



Discussion Outline: CV-Salts Executive Committee Meeting (March 13, 2014)

Developing a Draft Policy for Demonstrating Compliance with MUN Standards through Direct Use Protection by Implementing Alternative Water Supply Projects.

Regulatory Context

- 1) With limited exceptions, *"all ground waters in the Central Valley region are considered suitable, or potentially suitable, at a minimum, for municipal and domestic water supply (MUN)."*¹ The MUN beneficial use includes *"community, military, or individual water supply systems including, but not limited to, drinking water supply."*
- 2) The Water Quality Control Plans for the Central Valley region state that, *"at a minimum, ground waters designated for domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title-22 of the California Code of Regulations."* And, the California Department of Human Health established the MCL for Nitrate at 45 mg/L (as NO₃).²
- 3) Several studies have previously documented that nitrate concentrations in ground water exceed the established MCL at numerous well locations throughout the Central Valley.³ And, this conclusion is supported by the recent technical report prepared by the CV-SALTS (see Fig. 1 on the following page).⁴
- 4) The California State Legislature has established a state policy that *"every human being has the right to safe, clean, affordable and accessible water adequate for human consumption, cooking and sanitary purposes. The legislature also declared that "all relevant state agencies ... shall consider this state policy when revising, adopting or establishing policies, regulations, and grant criteria ... pertinent to the uses of water described above."*⁵

¹ Central Valley Regional Water Quality Control Board. Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin – 4th Ed. Pg. II-3.0 Note: the exceptions are also identified in the Basin Plan. The Tulare Lake Basin Plan contains identical text.

² 22 CCR §64431(a); see Table 64431-A (Maximum Contaminant Levels for Inorganic Chemicals)

³ See, for example, Thomas Harter, et al. Addressing Nitrate in California's Drinking Water: Report to the California State Water Resources Control Board. U.C. Davis Center for Watershed Sciences. January, 2012. See, also, Communities that Rely on Contaminated Groundwater. State Water Resources Control Board Report to the Legislature. January, 2013.

⁴ Initial Conceptual Model (ICM) Technical Services Tasks 7 and 8 – Salt and Nitrate Analysis for the Central Valley Floor Final Report. December, 2013.

⁵ AB 685 adding §106.3 to the California Water Code. Signed by Gov. Brown on September 25, 2012.

Existing Regulatory Options

- 5) In a recent Report to the Legislature, the State Water Board recommended increased use of two specific mechanisms, within their existing statutory authority, to address nitrate contamination in groundwater:
- A) *"The Water Boards will evaluate all existing Waste Discharge Requirements to determine whether existing regulatory permitting is sufficiently protective of groundwater quality at these sites. The Water Boards will use the findings to improve permitting activities related to nitrate."*⁶
 - B) *"The State Water Board and Regional Water Quality Control Boards (collectively referred to as "the Water Boards") will use their authority under the Porter-Cologne Water Quality Control Act (Porter-Cologne) (Water Code, §13300 et seq.) to order parties responsible for nitrate contamination to provide replacement water to impacted communities, as appropriate." [See Fig. 2, attached, for text of CWC §13304].*
- 6) The State Water Board's Policy for Implementation and Enforcement of the Non-Point Source Pollution Control Program (May, 2004) identifies several regulatory tools that can be used to address contamination problems such as nitrate in groundwater. These include, but are not limited to:
- (a) Waste Discharge Requirements⁷
 - (b) Cleanup and Abatement Orders⁸
 - (c) Conditional Waivers of Discharge⁹
 - (d) Discharge Prohibitions,¹⁰
 - (e) Time Schedule Orders,¹¹
 - (f) Enforcement Actions, including Civil Liability.¹²

⁶ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater (February, 2013). See recommendation #15 at page 43 of the report.

⁷ CWC §13263

⁸ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater (February, 2013). See recommendation #2 at page 28 of the report. This recommendation refers to §13304 of the California Water Code regarding Cleanup and Abatement Orders.

⁹ CWC §13269(e)

¹⁰ CWC §13243

¹¹ CWC §13242(b) and CWC §13262(c)

¹² CWC §13265

Regulatory Effectiveness Analysis

- 7) With the exception of Cleanup and Abatement Orders, most of the regulatory authority granted to the Regional Water Boards is intended to prevent pollution from adversely affecting the beneficial use of water. Where pollutant levels already exceed the applicable water quality standards, as is the case for nitrate in groundwater, these preventative tools will not (by themselves or in the near-term) eliminate the existing impairment or restore the MUN beneficial use to full attainment.¹³
- 8) The State Water Board has found that *"nitrate at concentrations above the MCL is considered anthropogenic and is predominantly detected above the MCL in areas of the state with current or historical agricultural activity..."*¹⁴ And, citing the UC-Davis Report (2012), the State Water Board stated that *"most nitrate detected in drinking water wells today was originally applied to the surface decades ago."*¹⁵
- 9) Regardless of what actions are taken at the surface to reduce new pollutant loading to groundwater, *"nitrate problems will likely worsen for decades."*¹⁶ This is because it takes many years for pollutants discharged at the surface to reach the underlying groundwater. Similarly, it will take an equally long time to purge the vadose zone of these legacy loads. Consequently, some regulatory options, such as imposing more stringent Waste Discharge Requirements (WDRs) or prohibiting nitrate discharges altogether, will not result in timely improvements to existing groundwater quality.
- 10) While it is necessary to reduce nitrate discharges as much as possible, there is no practicable means for most agricultural operators to achieve full compliance with applicable water quality standards. Nor is it reasonable to prohibit such discharges as doing so would result in a de facto moratorium on most commercial crops and dairies.
- 11) "Pump-and-Treat" technologies traditionally used to remediate groundwater contamination (e.g. MTBE, TCE or PCB plumes from discrete industrial discharges), *"are not technically feasible for large groundwater basins"* that have been adversely affected by widespread and diffuse non-point sources over a prolonged period of time.¹⁷

¹³ State Water Resources Control Board. Report to the Legislature: Communities that Rely on Contaminated Groundwater. Jan., 2013. See discussion at pages 18-20 in the report. See also the United Nations Report of the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation. A/HRC/18/33/Add.4 (Aug. 2, 2011); http://www2.ohchr.org/english/bodies/hrcouncil/docs/18session/A-HRC-18-33-Add4_en.pdf

¹⁴ State Water Resources Control Board. Report to the Legislature: Communities that Rely on Contaminated Groundwater. Jan., 2013; pg. 18.

¹⁵ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February, 2013; pg. 5

¹⁶ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February, 2013; pg. 5 (citing the UC-Davis Report identified in Footnote #3, above).

¹⁷ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February, 2013; pg. 5 (citing the UC-Davis Report identified in Footnote #3, above).

Regulatory Priority

- 12) The State Water Board has concluded that *"pollution prevention and cleanups ... may not be feasible. Consequently, any practical solution to groundwater contamination must also focus on strategies to provide safe drinking water to consumers through treatment and alternative water supplies."*¹⁸
- 13) A great many of the small, rural communities that have been most adversely impacted by nitrate-contaminated groundwater are unable to provide safe drinking water to local residents. This is due to a number of factors, including: a) insufficient financial resources; b) lack of access to safe alternative supplies; c) inadequate governance structure and/or technical expertise to construct and operate complex treatment and distribution systems; and, d) failure to meet eligibility criteria for most state and federal grant programs.¹⁹ Of these, the State Water Board has declared that: *"the single most important action that can be taken to help ensure safe drinking water for all Californians is to provide a stable, long-term source(s) of funding to assist those impacted by nitrate-contaminated groundwater."*²⁰
- 14) The State Board has determined that "other means of addressing nitrate contamination will need to be further pursued if a stable, long-term funding source addressing nitrate-related drinking water issues is not developed. Under Water Code Section 13304, the Water Boards have the authority to require the provision of, or payment for, uninterrupted replacement water service as part of a cleanup and abatement order. Replacement water may include both short and long-term solutions, such as providing bottled water or installing wellhead treatment and point-of-use systems. The Water Boards will take enforcement actions against responsible agricultural parties and others who contribute to nitrate groundwater contamination, and require them to provide replacement water as an interim solution, if a stable, long-term funding source is not developed."²¹
- 15) The process required to issue Cleanup and Abatement Orders is complex, time-consuming, expensive and inefficient. Therefore, whenever and wherever possible, it is preferable to create regulatory incentives that encourage the same outcome (alternate water supplies) while minimizing the cost and delay of implementing effective solutions. Such alternatives are intended to supplement, not restrict, the range of regulatory options available to the Regional Boards.

¹⁸ State Water Resources Control Board. Report to the Legislature: Communities that Rely on Contaminated Groundwater. Jan., 2013; pg. 19.

¹⁹ "Addressing Nitrate in California's Drinking Water: A Community Perspective." Presentation to the SWRCB by Clean Water Action, AGUA, California Rural Legal Assistance Foundation, and the Community Water Center. May 23, 2012. Available at: http://www.waterboards.ca.gov/water_issues/programs/nitrate_project/index.shtml

²⁰ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February, 2013; pg. 24.

²¹ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February, 2013; pg. 28.

Goals and Objectives for an Effective Regulatory Alternative

16) For affected communities, an effective alternative to existing regulatory options should:

- A) Provide the resources (including both capital and O&M) required to assure an adequate supply of safe drinking water to those most likely to be adversely affected by future nitrate discharges to groundwater authorized by the Regional Board.
- B) Include a long-term commitment to assure an adequate supply of safe drinking water as long as nitrate discharges to groundwater continue.
- C) Make some reasonable provision for population growth in the affected area.
- D) Should encourage responsible parties to minimize new nitrate loads to groundwater using Best Practicable Treatment or Controls (aka "best efforts").
- E) Be legally enforceable through the Water Boards current administrative procedures without limiting or waiving any existing statutory authority granted to the Water Boards.
- F) Preserve the economic viability of the commercial agriculture industry that provides a significant source of employment for these same communities.

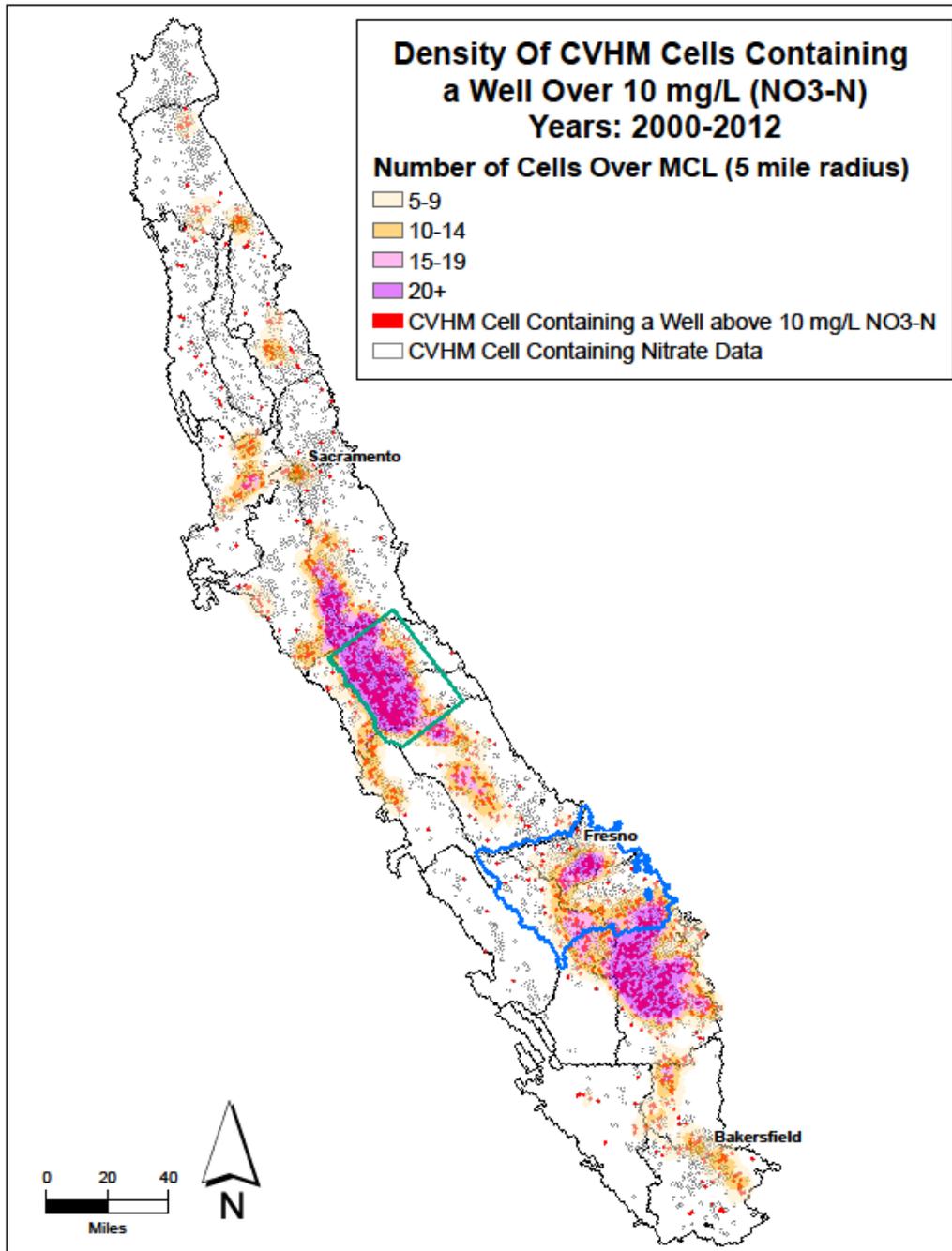
17) For regulated dischargers, an effective alternative to existing regulatory options should:

- A) Provide the legal assurance required for the discharger to remain in operation contingent upon mitigating adverse impacts on the MUN beneficial use itself.
- B) Allow responsible parties to seek out and implement the most cost-effective means for providing an alternate supply of safe drinking water including, but not limited to: drilling new or deeper wells, implementing well-head treatment, installing point-of-use treatment systems, providing access to surface water supplies, connecting to a local or regional potable water system, or blending supplies.
- C) Encourage responsible parties to leverage available resources by seeking additional state and federal grant funds to support alternate supply projects.
- D) Permit responsible parties to act alone or in cooperation with other dischargers to assure successful project implementation.
- E) Include an appropriate compliance schedule where necessary to complete the full range of project implementation tasks.
- F) Prohibit plaintiffs from referencing existence of a voluntary program to provide alternate supplies of safe drinking water as evidence intended to demonstrate any "admission" of legal liability for past practices.
- G) Recognize that some responsible irrigation practices intended to conserve scarce water supplies may increase the concentration, but not the mass, of nitrate discharged to groundwater. This is acceptable and necessary to support other important state water policies.

Conceptual Regulatory Alternative

- 18) The primary purpose for the state system of water quality standards is to protect the beneficial uses of water by preventing pollution that might interfere with such uses. Where beneficial uses are already impaired by prior pollution, and requiring current discharges to comply with applicable water quality standards will not restore the impaired waterbody to full attainment in a timely manner, or it is otherwise infeasible or impracticable to comply with these standards, then it is reasonable and appropriate to seek other means of protecting the MUN use and demonstrating compliance.
- 19) Providing an alternate water supply to users adversely affected by prior pollution is an effective mitigation strategy for achieving a level of "direct use protection" that is functionally-equivalent to meeting the water quality standard. Under circumstances like those identified above (#19), voluntarily implementing such projects should be recognized as a legally-acceptable alternative path to "conditional compliance" for current discharges that is consistent with "*maximum benefit to the people of California*" (SWRCB Res. 68-16).
- 20) The specific regulatory mechanisms for authorizing conditional compliance based on voluntarily providing alternate water supplies may include, but are not limited to:
 - a) Performance-based discharge conditions (WDRs)
 - b) An allocation of assimilative capacity
 - c) A conditional waiver of discharge
 - d) An approved "offset" or other "pollutant trading" program
 - e) A temporary conditional variance
 - f) Designation as a "pilot-demonstration project"
 - g) An "interim" discharge limitation
 - h) A site-specific objective
- 21) It is desirable and advantageous to coordinate and combine private and public resources to accelerate project implementation. There is considerable state and federal grant resources available to provide safer drinking water. Dischargers should be encouraged to focus their alternate compliance programs on overcoming the existing barriers to maximize access to these grant programs. This includes, but is not limited to: a) providing required matching funds; b) providing long-term O & M funding; c) using existing governance structures (or joint powers authorities) to receive and administer grants; d) providing technical expertise to support engineering, construction, and operations; e) providing access to substitute surface water supplies where readily available.
- 22) By linking on-going compliance to a voluntary alternate water supply project designed to provide direct use protection, the proposed regulatory approach is intended to mitigate adverse effects on end users far sooner and at considerably less cost than imposing a CAO to achieve the same end. CAOs do not provide the legal assurance that agricultural operators can continue to discharge if they are unable to meet the water quality standards.

Figure 1: Groundwater Contamination by Nitrate in the Central Valley Region²²



²² Initial Conceptual Model (ICM) Technical Services Tasks 7 and 8 – Salt and Nitrate Analysis for the Central Valley Floor Final Report. December, 2013. See Fig. 7-18 on page 7-25. Note: 10 mg/L Nitrate (as nitrogen) is chemically equivalent to the MCL of 45 mg/L for Nitrate (as NO₃).

Figure 2: Excerpts from the California Water Code

§13304. Cleanup and Abatement

(a) Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant.

Case examples where dischargers were required to provide an alternative water supply pursuant to a Cleanup and Abatement Order:

- 1) Central Valley Regional Water Quality Control Board. Cleanup and Abatement Order No. R5-2007-0723 for Ameripride Services, Inc.
- 2) Central Coast Regional Water Quality Control Board. Cleanup and Abatement Order No. R3-2004-0101 for Olin Corporation and Standard Fusee, Inc.