3.3.17 Letter 44—North Eastern California Water Association, Roderick McArthur, Vice President

Comment Letter IL44

North Eastern California Water Association
P.O. Box 367, McArthur, CA 96056

September 24, 2010

Delivered via email to: ILRPcomments@icfi.com

ILRP Comments
Ms. Megan Smith
ICF International
630 K Street, Suite 400
Sacramento, CA 95814

Dear Ms. Smith:

Please accept these comments of behalf of the North Eastern California Water Association (NECWA). We are a voluntary membership organization with 170 members and a geographic region that covers over 75,000 irrigated acres in the northeastern corner of the state, most of which are located in the Pit River Watershed. Our members are nestled between the Goose Lake Water Quality Coalition and Sacramento Valley groups and are a member of the Sacramento Valley Water Quality Coalition (SVWQC). NECWA was formed prior to the formation of the Irrigated Lands Regulatory Program for the purpose of protecting our members interests in water and property rights.

Comments specific to the Programmatic Draft Environmental Impact Report (PEIR) for the Irrigated Lands Regulatory Program.

One general comment regarding the analysis, the CEQA document which is being used to provide the analysis for the alternative that may or may not be selected by the Regional Board has analyzed only the five original alternatives. The sixth alternative has been analyzed in the Staff Report and Recommendation. We would wonder if the Regional Board will have the adequate CEQA coverage by constructing the analysis in that manner. 44-1

While our members have been active participants in the current Irrigated Lands Regulatory Program, (ILRP) we still believe that a regulatory program is unnecessary and is a drain on both private and public resources. Many of our members participated in the University of California's Rangeland Water Quality program that was strictly voluntary. They learned through that program how to implement many practices that improve and protect water quality. As you will note from the maps contained in the Staff Recommendation on pages 35 – 44, exceedances in our region rarely, if ever happen. There is one instance of E coli exceedance and that was attributed to factors outside of the control of irrigated agriculture. We certainly have very low to no negative impact on water quality. 44-2

NECWA's Mission is to protect and enhance water rights, water quality and riparian areas to the benefit of agriculture, the environment, recreation, and wildlife in the Northeastern California region.

2 NECWA ILRP PEIR Comments

That said, we are saddled with a costly and cumbersome regulatory program and understand that we must work within the regulatory framework that we have before us. We agree with these goals as outlined in the PEIR.

- Encourage implementation of management practices that improve water quality in keeping with the first objective without jeopardizing the economic viability for all sizes of irrigated agricultural operations in the Central Valley or placing an undue burden on rural communities to provide safe drinking water.

- Provide incentives (i.e., financial assistance, monitoring reductions, certification, or technical help) for agricultural operations to minimize waste discharge to state waters from their operations.

- Promote coordination with other regulatory and non-regulatory programs associated with agricultural operations to minimize duplicative regulatory oversight while ensuring program effectiveness (e.g., U.S. Department of Agriculture [USDA] National Organic Program, State Water Board Groundwater Ambient Monitoring and Assessment Program).

44-2 cont'd

Our members would encourage the Board as you deliberate in your decision to craft a program that focuses on priorities and places the appropriate level of scrutiny and cost on problem areas as well as low priority areas.

We support the Tiering concept in Alternative 2. We agree with the staff recommendation on page 138 regarding creation of low priority areas and the concept on page 139 that creates a Tiered approach for reducing costs for the lower threat areas. However, we believe that as currently written there is a lot of confusion of how the Tiered approach would be implemented. Tiering needs to be developed using best available science and working cooperatively with knowledgeable, local resources. Please see our detailed comments below on the Staff Recommended Alternative and our concerns regarding how a 303(d) listed waterbody would be handled. Our recommendation is that our detailed monitoring be used to place our region and others like us that have no negative impact, into Tier 1, rather than using an arbitrarily listed 303(d) water body and placing our Region into Tier 2. Area priority should be re-classified by your Board using the data and information that we have collected over the term of the program.

44-3

In addition, NECWA believes that the concept of Best Practicable Treatment or Control (BPTC) should NOT be tied in any way to agricultural discharges in Tier 1. BPTC applies to industrial specific point source effluent limits - Irrigated agriculture is NOT a point source and should never be allowed to be addressed as one – it is specifically exempted from point source definition in the statute.

44-4

Comments specific to the Irrigated Lands Regulatory Program: Economics Report

NECWA is highly concerned that the economic analysis is not accurate for our region and regions like ours. The Central Valley Production Model absolutely will not apply to our region, that consists mainly of very low impact irrigated pasture and hay lands. It is very problematic to us that staff believes that a reduction in these types of operations is planned and will happen from implementation of any of the alternatives of the program. That reasoning should support placing us immediately into a Tier 1 situation and lessen our costs and burdens, not put us out of business.

44-5

3 NECWA ILRP PEIR Comments

The number of growers and acreage appear to be inaccurate as they are conflicting in a number of areas. Accurate numbers should be applied and analyzed. 44-6

One of the Key Study Assumptions states: "As discussed further in Chapter 3, the model assumes that growers will react to increased costs and other compliance requirements by adjusting crop production as needed to maximize net income and stay in business. Results from the Central Valley were extrapolated to affected areas in the foothills and upper watersheds." It continues, "It is likely; however, that growers will find or develop less expensive ways to modify their production practices, and therefore, direct impacts on their revenues and production would be less than those estimated in Chapter 3." 44-7

NECWA is highly concerned about these assumptions. Our members are highly limited by growing season, soil types, elevation and other environmental factors completely out of their control. The choice of crop types are very limited and aren't easily changed.

Comments specific to the Staff Report and Recommendation for a Preferred Alternative.

Topic: Groundwater
CVRWQCB Staff Recommendation: Include groundwater requirements.

NECWA opposes including the groundwater requirements, unless first, we are assured that we are in Tier 1 and those associated Tier 1 monitoring requirements (none) would be in effect. As you will note in the Staff Report on Figure B-9 Map of Hydrogeologically Vulnerable Areas from State Water Resources Control Board (2000) the region NEWCA covers has only one minor and very small hydrologically vulnerable area. Additionally, on Figure B-10 California Department of Pesticide Regulations Groundwater Protection Areas, you will note that in the region NECWA covers, we have NO designated Groundwater Protection areas. 44-8

Topic: Waiver vs WDR's vs Direct CVRWQCB
CVRWQCB Staff Recommendation: A series of area-, geographically based, or commodity based implementation mechanisms with prioritized requirements. Implementation mechanisms could include waivers in low-priority areas and general WDRs in high-priority areas.

NECWA would support the Waiver approach, especially as we have pointed out the little risk our members pose to having a negative effect on water quality. We believe we should be allowed to work with CVRWCQB staff to develop a region-wide waiver and with that waiver would come the designation of being in Tier 1. Recall, our membership does not pose a significant risk to impaired water quality. 44-9

Topic: Coalition vs Coalition with JPA
CVRWQCB Staff Recommendation: Third-party structure established in Alternatives 1 and 2 with additional structural and third-party transparency requirements described above.

NECWA is concerned over the Coalition with JPA. This essentially means that we, as a volunteer run, membership organization take on the role of the enforcer. NECWA became involved to assist our members in dealing with the regulatory framework (ILRP) and chose to comply and work with the program. Outlyers that have never joined a coalition, seemed to have gotten off scott free … why doesn't the CVRWQCB go after those folks who have not complied, rather than adding more burden to our volunteer coalition? 44-10

4 NECWA ILRP PEIR Comments

Topic: Lead Entity (see above)
CVRWQCB Staff Recommendation: Third-party structure established in Alternatives 1 and 2 with additional structural and third-party transparency requirements described above.

NECWA believes the coalition approach in Alternative 2 is the best approach and that the Board should enforce their power under CWC §13267 to go after those property owners that have failed to participate in the coalition process. 44-10 cont'd

Topic: Water Quality Management Plans
CVRWQCB Staff Recommendation: Regional water quality plans similar to those described in Alternatives 1 and 2 with additional requirements to (1) ensure the plans are designed to implement BPTC to minimize degradation and address exceedances of water quality objectives, and (2) develop individual water quality management plans where regional plans have been ineffective.

The Draft Staff Report makes an improper presumption that all irrigated agriculture creates a discharge of waste, In Appendix D the Surface Water Quality Management Plan (SWQMP) requirements fail to account for the possibility that irrigated agriculture may not be the predominant source of the identified exceedances as we discovered after spending a huge amount of our members dollars on surface water quality monitoring. As general qualification, the SWQMP requirements should state that only if irrigated agriculture is identified as the predominant source of the pollutant discharge should the Surface and Groundwater Quality Management Plan be required. There is a real possibility that inputs from other point and non-point sources are contributing to the exceedances identified at monitoring sites, as we discovered when there have been PH, DO and an EColi exeedance (the ONLY exceedances ever identified in all of our monitoring) and have NEVER proven to be from an agricultural source. 44-11

Topic: Tiers
CVRWQCB Staff Recommendation: Establish geographically based tiering system to reduce costs for lower threat areas.

While we support the Tiered approach, we have many questions about it's actual implementation. It appears that staff is recommending that there must be landowner level, site specific information submitted for Tier 1 to be applied. This will not be a lessening of work load and cost, but a significant increase. For example, what is the definition of High Priority Surface or Ground Water? Does the definition automatically place NECWA into Tier 2, until we can prove otherwise? Do 303d listed waterbodies automatically place NECWA into Tier 2, and if so, can we ever prove otherwise and get ourselves back to Tier 1? 44-12

The iterative process shown in Figure 21 is intended, over time, to bring all water bodies accepting agricultural wastes into compliance with water quality objectives (where agriculture is the source of exceedance) and evaluate and prevent degradation. NECWA would point out our lack of exceedances and urge the Board and Staff to place our region and other watershed areas like us, covered by a coalition, into Tier 1.

Topic: Tier 1 and Optional Certified FWQMP. NECWA believes as the Staff Alternative is currently written, it appears the only way to be in Tier 1 is by using the individual FWQMP approach. As we mentioned above, this approach will be highly burdensome and highly costly to our individual members and our coalition as a whole.

5 NECWA ILRP PEIR Comments

Topic: Enrollment and Transparency Requirements

As described in Section IX.B, enforcement of program requirements can be difficult in the third-party framework. This is because the Board cannot enforce program requirements directly upon the third party; rather, enforcement must be conducted directly upon the irrigated agricultural operations. There may be cases where the individual operations may be unaware of third-party non-compliance, and also unaware of program requirements. This potential problem is mitigated in the recommended ILRP by (1) requiring individual operations to enroll directly with the Central Valley Water Board so that they are aware of the program and requirements, (2) requiring that third-party groups provide the Board with information regarding non-compliant operations, and (3) requiring that third-party groups provide transparency and communication of requirements with growers.

44-13

NECWA would reiterate that Board Staff and the Board should maintain the enforcement component. We would agree that (3) is a good concept and we could provide the Board with the information we send to our members regarding compliance with the program.

In summary, we urge the Board to accept Alternative 2 and ensure that a Tiered approach that utilizes prioritization on problem areas, allowing for a lessened burden onto regions that are low to no negative impact.

44-14

Thank you for accepting our comments.

Sincerely,

Roderick McArthur, Vice President

North Eastern California Water Association
PO Box 367
McArthur, CA 96056

Cc: Katherine Hart, Chair
Pamela Creedon, Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive
Rancho Cordova, CA 95670-6114

3.3.17.1 Responses to Letter 44

44-1

See Master Responses 3 and 4.

44-2

The Central Valley Water Board recognizes the support of three of the ILRP goals as well as a tiered program that focuses most resources on higher priority areas and will consider the support for this approach in development of the Long-term ILRP.

44-3

The support for Alternative 2, tiered systems, and suggestions for data sources will be considered in the development of the Long-term ILRP**.**

The priority systems described in Alternatives 2, 4, and 6 are intended to help reduce ILRP costs for areas/operations that do not have water quality problems. Under each of these alternatives, existing water quality data would be considered as part of the prioritization process. Data sources would include the current ILRP and data collected under other programs; such as the surface water ambient monitoring program (SWAMP), DPR, local groundwater management plan data, and other sources. Because there would be high costs involved with monitoring of all waters receiving agricultural waste discharges, the ILRP must consider data collected under other programs. The comment's concern that data from other programs should not be used may lead to much higher monitoring costs in order to provide a reasonable measure of effects of agricultural waste discharges. Also, structuring the ILRP without utilization of existing programs and data is in direct conflict with the program goals and objectives (see Draft PEIR, Appendix A, pages 92 and 93).

44-4

See Comment Letter 123, Response 9; Comment Letter 47, Response 6; and Comment Letter 104, Response 73. Also see Master Response 5.

44-5

See Master Responses 7 and 17. Also, regarding tiering regulations, see Comment Letter 47, Response 2.

44-6

See Comment Letter 111, Response 5.

44-7

The Central Valley Water Board recognizes that there are differences among individual growers in the amount of flexibility they have to respond to the ILRP. These concerns will be considered in the development of the Long-term ILRP.

44-8

See Comment Letter 48, Response 2.

Under Alternative 6, third-party groups and the Central Valley Water Board would identify low and high-priority areas in the development of watershed/area/commodity specific implementation mechanisms during the 3-year transition period. The Central Valley Water Board intends to use existing information in this prioritization. However, the program would have the flexibility to allow third-party groups and other interested parties to provide additional information during the process.

Tier 1 requirements would be applicable in low-priority areas. The Tier 1 groundwater monitoring requirement is for growers to participate in a regional groundwater monitoring program one year every 5 years. Additional monitoring may be required where monitoring identifies a water quality concern.

44-9

The support for developing waivers of waste discharge requirements for low priority areas, as described by Alternative 6, will continue to be considered in the development of the Long-term ILRP.

44-10

Alternatives 1, 2, and 6 include the third-party lead entity structure recommended by the comment. The Central Valley Water Board would work directly with agricultural operations in Alternatives 3 and 5. Alternative 4 proposes that the Board would work directly with operators unless a legal entity assumes responsibility for a group of operators. The commenter's support for the third-party framework described in Alternative 2, along with increased Board enforcement on non-participants, will be considered in the development of the Long-term ILRP.

44-11

See Comment Letter 10, Response 1 and Comment Letter 41, Response 23.

44-12

See Comment Letter 97, Response 6 and Comment Letter 47, Response 6.

See Comment Letter 47, Response 2.

The individual FWQMP approach is one option for operations to be considered Tier 1. However, the tier system allows characterization of geographic areas as Tier 1 based on Priority Factors (Draft PEIR, Appendix A, pages 150–151).

44-13

The support for the proposed requirements will be considered in the development of the Long-term ILRP.

44-14

The comment support for the selection of Alternative 2 will be considered in the development of the Long-term ILRP.

The tier system described in Alternative 6 is intended to work in the way this comment describes. In geographic areas that do not have water quality problems, reduced monitoring and management requirements would apply. Areas with water quality problems, where agriculture is contributes to the problem, would have additional monitoring and management requirements intended to address and monitor progress toward solving the water quality concern.

3.3.18 Letter 97—Northern California Water Association/ Sacramento Valley Water Quality Coalition, Bruce Houdesheldt, Director, Regulatory Affairs

Comment Letter IL97

SVWQC

September 24, 2010

ILRP Comments
Ms. Megan Smith
630 K Street
Sacramento, California 95814

RE: ***Comments on Long Term Irrigated Lands Regulatory Program Programmatic Environmental Impact Report (PEIR), Recommended Program Alternative (Program), and Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program (Economic Analysis)***

Dear Ms Smith:

On behalf of the 8000 plus members of the Sacramento Valley Water Quality Coalition (SVWQC) with over 1.2 million acres of irrigated lands enrolled in the Coalition Conditional Waiver of Waste Discharge, the following comments, questions and suggestions are made on the *Programmatic Environmental Impact Report (PEIR), Recommended Program Alternative (Program), and Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program (Economic Analysis)* released on July 28, 2010. Let me start by expressing the SVWQC's appreciation for the opportunity provided by the Regional Board to participate in the year-long stakeholder process. This allowed for discussion of important water quality issues, interpretation of policies (e.g. Tributary Rule, anti-degradation), presentation of data and modeling on key constituents of concern and to develop the range of alternatives. The SVWQC and many of its subwatersheds leaders participated actively in that process.

This type of process allowed Regional Board staff and stakeholders the opportunity to dialog in depth on important elements of the current program, benefiting not only staff, and the regulated community, but the ultimate decision makers, the Regional Board. 97-1

At first glance the Regional Board staff appears to have crafted a document that recommends ***Best-Performing Program Elements*** (Page 136-142) which are responsive to comments and concerns made by the agricultural and water quality coalition stakeholders during both the year long stakeholder process as well as during review of the two iterations of the straw proposals earlier this year. An opportunity we also appreciate the Regional Board staff under your direction undertaking.

Elements recommended by staff and highlighted as follows, are responsive to the flexibility SVWQC believes is important in the current program and any future iteration:

Implementation Mechanism (Page 138) - *Recommendation: A series of area-, geographically based, or commodity-based implementation mechanisms with prioritized requirements. Implementation mechanisms could include waivers in low-priority areas* (emphasis added) *and general WDRs in high-priority areas. Individual WDRS could be developed and implemented as an enforcement tool.* 97-2

Lead Entity (Page 138) - *Recommendation: Third-party structure established in Alternative 1 and 2 (Coalition model) with additional structure and third-party transparency requirements.* The SVWQC already meets many of the transparency requirements. 97-3

Program Organization (Page 139) – *Recommendation: Establish geographically based tiering system to reduce costs to low threat areas.* 97-4

Water Quality Management Plans (Page 140) - Recommendation: *Regional water quality plans similar to those described in Alternatives 1 and 2 with additional requirements to (1) ensure the plans are designed to implement BPTC (best practicable treatment and control) to minimize degradation and address exceedances of water quality objectives, and (2) develop individual water quality management plans where regional plans have been ineffective (emphasis added).* 97-5

However, the ***Recommended Long-Term Irrigated Lands Regulatory Program (Program)*** paints in some cases an entirely different, confusing and/ or conflicting picture of compliance, leaves our members with the feeling that the regulatory proposal lacks flexibility we were lead to believe, and will cost growers exponentially more. For example, staff has recommended Tier 1 and Tier 2 areas, with Tier 1 being low threat areas. However, at the bottom of Page 151 is the following 97-6

"Examples of high-priority areas for surface water would be those under SQMPs (Surface water Quality Management Plans) in the current ILRP (where irrigated agricultural operations are a source of the water quality concern). Area priority may be re-classified by the Central Valley Water Board based on review of new information collected during program implementation (see feedback loop in Figure 22)." 97-7

This leaves the impression that everyone starts in Tier 2 and with justification can move to Tier 1. In the SVWQC we have 54 management plans that are related to E. coli, Dissolved Oxygen and/or pH. As part of our Management Plan approved in 2009, we are in the process of source identification, management practice surveys, and if agriculture is the source, establishing goals and a schedule implementation of additional management practices to address the exceedances. However with significant sources of DO and pH from non-irrigated lands, the SVWQC members could implement management practices on every acre of irrigated ground in the Sacramento Valley and the exceedances of water quality objectives

would continue, either as a result of natural causes, or flow, or both. Given the State Water Resources Control Board's recent adoption of a Delta Flow Report that threatens to dewater the farms and habitat of the Sacramento Valley and leave Shasta and Oroville Reservoirs at dead pool levels for longer periods of the year and more frequent years, the challenges of meeting these water quality objectives only increases.

There needs to be clearer prioritization. Perhaps if AWEP/EQIP, Prop 84/50 or other sources of funding are in place or about to granted to address the Management Plan issues, these areas would be viewed as having an "action plan" to improve water quality and categorized as Tier 1.

97-7 cont'd

The following comments augment comments submitted on behalf of the Sacramento Valley Water Quality Coalition, several agricultural organizations and other water quality coalitions, by Teresa Dunham, Esq., are organized by the specific document (PEIR, Staff Report, Economic Analysis, etc.) and include recommended changes where appropriate.

I. Draft Programmatic Environmental Impact Report (DPEIR)

General Comment: The DPEIR does not analysis the Recommended Program Alternative (Program). The PEIR analyzes five proposed alternatives. Staff has combined elements of many of these alternatives to develop a sixth alternative, which staff is now recommending for approval. As the recommended alternative, the staff-developed alternative has become the proposed project. However, the Draft PEIR does not analyze this project at all.

97-8

Section 5.6 Climate Change: The DPEIR provides a narrative of the greenhouse gas inventories and impacts related to operation of well pumps, but do not take into account any carbon sequestration as an offset to air quality or climate change impacts from crop production.

97-9

II. Staff Report and Recommended Program Alternative (Program)

Surface and groundwater quality is vital to success of irrigated agriculture. Sacramento Valley growers are active stewards of this vital resource, as the number of acres in management practices, active participation of the Resource Conservation Districts, Farm Bureaus, and Agricultural Commissioners in our area, and the water quality results indicate.

The Recommended Program Alternative (Program) for the Long Term Irrigated Lands Regulatory Program represents a significant expansion of the programmatic requirements on family farmers, placing increased cost burdens on Sacramento Valley agriculture that are disproportional to the water quality monitoring results we have recorded for the last five years and stewardship practices exhibited by our growers to protect water quality.

97-10

Megan Smith, Comments on Long Term Irrigated Lands Recommended Program
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A. **All Areas Classified As Tier 2 (High Impact)** – (Page 151) Despite assurances to the contrary our reading of sections like this in the Program

> "Examples of high-priority areas for surface water would be those under SQMPs in the current ILRP (where irrigated agricultural operations are a source of the water quality concern). Area priority may be re-classified by the Central Valley Water Board based on review of new information collected during program implementation (see feedback loop in Figure 22)."

97-11

Lead us to believe that irrigated agriculture would be classified as a Tier 2 (high threat) area if it is required to have a Management Plan under the current Irrigated Lands Program. Surface Water Quality Management Plans are required when 2 or more exceedances occur at a specific monitoring in a three year period. Currently the SVWQC has 54 Management Plan requirements related to DO and pH, and E. coli and seven related to pesticides.

In these instances irrigated agriculture could implement management practices on every acre and there would still be violations of DO and pH because of inputs from natural causes.

Figure 23. Long – Term ILRP Prioritization Scheme Example – (*Page 161)* This exposes the fact that very few if any areas will be Tier 1. In the portion of the diagram marked "Area A" it refers to exceedances without distinguishing if these are irrigated agricultural related exceedances, which trigger management plan requirements, as it does in the "Area B" diagram. It simply says "Surface Water Objectives exceeded" and "trending degradation of surface water attributable to ". Under this scenario an E. coli exceedance in surface water that has been determined to come from a wastewater treatment plant or non-irrigated agricultural sources would still fall under Tier 2.

97-12

Recommendations: There needs to be some better prioritization of constituents of concern.

It is requested that the language be eliminated that automatically places an area in Tier 2 if you have a Surface Water Quality Management Plans for E. coli, DO and pH in the Sacramento Valley. Additionally if AWEP/EQIP, Prop 84/50 funding is in place or about to granted, an area would be viewed as having an "action plan" to address the water quality exceedance and be classified as Tier 1 (low impact).

Figure 23 needs to refer to exceedances that are associated with irrigated agriculture, not as it does now "surface water quality exceedances. . ."

97-13

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B. **Prioritization of Surface Water Quality Issues and Groundwater Quality Issues** (Pages 159- 160)
The relationship between the prioritization of water quality issues and the *Priority Factors* (Pages 150-151) is unclear. Specifically if you have a management practice in place that is protective of water quality do you become a Tier 1 area?

Which water bodies are considered priority?— streams tributary to water bodies in the Basin Plan with aquatic life uses based on the "tributary rule", tributary streams with identified municipal or domestic drinking water intakes; water bodies

97-14

Comment: Again aquatic life beneficial use includes DO, pH, and temperature as constituents of concern. Irrigated agriculture's ability to address this issue is limited. Also the tributary rule may potentially expand the number of water bodies beyond what should be a priority. Legacy OC Pesticides are a constituent of concern for human consumption beneficial use. Since existing background levels of Legacy OC Pesticides exist in the sediment almost 40 years after it was banned, detections and exceedances of water quality objectives will exist without a contribution from irrigated agriculture.

Recommendation: Eliminate or lower the priority of DO, pH, temperature and Legacy OC Pesticides as criteria for establishing a waterbody as a priority.

C. **Priority Groundwater Quality Issues** (Page 160)

Comment: The Regional Board has developed two important policies protective of groundwater quality. The first is its "Groundwater Quality Protection Strategy: A Roadmap for the Central Valley Region" and secondly, the alternatives for the Long-Term Irrigated Lands Regulatory Program (ILRP). The SVWQC are very committed to protecting and improving groundwater quality. To be clear, most landowners who irrigate their lands use groundwater in some manner and therefore have a vested interest in either maintaining or improving the quality of groundwater in their area. With this in mind, the SVWQC believes the following approach will help the Regional Board more effectively utilize its authorities to protect groundwater while providing a sound approach for farmers, ranchers and wetlands managers to address groundwater quality.

97-15

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As the Department of Water Resources (DWR) Bulletin 118 (2003 Update) states about the Sacramento Valley Hydrological Region:

"Groundwater quality in the Sacramento River Hydrologic Region is generally excellent. However, there are areas with local groundwater problems. Natural water quality impairments occur at the north end of the Sacramento Valley in the Redding subbasin, and along the margins of the valley and around the Sutter Buttes, where Cretaceousage marine sedimentary rocks containing brackish to saline water are near the surface. Water from the older underlying sediments mixes with the fresh water in the younger alluvial aquifer and degrades the quality.

Wells constructed in these areas typically have high TDS. Other local natural impairments are moderate levels of hydrogen sulfide in groundwater in the volcanic and geothermal areas in the western portion of the region. In the Sierra foothills, there is potential for encountering uranium and radon-bearing rock or sulfide mineral deposits containing heavy metals. Human-induced impairments are generally associated with individual septic system (emphasis added) development in shallow unconfined portions of aquifers or in fractured hard rock areas where insufficient soil depths are available to properly leach effluent before it reaches the local groundwater supply.

From 1994 through 2000, 1,356 public supply water wells were sampled in 51 of the 88 basins and subbasins in the Sacramento River HR. Samples analyzed indicate that 1,282 wells, or 95 percent, met the state primary MCLs for drinking water. Seventy-four wells, or 5 percent, have constituents that exceed one or more MCL. Figure 34 shows the percentages of each contaminant group that exceeded MCLs in the 74 wells."

97-15 cont'd

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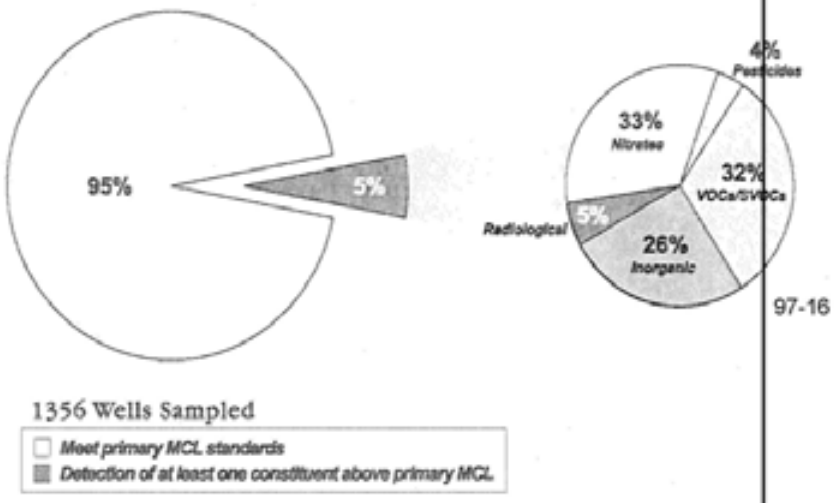
The following chart from DWR's Bulletin 118 illustrates the groundwater quality issues in the Sacramento Valley.



97-16

Figure 34 MCL exceedances in public supply wells in the Sacramento River Hydrologic Regior

Recommendations: The Regional Board has important authorities to protect groundwater quality. The Central Valley is a vast region and a strategic approach to groundwater quality will be important for these various programs to be effective and to assure that both the Regional Board and the Coalitions are utilizing their resources effectively to protect groundwater quality. To help carry out this authority, we urge the Regional Board to pursue the following:

97-15 cont'd

1. As a foundation to the ILRP, compile, analyze, and utilize existing groundwater data prior to proceeding with the adoption, regulation, and enforcement of groundwater monitoring programs within the ILRP.

- Sources of existing data that should be fully utilized include: GAMA, Department of Pesticide Regulation, CV-SALTS, Department of Public Health, and Department of Toxic Substances Control data.

- Once all sources of data are analyzed collectively, gaps in groundwater data will be identified. Such targeted identification will allow for proper determinations regarding necessary and appropriate actions to take to address groundwater monitoring.

2. Provide a report to the Board that describes the groundwater data and helps prioritize the areas in the Central Valley that have groundwater quality issues. The report, to the extent possible, should demarcate agricultural-related from urban and natural issues.

3. Work with the SWRCB to extend a comprehensive monitoring program established in Water Code §10781 until 2024 as called for in Water Code §10782(a) (1).

97-15 cont'd

D. Compliance time schedule—*5 to 10 years.* For watershed areas with multiple water body/pollutant issues to address, schedule may be staggered between 5 and 10 years, but cannot exceed 10 years.

Comment: When constituents of concern originate in nature, every management practice ag could do would not result in compliance. The Methylmercury TMDL has a longer compliance timeline.

Recommend: Eliminate compliance deadlines for DO, pH, temperature and Legacy OC Pesticides.

97-17

E. Appendix D - Surface and Ground Water Quality Management Plans

Comment: The submittal requirements in Appendix D appear to expand present requirements for management plans and add cost. Specifically ***Footnote 74***, "The intent of data verification is to provide confidence that the information being reported is accurate. This may include field visits to a subset of growers reporting their data or other methods to confirm data validity."

Recommendations:

1. A general caveat should be included in the language on each of the Elements 4-9, which states "If irrigated agriculture is identified as the predominant source . . ." then, 4. identify practices to address constituents of concern, 5. evaluate management practice effectiveness, 6. describe outreach to growers, 7. track management practice implementation, 8. monitoring plan to track changes in water quality, and 9. Describe schedule and milestones. In some instances, despite best efforts to identify monitoring sites that are representative of irrigated agriculture, inputs from other non-point sources contribute to the exceedances.

97-18

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2. Element 3 makes reference to ensuring that "all" growers are implementing practices to achieve BPTC for the parameter of concern. It might not be necessary to have "all" growers to implement practices to achieve WQOs. Recommend eliminating "all" and reference to BPTC.
3. Element 5 refers to "field studies" as an acceptable approach. Want to ensure this is not "the preferred" approach but one of a menu of approaches.
4. Footnote 74 refers to "field visits" as a method of data verification to give the Regional Board "confidence the information being reported is accurate." Again, in the SVWQC region it may only take broader implementation of management practices to improve water quality. The Regional Board might be able to improve their confidence level by compiling information available about AWEP/EQIP, Prop 50 and 84 grant funding, etc., to get a broad sense of what of management practices being implemented. It wouldn't provide specific locations, but would broaden the publics' understanding that agriculture is stewards of water quality.
5. Element 8 of the Groundwater Quality Management Plan requirements have cost implications. To track changes in water quality – which in groundwater's case may be decades before changes are realized—"The monitoring plan may need to include other sites or a different depth to groundwater (e.g. monitoring first encountered groundwater versus supply wells (emphasis added) or the frequency of sample collection. . ." Maintain regional monitoring unless there is a significant change in agricultural practices.
6. Lastly, Element 9, goals and schedules need to be reasonable. Management practices are slowly adopted and in some cases highly dependent on funding.

97-18 cont'd

F. <u>Three distinctly different timelines for developing a Groundwater Quality Management Plan</u>

<u>Page 152 2nd Paragraph under Tier 1</u> - Tier 1 it appears you have 5 years to "describe the area's existing water quality management objectives in a report to the Central Valley Water Board. Management Practices tracking, every 5 years would be the method by which the Central Valley Water Board would evaluate, in general, whether operations are continuing to meeting existing management objectives."
Low priority areas (Tier 1) described using factors on Page 150-151.

<u>Page 154 *High Priority Groundwater*</u> This section of the Program states there would be 18 months from adoption of WDR, which is 12 months after Water Board certifies Final PEIR. It is unclear, if and how the three (3) year phase-in (Page 143) would impact this timeline. See Footnote 59 which further confuses what the timeline is for submitting GWQ Management Plans where AB 3030 and SB 1938 programs exist.

97-19

Megan Smith, Comments on Long Term Irrigated Lands Recommended Program
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Page 157 3rd Paragraph- Priority Undetermined - in the 3rd paragraph it states, "Areas with insufficient information to determine prioritization would be required to complete assessment monitoring or studies with 5 years of long term program adoption." 97-19 cont'd

G. **Public involvement in the Tiering decision of an area makes the process potentially political versus technical.**

Page 151, last paragraph

"Third-party groups and the Central Valley Water Board would identify low and high-priority areas in the development of watershed/area/commodity–specific implementation mechanisms during the 3-year transition period. The Central Valley Water Board intends to use existing information in this prioritization. However, there will be the flexibility for third-party groups and other interested parties to provide additional information during the process." 97-20

See *Footnote 57* "During this process, there would be opportunity for public input.

H. **Tier 1 Regulatory Requirements are contradictory**

Comment: On *Page 152* Tier 1 requirements are described similar to the Pilot Management Practices in the SVWQC *Monitoring and Reporting Program Order R5-2009-0875*

> Under this tier, the Central Valley Water Board considers the existing level of management objectives as BPTC, and protective of surface and groundwater quality. Third-party groups are required to describe the area's existing water quality management objectives in a report to the Central Valley Water Board. Management practices tracking, every 5 years, would be the method by which the Central Valley Water Board would evaluate, in general, whether operations are continuing to meet existing management objectives. 97-21

On *Page 157* under Monitoring it states

> ***Surface Water***
> Monitoring would consist of tracking of management practices and watershed based assessment monitoring 1 year every 5 years (similar to the assessment monitoring required under the current ILRP). Monitoring and tracking results would be submitted in a report every 5 years to the Central Valley Water Board. Additional monitoring may be required where assessment monitoring identifies a water quality concern.

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Recommendation: Do not require assessment monitoring every 5 years unless there is significant increase or change in the agricultural practices. In subwatersheds with little acreage or few members monitoring, even every 5 years is expensive. 97-21 cont'd

I. **Other interested parties** (*Page 154, Paragraph 2 and 3*) –

Comment: Language here appears to open the door for negotiations on SQMP and GQMP to other parties – undefined. The SVWQC Management Plan (February 2009) and Monitoring and Reporting Program Order (December 2009) were approved by the Executive Officer and didn't not require Regional Board action or multi-party negotiations. This language also appears on Page 155, Paragraphs 1 and 2. 97-22

Recommendation: Delete reference to "other interested parties"

J. **Compliance Timelines of 5-10 years are problematic** - especially for groundwater quality and especially when constituents are legacy pesticides or the source of the constituent of concern is from non-irrigated agricultural sources. 97-23

K. **Ultimate Goal - Individual Farm Water Quality Management Plans** (*Page 155, Paragraph 3*) The Program states on the failure to meet water quality objectives will require Individual Farm Water Quality Management Plans (FWQMP) when water quality objectives are not met within approved time schedule for implementation or irrigated agriculture is not implementing requirements of Surface or Ground Water Quality Management Plans. As defined in Alternative 3 and summarized on Page 1-2 of the ***Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program (Economic Analysis)*** Individual FWQMP "regardless of whether water quality problems have been identified. 97-24

L. **Fees** (*Page 160*) – "Fees charged will be dependent on the amount of State funding allocated through legislative appropriation and the State Water Board's analysis of the level of staff effort required to implement the program. The Central Valley Water Board will recommend that the fee structure reflect the differing levels of effort for the different tiers and oversight of irrigated agricultural operations as individuals versus as part of a third-party group." 97-25

Not sure how this works, but can understand how growers are tying the SWRCB action on the Ag Waiver Fee increase in the Governor's budget with the CVRWQCB Recommended Alternative.

M. Point of Discharge - First encounter of ground water is defined as groundwater that needs to be protected even though there are areas where first encountered ground water is not and has never been usable water for drinking or agriculture use.

The assumption that the act of irrigating a crop is considered a discharger to groundwater that causes the degradation of groundwater is not provable or plausible in many areas of the State. Many areas throughout the state are irrigated and do not discharge to groundwater. 97-26

Recommendation: Eliminate this as point of compliance. Use existing water quality data to determine if discharge is impacting surface or groundwater quality.

III. Economic Analysis

As the *Economic Analysis* states on Page 1-3, ". . . a change in the underlying assumptions . . . could substantially alter the study results." There are numerous instances in the document where is incorrect or based on faulty assumptions. As just one example, information provided on "Enrolled and Total Acres. . ." Table 2-3 on Page 2-4 and Table 2-4, "Enrolled and Total Growers", which are used to determine fees in Alternatives 1-5, bear no relation to reality. For instance, Table 2-3 shows enrolled acreage of 173,438 in Butte Yuba Sutter watershed. It does not appear all acreage or crops are included in this figure, since the SVWQC reported 220,000 and 206,000 enrolled acres in 2009 and 2010. In some cases there are more enrolled growers in a watershed than estimated growers (Upper Feather Upper Yuba, Delta Mendota). 97-27

Tables 2-3 and 2-4 are just two examples of where is it difficult to determine how the results in the Economic Analysis were arrived at, leaving us to ask the question teachers for years have preached "Show your work."

Comment: The Recommended Program Alternative has not been analysis as part of the economic analysis. 97-28

Recommendation: An independent review of the Economic Analysis should be conducted.

Comment: The Central Valley Production Model (CVPM) not appropriate for Foothill areas The model is applied to too large an area. 97-29

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Page 13

Chapter 1 - Analytical Objectives and Approach

1.2 Key Study Assumptions (Page 1-3, Paragraphs 2 and 3)

"As discussed further in Chapter 3, the model assumes that growers will react to increased costs and other compliance requirements by adjusting crop production as needed to maximize net income and stay in business. Results from the Central Valley were extrapolated to affected areas in the foothills and upper watersheds.

"It is likely; however, that growers will find or develop less expensive ways to modify their production practices, and therefore direct impacts on their revenues and production would be less than those estimated in Chapter 3."

97-30

Comment: This seems to be a generalized statement that doesn't take into account Associated start up costs (seed, field preparation) in order to modify. Orchards for instance would not have the flexibility presumed here.

Forward linked effects understated. "Because Regional economic analysis results presented in Chapter 4 do not include forward linked effects, total regional impacts are understated."

97-31

Comment: Regional Board should provide estimate of understated impacts, as this makes validity of results otherwise suspect.

Page 1-4, Paragraph 2

"Results of the farm income analysis in Chapter 3 indicated that other crops would not be as affected as those linked to the livestock sector, so the forward-linked effects would also be smaller. Nevertheless, the exclusion of these additional forward-linked effects understates the total regional economic impacts of the Program alternatives".

97-32

Comment: We disagree that forward-linked effects of other crops would be smaller. Wine grapes for example have significant forward-linked effects. As the text points out forward-linked effects are understated. Several examples of forward-linked effects that could be included are agrotourism, food processing (e.g. tomato processing), and retail sales of wine from local vineyards.

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Chapter 2 - Compliance and Management Practice Costs

2.2.1.3 Acreage and Grower Data (Page 2-3)

"The Central Valley Water Board provided information on the number of enrolled growers by watershed (Table 2-4). Enrolled growers are those currently enrolled in the Board's program and are derived from the management plan acreage. Estimated growers are based on the total acreage in the ECR watersheds. Enrolled growers were used to determine fees in Alternative 1. The estimated growers were used to estimate fees for Alternatives 2–5."

97-33

Comment: As mentioned previously this information is significantly flawed and the Regional Board should correct the information and recalculate impacts.

2.3.1 When and Where Water Quality Management Practices Are Applied (Page 2-6)

"Water quality management practices are applied when there are documented COCs (Figure 2-1, Table 2-5). The practices applied for pesticides were based on the constituent's use by crop type (Footprint 2010; PAN 2010)."

97-34

Comment: The Regional Board should use objective sources of information. The use of the Pesticide Action Network (PAN) as source is inappropriate when objective sources exist.

2.3.2 Water Quality Management Practice Cost Calculations (Page 2-14)

"In the watersheds without COCs the only practices considered are nutrient management and water management, but only if there are acres that are vulnerable to leaching."

97-35

Comment: Why is nutrient management practices considered in areas without constituents of concern? These are costs to growers and producers that bear no relationship to need.

Megan Smith, Comments on Long Term Irrigated Lands Recommended Program
September 24, 2010
Page 15

2.4.1.1 Monitoring Costs (Page 2-17)

"The alternatives have two types of sampling: basic, which covers nitrate and electrical conductivity, and comprehensive, which covers other constituents such as organic compounds and native elements such as boron or selenium. Sampling location and frequency depend on the alternative." 97-36

Comment: Are these sampling types reflective of the Monitoring and Reporting Program Order requirements on Coalitions? If not, this understates costs.

Table 2-10. Surface and Groundwater Monitoring Cost Breakdown for Use in All Alternatives 97-37

Comment: The frequency of sampling in this table significantly understates costs. In much of the Sacramento Valley Water Quality Coalition area, we sample 8-12 times a year for field parameters and constituents of concern.

Table 2-11. Estimated Cost per Acre for Current Program (Page 2-20)

DRAFT Estimated Current Annual Cost for Compliance Actions Average $/acre
State Board Ag Waiver **Fees $0.15** 97-38

Comment: The current fee is $0.12/acre

"Surface water or groundwater characterization is necessary to meet the Tier 1 requirements under Alternative 4. Using the Natural Resource Conservation Service (NRCS) time estimates (NRCS 2010), it was assumed that each review would result in a one-time cost of $2,500 (Table 2-13) for evaluation **plus testing for water quality.** These costs are applied on a per-grower basis. Therefore, a grower who needed to conduct a site-specific evaluation of both surface water and groundwater would be required to spend $5,000 in addition to costs for water quality testing." 97-39

Comment: This example of how the Recommended Program Alternative could have a disproportional impact on small farming operations and low value crops. These costs are per grower regardless of size of property. Why would additional testing be required if a grower has an approved farm water quality management plan?

Megan Smith, Comments on Long Term Irrigated Lands Recommended Program
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Page 16

2.5 Water Quality Management Practices and Other Compliance Costs, by Alternative

Tables 2-19 thru 2- 22 under report actual costs

Comment: The Regional Board estimates in the PEIR that their costs to administer the program will range from approximately $4,000,000 to $66,000,000 depending on the alternative selected. Upwards of 97% of these costs would be funded by agriculture thru acreage fees assessed by the Regional Board. But these costs are footnotes to the tables and not factored into Total Compliance Costs. 97-40

Comment: In Tables 2-18 thru 2-22 are costs annual or one time. Our estimate is the cost of compliance is $13,000 per landowner, but not sure if that is a one time or annual cost.

Table 2-19. Costs by Hydrologic Basin for Alternative 2 – Third-Party Lead Entity (Page 2-25) 97-41

Comment: Growers fees increase to $548,227, what is this based on?
How was Groundwater Reporting to Third Party of $1,080,996 determined?

Table 2-20. Costs by Hydrologic Basin for Alternative 3 – Individual Farm Water Quality Management Plans (Page 2-25) 97-42

Comment: Why is there $11,874,774 Monitoring Cost for this Alternative?

We look forward to your response to the SVWQC's comments.

Sincerely,

Bruce Houdesheldt
Director, Regulatory Affairs
Northern California Water Association/Sacramento Valley Water Quality Coalition

Cc: Pamela Creedon Joe Karkoski Adam Laputz

3.3.18.1 Responses to Letter 97

97-1

See Comment Letter 41, Response 1.

97-2

See Comment Letter 41, Response 9.

97-3

See Comment Letter 41, Response 10.

97-4

The support for a geographically based tier system will be considered in the development of the Long-term ILRP.

97-5

The support for regional water quality plans will be considered in the development of the Long-term ILRP.

97-6

The comment's concern that all irrigated agriculture would automatically be in Tier 2 areas is not the intent of Alternative 6. The tier system is intended to allow the Central Valley Water Board and agriculture operations to focus their limited resources in areas with water quality concerns. The quoted example indicates that areas under surface water quality management plans in the current program would be high priority, or Tier 2, under Alternative 6, as long as irrigated agricultural operations are a contributing source of the water quality concern. Where agricultural operations are not a source of the water quality concern, these areas would not be considered Tier 2.

Continued development of the Long-term ILRP's implementing mechanisms will include expansion of "tier" definitions to clarify their applicability across watersheds and groundwater aquifers.

Also see Comment Letter 102, Response 10.

97-7

See Comment Letter 97, Response 6; Comment Letter 52, Response 6; and Comment Letter 41, Response 14.

97-8

See Master Responses 3 and 4.

97-9

See Master Response 15.

97-10

See Comment Letter 95, Responses 2 and 7 and Master Response 12.

Also see Comment Letter 52, Response 6; Comment Letter 46, Response 4; and Comment Letter 87, Response 4.

97-11

See Comment Letter 41, Response 10 and Comment Letter 52, Response 6.

97-12

See Comment Letter 1, Response 23.

See Comment Letter 52, Response 6.

See Comment Letter 41, Response 14.

97-13

See Comment Letter 123, Response23. See Chapter 4, Revisions to the Draft Program Environmental Impact Report, page 4-31 in this Final PEIR.

97-14

See Comment Letter 10, Response 3 and Comment Letter 52, Response 6.

97-15

See Comment Letter 96, Response 11; Comment Letter 50, Response 14; Comment Letter 45, Response 20; Comment Letter 111, Response 24; and Comment Letter 61, Response 3.

97-16

No response needed.

97-17

See Master Response 13.

97-18

See Comment Letter 41, Response 23.

97-19

See Comment Letter 41, Response 24.

97-20

See Comment Letter 1, Response 48.

97-21

See Comment Letter 123, Response 3.

97-22

See Comment Letter 1, Response 48.

97-23

See Master Response 13.

97-24

See Comment Letter 41, Response 29.

97-25

Comment noted.

97-26

See Master Responses 18 and 12.

97-27

See Master Response 17.

97-28

See Master Response 17.

97-29

See Master Response 17.

97-30

See Master Responses 7 and 17.

97-31

See Master Response 17.

97-32

See Master Response 17.

97-33

See Master Response 17 and Comment Letter 111, Response 5.

97-34

See Master Response 17 and Comment Letter 111, Response 5.

97-35

See Master Response 12 and 17.

97-36

See Master Response 17.

97-37

See Master Response 17.

97-38

The current State Water Board Agricultural Waiver fees are $0.12 per acre. See Master Response 17.

97-39

This comment will be considered in development of the Long-term ILRP.

97-40

See Comment Letter 41, Response 45.

97-41

See Master Response 17.

97-42

See Master Response 17.

3.3.19 Letter 115—Pacific Institute, Eli Moore, Senior Research Associate, Eyal Matalon, and Matt Heberger

Comment Letter IL115

PACIFIC INSTITUTE

Via Electronic Mail

ILRP Comments
Ms. Megan Smith
630 K Street, Suite 400
Sacramento, CA 95814

Re: Comments on the Central Valley Regional Water Quality Control Board's Staff-Recommended Long-Term Irrigated Lands Regulatory Program and Draft Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program

September 27, 2010

Dear Ms. Smith:

We commend the State Water Board and staff for developing alternatives to the Irrigated Land Regulatory Program and are excited to see potential solutions to address a key source of the significant environmental health problem of nitrate contamination of ground water.

We are pleased to submit the enclosed comments pertaining to the Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program. Pacific Institute is currently conducting primary and secondary research on the health, social and economic effects of nitrate contamination of drinking water in the San Joaquin Valley. Our comments draw from this research and the nearly 25 years of previous work on water issues in California.

By modifying the Irrigated Lands Regulatory Program, the Board can take a major step forward toward addressing a persistent and detrimental problem affecting our state: nitrate contamination of drinking water. Nitrate contamination of ground water drawn by

115-1

private and public water systems currently adds significant expenses to already strapped water boards, local and state agencies, private well owners, and consumers. According to an analysis of public water system monitoring data by Balazs (2009), there were 93 systems in the San Joaquin Valley serving 1.3 million consumers that had nitrate levels above the MCL during at least one quarter between 2005 and 2008 (see Appendix 1). The Groundwater Ambient Monitoring and Assessment Program estimates that 10% of the 600,000 private domestic wells in the state are also above the legal limit for nitrates, affecting another 169,000 residents.[1]

Studies have found exposure to nitrates to result in serious illness and death, including significant increased risk of: neural tube defects, premature birth, intrauterine growth restriction, anencephaly, increased methemoglobin levels causing pregnancy complications, central nervous system birth defects, and congenital malformations.[2] Nitrate exposure at excess levels can cause methemoglobinemia, also known as "blue baby syndrome", a cause of illness and death in infants. Additional known or suspected health effects include: respiratory tract infections in children, thyroid disruption, pancreatitis, sudden infant death syndrome (SIDS), and cancers of the digestive system.[3]

115-1 cont'd

Because California has no systematic monitoring of run-off and ground water quality, it is difficult to estimate the extent of nitrate contamination attributable to agricultural activities. However, several studies point to a widespread and severe problem with nitrate contamination from agricultural sources. UC Davis researcher Thomas Harter analyzed the use of fertilizers on California farms in 2007 and estimated that on average more than 80 lbs N/acre/year may leach into the groundwater beneath irrigated lands, usually as nitrate.[4] Harter concludes that "without attenuation, 80 lbs N/acre/year would lead to groundwater NO3-N concentrations at the water table that are two to four times higher than the MCL." Even though subsurface attenuation does occur in some areas, this is a remarkably high amount of unabsorbed nitrate released on irrigated lands.

General Comments on the Economic Analysis of the ILRP

The current draft Economic Analysis ignores several categories of costs and underestimates others, producing an artificially low finding of overall economic impact. Revisions to the analytical approach and the use of additional data sources can remedy this. Methods for the revised approach can be adapted from previous studies by the U.S. EPA, the USDA, and leading scientists.

115-2

[1] State Water Resources Board, Groundwater Ambient Monitoring & Assessment Program (2010). *Summary of Detections Above a Drinking Water Standard, GAMA Domestic Well Project*. Accessed on September 20, 2010 from http://www.swrcb.ca.gov/gama/domestic_well.shtml

[2] Manassaram, Deana M., Lorraine C. Backer, and Deborah M. Moll (2006) A Review of Nitrates in Drinking Water: Maternal Exposure and Adverse Reproductive and Developmental Outcomes in *Environ Health Perspectives*, 114:320–327. doi:10.1289/ehp.8407 available via http://dx.doi.org/ [Online 3 November 2005]

[3] Various, see for example Ward, Mary H., Theo M. deKok, Patrick Levallois, Jean Brender, Gabriel Gulis, Bernard T. Nolan, James VanDerslice (2005) Workgroup Report: Drinking-Water Nitrate and Health-Recent Findings and Research Needs. *Environmental Health Perspectives*, Vol. 113, No. 11 (Nov., 2005), pp. 1607-1614.

[4] Harter, Thomas (2009) Agricultural Impacts on Groundwater Nitrate. *Southwest Hydrology*, volume 8, number 4.

In this letter we provide a preliminary analysis of the costs to domestic well owners, public water systems, and water consumers using available data. With this analysis, we find that, currently, the total estimated costs for these three impacted stakeholders are between $40,169,276 and $89,600,723 (See Table 1). We also analyze trends in nitrate levels in monitored wells in Kern County, and find that levels are increasing in a third of locations, and the number of wells where nitrate levels exceed federal health standards is likely to double in the next ten years.

115-2 cont'd

Table 4. Additional Cost Estimates for ILRP

115-3

	Cost estimate		Number of systems/projects			Cost per project		
	Low range	**High range**	**Low**	**High**	**Notes**	**Low**	**High**	**Notes**
Public drinking water systems	$24,000,000	$60,000,000	60		Source: 2007 Compliance Reports (considered low because they are known to under-report.	$400,000	$1,000,000	Source: Paul Boyer, Self-help Enterprises
Domestic well owners	$5,615,734	$12,011,486	16,713	16,713	Assuming 10% of wells are above MCL (GAMA), and 60% of those have agriculture as a source of contamination.	$336	$719	Low range source: Culligan (2010); High range source: EPA (2002)
Users of public water systems	$10,553,542	$17,589,237	161,074	268,456		$65.52		Source: Pacific Institute Nitrate Survey (2010)
TOTAL	**$40,169,276**	**$89,600,723**						

It should be noted that, even with our proposed revisions to the economic analysis, a lack of data will continue to severely limit the economic impact assessment. As the Technical Memo makes clear, much of the data necessary for understanding the economic impact of the current program and proposed alternatives is not available. Monitoring of ground water quality in California is neither systematic nor comprehensive, making the extent of contamination and the identification of sources extremely difficult. Ironically, this is in part due to the current regulations under the ILRP. In a strange twist, we observe that only if an ILRP alternative were implemented would there be some of the data needed to analyze the full costs of the current program.

115-2 cont'd

Chapter 1, Analytical Objectives and Approach

115-4

To fully assess the costs of the current ILRP and proposed alternatives, the analytical approach of the Economic Analysis must include several key costs, including the costs to all affected public drinking water systems, drinking water consumers, and private well owners. A rich literature has documented the range of potential costs. The USDA report, *The Benefits of Protecting Rural Water Quality, An Empirical Analysis*, provides a succinct summary of the types of benefits from improving rural water quality (see Table 2).

115-4 cont'd

Table 2. Types of benefits from improving rural water quality[5]

Use Value	In-stream services	Recreational uses, such as swimming, boating, and fishing. Commercial/municipal uses, such as fishing, navigation, and water storage facilities.
	Consumptive services	Drinking water from municipal water systems and private wells. Irrigation and other agricultural uses.
	Aesthetic value	Near-water recreation, such as picnicking and sightseeing. Property value enhancement.
	Ecosystem value	Preservation of wildlife habitat and promotion of ecosystem diversity.
Nonuse Value	Vicarious consumption	Value place on enhanced use of clean water by others.
	Option value	Desire to preserve opportunity to enjoy clean water at some future time.
	Stewardship value	Protection of environmental quality and desire to improve water quality for future generations.

115-5

The analytical approach in the ILRP Technical Memo focuses solely on the costs to Growers and Land Owners, and Administrative Costs of the Program. While an assessment of each of the above types of benefits as they relate to the ILRP may not be necessary, we urge staff to at least integrate the costs related to *consumptive services, given the profound implications for public health and quality of life of millions of California residents impacted by this program*. To do so, the analytical approach should be revised to include the following question: *What are the costs to water system operators, well owners and drinking water consumers due to agricultural activities potentially*

115-4 cont'd

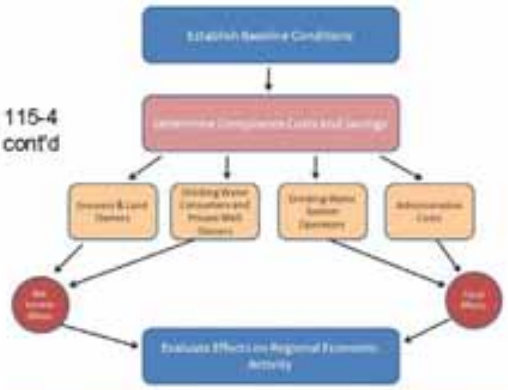

Figure 1. Suggested Revision to Economic Analysis Approach to the Irrigated Lands Regulatory Program

115-6

[5] United States Department of Agriculture Economic Research Service (1995). *The Benefits of Protecting Rural Water Quality, An Empirical Analysis*. Accessed September 20, 2010 from http://www.ers.usda.gov/Publications/AER701/.

regulated under long-term ILRP alternatives?

Addressing this question would allow staff to estimate savings associated with ILRP alternatives, such as the potential savings to drinking water systems no longer having to invest in nitrate mitigation. These savings are both fiscal, such as in the case of grants made by the California Department of Public Health to mitigate nitrate contamination of ground water, and they are economic, such as the case of consumers with unsafe drinking who may no longer have to purchase bottled water in addition to paying flat fees for tap water. Figure 1 here represents a revised version of the diagram of the analytical approach to the economic analysis on page 1-1.

115-4 cont'd

This approach to assessing costs and benefits was undertaken in the 2002 U.S. EPA analysis, *The Benefits of Reducing Nitrate Contamination in Private Domestic Wells Under CAFO Regulatory Options.* For each regulatory option being considered, the EPA reported the Expected Reductions in Number of Households with Well Nitrate Concentrations above 10 mg/L. In this case, staff used existing research on Willingness to Pay for such drinking water quality improvements to estimate the economic benefit to these households.[6] In the following section we adapt this methodology to estimate the costs of the ILRP to drinking water consumers.

ILRP Costs to Domestic Well Owners

According to the Groundwater Ambient Monitoring & Assessment Program, there are an estimated 600,000 private domestic wells in California and 10 percent of those tested have nitrate levels above the legal limit.[7] According to the USGS, there is a population of 813,390 in Central Valley counties who rely on domestic wells (See Table 3).[8] The percentage of wells contaminated per county in the Central Valley ranged widely, from less than 1% in Tehama to 40% of those tested in Tulare County. The extent to which contamination originates from agricultural run-off is not known, in part due to a lack of systematic monitoring of run-off and ground water quality. Most researchers agree that agriculture is the leading source of nitrate contamination of ground water in the Central Valley.[9]

115-7

Table 3. Population Served by Domestic Wells in Central Valley Counties

County	Total Population	Population served by domestic wells	As percentage of total population
Butte	203,170	38,400	19%

115-8

[6] U.S. EPA (2002) *The Benefits of Reducing Nitrate Contamination in Private Domestic Wells Under CAFO Regulatory Options.* Accessed online September 20, 2010 from http://www.epa.gov/npdes/pubs/cafo_benefit_nitrate.pdf.

[7] State Water Resources Board, Groundwater Ambient Monitoring & Assessment Program (2010). *Summary of Detections Above a Drinking Water Standard, GAMA Domestic Well Project.* Accessed on September 20, 2010 from http://www.swrcb.ca.gov/gama/domestic_well.shtml

[8] USGS (2000) Estimated Use of Water in the United States County-Level Data for 2000. Online at http://water.usgs.gov/watuse/data/2000/index.html

[9] United States Geological Survey (1995) *Water Quality in the San Joaquin-Tulare Basins, California, 1992-95.* Accessed on September 20, 2010 from http://pubs.usgs.gov/circ/circ1159/sec6.html

Colusa	18,800	7,060	38%
Fresno	799,410	41,730	5%
Glenn	26,450	12,260	46%
Kern	661,650	76,050	11%
Kings	129,460	20,990	16%
Madera	123,110	49,070	40%
Merced	210,550	53,140	25%
Placer	248,400	25,920	10%
Sacramento	1,223,500	64,030	5%
San Joaquin	563,600	102,340	18%
Shasta	163,260	25,560	16%
Stanislaus	447,000	85,170	19%
Sutter	78,930	21,310	27%
Tehama	56,040	32,590	58%
Tulare	368,020	103,420	28%
Yolo	168,660	33,460	20%
Yuba	60,220	20,890	35%
TOTAL	**5,550,230**	**813,390**	**15%**

115-8 cont'd

The cost of ensuring safe drinking water to the users of these wells must cover strategies for reducing nitrate levels or accessing an alternative water source. This may include installing treatment technology or a filter, drilling a new well, or buying bottled or vended water. According to Culligan, one of the leading purveyors of filter systems in the Valley, a typical nitrate filter costs $336 per fixture per year including maintenance.[10] Our cost estimate assumes that only 10 percent of the Central Valley population relying on domestic wells have high nitrates. Assuming only 60% of the contamination affecting these 16,713 households have agricultural run-off as a contaminating activity, the costs for each of them to install a Culligan filter total at $5,615,734. In the above-mentioned EPA report on CAFOs, a domestic well owner's Willingness to Pay for nitrate levels being brought down to the MCL is valued at $718.67 per year (inflation adjusted from $583 in 2001 dollars). Using this as the annual cost per household, the annual costs to domestic well owners amount to $12,011,486.

115-7 cont'd

ILRP Costs to Drinking Water Consumers

It has been well documented that households impacted by groundwater contamination incur significant costs to avoid contaminated tap water. A series of studies using the "avoidance cost" method—that is, "assessing the costs of actions taken to avoid or reduce damages from exposure to groundwater contaminants"—have demonstrated that household responses to contamination of domestic water supplies is far from inexpensive and that these expenditures must be taken into consideration in valuing the costs and benefits of groundwater protection.[11,12,13] To avoid nitrate-

115-9

[10] Culligan (2010) Personal Communication 9/17/10
[11] Abdalla, Charles W. *Measuring Economic Losses from Ground Water Contamination: An Investigation of Household Avoidance Costs.* Water Resources Bulletin Vol. 26 No. 3, 451-463.
[12] Collins, Alan R. and Scott Steinback (1993). *Rural Household Response to Water Contamination in West Virgina.* Water Resources Bulletin Vol. 29 No. 2, 199-209.
[13] Laughland, Andrew S., Musser, Lynn M., Musser, Wesley N., and James S. Shortle (1993). *The Opportunity Cost of Time and Averting Expenditures for Safe Drinking Water.* Water Resources Bulletin Vol. 29 No. 2, 291-299.

contaminated tap water, households must install costly reverse osmosis filters, order domestic water service to their home, or buy gallons of vended and bottled water for consumptive household uses such as cooking and drinking.

In the summer of 2010, Pacific Institute conducted a survey of 21 out of the 28 households connected to the community water system, Beverly Grand Mutual Water Company, which was in violation of the 45 mg/L MCL for nitrate concentration. Respondents were asked a series of questions about household socioeconomic and demographic information, perception of contamination, household water use, and expenditures on tap water, filters, and alternative sources of water (such as vended and bottled water).

115-9 cont'd

Preliminary analysis of the survey shows that households that are aware of contamination in their water and that drink and cook with exclusively non-tap sources of water pay on average 77% more than they would have had they solely used tap water for these consumptive household uses. On average, non-tap water expenditures for these households constituted 2% of household income, although some households spent up to 4.2% of their income on bottled and vended water for use in the home. On average, households that exclusively use non-tap sources of water for cooking and drinking spend $5.46 per person per month on vended and bottled water for use in the home (although some households spent up to $14.08 per person per month). This suggests that, collectively, the 1.3 million people connected to water systems with nitrate-contaminated groundwater supplies between 2005-08 spent approximately $7.1 million per month, or $85.2 million per year to avoid nitrate-contaminated water. How much of these costs of nitrate contamination can be attributed to agriculture is impossible to know without effective ground water monitoring, so we are left with an upper figure on the costs associate with the ILRP. A GIS analysis of land use surrounding the systems in violation would allow staff to identify systems in close proximity to agricultural land uses, a methodology regularly employed by researchers.

Costs to Public Water Systems

The costs of nitrate contamination of ground water extend to all public water systems with high nitrates and agriculture as a contaminating activity. The Economic Analysis in its current form only looks at the impact on community water systems, one subset of public systems. This analysis should be expanded to include other types of public water systems.

The assumption of the size of wells that small community water systems must replace is also flawed. Our understanding is that even small water systems must install wells that pull 2,000 gallons per minute due to fireflow requirements. This may explain why the cost estimate from Newkirk and Dewby is significantly lower than the costs of projects in applications for proposition 50 and 84 funding. We suggest you use the latter figures and abandon the Newkirk and Dewby figures for this reason.

115-10

Even with these corrections, the resulting cost estimates will represent a lower bound because of several categories of costs that are not quantifiable. These include the costs of treatment for health problems resulting from exposure to agriculture-related nitrates. They also include the future costs to water systems that may no longer have the option of simply digging a new well. Several systems have reported that they dug deeper wells to avoid nitrates only to then find

ground water with high arsenic levels and, as a result, incurred the additional costs of treatment for arsenic. 115-10 cont'd

Regional Economic Impacts

With the same rational that the economic analysis expects costs of the ILRP to agricultural businesses to have a ripple effect on the region, costs to well owners, public systems, and water consumers will have indirect economic effects. The current economic analysis excludes costs to community water systems from the analysis of regional economic impacts, removing them as a factor in the analysis of regional economic impacts. Although the limited data linking nitrate contaminated drinking water to agricultural activities constrains such a quantitative analysis, excluding them from the modeling relegates these significant effects to being inconsequential in the comparison of program alternatives.

As the technical memo states,

> Because businesses in a local economy are linked together through purchases and sales of goods and services produced in the region, an action that has a direct effect on one industry is likely to have an indirect effect on firms providing production inputs and support services, as the demand for their products also changes. As household income is affected by the changes in regional economic activity, additional induced effects are generated by increased household spending.

115-11

Similarly, changes to agricultural run-off brought about by the Program will have an economic ripple effect on drinking water consumers, domestic well owners, water system operators, and water system funding agencies, which in turn will have indirect effects on local economies.

In current form, the analysis of Regional Economic Impact focuses on the "value of agricultural production and spending to comply with program requirements and to implement management", and measures impact with economic indicators for Total industry output, Personal income, and Employment. This implies that the only changes in economic conditions resulting from the IRLP will be limited to within the farm properties and related businesses. Significant economic gains could also result for local drinking water users, water agencies, and local governments, among others. These gains will have a multiplier effect as they free up revenue for increased spending in other areas. As household expenses on avoiding nitrate-contaminated water are reduced, disposable income increases and allows for a rise in consumer spending. Public revenue currently dedicated to drinking water improvements necessary because of nitrates could be invested in public services or infrastructure projects, both of which would contribute to employment and profits.

Recognizing the Trend of Increasing Ground Water Nitrate Levels

The current economic analysis and Draft EIR assume that future nitrate levels in ground water will mirror current levels, but data suggests otherwise. Our analysis of the data shows that nitrate levels are increasing in a third of locations, and the number of wells where nitrate levels exceed 115-12

federal health standards is likely to double in the next ten years. Looking at wells monitored by GAMA in Kern County, we carried out a regression analysis to estimate the number of wells currently under the MCL that can be expected to rise above this threshold in the next ten years. Using a database including all nitrate measurements from 1980 to present in the GAMA database for Kern County, we selected wells that had ten or more samples recorded (678 wells), and fit a trend line of nitrate concentration versus time, using ordinary least squares regression. We used the uncertainty associated with this relationship to calculate the percent likelihood of exceeding the 45 mg/L threshold in 2010, 2015, and 2020.

115-12 cont'd

Table 3. Trend analysis of nitrate levels in Kern County wells

Groundwater Basin	Total number of Wells	Number of wells with greater than 75% likelihood of exceeding MCL in 2010	Number of wells with greater than 75% likelihood of exceeding MCL in 2015	Number of wells with greater than 75% likelihood of exceeding MCL in 2020
Antelope Valley (6-44)	29	0	0	0
Brite Valley (5-80)	4	0	0	0
Castac Lake Valley (5-29)	6	0	0	0
Cuddy Canyon Valley (5-82)	5	0	0	0
Cuddy Ranch Area (5-83)	4	0	0	0
Cuddy Valley (5-84)	6	0	0	0
Cummings Valley (5-27)	14	2	2	3
Fremont Valley (6-46)	11	0	0	0
Indian Wells Valley (6-54)	36	0	0	0
Kern River Valley (5-25)	55	4	7	8
Mil Potrero Area (5-85)	2	0	0	0
No Basin Found	67	1	2	2
San Joaquin Valley - Kern County (5-22.14)	417	24	37	50
Tehachapi Valley East (6-45)	3	0	0	0
Tehachapi Valley West (5-28)	18	2	2	2
Walker Basin Creek Valley (5-26)	1	0	0	0
TOTAL	**678**	**33**	**50**	**65**

115-13

Based on our analysis, we found 33 wells where the likelihood of exceeding the MCL is 75%. In 2015, this increases to 50 and in 2020 rises to 65 (See Table 3). This is almost a doubling of the number of wells with nitrate levels above the MCL by 2020, an increase from 5% to 10% of monitored wells. Based on current trends, we estimate that the number of wells exceeding the MCL in Kern County will double in the next ten years.

This trend of increasing nitrates in one of the counties with the most intensive agriculture, combined with the significant numbers of water systems and users and private well owners encountering nitrate-contaminated ground water points to the need for a systematic approach to monitoring and mitigating this contamination at the source. Additional costs that we are not able to quantify include those related to health outcomes caused by exposure to nitrates – including health services and pain and suffering – as well as the costs to ecosystems. A recent study

115-12 cont'd

looked at the effect of nitrate levels on California ecosystems, and found that 35% of the state's conifer forests, chaparral and oak woodlands were "at risk of major vegetation type change" due to nitrates.[14] This will undoubtedly have an effect on local economies and quality of life. 115-12 cont'd

Despite the limitations of our economic analysis due to limited data availability, there is no question as to the existence of significant costs resulting from regulated by the ILRP. Without an analysis of how the current program contributes to these costs and their indirect effects, and a comparison of the program alternatives' impact on these costs, the Board will not have the information it needs to make an intelligent and balanced decision on the program's future.

Thank you for considering these comments, please contact us with any questions or requests for additional information.

Sincerely,

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[14] Fenn, M.E., et al. (2010), Nitrogen critical loads and management alternatives for N-impacted ecosystems in California, *Journal of Environmental Management*. Doi:10.1016/j.jenvman.2010.07.034

115-14

Appendix 1

Public Water Systems in the San Joaquin Valley with ≥ 1 Nitrate Violation, 2005-2008

System Name	Population Served	Number of quarters with nitrate violations
AKIN WATER CO.	50	1
Arvin Community Services Dist	11,847	1
ATWATER, CITY OF	28,100	1
BEAR VALLEY CSD	7,400	3
BEVERLY-GRAND MUTUAL WATER	108	10
BROCK MUTUAL WATER COMPANY	500	3
BUEHNER HOUSES	25	1
BUEHNER WATER SYSTEM - WEBER COMPLEX	100	1
California Water Service – Stockton	171,777	5
CANYON MEADOWS MUTUAL WATER	325	1
CENTRAL WATER CO.	170	1
CENTURY MOBILE HOME PARK	50	3
Ceres, City of	40,943	12
CHERRY LANE TRAILER PARK	100	5
City of Modesto, DE East Turlock	500	1
City of Modesto, DE Grayson	1,100	12
Corcoran, City of	25,528	3
COUNTRY WESTERN MOBILE HOME PARK	120	3
CWS – LAKELAND	789	16
CWS - North Garden	15,998	6
Del Oro River Island Serv Terr #1	975	12
Del Oro River Island Serv Terr #2	87	8
Denair Community Services District	3,225	2
Dinuba, City of	19,297	1
DUCOR CSD	850	1
EAST OROSI C.S.D.	106	5
EAST WILSON ROAD WATER COMPANY	35	6
EDMUNDSON ACRES WATER SYSTEM	550	3
EL MONTE VILLAGE M.H.P.	100	5
EL NIDO MOBILE HOME PARK	250	6
ENOS LANE PUBLIC UTILITY DISTRICT	250	2
Fairview Water Company, LLC	100	9
FAIRWAYS TRACT MUTUAL	250	4
FAWCETT FARMS	50	1
FCSA #32/Cantua Creek	230	3
FCWWD #42/Alluvial & Fancher	257	3
FRESNO, CITY OF	457,511	15
GOOSELAKE WATER COMPANY	102	2
GREEN RUN MOBILE ESTATES	100	7
HARVEST MOON MUTUAL WATER CO	180	1
HILLVIEW WATER CO-RAYMOND	243	12
HILMAR COUNTY WATER DISTRICT	5,000	2

115-14
cont'd

Ivanhoe Public Utility Dist	4,474	12
Josephina and Enrique Water System	32	2
KERN VALLEY MUTUAL WATER	100	1
LEMON COVE WATER CO	200	7
Lindsay, City of	11,185	1
LSID – Tonyville	400	14
Madera County M.D. #10A - Madera Ranchos	2,255	2
MALAGA COUNTY WATER DISTRICT	900	2
MANTECA, CITY OF	66,000	2
MD#43 MIAMI CREEK KNOLLS	100	3
MD#85 VALETA MUTUAL WATER COMPANY	45	3
MERCED, CITY OF	80,453	1
MODESTO MOBILE HOME PARK, LLC	200	6
Modesto, City of	212,000	8
MOJAVE PUD	3,900	1
MONTEREY PARK TRACT COMMUNITY SERVICE DI	186	3
MOUNTAIN MESA WC	1,035	3
NORSEMAN M.H.P.	70	1
OASIS PROPERTY OWNERS ASSOCIATION	80	1
Orosi Public Utility District	7,318	1
PATIO VILLAGE MOBILEHOME PARK	75	2
PATTERSON, CITY OF	20,875	2
Poplar Comm Service Dist	2,200	4
Porterville Developmental Center	2,576	8
Porterville, City of	51,467	1
RAINBIRD VALLEY MUTUAL WATER COMPANY	188	2
RIPON, CITY OF	14,575	8
RODRIQUEZ LABOR CAMP	110	3
San Joaquin County-Raymus Village	1,086	1
SAN JOAQUIN ESTATES MUTUAL	220	6
SEVENTH STANDARD MUTUAL	110	3
SIERRA BREEZE MUTUAL WATER COMPANY	144	3
SIERRA MUTUAL WATER CO	39	2
SON SHINE PROPERTIES	400	1
SOULTS MUTUAL WATER CO.	100	13
STALLION SPRINGS CSD	4,300	2
Strathmore Public Util Dist	1,904	14
SUNNYSIDE CONVALESCENT HOSP	116	1
TEHACHAPI, CITY OF	7,218	11
Terra Bella Irrigation District – TBT	2,340	15
TOOLEVILLE WATER CO.	300	4
TRAVER WATER LLC	500	1
TRIPLE R MUTUAL WATER CO.	400	13
VALLEY VIEW ESTATES MUTUAL WATER CO	81	8
Vaughn WC INC	27,150	1
Wasco, City of	16,657	3
WATERTEK - GRANDVIEW GARDENS	350	7
WESTLAKE VILLAGE M H P	350	1
WHEELER FARMS HEADQUARTERS	25	15
WILSON ROAD WATER COMMUNITY	72	1

115-14
cont'd

ZONNEVELD DAIRY	141	1
Total (93 Systems)	1,342,280	430

3.3.19.1 Responses to Letter 115

115-1

See Comment Letter 123, Response 105.

115-2

See Master Response 17.

115-3

No response needed.

115-4

See Master Responses 8 and 17.

115-5

No response needed.

115-6

See Master Response 17.

115-7

See Comment Letter 123, Response 81.

115-8

No response needed.

115-9

The Central Valley Water Board shares the concern regarding the need for clean drinking water. Objective 1 in the development of the Long-term ILRP is to restore and/or maintain appropriate beneficial uses established in Central Valley Water Board Basin Plans by ensuring that all state waters within the Central Valley meet applicable water quality objectives including drinking water standards. However, the cost of remediation of polluted domestic groundwater supplies is not attributable to implementation of the Long-term ILRP.

115-10

See Comment Letter 115, Response 9.

115-11

See Master Response 17. Also see Comment Letter 104, Response 83 and Comment Letter 96, Response 18.

115-12

See Comment Letter 123, Response 81 and Comment Letter 6, Response 1.

115-13

This comment refers to a table; no response needed.

115-14

This comment refers to a table; no response needed.