

**STAFF REPORT
IRRIGATED LANDS REGULATORY PROGRAM
TENTATIVE ORDER ADOPTING A MONITORING AND REPORTING PROGRAM
FOR COALITION GROUPS**

I. Background

The Central Valley Regional Water Quality Control Board (Regional Water Board) first adopted a Monitoring and Reporting Program (MRP) for Coalition Groups on 11 July 2003. The purpose of the MRP, in part, is to characterize the effects of irrigated agriculture on waters of the State. This was and remains to be a challenging program because unlike monitoring programs for wastewater treatment facilities and industrial discharges, irrigated agriculture is a very complex, nonpoint source, land use category.

Throughout the first year of monitoring, Regional Water Board staff (Staff) evaluated the outcome of MRP implementation and identified aspects that needed improvement. Some revisions were made and a new MRP for Coalition Groups, Order No. R5-2005-0833, was adopted on 15 August 2005. This is the MRP that is currently being implemented by Coalition Groups.

The Coalition Group Conditional Waiver required renewal, and in October 2005, Staff circulated Tentative Waiver renewal documents with some additional revisions to the MRP for Board consideration at the November 2005 meeting. Comments on the circulated documents included concerns regarding the existing MRP Order and the October 2005 Tentative MRP. Based on the need to develop solutions to the identified concerns for the monitoring program, Staff withdrew the Tentative MRP from the Waiver renewal package, and developed an approach to consider alternatives in cooperation with the Irrigated Lands Regulatory Program Technical Issues Committee (TIC). The TIC members include representatives from other State agencies such as Departments of Pesticide Regulation, Food and Agriculture, and Fish and Game as well as from Coalition Groups, consulting firms, laboratories, irrigation districts, and environmental interest groups.

MRP revisions were considered necessary by Staff and by TIC members due to aspects that were either ambiguous or that needed improvement to better achieve Program objectives. Some of these aspects include:

- 1) The separation in time using a 'phased approach' -- toxicity measurements during the first two years and monitoring for contaminants that cause toxicity during subsequent years;
- 2) Ambiguities regarding follow-up after exceedances;
- 3) The need for clarifications in the QAPP laboratory and field procedures;
- 4) The need for clarification in source identification and management practice effectiveness requirements;
- 5) Ambiguities in the application of the requirement to monitor 20% of the water bodies each year;

- 6) Timing and triggers to conduct for storm event monitoring; and
- 7) Failure of the MRP to characterize the impacts of non-storm waste discharges during winter months resulting from agriculture practices.

Additionally, stakeholders had identified further topics for consideration. Some of these included:

- 1) Requirements for raw data submittal and laboratory detection limits;
- 2) Timing of various reports to the Regional Board;
- 3) Definition of trigger limits used to evaluate exceedances.

In general, it was clear to both the Coalition groups and to Staff that many of the difficulties in implementing the MRP were due to the variability in the watersheds characteristics in each Coalition area. This variability includes crop differences, climate zones, hydrology, and topography, all of which can alter the design for an effective monitoring approach. A good technical monitoring design should take into consideration these differences as well as the different potential contaminants, speed and distance of transport of wastes in water bodies, number and location of monitoring sites, monitoring frequency, and other considerations such as beneficial uses at the different monitoring locations.

TIC meetings began in December 2005 by identifying the technical aspects of the MRP that could be improved. The Center for Collaborative Policy was also engaged to facilitate the process. TIC Members formed smaller focus groups which generated recommendations for Regional Board consideration. These recommendations were incorporated into a working draft MRP document which was shared with the TIC in April of 2007. Additionally, four Stakeholder meetings were held and facilitated by Staff to discuss the non-technical aspects of the MRP, such as reporting frequency and trigger limits used for exceedance reporting.

During the period from December 2005 through April 2007, sixteen recommendations reached consensus agreement by the TIC members and were forwarded to the Regional Board Staff for their consideration. These recommendations are listed the Table, below.

**Table
TIC Recommendations for the Tentative MRP**

FOCUS GROUP	REC NO.	DESCRIPTION
Laboratory Round Table	LRT 1	Analytical methods used for chemistry analyses
	LRT 2	Quality control language clarifications
	LRT 3	Field duplicate for field precision
	LRT 4	Method blank for laboratory QC
	LRT 5	Addition of fenpropathrin
	LRT 6	Addition of TOC in sediment
Sediment Toxicity	SED 1	Follow up after observed sediment toxicity
	SED 2	Timing and frequency for sediment testing
	1	Follow up activities after observed toxicity
	2	Follow-up monitoring for analytical chemistry and

FOCUS GROUP	REC NO.	DESCRIPTION
Toxicity Trigger		bacteriological exceedances
	3	Follow up sampling for water quality exceedances of field measurements
	4	Triggers for storm water monitoring
Toxicity Trigger	5	Source identification for toxicity exceedances
	6	Flow calculations
	7	Assessment completeness
	8	Toxicity tests and control test acceptability criteria

These sixteen recommendations were accepted by Regional Board Staff and incorporated into the working draft MRP presented for discussion at a TIC meeting in April 2007, and are also included in the Tentative MRP.

Subsequent to the April 2007 meeting, the Regional Board also contracted with Dr. Brock Bernstein of the Southern California Coastal Water Research Project (SCCWRP) to conduct a third party review of the working draft MRP. Dr. Bernstein recommended some additional changes in the draft MRP language that have also been incorporated into the Tentative MRP. Dr. Bernstein also worked with the TIC to develop a Guidance Document for the MRP that provides additional clarification and proposes ideas for Coalition Groups to use in the development of their MRP Plans. The Guidance Document is not part of the package being brought to the Board for approval, but it is available on the Program website at the following link:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/hot_news/index.html

On 28 November 2007, staff circulated the Tentative Coalition Group MRP that incorporates the TIC recommendations as well as language changes recommended by Dr. Bernstein of SCCWRP, for a 30-day public review and comment period.

II. Overview of the Tentative Order

The Tentative documents for the Coalition Group MRP include the following:

1. Monitoring and Reporting Program
 - Introductory Elements
 - Part I. Components of a MRP Plan
 - Part II. Monitoring Parameters and Schedule
 - Part III. Reporting Requirements
2. Attachment A, Information Sheet
3. Attachment B, Definitions and Acronyms
4. Attachment C, Requirements for a Quality Assurance Project Plan

The Guidance Document that was developed with the TIC through SCCWRP facilitation is not part of the Board package that requires approval. However, it is a document that can be very helpful to Coalitions in the development of their MRP Plans and is located on the Program website.

A new aspect of this Tentative MRP that is new is the identification of five Program Questions that need to be answered through Coalitions' monitoring and reporting. Most significantly, the Tentative MRP allows for flexibility that Coalitions may use to answer these Program Questions, which can address the differences in conditions that Coalition Groups face in applying Program requirements. By effectively answering these Program questions, Coalitions will be meeting the Program objectives and working toward protecting water quality.

Coalition-specific MRP Plans are expected to address the unique conditions in each area and will likely deviate from some aspects of the MRP framework. Coalition groups may propose an alternative monitoring approach in their MRP Plan that differs with respect to monitoring parameters, monitoring frequency and follow-up to exceedances, provided that the following conditions are met:

- The MRP Plan is designed to answer the five Program questions in the Order;
- The MRP Plan provides valid, scientific rationale for the variations;
- The MRP Plan demonstrates the Coalition Group's ability to comply with conditions of the Coalition Group Conditional Waiver, applicable TMDLs, and Basin Plan requirements; and
- The MRP Plan is approved by the Executive Officer.

It is important to recognize that variations proposed by Coalition Groups must be submitted as part of their MRP Plans, and must meet the approval of the Regional Board. It is anticipated that most Coalition Groups will be able to maximize the advantages that this flexibility allows, and still answer the Program questions, meet Program objectives, and take action to protect water quality. If a Coalition is unable to submit an acceptable MRP Plan, the Regional Board will develop a specific MRP Order for that specific Coalition group.

The MRP also identifies different stages of Program monitoring. When a water body is adequately characterized, Coalitions may transition from more comprehensive Assessment monitoring to reduced monitoring of essential parameters for trend analysis, called Core monitoring. Special Project monitoring is also described, and it shall take place where exceedances have occurred and Coalition Groups need to develop Management Plans. Monitoring parameters and frequency identified in Special Project monitoring can take precedence over Assessment and Core monitoring strategies.

Coalitions are encouraged to utilize the information that they have already developed since 2003 in making the decisions about starting with Assessment, Core or Special Project monitoring at each of their monitored water bodies as they develop their new MRP Plans. Other changes from the previous MRP incorporated into this Tentative MRP document included the following:

1. Elimination of the 'phased approach for toxicity measurements
2. Clarification in the QAPP of container type, hold time requirements and options for reporting formats

3. Change in monitoring frequency to monthly, in the absence of technical justification for an alternative
4. Elimination of requirement for follow-up monitoring when exceedances occur, as long as monthly monitoring frequency is taking place
5. Change in Annual Monitoring Report due date from two times per year to once per year, with due date change to avoid winter holidays
6. Specifications in the QAPP regarding laboratory methodologies
7. Clarification of raw data submittal requirements
8. Reduction of Coalition reporting frequency from two semi-annual monitoring reports to one annual report
9. Incorporation of quarterly electronic data submittals for laboratory results
10. Removes the requirement for monitoring of pyrethroids in water column, but adds it to sediment monitoring where toxicity has been identified.

III. Tentative MRP Components

Coalition groups enrolled under the Coalition Group Conditional Waiver (Order No. R5-2006-0053) must submit an acceptable Coalition-specific MRP Plan within six months of the adoption of this Order. The Tentative MRP contains the four sections and three attachments, as described below.

Introductory Section. The initial section of the Tentative MRP describes the regulatory background for the document, and refers to the objectives to be met by Coalition Group MRP Plans (listed in Section II of Attachment A). It is expected that these objectives will be met by the information produced when a Coalition Group's MRP Plan is designed and implemented to answer the five Program questions also identified in this section. The five Program Questions are:

QUESTION No.1: Are conditions in waters of the State that receive discharges of wastes from irrigated lands within Coalition Group boundaries, as a result of activities within those boundaries, protective of beneficial uses?

QUESTION No.2: What is the magnitude and extent of water quality problems in waters of the State that receive agricultural drainage or are affected by other irrigated agriculture activities within Coalition Group boundaries, as determined using monitoring information?

QUESTION No.3: What are the contributing source(s) from irrigated agriculture to the water quality problems in waters of the State that receive agricultural drainage or are affected by other irrigated agriculture activities within Coalition Group boundaries?

QUESTION No.4: What are the management practices that are being implemented to reduce the impacts of irrigated agriculture on waters of the State within the Coalition Group boundaries and where are they being applied?

QUESTION No.5: Are water quality conditions in waters of the State within Coalition Group boundaries getting better or worse through implementation of management practices?

An MRP Plan that is designed to carefully and thoroughly respond to the five Program questions will help ensure consistency and comparability of these activities within the Central Valley. As the Coalition Groups answer the five Program Questions, they will be addressing objectives that are identified in the Conditional Waiver Order No. R5-2006-0053, as follows:

1. To determine whether the discharge of waste from irrigated lands within the Coalition Group boundaries causes or contributes to exceedances of applicable water quality standards or causes nuisance; (Questions 1, 2 and 3)
2. To provide information about the Coalition Group area characteristics, including but not limited to, land use, crops grown, and chemicals used; (Questions 2 and 3)
3. To monitor the effectiveness of management practices implemented to address exceedances of applicable water quality standards; (Questions 4 and 5)
4. To determine which management practices are most effective in reducing wastes discharged to surface waters from irrigated lands; (Question 5)

Additional MRP requirements for MRP Plan development will address the remaining Conditional Waiver objectives identified below:

5. To specify details about monitoring periods, parameters, protocols, and quality assurance;
6. To support the development and implementation of the Conditional Waiver;
7. To verify the adequacy and effectiveness of the Conditional Waiver's conditions; and
8. To evaluate the Coalition Group's compliance with the terms and conditions of the Conditional Waiver.

Part I. MRP Plan Components. The first Part of the Tentative MRP identifies and describes the elements of a MRP Plan that are essential for developing an effective monitoring design. Background information on environmental conditions, agricultural setting, and basic processes is necessary to develop a logical framework for selecting monitoring sites, frequency, and parameters. The monitoring design must describe how it will comply with conditions of the Coalition Group Conditional Waiver, and other Basin Plan requirements.

Part II. Monitoring Parameters and Schedule. Part II defines the requirements for three types of monitoring (Assessment, Core, and Special Projects) that will help to address the five Program questions. Assessment monitoring (MRP Part II.A) is conducted to characterize and evaluate water quality conditions within Coalition Group boundaries. In the absence of technical justification for an alternative, Assessment Monitoring is conducted at a monthly frequency and includes a broad list of contaminants that have been commonly found throughout Region 5, as well as other general water quality parameters listed in MRP Table II.D. Sediment monitoring remains at a frequency of twice annually.

Core site monitoring (MRP Part II.B) is conducted to track compliance with specific regulatory water quality standards and to track trends in water quality over time. Core

monitoring is a much-reduced subset of the Assessment monitoring list and is conducted on a monthly basis. Assessment and Core monitoring are conducted on a three-year cycle such that each designated site will follow Assessment monitoring requirements for one year, followed by Core monitoring requirements for two consecutive years. This schedule will be repeated over time, unless superseded by approved Special Project Monitoring.

Special Project monitoring (MRP Part II.C) is conducted for targeted studies that are designed to implement a Management Plan, TMDL, or other specific need. Special project monitoring sites will not necessarily follow the cycle and requirements of Assessment and Core monitoring, unless the site is also designated for those types of monitoring.

Part III. Reporting Requirements. Part III of the Tentative MRP describes the contents and schedule requirements for Quarterly Monitoring Data Reports, Annual Monitoring Reports (AMRs), Exceedance Reports, and Management Plans. A summary of reporting requirements is provided below.

- **Quarterly Monitoring Data Reports** consist of the submittal of laboratory data results in electronic format, with copies of chain-of-custodies, field logs and laboratory analytical sheets. Quarterly data reports are due each year on 1 June, 1 September and 1 December, and do not require the Coalition to evaluate the results and summarize their other activities as they must do with the AMR.
- **Annual Monitoring Reports** must include the 22 components listed and described in Part III.B of the MRP, which includes data analysis and interpretation elements. Coalitions are currently submitting this type of report two times per year; it would be reduced to once annually on 1 March.
- **Exceedance Reports** are required whenever a measurement goes above a water quality trigger limit. Upon receiving laboratory reports, the Coalition Groups will have five (5) business days to evaluate the results and identify exceedances, and one (1) additional business day to report exceedances to the Regional Water Board. More than one exceedance within a three year period will require the development of a Management Plan, according to Conditional Waiver Order No. R5-2006-0053.
- **Management Plans** result from exceedances of Basin Plan standards that occur more than once within a three-year period. The Management Plan is a form of Special Project monitoring that is waste-specific and will include a development and implementation schedule, source identification, management practice identification and implementation, performance goals, effectiveness monitoring, and Management Plan reporting.

Attachment A, Information Sheet

Attachment A presents background information for the Tentative MRP. The Information Sheet includes discussion of the following elements:

- The Program Regulatory Background, including the State NPS Policy
- MRP Program Questions and Program Objectives
- MRP Plan Structure and Design
- MRP Order Development Background
- TIC Process for Developing Recommendations
- Minimum Monitoring Requirements changes

Attachment B, Applicable Definitions and Acronyms

Attachment B contains definitions for terminology and acronyms used within the MRP and its attachments. Attachment B is provided for clarification of technical and regulatory terms as they apply to the MRP.

Attachment C, Requirements for a Quality Assurance Project Plan

Attachment C contains detailed explanations of the requirements for a QAPP and includes many examples. The QAPP will provide consistency and clarity in quality assurance and quality control elements in the monitoring program.