STATE WATER RESOURCES CONTROL BOARD
DRAFT MONITORING AND REPORTING PROGRAM NO.
FOR A STATEWIDE COASTAL MARINAS PERMIT

A. PURPOSE

This monitoring and reporting program (MRP) is intended to determine:

1. compliance/assurance (c/a) with permit terms and conditions, and
2. effectiveness of Marina Pollution Prevention Plans (MPPPs).

The Discharger shall not implement any changes to this MRP unless and until the Executive Officer (EO) or Assistant Executive Officer (AEO) of the Regional Water Quality Control Board (herein Regional Board) approves those changes in written letter.

B. SAMPLING AND ANALYIS PLAN

The Discharger shall prepare a Sampling and Analysis Plan (SAP) prior to sampling activities. The SAP must be approved by the EO or AEO of the Regional Board prior to commencing sampling activities. For Marinas located in enclosed bays[1] and estuaries[2], sediment sampling procedures and analytical methodologies must be in accordance with *Water Quality Control Plan for Enclosed Bays and Estuaries of California, i.e. Bays and Estuaries Plan* (SWRCB 2008) and surface water sampling procedures and analytical methodologies must be in accordance with the *Regional Board Water Quality Control Plans i.e. Basin Plan*. For Marinas located in ocean waters[3], sampling procedures and analytical methodologies for both sediment and surface water must be in accordance with *the Water Quality Control Plan for the Ocean of California, i.e. Ocean Plan (SWRCB 2005).* At a minimum, the SAP shall contain elements listed in *Table 2 of Section 3.3 Group B - Data Generation and Acquisition in EPA QA/G-5S* (EPA 2002). Those elements include:

1. Sampling Process Design.
2. Sampling Methods.
3. Sampling Handling and Custody.
4. Analytical Methods.
5. Quality Control.
6. Instrument/Equipment Testing, Inspection, and Maintenance.
7. Instrument/Equipment Calibration and Frequency.
8. Inspection/Acceptance of Supplies and Consumables.
9. Non-direct Measurements.

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[1] Enclosed bays are defined in Water Code section 13391.5 as: *indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes, but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.*

[2] Estuaries as are defined in Water Code section 13391.5 as: *waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include, but are not limited to, the Sacramento-San Joaquin Delta as defined by Section 12220 of CWC, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.*

[3] Ocean waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

10. Data Management.

C. MONITORING REQUIREMENTS

1. *Qualitative data.* The Marina operator or designated staff shall log daily visual observations at monitoring stations that are identified in the MPPP as potential pollutant[4] or waste[5] source(s). The Regional Board must approve monitoring stations (i.e. sampling process design) through the review of the SAP. The daily visual observations shall help document any noncompliance with the MPPP. On days when no violations occurred, the log shall state that, "No findings were observed". Visual observations must be made during daylight hours and should contain the following information:
    a. Date of observation.
    b. Name of observer.
    c. Name and address of Marina.
    d. Weather conditions at the time of monitoring.

    For each monitoring station, the following information shall be documented:
    e. Monitoring station description (e.g. fueling station, pump-out facility, boat docking area, storm water outlet, etc.) which shall be consistent with the Site Map submitted as part of the MPPP. And whether or not the monitoring station is used to collect quantitative data as required in Section C.2 of this MRP.
    f. Any visual observations of potential pollutant(s) or waste, such as any odors, murky water, floating materials and debris, suspended materials, oil and grease staining, hydrocarbon sheens, and/or trash. Include any actions taken or proposed to halt the release of potential pollutant(s) or discharge of waste at its source.
    g. Standardized observations of the water column clarity shall be documented using a Secchi disk.
    h. Standardized observations of water color shall be documented using a Forel-Ule Color Scale.

2. *Quantitative data:* A subset of the daily visual observation monitoring stations will be used to collect quantitative data. These monitoring stations will be approved in the SAP. At each monitoring station, a description of the location, including a reference to the Site Map, as well as geographic coordinates will be logged. Geographic coordinates (latitude and longitude) will be logged in decimal degrees, to a minimum of 5 significant digits to the right of the decimal point. All geographic data will be collected in accordance with the Federal Geographic Data Committee (FGDC) standards[6].

[4] Under California Water Code, Division 7, Section 13050 (l) "pollution" is an alteration of the quality of waters of the state to a degree that unreasonably affects the waters for beneficial uses, or facilities, which serve those beneficial uses.
[5] California Water Code, Division 7, Section 13050 (d) "Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.
[6] Using the North American Datum (NAD) 1983 and the spheroid GRS 1980.

a. *Field Screening of Surface Water*[7]*:* A field screening analysis shall be conducted and documented at the same monitoring station and time that the surface water analytical samples are collected. In order for the field screening data to be valid, the operator must be trained in the proper use of the instrument; the instruments must be calibrated prior to each use; the instruments must be serviced and calibrated by the manufacture in accordance with the recommended frequency; and field calibration reports must be submitted with the water quality monitoring reports as specified in Section F.4. The following field screening measurements shall be collected:
   i. electrical conductivity (EC),
   ii. pH,
   iii. temperature,
   iv. dissolved oxygen (DO)
   v. total dissolved solids (TDS), and
   vi. chlorophyll.

b. Laboratory Analytical Data: All laboratory analytical data must be analyzed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory[8]. Sampling, analysis and reporting must occur in accordance with the Schedule listed in Section G, Table 4 of this MRP.

i. Surface water. Representative surface water samples shall be analyzed for the constituents listed in Table 1, using the approved analytical methods (*or equivalent*) and with the minimum reporting limits as specified in Table 1.

Table 1. Approved Surface Water Chemistry Analytical Methods

Constituents in Water	Approved Analytical Method	Minimum Reporting Limit
Copper (dissolved)	EPA 200.8	3.1 ug/L
Zinc (dissolved)	EPA 200.8	81 ug/L
Surfactants	EPA 425.1	none
organic carbon (dissolved and total)	EPA 415.3	none
Total Kjeldahl Nitrogen (TKN)	EPA 351.3	none
Enterococci	EPA 1106.1	none
Grease & oil	EPA 1664	none

ii. Sediment. Representative subtidal surface sediment samples shall be analyzed for the constituents listed in Table 2, using the approved analytical methods (*or equivalent*) with the minimum reporting limits as specified in Table 2, toxicity (both acute and sublethal[9]) shall be analyzed using the approved toxicity methods specified in Table 3, and benthic community condition[10] shall be documented using standard methods. Data must be reported on

[7] Surface water is defined as the top one (1) meter from the air-water interface.
[8] The ELAP accredited laboratory must have a current certification for the constituents that are requested by the Discharger at the time the environmental samples are analyzed.
[9] Also referred to as chronic.
[10] Only Marinas located in enclosed bays and estuaries shall collect information on benthic community condition. Marinas located in ocean waters are not subject to analysis of benthic community condition.

a dry weight basis and in accordance with the Schedule listed in Section G, Table 4.

Table 2. Approved Sediment Chemistry & Grain Size Analytical Methods (all reported on a dry weight basis)

Constituents in Sediment	Approved Extraction/Digestion Method	Approved Determinative Method	Minimum Reporting Limit
Copper (total recoverable & dissolved)	EPA 3050	EPA 6020	34 mg/kg
Zinc (total recoverable & dissolved)	EPA 3050	EPA 6020	112 mg/kg
Polynuclear Aromatic Hydrocarbons (PAHs)		EPA 8270 GC-MS (in SIM mode)	312 ug/kg (HPAH), 85.4 ug/kg (LPAH)
Sediment Grain Size	hydrochloric acid vapors	EPA 9060, 5310 carbonaceous analyzer	N/A

Explanations: LPAH = low molecular weight PAHs, HPAH = high molecular weight PAHs, N/A = Not applicable

Table 3. Approved Sediment Toxicity Test Methods

Test Type / Species	Taxonomic Group	Matrix	Duration (days)	Endpoint(s)
Acute				
Leptocheirus plumulosus *Rhepoxynius abronius*	Amphipod	Whole sediment	10	Survival
Sublethal				
Neanthes arenaceodentata	Polychaete	Whole sediment	28	Growth, survival
Mytilus galloprovincialis	Mussel	Sediment-water interface	2	Embryo development

D. SPILL / ILLICIT DISCHARGE LOG

The Discharger shall log and report all spills or illicit discharges within and from the Marina, including spills or illicit discharges from vessels that are in the Marina for service. The spill or illicit discharge log shall identify:

1. time and date of the spill or illicit discharge;
2. cause of the spill or illicit discharge;
3. materials or wastes involved in the spill or illicit discharge,
4. estimated volume of the spill or illicit discharge;
5. specific location (consistent with the Site Map) where the spill or illicit discharge originated;
6. physical extent or size of the area(s) affected by the spill or illicit discharge;
7. public agencies notified; and
8. any corrective actions taken.

If a spill or illicit discharge occurs, reporting shall be in accordance with Section F.3 of this MRP. Additionally, a summary of spills or illicit discharges shall be included in the annual report as a cover letter in accordance with Section F.5.a.

E. DATA ASSESSMENT REQUIREMENTS

1. *Analytical laboratory data assessment*: The Discharger shall evaluate the data collected pursuant to this MRP to determine if water quality objective(s) needed to support designated beneficial uses for the Marina's water body are achieved. In order to determine if some of the designated beneficial uses of the Marina's water body are protected, the following data assessment must occur:
    a. For Marinas located in enclosed bays or estuaries:
        i. Surface water laboratory analytical data must be tabulated and compared to the applicable *Basin Plan* water quality objectives for recreational beneficial use[11] to determine if the use is supported.
        ii. Sediment laboratory analytical data must be tabulated and analyzed using the multiple lines of evidence (MLOE) approach as described in the *Bays and Estuaries Plan (SWRCB 2009)* to determine if sediment quality objectives (SQO) were achieved in order to protect aquatic life beneficial use.
    b. For Marinas located in ocean waters:
        i. Surface water laboratory analytical data must be tabulated and compared to the *Ocean Plan (SWRCB 2005)* water quality objectives for recreational beneficial use[12] to determine if the use is supported.
        ii. Sediment laboratory analytical data must be tabulated and compared to either site-specific or published sediment quality guidelines (SQGs), specifically the values for Effects Range-Low (ERL) and Effects Range-Median (ERM) so that aquatic life beneficial use is protected.

2. *Annual Assessment of the MPPP*. If the Discharger and/or the Regional Board conclude that the water quality objectives are not achieved, then the Discharger or designee shall re-assess the effectiveness of their MPPP by conducting a comprehensive site evaluation. The site evaluation will include, at a minimum, the following:
    a. A re-assessment of pollutant discharge potential including a revised Site Map.
    b. A re-evaluation of existing management practice(s), including any new management practice(s) that are necessary in order to protect beneficial uses.
    c. A schedule for implementing new, or revising existing, management practices.

F. REPORTING REQUIREMENTS

1. *Records retention*. The Discharger shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge and application for this Order, for

[11] If, at any time, the enterococci analytical result exceeds the single sample maximum of 104 cfu/100 ml (protective of REC-1 beneficial use), then weekly sampling will be required so that geometric mean can be computed and further analysis of water quality objectives can occur.
[12] If, at any time, the enterococci analytical result exceeds the single sample maximum of 104 cfu/100 ml (protective of REC-1 beneficial use), then weekly sampling will be required so that geometric mean can be computed and further analysis of water quality objectives can occur.

a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the State Board or Regional Boards at any time.

2. All documents required under this MRP must be signed by the Discharger and submitted to the EO or AEO of the Regional Board with the following certification:

   I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for concealing violations.

3. *Spill / Illicit Discharge Report*. The Discharger shall verbally report any spill or illicit discharge that may endanger human health or the environment to the Regional Board within 24 hours from the time the Discharger becomes aware of the circumstances. The Discharger shall submit a written report within 5 days, containing:
   1. The Spill / illicit discharge log (refer to Section D);
   2. A description of the spill or illicit discharge and its known or probable cause;
   3. The corrective actions taken and the length of time between when the spill or illicit discharge occurred and when it was corrected, include exact dates and times; and
   4. If the spill or illicit discharge has not been corrected, include the anticipated time it is expected to be corrected and what corrective actions are necessary.

4. *Water Quality Summary Report*. The water quality summary report shall be submitted as electronic files to the EO or AEO of the Regional Board in accordance with the Schedule listed in Section G, Table 4 of this MRP. The Discharger shall report in a cover letter any exceedence of water quality objectives (refer to Section E.1). The water quality summary report shall also include:
   a. water quality data provided in an electronic spreadsheet using the template provided by the Regional Board,
   b. daily visual observation logs as PDF,
   c. certified signed copies of laboratory analytical data as PDF,
   d. field notes from any sampling activities as PDF, and
   e. equipment calibration records as PDF.

5. *Annual Report.* The annual report must be submitted as electronic files by April 15th to the EO or AEO of the Regional Board. All tabular data and calculations used in the report are to be submitted as an electronic spreadsheet using the template provided by the Regional Board. The annual report shall also contain the following information:
   a. A summary of the spills or illicit discharges (see Section D and F.3. of this MRP) that occurred in or on its leasehold, including: the total number of

spills and illicit discharges for the year, the percentages of each type of spill or illicit discharge by activity category, and any efforts the Discharger used to prevent or minimize spills.

b. All existing water quality data provided in tabular form with exceedences of water quality objectives highlighted.
c. Sediment analytical data in tabular form as well as all certified signed copies of sediment laboratory analytical data as PDF and any field notes from sediment sampling activities.
d. Results of data assessment (see Section E.1 of this MRP) including any supporting documentation, and
e. Any revisions to the MPPP based on the analysis of all data (see Section E.2 of this MRP), including an implementation schedule of those revisions.

G. MONITORING AND REPORTING SCHEDULE AND FREQUENCY

Monitoring reports shall be submitted to the EO or AEO of the Regional Board according to the schedule given below.

Table 4. Schedule of monitoring frequency, reporting period, and report due dates.

RELEVANT MRP SECTION Monitoring & Reporting Activities *Report Name*	**YEAR 1** **Monitoring Frequency** Reporting Period *Report Due*	**YEAR 2** **Monitoring Frequency** Reporting Period *Report Due*	**YEARS 3 - 5** **Monitoring Frequency** Reporting Period *Report Due*
Section C.1 Daily visual observations. *Water Quality Summary Report*	**DAILY** Monthly *15th of the second month following monitoring, e.g. January monitoring due on March 15th, etc.*	**DAILY** Monthly *15th of the second month following monitoring, e.g. January monitoring due on March 15th, etc.*	**DAILY** Monthly *15th of the second month following monitoring, e.g. January monitoring due on March 15th, etc.*
Section D.2.a & D.2.b.i Quantifiable water quality data. *Water Quality Summary Report*	**12 TIMES PER YEAR, FROM JANUARY - DECEMBER** Monthly *15th of the second month following monitoring, e.g. May monitoring due on July15th, etc.*	**6 TIMES PER YEAR, FROM MAY – OCTOBER** Monthly from July – December *15th of the second month following monitoring, e.g. May monitoring due on July15th, etc.*	**3 TIMES PER YEAR, FROM MAY – OCTOBER,** Bimonthly from July – December *15th of the second month following monitoring, e.g. May monitoring due on July 15th, etc.*
Section D.2.b.ii Sediment laboratory analytical data. *Annual Report*	**2 TIMES PER YEAR, MAY and OCTOBER** Annually *April 15th*	**ONCE PER YEAR, IN OCTOBER** Annually *April 15th*	**YEAR 3 AND 5, IN OCTOBER** Biannually *April 15th of the year following data collection.*
Section C Log of any illicit spill or discharge.	**VARIES** A case-by-case basis. *Within 24-hours from the time the Enrollee becomes aware of the circumstances. .*	**VARIES** A case-by-case basis. *Within 24-hours from the time the Enrollee becomes aware of the circumstances.*	**VARIES** A case-by-case basis. *Within 24-hours from the time the Enrollee becomes aware of the circumstances.*

Reference:

State Water Resources Control Board. 2005. *Water Quality Control Plan for the Ocean of California.*

_____. *2008. DRAFT Water Quality Control Plan for Enclosed Bays and Estuaries of California.*

U.S. Environmental Protection Agency. 2002. EPA *QA/G-5S* Guidance on Choosing a Sampling Design for Data Collection for use in Developing a Quality Assurance Project Plan. Downloaded from http://www.epa.gov/quality/qs-docs/r5-final.pdf on April 20, 2009.