

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF MAY 30-31, 2013

Prepared April, 2013

ITEM NUMBER: 9

SUBJECT: Adopting a Total Maximum Daily Load for Nitrate in the Bell Creek Watershed

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THIS ACTION: Adopt Resolution No. R3-2013-0012

SUMMARY

Staff recommends adoption of the proposed Total Maximum Daily Load (TMDL) for nitrate in the Bell Creek Watershed.

Bell Creek is on the 2008-2010 Clean Water Act section 303(d) list of impaired waters due to excessive levels of nitrate. The water quality objective protective of the municipal and domestic water supply beneficial use (MUN) is a nitrate concentration of 10 mg/L-N; nitrate concentration in Bell Creek exceeds this water quality objective.

Bell Creek is located in Santa Barbara County and encompasses about six square miles. The watershed is a south-trending drainage that extends from the southern face of the Santa Ynez Mountains to the Pacific Ocean just west of Goleta. Bell Creek is listed as impaired because the water quality objective for municipal and domestic water supply is not being met due to excessive nitrate concentration.

The proposed TMDL, numeric targets, and load allocations for nitrate will result in meeting numeric water quality objectives for municipal and domestic water supply in the Bell Creek watershed. Central Coast Water Board staff has identified sources of nitrate that are causing water quality impairment, has identified parties responsible for these sources, and has proposed load allocations necessary to achieve the TMDL.

Staff has identified the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands in the Central Coast Region* (Agricultural Order) as the existing regulatory mechanism to achieve the TMDL. No new regulatory mechanism is being proposed to implement and achieve the TMDL.

This TMDL is being adopted not through a basin plan amendment, but through the Central Coast Water Board's approval of the resolution associated with this agenda item, which includes findings that the Agricultural Order will implement the TMDL. According to state policy, the Board is encouraged to take this approach of TMDL approval when the impairments can be addressed through a single action by the Board; the approach conserves valuable state resources and avoids regulatory redundancy.

In this agenda item, staff recommends the Central Coast Water Board approve the resolution (Attachment 1 to this Staff Report) that establishes a Total Maximum Daily Load (TMDL) for nitrate in the Bell Creek watershed.

Staff developed the technical basis for the TMDL and associated allocations, which is provided in the Final Project Report (Attachment 2 to this staff report). The Final Project Report is provided at the Central Coast Water Board's website:

http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/bell_ck_nitrate/index.shtml

DICUSSION

Project Development for the TMDL

Staff developed the TMDL using data and information from the Central Coast Ambient Monitoring Program (CCAMP) and Cooperative Monitoring Program (CMP). Staff also used land use data and conversations with staff from other agencies.

Numeric Targets

The Basin Plan contains water quality objectives for the Municipal and Domestic Supply (MUN) beneficial use:

"Waters shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, Title 22, Article 4, Chapter 15, Section 64435, Tables 2 and 3 as listed in Table 3-2 (Region 3 Basin Plan, p III-3). In Table 3-2, the maximum contaminant level (MCL) for Nitrate (as NO₃) in Domestic or Municipal Supply is 45 milligrams per liter (mg/L)."

The nitrate MCL of 45 mg/L nitrate as nitrate is equivalent to 10 mg/L nitrate as nitrogen.

The Basin Plan contains general water quality objectives for all inland surface waters, enclosed bays, and estuaries. The narrative water quality objective for toxicity states, in part:

"All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or aquatic life."

The TMDL numeric target is the nitrate numeric water quality objective for municipal and domestic supply. Achieving the proposed TMDL numeric target will result in achieving the water quality objective for municipal and domestic supply in water bodies degraded by nitrate.

The TMDL Numeric Target is: *receiving water column nitrate must not exceed 10 mg/L-N.*

Source Analysis

Discharges of nitrate from irrigated agriculture is the single controllable source causing impairment. Staff described sources of nitrate in the project area in Chapter 4 of the Final Project Report (which is Attachment 2 of this staff report).

TMDL and Allocations

The TMDL for nitrate in Bell Creek is a concentration-based TMDL and is equal to the numeric target, as described in the numeric targets section above.

Concentration-based TMDLs are an appropriate expression of TMDLs and meet USEPA requirements for TMDL approval.

Owners and operators of agricultural lands using nitrate are assigned load allocations equal to the TMDL and numeric targets.

Note that the TMDL and allocation is a *receiving water* concentration equal to the existing water quality objective in place to protect the municipal and domestic water supply beneficial use (MUN).

Implementation and Monitoring

Compliance with the Agricultural Order will implement the TMDL. Implementing parties will comply with the Agricultural Order (Order R3-2012-0011) and the Monitoring and Reporting Programs in accordance with Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03 to meet load allocations and achieve the TMDL.

Current requirements in the Agricultural Order that will result in achieving the load allocations include:

- Enroll in the Agricultural Order.
- Implement, and update as necessary, management practices to reduce nutrient loading.
- Maintain existing, naturally occurring, riparian vegetative cover in aquatic habitat areas.
- Develop, update, and implement Farm Plans.
- Properly destroy abandoned groundwater wells.
- Develop and initiate implementation of an Irrigation and Nutrient Management Plan (INMP) or alternative certified by a professional soil scientist, professional agronomist, or crop advisor certified by the American Society of Agronomy, or similarly qualified professional.

The Agricultural Order includes monitoring and reporting requirements. Owners and operators of irrigated agricultural lands will perform monitoring and reporting in accordance with Monitoring and Reporting Program Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03, as applicable to the operation. Current monitoring requirements include a sampling site at Bell Creek, and include nitrate monitoring. Additionally, individual reporting requirements include a description of individual nitrate discharges. Information gathered from the Cooperative Monitoring Program, the Central Coast Ambient Monitoring Program, and individual reporting requirements will inform progress toward achieving this TMDL.

Determination of Compliance with Load Allocations for Irrigated Lands

Demonstration of compliance with the load allocations is consistent with compliance with the Agricultural Order. Load allocations will be achieved through a combination of implementation of management practices and strategies to reduce nitrogen compound loading, and water quality monitoring. Flexibility to allow owners/operators of irrigated lands to demonstrate compliance with load allocations is a consideration; additionally, staff is aware that not all implementing parties are necessarily contributing to or causing surface water impairment.

However, it is important to recognize that impacting shallow groundwater with nutrient pollution may also impact surface water quality via baseflow loading contributions to the creek.

To allow for flexibility, Water Board staff will assess compliance with load allocations using one or a combination of the following:

- A. attaining the load allocations in the receiving water.
- B. demonstrating quantifiable receiving water mass load reductions.
- C. owners/operators of irrigated lands may be deemed in compliance with load allocations by implementing management practices that are capable of achieving load allocations identified in this TMDL.
- D. owners/operators of irrigated lands may provide sufficient evidence to demonstrate that they are and will continue to be in compliance with the load allocations; such evidence could include documentation submitted by the owner/operator to the Executive Officer that the owner/operator is not causing waste to be discharged to impaired waterbodies resulting or contributing to violations of the load allocations.

Time Schedule for Tracking Progress and Achieving the TMDL

The target date to achieve the allocations, numeric targets, and TMDL in the impaired waterbodies addressed in this TMDL is October 1, 2016. This date coincides with the time schedule of milestones described in Table 4 of the Agricultural Order. Additionally, staff concludes that the TMDL is achievable by this date because the results of best management practices will be realized quickly. Best management practices will benefit water quality quickly because groundwater is not significantly contributing to surface water nitrate loading; the soils in the watershed are shallow with low permeability, and groundwater nitrate concentration is less than 4.4 mg/L-N. Also, available information suggests that a relatively low number of agricultural operations are contributing to the impairment.

Water Board staff will propose modifications of the Agricultural Order or other regulatory mechanisms, if necessary, to address remaining impairments.

ANTI-DEGRADATION

The proposed TMDL is consistent with the provisions of the State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40 CFR 131.12. The TMDL requires actions that will result in improved water quality throughout the watershed and maintenance of the level of water quality necessary to protect existing and anticipated beneficial uses. The TMDL is implemented through the Agricultural Order, which is adopted in compliance with Water Code section 13269. The Agricultural Order includes conditions and prohibitions requiring compliance with water quality standards, implementation of management practices to attain water quality objectives, and monitoring and reporting programs. The Agricultural Order is enforceable and subject to review at least every five years.

PUBLIC INVOLVEMENT

Staff conducted stakeholder outreach efforts during TMDL development. Staff identified individual growers in the watershed and contacted them by email and telephone.

Staff distributed the TMDL documents to stakeholders and posted them for a formal 30-day public comment period commencing on February 13, 2013. Water Board staff solicited public comment from a range of stakeholders including local land owners and land operators, agricultural representatives, resource professionals, and public agencies.

One public comment letter was received from:

1. Ms. Janet Parrish, TMDL Liaison, U.S. Environmental Protection Agency (USEPA), Region IX, San Francisco, in a letter dated March 12, 2013.

The comment letter from USEPA requested minor clarifications in the Final Project Report, which staff has made. Ms. Parrish also stated USEPA's support for the proposed TMDL.

RECOMMENDATION

Adopt Resolution No. R3-2013-0012.

ATTACHMENTS:

The attachments are available at:

http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/bell_ck_nitrate/index.shtml

1. Resolution No. R3-2013-0012
2. Final Project Report: "Total Maximum Daily Load for Nitrate in Bell Creek Watershed"
3. Notice of Public Hearing and Notice of Opportunity for Public Comment