
Central Valley Regional Water Quality Control Board

24 July 2015

Parry Klassen, Executive Director
East San Joaquin Water Quality Coalition
1201 L Street
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CONDITIONAL APPROVAL OF EAST SAN JOAQUIN WATER QUALITY COALITION'S SEDIMENT DISCHARGE AND EROSION ASSESSMENT REPORT

Thank you for submitting the 15 May 2015 East San Joaquin Water Quality Coalition's (Coalition) Sediment Discharge and Erosion Assessment Report (SDEAR), as required by the Waste Discharge Requirements General Order R5-2012-0116 (Order).

Based on the attached staff review, the SDEAR partially achieves the main objective to determine which irrigated agricultural areas within the Coalition's area are subject to erosion and may discharge sediments that may degrade surface waters. The SDEAR uses a modeling approach that relies on slope and rainfall information to assess the potential for erosion. The model is supplemented with farm-specific information from the Farm Evaluation Reports.

Proximity to surface waters was not considered in SDEAR model. Proximity to surface waters must be considered as a factor that increases the potential for discharge of sediments that may degrade surface water prior to my issuing final approval of the SDEAR. Therefore, I am conditionally approving the Coalition's SDEAR. For the final approval, the Coalition must submit a work plan with a timeline to address proximity to surface waters by **1 December 2015**.

Growers with parcels within areas currently identified in the SDEAR (as conditionally approved) to have the potential for erosion and sediment discharge are required to prepare and certify a Sediment Erosion and Control Plan (SECP) using an approved template (section VII.C of the Order). Based on the date of this conditional approval, the deadline to complete and implement SECP is 23 July 2016 for members with small farming operations, and 22 January 2016 for all other members.

If you have any questions or comments regarding this letter, please contact Sue McConnell at Sue.McConnell@waterboards.ca.gov or by phone at 916-464-4798.

Original signed by

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Central Valley Regional Water Quality Control Board

TO: Sue McConnell, P.E.
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FROM: Wesley Ouimette
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DATE: 17 July 2015

SUBJECT: REVIEW OF EAST SAN JOAQUIN WATER QUALITY COALITION'S
SEDIMENT DISCHARGE AND EROSION ASSESSMENT REPORT

On 13 January 2014, the East San Joaquin Water Quality Coalition (Coalition) submitted the Sediment and Erosion Assessment Report (SDEAR or report), as required by the Order No. R5-2012-0116 Waste Discharge Requirements General Order for Growers within the Eastern San Joaquin River Watershed that are Members of the Third-Party Group (General Order), Section VIII.E. On 15 May 2015, the Coalition submitted a revised SDEAR.

The General Order requires that the report determines which irrigated agricultural areas within the Eastern San Joaquin River Watershed are subject to erosion and may discharge sediment that may degrade surface waters. The report must provide a description of the sediment and erosion areas as a series of ArcGIS shapefiles with a discussion of the methodologies utilized to develop the report (Attachment B, section VII.C). The objective of the report is to determine which member operations are within areas with the potential for erosion sediment discharge that may degrade surface waters. Members in identified areas will be required to prepare and implement a Sediment and Erosion Control Plan (section IV.B.7 of the General Order), that details water quality management practices to be implemented to reduce or eliminate sediment in storm water and irrigation water discharges

The Coalition's SDEAR relies on modeling and on information collected from growers to assess which parcels need a Sediment and Erosion Control Plan. In general, the approach to delineate areas susceptible to erosion and potentially subject to sediment discharge is reasonable. However, there are significant gaps in the scope of the analysis, and staff recommends conditional approval of the 15 May 2015 SDEAR. Detailed discussion is below.

RUSLE Model. The Revised Universal Soil Loss Equation (RUSLE) equation is widely accepted and well documented method to estimate soil erosion potential. The RUSLE model uses readily available data for the values used in the equation such as rainfall erosivity, soil erodibility, slope, and slope length. The approach is similar to the one used in the State Water Resources Control Board's Construction Storm Water program, but is applied over a much broader area.

In the Coalition's SDEAR, the soil loss estimated by the RUSLE model is compared to a soil loss threshold of 5 tons/acre/year, which is the United States Department of Agriculture's designation for tolerable soil loss for deep soils¹. Parcels with estimated soil loss below the threshold were considered low risk while areas with soil loss above 5 tons/acre/year are considered high risk. Review of the shapefile provided with the SDEAR shows that about 75% (about 4.2 million acres) of the Coalition service area is considered high risk based on the RUSLE modeling results. Growers with parcels in areas designated as "high risk" are required to complete a Sediment and Erosion Control Plan (SECP); about 10% of the member parcels are within the area requiring preparation of SECP.

The most notable gap is that the RUSLE model does not take into account proximity of farming operations to surface waters. Additionally, the modeling results typically reflect erosion and potential for sediment discharge due to rainfall. The RUSLE model does not directly indicate which areas might be susceptible to erosion due to irrigation as irrigation runoff and tailwater discharges are not accounted for in the model. An approach to evaluate areas in close proximity to surface water for the potential for erosion and discharge of sediment is necessary in order to comprehensively assess the entire Coalition area and consider the potential for sediment discharge due to irrigation practices. Evaluating areas that are in close proximity to surface waters will ensure that potential erosion and sediment discharge due to irrigation practices that may affect surface waters (i.e., proximity to surface water body) are considered.

Farm Evaluations. The second component of the SDEAR approach includes information from Farm Evaluations. Parcels where a grower self-reported a potential to discharge sediments to surface waters are proposed for inclusion in the "high risk" areas. Staff agrees that a SECP should be completed for any parcels reported in the Farm Evaluation to have the potential for sediment discharge, even if parcels are in a "low-risk" area based on the RUSLE output. However, parcels determined to be subject to discharge of sediment in Farm Evaluations alone should not be included in the area designated as susceptible to erosion and sediment discharge based on the assessment of properties in the SDEAR.

¹ USDA Natural Resources Conservation Service. 2010. From the Surface Down. An Introduction to Soil Surveys for Agronomic Use, Second Edition: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053238.pdf
A limitation of existing values developed for tolerable soil loss typically consider erosion only from the standpoint of protecting the farmland productivity, and do not necessarily inform about the effect of sediment discharge on the receiving waters.