

CENTRAL VALLEY CONDITIONAL WAIVER FOR DISCHARGES FROM IRRIGATED LANDS – CRITICAL POINTS AS THE STORY UNFOLDS AND HOW THEY RELATE TO ALFALFA AND FORAGE CROPS

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ABSTRACT

This paper discusses the Central Valley Conditional Waiver for Discharges from Irrigated Lands (Conditional Waiver) that was adopted in 2003 and that is under consideration for renewal at the end of 2005. This paper will explore: how the Conditional Waiver came into affect in 2003; how the Conditional Waiver has progressed through 2005; future possibilities for the Conditional Waiver; and how the Conditional Waiver relates to alfalfa and forage crop production in the Central Valley both now and possibly into the future.

Key Words: Central Valley Conditional Waiver, irrigated lands, management practices, alfalfa and forage crops

LOOKING BACK FOR PERSPECTIVE

To understand how the Conditional Waiver came into effect in 2003 and how it may progress in the future, it is helpful to have a basic understanding of the Porter-Cologne Water Quality Control Act of 1969, which is part of California Water Code. The regulatory authorities and responsibilities of the State Water Resources Control Board (State Board) and the Central Valley Regional Water Quality Control Board (Regional Board) are spelled out in the Porter-Cologne. Furthermore, it establishes an institutional framework for regulating discharges that may affect water quality. It is also helpful to reflect upon how discharges from irrigated lands had been regulated in the first three decades after the Porter-Cologne became law and how it has changed in the fourth decade.

Basic Principles of Porter-Cologne. The first principle is that regulation must be balanced. The State Board and the Regional Board must protect the water resources from over-utilization and degradation but they cannot over-regulate to the point of a loss of some beneficial use, which, includes irrigated agriculture and twenty other categories of beneficial use ranging from domestic, industrial, hydropower, recreational, groundwater recharge, navigation, and eleven different environmental aspects related to fisheries, wildlife, aquatics, and habitat preservation.

The second principle is that the regulation must involve all stakeholders and interested parties. In the case of this Conditional Waiver, this involves irrigated agriculture, managed wetlands, nurseries, environmental interests, and the State and Regional Boards. Public workshops, hearings, and written comment are the primary mechanism for involving all stakeholders. The

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reason for this principle is the fact that very little can be accomplished in isolation of other factors or interests. John Muir captured the essence of this principle almost a century ago in a statement “when we try to pick out anything by itself, we find it hitched to everything else in the universe”.

The third principle is that water quality regulation must be responsive to related State and Federal legislative and judicial mandates since the passing of the original law in 1969. They are numerous and ongoing and as a result, the regulatory process is not simple and straight forward but reflects realities of a complex, changing society.

The final principle is the State and Regional Boards’ capacity to regulate is dependent on the availability of human and fiscal resources. There are hundreds of thousands of discharges in California and a regulatory program to address all of them would far exceed revenue forecasts under the most robust economic settings. As a result, creative and cooperative efforts are necessary to employ affordable programs that meet mandated regulatory requirements.

First Three Decades of Regulation. The Porter-Cologne and the Federal Clean Water Act, which followed in 1972, recognized practical differences between point and non-point sources of pollution. Congress defined point source pollution in the Clean Water Act as that which comes from a discrete conveyance and that all other that did not fit such a definition were considered non-point sources. The distinction was significant as the Federal government took the responsibility to regulate point source pollution through the National Pollution Discharge Elimination Systems (NPDES) program and reserved regulation on non-point sources to the State and local governments through adoption of area-wide management plans. Initially, return flows from irrigated lands were treated as point source but then were re-categorized as a non-point source and exempted from the NPDES program.

In 1987, Congress re-enforced this original distinction between point and non-point sources of pollution and the need for different regulatory approaches by amending the law (§319) to require states to develop non-point source management programs. The amendment recognized the complexity of controlling non-point source pollution and qualified the requirement to identify and implement management practices by stating that practices should be selected to reduce pollution to the “maximum extent possible”. In response, the State Board adopted a Non-Point Source Program consistent with Section 319 of the Federal Clean Water Act. Regulation of return flows from irrigated lands remained within the scope of this non-point source program.

On the ground, the State and Regional Boards had primarily two regulatory tools to choose between to regulate storm water and irrigation return flows from irrigated lands, namely issuance of permits for Waste Discharge Requirements or a Conditional Waiver of Waste Discharge Requirements. A permit for Waste Discharge Requirements would prescribe water quality objectives set by the Regional Board that a discharger must achieve to discharge return flows into receiving waters. The alternative regulatory tool was a Conditional Waiver of Discharge Requirements. Conditional Waivers were available as a regulatory tool because it was not possible to provide a high level of regulatory oversight of every discharge in California. Conditional Waivers were generally issued for discharges that pose a minimum threat to water quality but they can be structured like a permit. For a Conditional Waiver to be issued, the

Regional Board must find that the waiver is not against the public interest. Over the past 30 years, Conditional Waivers have been issued for 48 categories of discharge ranging from storm water and return flows from irrigated lands, use of septic tanks, and emptying of swimming pools.

A Conditional Waiver for discharges of storm water and irrigation return flows from irrigated lands in the central valley was adopted by the Regional Board in 1982 and was applicable through 2002. The Conditional Waiver used a three-tier structure for implementation. Tier 1 was not regulatory in nature rather it relied upon irrigated landowners and operators to make self-determinations of when changes in management practices were needed to protect water quality. Being “self determined” should not be confused with optional or discretionary. Under the Porter-Cologne, compliance with rules to protect water quality is not optional. Tier 1 gave the discharger flexibility to select the most appropriate management practices to protect water quality in a specific farm, wetland, or nursery setting. Tier 2 allowed for regulatory incentives and encouragement of management practices that protected water quality. Tier 3 was highly regulatory in nature providing a venue for the Regional Board to require permits for Waste Discharge Requirements and to require implementation of required management practices to protect water quality. There were no legal requirements to use one tier before the other, the Regional Board preferred to regulate at the least intrusive level (tier 1) if it effectively protected water quality. This also reflected that the Regional Board did not have sufficient human and fiscal resources to verify that dischargers from irrigated lands were complying with the Conditional Waiver, thus the waiver was largely a passive program.

Although this Conditional Waiver for storm water and return flows from irrigated lands was largely a passive program, it did have available an assortment of enforcement options for non-compliance:

- Notice of Violation
- Cleanup and Abatement Order
- Cease and Desist Order
- Administrative Civil Liability Order
- Prohibition of Discharge
- Referral to the Attorney General

TRANSITION FROM PASSIVE TO ACTIVE REGULATION

Change in the Fourth Decade. By 2001 agricultural and wetland leaders in the Central Valley recognized the challenges that lay ahead related to managing water quality. A body of evidence both from other western states and in California was building that suggested storm water and return flows from irrigated lands may not necessarily be considered a low threat to receiving waters. In 2001, the 9th Circuit Court of Appeals ruled in the Hadwaters-Talent decision in Oregon that permits were required for applications of aquatic pesticides in surface waters. In the same period, in California, the Central Valley Regional Board had found the Sacramento and Feather Rivers impaired by some pesticides. Also, there were concerns with water quality in the San Joaquin River due to pesticides and salinity. Even in more remote areas of the larger Central Valley watershed there were concerns with nutrients, temperature, dissolved oxygen, and

pathogens in waterways that received storm water and irrigation return flows from irrigated lands.

During this same timeframe (late 1999) new California legislation, Senate Bill 390, had been signed into law and resulted in amendments to section 13269 and section 13350 of the Porter-Cologne. These amendments signified the end of the Conditional Waiver for irrigated lands as adopted by the Regional Board in 1982 and resulted in new requirements:

- Renewal of waiver policies and individual waivers by January 1, 2003
- Review the terms of the waiver policy using public hearings
- Determine whether the discharge should be subject to general or individual Waste Discharge Requirements
- Renewal or termination of waivers at least every five years
- Enforcement of waivers
- Impose penalties for violations
- Cover waiver program costs with fees from dischargers

Form of New Regulation Contested. When Senate Bill 390 became law it gave the State Board and Regional Board, agriculturalists, wetland managers, nurseries, and environmental interests just over three years to settle on a new form of regulation to replace the long-standing Conditional Waiver that would expire on December 31, 2002. Rudimentary points of contention were: whether storm water and return flow from irrigated lands should be treated more like point source discharges or non-point source discharges; whether some form of individual or general, Waste Discharge Requirements would be more effective and still affordable to protect water quality rather than a Conditional Waiver; and while it was understood by all stakeholders and interested parties that the new regulation would have a water quality monitoring compliance element there was disagreement over the extent of monitoring and related costs.

Framework of New Regulation Adopted. The Regional Board adopted a new, two-year Conditional Waiver for irrigated lands effective January 1, 2003. Irrigated landowners and operators, wetland managers, and nurseries who discharge or pose a threat of discharging storm water, irrigation runoff, seepage, or subsurface drainage could be covered under the Conditional Waiver and considered compliant with the Porter-Cologne Water Quality Control Act by taking one of three actions:

- Elect to work actively as a member of a Coalition, an organized group of dischargers with a common interest of protecting and enhancing water quality in a locally, shared drainage area
- Request from the Regional Board coverage under the Conditional Waiver as an individual discharger apart from a Coalition
- As an individual, submit a Request for Waste Discharge Requirements from the Regional Board

The conditions of the Conditional Waiver were relatively simple. A discharger, whether a member of a Coalition or an individual could continue to discharge water from irrigated lands into receiving waters over the next two years as long as water quality monitoring that has been approved by the Regional Board was conducted to assure water quality objectives were met. In

the event a water quality objective was exceeded in a drainage area, management practices must be modified and water quality monitoring continued until the objectives are met. The Conditional Waiver would be subject to the same enforcement options as outlined earlier in this paper for the Conditional Waiver adopted in 1982. Early on, it was apparent that the Coalition approach had more acceptance and momentum for managing water quality and providing coverage to dischargers under the Conditional Waiver than the options available to individual dischargers. It was a sensible approach for regulating non-point sources of discharges that facilitated local oversight, was less expensive and less intrusive on individuals, and it seemed more reasonable to administer and enforce by the State and Regional Boards. However, options remained available for individuals averse to joining large organizations.

Different Perspectives on Water Quality Monitoring. While the new Conditional Waiver had been adopted, details describing the extent and types of water quality monitoring required were purposely vague to allow more time to develop them. Acknowledging that much more work remained to develop the details of the new Conditional Waiver as adopted in December 2002, the Regional Board directed technical staff to draft and propose monitoring requirements. During this same period, Coalitions formed to provide coverage to its members under the Conditional Waiver and to formulate their own proposal for water quality monitoring. By April 2003, stark differences in proposed water quality monitoring requirements were evident.

A first draft of requirements proposed by technical staff of the Regional Board called for a pre-determined, systematic monitoring grid throughout the Central Valley. In total, a minimum of 1400 water quality compliance points was proposed for the Central Valley from Kern County in the south to Modoc County in the north along the Oregon border. Roughly one compliance point per 5000 irrigated acres was proposed. Irrigated landowners, wetland managers, and nurseries would need to identify themselves with the Regional Board by submitting a Notice of Intent to discharge. Water quality samples would be collected and analyzed monthly for 61 constituents of concern. If all 61 constituents of concern were analyzed it was estimated that the analysis could cost up to \$2500 per sample and this cost would need to be paid for by the dischargers. Annual reporting would be required for each compliance point. A three-tiered fee assessment was proposed to pay for administration and enforcement of the monitoring program. Proposed fees ranged from \$400 to \$6,750 per waiver period (possibly two years) for each compliance point. Fees would be split among the landowners and operators discharging from lands above each water quality compliance point. This proposal was viewed by Coalitions as too prescriptive, inflexible to specific hydrologic conditions and landscapes in sub-watersheds, and exceedingly expensive.

The first draft for water quality monitoring proposed by newly formed Coalitions was based upon a watershed approach. The watershed boundaries would align with hydrologic units defined in the respective Sacramento River and San Joaquin River Basin Plans. The monitoring points would primarily be at discharge points just above the main arteries of the Sacramento and San Joaquin Rivers and before they merge into the Bay-Delta. With this approach the number of compliance points would be much smaller (about 12 to 15 monitoring sites). A “phase-in” approach to water quality constituents of concern would be taken rather than testing for a broad list of constituents. Monitoring for specific constituents of concern could be modified as warranted with experience. Priority would be given to constituents already known to negatively

impact the environment and that would result in remediation that returns the greatest improvement in water quality. Coalitions proposed to begin complying with the Conditional Waiver without imposing fees on dischargers and favored funding initial water quality compliance monitoring with public funds earmarked for preserving water quality in the central valley. Coalitions proposed landowner and operator collaboration through collective groups rather than seeking individual discharger identity. Mandated discharger identity would likely discourage cooperation in addressing valid water quality concerns. Environmental interests viewed the proposal too broad in scale and grossly inadequate.

Seeking a Balance: One Regional Board member described the technical staff recommendations as “command and control policy” and the Coalition proposal as “wink and nod policy”. Neither proposal was adopted into the Conditional Waiver. The Regional Board was seeking rigorous yet reasonable regulations and protocol that were legally defensible. On July 11, 2003, the Regional Board adopted key water quality monitoring components into the Conditional Waiver.

An incremental approach was taken to implement water quality compliance monitoring points rather than imposing a pre-determined network of monitoring throughout the central valley. Monitoring would occur throughout the central valley in smaller, defined drainages and not just at the down-stream ends of large watersheds. Compliance points would be established based upon hydrologic settings of shared drainages and common cropping patterns and farming practices. A “phase-in” approach to monitoring constituents of concern would be taken rather than beginning with a broad list of constituents. The first phase of water quality monitoring would be conducted in 2004 and 2005 to distinguish watercourses with harmful contaminants related to irrigated lands from waterways without harmful contaminants. Toxicity tests using established protocols with four aquatic test species would be an important component of the first phase of monitoring as well as monitoring of other basic parameters such as pH, electrical conductivity, temperature, dissolved oxygen, total organic carbon, turbidity, pathogens, and selected nutrients. Samples would be taken during two storm events between November and March and monthly from irrigation return flows from April through October. All sampling and laboratory analyses would be conducted by an independent, California Certified Laboratory. Water quality monitoring may eventually be suspended at compliance points with a proven history of meeting water quality objectives. New compliance points would replace them in other un-monitored drainage courses. Compliance points that exceed water quality objectives in this first phase of monitoring will then proceed with more advanced water quality monitoring by testing for specific contaminants based on land use and pesticide use patterns and by testing at more sites to identify the general source of contamination. Once a specific constituent is known, specific farming practices in the drainage area would then be modified and water quality monitoring continued until the water quality objectives are satisfied.

The Regional Board also ruled that irrigated landowners and operators, wetland managers, and nurseries must knowingly elect to be covered under the Conditional Waiver by a Coalition. Coalitions would maintain a membership list with contact information. Provisions were in the Conditional Waiver that enabled the Regional Board to request the membership lists. The Regional Board also ruled not to impose fees on dischargers at that time to financially support

the administration and enforcement of the Conditional Waiver but Coalitions must pay for the costs of the compliance monitoring or coordinate with other monitoring programs.

On July 11, 2003, the Regional Board adopted these aspects of the Conditional Waiver with the expectation that it would be challenged through appeals to the State Board, litigation, and through new legislation. Since then, on January 24, 2004, the State Board heard appeals to the Conditional Waiver and largely upheld it. State legislation was also blocked at the committee level that could have diminished the Conditional Waiver. On May 10, 2005 Sacramento County Superior Court issued a decision to substantially uphold the Conditional Waiver.

REALITY IN THE FIELD

Coalitions Organize. Since January 1, 2003, ten groups have formed throughout the Central Valley to offer coverage to irrigated landowners and operators, wetland managers, and nurseries under the Conditional Waiver. A process is also in place to allow new Coalitions to form in the future. Table 1 summarizes the Coalitions that are recognized by the Regional Board as of October 2005. Six Coalitions organized on the basis of hydrologic units where common watercourses were shared to provide drainage of storm water and irrigation water. Three organized according to water district boundaries. The California Rice Commission, organized as an existing commodity group. The Rice Commission formed a Coalition based on a previous and successful working relationship with the Regional Board. Also, the rice acreage was largely contiguous within four Sacramento Valley counties and the rice farming culture was relatively consistent across the area with limited rotation to other crops. Presently, thousands of discharges and nearly 50 percent of the irrigated lands in the Central Valley are provided coverage under the Conditional Waiver through Coalitions.

Table 1. Summary of Coalitions formed throughout the Central Valley of California since January 1, 2003.

Coalition Group	Total Irrigated Acreage	Acreage Covered under Waiver	Estimated Percent Coverage
Sac Valley Water Quality Coalition	2,000,000	1,000,000	50
California Rice Commission	500,000	500,000	100
Goose Lake	7,300	5,120	70
East San Joaquin Water Quality Coalition	1,200,000	517,661	43
San Joaquin County and Delta Water Quality Coalition	998,000	348,800	35
San Luis Water District	66,500	33,250	50
Westside San Joaquin River Watershed Coalition	550,000	460,482	84
Southern San Joaquin Water Quality Coalition	4,000,000	1,000,000	25
Westlands Water District	431,435	431,435	100
Root Creek Water District	40,000	15,000	38
TOTAL	9,793,245	4,311,748	44

Compliance Monitoring Underway. Table 2 describes general water quality compliance monitoring activities in each Coalition area. In total, more than 72 monitoring sites (most likely over 100 sites, in-lieu of unavailable information) have been located throughout the central valley. Some variation is evident in the number of water quality monitoring compliance sites in each Coalition area. The differences reflect considerations of unique hydrologic conditions and landscapes. Science-based reasons for the selection of the specific compliance monitoring sites were submitted to the Regional Board by each Coalition in Watershed Evaluation Reports and Quality Assurance Program Plans to acquire approval from the Regional Board before compliance monitoring began.

Table 2. General overview of Coalition water quality compliance monitoring activities from August 2004 through September 2005.

Coalition Group	# of Water Quality Compliance Sites	# of Storm Events Sampled per Site	# of Irrigation Events Sampled per Site	Total # of Toxicity Tests	% of water column tests in excess of WQO	% of Sediment tests in excess of WQO
Sac Valley Water Quality Coalition	13 ¹ 7 shared	2 na	6 na	322 na	4.4 na	15.0 na
California Rice Commission	(6) ²	(2)	na	na	na	na
Goose Lake	na ³	na	na	na	na	na
East San Joaquin Water Quality	7	2	8	194	7.7	9.8
San Joaquin County and Delta Water Quality	5	2	7	194	21.1	6.2
San Luis Water District	na	na	na	na	na	na
Westside San Joaquin River Watershed	(19)	na	na	na	na	na
Southern San Joaquin Water Quality	(14)	na	na	na	na	na
Westlands Water District	na	na	na	na	na	na
Root Creek Water District	na	na	na	na	na	na
TOTAL	(72 +)	---	---	---	---	---

¹ Twenty compliance sites are in the Sacramento Valley Water Quality Coalition area, 13 are Coalition sites and seven are collaborative sites. Only Coalition data available at this time.

² Proposed but unconfirmed number of water quality monitoring compliance points.

³ Preliminary descriptive statistics not available at time paper was written.

An example of a science-based approach taken to locate water quality compliance monitoring is given for the Sacramento Valley Water Quality Coalition area. In total 244 drainage areas were identified in ten sub-watersheds that in combination made up the entire area represented by the Coalition. These drainage areas were ranked from high to low risk to water quality based upon types and intensity of agricultural and wetland uses. Seventeen drainages were categorized as high risk, 25 drainages as medium risk, and 202 drainages as low risk. Those drainages ranked as high risk were submitted as first in priority for compliance monitoring. The monitoring sites were located down-stream in primary drainage courses within each area to account for the nature of non-point source discharges and before the drainage converged with major watercourses. Presently 20 compliance sites are located throughout the Sacramento Valley. They are located as far south as Solano, Yolo, Sutter, and Yuba counties and as far north as Tehama and Shasta counties, a distance of about 150 miles. Annual costs to Coalition members, covered under the Conditional Waiver, to support the compliance monitoring has ranged from \$0.50 to \$2.00 per irrigated acre in 2005.

Table 2 also provides preliminary statistics describing the general extent of water column and sediment toxicity testing performed by California Certified Laboratories, just one parameter of the water quality compliance monitoring, for a few of the Coalitions. A total of 710 toxicity tests in three Coalition areas have been performed between August 2004 and September 2005. The total number of samples taken and analyzed throughout the entire Central Valley was undoubtedly higher but information on other Coalition compliance monitoring activities was unavailable when this paper was written. The frequency that water column toxicity exceeded water quality objectives (WQO) ranged from 4.4 percent to 21.1 percent in three Coalition areas. The frequency that sediment toxicity exceeded water quality objectives ranged from 6.2 to 15.0 percent. More information will be available in the future. The Coalitions are approaching the completion of the first full year of water quality compliance monitoring under the Conditional Waiver and annual reports are due to the Regional Board at the end of 2005.

Enforcement. Table 1 points out that approximately 1 out of every 2 irrigated acres in the central valley was not covered under the Conditional Waiver through Coalition participation. This fact has heightened scrutiny of enforcement efforts by the Regional Board and attention to the issue of member identification in Coalitions. The Regional Board has asserted that it is very costly to discern dischargers who have sought coverage under the Conditional Waiver from those who have not responded without having Coalition membership lists. In the meantime, the Executive Officer of the Regional Board has issued 323 Water Code Section 13267 Orders to dischargers in Yolo, Madera, Fresno, Sutter, Butte, Yuba, and Colusa Counties. These letters served to inform farmers, wetland managers, and nurseries of their options to comply with Water Code and required them to submit a response describing their status in complying with the Conditional Waiver. More letters are to be issued in the future. Also, the Regional Board has acquired lists of Pesticide Permit holders from the County Agricultural Commissioners offices in the Central Valley to assist with enforcement.

CHANGE AND RENEWAL OF THE CONDITIONAL WAIVER

Change in 2004 and 2005. Some notable changes were incorporated into Conditional Waiver during the first two years of its development and implementation. The issue of fees to pay for

the cost of administering and enforcing the Conditional Waiver was postponed when the Conditional Waiver was adopted in 2002. However, Water Code (due to SB 390) mandates that fees be collected from dischargers to pay for the administration and enforcement of the Conditional Waiver. In response, during the summer of 2005 the State and Regional Boards adopted a fee structure to put into effect in 2006 to support 22 Regional Board positions to administer and enforce the Conditional Waiver. Fees are less for Coalition members, \$100 per Coalition and \$0.12 per irrigated acre, when paid directly by the Coalitions out of annual membership dues. Members of Coalitions who do not pay the fee for their members will be charged \$100 per discharger and \$0.20 per irrigated acre. Individual dischargers not part of a Coalition will be charged \$100 plus \$0.30 per irrigated acre. Also during the summer of 2005, the State and Regional Boards approved a temporary agreement between the State Board and the California Department of Pesticide Regulation for a pilot program in the Sacramento Valley. The temporary program is exploring how to optimize State and Regional Board administrative and enforcement personnel needs and costs by coordinating with the Department of Pesticide Regulation and the County Agricultural Commissioners in the Central Valley. The temporary program was proposed by Coalitions in an effort to streamline the costs to discharges associated with administering and enforcing the Conditional Waiver.

Renewal Required by the End of 2005. It was recognized in December 2002 when the new Conditional Waiver was adopted that it would expire on December 31, 2005 and would require renewal and possibly revision by the Regional Board to extend it into 2006 and beyond. The other possibility was termination if the Conditional Waiver was not progressing. Numerous meetings, public workshops, and opportunity for written public comment have been offered throughout the central valley to discuss renewal and changes to the Conditional Waiver. A meeting is scheduled for November 28, 2005 (after the submission deadline for this paper) where the Regional Board may adopt a renewed Conditional Waiver with some modifications. Some aspects of the Conditional Waiver being contested among the stakeholders and interested parties include:

- Length of extension of Conditional Waiver
- Landowner or operator identification
- Water quality management plans
- Modifications to monitoring and reporting programs

In the most recent, “tentative” draft of a renewed Conditional Waiver for Irrigated Lands issued November 10, 2005, Regional Board technical staff have recommended a maximum five-year extension from January 1, 2006 through December 31, 2010.

The identification of owners and operators who discharge storm water and return flows from irrigated lands continues to be a contested issue. The recent, tentative draft of the Conditional Waiver requires Coalitions to submit a list of members who have knowingly elected to join a Coalition to receive coverage under the waiver by July 15, 2006 and to update it annually. The list must include each member’s name, address, irrigated acres, and sufficient information to locate each member’s irrigated land within the Coalition area. Other alternatives discussed related to owner/operator identification have been proposals for direct enrollment by all discharges with the Regional Board and alternatives where Coalitions provide lists of non-

respondents to membership outreach efforts or submit a list of Coalition member 's land parcel numbers without personal identity.

The tentative draft calls for Coalitions to submit by March 1, 2006 a list of water bodies and associated drainage areas within the Coalition boundaries with water quality concerns. This includes water bodies listed as impaired or where data indicates toxicity exceeds water quality objectives. Water quality management plans must be developed for these water bodies and be available to the Regional Board within 160 days of written request by the Executive Officer. These management plans may be based upon regional/watershed areas, areas with common cropping patterns, or specific hydrologic or geographic features. More than one management plan may be necessary. Management plans must identify who will implement and evaluate the plan; describe means of disseminating information; submit a schedule for training and information dissemination related to management practices that protect water quality; establish methods of measuring effectiveness of management practices in improving water quality; and establish procedures to establish when additional areas within Coalition boundaries must participate in the water quality management plan. The alternative to these water quality management plans that has been proposed is a schedule for individual farms, managed wetlands, and nurseries to develop individual water quality management plans. For example, individual operations with more than 500 irrigated acres would be required to develop water quality plans by January 1, 2007. The schedule continued to the extent of requiring individual operators with 40 irrigated acres or less to develop plans by January 1, 2008.

A final issue centers on water quality monitoring and reporting. Issues remain concerning the number of compliance monitoring sites, definitions of when a water quality objective is exceeded, response procedures when a water quality objective is exceeded, and incorporation of receiving water limits into the monitoring and reporting program. In the most recent, tentative draft of the Conditional Waiver all language related to changes in monitoring and reporting has been removed and postponed. Regional Board staff recommended more time to gather public input on the complex issue. It very likely will be revisited after the renewal of the Conditional Waiver is completed for 2006. It could be a potential point for amendment of the Conditional Waiver amid the next extension period.

EFFECTS OF THE CONDITIONAL WAIVER ON ALFALFA AND FORAGE CROPS

Attributes of Alfalfa and Forage Crops. Alfalfa and other forage crops represent the third largest commodity in California's agricultural industry. Approximately, 1.1 million acres are grown annually in the state with a large proportion of the production in the Central Valley. Alfalfa and other forage crops provide the primary feeds to California's dairy industry, the largest single agricultural commodity in the state and nation. As a result, alfalfa can be described as a vital component in the production of a wide variety of nutritious food for millions of consumers. More subtle but equal attributes of alfalfa and other forage crops are that they are important rotational crops, they provide forage for wildlife, and alfalfa in particular has been shown to effectively filter suspended sediments out of water supplies and effectively help control erosion, transport, and deposition of sediments into water courses.

Management Practices Posing Risk. While alfalfa and other forage crops have clear attributes they pose some risk to water quality. The 2002 Pesticide Use Reports provided by the California Department of Pesticide Regulation show alfalfa to be the second largest user of organophosphate insecticides. Alfalfa accounts for the largest acreage treated annually and the most applications per season. In 2002, organophosphate insecticides were reported in tailwater return flows from several alfalfa fields in the Sacramento Valley as much as six weeks after field application at levels toxic to aquatic indicator species. In addition, some herbicides used in alfalfa have been detected in groundwater and surface water. Other alfalfa and forage management practices postulated as posing risk to water quality include: alternative pesticides such as pyrethroid insecticides and post-emergence herbicides; phosphorus adsorbed to sediments, and perhaps pathogens.

Connection to Conditional Waiver. Since alfalfa and other forage crops are commonly grown throughout the Central Valley and the Conditional Waiver for Irrigated Lands has progressed using a watershed approach, it is probable that alfalfa/forage crops and the associated management practices may be involved in agricultural drainages where water quality objectives are exceeded. Also, protocols used to detect toxicity in discharges in the water quality compliance monitoring under the Conditional Waiver are the same as those used earlier to detect toxicity in return flows from the alfalfa fields in the Sacramento Valley. If compliance monitoring shows water quality objectives are exceeded in a specific drainage area, advanced phases of water quality monitoring will be required to identify the contaminant by testing for specific pesticides and nutrients according to land use patterns. Some of the specific pesticides required in later phases of the Monitoring and Reporting Order of the Conditional Waiver are important crop protection products for alfalfa/forage crops. They include methomyl, chlorpyrifos, endosulfuron, malathion, esfenvalerate, lambda-cyhalothrin, cyfluthrin, permethrin, diuron, and paraquat dichloride, and glyphosate (i.e. GMO's). Therefore, the alfalfa and forage industry should consider how to engage the Conditional Waiver.

Managing the Source. Attention to management practices that focus on the source of contamination remains a reasonable venue to invest resources into research and outreach to address water quality issues. Specific items may include but are not limited to:

- Sound rationale for pest control and fertilization practices based on agronomic and economic thresholds
- Safe handling and precise application of crop protection products and other inputs
- Alternative crop protection products with reduced risk to water quality
- Use of best available genetic materials to provide high levels of crop vigor and competition with pests
- Efficient irrigation practices
- Stand establishment techniques

Mitigation Practices. Efforts also need to be invested into mitigation practices that restrict residual crop inputs from entering watercourses. Specific items may include but are not limited to:

- Lined and unlined storm water and irrigation water retention and sediment basins

- Vegetated return flow ditches
- Buffer strips between fields and sensitive water ways
- Water amendments such as polyacrylamides that reduce suspended solids in water
- Costs/benefits of mitigation practices

Working within the Institutional Framework.. The California alfalfa/forage industry has a proven history of developing and adopting new management practices and technology that sustains it as a competitive commodity regardless of the challenge. Water quality issues should not be an exception. Perhaps the question of how to work effectively within the framework of the Conditional Waiver for Discharges from Irrigated Lands is as important as specific questions about management and mitigation practices.

Two questions are raised for consideration:

- Should, and if so, how can an established commodity group with an organized approach to extend knowledge work effectively with a Coalition (watershed) concept to manage water quality and respond to regulation? There are other underlying questions too, like does the industry find merit in the Coalition concept and will more alfalfa/forage producers in the Central Valley seek coverage under the Conditional Waiver through Coalitions? If situations arise where water quality objectives in specific drainage areas are exceeded and alfalfa/forage crops are implicated, is the industry poised to help Coalitions at a local level form and implement management plans so that the objectives are eventually met? Lastly, can the alfalfa/forage industry help Coalitions to work towards documenting the extent that sound agronomic practices are implemented? This is a re-occurring question from the Regional Board that may be rooted in demonstrating that management and mitigation practices are being used to the “maximum extent possible”.
- How to approach what appears to be a tightening window of opportunity to research and develop water quality management practices for alfalfa and forage crops? In a related paper published in 2003 Proceedings, 33rd California Alfalfa and Forage Symposium it was stated that the UC Alfalfa Workgroup and CAFA were working on water quality issues, however, progress was described as “somewhat slowly due to the lack of funding”. Since then, the UC Alfalfa Workgroup and CAFA has pursued funding sources, however, they have been confronted with obstacles. Confidentiality and liability issues have surfaced when public grants, especially from the State and Regional Boards, are offered to public groups to perform research and development of management practices on privately owned or operated irrigated lands. Also, issues related to characterizing farm discharges may run contrary to a Conditional Waiver founded on watershed and non-point source concepts.

SUMMARY

From 1982 through 2002 a Conditional Waiver for Discharges from Irrigated Lands was in place for the Central Valley. It was relatively non-intrusive and has been described as passive regulation. In 2003, the Regional Board enacted a new Conditional Waiver with a two-year term

for renewal or termination. The State and Regional Boards sought a creative regulatory approach that was rigorous, reasonable to administer and enforce, and legally defensible. Leaders in Central Valley agriculture and managed wetland supported the Conditional Waiver as an alternative to permits for Waste Discharge Requirements. They worked diligently to help form the Conditional Waiver and to offer tens of thousands of owners and operators of irrigated lands in the Central Valley a way to organize into Coalitions and receive coverage under the Conditional Waiver. As one option, the Conditional Waiver employs watershed concepts and water quality compliance monitoring throughout the Central Valley. It seeks to maximize the return to remediation of water quality in a fiscally responsible way that is technically suited to non-point discharges. It has withstood appeals to the State Board and litigation. Currently, there are ten Coalitions in the central valley working to meet the conditions of the Conditional Waiver and representing nearly 50 percent of the irrigated acreage in the central valley. It is up for renewal and subject to change before the end of 2005. The Conditional Waiver may be renewed for the period of January 1, 2006 through December 31, 2010. Primary changes may involve identity of Coalition members and development of water quality management plans in drainage areas where water quality objectives are exceeded. Alfalfa and other forages are likely to be affected by the Conditional Waiver because they are grown throughout the Central Valley and pose some risks to water quality. The cumulative knowledge and experience of the alfalfa and forage industry is needed to help irrigated agriculture operate successfully under this Conditional Waiver.

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