564 cc	5 worm tubes. 28 annelids, 12 <u>Chione</u> , 2 black line mollusks.

1951

APPENDIX E (CONTINUED)

Station Number	Volume of living animals	Volume of residue	Volume of mud and fine sand	Remarks
K-3	4 cc	200 cc	186 1/4 cc	Mostly shell fragments and gravel, brown algae fragments. 4 worms.
K-4	20 cc	230 cc	183 1/4 cc	Worm tubes, shell fragments. <u>Tagelus</u> , <u>Chione</u> , <u>Macoma nasuta</u> , <u>Paphia</u> , worms.
K-5	20 cc	520 cc	154 1/4 cc	Residue largely <u>Mytilus</u> shells. 7 <u>Hemigrapsis oregonensis</u> , worms
K-6	150 cc	210 cc	185 1/4 cc	20 worm tubes, more than 20 dead file limpet shells. 4 <u>Chione undatella</u> , 8 <u>Macoma nasuta</u> , 1 <u>Hemigrapsis oregonensis</u> , 2 amphipods, 2 small worms.
K-7	180 cc	190 cc	187 1/4 cc	22 worm tubes, few dead file limpet shells. 1 <u>Hemigrapsis oregonensis</u> , 3 <u>Macoma nasuta</u> , 3 <u>Chione undatella</u> , 1 amphipod
K-8	1 cc	4 cc	2060 cc	<u>Macoma nasuta</u> , shell fragments. 2 worms.
K-9	0	90 cc	200 1/4 cc	Few <u>Macoma nasuta</u> valves, worm tubes, 1 fish scale.
K-10	0	90 cc	197 1/4 cc	Oyster, <u>Tagelus</u> , <u>Laevicardium</u> shell fragments, 2 kelp fragments.
K-11	0	4 cc	2060 cc	Small shell fragments.
K-12	0	4 cc	2060 cc	Piece of tarpaper, matchstick, 2 fish bones, 4 fish scales, 1 dead <u>Macoma nasuta</u> .
K-13	0	170 cc	189 1/4 cc	<u>Macoma</u> and <u>Paphia</u> shells, gravel, 2 fish scales, some algal fragments, hydroid fragments.

APPENDIX E (CONTINUED)

1951

Station Number	Volume of living animals	Volume of residue	Volume of mud and fine sand	Remarks
K-14	1 cc	1000 cc	1064 cc	Lumps of clay containing shell fragments mostly <u>Chione</u> , many file limpet shells, 1 small <u>Macoma nasuta</u> .
K-15	0	200 cc	1864 cc	Shell fragments, fish bones and scales.
K-16	1 cc	3 cc	2061 cc	Worm tube, <u>Macoma</u> and other shell fragments, 16 fish scales, 1 worm.
K-17	0	2 cc	2062 cc	Glass, shells, 5 fish scales.
K-18	86 cc	90 cc	1974 cc	Dead tunicate, crab fragments, shell fragments, paper.
B-1	110 cc	400 cc	1664 cc	Shell fragments, Several file limpets, 10 cc worms, 1 fish, 3 black-striped mollusks, 18 <u>Paphia</u> and <u>Chione</u> .
B-2	22 cc	400 cc	1664 cc	Shell fragments, small stones. 2 <u>Chione</u> , 3 black-striped mollusks (2 cc) 20 cc worms.
B-3	3 cc	100 cc	1964 cc	Stones, one dead tunicate. Worms (3 cc).
B-4	0	70 cc	1994 cc	Shell fragments.
B-5	0	20 cc	2044 cc	Mostly fish scales, straw, wood.
B-6	0	150 cc	1914 cc	Rocks, shell fragments, fish scales, straw.
B-7	0	150 cc	1914 cc	Gravel and small shell fragments.

APPENDIX E (CONTINUED)

1951

Station	Volume of living animals	Volume of residue	Volume of mud and fine sand	Remarks
B-8	60 cc	500 cc	1564 cc	Shell fragments. Worms, 1 <u>Hemigrapsis oregonensis</u> .
B-9	0	60 cc	2004 cc	Straw, fish scales, rope, very few shell fragments, <u>Phyllospadix</u> .
B-10	0	180 cc	1884 cc	Largely fish scales and oil.
B-11	0	40 cc	2024 cc	Bones, fish scales, cloth, tinfoil, paper.
B-12	0	5 cc	2059 cc	Fish scales, bone, wood, very few shell fragments.
B-14	0	300 cc	1764 cc	Shell fragments.
B-15	0	20 cc	2044 cc	Shell fragments, few fish scales.
B-16	0	25 cc	2039 cc	Fish scales, shells, wood.
B-17	0	90 cc	1974 cc	Fish scales, bones, few shell fragments.
B-18	0	200 cc	1864 cc	Mostly shell fragments, few fish scales.
B-19	0	170 cc	1894 cc	Fish scales (90%), bones and shell fragments (10%).
B-20	0	20 cc	2044 cc	Fish scales (50%), bones and shells (50%).
B-21	0	500 cc	1564 cc	Fish scales and bones.
B-22	0	250 cc	1814 cc	Shell fragments (98%), few fish scales and bones.
B-23	0	210 cc	1854 cc	Shell fragments (98%), few fish scales and bones.

APPENDIX E (CONCLUDED)

Station	Volume of living animals	Volume of residue	Volume of mud and fine sand	Remarks
B-24	0	45 cc	2019 cc	Shell fragments (75%), fish scales (25%).
B-25	0	120 cc	1944 cc	Almost entirely fish scales.
B-27	210 cc	1250 cc	814 cc	Shell fragments - mostly oyster. Worms (130 cc), <u>Crepidula</u> (70 cc), 7 <u>Hemigrapsis oregonensis</u> , one green <u>Ascidian</u> .
B-28	85 cc	500 cc	1564 cc	Shell fragments. Worms and worm tubes (70 cc), mollusks (15 cc), several file limpets, one <u>Macoma nasuta</u> , 13 <u>Paphia</u> , 7 black line mollusks.
B-29	11 cc	250 cc	1814 cc	Mostly shell fragments. 3 worms (1 cc), 3 <u>Chione</u> (10 cc)
B-30	4 cc	500 cc	1564 cc	Shell fragments. One <u>Cladocera</u> , 1 small marine worm, 2 black-line mollusks, 4 <u>Paphia</u> , 2 file limpets, 5 worms.
B-31	30 cc	750 cc	1314 cc	Two <u>Hemigrapsis oregonensis</u> , 3 black line mollusks, 24 <u>Chione</u> , 1 file limpet (20 cc) <u>Worms</u> (10 cc).
B-32	120 cc	450 cc	1614 cc	Shell fragments. Clams, 23 <u>Chione</u> , (90 cc); Worms (30 cc)
B-33	8 cc	250 cc	1814 cc	Shell fragments. About 4 cc worms; 3 black-line mollusks (4 cc).
B-34	60 cc	375 cc	1689 cc	Shell fragments. Worms (40 cc), 10 <u>Chione</u> , 7 black line mollusks (20 cc).
B-35	80 cc	750 cc	1314 cc	Shell fragments. Worms (20 cc); 25 <u>Chione</u> , 4 black-line mollusks, 1 <u>Macoma nasuta</u> , several file limpets, 1 sea anemone.

X

X

X

X

APPENDIX F (CONCLUDED)

1951

Station number	Species								
	1.	2.	3.	4.	5.	6.	7.	8.	9.
B-12	0	0	0	0	0	0	0	0	0
B-13	0	0	0	0	0	0	0	0	0
B-14	0	0	0	0	0	0	0	0	0
B-15	0	0	0	0	0	0	0	0	0
B-16	0	0	0	0	0	0	0	0	0
B-17	0	0	0	0	0	0	0	0	0
B-18	0	0	0	0	0	0	0	0	0
B-19	0	0	0	0	0	0	0	0	0
B-20	0	0	0	0	0	0	0	0	0
B-21	0	0	0	0	0	0	0	0	0
B-22	0	0	0	0	0	0	0	0	0
B-23	0	0	0	0	0	0	0	0	0
B-24	0	0	0	0	0	0	0	0	0
B-25	0	0	0	0	0	0	0	0	0
B-26	0	0	0	0	0	0	0	0	0
B-27	0	0	0	0	0	0	0	7	0
B-28	0	0	0	1	16	0	0	0	0
B-29	0	1	0	0	2	0	0	0	0
B-30	2	0	0	0	4	0	0	0	0
B-31	3	4	0	0	21	0	0	2	0
B-32	5	4	0	0	19	0	0	0	0
B-33	3	0	0	0	6	0	0	0	0
B-34	7	1	0	0	9	0	0	0	0
B-35	4	4	0	1	20	0	0	0	0
48	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
51	0	0	0	1	0	6	6	0	0
52	0	3	1	0	0	0	0	0	0
53	0	0	0	1	0	0	1	7	0

Carpenter Environmental Associates, Inc.

70 Hilltop Road
Ramsey, New Jersey 07446
Phone: (201) 818-4844
Fax: (201) 818-4853
E-mail: carpentr@nis.net

MEMORANDUM

Date: January 11, 1998

To: File

From: BAB

Re: Site Inspection

CEA # 97086

Observations from January 9, 1998 site inspection:

Heavy rain during visit.

Items associated with Shipyards:

- ◆ Marine Railways - storm water contact with contaminated soil and trash. Direct discharge to Bay. Contact through tidal action.
- ◆ Spent grit stored in open dumpsters at edge of water. Grit on barge.
- ◆ Garbage stored near water on barge.
- ◆ Shed for spent grit has no containment to prevent drag out of grit where it can come into contact with storm water.
- ◆ Leak in containment on AFDL allowing water coming into contact with ongoing operations to flow into Bay.

Items associated with Heavy Industrial Operations:

- ◆ Fueling operations (gas pumps) have no cover and no containment beyond general first flush containment.

SITEVISMEM

EXHIBIT 752
USDC 96-1492-B-AJB

BELL 0004

BAE00076511

- ◆ Fuel truck parked outside in rain with no containment beyond general first flush containment.
- ◆ Paint mixing area near grit shed not covered or contained. Used paint buckets stored in area not closed. Equipment not protected.
- ◆ Painting area side curtained but not covered. Expose storm water to curtains with over spray and paint on ground to storm water.
- ◆ Equipment such as compressors oily and not covered or contained beyond general first flush containment.
- ◆ Large quantities of metal, pipe, etc (including oily materials) stored outside without cover or run on control or containment beyond general first flush containment.
- ◆ Tanker truck near fueling area stored with no drip pans.
- ◆ General very poor housekeeping. Example: used Valvoline oil bottle stored on compressor outside with oil covering outside of bottle.
- ◆ Observed numerous oil sheens and storm water cloudy with what looks like paint.

SITEVISI.MEM

BELL 0005

BAE00076512

5/8/97

TO: Lloyd A. Schwartz, Esq.
 FROM: Sandor Halvax
 SUBJECT: Environmental Projects Update
 NEXT MTG.: May 22, 1997 @ 3 PM

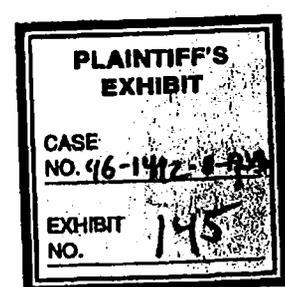
cc: Ed Ewing
 David Engel
 Greg Bennett
 Jackie Kriesler

#	Project/Issue	Resp	Complete	Comments / Status	Admin. Practice
1	Sediment Remediation	SH	Investigation 12/31/97 Cleanup 12/31/98	At the last Regional Board hearing RB staff indicated that they intended to begin work on the Southwest Marine site. RB staff expects to have the parameters of the SWM investigation complete by late May/Early June. EHC pressing hard to influence accelerated time line and clean-up standards.	A
2	NPDES Permit Renewal	SH	June 1997?	New draft permit received. Includes vessel discharges. Tentative adoption date is June Board hearing. Major issues are vessel discharges, monitoring and storm water management. Joint meeting of all parties on May 8th.	A
3	Industrial User Discharge Permit (IUD)	SH	07/01/97	Draft permit expected shortly. Delay due to MIWP modifications in local discharge limitations. Modifications expected to be good for SWM (higher discharge limits).	A
6	Old Diesel Tank Closure	SH	6/30/97	Getting quotes on work necessary to complete investigation and closure. An area at the foot of pier 3 will most likely require excavation.	P

PWC Audit Items Not Yet Complete

#	Project/Issue	Resp	Complete	Comments / Status	Admin. Practice
	TSDF Evaluations	HV	6/30/97 S	Have received permits and financial responsibility from some of the TSDF's. Compiling data.	A
28	PCB Mgmt.	SH	6/30/97	One transformer identified as containing PCB's. Obtaining quotes on retro-fill. <i>Pier 4 area</i>	A
32	Employee Awareness	SH	6/28/97	Discussed with Safety and craft managers the inclusion of environmental responsibility in the existing safety program.	A
33	Waste Stream Management	SH	6/28/97	WWC recommends implementing waste management review for life-cycle cost analysis of waste streams. Currently conducting life-cycle cost analysis of spent abrasive management.	A
34	Materials Substitution	SH	6/28/97	WWC recommends a more aggressive analysis of non-hazardous materials substitution alternatives.	A

Spec
 JB14



PROBLEM: All surface drains in SWM's yard #4 flow into the bay. There are two areas of concern.

- ① Solids (in particular sand blasting material) must not be washed into the bay. This problem can be stopped by keeping the yard clean and by installing settling tanks to separate the heavy solids from the liquids.
- ② Liquids (basically rain water) that runs thru the yard get contaminated when coming in contact with sandblast grit and paint chips. This water must be contained. I propose either repiping the drains to flow into several underground holding tanks or sealing the existing drain pipes and installing sump pumps in each drain and pumping to Baker Tanks.

SOLUTION: Baker Tanks (Baker or submerged) need to be able to hold the rain runoff for the entire yard. A one inch rain would deposit almost 300,000 gallons of water on SWM land. (Not including the two drydocks). There has been some discussion that SWM may be responsible for containing only $\frac{1}{10}$ " of a rainfall. The rest being allowed to empty into storm sewers. In that case we would need to be able to hold 30,000 gallons of water. This water would be tested and if clean it could be pumped into the city drain system. I still need yard layout of drains and pipes to determine location and number of tanks. Will continue when Dave gets back.

INCIDENT REPORT.

04-22-91
(DATE)

SUBJECT, Diesel #2 spill @ yard pump, REPORT OF
ON OR ABOUT, 1400, 04-22-91
(TIME) (DATE)

THE FOLLOWING INCIDENT OCCURRED.

LOCATION: Diesel pump @ head of pier #3

PERSONNEL PRESENT:

Joseph Blas
Steven Richardson 12650
David Mills 14250

CONDITIONS AS YOU OBSERVED THEM: On the above date and approx.

time, I, David Mills and Steven Richardson walked
up to find a fuel spill at the above mentioned location.
The spill appeared to originate from the SWM fuel
truck that was being filled and was approximately
20-35 gal on the tank and on the surrounding ground.
Richardson directed me to arrange w/ duty jack-lift to
receive a pallet of absorbent from receiving. Upon
calling duty jacklift I was informed, the driver of
the fuel truck ~~was~~ (Joseph Blas) was already taking
care of the matter. Total clean up time was approximately
1 1/2 hrs and Richardson + myself were assisted by Blas
to completion of clean-up. When asked, Joseph Blas
stated that he was present at the pump, but had his
back to the truck and apparently the automatic shut-off
valve failed to operate properly. Proper follow-up action
was taken by Joseph Blas which contributed greatly to
an efficient clean-up.

SWM 3159

ATHER: RAINING CLEAR WINDY OTHER SIGNATURE: [Signature] 26-14250

3

Summary of Violations Questioned by Southwest Marine

Date of Inspection	Incident	Violation (Permit No.83-11)	Person ackn. receipt	Date follow-up corr.	Summary of follow-up corr.	Corr. from:
11/17/93	Drains from inside Electrical Building were discharging to San Diego Bay.	Finding No. 15 Basin Plan Prohibitions	Armando DeQuesada	11/30/95	Pipe was permanently sealed.	Armando DeQuesada
6/18/92	Sand Blast on marine railways #3 dropping to the shore below.	Discharge Specifications B.3 - Comply with BMP. BMP #9 General Yard Cleanup & BMP #12 Abrasive blast grit storage and disposal	Tim Sturdavant & Steve Richardson	6/29/92	Containment problems were immediately corrected & fugitive blast grit media has been cleaned up.	Tim Sturdavant
6/18/92	Anchor chain blast barge - lacks waste containment system	Discharge Specifications B.3 - Comply with BMP. BMP #16 Over Water Protection	Tim Sturdavant & Steve Richardson	6/29/92	Process of cleaning the barge. SWM looking into more effective method of containment for this portion of our facility. Daily cleaning to prevent discharges.	Tim Sturdavant
6/18/92	Pride of San Diego missing drain plug. Noted sand blast grit surrounding this area.	Discharge Specifications B.3 - Comply with BMP. BMP #12 Abrasive blast grit storage and disposal & BMP #15 Containment of grit material and paint overspray.	Tim Sturdavant & Steve Richardson	6/29/92	Pride of San Diego dry dock, drain will be replaced to prevent accidental discharges to the surrounding waters.	Tim Sturdavant
6/18/92	Area west of hazardous waste yard needs cleaning. Sand blast noted in this area where there is a storm drain which discharges drainage.	Discharge Specifications B.3 - Comply with BMP. BMP #9 General Yard Cleanup, BMP #10 Catch Basin Control & Cleaning, and BMP #12 Abrasive blast grit storage and disposal	Tim Sturdavant & Steve Richardson	6/29/92	Area west of hazardous waste and reclamation yard has thoroughly been clean of all trash, dirt, and sand blast abrasive media. This area will be cleaned daily to ensure compliance with SWM's BMP program.	Tim Sturdavant
6/18/92	Storm drains need to be identified and labeled "Storm Drain"	Discharge Specifications B.3 - Comply with BMP. BMP #5 Posting Signs	Tim Sturdavant & Steve Richardson	6/29/92	All storm drains have been identified with yellow border and marked with the label "Storm Drain"	Tim Sturdavant

INCIDENT REPORT.

5-30-92
(DATE)

SUBJECT: Fuel spill into Bay (Diesel)
ON OR ABOUT: 0110 5-30-92
(TIME) (DATE)

REPORT OF

THE FOLLOWING INCIDENT OCCURRED.

LOCATION: Yard #4, Diesel Fuel station, pier #3

PERSONNEL PRESENT:

Loren Naffelger
Dana Austin
Steve Richardson
Clarence Moore 01-13244
Roy Hernandez 04-13299
EARL HOLBECK 08 3468
Mark HYMAN 09 11099

CONDITIONS AS YOU OBSERVED THEM: At about 0110 we detected a
odor of Diesel Fuel Near Bldg #13. We looked
out across the bay and saw a heavy oil slick.
The slick was about 2,500 to 3000 sq ft.
About 0115 Loren N., Earl H., Mark, H., and I
inspected the waters around our piers. That slick
was the only fuel we found in the water.

At about 0130 we paged Steve Richardson and
Tim Sturdevant. After 5 min we called the
listed home numbers (from the recall at the main
gate) Steve's # 695-0019 and Tim's # 469-2571 are
disconnected.

At about 0140 Received radio call the we
have a leak at the pier #3 Diesel Fuel station.
Loren N. proceeded to pier #3 to investigate the
leak. At that same time I made a 2nd
attempt to page Tim and Steve. After 5 min
and no answer, I called the Main Gate and
told the Gate Guard to page Tim and Steve

WEATHER: RAINING CLEAR WINDY OTHER SIGNATURE: _____

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every 5 to 10 mins.

About 0200 paged Tim & Steve again.

About 0210 Steve answered the page. After talking with Steve, he decided to come in. Steve arrived in the yard about 0230. We showed him the leak and spill. At this time Steve Richardson took charge of the clean up.

About 0245 Steve call and informed the Coast Guard.

At 0310 Steve informed Loren & me the the spill was cleaned up, and the most of the fuel had dissipated. Steve then called the Coast Guard the second time and tell them the spill has been taken care of.

At 0445 we found Fuel Oil in the Bay between pier #3 & the POSD. About 2-3000 sq ft. We then inspected the yard and all piers and found Diesel Oil covering the water from pier #1 to pier #5.

We then closed all the gaps in our oil Boom and secured them

Sturdivant - No return call from him.

About 0515 we paged Dana Austin. Dana returned our call and said he was on the way in. At this same time we started deploying absorbent pillows and a 60' oil absorbent booms, to shore up the boom on pier #5. We also used pads to soak up the oil.

0645 Dana Austin arrived; showed Dana the problem, briefed him on our actions. Dana advised us and authorized us to get more material from A.C.C.

We worked pier #5 from 0515 to 0730 then pier #1 from 0730 to 0930.

Buy M. Finer

Note: Mark Hyman had his people from 09 Repair the leak from the Diesel Fuel station. The leak was from the Filter elements.

I also had A.C.C. pump about 40-50 gal of Diesel fuel from the sump at the Diesel station.

Buy M. Finer

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INCIDENT REPORT

5/30/92
(DATE)

SUBJECT: Diesel fuel station leak
ON OR ABOUT: 0110 5/30/92
(TIME) (DATE)

REPORT OF

THE FOLLOWING INCIDENT OCCURRED.
LOCATION: Diesel fuel station - Pier 3 south

- PERSONNEL PRESENT:
- B. Simmons 29-12336
 - L. Nattigar 29-2848
 - E. Holbeck 08-3468
 - R. Hernandez 04-13299
 - E. Leming 04-16654
 - S. Kilpatrick 26-12650
 - D. Austin 55-13420
 - M. Hyman 04-11099

CONDITIONS AS YOU OBSERVED THEM: At approx. 0110 B. Simmons radioed to me to check water front next to facilities bldg. I joined Simmons and Holbeck in visual check of water from pier 3 to POSD, we observed approx. 3,000 square feet of water covered by a heavy oil slick. Simmons continued visual scan of yard while I radioed for FAE dept. to begin check of yard's oil containment boom from North to South ends. Larry Chappell (09-14029) answered radio call and began check on North end of yard while Earl Carry (09-15690) began check from South end. I then notified R. Hernandez to get the pusher boat on standby and had him check for the oil spill containment boom. Security officer A. Fultz was notified to locate deflake phone #

At 0100 pager calls were made to Steve Richardson and Tim Sturdavant (26-15736). Both individuals were also called at their home home numbers as listed at Main office - both numbers have been disconnected with no new number listed

WEATHER: RAINING CLEAR WINDY OTHER SIGNATURE: James B. [unclear] 710

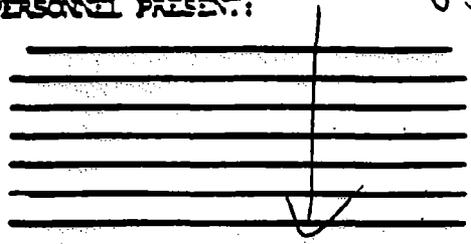
INCIDENT REPORT.

5/30/92
(DATE)

SUBJECT: Diesel fuel station leak
ON OR ABOUT: 0110 5/30/92
(TIME) (DATE)

REPORT OF

THE FOLLOWING INCIDENT OCCURRED.
LOCATION: See 1st page
PERSONNEL PRESENT:



CONDITIONS AS YOU OBSERVED THEM: At 0140 I received a radio call from Crane operator Joseph Bonslater (14-12646) requesting I immediately come to pier 3 south.

He and Fernando Figueroa (05-11394) had found the fuel station at the South-East end of pier 3 overflowing from its concrete containment area into the bay. I called FAC and Trans. upon my arrival, so the emergency shut off could be activated. Dept. 09 supv. M. Hyman secured station and I had transportation personnel obtain absorbent material for ground area around the diesel fuel station.

Dept 17 supv. R. Kammerer (17-4686) and his leadman (Ric) assisted in the setting up of lights and clean-up of the ground contamination. Action Cleaning sucked up the diesel in the containment area (approx 30 gallons).

While dept. 09 went to work on repairing the leak which originated at the gasket seal of the strainer, dept. 04 deployed a containment boom from the South wing wall of the POD to a barge on the north side of pier 3 - approx. 1/2 half down the pi

WEATHER: RAINING CLEAR WINDY OTHER SIGNATURE: Foreman B. A. Abt

INCIDENT REPORT.

5/30/92
(DATE)

SUBJECT, Diesel fuel station leak
ON OR ABOUT, 0110, 5/30/92
(TIME) (DATE)

REPORT OF

THE FOLLOWING INCIDENT OCCURRED.

LOCATION: See 1st Page

PERSONNEL PRESENT:

CONDITIONS AS YOU OBSERVED THEM: After numerous paging calls to Steve Richardson and Tim Sturdivant, Mr. Richardson called the main gate (at approx 0210). Steve was persuaded to come in by B. Simmons and he arrived at the yard at approx. 0230. With the help of B. Simmons, T. Chappell, and myself, the materials needed for the clean-up were loaded into the pusher boat operated by E. Lemingo. After notifying the U.S. Coast Guard at about 0245 Steve Richardson boarded the pusher boat to direct clean-up operations.

At 0310, Steve R. notified Simmons and myself that there was only three to four gallons in the water. He called the U.S. Coast Guard and reported to Petty Officer Moon that the fuel had dissipated. Mr. Moon stated that they would not be sending anyone to check on the spill. Shortly after this S. Richardson left the yard.

At 0445, B. Simmons and myself checked the FAC wharf area again and noted that there was still

WEATHER: RAINING _____ CLEAR WINDY OTHER SIGNATURE: John B. Malby

INCIDENT REPORT

5/30/92
(DATE)

SUBJECT: Diesel fuel station leak
ON OR ABOUT: 0110 5/30/92
(TIME) (DATE)

REPORT OF

THE FOLLOWING INCIDENT OCCURRED:
LOCATION: See 1st Page
PERSONNEL PRESENT:

CONDITIONS AS YOU OBSERVED THEM: a large slick covering the water. With the assistance of R. Kammer we began a check of the yard. We found that there was fuel in the water from pier 1 to pier 5 varying in concentration and width.

Pager calls went out to T. Sturdavant and D. Austin at about 0500. Mr. Austin returned our call and said he was on his way in to the yard. While we awaited Mr. Austin, B. Simmons, R. Hernandez, Oscar Gonzalez (05-2585), Alvin Ray (18-11176), and myself obtained 5 ea. boxes of Rubberizer pillows and 4 ea. 60' oil spill booms from the hazardous waste area and went to pier 5. There I had found a heavy concentration of fuel that had begun to seep through the oil containment booms. The pusher boat was used to bring an aluminum row boat down to pier 5, which was used to place the Rubberizer pillows across the gaps in the oil containment boom. I was directing this operation while B. Simmons was

WEATHER: RAINING _____ CLEAR WINDY OTHER
SIGNATURE: [Signature]

INCIDENT REPORT

5/30/92
(DATE)

SUBJECT: Diesel fuel station leak
ON OR ABOUT: 0110 5/30/92
(TIME) (DATE)

REPORT OF

THE FOLLOWING INCIDENT OCCURRED:
LOCATION: See 1st page
PERSONNEL PRESENT:

CONDITIONS AS YOU OBSERVED THEM: escorting D. Austin through what we had found. At approx. 0700 D. Austin arrived at pier 5 and directed us to continue with the deployment of pillows and to stretch 120' of the 1.25 inch Rubberizer boom across the area at the West end of pier 5 where the normal oil containment booms meet.

R. Hernandez and his crew took over the deployment of pillows at approx. 0730 when the 3rd shift labor Dept. employees went home. At that time they began moving towards the AFDL where another large concentration had been found. Rubberizer pads were obtained from Action Cleaning to soak up the fuel around the AFDL. Supervision of the clean-up operation was turned over to dayshift duty Supt. Roger Kubischta.

* Note * 5ea. bags of absorbent Kelp material were expended at the fuel station area. Used material is palletized at this area.

ENTER: RAISING CLEAR WINDY OTHER SIGNATURE John B. [Signature]

Summary of Violations Questioned by Southwest Marine

Date of Inspection	Incident	Violation (Permit No.83-11)	Person ackn. receipt	Date follow-up corr.	Summary of follow-up corr.	Corr. from:
6/16/95	Deficient implementation of BMP along general area that drains to outfall #4. Sloppy housekeeping.	Discharge Specifications B.3 - Comply with BMP. BMP #9 General Yard Cleanup	Armando DeQuesada	6/30/95	Did not address violation	Armando DeQuesada
6/16/95	Sump for outfall #5 needs cleaning of visually observed contaminated soil. Rain occurred night before and this morning. Valve is open.	Discharge Specifications B.3 - Comply with BMP. BMP #10 Catch Basin Control & Cleaning	Armando DeQuesada	6/30/95	Sump will be cleaned & Permanently closed	Armando DeQuesada
6/16/95	Storm drains along gantry area contain debris & other substances	Discharge Specifications B.3 - Comply with BMP. BMP #10 Catch Basin Control & Cleaning	Armando DeQuesada	6/30/95	Fabricating steel covers/ plates for drains. Drains will be clean & inspected	Armando DeQuesada
10/13/94	Threatened Violation - Electrical shop at west exterior end. The floor drain opening is plugged, which is removable and which should be kept sealed with a non-removable plug.	Finding No. 15 Basin Plan Prohibitions	Armando DeQuesada	10/21/1994 - SWM Internal Memo 10-18-94	The plug in question will be removed, and the opening permanently sealed with a non-removable plug	Armando DeQuesada
10/13/94	Pier 1 Boiler discharges to Bay	Finding No. 15 Basin Plan Prohibitions	Armando DeQuesada	10/21/1994 - SWM Internal Memo 10-18-94	Water will be discharged to sewer	Armando DeQuesada
10/13/94	Marine Railways 2 & 3 could use cleaning up of spent abrasive which could wash off with rainfall or tide	Discharge Specifications B.3 - Comply with BMP. BMP #9 General Yard Cleanup	Armando DeQuesada	10/21/1994 - SWM Internal Memo 10-18-94	Abrasive blast waste, trash, and debris will be removed	Armando DeQuesada
11/17/93	Storm drain on dry dock were not covered.	Discharge Specifications B.3 - Comply with BMP. BMP #12 Abrasive blast grit storage and disposal	Armando DeQuesada	11/30/95	Storm drain closure systems are being designed and implemented	Armando DeQuesada
11/17/93	There is a large hole on anchor chain barge allowing blast grit to spread to open end of barge.	Discharge Specifications B.3 - Comply with BMP. BMP #12 Abrasive blast grit storage and disposal	Armando DeQuesada	11/30/95	Spent material is being removed from barge. Foam rubber strips are to be placed in the holes to prevent discharge of blast grit into San Diego Bay.	Armando DeQuesada