

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

**MONITORING AND REPORTING PROGRAM NO. 98-21
FOR
TELEDYNE RYAN AERONAUTICAL**

**CLOSURE AND POST-CLOSURE MAINTENANCE
OF THE
CONVAIR LAGOON SAND CAP
SAN DIEGO BAY**

A. MONITORING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the nature of the monitored element. All samples shall be taken at the monitoring points specified in this Order, unless otherwise specified. Monitoring points shall not be changed without notification to and the approval of the San Diego Regional Water Quality Control Board (Regional Board) Executive Officer.
2. Monitoring must be conducted according to United States Environmental Protection Agency or California Department of Health Services approved test procedures as described in the current Title 40, Code of Federal Regulations (CFR), Part 136 and 261, or the current California Code of Regulations, Title 22, Article 11, as appropriate, unless other test procedures have been specified in this Monitoring and Reporting Program.
3. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified.
4. Monitoring results must be reported on discharge monitoring report forms approved by the Executive Officer.
5. If the discharger monitors any element more frequently than required by this Monitoring and Reporting Program, using test procedures as specified in Item No. 2 above, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report(s). The increased frequency of monitoring shall also be reported.
6. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or

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application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

7. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements, or observations;
 - b. The individual(s) who performed the sampling, measurements, or observations;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or method used; and
 - f. The results of such analyses.
8. All monitoring instruments and devices which are used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.
9. The discharger shall report all instances of noncompliance not reported under Reporting and Record Keeping Requirement D.6 of Order No. 98-21 at the time monitoring reports are submitted.
10. The monitoring reports shall be signed by an authorized person as required by Report and Record Keeping Requirement D.5.

B. VISUAL INSPECTIONS

1. To ensure the Convair Lagoon Sand Cap maintains its integrity, the thickness of the cap shall be monitored by divers in SCUBA gear who shall both generally inspect the cap thickness and also monitor the cap thickness utilizing probing methods (see Figure 1). Probing the sand cap to measure its thickness will reveal whether the cap has eroded or if additional sediment has been naturally deposited at the site. Divers shall inspect the cap for damage, including cracks in the sediment, gashes from boat keels, localized erosion, debris penetrating the cap, bioturbation, or other visual evidence of damage.
2. The perimeter berm shall be inspected for damage such as settling, cracking, etc. Berm monitoring requires a survey of the average elevation of the crest of the berm and the average width at both the base and crest of the berm. Berm dimensions shall be made using surveys with a stadia rod and an underwater surveying tape.
3. Divers shall verify navigational warning piles are in good condition, and that the warning signs mounted on the piles are intact and legible.

4. If possible, the same divers should conduct each visual inspection to more easily identify changes. Prior to conducting the inspections, the divers should review the design of the cap and the results of previous inspections.
5. Separate visual inspections shall be conducted following construction of the cap to monitor recolonization of eelgrass on the cap. The procedures and schedule for inspections shall be followed in accordance with the Eelgrass Mitigation Plan, which is expected to be finalized by June 1, 1998, as administered by the U.S. Army Corps of Engineers.
6. Photographs of the cap shall be taken to document the condition of the sand cap, perimeter berm, eelgrass, and other associated facilities.

C. SEDIMENT SAMPLING AND ANALYSIS

1. Sediment samples shall be collected from three locations in the cap as shown in Figure 2. Samples shall be collected by pushing an aluminum or brass core tube, with a recommended length of 3 feet and a diameter of 2 inches, into the sediment. The tube should be pushed down until it reaches the gravel layer without penetrating the gravel layer. The depth of penetration of the core tube at each sample location shall be recorded and reported. After the core tubes are withdrawn, they should be checked to verify that the sediment remained in the tube, and then capped at both ends.
2. Three samples shall be collected from each core tube; from the bottom, middle, and top of the sediment column. Each sample shall be a 3-inch segment of sediment from their respective location in the core tube. The bottom and top segments are to be analyzed first. Detection of PCBs in the bottom sample would suggest leakage through the gravel layer into the capping sediment. PCBs detected only in the top sample may indicate possible settling from sources outside the Lagoon. The middle sample will be held, but not analyzed, unless the analyses of the top or bottom samples reveal PCB concentrations of 2.0 mg/kg (dry weight) or greater. Analysis of the middle sample will indicate the extent of recontamination of the sediment if PCBs are detected in the top or bottom sample.
3. Sample collection, handling, and custody shall be performed using protocols and techniques appropriate for sampling PCB-contaminated materials. Sampling equipment shall be decontaminated after each use to avoid potential cross-contamination or direct contact by personnel handling the samples.
4. Samples shall be analyzed for PCBs using EPA Method 8080 (gas chromatography with electron capture device) or other method approved by the Regional Board Executive Officer.

D. BIOLOGICAL TISSUE SAMPLING AND ANALYSIS

1. Biological tissue sampling and analysis shall be conducted using the species *Callinassa californiensis* (ghost shrimp) and *Bulla gouldiana* (sea snail). These species shall be collected during each sample cycle from both the cap and from a reference site outside the Lagoon, located near Charley Brown's restaurant at the east end of Harbor Island (see Figures 3 and 4).
2. For laboratory analysis, all samples shall be cleaned to remove sediment adhering to the surface. All samples should also be depurated for at least 72 hours to remove sediment from the digestive system that could bias the results of tissue analyses. The samples shall be homogenized in a tissue grinder, and analyses will be based on the whole bodies of the organisms. Samples shall be analyzed for PCBs using EPA Method 8080 or other method approved by the Regional Board Executive Officer.

E. STORM DRAIN SAMPLING AND ANALYSIS

1. Sediment from the 60-inch storm drain shall be collected from the channel at the end of the existing pier. Sediment from the 30-inch storm drain shall be collected from the invert at the outfall. If there is not enough sediment available to collect a sample at the outfalls, samples should be collected, if possible, at the nearest upstream catch basin on these two systems. On the 60-inch storm drain, the nearest location is catch basin 134, which lies in the frontage road/parking area north of and parallel to Harbor Drive. On the 30-inch storm drain, the nearest location is a manhole at the northeast corner of the intersection of Harbor Drive and the Gate 2 entrance to Teledyne Ryan Aeronautical (see Figure 5).
2. Samples shall be analyzed for PCBs using EPA Method 8080 or other method approved by the Regional Board Executive Officer.

F. COMPLIANCE STATEMENTS

The discharger shall submit statements indicating compliance or noncompliance of the Convair Lagoon Sand Cap with the requirements of Order No. 98-21 and whether any large storms or earthquakes were experienced. Large storms and earthquakes are defined in Section H.3. Compliance statements shall be submitted annually for each year in which monitoring occurs.

G. MONITORING SCHEDULE AND REPORTING

1. Visual inspections and sediment sampling shall be accomplished within 30 days of the completion of the sand cap. This initial monitoring shall be reported to the Regional Board Executive Officer within 60 days after completion of the monitoring.

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2. All sampling for long-term monitoring shall be accomplished in April and May of each year in which monitoring is required following completion of the cap installation. Monitoring shall be conducted every year for the first 5 years after cap construction. The seventh year after construction, only visual inspections and biological sampling shall be accomplished. The full monitoring program shall again be completed ten, fifteen, and twenty years after cap construction. The monitoring program shall continue at five-year intervals beyond the twentieth year unless the Regional Board determines that a reduced monitoring program is appropriate or that monitoring is no longer necessary. The following table demonstrates the monitoring schedule (for the years not listed, no sampling is required).

Year	1998	1999	2000	2001	2002	2003	2005	2008	2013	2018
Years Following Construction	0	1	2	3	4	5	7	10	15	20
Visual Inspection	x	x	x	x	x	x	x	x	x	x
Sediment Sampling	x	x	x	x	x	x		x	x	x
Biological Sampling		x	x	x	x	x	x	x	x	x
Storm Drain Sampling		x	x	x	x	x		x	x	x
Compliance Statements	x	x	x	x	x	x	x	x	x	x

3. If an inspection or sampling indicates that the cap has in some way been breached, then the sampling schedule shall revert to once per year following any needed repair. Subsequent sampling shall be based on the same intervals given above (1,2,3,4,5,7,10,15,20 years after repair).
4. Monitoring reports shall be submitted to the Executive Officer annually for the years when monitoring occurs and shall contain the results of all monitoring which was conducted. Reports shall be due July 30th of the monitoring year and shall cover the period from July 1 to June 30.
5. Monitoring Reports shall be submitted to:

Executive Officer
 Attn: Planning and Services Unit
 California Regional Water Quality Control Board
 San Diego Region
 9771 Clairemont Mesa Blvd., Suite A
 San Diego, CA 92124-1324

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Phone: (619) 467-2952
Fax: (619) 571-6972

H. CONTINGENCY MONITORING PLAN

1. If a potential breach in or other damage to the cap is identified:
 - a) Sediment samples shall be collected and analyzed for PCBs to determine the extent of any potential breach. The number of samples to be collected will depend on the extent of damage.
 - b) The extent of damage shall be measured including area and depth of sand and gravel missing and area of gravel exposed.
 - c) Biological tissue sampling shall be conducted in the area of the potential breach or other damage.
2. If the surface of the cap is found to contain PCBs which do not appear to be from a breach in the cap, additional samples shall be collected and analyzed to determine the extent, and potentially identify the source. Storm drain sediment samples shall be collected from additional catch basins within Teledyne Ryan Aeronautical's property if the results of regular storm drain sampling indicate that the 60-inch or 30-inch storm drains contain contaminated sediment. Storm drain sampling upstream from the Teledyne Ryan Aeronautical property is not required.
3. Visual inspections shall be conducted within two weeks of a major earthquake, tsunami, or a storm event with winds of strong gale or higher (47 mph or higher); however, in certain cases of devastating disaster, the Regional Board Executive Officer may extend the two week requirement at his or her discretion. For purposes of this monitoring program, a major earthquake is one that inflicts significant damage to property in the metropolitan San Diego area, and/or measures 5.5 or greater on the Richter scale within 30 miles of Convair Lagoon. A major tsunami is one that inflicts significant damage to property in San Diego Bay.
4. If biological tissue sampling indicates any species within Convair Lagoon contains PCBs significantly above the levels of the same species at the reference site, the results shall be compared with the baseline levels within Convair Lagoon. Baseline levels within Convair Lagoon were established from sampling conducted in October 1996 and transmitted to the Regional Board by letter dated January 20, 1997. If these comparisons suggest that the cap has been breached and that PCBs are available to the particular species, then additional samples of the particular species shall be collected to determine the extent of potential recontamination, as well as to identify possible sources (inside or outside of the Lagoon). Sediment samples shall also be collected in the area where the contaminated organisms were

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found and analyzed for PCBs to further determine whether the source of the contaminants is the capped sediment.

5. If sediment in either the 60-inch or 30-inch storm drains is found to exceed 4.6 mg/kg (dry weight), sediment samples shall be collected at the nearest upstream catch basin of the particular storm drain within Teledyne Ryan Aeronautical's property, and sampling shall revert to once per year to ensure that the contaminated sediment in the storm drain has not reached Convair Lagoon. Subsequent sampling shall be done at the intervals presented in the Monitoring and Reporting Program Section G.2.
6. Any potential breach in the sand cap shall be reported to the Regional Board by telephone, by voice mail, or by fax within 24 hours from the time that 1) Teledyne Ryan Aeronautical has knowledge of the potential breach, 2) notification is possible, and 3) notification can be provided without substantially impeding cleanup or other emergency measures. Regional Board office hours are between the hour of 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding state holidays. Regional Board voice mail and fax machine are on-line 24 hours a day, 7 days a week. The initial report should include information on when the potential breach was discovered, how it was discovered, potential causes, and planned corrective or investigative actions.
7. Any corrective action taken and/or repair done to the sand cap shall be reported in writing to the Regional Board Executive Officer within 30 days of when Teledyne Ryan Aeronautical becomes aware of damage to or a potential breach in the cap. Subsequent written reports shall be submitted monthly in accordance with the following schedule until the damage or potential breach has been repaired or otherwise resolved:

Report Period

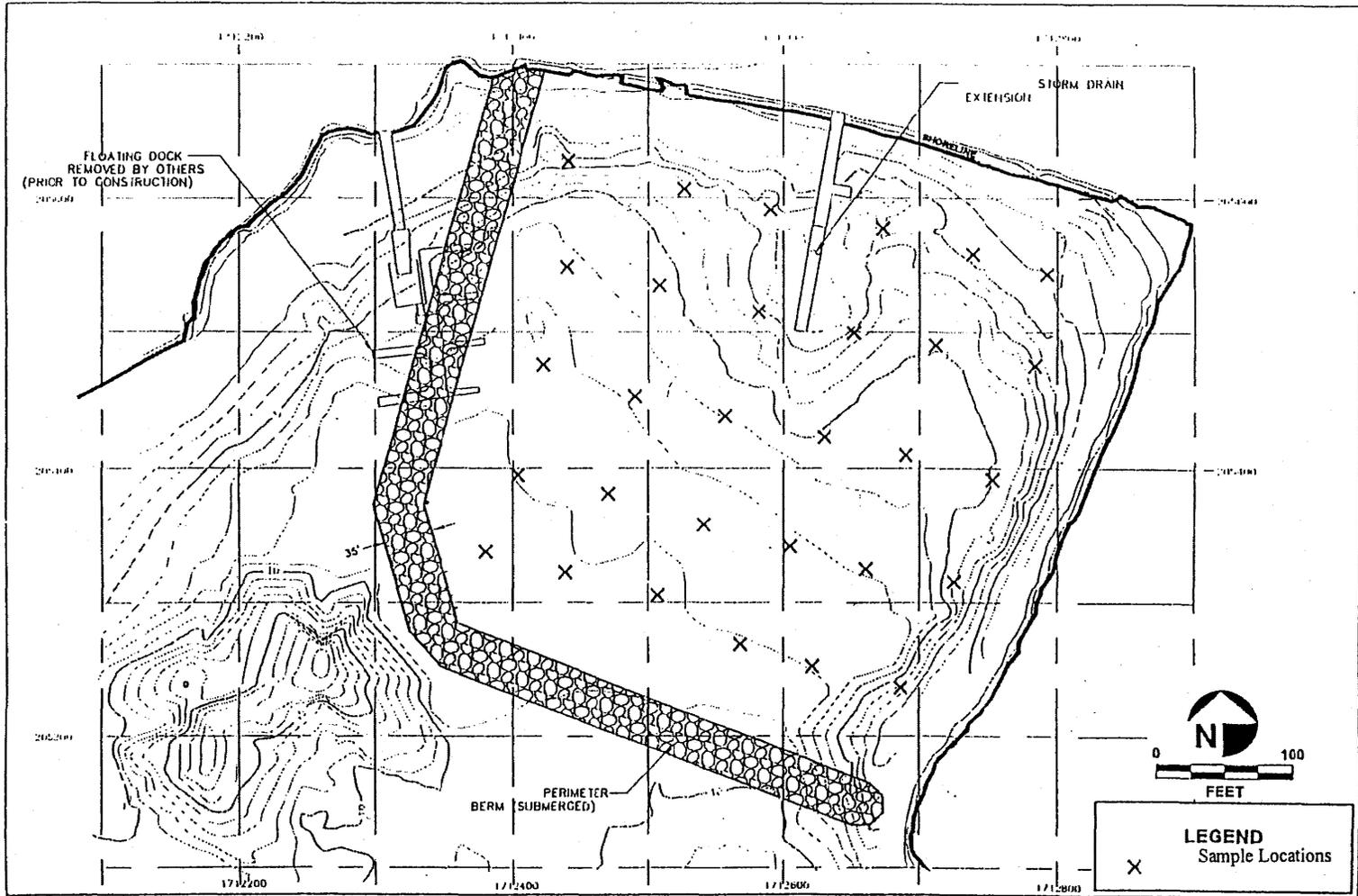
January, February,
March, April, May, June,
July, August, September,
October, November, December

Report Due

By the 30th day
of the following month
(February 28 for January)

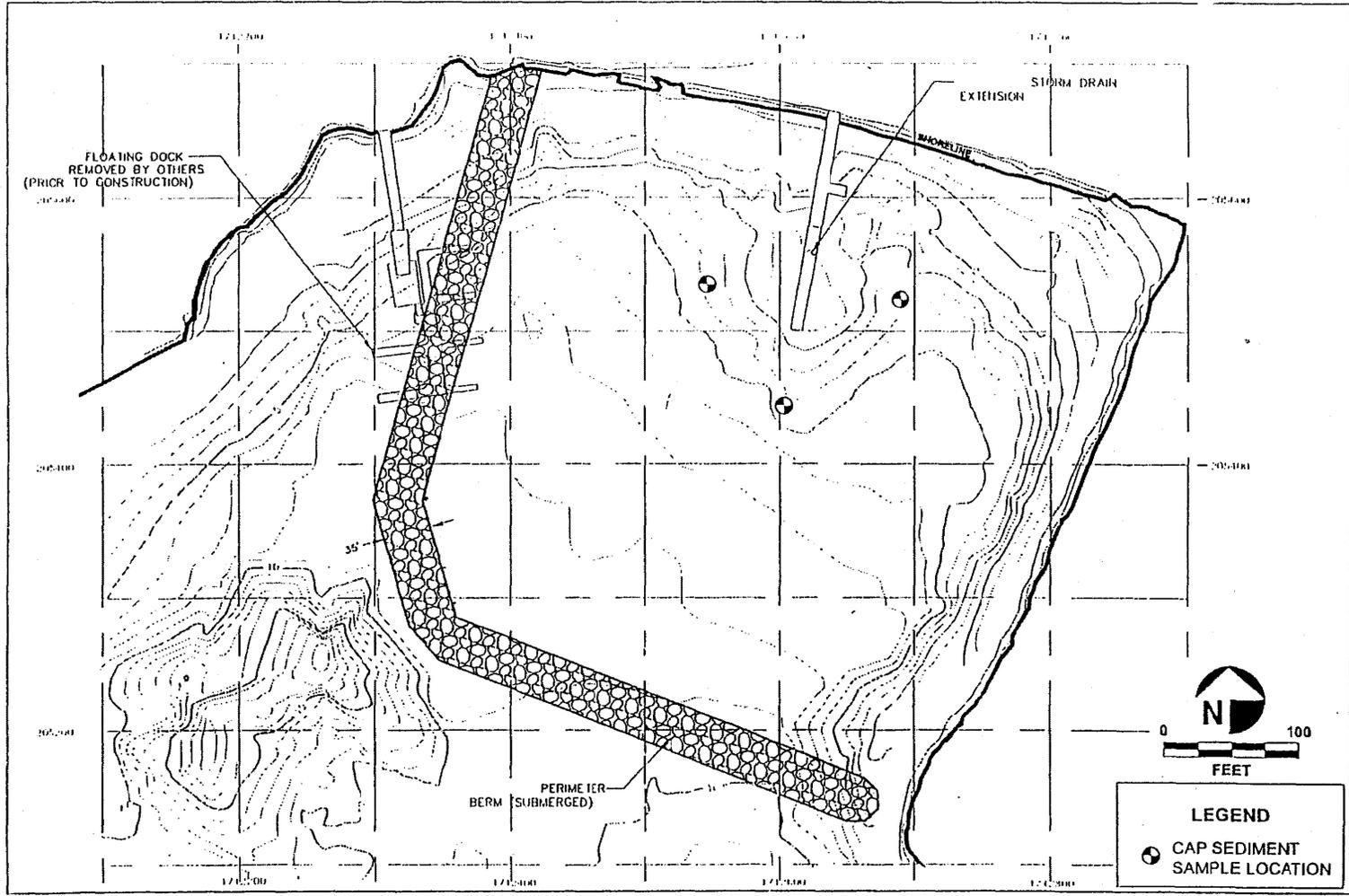
Ordered by:


JOHN H. ROBERTUS
Executive Officer



APPROXIMATE PROBE SAMPLING LOCATIONS

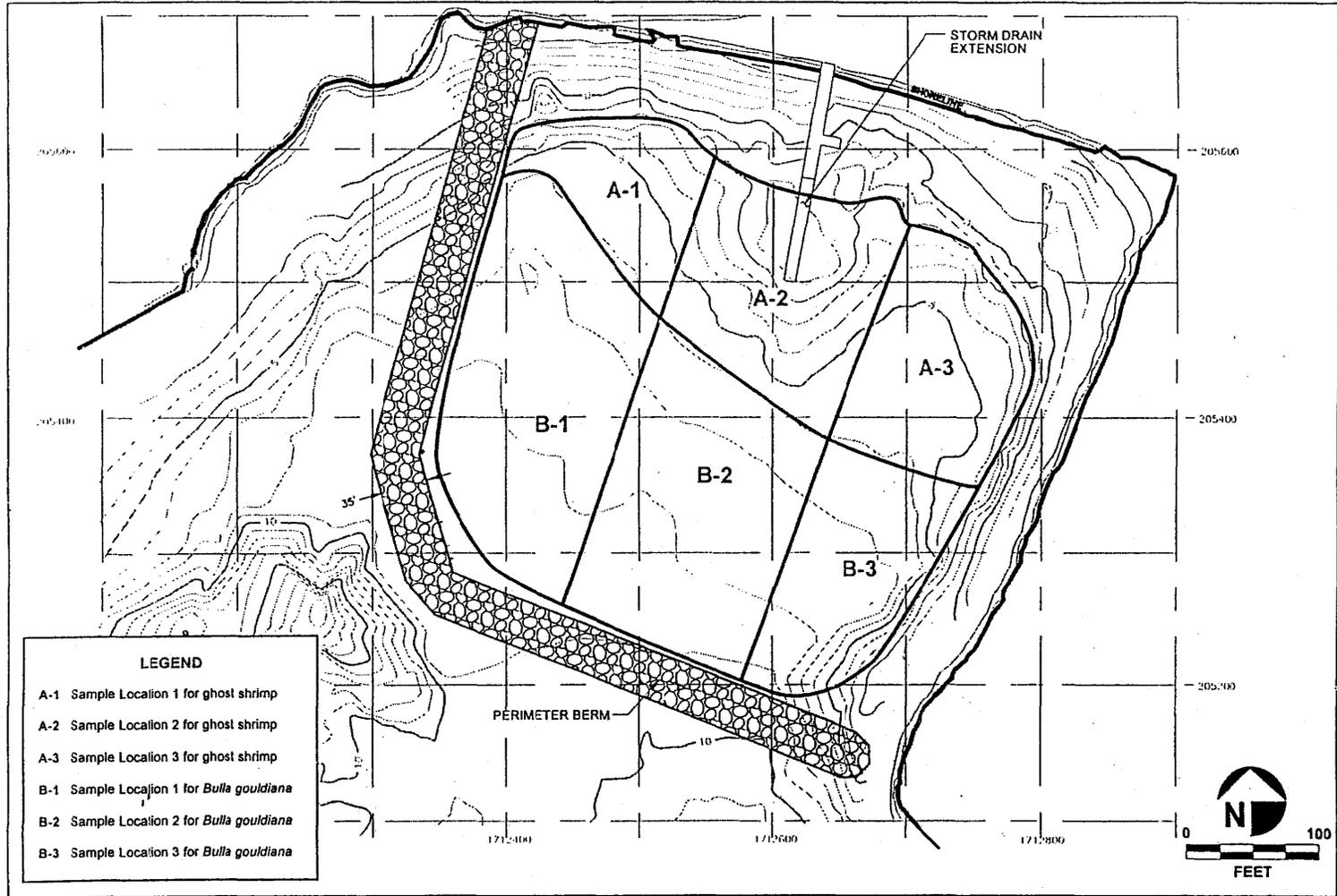
FIGURE
1



Cap Sediment Sample Locations

FIGURE

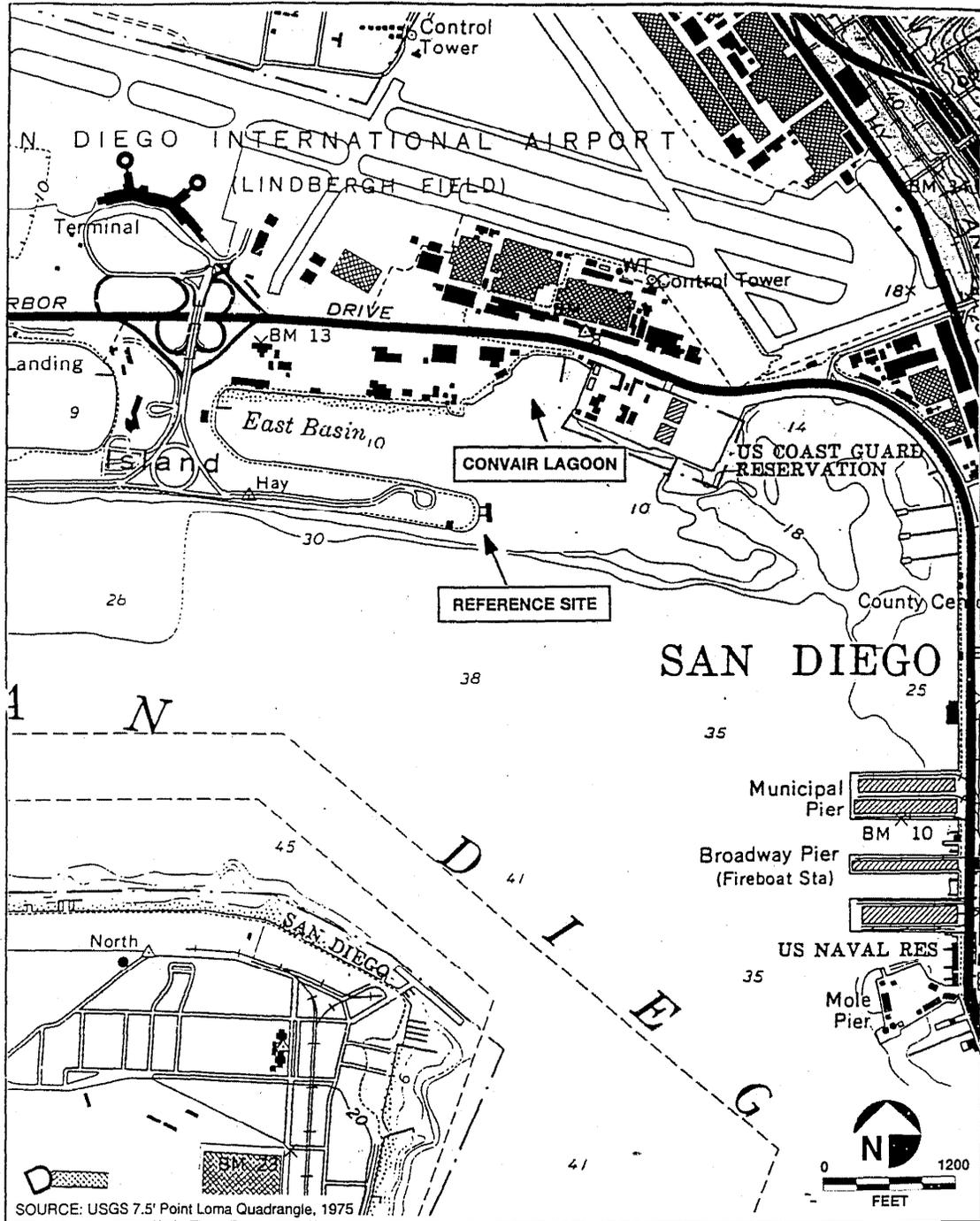
2



Long-Term Biological Sample Locations

FIGURE

3



SOURCE: USGS 7.5' Point Loma Quadrangle, 1975



Reference Site Vicinity Map

FIGURE

4

Figure 5

