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## Central Valley Regional Water Quality Control Board

19 September 2014

Mr. Joseph McGahan  
Westside San Joaquin River Watershed Coalition  
PO Box 2157  
Los Banos, CA 93635

### **GROUNDWATER QUALITY ASSESSMENT REPORT OUTLINE – WESTSIDE SAN JOAQUIN RIVER WATERSHED COALITION**

Thank you for the timely submittal of the 13 June 2014 outline for the Westside San Joaquin River Watershed Coalition's (Coalition) Groundwater Quality Assessment Report (GAR). The proposed GAR outline was submitted as required by the Waste Discharge Requirements for Growers within the Western San Joaquin River Watershed Order R5-2014-0002 (Waste Discharge Requirements).

Central Valley Water Board staff reviewed the GAR outline, data sources and the preliminary bibliography. The Coalition has identified a number of key information and data sources; it is understood that the list of information sources will evolve during the preparation of the GAR. As noted in the attached memorandum, staff determined that the proposed GAR outline meets the requirements described in Attachment B to the Waste Discharge Requirements, provision IV.A, with one needed revision. The Coalition can address the needed revision when submitting the draft GAR, rather than by submitting a revised GAR outline.

We appreciate the Coalition's interest in working closely with the Central Valley Water Board as the methodologies to be applied and the data sources to be used in the preparation of the GAR are developed. The thoroughness and detail of the proposed GAR outline, as well as the Coalition's willingness to provide other stakeholders with updates on the progress in the implementation of the Waste Discharge Requirements, are commendable. We look forward to an ongoing productive dialogue during the process of the GAR development and the receipt of the Coalition's Groundwater Quality Assessment Report by 17 March 2015.

If you have any questions or comments regarding the review, or need any further information, please contact Dana Kulesza at [dana.kulesza@waterboards.ca.gov](mailto:dana.kulesza@waterboards.ca.gov) or by phone at 916-464-4847.

*Original signed by*

Joe Karkoski, Chief  
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Enclosures: Staff Review of East San Joaquin Water Quality Coalition GAR Outline

cc: Clay Rodgers, CVWQCB, Fresno  
Vicki Kretsinger Grabert, Luhdorff & Scalmanini, Consulting Engineers

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## Central Valley Regional Water Quality Control Board

**TO:** Clay Rodgers, Assistant Executive Officer  
Joe Karkoski, Supervising Water Resources Control Engineer

**FROM:** Dana Kulesza, Engineering Geologist  
IRRIGATED LANDS REGULATORY PROGRAM

**DATE:** 19 September 2014

**SUBJECT:** REVIEW OF WESTSIDE SAN JOAQUIN RIVER WATERSHED COALITION  
GROUNDWATER QUALITY ASSESSMENT REPORT OUTLINE

To meet the conditions of the Waste Discharge Requirements for Growers within the Western San Joaquin River Watershed Order R5-2014-0002 (Order), the Westside San Joaquin River Watershed Coalition (Coalition) is required to prepare a Groundwater Quality Assessment Report (GAR). The GAR is due on 17 March 2015. The main objectives of the GAR are to:

- Provide an assessment of all readily available, applicable and relevant data and information to determine the high and low vulnerability areas where discharges from irrigated lands may result in groundwater quality degradation.
- Establish priorities for implementation of monitoring and studies within high vulnerability or data gap areas.
- Provide a basis for establishing monitoring workplans developed to assess groundwater quality trends.
- Provide a basis for establishing management practices evaluation program workplans and priorities developed to evaluate the effectiveness of agricultural management practices to protect groundwater quality.
- Provide a basis for establishing groundwater quality management plans in high vulnerability areas and priorities for implementation of those plans.

The Order requires that the Coalition provides a proposed outline describing data sources and references that will be considered in developing the GAR. The due date for the submission of the proposed GAR outline was 16 June 2014, and the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) received the Coalition's GAR outline on time. The submitted outline and accompanying information were reviewed to assess the preliminary list of data sources and references that will be considered in developing the GAR.

The Central Valley Water Board staff considered the preliminary data sources and whether the process proposed for data compilation and analysis would provide information needed to address the main objectives and minimum requirements of the GAR (Order sections VIII.D.1.p.34 and Attachment B.IV.A.1, p.14-15). The submitted GAR outline addresses all readily available sources of information for all required components and includes review and analyses as described in the Order. However, staff recommends a change to section 3.c.ii of the upcoming draft GAR.

Overall, the proposed GAR outline suggests that the Groundwater Quality Assessment Report will adequately address the five main objectives specified in the Order:

**Objective I. Determine the high and low vulnerability areas where discharges from irrigated lands may result in groundwater quality degradation.** The GAR outline indicates that approaches for existing vulnerability assessments will be summarized, and a statistical method will be developed to identify a vulnerability formula based on hydrogeologic parameters and groundwater quality observations. A vulnerability model will be developed using data from select areas based on relevant properties of geology, soil, hydrology, and available water quality data. The derived model will be applied to calculate vulnerability across the entire Coalition region using hydrogeologic, temporal, and land use variables. The model results will be validated using a subset of water quality data and calculated vulnerability designations. The model performance will be compared to the results of existing assessments, such as the Department of Pesticide Regulation and State Water Resources Control Board vulnerability designations. Based on the above calculations and evaluations, the rationale for vulnerability identification will be presented.

**Objective II. Establish priorities for implementation of monitoring and studies within high vulnerability areas.** Relative priorities will be established for high vulnerability areas based on multiple considerations, such as groundwater quality trends, constituent toxicity and mobility, land use and dominant commodities, proximity to areas contributing recharge to communities, and so on. Statistical analyses of associations between observed water quality and physical hydrogeologic conditions will inform the prioritization.

**Objective III. Provide a basis for establishing workplans to assess groundwater quality trends.** The outline indicates that the GAR will review information on existing well networks and monitored parameters, feasibility of using/sharing existing wells and data, as well as identify key data gaps in existing programs. The GAR will provide enough information on land use and will develop vulnerability prioritization sufficient to provide preliminary recommendations and justification related to informational needs for purposes of developing a Trend Monitoring Workplan.

**Objective IV. Provide a basis for establishing workplans and priorities to evaluate the effectiveness of agricultural management practices to protect groundwater quality.** Although the proposed outline indicates that the GAR will include much of the information necessary to design the Management Practices Evaluation Program, this objective is not explicitly addressed.

**Objective V. Provide a basis for establishing groundwater quality management plans in high vulnerability areas and priorities for implementation of those plans.** The data compilation and proposed analyses described in the outline indicate that the GAR will develop information necessary to designate and prioritize areas identified as vulnerable with respect to groundwater quality, and necessary for the design of the Groundwater Quality Management Plan.

**Recommended revision to Section 3.c.ii. Recharge to Groundwater** - This section of the outline states that existing publications will be used to determine areas where groundwater is recharged, with "special attention to potential for recharge upgradient of existing public areas for

urban and rural communities.” Below this, there is one item listed as “Recharge Areas Upgradient of Public Water Systems Reliant of Groundwater.”

Section IV.A.2 on page 14 of the MRP requires that the GAR include “Groundwater recharge information, if readily available, including identification of areas contributing recharge to urban and rural communities where groundwater serves as a significant source of supply.” Staff recommends this section be modified to align with the MRP required component language. The intent of this component is to identify areas contributing recharge to all rural and urban communities where groundwater serves as a significant source of supply, including those communities not served by a public water system. If this information is not readily available, the GAR should address this issue. Please refer to Item 3 on pages 3-4 of the 3 June 2014 Staff Review Memo of the East San Joaquin Water Quality Coalition GAR when working on this component of the GAR.<sup>1</sup>

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<sup>1</sup> This Review Memo can be accessed online at [http://www.waterboards.ca.gov/centralvalley/water\\_issues/irrigated\\_lands/monitoring\\_plans\\_reports\\_reviews/assessment\\_reports/coalitions/east\\_sanjoaquin\\_waterquality/2014\\_0603\\_esj\\_staffrvw.pdf](http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/monitoring_plans_reports_reviews/assessment_reports/coalitions/east_sanjoaquin_waterquality/2014_0603_esj_staffrvw.pdf)