



California Regional Water Quality Control Board

Central Valley Region



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Environmental
Protection

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15 August 2005

To Coalition Groups (See List on Reverse)

MONITORING AND REPORTING PROGRAM NO. R5-2005-0833 FOR COALITION GROUPS - CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS WITHIN THE CENTRAL VALLEY REGION

On 6 May and 2 June 2005, staff of the Regional Water Quality Control Board – Central Valley Region (Water Board) sent out draft revised versions of Monitoring and Reporting Program (MRP) No. R5-2003-0826 for Coalition Groups under Resolution No. R5-2003-0105, *Conditional Waiver of Waste Discharge Requirements for Discharges From Irrigated Lands*. On 21 July 2005, Water Board staff sent out a proposed final MRP along with responses to comments received during the two comments periods, and then provided another 2-week period for any additional comments. The attached memo contains a brief history regarding the reasons for the revisions.

Water Board staff evaluated and considered all comments received during the three comment periods, including those provided by members of the Technical Issues Committee and its focus groups, and those discussed during the Program's recent Public Advisory Committee meetings and recent Regional Board meetings. Attached are Water Board staff responses to comments received on the 21 July proposed final MRP. Based on these comments, MRP No. R5-2003-0826 for Coalition Groups is rescinded and replaced by MRP No. R5-2005-0833.

MRP No. R5-2005-0833, attached, has a number of revisions. Major revisions include the submittal of an Exceedance Report within the next business day of when a Coalition Group determines a water quality objective has been exceeded and a requirement to make this determination within five business days of receiving the laboratory analytical report, collection and evaluation of management practices in specific geographic areas only when a water quality objective is exceeded, and submittal of semi-annual monitoring reports by **30 June** and **31 December each year**. This time schedule requires that Coalition Groups submit a 2005 Irrigation Season semi-annual monitoring report by **31 December 2005**.

Coalition Groups shall comply with attached MRP No. R5-2005-0833. If you have any questions, you may contact Ms. Wendy Cohen at (916) 464-5817 or wcohen@waterboards.ca.gov.

THOMAS R. PINKOS
Executive Officer

California Environmental Protection Agency

Attachments:

15 August 2005 Memo from Wendy Cohen to Bill Croyle on the Reasons for Revisions
Monitoring and Reporting Program No. R5-2005-0833 for Coalition Groups
Response to Comments Received on 21 July 2005 Draft Revised MRP for Coalition Groups

Coalition Group List

California Rice Commission
East San Joaquin Water Quality Coalition
Goose Lake Coalition
Root Creek Water District
Sacramento Valley Water Quality Coalition
San Luis Water District
San Joaquin County & Delta Water Quality Coalition
South San Joaquin Valley Water Quality Coalition
Westlands Water District
Westside San Joaquin River Watershed Coalition



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TO: Bill Croyle, Program Manager
Irrigated Lands Conditional
Waiver Program

FROM: Wendy Cohen, Senior Engineer
Policy & Planning Unit

DATE: 15 August 2005

SIGNATURE: Wendy L. Cohen

SUBJECT: IRRIGATED LANDS CONDITIONAL WAIVER PROGRAM, REASONS FOR COALITION GROUP MONITORING AND REPORTING PROGRAM REVISIONS

This memo provides background on the reasons for revising Monitoring and Reporting Program No. R5-2003-0826 for Coalition Groups (MRP) under Resolution No. R5-2003-0105, *Conditional Waiver of Waste Discharge Requirements for Discharges From Irrigated Lands*.

Water Board staff identified the need to revise the Coalition Group MRP based on observations that the various Coalition Groups were using different monitoring and reporting procedures, particularly with regards to follow-up when water quality objectives were exceeded. The differences ranged from failures to resample and to perform a Toxicity Identification Evaluation (TIE), to failures to provide prompt notification when samples contained high pesticide levels or when other problems occurred. In most case, Water Board staff could have advised Coalition Groups regarding appropriate follow-up, if the Communication Reports had been submitted in a more timely fashion.

Water Board staff's review of the existing Coalition Group MRP showed that it did not specify timing and was inconsistent in describing the content for Communication Reports. Thus, the main impetus to revise the Coalition Group MRP was to clarify the timing and content of a Communication Report. Improved Communication Reporting would also help alleviate the inconsistencies in follow-up monitoring or TIE analyses allowing Water Board staff the opportunity to provide direction to the Coalition Groups in a timely manner when water quality objectives are exceeded.

In addition to the Communication Reporting, Water Board staff proposed other revisions to improve the Coalition Group MRP, as requested or proposed by Coalition Groups or interested parties and by Water Board staff. These include:

- As recommended by the Technical Issues Committee and supported by Water Board staff, adding a toxicity trigger of 50% mortality during the initial screening toxicity test to trigger the requirement for a TIE analysis;

- As recommended by the Management Practices Working Group and supported by Water Board staff, revising the language regarding an inventory of Management Practices in use throughout the watershed and narrowing this scope to requiring collection and evaluation of Management Practices in specific geographic areas only when a Water Quality Objective is exceeded;
- Adding acceptable analytical methods, practical quantitation limits, reporting units, and sampling frequencies to the Chemical Constituent table to ensure uniformity amongst Coalition Groups;
- Changing the Annual Monitoring Report requirement to Semi-Annual Monitoring Reports, which will help Coalition Groups by allowing Water Board staff to provide timely feedback prior to the next irrigation or wet season.
- Revising the list of constituents by adding hardness to assess water quality objectives for metals and by adding more complete nutrient analyses.

Comments Received on 21 July 2005 version of Draft Revised MRP for Coalition Groups and Water Board Staff Responses

ORIGIN OF COMMENTS	SUMMARY OF COMMENTS	WATER BOARD STAFF RESPONSE
Southern San Joaquin Valley Water Quality Coalition - William Thomas	<p>The Sediment Toxicity Focus Group did not commence as early as the Toxicity Triggers Group and there is still some unfinished business. The Nutrient Focus Group has not yet met. Therefore, some of the amendments involving sediment and nutrients have not been afforded thoughtful full discussion by the Technical Committees and outstanding issues remain. The proposed MRP amendments only reflect preliminary discussions or staff recommendations. The Management Practices Group was helpful, but was not as coordinated as the Technical Committees and therefore unresolved issues in that areas exist as well.</p>	Comment noted.
	<p>The Water Board response of “The only constituents that do not have numeric limits in Table 1 are flow and total organic carbon” to the comment that several of the physical parameters do not currently have water quality objectives in the Basin Plan (i.e., color and e. coli) is not fully correct and not responsive to the point made. Some of the constituents such as turbidity, need a baseline. E. coli has no basin plan objective; fecal coliform is not required, color needs additional clarifications. We are monitoring for various constituent, the results of which will not provide any clarification as to whether a water quality objective is met or exceeded. The point of the comment was to clarify and was not intended to advance a specific amendment to the MRP. Appreciate the response that Water Board staff is working on a list of numeric limits to implement the Basin plan water quality objectives and look forward to working with Water Board staff in that regard, and in reviewing their proposal.</p>	Comment noted.
	<p>Page 8, Table 1, Footnote “C” Sediment Monitoring. Comment provided suggesting sediment monitoring be one sample taken near the end of the irrigation season, which was discussed in the Technical Sediment Focus Group and was agreed that if one sample was taken, it should be taken at the end of the irrigation season, as that would trigger a worst case situation in most every event. The discussions went on to conclude that such a single sample would be clarified in the MRP. Water Board staff proposal requires 2 samples, which is a departure from what has been approved and ongoing in the coalition’s MRPs, and was clearly not accepted by the Technical Advisory Committee. There appears to be little rationale for this amendment, which would require doubling “this expensive duty” on coalition groups, other than perhaps scientific curiosity.</p>	<p>The Technical Issues Committee is set up to make recommendations to the Water Board. The requirement for two samples is not new because it a requirement in the existing monitoring and reporting programs. The coalition groups should have been collecting and should continue to collect two sediment samples per year. Section I.7 of MRP No. R5-2003-0826 requires, “At a minimum, each phase of the above referenced monitoring shall be conducted during two major storm events...”</p>
	<p>Page 7/8, Table 1, Commercial Lab Detection Levels. Water Board staff’s response that they have confirmed detection levels are “achievable” to multiple responses regarding detection limits is cavalier. What may be achievable in certain academic or private laboratories does not necessarily mean this is the commercial laboratory norm. “Some of these detection levels may be unrealistically low.” It was suggested to have meetings with “all of the laboratories” to discuss these issues, but they have not been held yet and therefore it is premature to regulate such unusually low detection limits before there has been sufficient review as to whether they are appropriate. For Water Board staff to indicate other laboratories may be able to achieve certain PQLs and therefore there is no need to change the detection levels is inappropriate. Furthermore, the Water Board approved MRPs that made clear that the coalition groups contracted with certain laboratories. The coalition groups cannot change capabilities of laboratories and therefore staff’s reaction is not germane to the issue.</p>	<p>Water Board staff has evaluated the request to raise PQLs for constituents in Table 1. Nutrient PQLs have been modified to limits that are attainable by most laboratories and provide low enough limits for Water Board staff to evaluate compliance with water quality objectives. However, the PQLs for pyrethroids have not been modified. Water Board staff reviewed laboratory analytical methods and standard PQLs for the methods listed in Table 1. Laboratories should be able to meet the PQLs by using the analytical methods listed in Table 1. Furthermore, raising the maximum PQL will hinder the ability to effectively evaluate water quality impacts.</p>

Comments Received on 21 July 2005 version of Draft Revised MRP for Coalition Groups and Water Board Staff Responses

ORIGIN OF COMMENTS	SUMMARY OF COMMENTS	WATER BOARD STAFF RESPONSE
Southern San Joaquin Valley Water Quality Coalition - William Thomas (continued)	Page 8, Table 1, Nutrients. The Nutrient Technical Advisory Committee Focus Group has yet to meet so it should be recognized that the nutrient issues have not yet been fully and adequately addressed.	Comment noted.
	Page 12, Section 3.1: Management Practices. The SSJVWQC offered language to clarify that the requirement to track all farming and irrigation management practices should be when water quality issues have been demonstrated. Water Board staff is seeking the review of management practices across the entirety of the region, as opposed to only those targeted areas where there may be water quality problems. This is a needless and serious overexpansion of the significant obligation. The language previously provided is reasonable and targets this significant obligation where there may be problems, and does not diffuse resources and activity out in areas where there are not water quality issues. This point was discussed in the Management Practices Advisory Group, but has not yet been resolved therein.	The purpose of the Implementation Plan is to summarize strategies for responding to possible exceedance scenarios. Coalition Groups need to have proposed response options and/or strategies already outlined for timely implementation when an exceedance occurs. The time needed by the Coalition Groups to prepare and submit and then for Water Board staff to review and respond to the Implementation Plan does not allow for timely implementation of management practices.
	Page 12, Section 3.2; New Timeline for the new “Exceedance Report.” The coalition groups pointed out that the 24-hour time deadline for submitting the newly termed “Exceedance Report” is unrealistic and does not reflect the logistical realities of dealing with lab reports, their review, and the internal reviews by coalition groups. Changing 24-hours to “next business day” is inconsequential and does not reflect these concerns. “It is easy for staff to think that this is realistic, because they have absolutely no understanding of the logistical requirements of and review processes to be engaged by the coalition groups.” There is no reason to require such an unrealistic timeline, which cannot and will not be able to be met by many coalitions. Staff has yet to respond to any of the Communication Reports filed many months ago or any of the Annual Monitoring Reports, so there is no need for such a strict and impossible timeline. “It is unrealistic for the Regional Board to take such a cavalier approach to submittal of monitoring data, and at the same time, trying to impose an unrealistic regulatory timeline on coalition submittals.” Coalitions proposed 5 days to allow time for delivery to the appropriate technical reviewer in the coalition, review of the lab report, notification to the coalition lead, internal coalition review, coordination back with the lab, notification of key coalition members, and preparing, finalizing, and submitting the required report. Staff wanting this by the next business day shows that staff does not understand the gravity of such reports to the industry and coalitions. Water Board staff’s response to Joe McGahan’s comment requesting 5 days (“a coalition group can verify the exceedance with the laboratory and notify member district’s farmers with this time frame”) is false. The coalitions understand what is required. Staff’s comments reflect they have no such understanding.	Water Board staff considers the next business day reporting requirement for the Exceedance Report reasonable and consistent with other Water Board programs. Water Board staff must be advised immediately about exceedances so that staff can promptly advise the coalition groups of the next steps for follow-up sampling as necessary. The purpose of the Exceedance Report is not only to allow Water Board staff to advise, but to integrate the Board into the process. The Exceedance Report is an easy and simple report that provides only information the coalition group has at that time regarding an exceedance. If the coalition groups have difficulty providing a simple report within the next business day, then it is unclear to Water Board staff how they can conduct the critical follow-up sampling. Contrary to the comment, Water Board staff has considered the comments received and does understand what is required to submit such a report. To provide clarification, we revised the first sentence of Section 3.2 to read “When the Coalition Group determines that water quality objectives are exceeded....” We also have included a time frame of 5 business days for the Group to make this determination, which is critical to be able to conduct the appropriate follow-up sampling.

Comments Received on 21 July 2005 version of Draft Revised MRP for Coalition Groups and Water Board Staff Responses

ORIGIN OF COMMENTS	SUMMARY OF COMMENTS	WATER BOARD STAFF RESPONSE
Southern San Joaquin Valley Water Quality Coalition - William Thomas (continued)	<p>Water Quality Issues in the Lower San Joaquin Valley. California Citrus Mutual (CCM) had made the point that “evidence is inconclusive as to the role of agriculture in the lower San Joaquin Valley in relationship to the problems this proposal is alleged to resolve.” Staff indicated they did not agree with that statement. In the first year of coalition monitoring, there have only been 3 or 4 samples, which have generated an Exceedance Report. In none of these has it yet been determined whether there is any agricultural causation, which makes the CCM statement true. Water Board staff should not jump to the conclusion that agriculture is causing extensive problems in the lower San Joaquin Valley any more quickly than agriculture should jump to the conclusion that there are never any problems. “The fact is that most all of the monitoring shows that the waters of the lower San Joaquin Valley are meeting the water quality objectives and in fewer occasions when this is not true, we yet do not have any causation information.”</p> <p>Page 14, Section C: Two Annual Reports. Semi-Annual Monitoring Reports has not been fully discussed in the Technical meetings, the coalition groups did not agree to two rather than one annual report would be submitted, and there was resistance to the semi-annual reporting at the Modesto Advisory Committee Meeting. There is no reason to bifurcate the annual reports, which would double the workload of the coalitions.</p>	<p>Comment noted.</p> <p>The semi-annual reporting will allow for timely feedback so that changes can be implemented before the next season, allowing the coalition groups to stay in compliance with MRP requirements.</p>
San Joaquin Valley Drainage Authority - Joseph McGahan	<p>Request approval of the MRP by the Water Board instead of the Executive Officer. Although the Executive Officer has been delegated the authority to approve the MRP, the initial MRP was approved by the Water Board and the same process should apply to the revisions.</p> <p>Request that the Technical Issues Committee (TIC) be formalized into the MRP because it is an “ad hoc group and its services could be terminated at any time.” Suggest the following language at the end of Section I, Monitoring and Reporting Program Requirements, a new paragraph 9 with the following wording, “9. <u>Technical Issues Committee</u> A Technical Issues Committee will be formed by the Regional Board, whose purpose is to address issues that might come up during the implementation of the MRP. This Technical Issues Committee would be open to members of Watershed Coalitions, Regional Board staff, other State and Federal Agencies and members of the public. The Technical Issues Committee would be chaired by a member of the Regional Board.”</p> <p>Management Practices 3.2 Exceedance Reports. The Water Board response to the request for five business days for the exceedance notification does not adequately address the complications in near immediate reporting to the Water Board. “As a consultant providing watershed coordinator services to the Westside Coalition, I am not always sitting at my desk at the immediate time that I receive notice from a laboratory of an exceedance.” Request reconsideration be given to this most onerous and strict deadline and request that 5 business days be allowed for exceedance notification.</p>	<p>The next Water Board meeting is currently scheduled for 15 and 16 September, resulting in an unnecessary delay in the issuance of the MRP, which the coalition groups and the Management Practice Working Group have had multiple opportunities to review and provide comments.</p> <p>The TIC is an important advisory group to help implement the Conditional Waiver Irrigated Lands Program. However, it is not appropriate to have the TIC advisory group in a formal Monitoring and Reporting Program.</p> <p>See response to third comment listed on page 2 of this table.</p>

Comments Received on 21 July 2005 version of Draft Revised MRP for Coalition Groups and Water Board Staff Responses

ORIGIN OF COMMENTS	SUMMARY OF COMMENTS	WATER BOARD STAFF RESPONSE
Kern County Water Agency – James Beck	The Agency urges the Water Board to drop the semi-annual monitoring report requirement. More time & effort is needed to produce semi-annual reports. Staff justification is that it will allow more review time for more timely feedback. Suggest moving due date of Annual Report to January 1 to allow staff ample review time. Semi-annual sampling will not improve storm season monitoring because it is unpredictable. The Agency’s experience is that it takes months to get results back from the lab and therefore there would not be anything new to report in a semi-annual report.	See response to second comment listed on page 3 of this table.
Sacramento Valley Water Quality Coalition – Aaron Ferguson	Page 4, Section 2A. Given the chemistries of potential toxicants and the capabilities of TIE tests, It is most efficient to conduct persistence tests. Water Board should utilize the TIC to evaluate the MRP and amend Section 2A to incorporate “persistence test.”	Water Board staff is more interested in environmental persistence (duration) rather than persistence within a sample. This proposed approach is not protective of water quality and the environment.
	Page 8, Table 1, Footnote “C” – Reference to Stephen Clark response to 6/2/05 version of the Coalition Group MRP that it is unsafe to sample during a storm event and that the TIC Sediment Focus Group discussed, but there remains some disagreement regarding the ultimate recommendation to collect sediment samples once or twice a year. Considering this, it is inappropriate to include Footnote “C” as written.	Water Board staff will not expect sampling to occur if conditions are unsafe. Furthermore, Footnote C does not request sampling during unsafe conditions. Sampling staff should use best professional judgment when meeting MRP sampling requirements. In many cases, dormant season monitoring is entirely feasible.
	Page 12, Section 3.1 – There remains an inconsistency between Section 3.1 (as amended) and Section 1 (as amended) regarding the identifying and tracking the progress of water quality management practices within the watershed. Section 1 contains a trigger for the collection of management practices information. Section 3.1 still indicates that the Coalition Groups shall develop the Implementation Plan. Section 3.1 should be amended to be consistent with Section 1 so that the Implementation Plan requirement is directly related to monitoring results.	See response to second comment listed on page 2 of this table.
	Page 12, Section 3.2 – Water Board must decide which is most important 1) an immediate report containing data regarding a violation or exceedance of a water quality objective or 2) information regarding follow-up monitoring and analysis and other actions that a Coalition Group may take to address the violation or exceedance. Assuming that a Coalition Group can provide anything more than raw data in 24 hours is not realistic.	The Exceedance Report is for reporting available information, how the information shows there has been an exceedance, and the next steps to address the exceedance to the extent possible. Coalition Groups need to communicate and follow-up with Water Board staff regarding exceedances.
	Page 14, Section C – It is not clear what value would be added by requiring submission of semi-annual monitoring reports. With the Exceedance, Communication, and Evaluation Report, there is no pressing water quality issue that would need addressing in a semi-annual report. The AMR in large part is a summary of these actions and should not be the mechanism for notifying the Water Board about new water quality issues. Furthermore, until the Water Board has completed one Annual Monitoring Report review cycle and refined their evaluation criteria, it seems unreasonable to change the frequency of the submissions.	See response to second comment listed on page 3 of this table.

10 August 2005

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM
ORDER NO. R5-2005-0833
FOR
COALITION GROUPS
UNDER
RESOLUTION NO. R5-2003-0105
CONDITIONAL WAIVER OF
WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES FROM IRRIGATED LANDS

As conditioned by the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Conditional Waiver) Resolution No. R5-2003-0105* (Order), Coalition Groups shall develop a monitoring program to assess the sources and impacts of waste in discharges from irrigated lands, and where necessary, to track progress in reducing the amount of waste discharged that affects the quality of the waters of the state and its beneficial uses.

The Regional Water Quality Control Board, Central Valley Region (Water Board) adopts this Monitoring and Reporting Program (MRP) pursuant to Water Code Section 13267. The Coalition Groups represent individual dischargers that discharge waste to waters of the state. The reports required by this Order are needed to evaluate impacts of discharges of waste to waters of the state and to determine compliance with the Conditional Waiver. The Water Board Executive Officer may revise the MRP as appropriate. Coalition Groups shall comply with the MRP as revised by the Executive Officer. This MRP replaces MRP No. R5-2003-0826, which is hereby rescinded.

The purpose of this MRP is to describe the minimum requirements for an acceptable Coalition Group MRP Plan. The purpose of the MRP Plan shall be to monitor the discharge of wastes in irrigation return flows and stormwater from irrigated lands that are enrolled under the Conditional Waiver. The Coalition Group shall prepare and submit to the Water Board for review and approval by the Executive Officer an MRP Plan that meets the minimum requirements of the MRP and includes sites to be monitored, frequency of monitoring, parameters to be monitored, and documentation of monitoring protocols. The Executive Officer will review the MRP Plan to determine if it meets or exceeds the minimum requirements of this Order. The submittal of a MRP Plan is a condition of the Conditional Waiver.

The development of a science-based water quality monitoring program is critical for determining actual and potential impacts of discharges of waste from irrigated lands on beneficial uses of water in the Central Valley Region. Determining the existing ecological conditions of agriculturally dominated waterbodies is a critical goal of a water quality monitoring program and should be achieved by multiple assessment tools such as toxicity, chemical monitoring, and bioassessments.^a

I. MONITORING AND REPORTING PROGRAM REQUIREMENTS

The Coalition Group shall submit to the Water Board a detailed MRP Plan that supports the development and implementation and demonstrates the effectiveness of the Watershed Program to comply with conditions of the Conditional Waiver.

^a *Letter to Art Baggett and Thomas Pinkos from Don Gordon, Agricultural Council of California, August 5, 2002.*

The MRP Plan shall be designed to achieve the following objectives as a condition of the Conditional Waiver:

- a. Assess the impacts of waste discharges from irrigated lands to surface water;
- b. Determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality in watersheds, subwatersheds, or drainage areas where water quality problems have been identified through monitoring;
- c. Determine the effectiveness of management practices and strategies to reduce discharges of wastes that impact water quality;
- d. Determine concentration and load of waste in these discharges to surface waters; and
- e. Evaluate compliance with existing narrative and numeric water quality objectives to determine if implementation of additional management practices is necessary to improve and/or protect water quality.

In order to focus the monitoring effort in a cost effective manner, a phased process is needed for the use of various assessment tools (i.e. chemical monitoring, toxicity testing, and bioassessments). A recent conference sponsored by the California Water Institute entitled "*Understanding Surface Water Monitoring Requirements*" provides excellent guidance on the use of various monitoring tools (California Water Institute, 2002).

1. Types of Monitoring and Evaluation

To achieve the objectives of the MRP, at a minimum, the Coalition Group shall conduct the types of monitoring and evaluation listed below. The monitoring will be conducted during different phases of the MRP.

- a. Toxicity Testing;
- b. Water Quality (constituents listed in Table 1) and Flow Monitoring;
- c. Pesticide Use Evaluation; and
- d. Evaluation of the effectiveness of management practices and tracking levels of implementation in the watershed.

These testing requirements are described below:

- Toxicity Testing

Activities within the watershed and the use of the receiving waters must be evaluated using aquatic toxicity testing. The purpose of the toxicity testing is to evaluate compliance with the narrative toxicity objective, to identify the causes of toxicity observed (e.g., sediment, contaminants, salt, etc.), and to determine the sources of the toxicants identified.

- Water Quality and Flow Monitoring

Water quality and flow monitoring is used to assess the sources of wastes and loads in discharges from irrigated lands to surface waters and to evaluate the performance of management practice implementation efforts. Monitoring data shall be compared to existing numeric and narrative water quality objectives.

- Pesticide Use Evaluation

The most significant factors influencing the amount of pesticides in surface waters are the timing of pesticide applications, the application rates, the amounts of pesticide applied, and the points of application (all of these factors can be referred to as "use pattern"). This information can be found in the pesticide use reports submitted by the applicators to the County Agricultural Commissioners and Department of Pesticide Regulations. Changes in pesticide concentrations at specific monitoring sites in the waterbodies need to be compared to pesticide use patterns in land areas upstream of the monitoring sites. By comparing these changes, it may be determined how changing the pesticide use patterns could impact water quality. Changing pesticide use patterns can also provide an indicator of the degree of implementation of certain management practices.

- Management Practice Effectiveness

Information on management practices will be collected and evaluated from Dischargers located in a watershed area when a water quality parameter is identified at a concentration that violates an established water quality objective as prescribed in the appropriate Basin Plan. The Coalition Group will determine the geographic areas within their watershed that may be the potential source of the exceedance through follow up monitoring, the County Agricultural Commissioners offices, or other information that may be available. The Coalition Group will contact Dischargers or other appropriate entities in the identified areas. The contact will include an explanation of the exceedance that occurred, the likely cause of the exceedance, and an explanation of the need to determine management practices that are being implemented in the area and possible management practices that can be used to minimize and/or eliminate the exceedance. The contact should also provide information on management practices being developed through research projects. The Coalition Group shall take affirmative steps to identify appropriate management practices. Such steps may involve management practices workshops and/or develop a management practices worksheet questionnaire to determine the management practices being used in the identified areas. The Coalition Group may conduct such outreach efforts or develop the workshops and worksheets with the assistance of the County Agricultural Commissioners, U.C. Extension Service, Natural Resources Conservation Service, Resource Conservation District, or other appropriate groups or agencies. Management practice data shall be collected in four broad areas; 1) pesticide mixing, loading, and application practices; 2) best management practices; 3) management practices to address others wastes (salt, sediment, nitrogen, etc.); and 4) irrigation and cultural practices. With this information and other information, the Coalition Group will determine the effectiveness of management practices in reducing loading of constituents of concern (COCs) and in protecting

waters of the state. This determination of effectiveness will take into account ongoing pilot projects being implemented to develop additional management practices.

2. Monitoring Phases

The MRP Plan shall describe a phased monitoring approach and provide documentation to support the proposed monitoring program. The program shall not consist of more than three phases. Phase 1 monitoring shall, at a minimum, include analyses of physical parameters, drinking water constituents, pesticide use evaluation, and toxicity testing. Phase 2 monitoring includes chemical analyses of constituents that were identified in toxicity testing in Phase 1 that may include pesticides, metals, inorganic constituents, and nutrients and additional monitoring sites in the watershed. Phase 3 monitoring includes management practice effectiveness and implementation tracking and additional water quality monitoring sites in the upper portions of the watershed.

A. Monitoring Phase 1

Monitoring Phase 1 shall include analyses of physical parameters, drinking water constituents, pesticide use evaluation, and toxicity testing. Phase 1 monitoring parameters shall include all 303(d) pollutants identified in downstream waterbody(s) and discharged to land or surface water within the watershed. Phase I monitoring parameters shall also include all pesticides listed in the Pesticide Implementation Plan contained within the Water Board's Basin Plan if used within the watershed. General water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern in land areas upstream of the monitoring sites. This will also identify the types of pesticides used in the watershed to assist in determining the selection of appropriate species for toxicity testing. Acute toxicity testing shall be conducted using the invertebrate, *Ceriodaphnia dubia* (water flea), and the larval fathead minnow, *Pimephales promelas*, according to standard USEPA acute toxicity test methods^b. In addition, to identify toxicity caused by herbicides, 96-hour toxicity tests with the green algae, *Selenastrum capricornutum* (green algae), shall be conducted^c. The water column toxicity testing will be used as an indicator for wastes that are water-soluble. Sediment toxicity testing using the invertebrate species *Hyalella azteca* or *Chironomus tentans* according to USEPA methods^d shall be conducted for hydrophobic (sediment bound) wastes that are present in the waterbody.

For this initial screening, 100% (undiluted) sample shall be tested. If, during the initial toxicity screening, a 50% or greater difference in test organism mortality is detected at any time between an ambient sample (i.e., from a stream site) and the laboratory control during an acceptable *Ceriodaphnia dubia* or *Pimephales promelas* test, or a 50% or greater difference in test

^b USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012.

^c USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-013.

^d USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024.

organism growth is detected between an ambient sample (i.e., from a stream site) and the laboratory control at the end of an acceptable *Selenastrum capricornutum* test, then a Toxicity Identification Evaluation^e (TIE) and chemical monitoring shall be conducted on that same sample. At a minimum, a Phase I TIE^f should be conducted to determine the general class (i.e., metals, non-polar organics such as pesticides, surfactants, etc.) of the chemical causing toxicity. This minimum TIE effort will determine the type of chemical monitoring necessary to identify the specific agents causing toxicity. Phase II^g TIEs may also be utilized to identify specific toxic agents.

If at any point during the initial toxicity screening the mortality reaches 100%, a multiple dilution test is required. A multiple dilution test on the same sample must include a minimum of five (5) sample dilutions. The TIE will be conducted to determine the cause of toxicity and the multiple dilution test will determine the magnitude of the toxic response.

Sites identified as toxic (statistically different from the laboratory control) in the initial screen shall be re-sampled to estimate the duration of the toxicant in the waterbody. Additional samples collected upstream of the original site should also be collected to determine the potential source(s) of the toxicant in the watershed.

Information must be collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through all phases of monitoring.

B. Monitoring Phase 2

Monitoring Phase 2 will include general physical parameters, pesticide use evaluation, and chemical analyses of pesticides, metals, inorganic constituents and nutrients. Phase 2 will be designed based on the results of Phase 1 monitoring. It is expected that this phase will begin no later than 2 years after the start of the first phase. This phase of monitoring will include general water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen to indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern and changes in land areas upstream of the monitoring sites. This will also identify any additional or new pesticides used in the watershed to be monitored. Chemical analyses will be conducted in Phase 2 to assess the sources of waste and pesticide loads in discharges from irrigated lands to surface waters and to evaluate performance of management practice implementation efforts. Wastes include the constituents that cause toxicity in Phase 1 monitoring.

^e A TIE is a set of sample manipulation procedures designed to identify the specific causative agent(s) responsible for the observed toxicity.

^f USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase I Toxicity Characterization Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-034.

^g USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase II Toxicity Identification Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-035.

Information must be collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through all phases of monitoring.

C. Monitoring Phase 3

Phase 3 monitoring shall be implemented by the Coalition Groups as directed by the Executive Officer. Monitoring Phase 3 shall determine statistically significant changes in waste concentrations based on various management practices. Phase 3 monitoring shall begin no later than two years from the start of Phase 2 monitoring. This phase of monitoring will include general water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen to indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern and changes in land areas upstream of the monitoring sites. Information collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through the previous phases of monitoring. Due to the various land use patterns and rainfall/runoff factors that can affect waste concentrations on an annual basis, it may be difficult to determine success (waste reductions) from single or multiple management practices based on only a year of sampling. Phase 3 shall determine if statistically significant changes in waste concentrations result from the implementation of various management practices. Data should be collected in four broad areas; 1) pesticide mixing, loading, and application practices; 2) pest management practices; 3) management practices to address waste (salt, sediment, nitrogen, etc.), and 4) cultural practices. This information may be used to compare the effectiveness of management practices in reducing waste loads.

Based on the results of the data collected during the three phases of monitoring, any of the above types of monitoring may be required to be repeated at a specific site or watershed.

3. Historical Data

Historical water quality data has been used for listing various water bodies as impaired. Therefore, synthesis and statistical analysis of all historical data by site and date is a critical first step for designing a science based monitoring program in a watershed. Historical analysis will provide a benchmark for measuring change (progress) in reducing concentrations of wastes due to management practices and will provide rationale for the site selection process (i.e. continue to monitor sites with extensive temporal data for wastes or water quality parameters). It is also possible that spatial analysis of historical data will reveal sites where data are lacking and that should be monitored in the future. Coalition Groups shall collect and review historical data for all wastes in the various watersheds in advance of developing monitoring designs. This critical initial step in developing a MRP Plan will focus the study, provide rationale for the site selection process, and reduce costs.

Coalition Groups are encouraged to review the on going monitoring in the watershed and coordinate the monitoring effort to avoid duplication.

4. Minimum Requirements

The following table lists the minimum requirements for the constituents to be monitored by the Coalition Group:

Table 1. Minimum Monitoring Requirements

Constituent	Analytical Methods	Maximum PQL	Reporting Unit	Monitoring Phase	Minimum Sampling Frequency
Physical Parameters					
Flow	Calculated	1	cfs	Phase 1, 2 & 3	(b)
pH	SM 4500 H&B or EPA 150.1	0.1	pH units	Phase 1, 2 & 3	(b)
Electrical Conductivity	EPA 9050A or EPA 120.1	100	µmhos/cm	Phase 1, 2 & 3	(b)
Dissolved Oxygen	SM 4500	0.1	mg O ₂ /L	Phase 1, 2 & 3	(b)
Temperature	SM 2550	0.1	Degrees Celsius	Phase 1, 2 & 3	(b)
Color	SM 2120B	5	Color Unit	Phase 1, 2 & 3	(b)
Turbidity	SM 2130B or EPA 180.1	1	NTUs	Phase 1, 2 & 3	(b)
Total Dissolved Solids	SM 2540C or EPA 160.1	10	mg/L	Phase 1, 2 & 3	(b)
Total Organic Carbon	SM 5310C or EPA 415.1	0.5	ug/L	Phase 1, 2 & 3	(b)
Drinking Water					
<i>E. coli</i>	SM 9221 or SM 9223	2	MPN/100ml	Phase 1	(b)
Total Organic Carbon	SM 5310C or EPA 415.1	0.5	ug/L	Phase 1	(b)
Toxicity Test (a)					
Algae Toxicity	EPA-821-R-02-013	NA	% Reduction	Phase 1	(b)
Water Column Toxicity	EPA 821-R-02-012	NA	% Survival	Phase 1	(b)
Sediment Toxicity	EPA 600-R-99-064	NA	% Survival	Phase 1	(c)
Pesticides					
Carbamates					
Aldicarb	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Carbaryl	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Carbofuran	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Methiocarb	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Methomyl	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Oxamyl	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Organochlorines					
DDD	EPA 608 or EPA 8081A	0.02	ug/L	Phase 2	(b)
DDE	EPA 608 or EPA 8081A	0.01	ug/L	Phase 2	(b)
DDT	EPA 608 or EPA 8081A	0.01	ug/L	Phase 2	(b)
Dicofol	EPA 608 or EPA 8081A	0.1	ug/L	Phase 2	(b)
Dieldrin	EPA 608 or EPA 8081A	0.01	ug/L	Phase 2	(b)
Endrin	EPA 608 or EPA 8081A	0.01	ug/L	Phase 2	(b)
Methoxychlor	EPA 608 or EPA 8081A	0.05	ug/L	Phase 2	(b)
Organophosphorus					
Azinphos-methyl	EPA 8141A or EPA 614	0.1	ug/L	Phase 2	(b)
Chlorpyrifos	EPA 8141A or EPA 614	0.02	ug/L	Phase 2	(b)
Diazinon	EPA 8141A or EPA 614	0.02	ug/L	Phase 2	(b)
Dimethoate	EPA 8141A or EPA 614	0.1	ug/L	Phase 2	(b)
Disulfoton	EPA 8141A or EPA 614	0.1	ug/L	Phase 2	(b)
Malathion	EPA 8141A or EPA 614	0.1	ug/L	Phase 2	(b)
Methamidophos	EPA 8141A or EPA 614	0.2	ug/L	Phase 2	(b)

MONITORING AND REPORTING PROGRAM
ORDER NO. R5-2005-0833
FOR COALITION GROUPS UNDER
RESOLUTION NO. R5-2003-0105
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS
FOR DISCHARGES FROM IRRIGATED LANDS

Constituent	Analytical Methods	Maximum PQL	Reporting Unit	Monitoring Phase	Minimum Sampling Frequency
Organophosphorus (continued)					
Methidathion	EPA 8141A or EPA 614	0.1	ug/L	Phase 2	(b)
Parathion-methyl	EPA 8141A or EPA 614	0.1	ug/L	Phase 2	(b)
Phorate	EPA 8141A or EPA 614	0.2	ug/L	Phase 2	(b)
Phosmet	EPA 8141A or EPA 614	0.2	ug/L	Phase 2	(b)
Pyrethroids					
Biphenthrin	EPA 1660 or EPA 8081A	0.05	ug/L	Phase 2	(b)
Cyfluthrin	EPA 1660 or EPA 8081A	0.05	ug/L	Phase 2	(b)
Cypermethrin	EPA 1660 or EPA 8081A	0.05	ug/L	Phase 2	(b)
Esfenvalerate	EPA 1660 or EPA 8081A	0.05	ug/L	Phase 2	(b)
Lambda-Cyhalothrin	EPA 1660 or EPA 8081A	0.05	ug/L	Phase 2	(b)
Permethrin	EPA 1660 or EPA 8081A	0.05	ug/L	Phase 2	(b)
Herbicides					
Atrazine	EPA 619 or EPA 507	0.5	ug/L	Phase 2	(b)
Cyanazine	EPA 619 or EPA 507	0.5	ug/L	Phase 2	(b)
Diuron	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Glyphosate	EPA 547	5	ug/L	Phase 2	(b)
Linuron	EPA 8321 or EPA 632	0.5	ug/L	Phase 2	(b)
Molinate	EPA 634 or EPA 507	0.5	ug/L	Phase 2	(b)
Paraquat dichloride	EPA 549.1	0.5	ug/L	Phase 2	(b)
Simazine	EPA 619 or EPA 507	0.5	ug/L	Phase 2	(b)
Thiobencarb	EPA 634 or EPA 507	0.5	ug/L	Phase 2	(b)
Metals					
Arsenic	EPA 200.7, 200.8, or 206.3	1	ug/L	Phase 2	(b)
Boron	EPA 200.7 or 200.8	10	ug/L	Phase 2	(b)
Cadmium	EPA 200.7, 200.8, or 213.2	0.1	ug/L	Phase 2	(b)
Copper	EPA 200.7, 200.8, or 220.2	0.5	ug/L	Phase 2	(b)
Lead	EPA 200.7, 200.8, or 239.2	0.5	ug/L	Phase 2	(b)
Nickel	EPA 200.7, 200.8, or 249.2	1	ug/L	Phase 2	(b)
Selenium	EPA 200.7, 200.8, or 270.3	1	ug/L	Phase 2	(b)
Zinc	EPA 200.7, 200.8, or 289.2	1	ug/L	Phase 2	(b)
Nutrients (d)					
Total Kjeldahl Nitrogen	EPA 351.2 or 351.3	500	ug/L	Phase 2	(b)
Nitrate as NO3	EPA 300.1 or 353.2	50	ug/L	Phase 2	(b)
Nitrite as Nitrogen	EPA 300.1 or 353.2	50	ug/L	Phase 2	(b)
Ammonia	EPA 350.3 or SM4500 NH3	100	ug/L	Phase 2	(b)
Hardness	SM 2340 or EPA 130.1	10,000	ug/l	Phase 2	(b)
Total Phosphorous	EPA 365.1, 365.4, or SM 4500-P	10	ug/L	Phase 2	(b)
Soluble Orthophosphate	EPA 300.1, 365.1, or SM 4500-P	10	ug/L	Phase 2	(b)

- a In addition to TIEs, sites identified as toxic in the initial screen shall be re-sampled to estimate the duration of the toxicant in the waterbody. Additional samples upstream of the original site should also be collected to determine the potential source(s) of the toxicant in the watershed
- b Monitoring frequency is monthly during irrigation season and sampling of two major storm events during the storm season.
- c Sediment Toxicity Monitoring frequency is one sample during the irrigation season and one sample during the dormant season.
- d Alternative methods may be used for analysis of nutrients provided the methods are approved by the National Environmental Laboratory Accreditation Program. Alternative methods must be included in the Coalition Group's QAPP and are subject to approval by the Water Board.

PQL	Practical Quantitation Limit	MPN	Most Probable Number
cfs	cubic feet per second	NTU	Nephelometric turbidity unit
mg/L	milligrams per liter	ug/L	micrograms per liter
ml	milliliters	mg	milligrams
µmhos/cm	micromhos per centimeter	NA	Not applicable

The MRP Plan must include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for every parameter monitored.

Method detection limits and practical quantitation limits shall be reported. All peaks detected on chromatograms shall be reported, including those that cannot be quantified and/or specifically identified. The Coalition Group shall use USEPA approved methods, provided the method can achieve method detection limits equal to or lower than analytical methods quantitation limits specified in this Order.

At a minimum, the MRP Plan must clearly demonstrate: 1) compliance with requirement of all phases of monitoring as described in this MRP; 2) sufficient number of monitoring sites based on acreages and watershed characteristics, flow monitoring, and frequency of sample collection to allow for the calculation of load discharged for every waste parameter monitored; and 3) the use of proper sampling techniques and laboratory procedures to ensure a sample is representative of the site and is performed in the laboratory using approved methodologies

Bioassessment monitoring protocols are at the developing phase and there are no Basin Plan requirements or standards addressing the results of bioassessment monitoring. Coalition Groups are encouraged to conduct bioassessments to collect data that may be used as reference sites and provide information for scientific and policy decision making in the future. Bioassessments may serve monitoring needs through three primary functions: 1) screening or initial assessment of conditions; 2) characterization of impairment and diagnosis; and 3) trend monitoring to evaluate improvements through the implementation of management practices. Bioassessment data from all Wadeable Impaired Waterbodies may serve as an excellent benchmark for measuring both current biological conditions and success of management practices.

Watershed Specific Requirements

The watershed specific requirements include watershed COCs based on the characteristics of the watershed and the receiving water quality conditions. Some watersheds may need to conduct more extensive toxicity testing or increase the number of monitoring sites if toxicity has been documented by previous monitoring. Watershed specific requirements will include follow up analyses on specific COCs, e.g., specific metals or pesticides.

5. Flow Monitoring

Representative flow measurements shall be obtained at each sample location during each sampling event. Additionally, the presence or absence of flow at each sample site shall be noted at a sufficient frequency to determine the quantity discharged during the irrigation season. The MRP Plan shall record the time, date, and location of each flow measurement or observation (absences) on field data sheets. Discharge flow monitoring shall be conducted and shall be reported in cubic feet per second.

6. Monitoring Seasons

Monitoring required in Section 1 “Types of Monitoring and Evaluation” shall be conducted during the irrigation and storm seasons, which coincides with the orchard dormant spray application. In general, the irrigation season is March through August, but may start as early as February and extend to October. The storm season is December through February, but may include November and March. The MRP Plan shall describe the phased monitoring program for irrigation and storm seasons.

Each phase of monitoring shall include monitoring of two major storm events during one storm season and monthly sampling during one irrigation season followed by collection and evaluation of data. Data must be submitted to the Executive Officer for review and approval. The Coalition Group shall design a monitoring phase based on the results of the previous phase. A revised MRP Plan shall be submitted for each phase for approval by the Executive Officer.

7. Monitoring Schedule

The MRP Plan shall be carried out using a systematic schedule. The MRP Plan should provide the start date, time of the year, when field studies will take place, frequency of sampling, and when the field studies end. Timing, duration, and frequency of sampling should be based on the complexity, hydrology, and size of the waterbody. Historical data must be reviewed to assist with determining some of these factors. The MRP Plan must include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for appropriate parameters to achieve the objective identified in Section I. *MONITORING AND REPORTING PROGRAM REQUIREMENTS* above.

At a minimum, each phase of the above referenced monitoring shall be conducted during two major storm events and monthly sampling during the peak irrigation season for one year, unless otherwise approved by the Executive Officer.

8. Monitoring Sites

The MRP Plan shall describe the study area, sampling sites, sampling locations, GPS coordinates, land use in the watershed, the chemicals being used, and the existing management practices in the watershed. The numbers and locations of sites must be based on specific watershed characteristics and be supported by a detailed discussion of these characteristics. Monitoring sites shall be selected for various watersheds based on size and flow of waterbodies (mainstem river, tributaries and agricultural drainage), land use (e.g., agricultural activities and pesticide use). Monitoring sites must be established initially on the waterbodies that are carrying agricultural drainage into natural waterbodies. If results indicate that water quality objectives are exceeded at any site, monitoring for the COCs (constituents exceeded water quality objectives) shall continue and the monitoring must be expanded upstream in a systematic search for sources. All major drainages must be part of baseline monitoring. At least 20% of the intermediate drainages must be monitored during the first year and the second 20%, the second year, etc. Smaller drainages will be monitored if the evaluation of data from the larger drainages or receiving water indicates water quality problems. The major, intermediate, and small drainages based on hydrology, size and flow of the waterbodies are different for each watershed.

Therefore, Coalition Groups shall provide scientific rationale for the site selection process based on historical and on-going monitoring, drainage size, and land use. The size of major, intermediate, and small drainages within the sub watershed shall be discussed in the MRP Plan and how the size of these drainages was used to develop the monitoring sites. Monitoring sites should not include main-stem waterbodies already on the Clean Water Act section 303(d) listed waterbody. These sites should be monitored only to determine the degree of implementation of management practices to reduce discharge of COCs listed on 303(d). The initial focus of the MRP Plan shall be on waterbodies that carry agricultural drainage or are dominated by agricultural drainage. A map showing the monitoring sites shall be provided with the MRP Plan.

II. QUALITY ASSURANCE PROJECT PLAN (QAPP)

To create a sound and consistent watershed or regional MRP Plan, it is important to develop monitoring protocols and a monitoring plan for the evaluation of water quality data. A QAPP must be developed by the Coalition Group to include watershed and site-specific information, project organization and responsibilities, and quality assurance components of the monitoring program. Surface Water Ambient Monitoring Program (SWAMP) QAPP is a comprehensive quality assurance plan that includes many of the elements required under this MRP. **Attachment A** presents the MRP QAPP Requirements and the outline for development of the monitoring QAPP. The QAPP includes the laboratory and field requirements to be used for data evaluation. Coalition Groups may use the SWAMP QAPP as an available resource and add the site-specific requirements and any other elements that are required under this MRP. A Watershed specific QAPP is required to be submitted with the Watershed Evaluation Report. The Watershed Evaluation Report is a condition of the Conditional Waiver.

III. REPORTING REQUIREMENTS

Pursuant to California Water Code Section 13267, the following Reports are required to be submitted to the Water Board by a time schedule established by the Executive Officer.

A. Watershed Evaluation Report

Upon the request of the Executive Officer the Coalition Group shall compile and submit a Watershed Evaluation Report containing the following information:

1. Watershed Setting

- Map(s) of watershed area showing irrigated lands (including crop type), drainage and discharge locations. Maps or discussion shall provide details of the watershed showing which fields are served by each drain;
- Information on crops grown in the watershed or subwatershed area, production practices, chemicals used, and application methods (including timing of application) within the watershed and other factors that may impact the quality of discharges;

- Historical water quality monitoring results;
- Documentation of existing receiving water quality data and quality of typical irrigation discharges;
- Known water quality issues, water quality limited waterbodies, and potential water quality problems;
- Known programs addressing the water quality issues associated with discharges from irrigated lands; and
- Discussion of practices in use and available programs to address problems from irrigated agricultural discharges (e.g. tailwater return systems, irrigation efficiency improvements, UC Coop Ext. and NRCS grower outreach, EQIP, etc.).

2. Watershed Priorities

Based on the information available, the Coalition Group shall identify its priorities with respect to work on specific subwatersheds and water quality parameters.

3. Management Practices

The Coalition Group shall be responsible for monitoring the success of identified management practices through the MRP Plan as well as the evaluation of the management practices. The MRP Plan shall provide an Implementation Plan for management practices in the watershed and identify pilot projects for the implementation of management practices on prioritized sub-watersheds.

3.1 Implementation Plan

The Coalition Group shall develop an Implementation Plan to identify and track the progress of water quality management practices within the watershed when a water quality exceedance is found as described on page 3. This plan may address water quality issues related to the discharge of irrigation return flows separately from stormwater discharges and shall include a schedule for implementation of management practices that may include, but is not limited to, grower education, technical and financial assistance.

3.2 Exceedance Reports

When the Coalition Group determines that water quality objectives are exceeded at the monitoring locations, the Coalition Group shall submit an Exceedance Report by email to designated Water Board staff assigned to the Coalition Group or fax (916-464-4780) in writing within next business day describing the exceedance, the follow-up monitoring, and analysis or other actions the Coalition Group may take to address the exceedance. The Coalition Group determination of a water quality exceedance shall occur no later than 5 business days after receiving the laboratory analytical report.

3.3 Communication Reports

The Coalition Group shall submit a Communication Report within 45 business days of the Exceedance Report. The Communication Report will describe the follow-up monitoring and analyses that were conducted, what actions were taken to identify the source of the problem, complete analytical laboratory results, and a time schedule to identify and implement the Management Practice Effectiveness described on page 3, Section I.1 (4th bullet) and/or other measures to correct the problem, and to submit an Evaluation Report.

3.4 Evaluation Reports

The Evaluation Report shall be submitted in accordance with the time schedule submitted in 3.3 above, or as directed by the Executive Officer. The Evaluation Report shall include, at a minimum, description of management practice(s) or other measures implemented, target chemical(s), reasons for implementing the specific practice or measure, methodology for evaluating the effectiveness of the practice or measure (including sampling and quality assurance/quality control plans), and involvement by stakeholders and agencies in developing, implementing and evaluating the practice or measure.

B. Monitoring and Reporting Program Plan

Upon the request of the Executive Officer the Coalition Group must submit an MRP Plan that includes the components of the monitoring program as stated in this Order. The MRP Plan shall specify all quality assurance elements including the USEPA test method and detection limits for the required constituents as specified in the QAPP for Monitoring Program Requirements, **Attachment A**. At a minimum, the MRP Plan shall include the following elements:

1. Description of the watershed including characteristics relevant to the monitoring;
2. Summary of the historical data and on-going monitoring;
3. Description of Monitoring Phases;
4. Monitoring sites;
5. Land Use description;
6. Sampling locations;
7. Detailed maps showing the land use and sampling locations;
8. Monitoring periods; including description and frequencies of monitoring events;
9. Monitoring parameters;
10. Parameters to be monitored including minimum and site specific requirements;
11. A QAPP consistent with the requirements described in **Attachment A**;
12. Documentation of monitoring protocols including sample collection methods and laboratory quality assurance manual;
13. Laboratory Quality Assurance manual must describe analytical methods; internal quality control (QC) samples, frequency of QC sample analyses and acceptance criteria; calibration procedures and acceptance criteria; instrumentation and, other technical capabilities of the laboratory; and
14. Watershed contact information.

C. Semi-Annual Monitoring Reports

The Semi-Annual Monitoring Reports (Semi-Annual Report) shall be submitted by **31 December**, covering the period of 1 May through 31 October, and **30 June**, covering the period of 1 November through 30 April, of each year. Each Semi-Annual Report shall include the following components:

1. Title page;
2. Table of contents;
3. Description of the watershed;
4. Monitoring objectives;
5. Sampling site descriptions;
6. Location map(s) of sampling sites and land use;
7. Tabulated results of all analyses;
8. Sampling and analytical methods used;
9. Copy of chain of custodies;
10. Associated laboratory and field QC samples results;
11. Summary of precision and accuracy;
12. Pesticide use information;
13. Data interpretation including assessment of data quality objectives;
14. Summary of management practices used;
15. Actions taken to address water quality impacts identified, including but not limited to, revised or additional management practices to be implemented;
16. Exceedance, Communication, and Evaluation Reports; and
17. Conclusions and recommendations.

Copies of all field documentation and laboratory original data must be included in the Semi-Annual Report as attachments. The Semi-Annual Report should also provide a perspective of the field conditions including a description of the weather, rainfall, temperature, stream flow, color of the water, odor, and other relevant information that can help in data interpretation.

In reporting monitoring data, the Coalition Groups shall arrange the data in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the Conditional Waiver.

A transmittal letter shall accompany each report. This letter shall include a discussion of any violations of the Conditional Waiver found during the reporting period, and actions taken or planned for correcting noted violations, such as operational, field or facility modifications. If the Coalition Group has previously submitted a Communication Report describing actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall be signed and contain a penalty of perjury statement by the Coalition Group, or the Coalition Group's authorized agent. This statement shall state:

MONITORING AND REPORTING PROGRAM
ORDER NO. R5-2005-0833
FOR COALITION GROUPS UNDER
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CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS
FOR DISCHARGES FROM IRRIGATED LANDS

- 15

"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 knowingly submitting false information, including the possibility of fine and imprisonment for violations."

The Water Board may request Coalition Groups and/or individual Dischargers to take additional actions if monitoring data indicates the water quality objectives are exceeded in surface waters.

Based on results of the monitoring program after a minimum of one year, the Coalition Group may submit a revised MRP Plan requesting a reduction in the constituents monitored and/or sample frequency. If such reductions are warranted, the MRP Plan may be revised by the Executive Officer.

The Coalition Group, on behalf of the individual member dischargers, shall implement the above monitoring program as of the date of this Order.

Ordered by:



THOMAS R. PINKOS, Executive Officer

15 August 05
(Date)

Attachment A – Quality Assurance Project Plan (no changes proposed)