
Central Valley Regional Water Quality Control Board

13 July 2012

David Guy, President
Northern California Water Association
445 Capitol Mall, Suite 335
Sacramento, CA 95814

SACRAMENTO VALLEY WATER QUALITY COALITION 2011 ANNUAL MONITORING REPORT REVIEW

Thank you for submission of the Sacramento Valley Water Quality Coalition (Coalition) Annual Monitoring Report (AMR), received on 1 March 2012. Staff has completed a review (enclosed with this letter) of the AMR for compliance with Monitoring and Reporting Program (MRP) Order No. R5-2009-0875.

The attached review memorandum indicates that the Coalition's AMR presentation and discussion of test results and laboratory QC were incomplete. According to the Coalition's MRP Order, the Coalition is required to describe all laboratory QC issues, missing data, and results that do not meet QC objectives. The Coalition must also identify the cause of these issues, and describe how they will be corrected or avoided in the future to ensure sample integrity and quality.

Staff identified report quality issues that need to be addressed. Please review the attached memorandum and checklist. The Coalition must address and correct all omissions and errors identified in the staff memorandum and checklist as an Addendum to the Annual Monitoring Report. The Addendum must include corrected datum (item 8.1.1), mapping dates and data sources (item 8.1.2), the missing Exceedance Report and lab report for toxaphene on the Pit River (Event 66) (item 9.3), and give an explanation for the QA/QC report quantitation limit (QL) discrepancies (item 10). Upon receipt of the Addendum which includes the missing items, staff considers the 2011 AMR acceptable and complete. **The AMR Addendum is due by COB on 3 August 2012.**

The Coalition should submit its next AMR in accordance with the MRP Order by 1 March 2013, and ensure that it complies with all requirements. If you have any questions or comments regarding the review, or need any further information, please contact Mark Cady at (916) 464-4654 or Scott Perrou at (916) 464-4633.

Original signed by

Joe Karkoski, Chief
Irrigated Lands Regulatory Program

Susan Fregien, Senior Environmental Scientist
Monitoring and Implementation Unit
Irrigated Lands Regulatory Program

Enclosure: Staff Review of SVWQC 2011 AMR

cc: Bruce Houldesheldt, NCWA
Claus Suverkropp, LWA

Central Valley Regional Water Quality Control Board

TO: Susan Fregien
Senior Environmental Scientist
IRRIGATED LANDS REGULATORY PROGRAM

FROM: Scott Perrou
Environmental Scientist
IRRIGATED LANDS REGULATORY PROGRAM

DATE: 9 July 2012

SUBJECT: 2011 ANNUAL MONITORING REPORT – SACRAMENTO VALLEY WATER
QUALITY COALITION

On 1 March 2012, the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) received the Sacramento Valley Water Quality Coalition (Coalition) 2011 Annual Monitoring Report (AMR). This AMR covers the period October 2010 through September 2011. In the current memorandum, staff presents comments pursuant to the Monitoring and Reporting Program Order R5-2009-0875 (MRP Order).

The review section titles and numbers below are the same as those used in the AMR Checklist (see attached). Staff derived the checklist directly from the MRP Order, Part IV, Section B on pages 19-23. Staff used the checklist to provide an itemized evaluation of the compliance elements. If the minimum requirements were not met or omissions were noted, this memorandum provides a discussion. No discussion is provided for those items that met the compliance standards.

Checklist Items:

3. Table of Contents. Tables 6, 20, and 21 are not listed in the List of Tables on page *iii*.

4. Executive Summary. The Executive Summary references outdated Orders and a 2009 MRPP, which are no longer applicable. The Coalition should update all references to reflect the current and applicable regulatory documents.

6. Monitoring Objectives and Design. This section makes many references to the Coalition's MRPP. Staff recommends that the section be updated and state something similar to "The Coalition's water quality monitoring program will achieve the following objectives in accordance with Monitoring and Reporting Program Order No. R5-2009-0875" and update the section text to reference the current Order, not the MRPP.

Assessment, Core, and Special Monitoring schedules are not clearly defined in the AMR. The AMR mentions "A three-year cycle of one year of Assessment monitoring for the broad suite of ILRP analytes and two years of Core monitoring of a reduced set of analytes" and

“Customization of monitoring schedules and the analytes monitored based on the characteristics of individual watersheds” but it doesn’t describe what Assessment or Core monitoring are. If the report were to reference pages 7-10 of MRP Order No.R5-2009-0875 (Order) and the Sacramento Valley Water Coalition 2011 ILRP Monitoring Plan, approved 9 March 2011, staff believes this would be clearer.

Also, a description of Management Plan monitoring is not explicitly required in the Order. However, it would be helpful and more easily discernible if:

- The assessment and management plan monitoring schedule for all sub watersheds (from the most current approved Management Plan) were included in the Appendices,
- The monitoring schedules in the Appendices were referenced in the appropriate AMR sections.

This would allow any reader of the report to quickly review constituents required to be tested and assess compliance.

8. Location Maps. The 2009 MRP Order Part IV.B states

Location map(s) showing the sampling sites, crops, and land uses within the Coalition Group’s geographic area must be updated once per year (based on available sources of information) and included in the Annual Monitoring Report. The map(s) must contain a level of detail that ensures they are informative and useful. The datum must be either WGS 1984 or NAD83, and clearly identified on the map. The source and date of all data layers must be identified on the map(s).

Maps are provided by the coalition in the electronic appendices provided on CD; however they do not show the datum, the source or date of the data layers used to create the maps. The maps must have the datum identified on the maps. A legend should be added to each map with the datum sources and dates for all mapping information.

9. Tabulated results. The monitoring results are presented in the electronic data deliverable (EDD) and in tables of detections and exceedances of water quality trigger limits (AMR Tables 20 - 24).

Toxicity results are presented in the EDD in 15 different spreadsheets. Toxicity results should be summarized in a single spreadsheet in future reports to make the review process more efficient and the data results more discernible.

All exceedances must be reported. Toxaphene was detected and identified in the AMR (page 61 and in Table 22, page 63) in the Pit River at Pittville Bridge (PRPIT) on 17 August 2011, but was not reported in the Exceedance Report for that monitoring event (Appendix D, Event 66). Additionally, there is no lab report in Appendix B of the AMR supporting the PRPIT exceedance data in Table 22. Staff recommends that the missing exceedance report and lab report be provided in an addendum.

10. Data Discussion to Illustrate Compliance. There were a few discrepancies between the report text versus the tabulated data, as follows:

- On page 53, the Coalition states that 375 toxicity results were analyzed. Staff counted 357 results (counting all tests minus replicates and LABQA) in the tabulated data versus the text.
- On page 53, the Coalition states that the sediment toxicity samples included two duplicate samples; staff counted three duplicate samples (LHNCT & ACACR on 21 April 2011 and FRSHC on 17 August 2011).
- On page 58, staff counted 4,043 (not including surrogates or sediment samples) individual pesticide results, not 4,256.
- On page 66, staff found a typographic error under the Trace Metals heading. The Coalition stated that “monitoring included both unfiltered metals (total arsenic, boron, copper, lead, molybdenum, and selenium) and unfiltered metals (dissolved copper and lead)”, text should have been unfiltered and filtered, respectively.
- The Coalition’s approved QAPP specifies that that the laboratory quantitation limit/s (QL/s, aka reporting limits) must be less than or equal to the QLs for the Coalition’s constituents of concern. In January and February, 35 samples analyzed by APPL Labs did not have acceptable QLs. This should be noted in the Quality Assurance Results section text along with an evaluation of the cause(s) for the failures, and actions that will be taken to prevent these issues in the future.

11. Electronic Data Submitted in a SWAMP Comparable Format.

The 2011 quarterly electronic data deliverable (EDDs) were reviewed and evaluated by the ILRP Data Management Team. Issues were identified with formatting, missing QC samples, inappropriate flags, and other items that do not follow data submission, collection, and business rules. Detailed feedback information has already been provided to the Coalition. Future EDDs must address and correct problems accordingly.

12. Description of Sampling and Analytical Methods Used. On page 15, Table 4 illustrates the Coalition’s 2011 planned sample monitoring but the table does not indicate how many samples were actually taken. The Order does not specifically require that the number of planned and actual samples taken be in the AMR. However staff recommends that the actual number of samples be added to the table to more clearly demonstrate Order compliance.

20. Actions Taken to Address Water Quality Exceedances

Outreach. The Coalition and its subwatersheds are doing a good job conducting outreach activities and have made improvements from last year. The Landowner Outreach Efforts section in the AMR provides a good write up of the Coalition’s strategy, but staff recommends inclusion of a summary of specific outreach efforts that were conducted to address specific exceedances. In Appendix F of the AMR, the Coalition’s addition of the column titled “Focus of Outreach” is useful in evaluating the relationship between the outreach efforts and the receiving audience.

Staff requires additional information to assess whether the Coalition's outreach efforts are effective. Additional useful items may include tabulation of feedback received during meetings and from phone calls, results of meeting evaluations, replies or requests from newsletter pieces, and other interactions with Coalition members.

These additional items will demonstrate to the members of the Coalition and the Central Valley Water Board staff the effectiveness of the outreach efforts and help target areas that can be improved to ensure future water quality compliance.

Annual Monitoring Report Review Checklist

| Report Name: Sacramento Valley 2011 Annual Monitoring Report | | | | | | | | | |
|--|--|-----------------|-------------------|----------------------------------|----------------------|-----------------------|--|-----------------|--|
| Submittal Date: 1 March 2012 | | | | | | | | | |
| Item No. | AMR Component Name | A Acceptable | U Unacceptable | NI Not Included or Incomplete | NA Not Applicable | Page # (Section #) | Comments | Staff reference | |
| 1 | Signed Transmittal Letter | | | | | | | | |
| 1.1 | Penalty of Perjury Statement | X | | | | Cover ltr | | | |
| 1.2 | Signature of Authorized Coalition Representative | X | | | | Cover ltr | | | |
| 1.3 | Dated | X | | | | Cover ltr | | | |
| 1.4 | Discussion of exceedances, and corrective actions taken or planned (or reference to previous correspondence) | X | | | | | Included in the body of the report | | |
| 1.5 | Submitted on time | X | | | | | | | |
| 2 | Title Page | | | | | | | | |
| 2.1 | Report title | X | | | | Title page | | | |
| 2.2 | Date of the report | X | | | | Title page | reports March 2011 | | |
| 2.3 | Monitoring date range covered by the report | X | | | | | not on Title page but included as footer in report | | |
| 2.4 | Coalition Group name | X | | | | | | | |
| 3 | Table of Contents | | | | | | | | |
| 3.1 | List of sections/chapters, tables, figures, appendices/attachments with page numbers | X | | | | i - iv | Did not include Table 6, 20, & 21 in Table of Contents | | |
| 4 | Executive Summary | | | | | | | | |
| 4.1 | Summary of key results and activities | X | | | | v - vii | | | |
| 4.2 | Brief summary of conclusions and recommendations | X | | | | vii - viii | | | |

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|----------|--|---|-----------------|-------------------|----------------------------------|----------------------|-----------------------|--|---|
| 5 | Description of the Coalition Group Geographical Area | | | | | | | | |
| 5.1 | | General description of relevant geographic features of the Coalition area, such as location and extent of area, major landforms, land uses, vegetation types, crop types, climate patterns, key waterways, and cities | X | | | | 3 | | |
| 6 | Monitoring Objectives and Design | | | | | | | | |
| 6.1 | | Brief description of monitoring objectives (references to section and page numbers in MRP Plan or QAPP, as appropriate) | X | | | | 4 | | |
| 6.2 | | Monitoring design aligns with MRP Plan, any deviations from MRP Plan or QAPP are described (references to section and | X | | | | 4 | | MRP Order, p. 9-14; MRP Attach. A, p. 4-6 |
| | 6.2.1 | Assessment Monitoring: sites, parameters, schedule | X | | | | 4 - 8, 23-24 | reports sampling sites and described briefly | MRP Order p.5-11 for sites MRP Order p.11-15 for parameters 2011 ILRP Monitoring Plan Attachment D |
| | 6.2.2 | Core Monitoring: sites, parameters, schedule | X | | | | 4 - 8, 23-24 | reports sampling sites and described briefly | MRP Order p.5-11 for sites MRP Order p.11-15 for parameters 2011 ILRP Monitoring Plan Attachment D |
| | 6.2.3 | Special Project monitoring (Management Plan, TMDL, source identification): sites, parameters, schedule | X | | | | 6 - 8, 23-24 | | MRP Order p.5-11 for sites MRP Order p.11-15 for parameters 2011 ILRP Monitoring Plan Attachment D |
| 7 | Sampling Site Descriptions and Rainfall Records for the time period covered under the AMR | | | | | | | | |
| 7.1 | | Sampling site name and description (e.g. geographic area, watershed, crop type and drainages that the site represents), or unique information about the site or surrounding area | X | | | | p.7-13 Appendix E | | |
| 7.2 | | Rainfall records in graphic or narrative form (in inches of precipitation) | X | | | | Figures 2a - 2d | Pages 38 - 48 | |

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|----------|---|---|-----------------|-------------------|----------------------------------|----------------------|-----------------------|---|---|
| 8 | Location Maps(s) of sampling sites, crops, and land uses | | | | | | | | |
| 8.1 | | Location maps show sampling sites, crops, and land use with informative level of detail | X | | | | Appendix E | | |
| | 8.1.1 | Datum identified on map (<u>must be</u> WGS 1984 or NAD 1983) | | | X | | Appendix E | Map must be updated annually; Datum not identified on maps | MRP Order, p. 20 |
| | 8.1.2 | Source and date of all data layers identified on map | | | X | | | Per MRP each map should also have source and date of all data layers and the legend should be on each map | |
| 8.2 | | Accompanying list or table indicates: site name, ID number, ILRP station code number, and GPS coordinates (latitude and longitude in decimal degrees to at least five decimal places) | X | | | | p.7 | | |
| 9 | Tabulated Results | | | | | | | | |
| 9.1 | | Data are in tabular form, clearly organized and readily discernible | X | | | | | | Toxicity data could be more easily discernible if all data was compiled into a single spreadsheet (similar to Chem data worksheet) |
| 9.2 | | Tabulated results agree with the electronically submitted data | X | | | | | | |
| 9.3 | | Previously reported exceedances match exceedances identified in the AMR | | | X | | | | Toxaphene reported at the Pit River (PRPIT) included in AMR EDD but was not included in an Exceedance Report; also data reported per plan but data didn't show up in quarterly data and no Lab Report |
| 9.4 | | All required constituents for each site have reported results | X | | | | | | |
| 9.5 | | All necessary re-sampling completed and results reported | X | | | | | | |

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|-----------|--|--|-----------------|-------------------|----------------------------------|----------------------|-----------------------|--|--|
| 10 | Data Discussion to Illustrate Compliance | | | | | | | | |
| | 10.1 | Results discussed in text agree with tabulated data | X | | | | p.53-71 | Place tables immediately following text write ups for each table | |
| | 10.2 | Discussion illustrates compliance with the Conditional Waiver, or if a required component was not met an explanation of missing data or a reason for non-compliance is included | X | | | | | | |
| | 10.3 | Results are compared to ILRP requirements, water quality standards and trigger limits; toxicity results, TIE's and possible causes of toxicity are discussed | X | | | | | | |
| 11 | Electronic data submitted in a SWAMP comparable format, <u>either</u> Option A or B | | | | | | | | |
| | 11.1 | A Option A. Spreadsheet format: Lab data submitted electronically within the SWAMP comparable spreadsheets; Field data submitted electronically, or in paper copy on SWAMP comparable field sheets within AMR | X | | | | EDD | | |
| | | B Option B. SWAMP database format: All field and lab data uploaded into a SWAMP comparable database (following the most current <i>Required Data Submission Format</i> document) | | | | X | | | |
| | 11.2 | Sample results and required QC results are included: field blanks, field duplicates, lab blanks, spikes (LCS, MS), duplicates (LCD, MSD, replicates), surrogates (for pesticide analyses) | | | X | | | | Please refer to EDD Checklists notes for the 2011 4 th Quarterly Monitoring Data Report |
| | 11.3 | Toxicity analyses include: individual sample results, negative control summary results, replicate results, water quality measurements (pH, ammonia, temperature, SC, DO) | | | X | | | | Please refer to EDD Checklists notes for the 2011 4 th Quarterly Monitoring Data Report |
| | 11.4 | Data not meeting project QA acceptance guidelines are flagged and include brief notes detailing the problem in the <i>Comments</i> field | | | X | | | | Please refer to EDD Checklists notes for the 2011 4 th Quarterly Monitoring Data Report |

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|-----------|---|-----------------|-------------------|----------------------------------|----------------------|-----------------------|----------|-----------------|
| 12 | Description of sampling and analytical methods used | | | | | | | |
| 12.1 | Description of sampling methods used (e.g. type of collection, collection containers, sample preservation, transportation, handling, field measurements), with references to SOP's if appropriate | X | | | | p.14 | | |
| 12.2 | Description of analytical methods used (references to SOP's and QAPP as appropriate); any deviations from the QAPP are described and explained | X | | | | p.17-18 | | |
| 13 | Copies of chain-of-custody forms and sample receipt documentation | | | | | | | |
| 13.1 | Copies of all COCs are included, legible and completed accurately; any anomalies are noted/explained | X | | | | | | |
| 14 | Field Data Sheets, Lab Reports, Lab Raw Data | | | | | | | |
| 14.1 | Copies of all field data sheets (attached/provided electronically on CD) are included, legible, contain the required elements in the ILRP template, and are completely filled | X | | | | | | |
| 14.2 | All analytical reports (attached/provided on CD) are included, complete, and signed by authorized laboratory representative | X | | | | | | |
| | 14.2.1 Sample results with units, RLs and MDLs | X | | | | | | |
| | 14.2.2 Sample preparation, extraction and analysis dates | X | | | | | | |
| | 14.2.3 Results for all QC samples: field and laboratory blanks, lab control spikes, matrix spikes, field and laboratory duplicates, surrogate recoveries | X | | | | | | |
| | 14.2.4 Chemistry lab narrative describes all QC failures, analytical problems and anomalous occurrences. | X | | | | | | |

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|-----------|--|---|-----------------|-------------------|----------------------------------|----------------------|-----------------------|----------|---------------------------|
| | 14.3 | All toxicity lab reports (attached/provided on CD) are included, complete, and signed by authorized lab representative | X | | | | | | |
| | 14.3.1 | All toxicity sample results included | X | | | | | | |
| | 14.3.2 | Results for all QC samples: field duplicate, negative control, narrative summary of reference toxicant results | X | | | | | | |
| | 14.3.3 | All raw data (including failed tests) and original bench sheets showing individual replicates | X | | | | | | |
| | 14.3.4 | Toxicity lab narrative describes all QC failures, analytical problems and anomalous occurrences | X | | | | | | |
| 15 | Associated laboratory and field quality control samples results | | | | | | | | |
| | 15.1 | Chemical analyses include: field blank, field duplicate, lab blank, matrix spike and MSD, lab control spike and LCSD | X | | | | | | |
| | 15.2 | Microbiological analyses include: field blank, field duplicate, negative control, positive control | X | | | | | | |
| | 15.3 | Toxicity tests include: field duplicate, negative control, reference toxicant (narrative OK, raw data not required) | X | | | | | | MRP Attach. C, p. 18 |
| 16 | Summary of Quality Assurance Evaluation results | | | | | | | | |
| | 16.1 | Acceptance criteria for all field and laboratory QA/QC measurements identified and in agreement with ILRP requirements; any adjustments to acceptance criteria documented and discussed | X | | | | | | MRP Attach. C, Appendix B |
| | 16.2 | Summary of accuracy (lab control spike and matrix spike recovery) and precision (RPD for field duplicate, LCS/LCSD and MS/MSD pairs) included for all constituents and tests | X | | | | | | |
| | 16.3 | QA/QC results that did not meet acceptance criteria identified in a table or narrative description that is prepared by the Coalition (not laboratories) | X | | | | | | |
| | 16.3.1 | Discussion of how the failed QA/QC results affect the validity of the reported data | X | | | | | | |
| | 16.3.2 | Corrective actions for QA/QC results that did not meet acceptance criteria are described, laboratory exception reports are included when samples are reanalyzed due to exceedance of the linear range | X | | | | | | |

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| | 16.4 | Both field and laboratory completeness are calculated and reported; overall Project completeness is determined | X | | | | | | |
| 17 | Flow Monitoring Method(s) | | | | | | | | |
| | 17.1 | The method used to obtain flow measurement at each monitoring site during each monitoring event is listed | X | | | | p.14 references QAPP | | |
| 18 | Monitoring Site Photos | | | | | | | | |
| | 18.1 | Photos are included for each monitoring site for every monitoring event, either electronically or in hard copy | X | | | | | | |
| | 18.2 | Each photo is clearly labeled with site ID and date | X | | | | Appendix A | EDD has the name but no ID or date on the individual photos. The MRP Order requires that each photo have the ID and Date on the photo itself | |
| | 18.3 | Photos are descriptive and useful | X | | | | | | |
| 19 | Summary of Exceedance Reports submitted during the reporting period and related pesticide use information | | | | | | | | |
| | 19.1 | Summary of all Exceedance Reports submitted during the AMR period is included | | | X | | p.53-71 | Exceedance Reports in Appendix D; There is no Exceedance Report for Toxaphene from 17 August 2011. | |
| | 19.2 | Pesticide use data for all pesticide and toxicity exceedances occurring during the AMR time period (unless under a Management Plan): all chemicals applied within the monitoring site subwatershed during the four weeks prior to the measured exceedance | X | | | | | | |
| 20 | Actions Taken to Address Water Quality Exceedances | | | | | | | | |
| | 20.1 | Discussion of actions taken to address water quality exceedances during the time frame of the AMR is included | X | | | | | | |
| | 20.2 | Updates or additional management practices implemented (Attachment A of the MRP Order, p. 4) | X | | | | | | |

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|-----------|--|-----------------|-------------------|----------------------------------|----------------------|-----------------------|---------------------------------|-----------------|
| 21 | Status update on preparation and implementation of all management plans and other special projects | | | | | | | |
| 21.1 | Brief update on status of all Management Plans and special projects that are in preparation or being implemented | X | | | | p.72 | | |
| 22 | Conclusions and Recommendations | | | | | | | |
| 22.1 | Conclusions are supported by the data presented in the AMR | X | | | | p.74 | | |
| 22.3 | Recommendations are appropriate and adequately detailed | X | | | | | Didn't make any recommendations | |