

Exhibit I

**Summary of Comments Submitted to the
California State Water Resources Control Board**

***Public Workshop on Practices for the Management and Disposal of Food Processing and Winery Waste
Through Land Application and Other Means (July 11, 2005)***

Hilmar Cheese Company
July 6, 2005
Warren Climo – Director, Enviro. Management

CA Regional Water Quality Control Board
June 29, 2005
Thomas Pinkos – Executive Director

Dellavalle Laboratory, Inc.
July 6, 2005
Nat Dellavalle – President

Frito Lay, Inc.
July 6, 2005
Larry Perry – Group Manager, Enviro.
Compliance & Engineering
Attachment – Kern Plant Land
Treatment System Audi
Attachment – Letter to CVRWQCB
(January 21, 2005)

Central Valley Clean Water Association
July 6, 2005
Warren Tellofson – Executive Officer

Brown & Caldwell
June 24, 2005
Robert Beggs – Managing Engineer
Ronald Crites – Natural Systems Service Leader

Stanislaus County
July 6, 2005
Sonya Harrigfeld – Director, Dept. Enviro.
Resources

Ingomar Packing Company
Jim Murphy - VP of Operation

Mape's Ranch and Lyon's Investments
July 6, 2005
Bill Lyons, Jr.

Musco Family Olive Company
July 6, 2005
Benjamin Hall

Obscurity Cellars
John Smith – Owner

Pacific Coast Producers
July 5, 2005
Mona Shulman – VP and General Counsel

Anonymous Winery
June 22, 2005

Sensient Dehydrated Flavors Co.
July 5, 2005
Joe Martins – Director, Manufacturing

CA Bankers Association
July 14, 2005
Corny Gallagher – Chair, CBA Ag. Lending
Committee

City of Merced
July 1, 2005
Hubert Walsh – Mayor

JFB Ranch, Inc.
John Bennett – President, JFB Ranch and partner
of Ingomar Packing Co.

City of Merced
January 21, 2005
John Raggio - Director, Public Works

CA Association of Winegrape Growers
July 6, 2005
Karen Ross – President

CA Food Production & Processing Coalition
July 6, 2005
Michael Boccadoro

ECO-LOGIC
June 29, 2005
Dr. Richard Stowell - Prinicpal

**STATEMENT OF HILMAR CHEESE COMPANY FOR STATE WATER
RESOURCES CONTROL BOARD JULY 11, 2005 WORKSHOP ON PRACTICES
IN THE MANAGEMENT AND DISPOSAL OF FOOD PROCESSING AND
WINERY WASTE THROUGH LAND APPLICATION AND OTHER MEANS**

July 6, 2005

The Hilmar Cheese Company would like to express its appreciation to the State Board for conducting this workshop on such a critical topic. A sustainable food production and processing industry is vital to the Central Valley's long-term social and economic health. Hilmar Cheese Company is fully supportive of any regulatory and technical processes that will lead to improving the sustainability of the Central Valley's vital role in California's and the nation's food supply.

Hilmar Cheese Company is cognizant of the need to protect the State's water supply for beneficial users of these supplies. Its own hard won experience has shown that the most difficult issue faced by the Central Valley is salt management. Every food processor is a natural concentrator of salts as it collects produce from surrounding farms. To compound this, every processor must, through food regulation standards, maintain food safety by using cleaning compounds that also contain salts. In addition, the State Department of Water Resources and the State Board of Food and Agriculture urge the conservation and recycling of water supplies that in turn result in saltier process waters. After the application of source control, recycling technologies and conventional waste treatment processes, excess salts remain in the treated wastewaters. Removal technologies for these residual salts are expensive, contribute to other pollution issues (e.g., air quality), are unproven in these applications, and leave the unanswered problem - where do the removed salts go?

Long-term balanced solutions to these issues, that are based in fact and good science, will require the full participation and input of regulators, scientists, industry and the public. The State Board needs to play a critical leadership role in this to ensure that a workable approach is adopted and the inputs from the various stakeholders are balanced against the long term environmental, social and economic impacts of any directions taken.

Specific responses to the questions raised by the State Board's Notice of Workshop are given below.

1. Does the land application of food processing and winery wastes threaten groundwater quality and beneficial uses of groundwater?

Land application of food wastes is a viable method to treat organic and nitrogen loadings in food processing wastewater. It also acts to recycle water and reduce demand on other water supplies. Minerals within the wastewater can also provide the needs of growing plants. If the application is practiced in a well-managed, sustainable manner where loading rates are matched to soil and crop conditions, then groundwater quality can be protected.

There are a number of recognized benefits from a well managed land application system including:

- Recycling of organic materials to the soil will improve soil fertility, aid soil structure, increase the soil's ability to retain water and hold beneficial minerals for crop growth. The plant nutrients contained in the organic structures, particularly nitrate, are slowly released over time and are therefore more closely matched to plant uptake than large, infrequent applications of fertilizer – this in turn reduces the risk of minerals being leached into the groundwater.
- Recycling of the wastewater reduces reliance on other water sources for crop irrigation, releasing more water for other purposes. This is critical as increased demand is placed on the State's water supply.
- Recycling of minerals to the soil for crop growth reduces the requirement to import fertilizers - this in turn reduces the overall potential to increase salinity in the Valley.

2. Should there be state-wide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

Yes, state-wide consistency is essential to ensure that there is fair and equitable treatment of all dischargers and competitive advantages gained by inconsistent application of regulations are avoided.

Without consistency, the regulatory community does not have the ability to plan for the future. This leads to uncertainty for the business community, which in turn can lead to a loss of those businesses and their affiliates from the state.

Both state-wide consistency and allowance for regional variations can be achieved if standards are based on what can be achieved through reasonable, practicable and sustainable treatment processes rather than set numeric limits for all. Variations in groundwater quality, soil, water supplies and climatic types can be included in permits to account for local conditions.

3. If there should be consistent state-wide regulation of food processing and winery waste, how should such consistency be developed?

Consistency needs to be developed through a collaborative effort between regulators, industry and scientists to develop guidelines and an implementation plan, based on fact and sound science that will:

- Establish achievable (practical and sustainable) wastewater treatment goals using current, recognized treatment technology.

- Establish R&D direction for the development of new technology and practices that would enable new goals to be set at a future date.

For instance, if current best practices indicate that minerals in the wastewater from a food processor could be held to a specific TDS limit above the incoming water quality, then this could be applied state-wide. The regional variation would be achieved through the variations in the water supplies to the processors yet each would have a consistent standard to achieve. If R&D of treatment technologies evolves new processes that can lower this in an achievable manner, then regulation can move to lower this standard over a defined time period to allow businesses time to achieve them.

4. Should food processors and wineries be encouraged to develop practices and guidelines for management and disposal of waste that are protective of groundwater?

The development of best management practices is supported and encouraged. These practices should include design and operation of any waste system and be based on sound science developed from collaborative efforts of regulators, scientists and industry.

The industry is more likely to participate in the development of these standards if they are collaborative and therefore will take ownership and responsibility for their proper implementation. They will also be seen as promoting a 'level playing field' for all industry by ensuring that the design and operation of the systems will consider the same factors in each case.

These guidelines could also be used as a basis for third party certification (see item 5.)

5. Should there be third-party certification of food processing and winery waste management and disposal plans?

Third party certification is supported and has a number of benefits if it is based on processes that are practical and of benefit to the management of waste processing facilities. The process of developing plans, implementation and regular auditing is more likely to promote sound practices – as per examples shown with such practices as ISO 14000 and 9000 third party audits. Third party certification could lead to reducing the regulatory burden upon State agencies and allow them more time to focus on developing appropriate regulation and permitting.

6. Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

There are a range of practices that can reduce salt in process waters including:

- Source control to reduce the use of salts in the processing plants and thereby reducing them in the wastewater

- Reclamation and reuse of caustic solutions
- Use of low sodium cleaners

Further reductions in salts are very difficult to achieve and require treatment processes. The main problems with these are that the overall technical feasibility, economics of operation and environmental impacts have not been fully evaluated.

Hilmar Cheese Company's experience with membrane removal of salts has shown that the use of reverse osmosis is not sustainable in the long term. The systems require heavy use of energy and cleaning chemicals, they foul and scale heavily, and the resultant concentrated brine has no practical outlet. Current outlets for brine require trucking to EBMUD's POTW facility in Oakland. This trucking adds to air pollution and traffic congestion. When multiplied up for all food processors in the Central Valley this would create major issues for the State's ability to supply sufficient power to run the equipment, stress on outlets for the concentrated brine and congestion on the highways.

Long-term salt management in the Central Valley requires solutions beyond the level of individual point-source dischargers. It is a problem faced by POTWs and industrial dischargers. To this end, large regional facilities designed to treat salt residues or a brine line to the ocean is required.

Warren Climo
Director – Environmental Management
Hilmar Cheese Company



California Regional Water Quality Control Board

Central Valley Region



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TO: Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board

FROM: Thomas R. Pinkos
Executive Officer

DATE: 29 June 2005

SIGNATURE: _____

SUBJECT: *COMMENTS REGARDING THE LAND APPLICATION OF FOOD PROCESSING AND WINERY WASTE: 11 JULY 2005 PUBLIC WORKSHOP*

On behalf of the Central Valley Regional Water Quality Control Board (Region 5), I appreciate the opportunity to provide written and verbal comments for the State Water Resources Control Board's (State Board's) 11 July 2005 "Workshop to Receive Comment on Practices for the Management and Disposal of Food Processing and Winery Waste Through Land Application and Other Means." This memorandum provides some background on the food processing industry within Region 5, describes the rationale for staff's 28 January 2005 Food Processing Informational Item, lists the actions taken by staff since the January 2005 informational item, and responds to State Board's six questions listed within the workshop notice.

Background

Solid and liquid wastes from food processing industries (including canneries; meat, fruit, and vegetable packing houses; cheese manufacturers; and wineries) contain significant quantities of organic matter, nutrients, and salts. Food processing wastewater is typically much higher strength than domestic wastewater, and therefore has a higher potential to adversely impact water quality and to create nuisance conditions.

As of January 2005, staff is aware of the following food processors within the Central Valley Region:

- 119 processors discharge directly to Publicly Owned Treatment Works (POTWs), regulated under that POTW's pre-treatment program;
- 212 processors currently discharge to land, regulated under individual waste discharge requirements;
- 36 processors discharge to land and are enrolled under the *Waiver of WDRs for Small Food Processors*¹; and

¹ Applicable to those food processors who discharge less than 100,000 gallons of wastewater per year and apply it to cropland at agronomic rates, as well as to food processors who tank and haul all wastewater to a permitted treatment facility.

California Environmental Protection Agency

- 300 wineries plus an unknown number of other food processors discharge to land but have not submitted Reports of Waste Discharge, as required by the California Water Code.

The subject of this State Board workshop is the discharge of food processing waste to land; therefore, the remainder of this memorandum discusses that sub-group of food processors.

In the past, Region 5's focus in permitting the land discharge of food processing waste has been to ensure that the wastes were applied at rates that were thought to (a) allow organic matter to be broken down by microorganisms within the soil, (b) allow nutrients to be taken up by the crops grown on the disposal ground, and (c) prevent nuisance odor and vector conditions. In part, staff used guidelines prepared by the industry to determine adequate loading rates. For many years, staff provided very little oversight because the prevailing notion was that the disposal ground would provide natural attenuation of the waste. Consequently, few dischargers were required to monitor groundwater. The resulting data, while sparse, raised concern about the potential impacts to groundwater from the land discharge of food processing waste. This eventually triggered an increase in the number of sites at which groundwater monitoring was required to demonstrate whether the natural attenuation processes were sufficient. The resulting data revealed widespread groundwater impacts, as well as information on the fate of applied waste constituents during attenuation, and prompted increased oversight. This increased oversight was also due in part to the State Board's Strategic Plan, which required an evaluation of program consistency both throughout the three Regional Board offices and with State Board directives.

In late 2004, staff reviewed the groundwater monitoring data from the 105 food processing sites that have been required to install groundwater monitoring wells, and based on professional judgment, found that 40% of these sites are polluting or degrading groundwater. It was obvious that natural attenuation does not work in all cases, and that the industry guidelines, as well as the waste discharge requirements adopted by the Regional Board, were allowing food processing discharges to take place in a manner inconsistent with existing State policies.

28 January 2005 Informational Item "Regulation of Food Processing Waste Discharges to Land"

In March 2000, staff first notified the Regional Board of concern about the impacts of food processing waste by presenting the informational item *Effective Regulation of Discharges of Food-Processing Waste*. In 2004, several Regional Board members asked for an update, and at the 28 January 2005 meeting, staff presented the informational item *Regulation of Food Processing Waste Discharges to Land*. As part of this presentation, staff prepared an extensive staff report. This report was distributed to more than 300 known interested persons prior to the Board meeting, and is attached to this memorandum.

The staff report describes the water quality impacts associated with the disposal of food processing waste; Region 5's past regulatory focus; the sunset of waivers and the impact of the Regional Board's consistency initiative; problems from the past regulatory methods; case studies of four facilities that are polluting groundwater; the extent of known and suspected groundwater pollution from food processors in the region; and provides a long-term vision for the proper regulation of food processors. As part of that discussion, the report contains examples of three facilities that have invested in the upgrades to manage their waste properly.

As described to the Board in January 2005, staff's current regulatory procedure for individual sites is based completely on existing regulations and entails the following phased steps:

1. Update individual facilities Monitoring and Reporting Programs to the level of detail need to determine whether they are complying with their waste discharge requirements, specifically with the Groundwater Limitations. In general, this means determining whether a facility is unreasonably impacting water quality.
2. If groundwater degradation is either threatened or documented, require the discharger to implement Best Practicable Treatment and Control (BPTC) measures, or otherwise comply with the Water Quality Control Plan and also satisfy State Board Resolution No. 68-16 (the Anti-degradation Policy). If the discharge cannot be modified such that it does not unreasonably degrade or pollute groundwater, then the site will be regulated under Title 27 California Code of Regulations Division 2 (Waste Discharge to Land regulations).
3. If groundwater has been unreasonably degraded or polluted, issue a Cleanup and Abatement Order that requires the discharger to remediate the groundwater consistent with Water Code Section 13304 and State Board Resolution No. 92-49 (the Cleanup Policy).

The California Water Code, Title 27, and the two cited State Board resolutions authorize and direct the above actions. Contrary to claims by the food processing industry, staff has not proposed, is not currently proposing, and does not intend to propose any new policy or regulation, or any new interpretation of existing policies and regulations. Each action described in the above three steps is site-specific and, as always, staff will comply with all public noticing requirements for each action. The bottom line is that staff intends to fully and consistently implement existing policies and regulations at food processing facilities in order to fulfill the Regional Board's mandate of protecting water quality from discharges of waste.

Actions taken since the January 2005 Informational Item

Since the January informational item, staff has continued meeting with two major industry groups (the California League of Food Processors and the Wine Institute), as well as other interested persons, and have responded to several legislative and State Board requests. Staff is in the process of preparing a waiver of Reports of Waste Discharges (RWDs) and WDRs for *solid* food processing wastes applied to land in Stanislaus County. This waiver is intended to replace the previous waiver that expired in 2003 as a result of Senate Bill 390 and will apply for dischargers regulated by Stanislaus County's Food-Processing By-product Use Program. As for regulating individual food processors, staff has updated several monitoring and reporting programs, is continuing oversight of sites already under enforcement orders, and is continuing to prepare WDRs for those sites that have submitted RWDs. Staff is also requesting RWDs from the existing, un-permitted sites (i.e., the 300 wineries not discharging in compliance with the California Water Code), as time permits.

It is noted that the Regional Water Boards have been directed by CalEPA and the State Water Resources Control Board to emphasize enforcement actions throughout all programs and offices. With regard to food processors, this means that staff will focus activities on those sites currently regulated by WDRs whose waste discharge is polluting or unreasonably degrading the groundwater (these sites are listed in

Attachment B to the 28 January 2005 staff report). As time permits, staff will continue to review individual food processors' monitoring and reporting programs to determine whether they need updating to require groundwater monitoring and/or more comprehensive waste or land disposal monitoring. Our goal is to ensure that the regulated dischargers comply with their waste discharge requirements. It should be emphasized that staff must work on food processing sites in concert with all the other sites already being regulated. There has not been – and due to limited resources cannot be – a wholesale shift of priorities from regulating other sites to regulating food processors.

State Board Questions

Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?

Yes. In fact, monitoring data submitted by food processors within the Central Valley show that the waste discharged from certain facilities has not only threatened the beneficial uses of underlying groundwater, but has polluted the groundwater. Staff understands that certain food processing groups dispute this statement, which is why the staff report for the January 2005 Informational Item contains a detailed description of the groundwater issues at four food processors, and includes a table (Attachment B) which lists all permitted food processing waste dischargers in the Central Valley Region.

Of the 212 food processors permitted under individual WDRs within the Central Valley Region, only 49% are currently required to monitor the groundwater. While groundwater monitoring may not be necessary at 100% of the sites (the requirement is based on site-specific conditions), staff will be evaluating the remaining sites and updating the monitoring and reporting programs as necessary. Staff anticipates that a much larger percentage of food processors will soon be monitoring the groundwater upgradient and downgradient of their waste storage and disposal areas.

Facilities that have impacted groundwater (and have previously been formally notified of staff's determination of that fact) are identified in Attachment B of the staff report. The table also identifies the facilities that staff suspects are degrading or polluting groundwater. Staff made the determination of "suspected degradation" based on professional judgment, any groundwater monitoring data already submitted, and an assessment of site-specific characteristics such as the type of waste discharged, the method of discharge, and the quality of the underlying groundwater. As shown in Attachment B, 40% of the sites with groundwater monitoring wells (or 19% of the total number of sites) have impacted the groundwater. In addition, staff suspects that 56% of the remaining sites have impacted groundwater. In total, 75% of the regulated food processing sites have either confirmed or suspected groundwater degradation or pollution. This statistic alone shows that Region 5's previous reliance on soil attenuation to treat food processing waste was a flawed strategy, and that it is appropriate to fully implement all applicable State policies and regulations in permitting the discharge of food processing waste. Failure to do so would only lead to increased groundwater pollution.

As stated during the January Regional Board meeting, the listing of the sites that are polluting groundwater and the sites suspected of polluting groundwater is a tool for staff to prioritize workload. The highest priority sites are those with known groundwater pollution or suspected groundwater

pollution. Within these two groups, staff will focus on sites with high strength waste, a large volume of waste, or for which the Regional Board has received complaints.

Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

The Legislature and the State Water Board have already provided the tools for statewide consistency in regulating food processors. These tools include:

- Existing statute: the California Water Code;
- Existing regulations: Title 27 of the California Code of Regulations;
- State Board policies: Resolution No. 68-16 (the "Anti-degradation Policy"), Resolution No. 88-63 (the "Sources of Drinking Water Policy"), and Resolution No. 92-49 (the "Cleanup Policy");
- The precedential decisions made through State Board's ruling on petitions;
- State Board's review and approval of each Regional Board's Basin Plan(s); and
- The 15 November 2004 Strategic Plan.

The above documents and regulations provide consistent guidance for all the regional boards, and allow staff to take into account site-specific considerations (i.e., strength of waste discharged, volume and timing of discharge, type of treatment and/or disposal system, and quality and depth of underlying groundwater), as well as relevant regional differences, when preparing individual waste discharge requirements. Staff has previously discussed internally whether it would be appropriate to prepare, for example, a single monitoring and reporting program for all food processors, but has concluded that the wide of variety of food processing operations (and the resultant variety of waste treatment and disposal practices) and site specific conditions make that idea infeasible. While the Regional Board has adopted a waiver of WDRs for the smallest food processors, it only applies to two types of waste disposal. As mentioned, Regional Board staff is in the process of developing another waiver for the reuse of specific solid food processing wastes. Although more time consuming, it is more appropriate – and more equitable to each individual facility – to regulate each of the other food processors on an individual basis.

It is important to understand that the issue of consistency between the regions has been raised because historically Region 5 has *not* regulated food processing sites in a manner consistent with the above policies and regulations. However, staff now intends to fully implement the above policies and regulations so as to ensure the protection of beneficial uses and the prevention of nuisance conditions.

If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

As stated above, staff believes that the existing regulations and policies are sufficient.

Should food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are protective of groundwater?

Yes, and in fact, this is already the case. Two major industry groups, the California League of Food Processors (CLFP) and the Wine Institute, are each developing management practices for their members. Staff has encouraged the development of the two sets of guidelines, and has been working with the industry groups since 2001 to ensure the water resource protectiveness of these efforts.

Staff has provided comments on both the draft and final versions of the California League of Food Processors' *Manual of Good Practice for Land Application of Food Process/Rinse Water*. Staff has consistently stated that the document should describe that the criteria for evaluating the effectiveness of land treatment is (a) the maximization of soil treatment and (b) the minimization of groundwater degradation. Many of staff's specific comments and concerns were not included in the final document; in particular, the document does not address methods to achieve best practicable treatment and control of salt constituents. As a result of the January 2005 Information Item, staff and members of CLFP met in April 2005 to discuss revising the *Manual* to better reflect existing regulations and policies and to emphasize certain practices which, if implemented at a site, will better protect water quality. We also agreed to hold several informational workshops, and to meet again to discuss specific revisions to the *Manual* no later than October 2005.

With respect to the Wine Institute, staff commented on both the study design and drafts of the *Land Application of Winery Stillage and Non-Stillage Process Water Study Results and Proposed Guidelines*. The document is currently undergoing a peer review overseen by State Board. While staff commends the Wine Institute for completing the study, it should be pointed out that only a small number of the largest wineries dispose of waste in the manner studied by the Wine Institute. Staff's main concerns with the *Guidelines* are that (a) intensive monitoring and feedback are necessary to maximize the treatment of wastewater by fallow land and, more importantly, (b) the study shows that land treatment methods are not sufficient to prevent elevated levels of salt and decomposable waste constituents from moving through the vadose zone and potentially into the underlying groundwater. In recognition of the salt issue, the Wine Institute is now conducting a wastewater salt loading study, in which the waste streams from individual winemaking processes will be analyzed and management practices will be proposed to reduce the quantity of salt in the wastewater applied to land. Staff met with the Wine Institute to discuss the study design in June, and expect to be asked to provide comments on the draft document in the spring of 2006.

Should there be third-party certification of food processing and winery waste management and disposal plans?

Third party "certification" – similar to the Dairy Quality Assurance Program – could be helpful to the industry to comply with the Board's requirements. However, Regional Board staff includes professionals with degrees in engineering, geology, chemistry, environmental science, and soil/water science, and must continue its responsibilities of reviewing and commenting on food processing and

winery waste disposal plans. Also, by virtue of regulating several hundred food processors and reviewing monitoring reports from all of these sites, Regional Board staff has the necessary understanding of the region-wide impact of food processing waste on groundwater quality. A third-party review process could weaken the Regional Board's regulatory authority and could lead to inconsistent application of State policies.

Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

The concentration of salt in all sources of wastewater, not just from food processors, is one of the biggest problems facing the Regional Board and the Region's groundwater resources. This issue was highlighted by Regional Board Vice-Chair Dr. Karl Longley at the 23 June 2005 Regional Board meeting, when he read a statement into the record, which included the following text: "...Central Valley waters are increasingly being subjected to heavier loadings of salt and other substances due to continuing growth of both population and industry. The degradation of these waters makes them less fit for domestic and industrial use, and, in time, may require advanced treatment to render them fit for higher uses. In carrying out the intent of the statutes, regulations, and policies to protect water quality and beneficial uses...the Central Valley Regional Board staff has stepped up their efforts to mitigate deleterious impacts to water from a number of industries including the food processing industry..."

The issue of salt in food processing wastewater was also discussed in the January 2005 Informational Item as follows: "...similar sources of salt exist in many food processing operations (i.e., boiler blowdown, ion exchange reject, clean in place solutions, other equipment cleaning solutions), and similar controls and treatment options apply to most situations. Therefore, this would be an area where industry associations could relieve the burden of members and help achieve consistency and water quality goals by developing and providing guidance."

It is usually much easier to prevent salt from entering a waste stream (i.e., source control) than to remove salt once it is in the waste stream. However, the January 2005 Informational Item also stated, "...technology for salt removal (e.g., reverse osmosis and ultrafiltration) has also been available for decades and is continuously improving. Such technology has been employed by a few food process dischargers within this region as a waste treatment method and is employed in other regions for treatment of waste and treatment of polluted groundwater. The industry associations could also assist their members by compiling the available treatment information so that each individual discharge need not research each potential BPTC measure and does not find itself in a situation that requires cleanup."

It would be appropriate for the State Water Board to provide funding and oversight on studies to determine both salinity source control methods and salt removal methods for food processing and winery wastewater. These studies would have statewide applicability and, if the resulting practices are implemented, would result in reduced salt loads in both surface waters and groundwaters.

Economics

A final point should be made regarding the economics of complying with the regulations for waste discharges to land. Many food processors discharge their wastewater directly to POTWs (publicly

owned treatment works; i.e., a city-owned wastewater treatment plant) instead of to private land. Those food processors discharging to POTWs typically pay fees that are directly related to their organic and suspended solids mass loadings, as well as to flows. These fees can represent a significant cost, which food processors discharging to private land may not bear. Additionally, POTWs may impose pretreatment standards that require the generator to remove BOD or suspended solids, adjust pH, and/or remove other deleterious constituents. In contrast, many food processors that discharge to private land perform little or no treatment of the waste. Therefore, there appears to be an economic disparity within the food processing industry with regard to the cost paid for wastewater disposal when discharging to a POTW versus discharging to private land. When looking only at food processors discharging to private land, those that manage their wastewater in a manner that protects water quality appear to be at a competitive disadvantage compared to the processors who are not allocating the resources necessary to treat their waste to the extent that they do not unreasonably impact water quality. Those food processors that are not protecting water quality should consider the costs of groundwater cleanup versus the cost of installing appropriate waste management systems that result in compliance with the waste discharge requirements. As staff better implements the existing regulations and policies, there should no longer be an economic incentive for non-compliance.

Conclusion

It should not be disputed that the discharge of food processing waste to land has the potential to degrade water quality – in fact, in many cases it already has. It is appropriate to regulate food processing sites in a manner consistent with existing State policies and regulations such that the Regional and State Boards fulfill its mandate to protect water quality.

I trust this answers the concerns of the State Water Board members regarding Region 5's regulation of food processing waste discharges. If you have any further questions, please do not hesitate to contact either Wendy Wyels, Environmental Program Manager, at (916) 464-4835 or Bert Van Voris, Waste Discharge to Land Program Manager, at (559) 445-6079.

Attachment: 28 January 2005 staff report for the informational item *Regulation of Food Processing Waste Discharges to Land*

cc w/o attachment: Regional Board members

Celeste Cantu, Executive Director, State Water Resources Control Board

Tom Howard, Chief Deputy Director, State Water Resources Control Board

Frances McChesney, Office of Chief Counsel, State Water Resources Control Board



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July 6, 2005

Sent Via E-mail U.S. Mail

Mr. Daniel Merkely
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

DMerkley@waterboards.ca.gov

Re: Public Workshop on Practices for the Management and Disposal of Food Processing and Winery Waste through Land Application and Other Means

Dear Mr. Merkely:

Dellavalle Laboratory Inc. has provided laboratory and technical agronomic services to California agriculture and allied industries for over 28 years. Those services include plant nutrients, fertilizer, organic matter, and salinity and irrigation water management. I am a Certified Professional Agronomist and Soil Scientist with over 40 years of experience.

A few years ago a client requested our assistance with correspondence from the Central Valley Regional Water Quality Control Board relating to discharge of effluent from a food processing facility to crop land. The effluent contained water, a valuable agronomic input; plant nutrients, valuable agronomic inputs and organic matter, also a valuable agronomic input. Our background and expertise seemed appropriate.

Since that time we have assisted numerous dischargers with agricultural reuse of food processing and municipal effluents and solid residues. If improperly managed, all can pose risk to water quality. Management, not source, constituent concentration or physical state is the key to water quality protection. Commercial fertilizer with 3 to 82 percent nitrogen poses no more or less risk than effluent with 45 mg/L nitrate. Both can be well and poorly managed. So can both solid and liquid residues and commercial materials. Good management is the key.

Water, plant the nutrients, salinity and organic matter (BOD) can be managed to minimize but not eliminate impact on water quality. Irrigation and plant production on farms, parks, golf courses, school grounds, commercial landscapes and personal yards impact water quality. Irrigation and plant production are clearly the public interest.

Because food processing and winery wastes contain valuable agronomic inputs, I choose not to use the term "waste". Waste is without value, to be discarded, to be disposed, or to be thrown away. When one calls something waste, one tends to treat it as such.

With the above as our background, I would now like to address the questions presented in the public notice for the upcoming workshop and then add a few additional comments;

Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?

Properly managed land application of food processing waste does not unreasonably threaten groundwater quality and its beneficial uses. Too much by-product or residue or an agronomic rate improperly managed can create problems. However, if the food processing by-product is applied at agronomic rates and properly managed, it poses no more threat to groundwater than properly managed fertilizer and irrigation water.

Agricultural reuse replaces commercial fertilizers as well as the environmental impacts of their manufacture and transport. Both the State and Federal Governments foster reuse as a viable alternative to disposal. The Board can assist with that effort.

Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

Yes, it is important. It provides a level playing field for all food processors in the State. Differing rules can unnecessarily increase complexity and costs for food processors, consultants assisting with monitoring and management and the Board Staffs.

A General Order that recognizes well managed reuse would reduce quantities of residue requiring disposal and reduce threats to groundwater. Environmental conditions can vary within regions as much as or more than between regions. A General Order could focus on conditions not political boundaries.

If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

All affected parties, agencies and persons with technical expertise should have input. In particular there should be consideration of the various public policies, some of which conflict. Treatment and reuse for example.

Should food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are protective of groundwater?

Yes, leading usually works better than pushing. Agricultural reuse that meets acceptable standards coupled with relaxed monitoring and treatment requirements could reduce costs and improve groundwater protection.

Should there be third party certification of food processing and winery waste management and disposal plans?

Third party certification can be a benefit or a needless cost. Certification by the California Department of Health Services Environmental Laboratory Certification Program has made Dellavalle Laboratory a better laboratory. The Certified Agronomist and Soil Scientist programs have been a benefit.

A clear set of objectives and a reasonable set of regulations in the hands of regulatory and industrial technicians are more important than certification. For example, requiring nitrogen be removed from effluent to be used for agriculture reuse may be unreasonable. It makes little sense to spend money to remove nitrogen from effluent only to have to add fertilizer nitrogen for crop production.

Any certification program would have to be carefully crafted over a period of years.

Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

Salt (sodium salts) may be the most difficult residue constituent to address. Potassium hydroxide, a plant nutrient, could be substituted for lye but at higher cost. Development of a reuse program could make its use economical.

Some residues have less salt than are removed by crops when applied at agronomic rates based on nitrogen. Food processing residue applied as a soil amendment is an example and is economical compared to disposal. With such reuse of salt is not an issue.

The key to reuse is management. Where land application rates are within agronomic or assimilative rates impacts on groundwater can be no greater than with fertilizer materials being replaced. A key management component is sufficient acres to accommodate the material. Where dischargers are truly reusing food processing residues an incentive such as relaxed monitoring requirements would encourage reuse.

If you have questions, please do not hesitate to contact me at (559) 233-6129.

Best regards,

A handwritten signature in cursive script, appearing to read "Nat B. Dellavalle".

Nat B. Dellavalle, CPAG/SS
President



July 6, 2005

Mr. Arthur Baggett
Chairman
California State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Chairman Baggett:

Frito-Lay respectfully submits a copy of our written comments submitted to the Central Valley Regional Water Quality Control Board on January 21, 2005 concerning the Staff Report titled "Regulation of Food Processing Waste Discharges to Land".

Frito-Lay requests that these comments be considered when the California State Water Resources Control Board holds its Public Workshop on Monday, July 11, 2005. Further, we strongly encourage you and the State Water Resources Control Board to take the leadership role in developing policies related to salinity management, the beneficial uses of recycled water, and the application of regulations and permit conditions regarding discharges to land of food processing by-products. The Board's leadership is critical to ensuring consistency in policies and regulations across the state.

Frito-Lay and the food processing industry look forward to working with you to address these issues.

VERY SINCERELY,

Larry E. Perry

FRITO-LAY, INC.

(original signed by)

Larry E. Perry, P.E.

Group Manager – Environmental Compliance and Engineering

Frito-Lay North America

CC: Mr. Robert ter Kuile – Frito-Lay, Inc. Regional Environmental Manager
Mr. Brent Fowler – Frito-Lay, Inc. Kern Facility Technical Manager

Attachments: Frito-Lay Brown and Caldwell Report, May, 2003
Letter dated January 21, 2005, RE: Comments on Staff Report –
"Regulation of Food Processing Waste Discharges to Land"



Frito-Lay, Inc.

January 21, 2005

Ms. Wendy Wyels
Environmental Program Manager I
Waste Discharge to Land Section
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive Suite #200
Rancho Cordova, CA 95670

Re:Comments on Staff Report – “Regulation of Food Processing Waste Discharges to Land”

Dear Ms. Wyels:

Frito-Lay, Inc. respectfully submits these comments regarding the proposed Regulation of Food Processing Waste Discharges to Land by the Central Valley Regional Water Quality Control Board (“Board”). Frito-Lay operates a land treatment system at our Bakersfield (Kern County) snack food production facility, and has significant concerns about the proposed changes to and the Board’s apparent interpretation of existing regulations, and their applicability.

From the public notice that was first brought to Frito-Lay’s attention on January 17, 2005 we understand that the Board will hear from staff at the meeting scheduled for January 28, 2005 and that all comments must be submitted in advance by 8:00 am local time on Monday, January 24. This notice and deadline provided only four full working days (excluding the Federal holiday) in which to review the materials and prepare comment – a schedule which has proved inadequate to review and comment on the more than 70 pages of staff report and supporting documents. Due to this extremely short timeframe, the length of document that was published for review, and the level of impact this matter will have, not only on our operation but all land application wastewater treatment operations in the Central Valley, we respectfully request that this agenda item be pulled from the agenda for the January 28 meeting date. As a minimum, at least 30 days additional comment time should be provided by the Board to provide Frito-Lay, Inc. and other affected parties adequate time for meaningful review and response to this important issue.

Due to the very brief time period allowed to prepare comments at this time Frito-Lay has limited its comments to a very few specific issues as discussed below:

1. Changes to the existing WDR process are not warranted. The WDR process regulates land application of food processing wastewaters under Title 15. This process is well established, well accepted and adequately protective of the environment. Title 15 already provides for permitting, environmental monitoring and enforcement of standards which adequately address the management and reuse of wastewaters emanating from food processing facilities. Through the WDR process, facilities seeking a permit are already required to submit significant chemical and other analyses that adequately define wastewater streams to be land applied. Existing regulations are already in place to achieve proper management of

wastewater streams under Title 15, including enforcement provisions to ensure WDR requirements are met. The staff report further suggests that Title 27 regulations could be applied as an additional regulatory approach to ensure environmental protection from land application. Frito-Lay does not agree with staff's interpretation of the applicability of these regulations, nor the appropriateness of including these regulations in a revised regulatory approach for land application of food processing wastewaters. We believe Title 27 was designed to regulate landfills, not the spray application of wastewaters containing organic food residuals produced from the land to which they are returned. Finally, data presented in the staff report shows that less than 20% of affected facilities have an identified problem. We believe it would be premature to add new or substantially modify existing regulations in reaction to a small number of non-compliant facilities.

2. The staff report fails to note that land application of food processing wastewaters and residuals has been established and proven over many decades by the US EPA and individual states as an acceptable and encouraged means of mitigating environmental impacts while conserving natural resources. Land application is generally much preferred to direct wastewater discharge to a POTW or a receiving stream, both of which require substantial input of energy and chemicals to accomplish the equivalent treatment. Due to the great assimilative capacity of soil and plant systems and the desirability of direct ground water recharge in the Central Valley, land application offers a sustainable environmentally friendly alternative for foods processors and for the State. For decades States, including California, have issued permits with prescribed limits on hydraulic and organic loading designed to keep wastewater loading within the soil's assimilative capacity. Thousands of EPA studies tout the benefits of land application for wastewater and agricultural residuals management and, when properly managed, demonstrate no adverse impact to groundwater resources.
3. Frito-Lay asserts that the staff report does not adequately support the broad conclusions alleging wide spread adverse impacts from improper wastewater management in food processing. The facts presented do not support staff allegations that this large, diverse group is responsible for "significant groundwater impacts from salts and nutrients" associated with their operations. Frito-Lay is confident of its operations and expects that the majority of facilities are operating well within the requirements of WDR's issued by the Board, and are meeting or exceeding the environmental objectives set out in Title 15 of the State regulations. Information included in the Summary Table in the staff report borders on the unethical. In this table hundreds of companies are listed as "suspected" of groundwater degradation with no supporting data provided. This misrepresentation by staff is very disturbing from technical, ethical and legal perspectives. Because of the inaccuracies and apparent staff bias included in the report Frito-Lay requests that this document be immediately withdrawn and not presented to the Board. Likewise, staff report Attachment A purports to be a list of proposed water quality "limits", many of which will not only be unattainable by food industry land application systems, but impossible for similar systems operated by municipalities in the Central Valley to meet, and completely inappropriate for spray irrigation systems. We request that this document be immediately withdrawn from consideration as policy or proposed regulation.

In support of our comments included in number 3, above, we have attached a Brown and Caldwell report commissioned by Frito-Lay in 2003 as an independent audit of the land application system at our Bakersfield (Kern County) facility. Frito-Lay, as a good neighbor and good steward of the environment, determined that this external audit was in order to ensure that we were operating our system according to design and good operating practices, and that our

impacts to ground water quality were negligible. The detailed review described in the report concluded that Frito-Lay is in compliance with all regulatory requirements and is not contributing to degradation of groundwater beneath the site.

Frito-Lay appreciates the opportunity to share these limited comments with the Board and respectfully requests that they be considered very carefully. We look forward to an opportunity to comment further and to working cooperatively with the Board and its staff to address these important issues in the Central Valley.

VERY SINCERELY,

Larry E. Perry

FRITO-LAY, INC.

(original letter signed by)

Larry E. Perry, P.E.

Group Manager – Environmental Compliance and Engineering

Frito-Lay North America

CC: Mr. Robert ter Kuile – Frito-Lay, Inc. Regional Environmental Manager
Mr. Brent Fowler – Frito-Lay, Inc. Kern Facility Technical Manager
Mr. Ron Crites – Brown and Caldwell, Inc.
Ms. Pat O'Toole – The O'Toole Law Firm

Attachment: Frito-Lay Brown and Caldwell Report, May, 2003

FRITO-LAY

KERN PLANT

**Land Treatment System Audit
and
Hydrogeologic Data Evaluation**

May 2003

**Brown and Caldwell
Sacramento, California**

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LIST OF ACRONYMS

bgs	below ground surface
BOD	Biochemical Oxygen Demand
DWR	Department of Water Resources
EC	Electrical Conductance
ET	evapotranspiration
FDS	Fixed Dissolved Solids
ft	feet
in	inch
KCWA	Kern County Water Agency
L	liter
lb	pound
MCL	Maximum Contaminant Level
meq	milli-equivalents
mg	milligrams
mgd	million gallons per day
msl	mean sea level
ppm	parts per million
RRBWS	Rosedale-Rio Bravo Water Storage District
RWQCB	Regional Water Quality Control Board
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
yr	year

SECTION 1

INTRODUCTION

This report summarizes the results of Brown and Caldwell's land treatment system audit and hydrogeologic data evaluation for Frito-Lay's Kern Plant. The work was conducted as described in our letter proposal number 17-03-91054-006.7. The scope included the following 5 tasks:

1. Obtain Additional Field Data
2. Develop Hydrogeologic Conceptual Model
3. Audit of Existing Operations and Monitoring
4. Analysis of Land Treatment Loading Rates
5. Report Evaluation Findings

1.1 Background

The Frito-Lay Kern facility is located northwest of Bakersfield, California, as shown on Figure 1-1. The land application system has been operating since 1986. In the 17 years of operation, the regulatory requirements have increased from loading rates and soil sampling, to include lysimeters sampling the vadose zone and addressing groundwater monitoring wells. The Central Valley Regional Water Quality Control Board (RWQCB) has increased its attention on food processing land application systems, with special focus on groundwater quality impacts (Brown and Caldwell, et al., 2002). The limited data from the monitoring wells shows a range of from 1.9 mg/L nitrate-nitrogen in the south well (MW1), to 7.5 mg/L in the center well (MW2), to 4.7 mg/L in the north well (MW3) in the direction of the gradient across the site. The expected reaction from the RWQCB has been to raise concerns about degrading the groundwater. As a result, Brown and Caldwell has been retained to audit the operation and analyze the hydrogeology in a regional context.

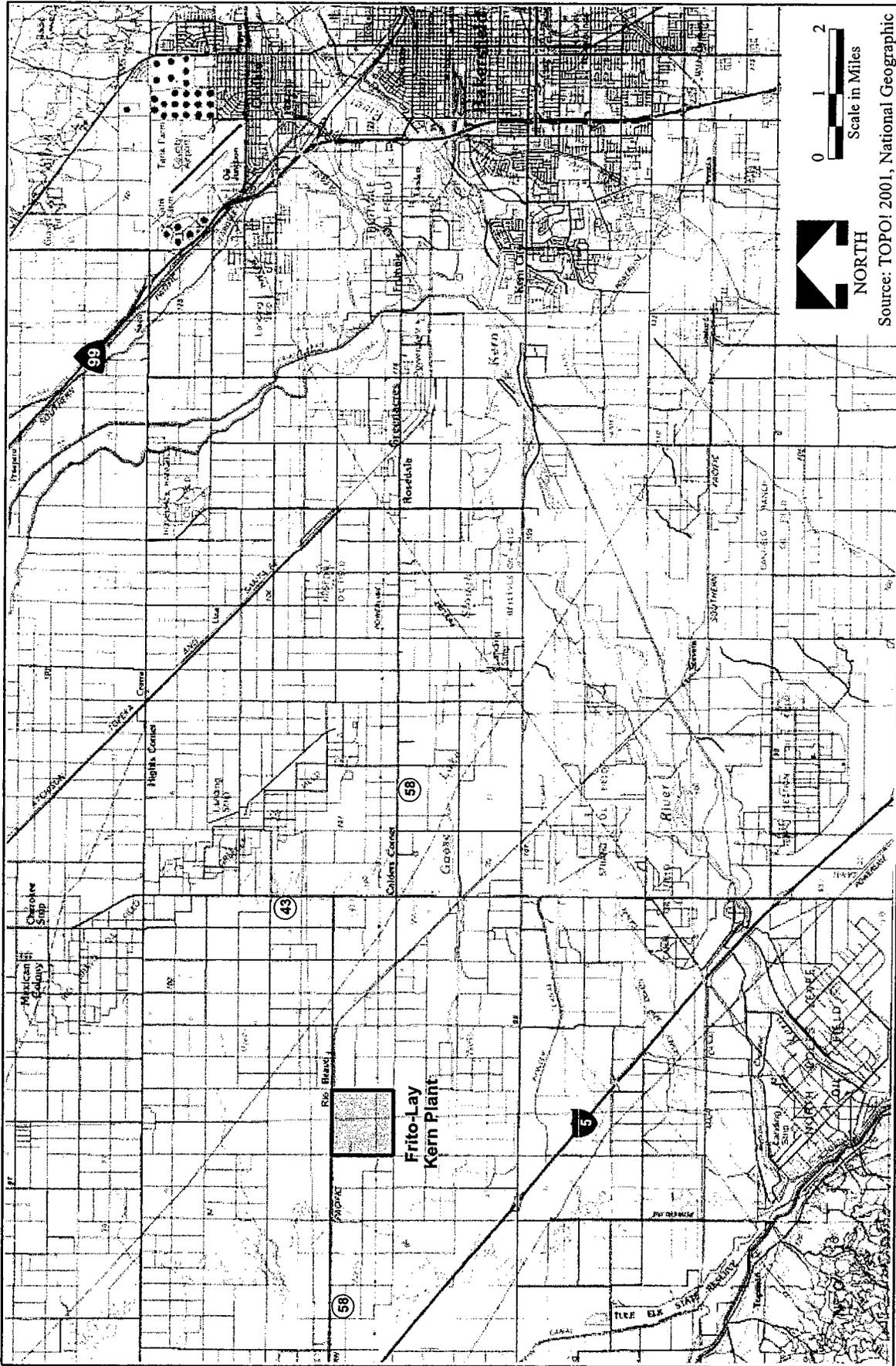
1.2 Purpose

The overall objective of the evaluation is to provide an independent perspective on the groundwater quality data recently collected and reported to the RWQCB. Additional objectives are to audit the operations of the land application system, develop an improved understanding of the hydrogeology, and evaluate the monitoring program.

1.3 Approach

The approach for this project included reviewing field data, incorporating these data into a hydrogeologic conceptual model, analyzing any remaining data gaps, conducting an audit of the land application practices, estimating the time of travel of applied wastewater constituents to groundwater, and recommending the best strategy to pursue additional information is needed.

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Source: TOPO! 2001, National Geographic

BROWN AND CALDWELL	PROJECT 24042-002	SITE 24042-002	Frito-Lay Kern Plant, Kern County, California	Figure 1-1
	DATE 5-20-03	TITLE Site Location Map		

1.4 Data Sources

This evaluation relies largely upon data obtained from Frito-Lay staff, Frito-Lay's previous consultants, and public water agencies. The sources are cited in the references section at the end of this report.

1.5 Limitations

This report was prepared solely for Frito-Lay in accordance with the standards of the environmental consulting industry at the time the services were performed and in accordance with the contract between Frito-Lay and Brown and Caldwell dated February 12, 2003. This report is governed by the specific scope of work authorized by Frito-Lay and is not intended to be relied upon by any other party. We have relied on information or instructions provided by Frito-Lay and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

SECTION 2

LAND TREATMENT SYSTEM AUDIT

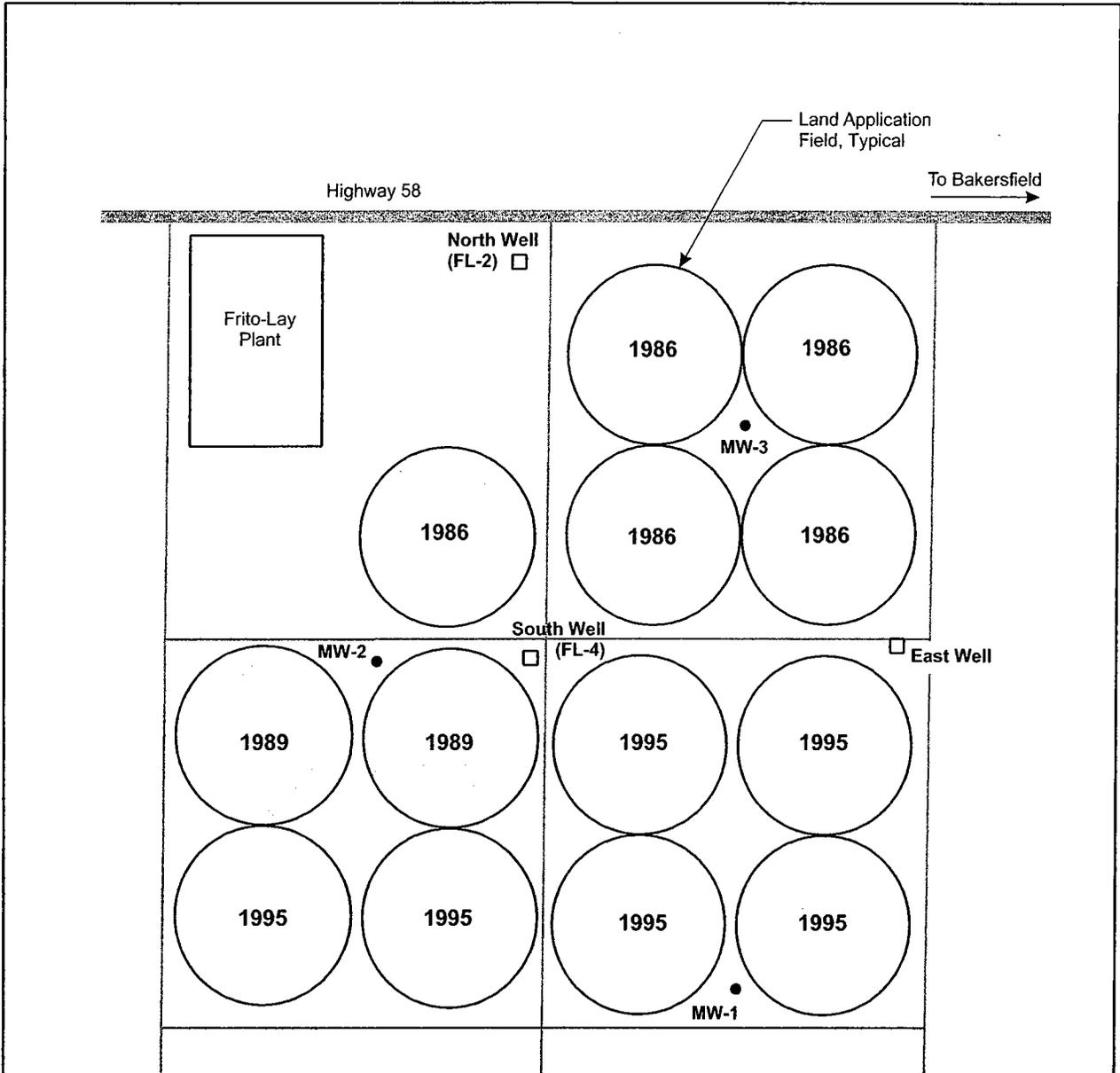
2.1 Land Treatment Operations History

Land treatment has been practiced at the Kern site since the facility began operations in 1986. For the initial 3 years the land application system was limited to the northern half of the site using 5 center pivot irrigation systems on 130 acres. In 1989 two more fields totaling 61 acres were added to increase the field area to 191 acres. Expansion to 13 center pivots in 1995 coincided with the addition of the bakery. The field areas are shown in Figure 2-1. The average annual flows and irrigated areas are listed on Table 2-1.

Table 2-1. Land Treatment Flows and Irrigation Areas

Year	Flows, mgd	Area, acres	Wastewater loading rate, in/yr
1986	0.48	130	49.4
1987	0.45	130	46.4
1988	0.50	130	51.5
1989	0.60	191	42.4
1990	0.60	191	42.4
1991	0.64	191	45.1
1992	0.70	191	49.4
1993	0.72	191	50.8
1994	0.81	191	57.1
1995	0.82	330	33.2
1996	0.99	248	53.5
1997	1.09	272	53.2
1998	1.15	330	46.7
1999	1.13	330	45.8
2000	1.03	330	41.8
2001	1.02	330	41.4
2002	0.99	330	40.2

In the initial 10 years of operation the principal crop grown was alfalfa. To sustain the 130 acres of alfalfa during the summer months required supplemental irrigation water. Up to 20 in/yr of irrigation water from the plant supply wells was used to meet consumptive crop water demand during the summer months.



0 500 1,000
Scale in Feet

Legend

- Supply Well
- Monitoring Well

1986 Year Center Pivot Initially Operated

Base from Jacobson Helgoth, 2002

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BROWN AND CALDWELL	PROJECT 24042-002	SITE Frito-Lay Kern Plant, Kern County, California	Figure 2-1
	DATE 5-20-03	TITLE Irrigation Areas	

After 1996, the cropping plan was changed to summer sudan grass on the maximum area that can be sustained by process wastewater alone. During the winter months, when process flows continue at the same rate as during the summer, winter forage is grown on all 13 center pivots. The result is that the annual hydraulic and nitrogen loading rate has been reduced, while the annual uptake of nitrogen has been kept nearly constant.

2.2 Depth of Wastewater Penetration

The depth of wastewater penetration since the operations began in 1986 was estimated in order to determine if the percolate water could have reached the groundwater. During the months from November through March there is more wastewater available, if applied uniformly to the irrigated area, than the net evapotranspiration (ET - precipitation). The percolation was estimated by subtracting the net evapotranspiration from the applied wastewater depth. The annual depth of penetration, shown on Table 2-2, was estimated using the average water-holding capacity of the soil and the annual percolation. The average water-holding capacity is 0.10 inches of water per inch of soil, or 1.2 inches of water per foot of soil. The cumulative depth of penetration assumes that the soil profile is uniform without slowly permeable barriers. As will be shown in Chapter 3, there are several slowly permeable soil layers in the soil profile above the water table. The actual depth of penetration per year will be less than that shown on Table 2-2 because of these slowly permeable layers. Water that encounters these layers will mound up until it can either flow through or around the layer.

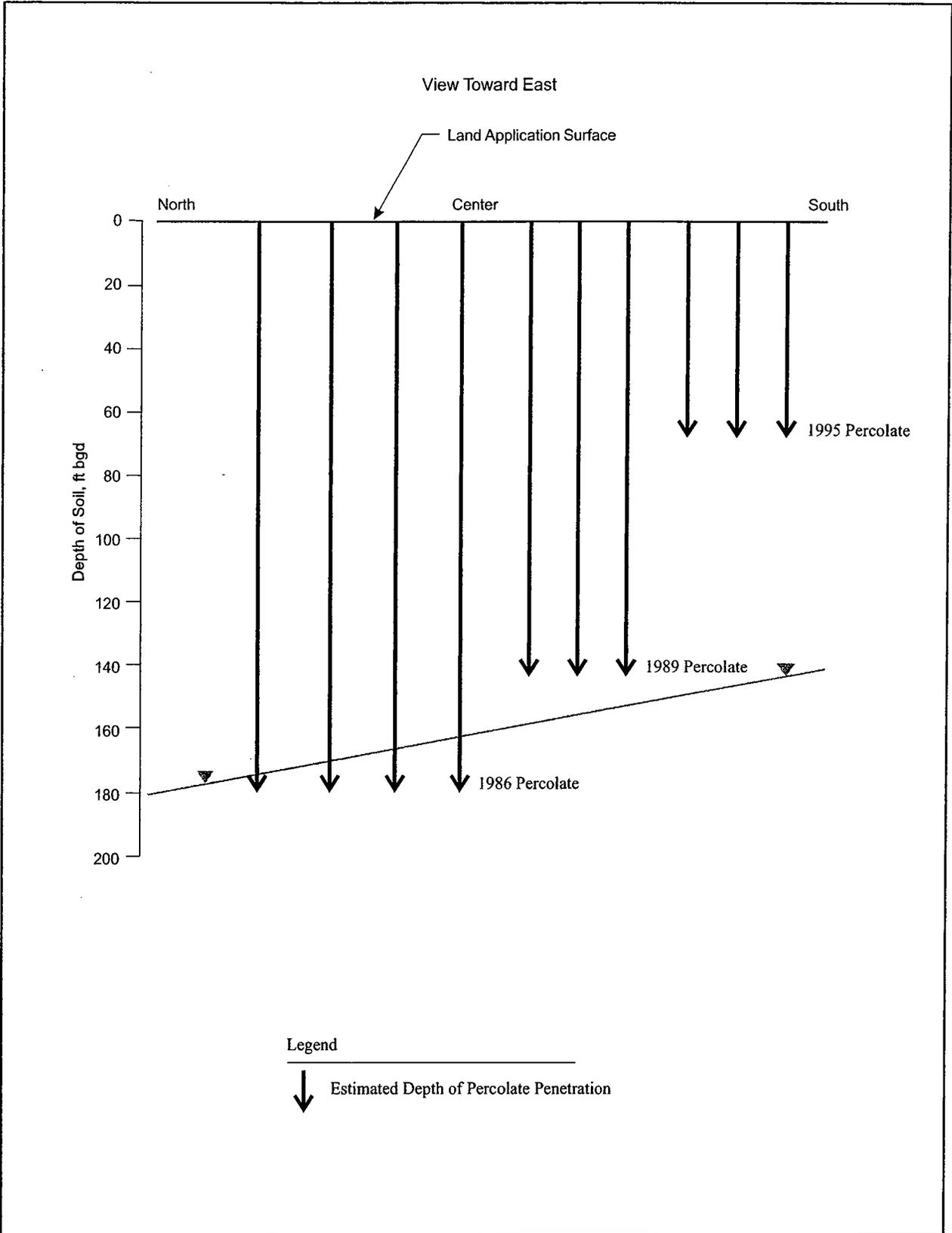
Table 2-2. Estimated Depth of Wastewater Percolation over Time

Year	Percolation, in/yr	Depth of penetration, ft	North area, cumulative depth, ft	Middle area, cumulative depth, ft	South area, cumulative depth, ft
1986	14.0	11.7	11.7	--	--
1987	12.8	10.6	22.3	--	--
1988	14.9	12.4	34.7	--	--
1989	11.1	9.3	44.0	9.3	--
1990	11.1	9.3	53.3	18.6	--
1991	12.3	10.3	63.6	28.9	--
1992	14.1	11.8	75.4	40.7	--
1993	14.6	12.2	87.6	52.9	--
1994	17.3	14.4	102.0	67.3	--
1995	7.3	6.1	108.1	73.4	6.1
1996	15.8	13.2	121.3	86.6	19.3
1997	15.6	13.0	134.3	99.6	32.3
1998	12.9	10.8	145.1	110.4	43.1
1999	12.6	10.5	155.6	120.9	53.6
2000	10.9	9.1	164.7	130.0	62.7
2001	10.7	8.9	173.6	138.9	71.6
2002	12.7	10.6	184.2	149.5	72.2

The depth to groundwater beneath the site ranges from 140 ft on the south to 180 ft on the north. As shown on Table 2-2, the percolate since 1986 has probably recently arrived at the water table on the north side of the site. In the center, where the water table is nearly 170 ft beneath the ground surface, the percolate since 1989 is estimated to be at about 150 ft. On the south side of the site where application has been occurring for only eight years, the percolate is estimated to be at about a depth of 72 ft, or about halfway to the groundwater table. In Figure 2-2, the percolate depth of penetration is shown schematically across the site. Based on this analysis, the groundwater quality in MW-1 and MW-2 is most likely the result of percolate from pre-Frito-Lay activities and from upgradient flow of groundwater from the south, not from Frito-Lay's wastewater percolate.

2.3 Nitrogen Loading and Removals

The average nitrogen loading to the site over the first 17 years of operation is 397 lb/acre, based on a typical 38 mg/L of total nitrogen and the average hydraulic loading rate of 46.5 in/yr. Crop uptake has consistently removed the plant-available nitrogen from the soil profile. In the last three years the annual crop uptake has



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BROWN AND CALDWELL	PROJECT 24042-002	SITE Frito-Lay Kern Plant, Kern County, California	Figure 2-2
	DATE 5-20-03	TITLE Schematic of Estimated Depth of Percolate Penetration	

averaged 455 lb/acre. The soil nitrate nitrogen content has consistently been below 10 ppm and was typically 4 ppm. Based on these values, the soil would be seen agronomically as nitrogen deficient. Based on the nitrogen balance and the lack of nitrate in the soil profile, there is no threat to groundwater quality from nitrate in the percolate from the land application system.

2.4 Audit of Current Operations

In conducting the audit of the current land application operations, a review was made of the annual reports and the collected monitoring data. A site visit was conducted on April 1, 2003 and interviews were conducted with Frito-Lay staff and with Mr. Wes Selvidge.

The current land application system is well operated. Pretreatment using rotating fine screens is appropriate to protect the sprinklers from clogging. Center pivots do a good job of distributing biochemical oxygen demand (BOD), solids, and nutrients uniformly over the site.

Crop rotation practice is to plant Sordan (sudan grass) on 6 pivots during the spring. After the sudan grass is harvested in the fall, the winter forage is planted on all 13 pivots. The 6 pivots that are used for crop irrigation in the summer are rotated through the full 13 pivots so that, on average, each pivot is planted to the summer crop every other year.

2.5 Assessment of Performance Monitoring

The regulatory monitoring for the land application system includes the wastewater constituents, vadose zone water, and groundwater. The regulatory requirements for monitoring in Board Order No. 95-197 are summarized in Table 2-3. The effluent monitoring requirements are reasonable; however, the vadose zone sampling frequency is not realistic. As shown in the depth-of-penetration discussion, the only significant percolation occurs during the months from November through March. A more reasonable sampling frequency would be twice a year, in the winter and in the spring.

The monitoring program requires that monthly samples be taken for a year from the background monitoring well and analyzed for electrical conductance (EC) and nitrate-nitrogen. These twelve data points would be used to determine standards for water quality protection. As of the date of this report, four samples have been taken from each of the three wells. It is recommended that the current list of groundwater constituents continued to be sampled for at least four more quarters. After eight data points are available, a statistical analysis should be made of the water quality, as well as updated Piper and Stiff diagrams and time-concentration graphs (see Chapter 3). In addition, it is recommended that fixed dissolved solids (FDS) be measured for the applied wastewater. FDS is preferred over EC because it is a pure measure of inorganic solids. To compare with water quality diagrams for the monitoring well data in the future, it is recommended that a general mineral analysis be conducted on the applied wastewater.

For security monitoring the water supply is being regularly tested for drinking water constituents and potential pollutants. That sampling should be continued.

Performance monitoring includes the analysis of the current hydraulic loading rates, nitrogen loading rates, crop uptake and removal of nitrogen, soil testing for nitrogen and groundwater testing for nitrate-nitrogen. Although soil testing is not part of the regulatory monitoring, it should be continued because it supports the conclusion that there is a lack of nitrate nitrogen below the root zone and therefore limited opportunity for nitrates to percolate to the groundwater.

Table 2-3. Summary of Monitoring Requirements

Type of sample	Constituent	Frequency
Domestic effluent	Discharge	Daily
	BOD	Monthly
	Total coliform	Once/2 weeks
	Chlorine residual	Daily
	Settleable solids	Once/ 2 weeks
Combined food processing and domestic waste streams	Discharge	Daily
	BOD	Monthly
	Total Suspended Solids (TSS)	Monthly
	Nitrate-N	Monthly
	Total Nitrogen	Monthly
	Electrical conductance	Monthly
	Dissolved oxygen	2/week
Vadose zone	Electrical conductance	Quarterly
	Nitrate-N	Quarterly
	Total Nitrogen	Quarterly
Groundwater	Electrical conductance	Quarterly
	Nitrate-N	Quarterly
	Total Nitrogen	Quarterly

SECTION 3

HYDROGEOLOGIC DATA EVALUATION FINDINGS

3.1 Regional Geology

The Frito-Lay Kern Plant is located in the Kern County sub-basin (DWR 5-22.14) of the San Joaquin Valley basin, approximately 15 miles west of Bakersfield. (DWR, 2003). The property is on the north side of the Kern River Fan, a west-trending depositional feature formed by the coarse-grained alluvial (river) deposits emanating from the Sierra Nevada. Both the topography and the sediments themselves dip gently westward as a result of this depositional system (known as a distributary alluvial fan). Much of the Kern River Fan consists of Pleistocene glacial outwash deposited between 10,000 and one million years ago.

The Corcoran Clay is an important regional fine-grained lake deposit present in the trough of the San Joaquin Valley. A review of publications on the regional and local geology and a review of the Frito-Lay well logs suggests that the Corcoran Clay does not extend as far southeast as the Frito-Lay property. However, numerous fine-grained silt overbank deposits are present in the area.

3.2 Regional Hydrogeology

The San Joaquin Valley basin is recharged primarily by the rainfall and snowmelt of the Sierra Nevada, which infiltrates along the major river beds. Groundwater flow in the region is dominated by the natural and artificial recharge from the multiple channels of the Kern River, which include the Kern River (6 miles south of the property) and Goose Lake Slough (one mile south of the property). Groundwater recharge to the south and southeast of Frito-Lay create mounding of the water table and north-northwest movement away from the recharge toward areas of heavy groundwater pumping and Tulare Lake to the northwest. A review of available regional water level maps from 1991 to present indicate generally consistent northwest groundwater flow directions (with a range of north-northwest to northwest) based on spring (January-February) water level data of the Kern County Water Agency (KCWA). These data are collected from wells with a variety of screen intervals, so they include both unconfined (water table) and semi-confined (deep) aquifer conditions. Nevertheless, an overall northwest regional flow direction is clear, even though water levels rise and fall seasonally and over the years due to drought cycles.

The KCWA water level maps also indicate that the horizontal hydraulic gradient ranges from five to forty feet (ft) per mile, with an average gradient of approximately 20 feet per mile.

The vertical gradients between shallow wells screened near the water table and deeper wells screened in semi-confined zones vary depending on seasonal recharge (which raises shallow water levels) and pumping (which is concentrated in deeper zones). Overall a weak downward vertical gradient is indicated by most available data (Schmidt, 2003a).

Estimates of aquifer parameters have been derived from pumping tests and groundwater modeling. Transmissivities of 346,000 to 440,000 gallons per day per foot (gpd/ft) (average 409,000 gpd/ft) were indicated for wells in KCWA Improvement District No. 4, located approximately 10 miles southeast of the Frito-Lay property (Schmidt, 2003b).

Since wells are typically screened from approximately 200 to approximately 500 to 700 feet, an average aquifer thickness of 400 feet to yields an hydraulic conductivity estimate of approximately 140 ft/day. Other estimates of hydraulic conductivity for the shallow aquifer beneath the Kern Water Bank have ranged from 200 to 2,100 gpd/ft² (27 to 280 ft/day) and the closest areas of the Kern Water Bank (Areas N and S; approximately 3 miles south of the Frito-Lay property) were estimated to have hydraulic conductivities of approximately 600 gpd/ft² (80 ft/day) (Schmidt, 1997). The vertical hydraulic conductivity of the sands has been estimated at 18 ft/day in the RRBWSD, which would convert to roughly 180 ft/day horizontal hydraulic conductivity. Since hydraulic conductivities can be expected to be similar at the Frito-Lay property, a range of 80 to 140 ft/day is a reasonable estimate of hydraulic conductivity considering all of the above.

3.3 Local Geology

The geology beneath the Frito-Lay property is similar to the regional geology described in Section 3.1, with discontinuous coarse-grained alluvial channel deposits interbedded with fine-grained overbank deposits. The location of hydrogeologic cross section is shown on Figure 3-1, and the local geology is shown on Figure 3-2, which includes the boring logs for two of the Frito-Lay monitoring wells (Nolte, 2002b) and the one older 1978 Frito-Lay water supply well. The most important feature of the cross section is the interbedded, discontinuous nature of the permeable sands in the vicinity of the water table. These discontinuous channel and overbank deposits are typical of alluvial environments, due to repeated alluvial channel migration across the area.

3.4 Local Hydrogeology

As described in Section 3.2, groundwater occurs in a shallow water table aquifer at approximately 140 to 180 feet below ground surface (bgs). As shown in Figure 3-3, groundwater in the monitoring wells flows toward the northwest at a horizontal gradient of approximately 56 ft/mile (based on Brown and Caldwell's April 2, 2003 measurements). This recent gradient is somewhat steeper than the regional gradient (which is based primarily on deeper supply wells) of approximately 20 ft/mile to the northwest, and to previous April 2002 water level measurements by Nolte (2003).

The groundwater flow velocity beneath the site can be estimated based on aquifer parameters and the horizontal hydraulic gradient. The equation, based on Darcy's Law (Driscoll, 1986), is as follows:
$$v = Ki/n$$

Where,

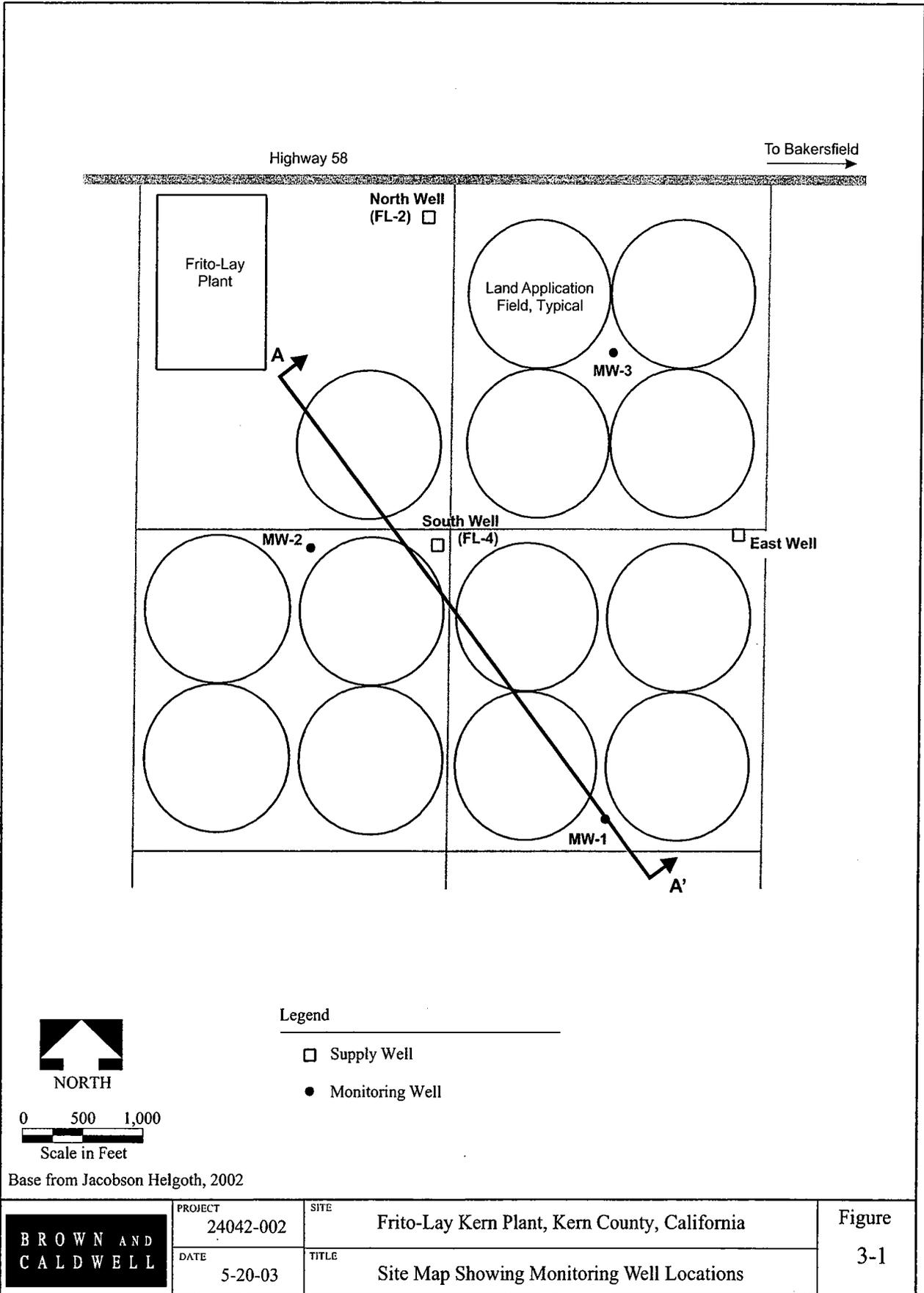
v=Velocity of groundwater flow (ft/day)

K= hydraulic conductivity (80-140 ft/day)

i=horizontal hydraulic gradient (averages 20 ft/ft)

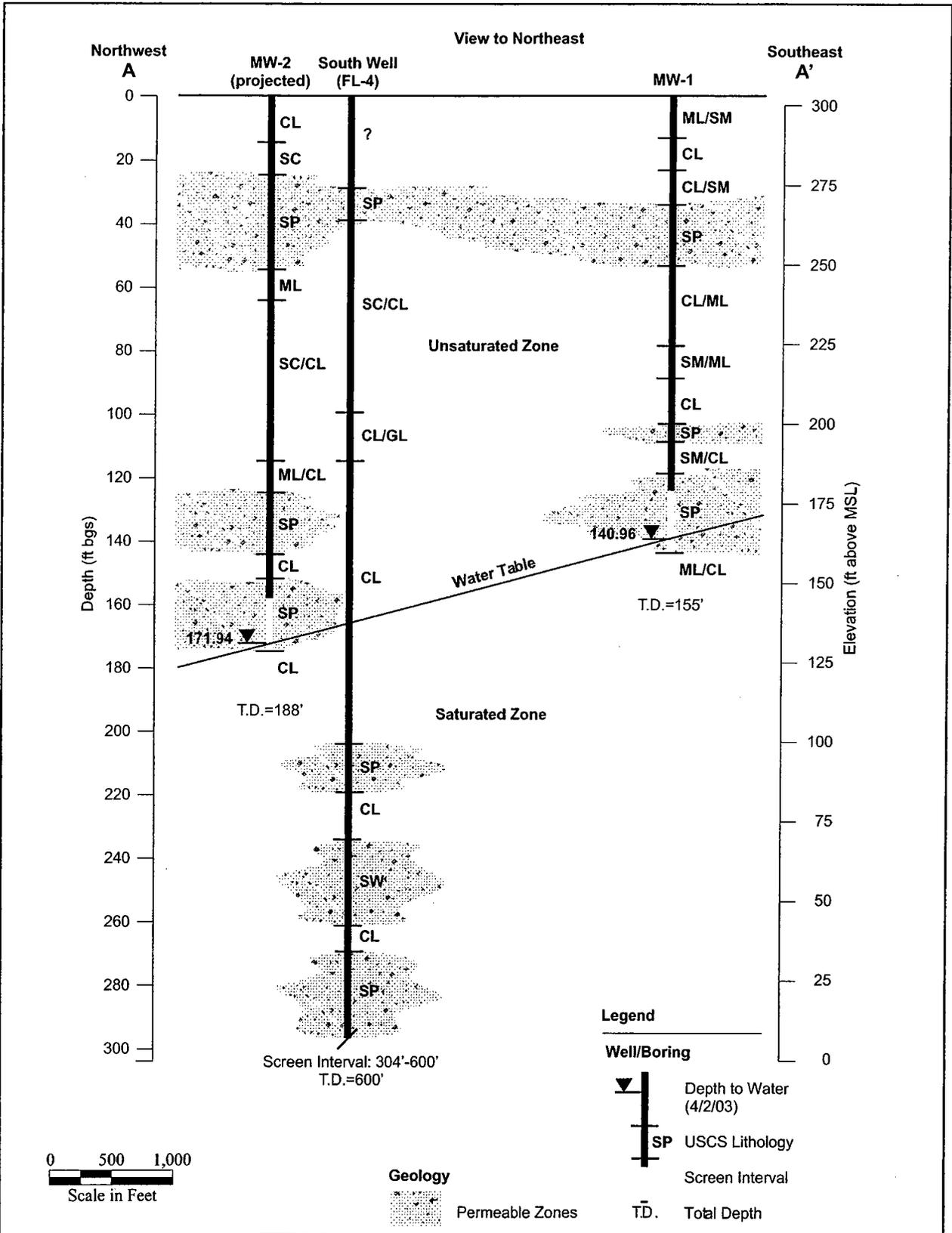
n=effective porosity (0.2-0.3; unitless)

The above equation yields an estimated groundwater flow velocity of approximately 1.0 to 2.6 ft/day (or 360 to 950 ft/year). This flow rate is equivalent to 5.4 to 14 years/mile. For comparison, a similar rate was estimated in the West Bakersfield Area Ground Water Quality Management Study (which extended from Highway 99 to Enos Road, 3 miles east of the property), which found groundwater velocities to be in the range of 200 to 1000 feet per year (with an average of 550 feet per year) using Kern County groundwater model estimates (Longley, 1990). Previous suggestions of a much faster response of water levels northwest of the recharge areas to recharge events represent propagation of the pressure wave in the deeper semi-confined aquifer, and not an actual groundwater flow velocity.



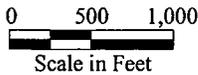
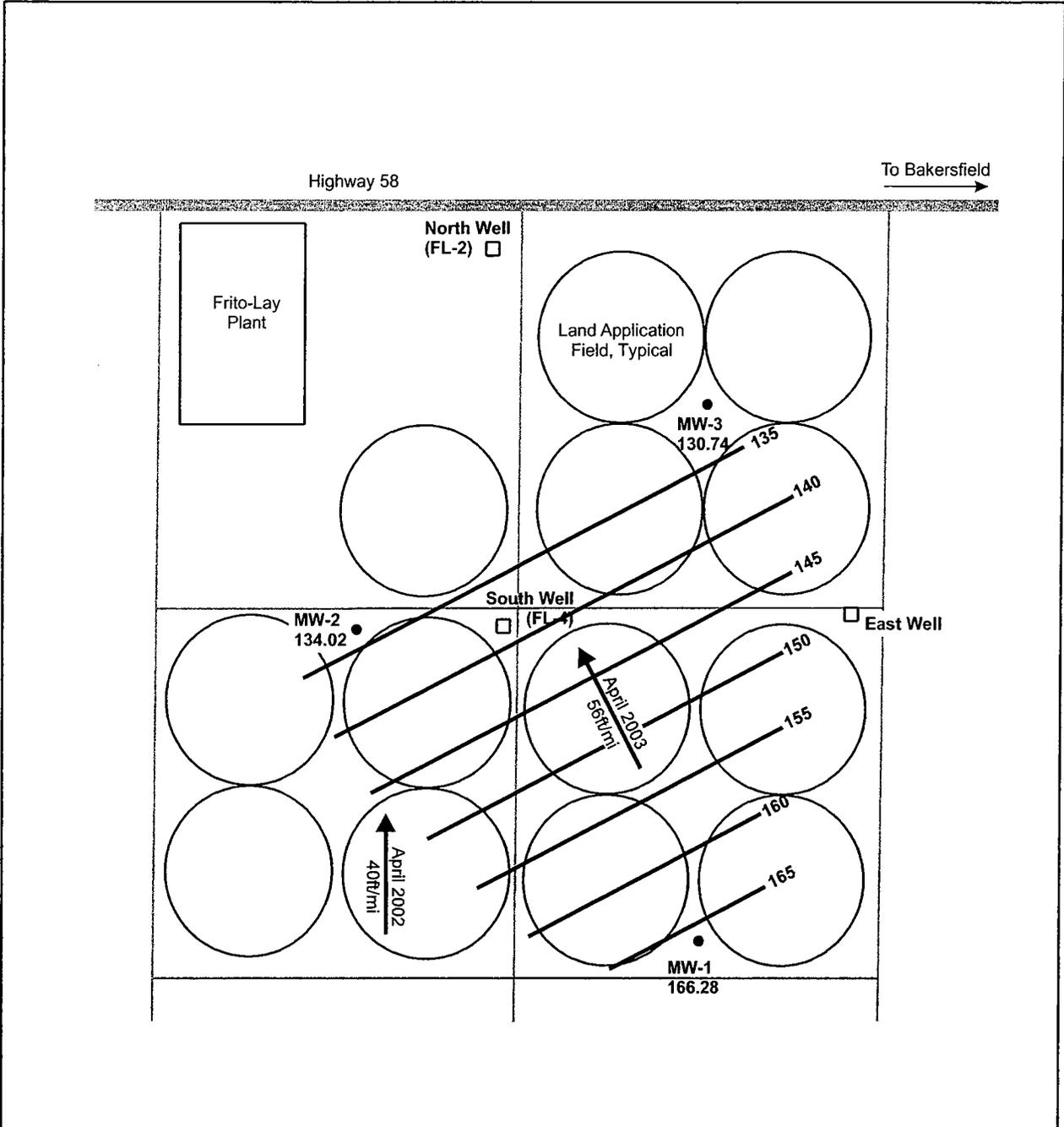
P:\24000\24042 - Frito-Lay

BROWN AND CALDWELL	PROJECT	24042-002	SITE	Frito-Lay Kern Plant, Kern County, California	Figure 3-1
	DATE	5-20-03	TITLE	Site Map Showing Monitoring Well Locations	



P:\24000\24042 - Frito-Lay

BROWN AND CALDWELL	PROJECT 24042-002	SITE Frito-Lay Kern Plant, Kern County, California	Figure 3-2
	DATE 5-20-03	TITLE Hydrogeologic Cross Section	



Legend

□ Supply Well

● Monitoring Well

166.28 Groundwater Elevation, April 2003, Feet Above MSL

Groundwater Elevation Contour, Contour Interval=5 Feet

Approximate Groundwater Flow Direction

Base from Jacobson Helgoth, 2002

P:2400024042 - Frito-Lay

BROWN AND CALDWELL	PROJECT 24042-002	SITE Frito-Lay Kern Plant, Kern County, California	Figure 3-3
	DATE 5-20-03	TITLE Site Map Showing Groundwater Elevation Contours	

Groundwater elevations measured over time in the three Frito-Lay monitoring wells, Frito-Lay's inactive east well (RRBWSD data) and nearby well 27N02 (KCWA data; approximately 7000 feet southeast of the property) are plotted on a hydrograph in Appendix B. The hydrograph shows that seasonal fluctuations in water levels occur in the deeper supply wells of five to ten feet. The very limited monitoring well data shows that the water table has less response to seasonal pumping than the semi-confined aquifer, as is typical of the region (Swartz, 1995) and unconfined aquifers in general.

3.5 Regional Groundwater Quality

Groundwater quality in the Tulare Lake hydrologic region is generally calcium bicarbonate to calcium sulfate type (Sierra Scientific Services, 2003a) and is generally suitable for urban and agricultural uses with only local impairments (DWR, 2003). Oxidizing conditions are present above approximately 500 feet below ground surface (bgs), with reduced conditions in deeper zones below. The primary constituents of concern are high total dissolved solids (TDS), nitrate, arsenic, and organic compounds (DWR, 2003).

The West Bakersfield Area Ground Water Quality Management Study found that nitrate concentrations were high beneath a large part of the region, with numerous potential sources including natural geologic nitrogen, fertilizers, disposal of sewage effluent, septic tanks, and oil field wastes (Longley, 1990). Concentrations between Allen and Enos roads (the western part of the West Bakersfield study area) ranged from 3.5 to 160 mg/L nitrate as NO_3^- . Approximately 50 percent of the samples were above the MCL for nitrate of 45 mg/L. All exceedences were in the northern two-thirds of the study area, suggesting increasing concentrations north of the groundwater recharge areas. TDS in the same area ranged from 69 to 1330 mg/L, with approximately 33 percent above 500 mg/L, and all of the TDS exceedences also occurring in the northern two-thirds of the area. KCWA's Kern Fan Monitoring Reports have also delineated areas of poor water quality in the area, including an area of nitrates above 40 mg/L that extends to within two miles of the Frito-Lay property from the east (KCWA, 1997). It is also noteworthy that adjacent wells sometimes have variations of as much an order of magnitude in both nitrates and TDS.

Surface water recharged along the Kern River fan facilities that percolates to the aquifer has relatively low nitrate and TDS concentrations, as evidenced by both the Longley and KCWA monitoring data. Notably, there is an absence of any groundwater quality problem areas from Bakersfield to Interstate 5 along the river, although problem areas exist both north and south. It has been previously noted that the recharged surface water is displacing and diluting the background groundwater quality (Schmidt, 2003a). As groundwater migrates away from the recharge areas, it mixes with and accumulates both contamination as well as natural constituents such as arsenic, fluorides, and uranium (nitrates and TDS may increase naturally as well). This change will be most pronounced in the shallow water table aquifer, which is dominated by natural and artificial recharge along the Kern River fan (including the Goose Lake Slough). This interpretation should be revisited when RRBWSD's background water quality report is released (Sierra Scientific Services, 2003b; in preparation).

3.6 Local Groundwater Quality

Available groundwater quality data from the three Frito-Lay monitoring wells, north and south supply wells, and other nearby private wells with recent data have been used to evaluate water quality at the property. Limitations of this evaluation have been stated in Section 1, and specific data gaps and inconsistencies are noted below as appropriate.

Nitrate as NO_3^- concentrations for the three monitoring wells over are time shown in the graph in Appendix A (after conversion from nitrate as N concentrations after multiplying by 4.43). Nitrate concentrations have been relatively consistent in upgradient well MW-1 in the samples collected to date. The samples from

downgradient wells MW-2 and MW-3 have nitrate concentrations roughly twice as high. It is too early to tell if the drop in nitrate concentrations in all three April 2003 samples is due to seasonal variation or a longer term trend.

Nitrate concentrations from samples collected from the deeper Frito-Lay north (#2) and south (#4) supply wells are also shown for comparison, as are data obtained from the KCWA for wells 11G01 (3 miles cross-gradient to the northeast), upgradient well 27N02 (1.5 miles southeast), and 20B01 (which appears to be Frito-Lay's north supply well). The recent north and south supply well data is suspect because of inconsistencies in well numbering and compositing of the samples by URS. However, the data show nitrate (NO_3) concentrations range from below 2 mg/L to over 7 mg/L. These data are of limited usefulness without knowing the lithology and screen intervals of the off-site wells, which is not available without the written permission of the well owner. However, as seen in the regional nitrate concentrations, there is a considerable variation in nitrate concentrations in wells on and near the property, and the Frito-Lay land application system is not necessarily responsible for changes across the site. All concentrations are below maximum contaminant level (MCL) for nitrate as NO_3 of 45 mg/L (10 mg/L as nitrogen). Wells screened at deeper intervals can always be expected to be less impacted by nitrates and TDS from agriculture and septic systems.

Specific electrical conductance (EC) for the same set of wells is also plotted on a graph in Appendix A. For reference, TDS is approximately 60 percent of the EC for the supply wells (based on 2002 analyses). The data are similar to nitrate concentration trends, in that downgradient wells MW-2 and MW-3 have EC values of up to roughly twice the upgradient well, and all the shallow monitoring wells have concentrations higher than the deep supply wells.

Another method of comparing water samples for differences and similarities is the use of water quality plots, which include Piper trilinear diagrams and Stiff diagrams (Hem, 1992). Appendix A includes Piper and Stiff diagrams for the three monitoring wells and the north and south supply wells. The supply wells have sodium chloride-type water, which is assumed to represent the background (native) groundwater. The three shallow monitoring wells have calcium-dominated waters. Upgradient well MW-1 is bicarbonate, but the waters change to chloride-dominated in downgradient wells MW-2 and MW-3. However, it is unclear if this change is due to impacts from the land application system or the natural changes in water chemistry as the recharged surface water takes on the character of the aquifer's native groundwater.

The groundwater monitoring program could benefit by evaluating the data in light of the upcoming background water quality for RRBWSD (Sierra Scientific Services, 2003b) and by conducting a statistical analysis after 8 quarters. At that time, the possible need for another upgradient or downgradient monitoring well should be re-evaluated.

SECTION 4

CONCLUSIONS AND RECOMMENDATIONS

Brown and Caldwell's land treatment system audit and hydrogeologic data evaluation produced the following conclusions and recommendations:

1. The land application system is being operated in compliance with its Regional Board Order.
2. The nitrogen loading rate has been matched and balanced by the annual crop uptake of nitrogen. Soil nitrate levels are very low indicating that little nitrogen is available to percolate to groundwater.
3. Vadose zone soil-water should not be sampled in the summer because the soil water is not moving downward and is being evapoconcentrated by plant roots. Vadose zone sampling should be confined to the winter and spring quarters.
4. The percolate from the original northern area has the potential to have arrived at the groundwater after 17 years of operation. Percolate from the southern area has only penetrated halfway to groundwater.
5. The geology beneath the site consists of discontinuous alluvial fan deposits. The three Frito-Lay monitoring wells are screened in the shallow unconfined water table. Regional groundwater recharge of the water table aquifer to the south and heavy widespread pumping from the deeper semi-confined zones creates a weak downward vertical hydraulic gradient.
6. Groundwater occurs at approximately 140 to 180 ft beneath the property in the first water-bearing zone and flows towards the northwest to north-northwest at a gradient of approximately 40 to 56 ft/mile. This horizontal hydraulic gradient is similar to the regional gradient (although somewhat steeper), which is relatively consistent over time in spite of seasonally variable recharge and pumping. The steeper gradient is most likely due to seasonal groundwater recharge, being practiced approximately one mile south of the site by the RRBWSD.
7. Monitoring well MW-3 is down-gradient of the northern land application system that has been operating for 17 years. MW-2 is upgradient of the northern area and downgradient of the middle and southern areas that have only been operating for 14 and 6 years, respectively. It is recommended that water level measurements be collected quarterly from all three monitoring wells and the inactive Frito-Lay east supply well when groundwater sampling is conducted to provide baseline data to comply with RWQCB Order Nos. 95-197 and for future analysis.
8. Groundwater samples should be collected and analyzed for general minerals, nitrates, EC, TDS, and fixed dissolved solids (FDS) for another year before statistical analyses are conducted. It is recommended that general mineral analyses be conducted on the applied wastewater for comparison to the groundwater samples.
9. The velocity of groundwater flow beneath the site can be estimated to range from approximately 0.07 to 0.19 miles/year toward the north-northwest. The time for groundwater to traverse below the one mile-wide site thus ranges from approximately 5.4 to 14 years.

10. Piper and Stiff diagrams show that the upgradient groundwater chemistry changes across the site, but the changes in the downgradient wells may be due to natural evolution of the surface water recharged to the south of the property.
11. Groundwater quality in the region is good in the vicinity of the natural and artificial recharge areas along the Kern River fan, but problem areas are present to both the north and the south. Regional data indicate that both nitrates and TDS increase northward across the RRBWSD, most likely due to mixing of recharged surface water with native groundwater higher in nitrates and TDS due to both natural sources and a multitude of potential contaminating activities.
12. Although the nitrate and TDS concentrations are higher in downgradient monitoring wells, the changes across the site are small relative to regional trends and may be due to natural conditions. Based on the most recent sampling, nitrate-nitrogen concentrations range from 1.9 to 7.5 mg/L in monitoring wells 1 and 2 and were 4.7 mg/L in the downgradient well.
13. The need for an additional up-gradient monitoring well (to assess natural ambient variations in nitrates and EC) and an additional down-gradient monitoring well should be evaluated. The evaluation should be conducted after monitoring results to date have been re-assessed in light of the upcoming background water quality report for RRBWSD (Sierra Scientific Services, 2003b; in preparation) and after a statistical analysis of the first eight quarters of data.

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GLOSSARY

A

- alluvium** A general term for clay, silt, sand, gravel, or similar unconsolidated detrital material, deposited during comparatively recent geologic time by a stream or other body of running water, as a sorted or semi sorted sediment in the bed of the stream or on its floodplain or delta, as a cone or fan at the base of a mountain slope.
- aquitard** A confining bed and/or formation composed of rock or sediment that retards but does not prevent the flow of water to or from an adjacent aquifer. It does not readily yield water to wells or springs but store ground water.
- aquifer** A body of rock or sediment that is sufficiently porous and permeable to store, transmit, and yield significant or economic quantities of groundwater to wells and springs.
- artificial recharge** The addition of water to a groundwater reservoir by human activity, such as putting surface water into dug or constructed spreading basins or injecting water through wells.

B

- beneficial use** One of many ways that water can be used either directly by people or for their overall benefit. The State Water Resources Control Board recognizes 23 types of beneficial use with water quality criteria for those uses established by the Regional Water Quality Control Boards.

C

- confined aquifer** An aquifer that is bounded above and below by formations of distinctly lower permeability than that of the aquifer itself. An aquifer containing confined ground water. See artesian aquifer
- contaminant** Any substance or property preventing the use or reducing the usability of the water for ordinary purposes such as drinking, preparing food, bathing washing, recreation and cooling. Any solute or cause of change in physical properties that renders water unfit for a given use. (Generally considered synonymous with pollutant).

D

- domestic well** A water well used to supply water for the domestic needs of an individual residence or systems of four or less service connections.

E

- electrical conductivity (EC)** The measure of the ability of water to conduct an electrical current, the magnitude of which depends on the dissolved mineral content of the water.
- effective porosity** The volume of voids or open spaces in alluvium and rocks that is interconnected and can transmit fluids.

G

- groundwater basin** An alluvial aquifer or a stacked series of alluvial aquifers with reasonably well-defined boundaries in a lateral direction and a definable bottom.
- groundwater monitoring network** A series of monitoring wells at appropriate locations and depths to effectively cover the area of interest. Scale and density of monitoring wells is dependent on the size and complexity of the area of interest.

GLOSSARY (CONTINUED)

groundwater table The upper surface of the zone of saturation in an unconfined aquifer.

groundwater Water that occurs beneath the land surface and fills the pore spaces of the alluvium, soil, or rock formation in which it is situated. It excludes soil moisture, which refers to water held by capillary action in the upper unsaturated zones of soil or rock.

H

hydraulic conductivity A measure of the capacity for a rock or soil to transmit water; generally has the units of feet/day or cm/sec.

L

leaky confining layer A low-permeability layer that can transmit water at sufficient rates to furnish some recharge to a well pumping from an underlying aquifer.

lithologic log A record of the lithology of the soils, sediments and/or rock encountered in a borehole from the surface to the bottom.

M

maximum contaminant level (MCL) The highest drinking water contaminant concentration allowed under federal and State Safe Drinking Water Act regulations.

N

natural recharge Natural replenishment of an aquifer generally from snowmelt and runoff; through seepage from the surface.

P

perforated interval The depth interval where slotted casing or screen is placed in a well to allow entry of water from the aquifer formation.

permeability The capability of soil or other geologic formations to transmit water. See hydraulic conductivity.

pollution (of water) The alteration of the physical, chemical, or biological properties of water by the introduction of any substance into water that adversely affects any beneficial use of water.

porosity The ratio of the voids or open spaces in alluvium and rocks to the total volume of the alluvium or rock mass.

potentiometric surface The surface to which the water in a confined aquifer will rise in a tightly cased well.

R

recharge Water added to an aquifer or the process of adding water to an aquifer. Ground water recharge occurs either naturally as the net gain from precipitation, or artificially as the result of human influence. See artificial recharge.

GLOSSARY (CONTINUED)

recharge basin A surface facility constructed to infiltrate surface water into a groundwater basin.

RWQCB California Regional Water Quality Control Board

S

salinity Generally, the concentration of mineral salts dissolved in water. Salinity may be expressed in terms of a concentration or as electrical conductivity. When describing salinity influenced by seawater, salinity often refers to the concentration of chlorides in water. See also total dissolved solids.

saturated zone The zone in which all interconnected openings are filled with water, usually underlying the unsaturated zone.

semi-confined aquifer A semi-confined aquifer or leaky confined aquifer is an aquifer that has aquitards either above or below that allow water to leak into or out of the aquifer depending on the direction of the hydraulic gradient.

T

total dissolved solids (TDS) A quantitative measure of the residual minerals dissolved in water that remain after evaporation of a solution. Usually expressed in milligrams per liter. See also salinity.

transmissivity The product of hydraulic conductivity and aquifer thickness; a measure of the ability of water to move through the aquifer. Transmissivity generally has the units of ft²/day or gallons per day/foot. Transmissivity is a measure of the subsurface's ability to transmit groundwater horizontally through its entire saturated thickness and affects the potential yield of wells.

U

unconfined aquifer An aquifer which is not bounded on top by an aquitard. The upper surface of an unconfined aquifer is the water table.

unsaturated zone The zone below the land surface in which pore space contains both water and air.

W

water quality Description of the chemical, physical, and biological characteristics of water, usually in regard to its suitability for a particular purpose or use.

water table See groundwater table.

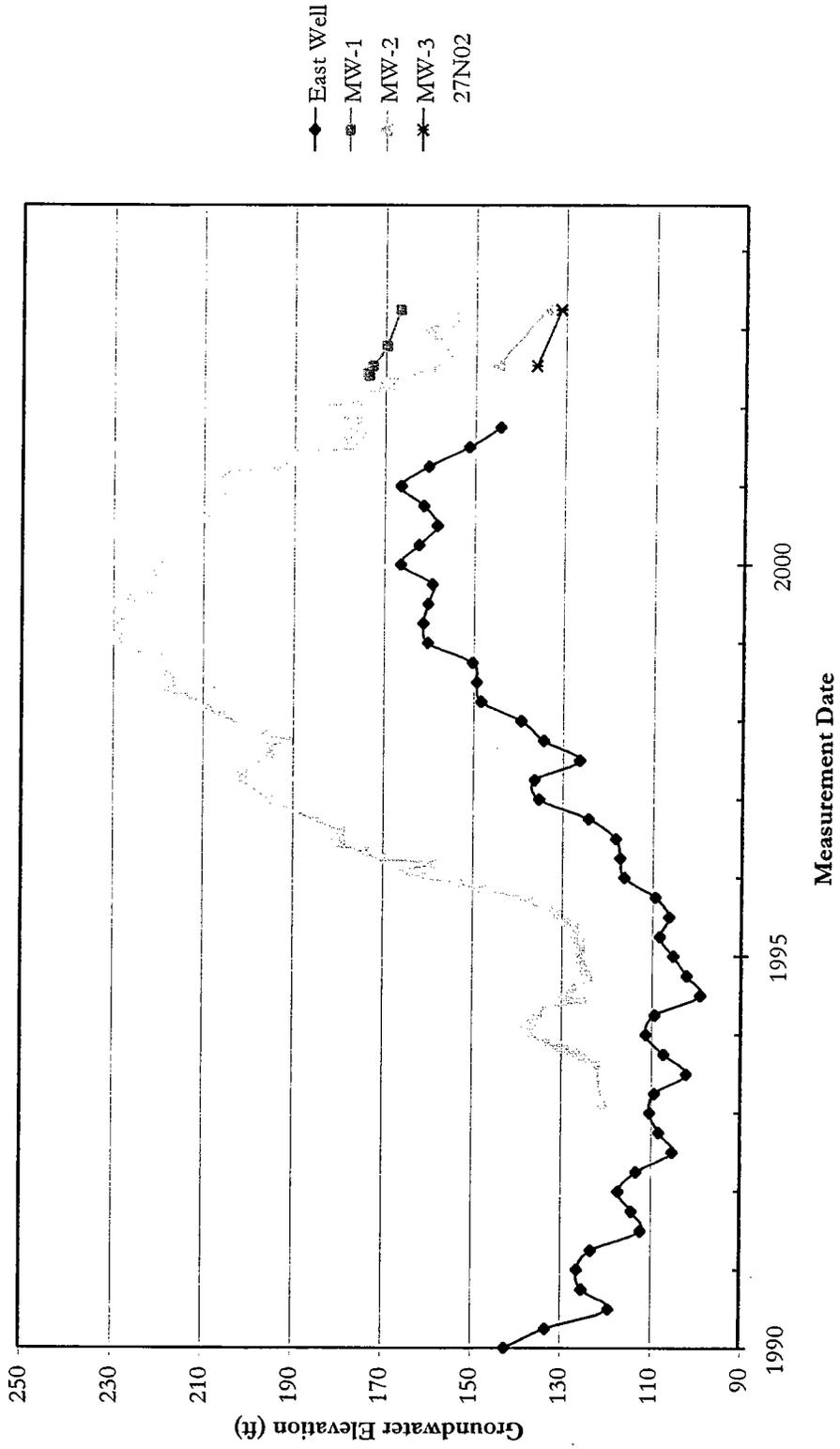
GLOSSARY (CONTINUED)

well completion report A required, confidential report detailing the construction, alteration, abandonment, or destruction of any water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well. The reports were called Water Well drillers' Report prior to 1991 and are often referred to as "driller's logs." The report requirements are described in the California Water Code commencing with Section 13750.

APPENDIX A
GROUNDWATER DATA

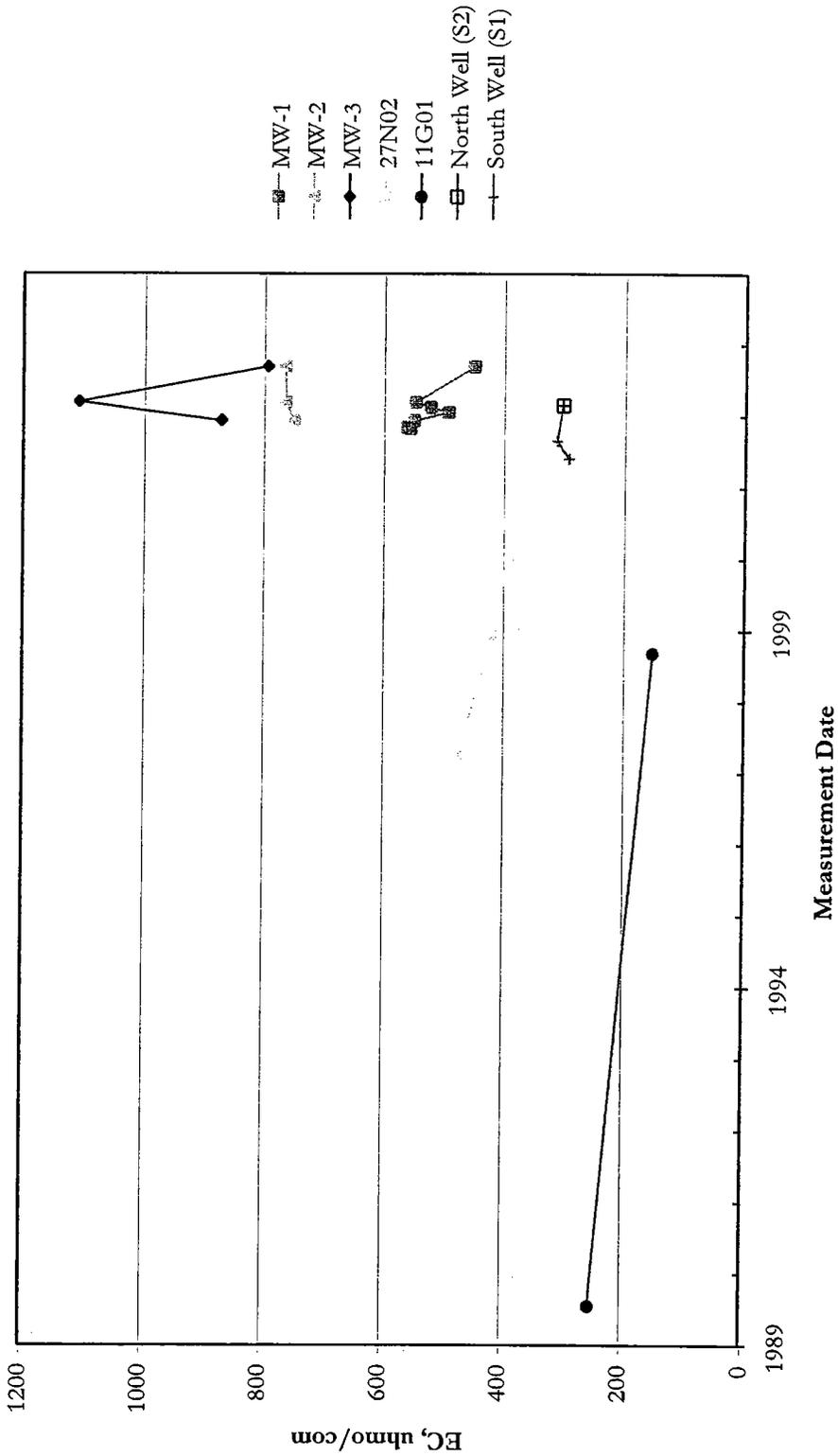
**HYDROGRAPHS AND
WATER QUALITY PLOTS**

Hydrograph, Frito Lay Kern Plant



- ◆ East Well
 - MW-1
 - ▲ MW-2
 - * MW-3
- 27N02

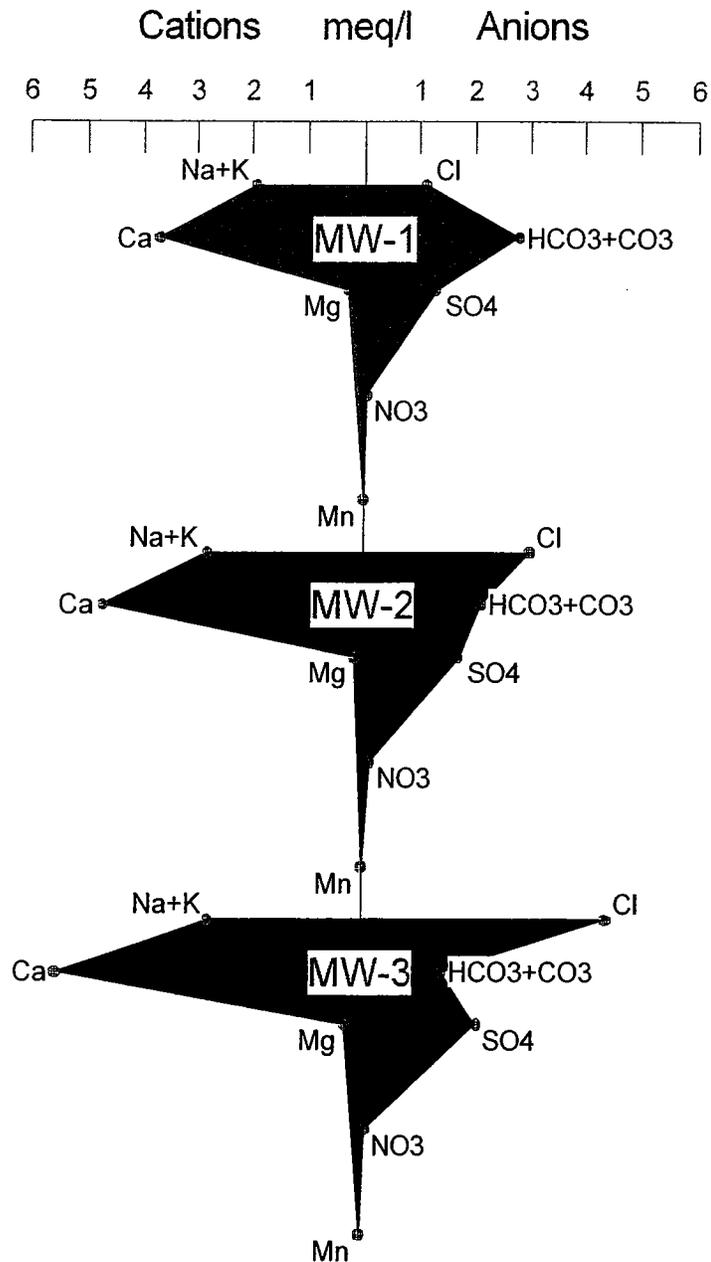
Specific Electrical Conductance Graph, Frito Lay Kern Plant



STIFF DIAGRAMS

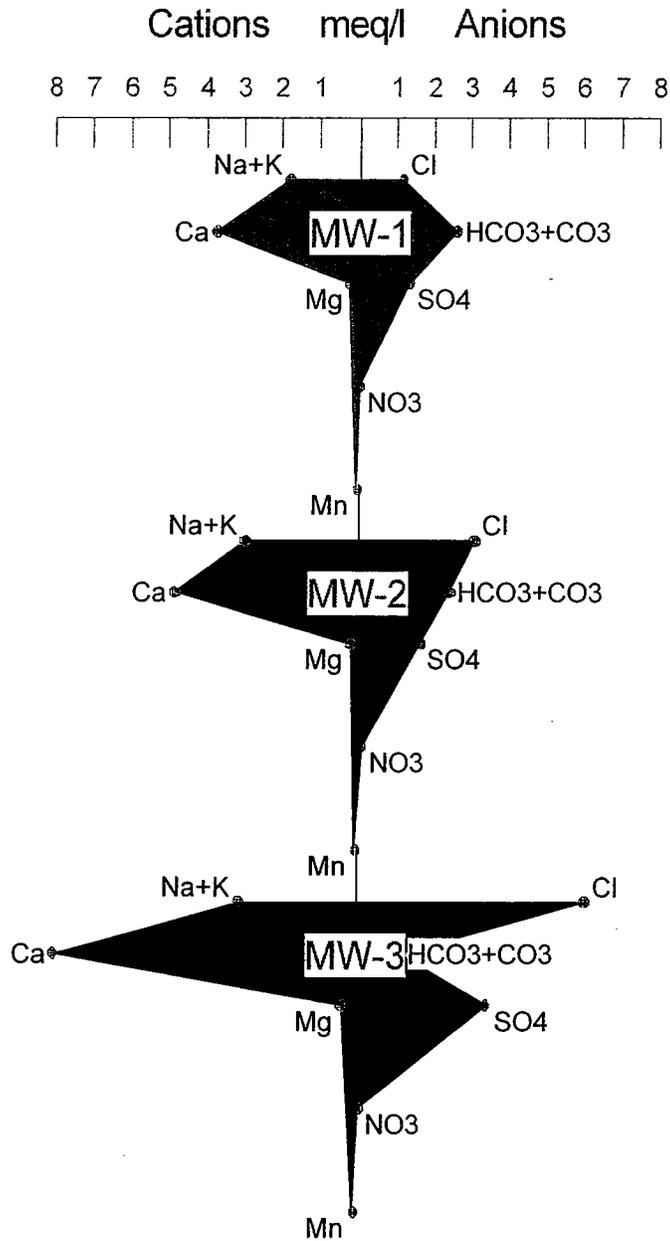
Frito-Lay Bakersfield

Monitoring Wells, Third Qtr 2002 Monitoring Results



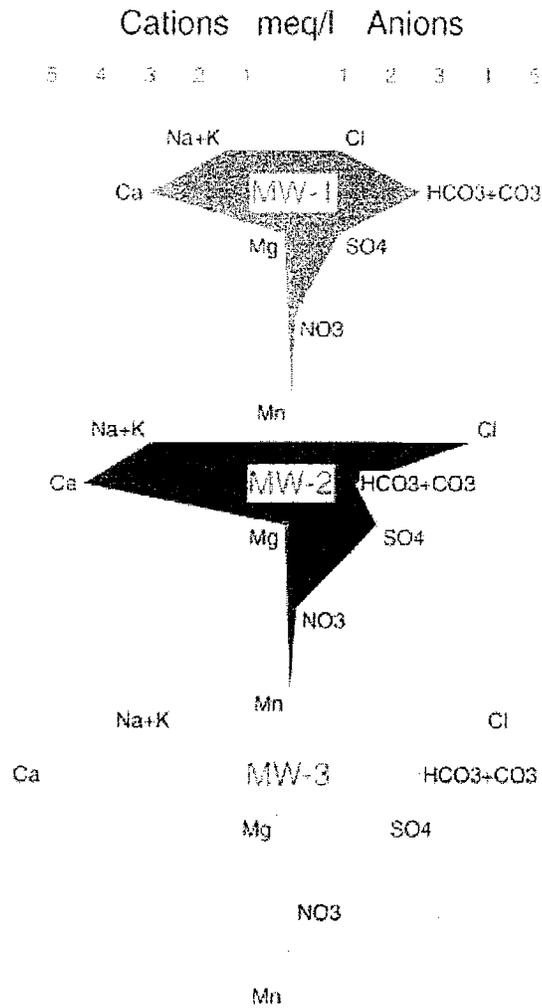
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Frito-Lay Bakersfield

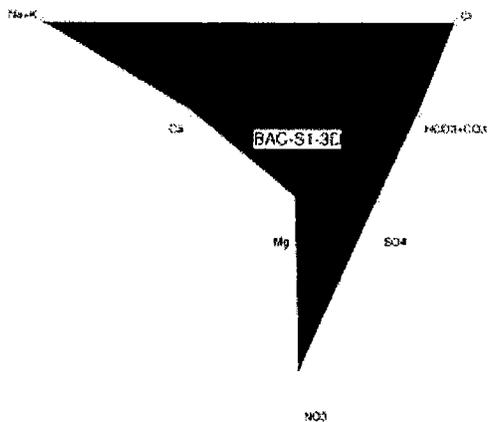
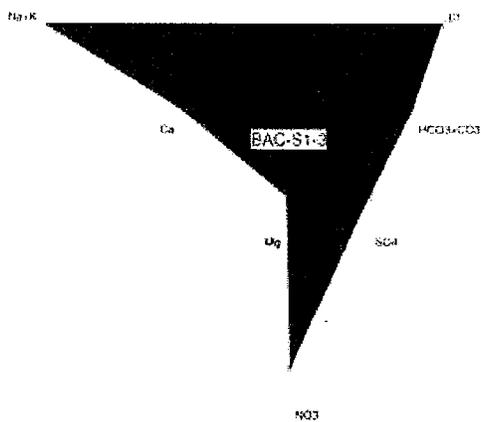
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Frito-Lay Bakersfield

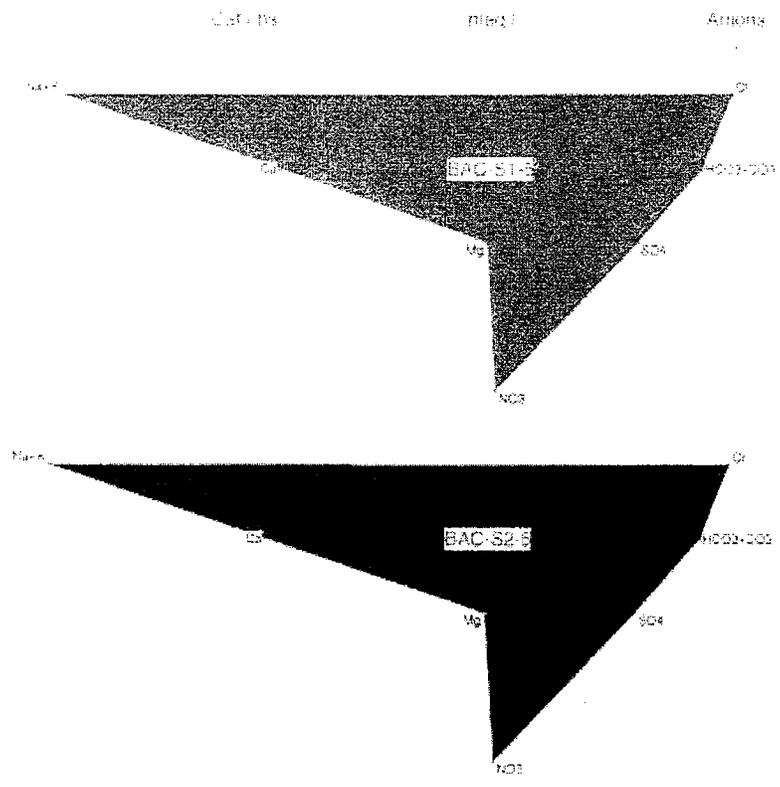
S1-3 Walls, Second Qtr. 2002 Monitoring Results

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Frito-Lay Bakersfield

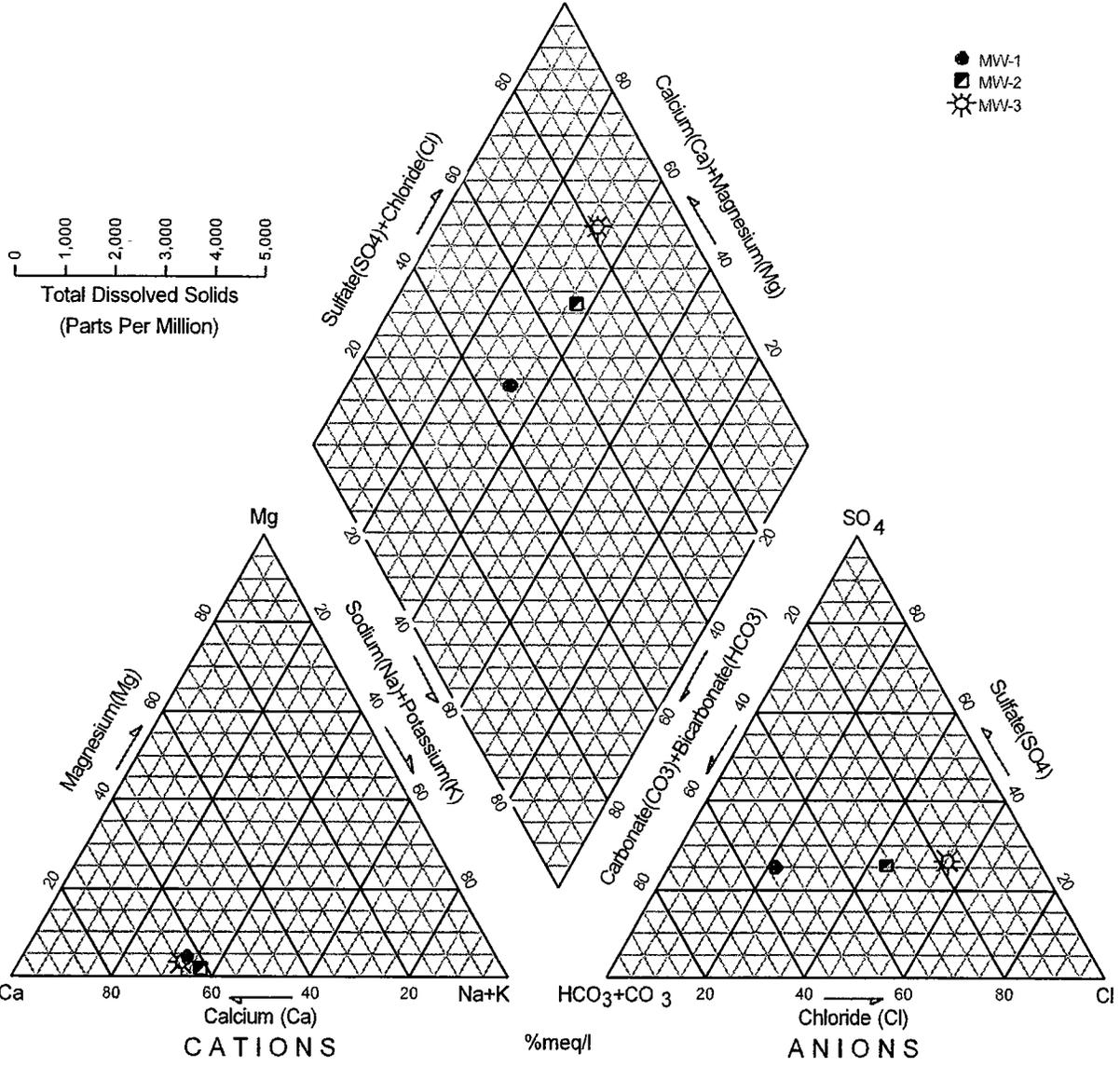
S-5 Wells, 4th Qtr 2002 Monitoring Results



PIPER DIAGRAMS

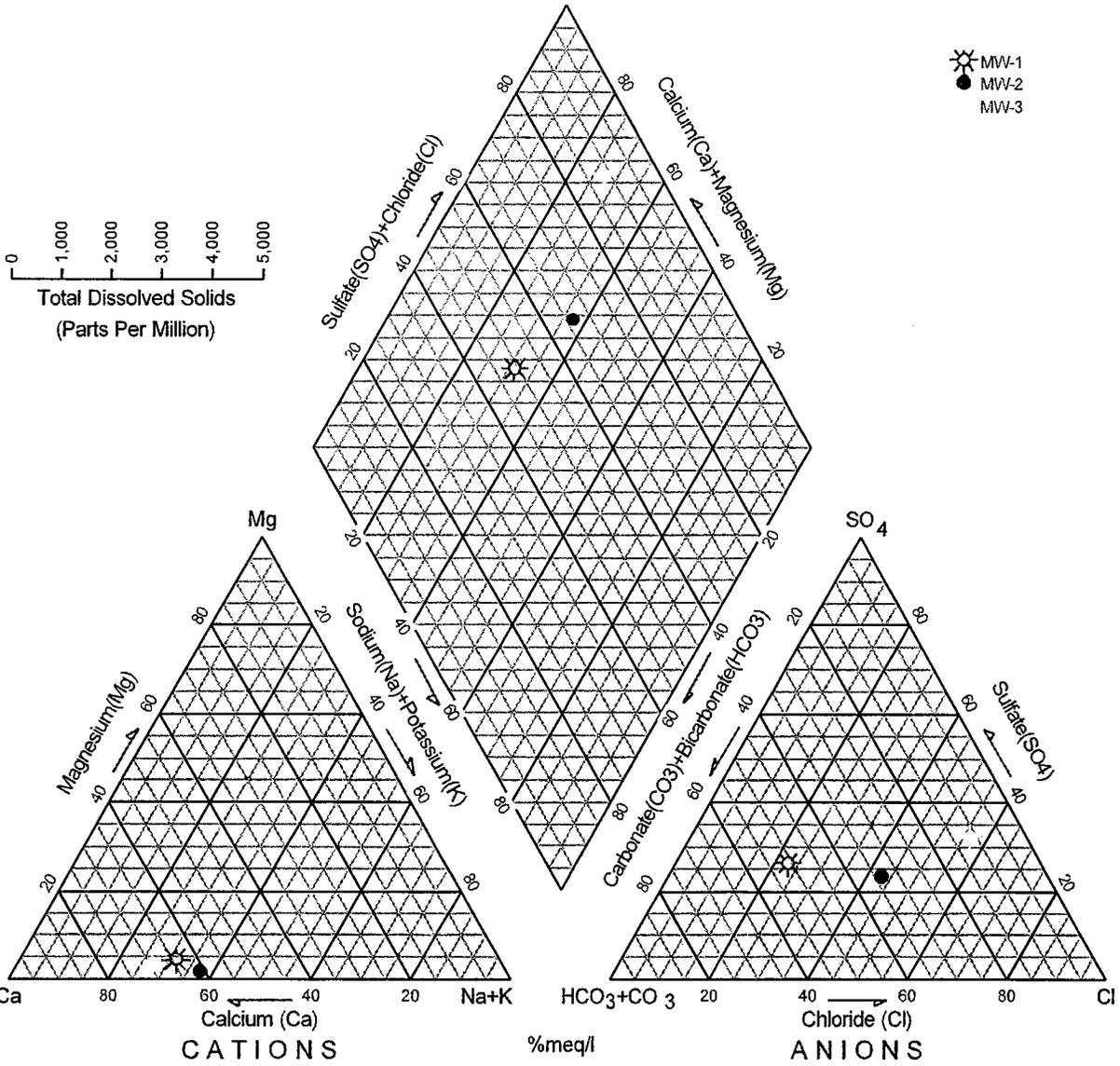
Frito-Lay Bakersfield

Monitoring Wells, Third Qtr 2002 Monitoring Results



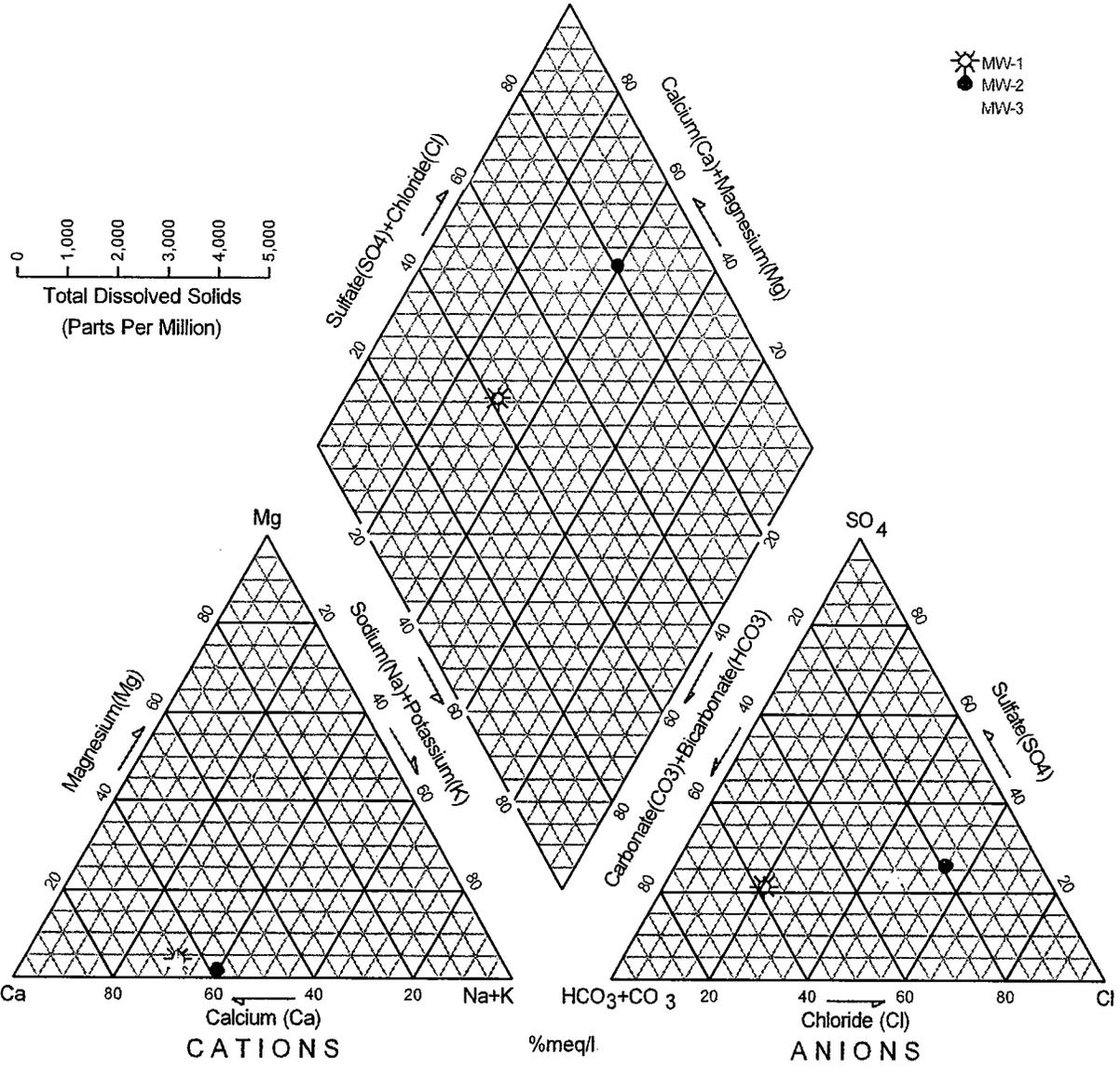
Frito-Lay Bakersfield

Monitoring Wells, Fourth Qtr 2002 Monitoring Results



Frito-Lay Bakersfield

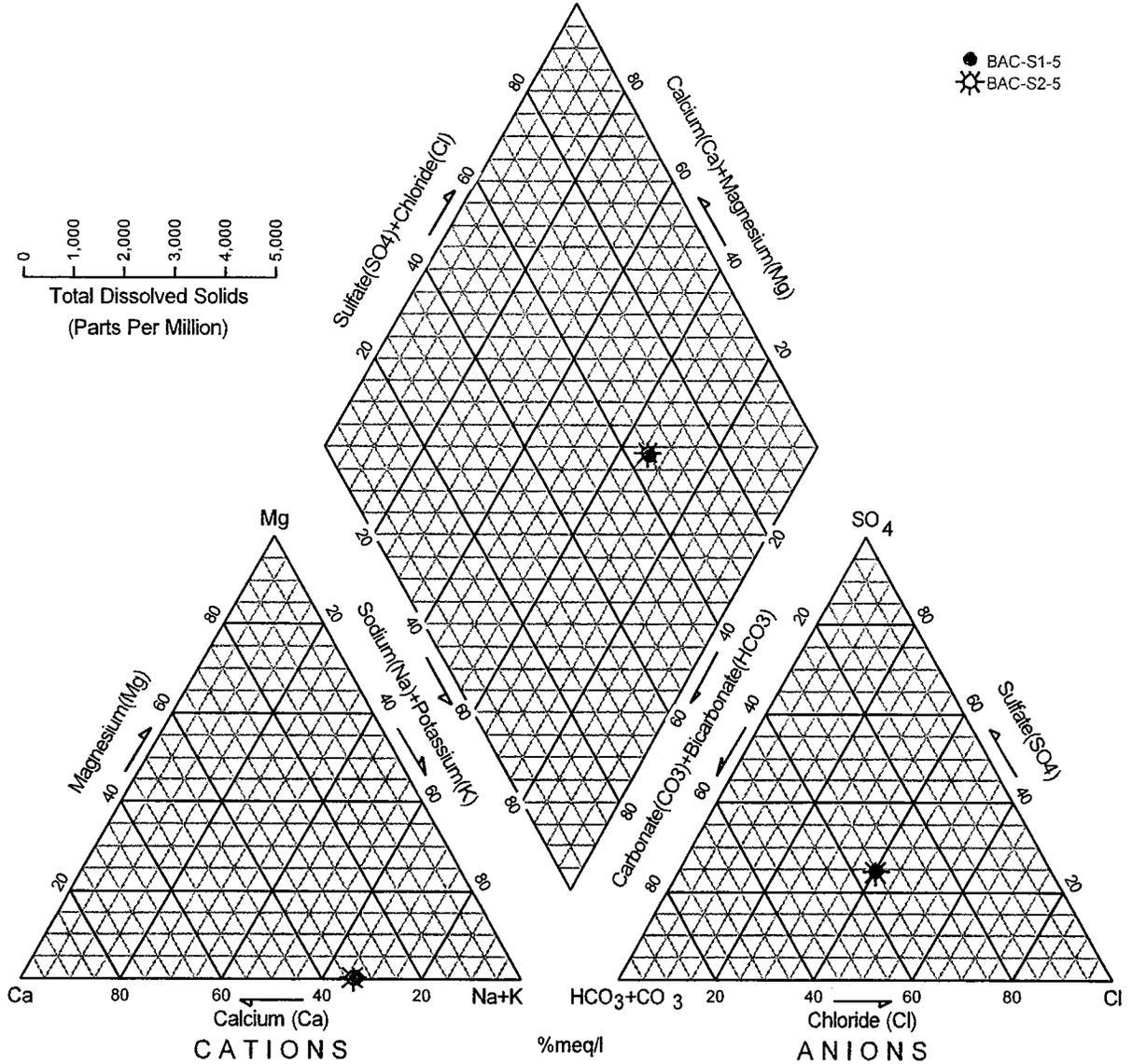
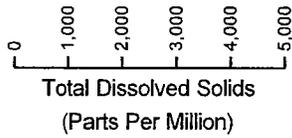
Monitoring Wells, First Qtr 2003 Monitoring Results



Frito-Lay Bakersfield

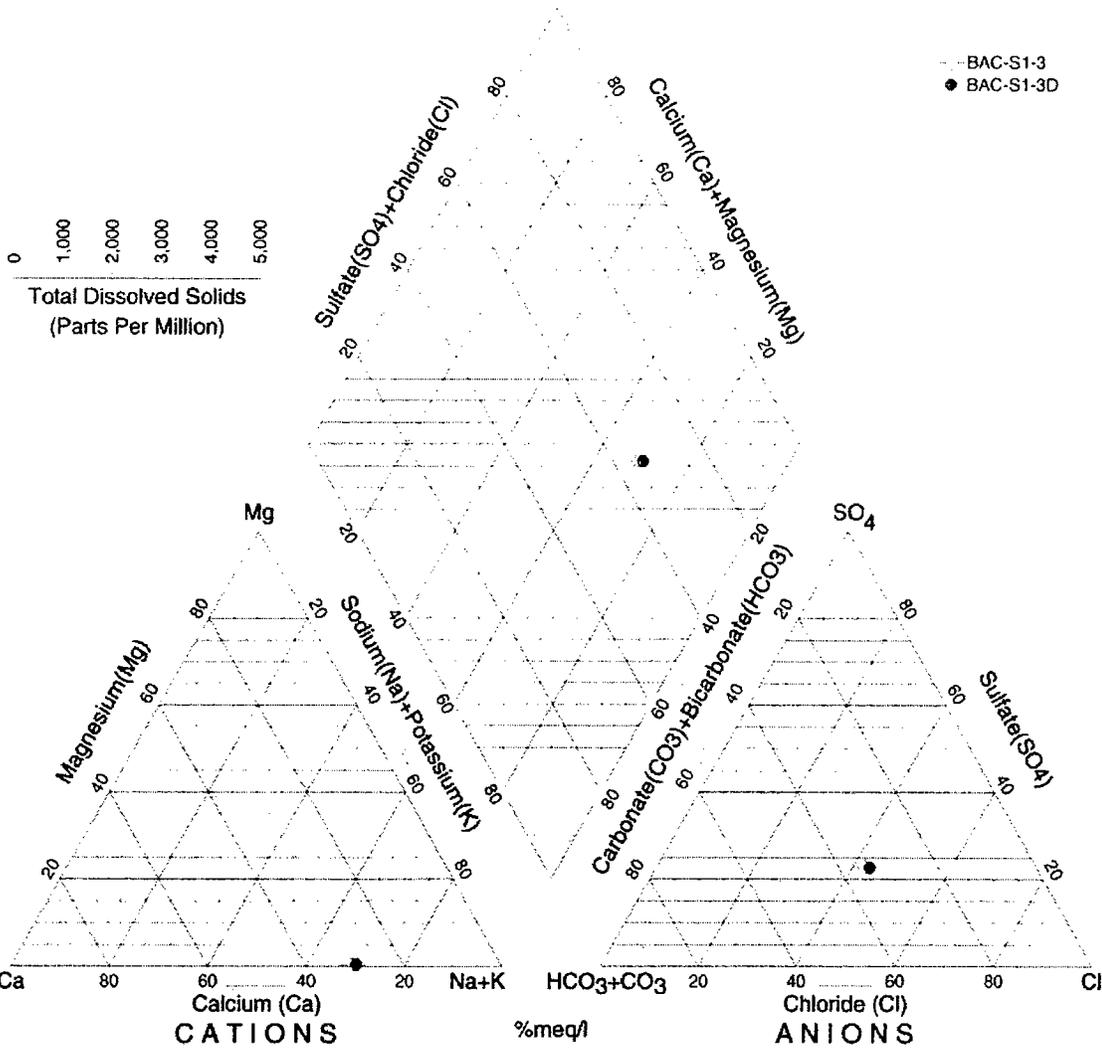
S-5 Wells, 4th Qtr 2002 Monitoring Results

● BAC-S1-5
⊛ BAC-S2-5



Frito-Lay Bakersfield

S1-3 Wells, Second Qtr 2002 Monitoring Results





CVCWA

CENTRAL VALLEY CLEAN WATER ASSOCIATION

Formerly the Central Valley Wastewater Manager's Association

Representing Over Forty Wastewater Agencies

STAN DEAN – CHAIR, SRCSD STEVE WILSON – VICE CHAIR, CERES
JACQUE McCALL – SECRETARY, VACAVILLE ED CROUSE – TREASURER, RANCHO MURIETA

July 6, 2005

Via Electronic and U.S. Mail

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812

**SUBJECT: PUBLIC WORKSHOP RE: PRACTICES FOR THE
MANAGEMENT AND DISPOSAL OF FOOD PROCESSING
AND WINERY WASTE THROUGH LAND APPLICATION
AND OTHER MEANS**

Dear Mr. Merkley:

On behalf of the Central Valley Clean Water Association (CVCWA), we are pleased to submit the following comments in response to the recently released Notice of Public Workshop concerning the "Practices for the Management and Disposal of Food Processing and Winery Waste through Land Application and other Means." CVCWA is an association of local public agencies providing wastewater collection, treatment and water recycling services to millions of Central Valley residents and businesses.

CVCWA is an interested party on this issue for several reasons. First, many of CVCWA's members dispose of wastewater through land application and therefore face permit requirements and water quality issues similar to those of concern to food processors that land apply wastewater. Groundwater objectives apply to the discharges of CVCWA's members as well as to food processors and wineries, and thus CVCWA shares similar concerns as to the application of such groundwater objectives in individual waste discharge requirements.

11476 "C" Avenue Auburn, CA 95603-2702
www.cvcwa.org

Mr. Daniel Merkley
July 6, 2005
Page 2

Second, CVCWA members may be affected if additional regulation of the land application of food processing waste results in increased diversions of such wastes to local sewerage agencies. There are already many POTWs throughout the Central Valley that receive food processing waste for treatment and discharge. POTWs address and evaluate the impacts of such wastes on their treatment systems through pretreatment programs and the issuance of local limits, if necessary. However, as POTW permits become more stringent with the imposition of water quality based effluent limitations for metals and salts, it becomes increasingly difficult for local sewerage agencies to accept industrial waste. Alternatively, local agencies are forced to develop local limits and pretreatment requirements that are not economically feasible for the food processing entities.

At the center of most of the permit and regulatory issues for the food processors and the POTWs, is the issue of salts and their impact on surface and groundwater quality throughout the Central Valley. In short, many wastewater dischargers (industrial and POTWs) are currently receiving permit effluent limits for salts that can not be met with current, economically feasible treatment methods. For the POTWs, the primary technology available for treating salts is reverse osmosis (RO). However, RO is expensive, creates brine for which there is no current feasible disposable method, consumes significant energy, and may create more environmental detriments than benefits.

As an alternative, POTWs are encouraged to use surface water supplies which are lower in salts instead of groundwater for municipal uses. Many POTWs do not control the municipal drinking water supply in their service area. Moreover, many Central Valley communities are unable to obtain additional surface water rights for current and future municipal uses. There is a limited supply of surface water available for municipal uses and it is not legally, economically or technically feasible for all Central Valley communities to forego their use of groundwater in favor of surface waters.

Consequently, there is no easy fix to the issue of salts in wastewater discharged to land or surface waters. Because of the complexities associated with salts and their impact on California's sustainability, we recommend that the State Water Resources Control Board (State Water Board) undertake an effort to address salts on a statewide basis and look for statewide solutions. As part of this effort, the State Water Board should engage the various constituencies and stakeholders that are affected by this issue, including food processors, the Central Valley Regional Board and POTWs. Should the State Water Board determine that this is the appropriate path, CVCWA would agree to be an active participant.

Furthermore, CVCWA encourages the State Water Board to act quickly in establishing a plan for addressing salts throughout the Central Valley and the state. Many of CVCWA's member agencies have already received salt related effluent limitations with which they cannot readily comply. Some agencies have been granted time schedules to comply with these limits; however, the time schedules are generally limited to five years. Such short time schedules do not allow the agencies enough time to evaluate the various

Mr. Daniel Merkley
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options and develop plans for meeting these limits on a consistent basis. Thus, CVCWA encourages the State Water Board to consider addressing these pending final effluent limits in the interim while the salt plan is being developed.

In summary, CVCWA encourages the State Water Board to review salts issues broadly and comprehensively using the best available scientific information. Thank you for giving us the opportunity to comment. We look forward to working with you and members of the food processing and winery industry in addressing this vital statewide issue.

Sincerely,

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

Warren Tellefson
Executive Officer

WT/jlp

cc: Tom Howard, Deputy Director, SWRCB
Stan Dean, Chair, CVCWA

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Sacramento, California 95670

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www.browncaldwell.com

June 24, 2005



Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
Post Office Box 100
Sacramento, California 95812

Subject: Comments on Food Processing and Winery Waste
Management Issues

Dear Mr. Merkley

We are sending this letter in response to the Notice of Public Workshop (Notice) for food processing and winery waste dated June 14, 2005. As requested, we have included comments on the specific questions in the Notice.

We would like to start out by noting that land treatment is a valid and effective treatment process backed by extensive university and federal agency research, several Environmental Protection Agency design manuals, and numerous other technical studies and manuals. Land application of wastewater is also a more sustainable approach than mechanical treatment because it provides treatment with low energy inputs and enables reuse of water and nutrients.

It should be noted, salinity impacts from process/rinse water irrigation reuse are often not much different than impacts from agricultural irrigation in many areas. It should also be noted, wastewater reuse is strongly encouraged in the Water Code to the point that violation of only a salinity standard, as a consequence of a wastewater reuse project, is specifically allowed under Section 13523.5.

Our comments to the specific questions in the Notice are as follows

Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?

Land application and irrigation reuse of food processing wastewater has been practiced in California for several decades at numerous sites. The only cases we are aware of where there have been actual documented impacts to beneficial users of groundwater have been the result of mineral salts from land application of

Mr. Daniel Merkley
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brine. These have primarily occurred near olive and meat processing wastewater land application or storage sites.

Increases in nitrate concentrations in shallow groundwater at some sites have been documented; however, at the vast majority of sites nitrate concentrations are actually lower than the typical nitrate concentrations in the general surrounding area. We are not aware of any documented cases where beneficial users of groundwater have been impacted by nitrate from food processing wastewater irrigation.

While Regional Water Quality Control Board (RWQCB) staff has expressed concerns regarding indirect increases in iron and manganese concentrations in groundwater caused by irrigation reuse of food processing wastewater, we are not aware of a single case where beneficial users of groundwater has been impacted.

Therefore, based on several decades of experience, properly managed land application systems are protective of groundwater quality. Beneficial uses of groundwater can be impacted by land application of food processing wastewater, but the incidence is rare.

Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

There should be consistency in the science and economics underlying the development of appropriate water quality objectives and implementation plans in the basin plans for each region. Basin plans which are fully compliant with the Water Code can be properly developed and the water quality objectives appropriately applied for each region.

If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

A university based panel with experts on agricultural practices, agronomy, soil science, and pollutant transport should be convened to develop loading rate guidelines for different soil and climate conditions. These guidelines would be the scientific basis for basin plan amendments. A second panel with university economic experts and industry cost experts should be convened to develop economic evaluations of treatment technologies, benefits, direct impacts, and indirect impacts. These would serve as the basis for the economic evaluation component required in basin plan amendments.

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Basin plans throughout the state could be amended using a consistent scientific and economic basis.

Should food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are protective of groundwater?

Food processor and winery associations should sponsor guidelines for management of land application. Food processors and wineries should provide active support to the panels suggested above in terms of data, management practices information, and resources. However, for true objectivity, the food processors should not be the sole providers of resources to the panels.

Should there be third-party certification of food processing and winery waste management and disposal plans?

Third party certification should not be necessary. Registered professional engineers are already required to prepare food processing and winery waste management plans. Also, RWQCB staff review waste management plans as part of the permitting process.

Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

The most effective and economical ways to control salts are source control and enhanced seasonal drainage.

Source control includes:

1. Minimizing the use of salts and chemicals in the processing and cleaning steps at the factory.
2. Reusing salts and chemicals to the extent they can be economically separated and safely reused in the food making process.
3. Substituting "good" minerals for "bad" minerals wherever reasonably possible. For example, several mineral components of salinity are actually very beneficial to the likely users of groundwater. Calcium, magnesium, phosphorous, and potassium are generally very desirable in irrigation water. Substituting those minerals for sodium-based minerals is practicing an effective form of source control.

Mr. Daniel Merkley
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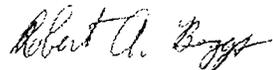
Enhanced seasonal drainage is the process of actively managing shallow groundwater to contain higher salinity water and minimize average salt concentrations. This involves collecting and pumping shallow groundwater and discharging it to surface waters during seasonal periods of high precipitation and ample surface water flows. These seasonal periods generally correspond with excess salt assimilative capacity in surface waters both on a real and regulatory water quality objective basis. Due to the slow process of salt migration in shallow groundwater, brief annual extraction periods are sufficient to contain the salts and keep average annual concentrations below levels of concern.

The energy, resource usage, and subsequent indirect pollution for mechanical aerobic treatment followed by reverse osmosis are extremely high. Based on internal evaluation, we believe that indirect pollution caused by implementing reverse osmosis greatly exceeds the potential reduction in impacts to beneficial groundwater users. In addition, a concentrated brine product is left after reverse osmosis treatment that may be difficult to dispose. For these reasons, reverse osmosis treatment is neither a sustainable nor practicable treatment for the great majority of food processing wastewaters.

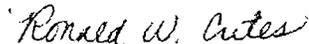
We appreciate the opportunity to provide you with comments on this important topic and look forward to the workshop in July.

Sincerely,

BROWN AND CALDWELL



Robert A. Beggs, P.E.
Managing Engineer



Ronald W. Crites, P.E.
Natural Systems Service Leader

RB/RC: vh



DEPARTMENT OF ENVIRONMENTAL RESOURCES

3800 Cornucopia Way, Suite C, Modesto, CA 95358-9492
Phone: 209.525.6700 Fax: 209.525.6774

July 6, 2005

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95812

Re: Comments on practices for the management and disposal of food processing and winery waste through land application and other means.

Dear Mr. Merkley,

As you know, Stanislaus County has been very active in researching and developing solutions for the use of Food Processing By-Products in the agricultural community. During the past year, we have sponsored a regional summit on "Best Practices" for by-product use in December 2004, we have participated in the Central Valley Regional Water Quality Control Board Workshop in January 2005, and we have presented information at a Senate Agriculture Committee hearing for Senator Jeff Denham in February 2005. Our staff is more than willing to share information from these activities with you and your office at any time.

In 1978 when Stanislaus County recognized the potential problems of handling, hauling, and using Food Processing By-Products, we brought together a team of interested individuals representing: the agricultural community including the Farm Bureau, UC Extension, and the Ag Commissioner's office, the Food Processing Industry, the waste hauling companies, and the regulatory community to develop a program that would address concerns and solve problems. Using this format, by-product use sites in our area implement the program guidelines with full support of all interested parties of the food processing industry.

Since 1978, Stanislaus County has been monitoring the handling and recycling of Food Processing By-Products at permitted sites throughout our county. We believe this well-established and effective program could be a component in managing Food Processing By-Products throughout California.

Mr. Daniel Merkley
July 6, 2005
Page 2

Before we respond to those questions you proposed in the notice for the upcoming July 11, 2005 workshop to be held in Modesto, California, we'd like to make two general statements that would apply to our responses. First, Stanislaus County has little or no experience with the land application of winery waste, so all of our comments are confined to the land application of fruit and vegetable processing by-products. Secondly, we are of the opinion that it is incorrect to refer to fruit and vegetable processing by-products as "wastes". These by-products are highly recyclable could be re-classified as a soil amendment or a fertilizer.

With those caveats, our responses follow:

1. Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?

It is our experience that farmers that land-apply fruit and vegetable by-products have a vested interest in applying them at agronomic rates, with the ultimate goal of optimizing the fertility of the land, while controlling vectors and odors. Agronomic rates, as you are aware, are those that balance the removal of nutrients by a growing crop, to avoid accumulation of a given nutrient in the soil profile. Accumulation of certain nutrients, like nitrogen, has the potential to impair groundwater quality; so, it is appropriate to monitor the application rates through an oversight program.

Working in concert with the processors and applicators/farmers, Stanislaus County has developed an oversight program that provides for reasonable checks on the constituents of the by-products, the rates at which they are applied, the discing of the applied by-products into the soil, and spot monitoring for vector and odor control.

Regional Board staff has expressed some concerns about the adequacy of Stanislaus County's program to monitor the land application of food processing by-products. The following are examples of program changes developed in response to those concerns:

- ▶ Representative testing of the applied by-products regarding: moisture, total nitrogen, organic carbon, sodium, potassium, calcium, magnesium, and phosphorus.
- ▶ Target agronomic rates for these components (or any other component of concern) that are based on solid scientific evidence. Data collected by UC Extension, USDA, and the County Agriculture Commissioners Office are reviewed on a regular basis to identify reasonable target agronomic rates.

► To have soil samples from fields to which by-product is applied analyzed for: cation exchange capacity, plant nutrients, total organic carbon, salinity, and sodicity. Plant nutrients include total nitrogen, nitrate and ammonium nitrogen, available phosphorous (Olsen), potassium, magnesium, calcium and sodium. Saturation paste samples are analyzed for soluble salts (electrical conductivity), pH, and buffer pH (lime requirement). Each field scheduled to receive by-products in any given year is sampled in late spring or early summer prior to the by-product application. Representative soil samples are collected from the depth intervals of 0-12", 12- 24", and 24-36" at 10 to 20 sites per field based on geostatistical-based standards of practice. Samples taken from the same depth intervals are mixed to form a single composite sample for that depth interval, for a total of three composite samples per field.

► Training field inspectors to identify situations of concern before they can develop into problems, and a continuous education program for both by-product generators and farmers receiving the by-products for land application.

2. Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

It is our opinion that an allowance should be made for regional environmental variations (e.g., rainfall patterns, nature of the soils, typical agricultural patterns, depth to the water table, groundwater flow patterns).

At the same time, we believe that some basic tenets should be predicated statewide. We believe that the application of food processing by-products at agronomic rates is of fundamental importance for land application to be successful and sustainable. We would encourage the statewide use of this criterion, and then give counties the necessary latitude to best adapt a fruit and vegetable by-product recycling program to local conditions.

3. If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

All stakeholders, including local regulatory agencies, the food processing industry, by-product haulers, the agricultural community, and the applicators/farmers should be included in the development of proposed regulations.

Mr. Daniel Merkley
July 6, 2005
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4. Should food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are protective of groundwater?

Yes. We caution, however, that such guidelines should be based on sound science, in conjunction with, "best" agricultural practices; and, those these practices and guidelines should not threaten the economic existence of California's food processing industry.

5. Should there be third-party certification of food processing and winery waste management and disposal plans?

Stanislaus County's oversight program is a reasonable alternative between self-monitoring and cumbersome multi-agency monitoring. There is adequate opportunity in existing statutes to allow the Regional Board to intervene when enforcement actions are justified.

6. Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

UC Extension staff is currently in the process of researching salts and salt loading in agricultural operations. We're optimistic that their work will be helpful in developing in identifying cost-effective methodologies for reducing salts, and appropriate application standards.

Again, Stanislaus County appreciates the opportunities to comment and participate in any workshops involving the use of Food Processing By-Products. If you have any questions or comments, or you see any way that we might be able to help your office, please feel free to contact me at 209-525-6700.

Sincerely,



Sonya K. Harrigfeld
Director

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
California State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Mr. Merkley:

I am writing to express my concern with the Central Valley Regional Water Quality Control Board's (RWQB) regulation of food processing by-products that are discharged to land. The RWQB staff proposed a significant shift of regulatory and enforcement policy on January 13, 2005, and this change will have a profound impact on food processing companies in the Central Valley. Although there has been no rulemaking process and the new policy has not had the benefit of input from scientific peer review and input from the regulated community, RWQB staff is already implementing elements of this proposal via individual waste discharge permits. Permit conditions have been, and remain, inconsistent and are often based on the most conservative assumptions, sometimes without scientific justification. Analysis provided to RWQB staff by independent scientists and engineers is often not considered or is dismissed. Industry cannot continue to operate in this arbitrary and uncertain regulatory environment. **The RWQB staff has adopted the policy of issuing citations and fines over permitting and creating an adversarial relationship to not working together to resolve issues; "TOGETHER WE MAKE A DIFFERENCE". This policy will continue to have a devastating affect on California's economy, its people and tax base.**

I am pleased that the State Water Resources Control Board will be conducting a workshop on July 11, 2005 to address some of these issues. The workshop should be an excellent opportunity for all stakeholders to discuss problems and suggest solutions. The State Board has posed six questions to be discussed at the workshop in Modesto, and my organization would like to respond to those questions as follows:

Does the land application of food processing by-products threaten groundwater quality and beneficial uses of groundwater?

Land application of food processing by-products can be practiced in a sustainable manner and impacts to groundwater minimized or prevented with attention to loading and operating practices. Properly practiced land application remains an effective and reliable technique for the management of organic and nitrogen constituents through treatment in the soil. Hydraulic and constituent mass loading must be managed through controlled application of the by-products and proper operation of the land application areas. Dissolved inorganic salinity constituents are recognized to be an issue because these have limited uptake by plants can be mobile depending on the rate of application and soil type(s). My company and other food processors are addressing the issue of salinity by

evaluating and implementing source reduction measures and different treatment options. However, industry cannot continue to invest in these efforts unless there is a more stable and predictable regulatory landscape.

Should there be a statewide consistency in the regulation of food processing by-products rather than allowing for regional environmental variations and differences?

There must be consistency in the regulatory framework and the process of how the regulations are implemented, both between Regional Boards and within a given Board's purview. Inconsistent regulatory interpretation and enforcement deprives the regulated industry of the ability to plan and creates significant uncertainty and disincentives for the business community. Achieving a technically sound regulatory framework is critical to the ongoing viability of the food processing industry in California.

The need for consistency in the general regulatory framework must be balanced with recognition of the unique environmental differences of each region or site. Management plans and policies must allow for different conditions in some instances. A more cooperative working relationship between the regulators and industry and an adherence to the application of sound scientific principles will facilitate the resolution of site specific issues.

If there should be consistent statewide regulation of food processing by-products, how should such consistency be developed?

The State Water Resources Control Board should oversee the development of a coordinated cooperative body of policies and regulatory interpretation with input from the stakeholders. A task force of regulatory agency staff, industry, and scientific and technical experts is needed to address the construction of the regulatory framework and permit conditions.

Should food processors be encouraged to develop practices and guidelines for management and disposal of by-products that are protective to groundwater?

Dischargers and industry groups should be encouraged to develop and implement guidelines for the generation and management of liquid and solid wastes that reflect principles of good environmental stewardship and are protective of groundwater. This should occur within an agreed upon context; if guidelines are followed for the design and operation of waste management systems and dischargers work cooperatively with regulatory agencies, then dischargers should not be penalized for these management efforts. Industry must have a potential safe harbor in order to plan and to invest in the future of their businesses.

Should there be a third-party certification of food processing by-product management and disposal plans?

Independent third party certification is an option that should be considered. The best practices guidelines developed by industry, combined with intensive training, could be the basis for a certification system coordinated by independent agencies. This option

could relieve some of the burden on RWQB staff and ensure compliance. Industry can work with regulators to develop potential options and procedures for a third party certification program.

Are there economical ways to address salt loading issues associated with food processing by-product disposal?

The primary management tools for inorganic salinity loading associated with food processing by-products are best management practices and treatment. Salinity levels should be reduced to the extent practical by source reduction and by using best management practices within the facility.

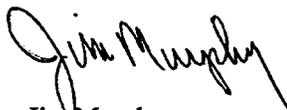
The economic and overall environmental impacts of treatment based solutions need to be considered and evaluated. Due to the significant energy requirements and lack of disposal outlets for mineral wastes, treatment is costly, complex, and is not likely to be an option for many facilities.

Long-term salinity management, particularly in California's Central Valley, is a larger issue requiring solutions beyond the level of the individual point-source dischargers. It will be necessary for the State Board, rather than each of the regional boards, to address this issue and establish general policies.

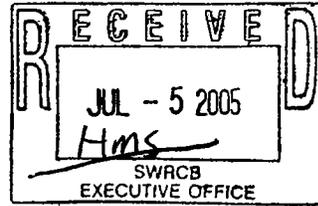
Recommendations

Food processors will continue their long-standing efforts to be good stewards of the land and water resources that are vital to the health of the industry. The issues under consideration are both important and complex, and have policy implications that extend far beyond just food processors located in the Central Valley. The current regulatory regime is not sustainable in both economic and environmental terms. It is critical that a statewide approach is developed and implemented to ensure that rules based on sound science and economics are uniformly applied by each of the regional boards.

I strongly encourage you and the State Water Resources Control Board to take the leadership role in developing policies related to salinity management, the beneficial uses of recycled water, and the application of regulations and permit conditions regarding discharges to land of food processing by-products. The Board's leadership is critical to ensuring consistency in policies and regulations across the state. My organization and the food processing industry look forward to working with you to address these issues.



Jim Murphy
Ingomar Packing Company
Vice President of Operation
PO Box 1448
Los Banos, Ca. 93635



Mr. Arthur Baggett
Chairman
California State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

CC
TRH
BRD. MEMB
SSM
BJ
CMW
RBS

Dear Chairman Baggett:

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I am pleased that the State Water Resources Control Board will be conducting a workshop on July 11, 2005 to address some of these issues. The workshop should be an excellent opportunity for all stakeholders to discuss problems and suggest solutions. The State Board has posed six questions to be discussed at the workshop in Modesto, and my organization would like to respond to those questions as follows:

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However, industry cannot continue to invest in these efforts unless there is a more stable and predictable regulatory landscape.

Should there be a statewide consistency in the regulation of food processing by-products rather than allowing for regional environmental variations and differences?

There must be consistency in the regulatory framework and the process of how the regulations are implemented, both between Regional Boards and within a given Board's purview. Inconsistent regulatory interpretation and enforcement deprives the regulated industry of the ability to plan and creates significant uncertainty and disincentives for the business community. Achieving a technically sound regulatory framework is critical to the ongoing viability of the food processing industry in California.

The need for consistency in the general regulatory framework must be balanced with recognition of the unique environmental differences of each region or site. Management plans and policies must allow for different conditions in some instances. A more cooperative working relationship between the regulators and industry and an adherence to the application of sound scientific principles will facilitate the resolution of site specific issues.

If there should be consistent statewide regulation of food processing by-products, how should such consistency be developed?

The State Water Resources Control Board should oversee the development of a coordinated cooperative body of policies and regulatory interpretation with input from the stakeholders. A task force of regulatory agency staff, industry, and scientific and technical experts is needed to address the construction of the regulatory framework and permit conditions.

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Should there be a third-party certification of food processing by-product management and disposal plans?

Independent third party certification is an option that should be considered. The best practices guidelines developed by industry, combined with intensive training, could be the basis for a certification system coordinated by independent agencies. This option could relieve some of the burden on RWQB staff and ensure compliance. Industry can

work with regulators to develop potential options and procedures for a third party certification program.

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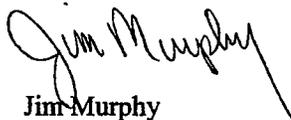
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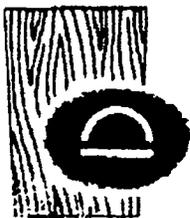
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Jim Murphy
Ingomar Packing Company
Vice President of Operation
PO Box 1448
Los Banos, Ca. 93635



Mape's Ranch and Lyons' Investments

10555 Maze Road Modesto, CA 95358

Office: (209) 522-1762 FAX: (209) 522-7871

July 6, 2005

Sent Via Fax & Federal Express

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812

Re: Public Workshop on Practices for the Management and Disposal of Food Processing and Winery Waste Through Land Application and Other Means

Dear Mr. Merkley:

On behalf of Lyons Investments, the Lyons family, Mape's Ranch and Dos Rios Ranch, we appreciate the opportunity to comment on the practices for the management, disposal of food processing and winery waste through land application and other means.

At the outset it is important to note that my written comments focus solely on practices for the management and reuse/recycling of food processing by-products through land application as a soil amendment. Our family has applied food processing by-products to Dos Rios Ranch and Mape's Ranch for seventeen years. We do not accept food processing waste water, cheese, milk whey, meat, poultry, or winery waste or wastewater of any kind and, as such, we do not have experience with the application of those waste streams.

As I am sure you are aware, Stanislaus County established a Food Processing Residue Use Program in 1978. This program requires any person contemplating application of food processing residue/by-product to obtain a permit for such land application. Typical by-products applied to the land as a soil amendment include culls, stems and other fruit and vegetable by-products. The majority of the food residue comes from tomatoes, beans, peaches, broccoli, cauliflower, bell peppers, potatoes, yams, melons, grapes, cranberries, prunes, peaches, pears, and fruit cocktail mix. Since inception of the program, the County has successfully diverted more than 6 million tons of food processing by-product from the local landfills thru land application, direct feed, and dehydration operations.

When we began operations in 1988, we not only applied for a permit from the Stanislaus County, but also submitted a report of waste discharge (RWD) to the California Regional Water Quality Control Board, Central Valley Region (Regional Board). At that time, a waiver was issued conditioned upon our retaining certain records to evaluate by-product loading at the property. The Regional Board requested (1) sources and description of by-product materials; (2) amount of by-product received daily (tons or cubic yards); (3) fields where by-products are applied, rate of application

and total application/year/field; and (4) total nitrogen, total dissolved solids and percent moisture content of representative samples from the various by-product streams. Since the issuance of the waiver by the Regional Board, we have kept all of the requisite records and provided a yearly report to both the Regional Board and the County. Moreover, at no time since the adoption of the waiver for our operation has the Regional Board or the County made a determination that our operation has applied food processing by-product in excess of agronomic rates, been a public nuisance or in any way has our operation over the past seventeen years impacted groundwater quality.

In addition to the record keeping requirements of the Regional Board, since 1988 we have annually obtained a permit from Stanislaus County in accordance with the Food Processing By-Products Use program, as amended over the years. The requirements of this permitting process are much more stringent than the Regional Board requirements. We submit a plan of operation that requires identification of soil types on the project site, identification of approximate depth to groundwater, written notice to adjacent property owners, detailed site map, origin and types of by-products to be applied on the land, detailed description of how by-products will be utilized, detailed description of how odor, pest and operational nuisances will be prevented, and a detailed description of the land application process.

The permit also requires analysis of total nitrogen, total dissolved solids and percent moisture content of representative samples of the food processing by-product. For the 2005 food processing season the County's permit was once again amended and now requires testing of soils during the pre-application and post application period to confirm nutrient levels in the soil.

At the conclusion of each season, an annual report is submitted summarizing all testing results as well as a complete summary of the total amount delivered to the project site, records indicating the fields where by-products were applied, rate of application and total application for the year.

We are very proud of our operations at Dos Rios and Mape's Ranches. Over the past 17 years we and our tenants have experienced higher crop yields due to better cultivation practices, the application of organic food processing by-products as a soil amendment and overall management of our crop nutrient requirements through lab leave analysis. Neither we, nor our tenant, have experienced any crop damage due to the application of food processing by-products. Finally, we have had no nuisance complaints from neighbors or the general public as a result of our operations.

We believe that the Stanislaus County's regulatory program should serve as a model for the State. It is an example of how government and the regulated community have developed a program that works, by not only protecting the environment, but also by allowing the efficient use of a by-product that would otherwise be classified as "waste" and require disposal at a landfill.

With the above as background, I would now like to address the questions presented in the public notice for the upcoming workshop.

Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?

The land application of food processing by-product does not threaten groundwater quality and is properly managed. Naturally, if too much food processing by-product is applied at one location it may create a problem. However, if the food processing by-product is applied at agronomic rates it poses no threat to groundwater and should be considered as a normal and customary farming soil amendment program. Over the past seventeen years we have demonstrated through our operation that effective management produces high crop yields with the use of this organic product, with no impact to groundwater quality.

Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

Yes, we believe consistency is important. It provides a level playing field for all food processors in the State (however there needs to be a degree of reasonable flexibility at each location). We support a General Order that incorporates a program similar to Stanislaus County's Food Processing By-Product program statewide. This program has been in place for nearly 30 years and has proven to be a successful way to fully utilize food processing by-product by recycling it back into land (or by direct feed or de-hydration). We believe that some sort of accommodation should be made if there is an existing local regulatory program in place that is proven and works. An existing oversight program that is as stringent as the general order, should be acceptable, assuming of course, that there is annual reporting to the State.

If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

There should be input from all parties affected by any proposed regulation, including local regulatory agencies, food processing industry representatives, by-product haulers, the agricultural community, end users of the by-products and the environmental community. Additionally, various state agencies, regional and county entities that have input should be included as there are often conflicting views among regulatory agencies, i.e. one state agency encourages and rewards reuse while another is critical of an effective program.

Should food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are consistent with groundwater protection?

Yes. We believe that it would be appropriate to have the industry group representatives review and update the existing guidelines for the management and disposal/reuse of waste/by-product. I'm confident the food processors and wineries want to protect the groundwater and will work with the State Board to reach reasonable guidelines that are based on sound science.

Should there be third party certification of food processing and winery waste management and disposal plans?

I am not certain what third party certification means. Currently, any party that conducts by-product, soil and/or water testing has the tests run by an

independent laboratory. This laboratory then confirms the results through a reporting process. Adding an additional layer requiring independent consultants to either prepare or approve of a by-product management, disposal and a reuse plan seems to be an additional costly burden that does not appear to be justified. Proper regulatory control and local oversight that defines a clear set of objectives for the program should be sufficient to ensure that land application of by-products is done effectively without posing a threat to groundwater.

Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

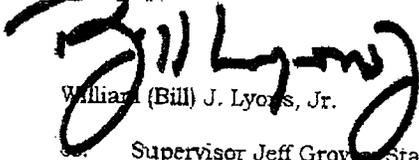
The answer to this question should be jointly resolved by the food processing industry and the Regional Boards. These two entities should work collaboratively towards a solution that protects the public interest as well as the food processing industry that is so critical to California's economy. It is my hope that the State Water Resources Control Board encourages this partnership and provides the leadership that results in mutually favorable solutions which I believe exist.

The bottom line with respect to land application of food processing by-products, comes down to the issue of management. Application of food processing by-products at an agronomic rate, as a soil amendment, poses minimal threat similar to production agriculture. Application in excess of the agronomic rate of any material may pose an increased risk.

With limited resources available, it is important to work effectively with other governmental entities to avoid duplicating efforts, and as such, we believe that the proper course for the State to take is to adopt a General Order applicable to the reuse of food processing by-products which accommodates existing regulatory programs in some fashion.

Thank you again for this opportunity to provide comments. Please do not hesitate to call me at (209) 522-1762 should you have any questions.

Sincerely,



William (Bill) J. Lyons, Jr.

Supervisor Jeff Groves, Stanislaus County Board of Supervisors
Sanya Harrigfeld, Stanislaus County, Department of Environmental Resources
Denny Hoch, Stanislaus County, Department of Environmental Resources
Lyons Investments



July 6, 2005

Mr. Arthur Baggett
Chairman
California State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Chairman Baggett:

Musco Family Olive Co. of Tracy San Joaquin County would like to thank the State Water Resources Control Board for scheduling the Workshop on Practices for the Management and Disposal of Food Processing and Winery Waste through Land Application and Other Means. In light of the apparent change in the interpretation of regulations and policies by the Central Valley Regional Water Quality Control Board staff as presented in their January 28, 2005 informational session, it is imperative that all stakeholders be given the opportunity to discuss all of the environmental, economic, and technical issues associated with continuing to protect water quality throughout the State of California.

We recognize the importance of protecting California's water supplies for all beneficial users of these supplies. A major problem faced by the State is salt management, which is an issue requiring solutions beyond the level of the individual point source dischargers. As long as millions of pounds of salts are imported into Southern and Central California each year through State and Federal Water Projects, long-term salt management solutions must realistically involve all industrial, agricultural and municipal users of water, as well as concerned State and Federal Agencies and private organizations.

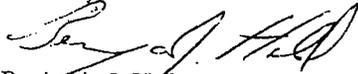
We are concerned that recent Central Valley Board actions are unfairly targeting the food industry as the principal cause for real and imagined water quality problems, and that the Board is attempting to force individual dischargers on a case-by-case basis to install expensive, unsustainable treatment systems without fair consideration of the larger socio-economic and environmental issues associated with such installations. It is well known that treatment of food processing by-products and waste is extremely energy intensive, that there is no practical outlet for the concentrated waste brines generated by such systems, and that in the absence of a long-term state-wide salt management plan these treatment schemes will not have the desired effect on the state's water quality.

Musco and other food processors are not seeking exemption or waiver from regulation, but to participate fully in an appropriate rulemaking process to resolve the salt

management problems of the Central Valley and of the State. This workshop is an important first step toward the development of a comprehensive statewide salt management plan, toward the development of a well reasoned framework of regulations and policies, and toward the development of necessary interim measures, pending the establishment of longer-term solutions. Unless such a process is initiated to develop reasonable requirements of food processing by-products, the food processing industry will suffer irreversible impacts. Because of this, it is critical that the State Board assume the leadership role in formulating a workable statewide approach that allows and encourages stakeholder participation.

We have reviewed the comments of both the California League of Food Processors and the California Food Production and Processing Coalition regarding the six questions posed in the Notice of Public Workshop, and fully concur with both organizations.

Sincerely,

A handwritten signature in black ink, appearing to read "Benjamin J. Hall". The signature is fluid and cursive, with the first name being the most prominent.

Benjamin J. Hall
Musco Family Olive Co.

Obscurity Cellars
6440 Slug Gulch Road
Fair Play, CA 95684
530-957-0586

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Via email to dmerkley@waterboards.ca.gov

Dear Mr. Merkley:

Obscurity Cellars is a small winery in the Sierra Foothills, and holder of a waiver granted in late 2003 for disposal of winery liquid waste to land. Since septic systems are no longer considered acceptable as a means for disposal of winery liquid waste, the only two options for a facility such as ours are to tank and haul the liquids to a waste treatment facility or to dispense them to the surrounding land.

Our vineyards adjacent to the winery have been expanded to six acres, and the amount of liquid we apply to the ground represents much less than one inch of equivalent rainfall each year (compared to a normal rainfall of approximately forty inches per year). Further to this use, the material resulting from winery operations consists of fragments of grape skins, grape pulp and organic material that settles during wine development, and thus contains not waste but nutrients which can be beneficially applied to the vineyard, reducing the need for chemical fertilizer applications. In contrast to historical chemical and cleaning agent use in wineries, modern winery practices produce insignificant quantities of salts or other materials which might raise concerns. As a result, the liquid which results from our operations contains organic materials which, when spread over the vineyard land, are easily broken down by natural processes so that the nutrients can be utilized by the vines and cover crops which grow between the rows. When care is taken to prevent runoff (and wineries have demonstrated and will continue to demonstrate responsible practices in this regard), virtually all the nutrients contained in the liquids can be put to beneficial instead of detrimental use.

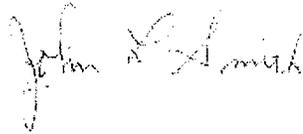
The final result is an agricultural system which is in balance, allowing virtually all the byproducts created in the production of wine from grapes to be recycled and reused beneficially by the vines which produce the grapes. To add a burden of monitoring for these small amounts of liquids with extremely low salt content and mild pH levels that are easily accommodated within the buffer capacity of soils, would be to transform a system with minimal cost and beneficial contribution to the land into an uneconomical system which would drive many current waiver holders into the only alternative system:

tank and haul. In this approach, where the cost can be prohibitive and the liquid material adds a burden to a waste processing facility, all the nutrient value of the liquids are lost by treating them as waste and processing them.

With the current system of waivers (and the potential expansion of waivers to larger wineries with proportional amounts of vineyard land available for liquid distribution), wineries with vineyards, either on the same site or on commonly owned land, which produce small volumes of liquid can apply this material to the land in a manner which represents the most reasonable, economical and ecologically sound use of beneficial materials which would otherwise burden waste processing systems while the nutrient values would be lost.

As a result of this successful demonstration of one of the few fully recyclable systems of agricultural production, I urge you to continue and expand previous and current waivers for wineries.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "John L. Smith".

John L. Smith
Owner, Obscurity Cellars



July 5, 2005

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P. O. Box 100
Sacramento, CA 95812

Re: July 11 Workshop/Food processing discharge

Dear Mr. Merkley:

On behalf of Pacific Coast Producers, a grower-owned cooperative which processes and cans apricots, peaches, pears, tomatoes and fruit cocktail, I submit the following responses regarding the questions posed by the State Water Resources Control Board notice:

Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?

The land application of food processing rinsewater and byproduct discharge, properly managed, should not threaten groundwater quality and beneficial uses of the groundwater. Land application is a win-win situation for the processor and the water resource. With water supplies a constant issue in the State of California, groundwater recharge by application of cannery rinsewater is a positive factor. Land application allows the processor to maintain responsibility and control, while providing a cost effective method of disposal. If loading rates are properly managed, the soil column actively filters any potential constituents. In addition, solid waste byproduct can be a beneficial soil amendment, so long as it is properly applied in loading rates that the soil column can efficiently utilize. Sodium is an issue, and we recognize it as such. We are actively pursuing potential substitutes, source control and treatment options, however, no currently available option is a feasible long term solution.

Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

There should be a statewide policy so that all processors are on a treated equally, and the staff is provided with guidance from an overall state policy. The current system for site-specific wastewater discharge requirements (WDRs) allows the staff to take into account regional and site specific environmental variations and differences. The staff and the

industry would benefit, however from guidance from an overall, consistent policy integrated with state water management, recycling and supply issues. For instance, a statewide policy regarding sodium buildup in the Central Valley is essential as it affects everyone – Northern and Southern water users, agricultural producers and consumers. A determination of appropriate loading rates is best as a consistent policy statewide, rather than allowing variation between, and even within, regions. In addition, the goals of the Basin Plans should be reviewed and revised to account for differing uses of groundwater resources. The question seems to be not whether this is a State issue, rather how can these issues be addressed without the application of a Statewide policy?

If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

A policy should be developed as any regulatory policy, draft regulations should be prepared by staff with input from professionals in the field, and by going through the required Administrative Procedures Act publications and notices, with a comment period for the public to comment on proposed regulations.

Should food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are protective of groundwater?

Yes, processors should be required to responsibly manage discharges and to protect groundwater. The California League of Food Processors has already developed a manual of guidance on such issues, and the experts retained by the League can elaborate upon any issues that require further guidance.

Should there be third-party certification of food processing and winery waste management and disposal plans?

Third party certification should not be necessary if there is an overall standard is adopted by regulation and that staff applies in reviewing such plans.

Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

At this time, we are unaware of any economical ways to address salt loading issues. Any substitutes for sodium products are quite expensive, and salt removal systems are expensive, and consumptive of power. In addition, there is the problem of disposing of brine.

Finding an economical way to address salt loading is an extremely important issue for not only the food processing industry, but for the State of California as a whole, as the environmental impacts would affect more than simply the food processing industry. We urge all concerned to fund research into technology that can work

Very truly yours,



Mona Shulman

Vice President and General Counsel

From: Ryan Leeman <rwine@sbcglobal.net>
To: <DMerkley@waterboards.ca.gov>
Date: 6/22/05 12:20PM
Subject: Comments on land application of food processing and winery waste water

Dear Mr. Daniel Merkley,

I am responding to your questions as a small winery, <500,000 cases, regarding the land application of food processing and winery waste water.

Question #1: "Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?" The answer is it depends on each individual case. Yes it can change the groundwater quality. But it is impractical to expect small wineries, ie <500,000 cases to install waste water facilities and have them operated properly. If you really are concerned with winery and food processors waste water impacting ground water then you should be forcing local municipality to accept and process the water. This is where qualified facilities and personnel are found for processing waste water. Not at wineries or food processors. Current regulations will only allow large companies that can afford waste water treatment facilities to survive Food will only be made by the Wal-Mart's, and Safeways and other super large companies. How many food processors and wineries are in California? Several hundred thousand! Do you want millions of reports each month. No,

waste needs to go to central locations if you really are concerned about ground water contamination from waste water.

Question #2: "Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?" No, each region is different and should be handled differently. However, within a region it should be consistent Right now WDR within a region are all different, with different "requirements. Within 5 miles of our winery we have one still with out a WDR that is land applying, and several with different requirements in the WDR. Also, the requirements of at least 4 monitoring wells is not economical for small producers. If you are signing off on waste water facilities, then the treated water should not be impacting ground water. Therefore, no need for monitoring wells. If the state wished to monitor the water then the state should pay for the wells and reporting. Quit telling wineries and food processors what they are required to meet and tell them how to meet those requirements. Their are bad suppliers of

"waste water" equipment. The state should tell wineries and processor what works and is needed and which companies can supply the equipment and services at a reasonable cost. Right now you have several unscrupulous engineers and waste water company selling bad equipment. Quit with the threats of fines and closings. If we are required to meet the "requirements" in our WDR I have told my boss to close the winery and get out of California. Waste water is a utility. Right now we have spent more on a waste water system and operating that system cost more than our electricity. Again if you want consistency, waste should be sent to a waste water facility, not left to process on our own.

Question #3: "If there should be consistent statewide regulation of food

Then you have the requirement of groundwater well for monitoring. You expect each company that land applies waste water to install at least 4 monitoring well, if not more. This alone is cost prohibitive. If the state is defining effluent limitation and the waste water stays below the limitations then there is no need to monitor because the limitations should prevent ground water contamination.

With what we have spent on instillation of a waste water treatment facility and the requirements in the WDR for reporting and the operation of the system we could haul off 1.2 million gallons of untreated waste water 100 miles away per year for the next 10 years before we would have spent the same amount of money. This tells you that you need new regulations and policies regarding disposal of food processing and winery waste.

rwine@sbcglobal.net

I would prefer to stay anonymous for fear from the California Regional Water Quality Control Board might fine the company that I work for. But I would be happy to answer any questions that this letter creates in private

July 5, 2005

SENSIENT™

Mr. Daniel Merkle
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
Post Office Box 100
Sacramento, California 95812

Sensient Dehydrated Flavors Co.
P.O. Box 1524 / 151 South Walnut Rd.
Turlock, CA 95381
Tel (209) 667-2777 Fax (209) 634-6235
www.sensient-tech.com

Subject: Comments on Food Processing and Winery Waste
Management Issues

Dear Mr. Merkle:

I am writing in response to the Notice of Public Workshop for food processing and winery waste. Sensient is very concerned about new policies that Regional Board staff has begun applying to the irrigation reuse of food process/rinse water. These policies appear to have been developed without proper rulemaking processes and without adequate technical or scientific basis.

Based on our decades of experience with irrigation reuse of process/rinse water, we believe it to be a reasonable, sustainable practice. The policies being pursued by staff will result in a substantial loss of competitiveness for our industry with no significant benefits to environmental protection.

Our comments to the questions to be discussed at the workshop in Modesto are as follows:

Does the land application of food processing and winery waste threaten groundwater quality and beneficial uses of groundwater?

Sensient has been practicing land application of food process/rinse water for several decades. Our factory water supply wells are relatively shallow and would be much sooner impacted than any other groundwater users in the area. However, our factory wells and the monitoring wells closest to the areas of greatest land application have not been adversely affected. In addition, the crops grown on land irrigation with our process/rinse water have been healthy and productive. Therefore we would conclude that irrigation with process/rinse water is in fact good practice and does not threaten beneficial uses of groundwater.

Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

There should be consistency in the rulemaking procedures and science used for the formal development of policies. Economic effects of potential policies should be properly evaluated as per state law.

If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

The State Board should oversee the development of consistent, science-based standards utilizing university research and industry experience.

Should food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are protective of groundwater?

Food processor and winery associations should sponsor guidelines for management of land application such as the recently developed Manual of Good Practice developed by the California League of Food Processors.

Should there be third-party certification of food processing and winery waste management and disposal plans?

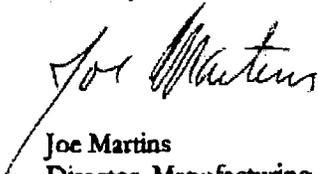
It is not clear what benefit third party certification would provide. Third party expert certification of general design and operational guidelines could be appropriate and helpful.

Are there economical ways to address the salt loading issues associated with food processing and winery waste disposal?

Based on our experience, source control is the most effective and sustainable approach for salinity control. Expensive, high-energy treatment systems on the whole probably cause more environmental damage than good.

We appreciate the opportunity to provide comments and look forward to the upcoming workshop.

Sincerely,



Joe Martins
Director, Manufacturing
Sensient Dehydrated Flavors
P.O. Box 485/9984 W. Walnut Avenue
Livingston, CA 95334
Tel: (209) 394-7971
Fax: (209) 394-7373
joe.martins@sensient-tech.com

cc: Art Baggett

CITY OF MERCED

"Gateway to Yosemite"



July 1, 2005

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Re: Comments regarding Management and Disposal of Food Processing Wastes

Dear Daniel:

Thank you for the opportunity to comment on practices for the management and disposal of food processing and winery waste through land application and other means.

The City of Merced is interested in the regulation of food processing wastes to land for several reasons including:

- Food production and its subsequent processing are still important aspects of the greater Merced area economy and labor market particularly for less skilled workers.
- Food production and processing are essential to the culture we live in. If we as a people chase these industries from California for environmental reasons, will there be lesser or greater environmental damage at the relocation site? Will California's food supply be secure?

In these regards, the City believes that the state must 1) educate the people regarding the inherent degradation that is associated with food production and processing whether it happens in California or in some remote third world site, and 2) work with agriculture to reduce degradation to the extent feasible. Regulation of California agriculture to where California becomes a food importing state is not acceptable to the City on principle. Additionally, regulating agriculture, particularly irrigated agriculture, out of business encourages urban sprawl. Once an acre of irrigated agriculture goes out of production, it can easily convert to an acre of urban development from a water resources perspective.

Regarding your six specific questions, the City provides the following comments:

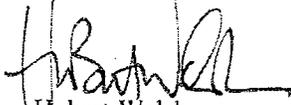
1. There is no question that like irrigated agriculture, itself, land application of food processing wastes has the potential to degrade groundwater quality and impact beneficial uses. The issue is whether that degradation can be reduced or mitigated to an acceptable and sustainable level.
2. State Board Resolution No. 68-16 is statewide, which suggests that any groundwater anti-degradation policy should be statewide. The policy should clearly encourage situation-specific analyses such as encouraged by Water Code Section 13241 with the possible addition of a seventh criterion: the need for maintaining agriculture within the region. This section of the Water Code was central to the California Supreme Court's construction in the recent case of City of Burbank V. State Board.
3. The City believes consistent statewide policy/regulation should be developed via working committees of the representative stakeholders as discussed in the City's letter on this subject to the Regional 5 Water Board date January 21, 2005 (copy attached).
4. The food processors need to be important stakeholders in the development of disposal practices and guidelines to protect groundwater; but in the end, the State will need to craft the regulations and associated guidance. A key stumbling point between the State and food processors has been distinguishing groundwater impacts related to land use versus impacts related to effluent quality. As a brief example of this important concept, assume upgradient shallow groundwater flowing under an ag field has a salinity of 800 mg/L. If the farmer irrigates with this water, is the resulting degradation of groundwater quality caused by evapotranspirative concentration of irrigation water salts regulated? The answer is clearly "no". If the farmer switches from 800 mg/L groundwater to 800 mg/L effluent, should the same resulting degradation be regulated? The answer should be "no". The degradation in both cases was caused by the land use, not by the sources of the irrigation water. This concept is discussed in greater detail in the June 29, 2004, letter from ECO:LOGIC Engineering to the Region 5 Water Board. This letter is attached for your consideration.
5. The City is open-minded to arguments for third-party certification, but sees no benefit to such a program at this time.
6. The City believes there are economical ways to address salt loading issues; but, the real issue is, are they cost-competitive with food production in (and transport from) other states or other nations with little to no regulation and greater environmental damage? Public education about food production and the inherent degradation potential of food production should be a part of the state's school curriculum and "Buy Californian" ad campaign. Economical ways to address salt loading issues on a case-specific basis may include:

- a. Reducing effluent salinity in the industries by:
 - i. Reducing water conservations measures.
 - ii. Reducing evaporative losses of water.
 - iii. Reducing use of salt-based products and/or processing methods.
- b. Conveying high salinity effluents to saline waters.
- c. Dispersing and diluting elevated salinity effluents over a large area of irrigated agriculture.

The City needs to be convinced of the Region 5 Water Board staff's unsubstantiated claim that reverse osmosis is a practicable method of general salt removal from food processing wastes.

Should you have questions please contact John Raggio of our Public Works Department at 209-385-4775 or Steve Tarantino, a consultant retained by the City, at Erler & Kalinowski, Inc. at 650-292-9100.

Very truly yours
CITY OF MERCED



Hubert Walsh,
Mayor

cc: Dennis Cardoza, United States Congressman
Arnold Schwarzenegger, Governor of California
Jeff Denham, State of California Senator
Barbara Mathews, State of California Assemblywoman
Thomas R. Pinkos, California Regional Water Quality Control Board, Executive Officer
James G. Marshall, City Manager, City of Merced
David Tucker, City of Merced, City Engineer
Humberto Molina, City of Merced, Public Works Manager-WWTP
Larry Pitts, Unilever Best Foods, General Manager
Jo Anne Kipps, Regional Water Quality Control Board
Stephen A. Tarantino, Erler & Kalinowski, Inc.
Don Bergman, Merced Chamber of Commerce, Executive Officer
Bert Van Voris, Regional Water Quality Control Board
Dan Rich, Ecologic



July 11 workshop
cc: Bd, DI
email: Bd, DI, CC, HNS, TH,
CMW, DWA, D. Merden

1303 J STREET, SUITE 600, SACRAMENTO, CA 95814-2939 T. 916.441.7377 F. 916.441.5756

June 14, 2005

The Honorable Arnold Schwarzenegger
Governor of California
State Capitol, 1st Floor
Sacramento, CA 95814

Dear Governor Schwarzenegger:

On behalf of the California Bankers Association's Agriculture Lending Committee, I am writing to urge you to reject the findings of the State Water Resources Control Board's *Staff Report on the Regulation of Food Processing Waste Discharges to Land*. The *Staff Report* represents a radical change in how food processing waste discharges to land are regulated and presents a potentially significant threat to the ongoing sustainability of the food processing industry. The proposed regulatory scheme will also have a chilling effect on investment and may result in the reduction of economic development and employment opportunities in California's Central Valley.

CBA understands the complexity of the agriculture system and the issues surrounding the environmental challenges that this industry faces. CBA represents the majority of financial institutions that provide credit to agricultural production, input suppliers, processors and value added food packaging, distribution, and wholesaling in California. CBA members extend more than \$20 billion in loans to the production sector of the agriculture industry, which represents more than seven percent of the state's jobs and domestic product.

We further believe that it is counterproductive for enforcement of air and water regulations to be inconsistently applied as has been the recent experience of California's food processors. Whether the regulations themselves or their enforcement is inconsistent, it directly results in uncertainty in the costs and opportunities for the impacted businesses. This uncertainty, in turn, poses risk to lenders who must consider restrictions or increases in the cost of credit to guard against the uncertainty of repayment.

A strong regulatory environment is important for long-term sustainability of California's food processing industry. It can be helpful in providing certainty and the minimization of financial risk that promotes an active lending environment. The regulatory process, however, needs to be fair and consistent, based on a balance of sound science and operational principles. Fair and consistent implementation and enforcement of environmental regulations will bring more resources for environmental solutions from all funding sources including lenders far in excess of what would be gleaned through the levying of arbitrary fines and penalties.

For these stated above, CBA opposes SWRCB's *Staff Report* and encourages your Administration to pursue a waiver program for fines and penalties for those processors who are working with regulators to meet environmental goals for air and water. It will remove a significant risk that will then, in turn, promote investment for those very solutions we all believe are prudent and necessary.

The Honorable Arnold Schwarzenegger

June 15, 2005

Page 2

Sincerely,



Cory Gallagher
Chair, CBA Agriculture Lending Committee

CG:aa

cc: The Honorable Jeff Denham, Chair, Senate Agricultural Committee, California State Senate
The Honorable Denise Ducheny, Vice Chair, Senate Agricultural Committee, California State Senate
The Honorable Barbara Matthews, Chair, Assembly Agricultural Committee, California State Assembly
The Honorable Bill Maze, Vice Chair, Assembly Agricultural Committee, California State Assembly
Arthur G. Baggett, Jr., Chair, State Water Resources Control Board
Tam Doduc, Board Member, State Water Resources Control Board
Richard Katz, Board Member, State Water Resources Control Board
Peter S. Silva, Board Member, State Water Resources Control Board
Gerald Secundy, Board Member, State Water Resources Control Board
Robert Schneider, Chair, Central Valley Regional Water Quality Control Board
Dennis Albiani, Deputy Legislative Secretary, Office of the Governor
Terry Tamminen, Cabinet Secretary, Office of the Governor
Patricia Clarey, Chief of Staff, Office of the Governor
A.G. Kawamura, Secretary, California Department of Food & Agriculture
A.J. Yates, Undersecretary, California Department of Food & Agriculture
Terry Branham, Undersecretary, California Environmental Protection Agency
Alan C. Lloyd, Agency Secretary, California Environmental Protection Agency



JFB RANCH, INC.

Mr. Arthur Baggett
Chairman
California State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

51170 WEST ALTHEA
FIREBAUGH, CA 93622
Office: (209) 364-6149
FAX: (209) 364-6217

Dear Chairman Baggett:

I am writing to express my concern with the Central Valley Regional Water Quality Control Board's (RWQB) regulation of food processing by-products that are discharged to land. The RWQB staff proposed a significant shift of regulatory and enforcement policy on January 13, 2005, and this change will have a profound impact on food processing companies in the Central Valley. Although there has been no rulemaking process and the new policy has not had the benefit of input from scientific peer review and input from the regulated community, RWQB staff is already implementing elements of this proposal via individual waste discharge permits. Permit conditions have been, and remain, inconsistent and are often based on the most conservative assumptions, sometimes without scientific justification. Analysis provided to RWQB staff by independent scientists and engineers is often not considered or is dismissed. Industry cannot continue to operate in this arbitrary and uncertain regulatory environment.

I am pleased that the State Water Resources Control Board will be conducting a workshop on July 11, 2005 to address some of these issues. The workshop should be an excellent opportunity for all stakeholders to discuss problems and suggest solutions. The State Board has posed six questions to be discussed at the workshop in Modesto, and my organization would like to respond to those questions as follows:

Does the land application of food processing by-products threaten groundwater quality and beneficial uses of groundwater?

Land application of food processing by-products can be practiced in a sustainable manner and impacts to groundwater minimized or prevented with attention to loading and operating practices. Properly practiced land application remains an effective and reliable technique for the management of organic and nitrogen constituents through treatment in the soil. Hydraulic and constituent mass loading must be managed through controlled application of the by-products and proper operation of the land application areas. Dissolved inorganic salinity constituents are recognized to be an issue because these have limited uptake by plants can be mobile depending on the rate of application and soil type(s). My company and other food processors are addressing the issue of salinity by evaluating and implementing source reduction measures and different treatment options. However, industry cannot continue to invest in these efforts unless there is a more stable and predictable regulatory landscape.

Should there be a statewide consistency in the regulation of food processing by-products rather than allowing for regional environmental variations and differences?

There must be consistency in the regulatory framework and the process of how the regulations are implemented, both between Regional Boards and within a given Board's purview. Inconsistent regulatory interpretation and enforcement deprives the regulated industry of the ability to plan and creates significant uncertainty and disincentives for the business community. Achieving a technically sound regulatory framework is critical to the ongoing viability of the food processing industry in California.

The need for consistency in the general regulatory framework must be balanced with recognition of the unique environmental differences of each region or site. Management plans and policies must allow for different conditions in some instances. A more cooperative working relationship between the regulators and industry and an adherence to the application of sound scientific principles will facilitate the resolution of site specific issues.

If there should be consistent statewide regulation of food processing by-products, how should such consistency be developed?

The State Water Resources Control Board should oversee the development of a coordinated cooperative body of policies and regulatory interpretation with input from the stakeholders. A task force of regulatory agency staff, industry, and scientific and technical experts is needed to address the construction of the regulatory framework and permit conditions.

Should food processors be encouraged to develop practices and guidelines for management and disposal of by-products that are protective to groundwater?

Dischargers and industry groups should be encouraged to develop and implement guidelines for the generation and management of liquid and solid wastes that reflect principles of good environmental stewardship and are protective of groundwater. This should occur within an agreed upon context; if guidelines are followed for the design and operation of waste management systems and dischargers work cooperatively with regulatory agencies, then dischargers should not be penalized for these management efforts. Industry must have a potential safe harbor in order to plan and to invest in the future of their businesses.

Should there be a third-party certification of food processing by-product management and disposal plans?

Independent third party certification is an option that should be considered. The best practices guidelines developed by industry, combined with intensive training, could be the basis for a certification system coordinated by independent agencies. This option could relieve some of the burden on RWQB staff and ensure compliance. Industry can work with regulators to develop potential options and procedures for a third party certification program.

Are there economical ways to address salt loading issues associated with food processing by-product disposal?

The primary management tools for inorganic salinity loading associated with food processing by-products are best management practices and treatment. Salinity levels should be reduced to the extent practical by source reduction and by using best management practices within the facility.

The economic and overall environmental impacts of treatment based solutions need to be considered and evaluated. Due to the significant energy requirements and lack of disposal outlets for mineral wastes, treatment is costly, complex, and is not likely to be an option for many facilities.

Long-term salinity management, particularly in California's Central Valley, is a larger issue requiring solutions beyond the level of the individual point-source dischargers. It will be necessary for the State Board, rather than each of the regional boards, to address this issue and establish general policies.

Recommendations

Food processors will continue their long-standing efforts to be good stewards of the land and water resources that are vital to the health of the industry. The issues under consideration are both important and complex, and have policy implications that extend far beyond just food processors located in the Central Valley. The current regulatory regime is not sustainable in both economic and environmental terms. It is critical that a statewide approach is developed and implemented to ensure that rules based on sound science and economics are uniformly applied by each of the regional boards.

I strongly encourage you and the State Water Resources Control Board to take the leadership role in developing policies related to salinity management, the beneficial uses of recycled water, and the application of regulations and permit conditions regarding discharges to land of food processing by-products. The Board's leadership is critical to ensuring consistency in policies and regulations across the state. My organization and the food processing industry look forward to working with you to address these issues.

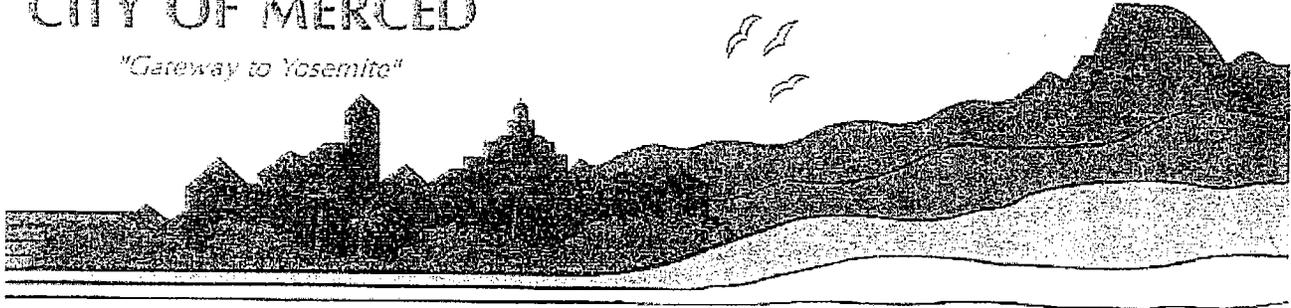
Sincerely yours,



John F. Bennett President of J.F.B. Ranch, Inc. and
Tomato grower and partner of Ingomar Packing Co.

CITY OF MERCED

"Gateway to Yosemite"



21 January 2005

Wendy Wyels
Environmental Program Manager I
Waste Discharge to Land Section
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

**Subject: Regulation of Food Processing Waste Discharges
to Land in the Central Valley Region**

Dear Ms. Wyels:

Thank you for the opportunity to comment on your letter of January 13, 2005, regarding the proposed regulatory strategy for food processing waste discharges to land.

As you know, the City of Merced (city) operates an Industrial Waste Treatment Facility ("IWTF") that consists of approximately 580 acres and is operated under Waste Discharge Requirements ("WDR") Order No. 97-034. The IWTF receives seasonal tomato processing wastewater from Unilever that is located within the City, which in turn is directly applied to the land using furrow irrigation techniques. Various crops are planted and harvested to help remove the nitrogen from the soil, which is subsequently sold as fodder.

Given the short time frame for reviewing and preparing comments to the Staff Report, this letter does not contain detailed information. However, the City does have several concerns it wishes the Regional Water Quality Control Board (RWQCB) to consider:

Letter to Wendy Wyels

RWQCB

January 21, 2005

Page 2 of 3

- significant departure from current regulatory practices,
- does not have specific criteria or methodology in order to determine if pre-1968 base line groundwater degradation may have occurred ? How are ambient concentrations to be determined?,
- will take significant time and expense on the part of the dischargers to implement,
- will likely result in increased costs to the dischargers.

It is also anticipated that as a result of the implementation of the strategy set forth in the Staff Report, the City's food processing discharger will be unable to continue operating in the City or in another location within the purview of this RWQCB. This will result in a significant economic loss, including jobs to the community of Merced, as well as within the entire Central Valley.

Therefore, the City strongly encourages the RWQCB to implement a strategy that includes establishing a working committee of representative stake holders, that will develop a more flexible approach to manage food processing wastes and the associated implementation plan. This plan should strive to balance the preservation of the groundwater water quality, along with the economic value food processors bring to Central Valley communities.

The City would be willing to elaborate in detail on the proposed strategy, if the RWQCB, is willing to extend the comment period for an additional 6-weeks.

Should you have questions please contact either me at (209)385-4775 or Steve Tarantino, a consultant retained by the City, at Erler & Kalinowski, Inc. at (650)292-9100.

Very truly yours
CITY OF MERCED

John Raggio
Director of Public Works

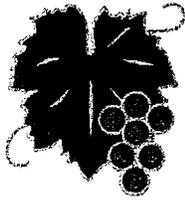
Letter to Wendy Wyels

RWQCB

January 21, 2005

Page 3 of 3

cc: Dennis Cardoza, United States Congressman
Arnold Schwarzenegger, Governor of California
Jeff Denham, State of California Senator
Barbara Mathews, State of California Assemblywoman
Thomas R. Pinkos, California Regional Water Quality Control Board, Executive Officer
James G. Marshall, City Manager, City of Merced
David Tucker, City of Merced, City Engineer
Humberto Molina, City of Merced, Public Works Manager-WWTP
Larry Pitts, Unilever Best Foods, General Manager
Jo Anne Kipps, Regional Water Quality Control Board
Stephen A. Tarantino, Eler & Kalinowski, Inc.
Don Bergman, Merced Chamber of Commerce, Executive Officer
Bert Van Voris, Regional Water Quality Control Board
Dan Rich, Ecologic



CALIFORNIA
ASSOCIATION OF
WINEGRAPE
GROWERS

July 6, 2005

Mr. Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812
Via e-mail: DMerkley@waterboards.ca.gov

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Dear Mr. Merkley:

The California Association of Winegrape Growers (CAWG) appreciates the opportunity to provide written responses to the questions posed in the *Notice of Public Workshop to Receive Comment on Practices for the Management and Disposal of Food Processing and Winery Waste through Land Application and Other Means* which will be held on Monday, July 11th. Our brief comments respond specifically to the six questions referenced in the Notice.

CAWG represents the growers of grapes processed for wine and concentrate throughout California. However, more than fifty percent of all the grapes crushed annually in the state are grown and processed in the San Joaquin Valley. The Central Valley is the backbone of affordable, everyday wine production.

The ability of processing entities to be located in close proximity to grape growing regions is critical to a sustainable business model because it assures the best opportunity to preserve fruit quality and produce better products; it reduces long-distance hauling of grapes to processing plants and the associated traffic and air quality issues; and, it fosters on-farm job opportunities, as well as processing plant opportunities in rural communities. On behalf of our grower members, CAWG is keenly interested in the development and implementation of best practices that are environmentally sound and economically feasible for the disposal of grape processing water and byproducts generated in the production of wine. In fact, the economic lives of grower and vintner are inextricably linked.

- Does the land application of food processing and winery waste threaten groundwater quality and beneficial use of groundwater:

CAWG applauds the investment Wine Institute has made to collect the data to address the scientific and technical issues associated with water quality, winery processing water and grape byproducts disposal. We are pleased that Phase I of this study, conducted by Kennedy/Jenks Consultants, has been referred by the State Water Resources Control Board to an independent, scientific peer review panel for an analysis that should be completed in August or September of this year. It is our understanding that, subject to confirmation by the peer review

Representing wine and concentrate grape growers.

panel, the study's results are quite positive with regard to best management practices at agronomic rates for land application of winery process water. Water quality objectives for iron, manganese, biochemical oxygen demand (BOD5), nitrogen, pH and IDS can be met once the new scientific findings are incorporated into BMPs for wineries.

- Should there be statewide consistency in regulating food processing and winery waste rather than allowing for regional environmental variations and differences?

Yes, given regional variables for the land application of process water generated by wineries, there should be statewide consistency in regulating winery waste. This should be based upon peer-reviewed data and scientific conclusions. In addition to the Wine Institute study referenced in point one, Wine Institute is currently conducting an additional study to evaluate salt loading generated by in-house winery practices. This study, also conducted by Kennedy/Jenks, is scheduled for completion in early 2006. Based on the scientific evidence, Wine Institute hopes to request that the Board re-open its prior order and further extend Region 3's existing 80-ton exclusion from waste discharge requirements and use the Region 3 Basin Plan amendment as a template for other regional boards.

- If there should be consistent statewide regulation of food processing and winery waste, how should such consistency be developed?

Consistency should be based on independent, peer-reviewed science prior to imposing new regulations.

- Should the food processors and wineries be encouraged to develop practices and guidelines for the management and disposal of waste that are protective of groundwater?

Best management practices are consistent with the *California Code of Sustainable Winegrowing Practices*, a joint program of CAWG and Wine Institute. In fact, CAWG and Wine Institute have helped create the National Grape & Wine Initiative to significantly expand the investment in grape product research, extension and development. The goal of the Initiative is to triple the industry's national economic impact to \$150 billion by the year 2020 based on research, education and extension to accelerate the development and adoption of best practices that are economically viable, environmentally sound and socially responsible.

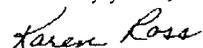
- Should there be third-party certification of food processing and winery waste management and disposal plans?

Third-party certification is an option to consider as an alternative to individual WDRs.

- Are there economical ways to address the salt-loading issues associated with food processing and winery waste disposal?

Wine Institute's on-going salt-load study is evaluating in-winery streams of water to find cost-effective mitigation measures during the grape crush season and through the remaining months of the year (about seven to eight). However, the study is not designed to address the water quality of the salts coming into the wineries. This is a Basin-wide and significant problem for **all** water users. Wine Institute's preliminary report of the salt-load study may be available to the Board in early 2006.

Sincerely yours,



Karen Ross

President

Cc: Members, State Water Resources Control Board
Celeste Cantu, SWRCB Executive Officer
Dr. Karl Longley, Vice chair, CVRWQCB
Mr. Al Brizard, Member, CVRWQCB
Mr. Tom Pinkos, CVRWQCB Executive Officer
Mr. Jackson Gualco, The Gualco Group, Inc.

CALIFORNIA FOOD PRODUCTION & PROCESSING COALITION

July 6, 2005

Daniel Merkley
Agricultural Coordinator
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

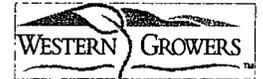
Dear Mr. Merkley

On behalf of the California Food Production and Processing Coalition, I would like to submit the following comments for the upcoming SWRCB, July 11, 2005 Workshop on Practices in the Management and Disposal of Food Processing and Winery Waste Through Land Application and Other Means.

The California Food Production and Processing Coalition would like to express our appreciation to the State Board for conducting this Workshop on such a timely and important issue. The Coalition views this Workshop as a critical first step toward the development of economic and environmentally sustainable statewide water quality objectives for the food processing industry. We look forward to working with the State Board toward this end.

Sincerely,

Michael Boccadoro



**COMMENTS OF THE CALIFORNIA FOOD PRODUCTION & PROCESSING
COALITION
FOR STATE WATER RESOURCES CONTROL BOARD
JULY 11, 2005 WORKSHOP ON PRACTICES IN THE MANAGEMENT AND
DISPOSAL OF FOOD PROCESSING AND WINERY WASTE THROUGH LAND
APPLICATION AND OTHER MEANS
(July 6, 2005)**

Before commenting on the questions posed in the SWRCB Notice of Public Workshop to Receive Comments on Practices for the Management and Disposal of Food Processing and Winery Waste, the California Food Production and Processing Coalition would like to express its appreciation to the Board for conducting this workshop at a critical juncture faced by the food industry and the regulatory community. As explained below, the food processing industry is being forced into costly treatment technologies with high energy demands and without any consideration of viable disposal options for concentrated brines generated from the treatment of process wastewater.

The Coalition and the food processing industry recognize the importance of protecting the State's water supplies for all beneficial users of these supplies, including the food processing industry. The problem faced by the State is salt management, and to a lesser extent management or mitigation of nitrate. Long-term salt management, particularly in California's Central Valley, is a larger issue requiring solutions beyond the level of the individual point source dischargers. As a result, long-term salt management solutions must realistically involve all industrial, agricultural and municipal users of water, including the food processing industry.

There is clearly a need for a comprehensive salt management program, developed in coordination with statewide policies of other State agencies. The industry, for instance, has been urged by the State Department of Water Resources and the State Board of Food and Agriculture to conserve potable water supplies. As the food processing industry has become more efficient in its water usage, its resulting process water has become saltier. Also, the Department of Water Resources has indicated in its California Water Plan Update 2005 (Bulletin 160-05) that the State must utilize its wastewater and recycle supplies to meet the State water supply needs. It estimates that by 2020 the State could generate as much as 1.1 maf/yr of new supplies through recycling efforts. Also, California's Recycled Water Task Force, in its June 2003 Report, has concluded that if the State is to remove the obstacles to water recycling, virtually every entity involved in water recycling activities has a role to play in implementing the recommendations in its Report. The Central Valley Regional Board, however, has imposed re-use requirements that discourage and in effect prohibit re-use of wastewater.

As indicated in the June 23, 2005 statement by Dr. Karl Longley, the Central Valley Regional Board Vice Chair, "A compelling need exists for interested parties to come together to find solutions for mitigating the salt impacts to the waters of the Central Valley." As we have repeatedly stated, the food processing industry is not seeking exemption from regulation, but to participate fully in an appropriate rulemaking process to resolve not only the salt management problems of the Central Valley, but of the State itself.

We are also well aware that there are no quick fixes, and that there are many important statewide interests that must be balanced. A solution in one arena, such as water, should not create larger problems in another arena, such as air quality. By the same token, we should all be cognizant of the substantial advances made by the food processing industry and others to conserve water supplies and statewide initiatives by other State agencies to conserve water.

We recognize that the development of a meaningful salt management strategy will require the full participation of all stakeholders. The food processing industry is committed to participating in this process. In this regard, we believe that this workshop is an important first step toward the development of a comprehensive statewide salt management plan, as well as the development of necessary interim measures, pending the establishment of longer-term solutions.

We believe that unless such a process is initiated to develop reasonable requirements of food processing by-products, the food processing industry will suffer irreversible impacts. Because of this, it is critical that the State Board assume the leadership role in formulating a workable statewide approach that allows and encourages stakeholder participation.

Set forth below is the Coalition's response to the questions raised in the State Board's Notice of Workshop.

Regulatory Framework

The fundamental change in implementation of regulation and policies outlined in the 13 January 2005 Central Valley Regional Water Quality Control Board (RWQCB) Staff Report on regulation of food processing rinsewater and byproduct discharges to land was accomplished without any opportunity by concerned stakeholders, including the regulated community or peer review, to participate, other than after-the-fact comments by the regulated community submitted for the Regional Board January 28, 2005 informational item, which have been largely ignored by staff.

The Staff Report described a proposed regulatory strategy which includes more aggressive implementation of existing policies and regulations, such as the Anti-degradation Policy and Title 27 regulations and increased enforcement, intended to "address existing deficiencies and prevent future water quality impacts" from waste discharges to land.

The current regulatory situation in the Central Valley reflects the following:

- The Regional Board staff has wide discretion in interpreting and implementing policies, which has resulted in shifts in regulation and significant inconsistency in requirements for dischargers
- The Regional Board staff is implementing the regulatory strategy described in the 13 January Staff Report via more restrictive design requirements, effluent limitations, and monitoring requirements as conditions in individual WDR permits, without following appropriate rulemaking procedures.

- Permit conditions are assigned based on the most conservative assumptions, generally without scientific basis. Scientific analyses and conclusions of independent engineers and scientists are often not considered or are dismissed.

Potential Threat to Groundwater Quality and Beneficial Uses

Conclusions in the Staff Report concerning widespread impacts and threats to groundwater quality appear to be based on very limited data and a generalized assessment of existing groundwater conditions in the Central Valley. Evaluation of potential “threats” to groundwater must consider the quality of the local groundwater – many areas of the Central Valley have poor quality shallow groundwater high in naturally occurring dissolved solids or containing compounds such as arsenic, which render the water unusable as a source of drinking water. No analysis has been presented to support the listing of dischargers in the January 13 Staff Report as having created “suspected impacts” to groundwater or to separate out contributions from other sources in the cases of actual impacts. In some locations, groundwater has been impacted due to past discharge practices, however, many sites where land application has been practiced for significant periods of time show no or only very minor changes to groundwater quality.

Land application can be practiced in a sustainable manner, with attention to loading and operational practices, without impact to groundwater. Properly controlled land application remains an effective, reliable technique for management of organic and nitrogen constituents in process water through treatment in the soil. Hydraulic and constituent mass loading can be managed through controlled process water application and proper operation of the land application areas.

Dissolved inorganic salinity constituents are recognized by dischargers to be an issue because these have limited uptake by plants and can be mobile depending upon the rate of application and soil type(s). Individual food processing companies are addressing the issue of salinity management through evaluating and implementing source reduction measures and different wastewater treatment options.

Are the designations of beneficial use of groundwater appropriate or correct in all cases? Potential future beneficial uses assigned in the applicable basin plans are the basis for decisions on appropriate quality of discharges and protection of areas of groundwater, not actual beneficial uses. Conservative effluent limitations are being assigned by RWQCB staff based on information in various agricultural studies and regulations promulgated in the European Union, which may not apply to the groundwater area in question, and/or based on sensitivity of receptors which may not ever be present in the area in question. There is a need to establish a water quality objective to protect actual (not perceived) beneficial uses based on site specific (not foreign) conditions.

Statewide Consistency

There must be a statewide framework for regulation to provide consistency in policy development, interpretation and the process of how regulations are implemented. Currently, there is inconsistency both between Regional Boards and within a given Regional Board. For example,

the definition of small processors for the purpose of waiver issuance differs between the Central Valley RWQCB and the Central Coast RWQCB. Processors operating multiple facilities under different RWQCB have stated that similar facilities are assigned significantly differing permit requirements.

Inconsistent regulatory interpretation and enforcement deprives the regulated community of the ability to plan long-term strategies and creates significant uncertainty and disincentives for the business community. Achieving a balanced, technically sound regulatory framework is critical to the ongoing viability of food processing and wineries operations in California.

A statewide approach is needed to address major issues, including:

- Salinity Management Plan
- Update/ supplement the Basin Plans
- Application of beneficial use designations

Within the overall framework of guidance, management plans and policy implementation should take into account differing conditions in some instances. For example, differences in organic loading are appropriate for different soil and climate types. Differences in the occurrence and quality of local groundwater must also be recognized for assignment of permit requirements.

Development of Statewide Consistency

The State Water Resources Control Board (SWRCB) is in the best position to oversee development of comprehensive and consistent policies reflecting sound science and incorporating input from applicable state agencies, such as the Department of Water Resources and the Department of Food and Agriculture. Within this framework, regional implementation recognizing environmental differences in site conditions and regions is appropriate.

The SWRCB should oversee development of a coordinated cooperative body of policies and regulatory interpretation with stakeholder input. A task force input and dialog between regulatory agency staff, industry and scientific and technical experts is needed to address development of the regulatory framework and permit requirement. The process must be open to public comment and adhere to the State's rulemaking procedures.

Guidelines for Management of Waste Protective of Groundwater

Dischargers should be encouraged to develop and implement guidelines for generation and management of liquid and solid agricultural by-products that reflect good environmental stewardship and are protective of groundwater. A number of efforts to develop guidelines have already taken place and/or are underway.

Development of the guidelines should occur with recognition of the value of these efforts by the regulatory agencies and incorporation into the regulatory framework. If guidelines are followed for design and operation of residuals management systems and dischargers work cooperatively with regulatory agencies this increases environmental stewardship levels.

Guidelines also promote a “level playing field“ in the sense that they provide a consistent basis of operation and lead individual dischargers to consider the same factors.

Third Party Certification of Management and Disposal Plans

We support the concept of third party certification for management and re-use plans, similar to the procedures incorporated in the ISO 14000 series, with the caveat that certification should be operationally useful to the facilities. Independent certification increases the likelihood that dischargers have developed a sound plan and are following the plan, because they demonstrate this to an independent auditor. Certification then serves to demonstrate the dischargers’ commitment to outside parties.

Addressing Salt Loading Issues

The primary management tools for inorganic salinity loading associated with processing are best management practices and treatment. Salinity levels should be reduced to the extent practical by source reduction and using best management practices within the facility. Numerous examples of effective source reduction measures, including eliminating on-site ion exchange based water softening, using low sodium cleaning products, and recycling caustic solutions are being implemented more frequently.

The economics and overall environmental impacts of treatment based solutions need to be considered and evaluated. Treatment by each individual discharger for near complete removal of organic constituents (required prior to membrane-based separation of dissolved inorganic species) and inorganic constituents is infeasible due to the significant power requirements, environmental impacts from increased power demand, hauling of concentrated brine solutions, and the lack of disposal outlets for concentrated mineral wastes.

Properly controlled land application provides a useful interim management technology, while also providing the benefit of recycling water. Long-term salt management, particularly in California’s Central Valley, is a larger issue requiring solutions beyond the level of the individual point-source dischargers. Regional facilities to receive and treat wastes and/ or a brine-line type outlet to the ocean may need to be funded and constructed.

Closing Comment

As indicated above, the food processing industry is not seeking exemption from regulation. Rather, it recognizes that something must be done to control salts from reaching underlying groundwater resources. However, the salt management issues faced by the food processing industry and the State itself are beyond the capabilities of the individual Regional Boards and food processors. It requires a comprehensive strategy and statewide policy consideration which the State Water Resources Control Board can only provide. It is our hope that based on the information gathered at this workshop, the State Board will be persuaded to take the necessary actions to initiate the development of a regulatory framework to address salt management issues on a statewide basis.

June 29, 2005

Ken Landau, P.E., AEO-NPDES
Jack Del Conte, P.E., AEO-WDR
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Principals
David R. Bennett
Charles G. Bunker
Robert W. Emerick
Jeffrey R. Hauser
Gerry O. LaBudde
Richard E. Stowell

RE: Amador County Regional WWTP Planning Issues

Gentlemen:

It is our understanding that you will be answering our letter of 10 March 2005. Since March, additional conceptual work has been completed regarding Amador County regional wastewater facilities planning, and some clarification of Regional Board policy has become evident that we wish to discuss. The issue is first summarized. A proposed solution is presented thereafter.

AMADOR COUNTY PROBLEM STATEMENT

The Amador County regional planning objective is complete effluent reclamation, which raises the issue of evolving Regional Board policies regarding groundwater degradation. The two proposed golf course sites in the Amador County regional planning area have not been irrigated historically. Therefore, it is likely that shallow groundwater salinity at these sites is less than the 700 $\mu\text{S}/\text{cm}$ water quality objective (WQO) for salinity. The Amador Water Agency (AWA) provides a low salinity potable water to the area. The low salinity water supply results in low salinity wastewater effluents in the area (e.g., City of Jackson effluent salinities typically range between 400 and 500 $\mu\text{S}/\text{cm}$). AWA service area wastewater effluents are clearly a good quality irrigation water supply from a salinity perspective.

If this good quality effluent is used to irrigate a golf course at a 70 percent irrigation efficiency (a typical value), irrigation season percolate below the turf root zone should be in excess of 1000 $\mu\text{S}/\text{cm}$ due to the salt concentrating effect of evapotranspiration. This percolate will degrade groundwater quality; and it will cause exceedances of the 700 $\mu\text{S}/\text{cm}$ WQO if the percolate is not allowed to mix into the groundwater. Without a clearly defined and permitted groundwater mixing zone, effluent cannot be reclaimed on the proposed golf courses because of groundwater degradation issues. This is contrary to the stated intents of the Basin Plan, Water Code, and AWA.

PROPOSED SOLUTION

We believe the following language from the recent tentative Cease and Desist Order (CDO) for the City of Dixon is the most rational, concise synopsis of groundwater degradation policies that we are aware of to date:

"The concentration of any waste constituent in water that percolates below the base of any wastewater pond or ground surface of any land application area shall not exceed background groundwater quality or the applicable water quality limit, which ever is higher."

This specific language has never, to our knowledge, been included in a permit. We noticed, however, that the final Dixon CDO did not contain this language, instead making use of the more typical requirement:

"The discharge of waste from any treatment pond, storage pond, disposal pond, land disposal area, or land application area shall not cause the underlying groundwater to contain constituents in excess of background groundwater quality, or in excess of the applicable water quality objective, whichever is higher. Compliance with this limitation shall be measured by a groundwater monitoring well network approved by Regional Board staff."

We are writing to request clarification of regulatory intent and to propose regulatory language that will allow for reclamation while protecting beneficial uses from effluent impacts, which are different from land use impacts.

Application of the tentative CDO language to salinity appears to separate salinity-concentrating effects caused by land use (e.g., evapotranspiration by landscaping or crops) from the regulated wastewater impacts. This concept makes perfect sense in the context of general regulatory intent. Specifically,

1. If effluent has salinity less than 700 $\mu\text{S}/\text{cm}$ (i.e., less than the WQO), that effluent typically could be discharged from a salinity perspective to any surface water, including effluent dominated waterbodies. The effluent could, then, be diverted downstream and used for any land use without regards to groundwater quality impacts related to that land use. There should be no penalty for direct reclamation of effluent versus indirect reclamation of effluent from a stream unless the intent of the Basin Plan and the Water Code is to encourage effluent disposal via discharge to surface waters rather than via reclamation. That is not the stated intent of either document.
2. "Background" first recoverable groundwater can be used to irrigate overlying soil. Therefore, an effluent that exhibits salinity equal to or less than "background" should be an acceptable alternative to the use of regional groundwater unless the

intent of the Basin Plan and Water Code is to encourage effluent disposal via infiltration basins rather than via reclamation. Again, that is not the stated intent.

3. Regional Board staff stated the position during the Regional Board presentation on land application of food processing wastes, mentioned in our 10 March 2005 letter, that groundwater degradation was not an issue if the effluent is a good quality irrigation water (i.e., the effluent meets irrigation water quality objectives).

From a salinity standpoint, the tentative CDO language separates effluent impacts on underlying groundwater quality from land use impacts on underlying groundwater quality. If the effluent is compliant with irrigation-based water quality objectives, or is of equal or better quality than background water quality, whichever is highest, then the groundwater impacts resulting from reclamation of this effluent would not be substantially different from impacts resulting from either use of first recoverable groundwater, or use of a compliant groundwater or surface water resource to irrigate the site. This concept of effluent being a replacement for other water resources of comparable quality completely complies with the apparent intent of the legislature as expressed in the Water Code, including Water Code Section 13523.5 (the salinity exemption). With this approach, monitoring can be conducted directly on the effluent, rather than in groundwater where impacts can go undetected for years and/or be masked by variations in background conditions.

This approach of placing the point of compliance on initial percolate quality rather than on remote monitoring wells also vacates the need for speculative nitrogen and salt balances. These balances were necessary because remote monitoring wells do not differentiate effluent impacts from either land use impacts or the spatial and temporal variability of shallow groundwater quality, which can be extreme as most notably evidenced (to our knowledge) by the Mountain House background groundwater quality data.

From the standpoint of many of the other numerous contaminants (e.g., metals), the final CDO language is desirable because it recognizes the treatment potential of the soil column. Ignoring soil treatment is not consistent with maximum benefit to the people of California because it effectively makes most leachfield systems non-compliant regardless of whether the system complies with Resolution No. 68-16, the Anti-Degradation Policy.

Therefore, while the tentative CDO language adequately addresses conservative contaminants like salts and the final CDO language adequately addresses the need to recognize soil treatment, neither addresses all issues of concern completely. It is our suggestion that some contaminants (e.g., EC, TDS, nitrate, ammonium, phosphate, potassium, sodium, chloride, sulfate, and boron) be regulated on an effluent basis (i.e., initial percolation basis), with an appropriate averaging period to protect beneficial uses. All other contaminants would be regulated as deep percolate enters groundwater (if no

mixing zone is permitted), or via the more typical upgradient, downgradient, and intrawell comparisons of first recoverable groundwater quality (if a mixing zone is permitted). This approach fosters reclamation, allows for verifiable use of soil treatment, separates land use impacts from effluent impacts, and reduces the confounding effects of the spatial and temporal variabilities in shallow groundwater quality analyses.

If the Regional Board does not intend to permit mixing zones in groundwater, we propose, for discussion purposes, the following language that we believe covers all envisioned situations. We believe this language facilitates reclamation by separating land use impacts from water supply impacts.

The concentration of any waste constituent, excluding certain salts as delineated below, in water that percolates below the base of the designated soil treatment zone for any land application area shall not exceed background groundwater quality, or an applicable groundwater quality limit, or an applicable surface water quality limit, which ever is highest, unless the constituent does not have an applicable groundwater quality limit and applicable surface water quality limit, in which case the Anti-Degradation Policy governs.

The concentration of EC, TDS, nitrate, ammonium, phosphate, potassium, sodium, chloride, sulfate, and boron applied to any land application area shall not exceed background groundwater quality, or an applicable groundwater quality limit, or an applicable surface water quality limit, or a land application area-specific agronomic need for the constituent, which ever is highest.

If the Regional Board intends to permit mixing zones in groundwater, the words "below the base of the soil treatment zone" in the first paragraph would be replaced by "beyond the boundary of the groundwater mixing zone."

We request comment regarding whether this proposed approach complies with all applicable laws and resolutions. It might also be constructive to meet to discuss this and the topics described in the 10 March 2005 letter further.

Sincerely,

ECO:LOGIC Engineering



Richard E. Stowell, Ph.D., P.E.
Principal

cc: Amador County WW Stakeholders

Exhibit J

From: Bert VanVoris
To: Harlow, Loren; Pinkos, Tom
Date: Fri, Oct 8, 2004 4:06 PM
Subject: Media Contact regarding HCC

** Confidential **

The following describes the general thrust of an interview yesterday with Chris Bowman of the Sacramento Bee concerning HCC. I have not copied this to Fred Zinchiak at public affairs as you may determine it needs edit first. I will assume for now that Tom will provide it to Janice and have Janice forward this or an edit of this to Fred as appropriate.

On 7 October, Chris Bowman, environmental staff writer of The Sacramento Bee (916 321-1069) interviewed Bert Van Voris (Supervising Engineer), Jo Anne Kipps (Senior Engineer), and Alexis Phillips-Dowell (Water Resource Control Engineer) for almost four hours regarding Hilmar Cheese Company (HCC) near the unincorporated community of Hilmar in western Merced County. Bowman had several months ago copied and then reviewed Regional Board files concerning this discharge and has had brief contact with current and past staff about particular points. The appointment was believed to concern cheese-related discharges throughout the region, but in fact in this session other sites were discussed in passing and only relative to HCC.

HCC discharges cheese processing wastewater to land immediately adjacent to its cheese processing facility and has expanded several times since the issuance in 1997 of the current waste discharge requirements (WDRs). While the WDRs require HCC to treat all of its discharge flow to reduce its salinity (as measured by electrical conductivity) to 900 μ mhos/cm, it has not provided sufficient treatment capacity to do so, and has continued to expand production. Consequently, HCC discharges wastewater subjected to only preliminary pretreatment that has, at times, created odor and fly nuisance conditions, and has degraded groundwater for salinity constituents, including sodium and chloride, nitrate, iron, and manganese. The degradation exceeds concentrations of certain numeric water quality objectives and that would most likely be translated in accordance with the Basin Plan procedures from narrative water quality objectives.

Complicating analysis of this land discharge is an extensive network of subsurface tile drains that control groundwater elevations in the discharge vicinity. Turlock Irrigation District owns and operates the sumps and pumps that convey the tile drainage to concrete-lined irrigation water delivery canals that discharge to the San Joaquin River. While HCC reportedly plugged tile drains that were in its wastewater disposal area, tile drains on surrounding properties likely continue to drain some portion of HCC's discharge. Several nearby dairies also complicate analysis of water quality and nuisance impacts that can be apportioned to the HCC discharge.

Bowman posed follow-up questions he developed from his review of the case file. In response to his question about enforcement, staff explained that compliance schedules to correct discharge deficiencies and consistency with the Water Code have been, to date, incorporated into waste discharge requirements. Staff reminded him that HCC has been issued notices of

RWB-023816

violations through the years for failure to comply with the compliance schedules, as well as for creating or threatening to create nuisance and for degrading groundwater. We agreed that no formal enforcement action has yet been taken. We confirmed his conclusion that staff was working on a formal enforcement action in 2002, and in response to his question about why it stopped, noted that HCC had proposed to cease discharge and connect to the City of Turlock wastewater treatment facility. We acknowledged this decision proved premature later when HCC abandoned this proposal and replaced it with one to construct a conventional industrial wastewater treatment facility, the effluent from which could be considered [recycled water] suitable for agricultural uses. We discussed the recently submitted report of waste discharge for the new treatment facility, which is expected to be fully operational by December 2004, and the drafting of updated WDRs for the discharge from this new treatment facility. Bowman posed questions concerning the following:

1. His conclusion from review of the file and independent investigation that HCC has caused pollution of groundwater. (Staff indicated this was a formal decision not yet determined by the Regional Board.)
2. His speculation that on-site tile drains were installed by HCC to relieve the hydraulic constraints of its disposal area. (Staff did not confirm or rebut.)
3. His conclusion that tile drains were discharging pollutants from HCC into the drainage system operated by Turlock Irrigation District and about his copies of analytical results of a sample he had taken of drainage water. (Staff concurred that such discharge was likely.) Bowman also posed related questions about NPDES criteria and USEPA involvement and potential concern. (Staff explained when NPDES criteria were relevant or required, including during Regional Board consideration of best practicable treatment and control for a land discharge pursuant to State Board Resolution 68-16.)
4. His understanding, including his sharing some information about the sources of his information, of the impacts of the HCC discharge on nearby domestic wells and of replacement water supplies provided by HCC and as to what it might mean. (Staff confirmed what was in the file, which apparently is less extensive than information he has obtained by additional investigation.) He observed that Jim Ahlem (a co-owner of HCC) has purchased, or tried to purchase, several properties with affected wells, and suggested this might be why. He indicated that the occupants of one home he contacted developed a rash when taking showers. (Staff was unable to confirm either.)
5. His concern over HCC wastewater being discharged to farmland associated with operating dairies and how the Regional Board was regulating these dairies to ensure protection of water. (Staff referred him to Robert Mattioli of the Sacramento office.) He also asked about these dairy owners and whether they had any affiliation with HCC or its owners. (Staff indicated we could not add more to what was in the file.)
6. His concern over HCC cheese waste disposed of off-site, such as at property in Mariposa County and at compost sites in Stanislaus County, and who regulates these sites, and over an alleged discharge of HCC cheese waste in

Mariposa County. (Staff indicated the compost sites were either regulated by staff in the Sacramento office and/or by county CUPs. We reported we were unable to confirm the Mariposa County discharge allegation, but indicated that disposal of cheese waste on farm property and dairies without proper permits was recurring by the industry.)

7. His observation that HCC was a discharge with one of the worst compliance records in the state. (The well-documented disparities in use of SWIM, and misleading conclusions that could be drawn from SWIM data, were described.) Bowman then asked for confirmation that it was the worst land discharger regulated out of the office in staff opinion. (Staff indicated that Musco Family Olive Company in San Joaquin County might be worst of the two, and that a few major San Joaquin Valley wineries might be in contention.)

8. His observation that enforcement can be taken against HCC for effluent limitation violations regardless of impact on groundwater and yet has not been taken despite continuous violation of effluent limitations spanning years. (Staff agreed with the observation and referred to the informal enforcement actions taken. Bowman contrasted this with Regional Board action on a much smaller discharge provided by one of his sources, and staff described how the actions were the same.) He pressed staff present whether we as individuals believed formal enforcement against HCC was warranted (all three of us did).

9. His thought that management may be against an enforcement action, either in this office or at the regional level, specifically naming Harlow and Carlton, including reference to the meeting of the two with HCC on-site in late 2001. (Staff indicated that management told Van Voris that it would review the evidence for enforcement that staff proposes to determine whether such action is appropriate, and directed staff that updated WDRs, and enforcement if appropriate, is a high priority. Staff present all agreed that HCC is a high priority. There was related discussion about staffing and other high priorities, including the dismal staffing of this program for permitting and enforcement. We acknowledged that staff intended to circulate tentative documents last March, and what these documents might be as far as alternatives available, but admitted that we had yet to complete draft recommendations to management and the documents, which we attributed to the staffing and these other demands, as well as lengthy delays by HCC in providing technical information germane to the preparation of the tentative documents.)

10. His observation of a pattern of perceived intentional deceit by HCC, along with examples. (Staff concurred with the facts described but offered no opinion on the conclusion.)

11. How much HCC had saved while operating in violation of the Water Code. (We advised him that we lacked expertise in this area and would only prepare such as estimate if developing a case for liability. We said in a situation this complicated we would seek the assistance of the State Board staff who had greater resources and expertise for this type of and most likely highly controversial estimate. When asked, we indicated this would be the State Board enforcement unit, but that we had not requested any such assistance.) Bowman suggested that that it was likely considerable and that he would be contacting the State Board enforcement unit.

12. He commented that he could find no undue influence by Chuck Ahlem (HCC

co-owner, former Regional Board member, and current Undersecretary of the California Department of Food and Agriculture, but also observed that Ahlem reported income of \$500 million from HCC in one year in securing his current political appointment. He asked whether staff actions on HCC were knowingly affected by an action of Ahlem's. (Staff responded in the negative.)

Bowman said the article would be published sometime this year. The article's broad theme will be statewide consistency in enforcing water quality laws and regulations and it will focus on the Central Valley Regional Quality Control Board's lack of formal enforcement against HCC despite its chronic noncompliance as the "poster child" for the theme.

He said, in addition to contacting the staff mentioned herein and HCC directly with his questions, that he would be questioning management of this office, the Regional Board, the State Board, and CalEPA about enforcement in general and HCC enforcement in particular before he completes his article.

CC: George, Catherine; Wyels, Philip

From: Ken Landau
To: Pinkos, Tom
Date: Tue, Oct 19, 2004 4:21 PM
Subject: Hilmar Cheese EO Report

Chris Bowman called Beth Jines, who called you, but talked to me since you weren't here. I then called Chris Bowman.

Chris is somewhat unhappy with the Hilmar Cheese EO Report, although not terribly bent out of shape.

1) He had not as yet contacted Hilmar Cheese, so he had to hastily call them before they read about the Bee's investigation from our EO Report. I said that I understood - we have the same concern about dischargers hearing about potential enforcement actions first through the newspaper. It was my assumption when I read the EO Report that Hilmar was aware of the investigation.

2) He is not sure what the ultimate timing or focus of the article will be (or even if there will be one) until he has completed the work and it has gone through the editor, so the EO Report is speculative about just what the Bee is going to do. The EO Report may be correct, or it may be wrong. Unknown at this time.

3) He is not thrilled about having media inquiries broadcast to the public.

I said that we have occasionally made corrections to EO Reports and other documents when they were factually incorrect, and that may be appropriate here. We went over the EO Report so I could understand what he found factually incorrect and try to work out a remedy if we agreed. Specifically, he would like the last line of the first paragraph (which says that the Bee will be publishing an article) and the entire fifth paragraph (which talks about the content of the article) removed. As an explanation for the changes, say something like "The EO Report regarding Hilmar Cheese has been amended to remove speculation on the timing and content of possible media coverage involving Hilmar Cheese."

I don't know just what Chris said to whom at the Regional Board, but it does seem like the discussion of the Bee coverage is more appropriate for the week-ahead report than for an EO Report. The proposed changes seem reasonable to me.

I told Chris that I would talk with you when you returned Thursday. If these changes are ok with you, we'd make them and I'll call him to let him know. If you don't want to make the changes, or if you want to do something substantially different, I have committed to getting back to him and/or his editor. I have also committed to Beth that we will let her know what we do.

CC: Harlow, Loren

Exhibit K

EXHIBIT

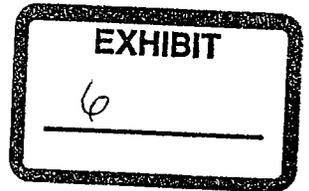
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From: Tom Pinkos
To: Harlow, Loren; Kipps, Jo Anne; VanVoriss, Bert
Date: Wed, Oct 13, 2004 12:45 PM
Subject: HCC

Schneider has asked me to add to the EO Report an update on Hilmar, i.e., where are we in the process, re administrative, enforcement, etc - only what I can report in public - do we have a timeline for actions - I have Bert's email on the interview with the Bee, and I pulled up the report from the Sept EO Report - I would appreciate if you could put something together for me that would be responsive to Bob - if I could get by early tomorrow then I'd have time to edit and prepare - thanks

CC: George, Catherine; McChesney, Frances

RWB-023832



From: Tom Howard
To: Pinkos, Tom; Schneider, Robert; Wilson, Craig M.
Date: Mon, Dec 13, 2004 6:12 PM
Subject: Re: hcc talk points

Thanks, we will discuss here.

As we discussed we also need an executive level memo that briefly lays out the issue, our historical response and tentative future actions. No more than two pages.

The memo is also needed ASAP.

>>> Tom Pinkos 12/13/04 04:49PM >>>
attached is a DRAFT of some Hilmar talking points; Bert is in the office today and tomorrow so I've asked him to read it over for accuracy. If he has any substantive changes I'll make them first thing a.m.; also, send me any comments or changes you would like me to make

Exhibit L



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Water News

Board Meeting Notice
 NOTICE IS HEREBY GIVEN that the Regional Board will be meeting in closed session at its regularly scheduled meeting of January 27/28, 2005, to evaluate the performance of its Executive Officer and other employees relative to the operation of the Fresno Office. Authorized by Government Code Section 11126 (a).

IMPORTANT NOTICE! PLEASE READ...
Water Boards' Domain Change
 In order to make the State and Regional Water Boards easier to recognize and to create a more unified identification for the Water Boards, collectively, we will be changing our Internet web address to <http://www.waterboards.ca.gov/centralvalley> and the State Water Board will be changing their web address to <http://www.waterboards.ca.gov>. Along with this, our email addresses are also changing. Both the old and the new address will be active for the next six months while we make this transition. (11/4/04)

Water Pollution Case Against Sacramento Developer Settled By Regional Water Board and Department Of Fish And Game
 The \$591,000 settlement resolves water quality pollution problems allegedly caused by Angelo Tsakopoulos' AKT Development Corporation at the Anatolia Development, part of the Sunrise Douglas Community Plan in Rancho Cordova.
 ▶ [More information on the AKT settlement](#)

Brownfields Workshop on Feb. 23, 2005 in Sacramento
 This all-day workshop will provide property owners, realtors, consultants, attorneys, redevelopment professionals, environmentalists, and community members with a practical understanding of state and local programs and resources available for transforming environmentally impaired properties. Topics to be discussed include: AB 389 - Brownfields Reform, Cal/EPA Brownfields MOA, Brownfields Inventory Process, Funding Opportunities, California Health Hazard Screening Levels, State and Local Site Assessment and Cleanup Programs.
 ▶ [More information on the Brownfields Workshop](#)

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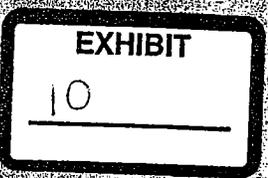


Exhibit M



The Online Division of The Sacramento Bee

This story is taken from [From cheese to pollution](#) at sacbee.com.

Official in trouble over cheese waste

By Chris Bowman -- Bee Staff Writer

Published 2:15 am PST Saturday, January 1, 2005

Setting it straight: *A story on page A1 Saturday about members of the state's Central Valley Regional Water Quality Control Board incorrectly identified Gary Carlton. He is a former Gov. Gray Davis appointee to the statewide Water Resources Control Board.*

Directors of the state's Central Valley Regional Water Quality Control Board have called into question the performance of their executive officer after learning that a giant cheese factory has been polluting with impunity for the past 16 years.

One board member said he and the board chairman were angry to learn from a Sacramento Bee story rather than board staff that the politically connected Hilmar Cheese Co. has been flooding acres of fields daily with putrid wastewater from its sprawling plant south of Turlock.

In a notice posted on the board's Web site earlier this week, the chairman called for a special closed-door session for the board "to evaluate the performance of its executive officer and other employees relative to the operation of the Fresno office" at its next monthly meeting, Jan. 27-28, in Sacramento.

Hilmar, the world's largest cheese factory, is one of hundreds of mostly agriculture-related businesses in the southern third of the Valley regulated by the board's Fresno staff. One of its owners is Chuck Ahlem, California's undersecretary of agriculture and a dairyman who served from 1996 through 2000 as a Gov. Pete Wilson appointee on the Valley water board.

The board chairman, Robert Schneider, said several issues raised in the Dec. 12 story merit the board's immediate attention.

"Our goal is to ensure that our board is doing the best job possible to protect the waters of this state," Schneider said Friday in a telephone interview from a Lake Tahoe ski resort. "(The Bee story) makes it clear that hasn't occurred. We want to find out why."

The regional water board members appointed by the governor serve as the frontline protectors of rivers, streams and groundwater in the Central Valley. They direct a staff of engineers, geologists and other specialists in setting and enforcing rules on businesses and sewage treatment plants that dispose of wastewater into waterways or, like Hilmar Cheese, spread it on land.

Board member Alson Brizard, a retired walnut farmer, said he felt "blindsided" by The Bee story, a three-month investigation of the cheesemaker's chronic violations and the void in water-quality enforcement.

The board's executive director, Thomas Pinkos, occasionally updated directors on the company's compliance issues in his monthly reports to the board. But the news briefs did not note anything unusual, such as the high volume of wastewater involved, the severity of the groundwater pollution and the long history of noncompliance, Brizard said.

"We were not aware of 90 percent of what was reported," Brizard said in a telephone interview from his home in Groveland, Tuolumne County. "I as a board member would have liked to have known before I read it in The Sacramento Bee."

Schneider said board members will question Pinkos in private because job performance is a personnel issue kept confidential by law. Pinkos serves at the pleasure of the board.

Brizard said his questions will go beyond Hilmar Cheese to the overall enforcement performance of the Fresno office.

Board members Christopher Cabaldon of West Sacramento and Karl Longley of Fresno are in Europe and could not be reached for comment, and member Lu-cille Palmer-Byrd of Newman, Stanislaus County, refused to comment.

Gov. Arnold Schwarzenegger has yet to fill four vacancies on the nine-seat Valley water board.

The Bee reported that on nearly every day for the past 16 years the locally owned Hilmar Cheese Co. violated state water-quality rules designed to keep groundwater drinkable as production rapidly grew.

The company's own tests showed the wastewater volume and salinity far exceeding permitted limits.

Board staff recorded at least 4,000 violations against the company in the past four years alone, making it one of California's most chronic offenders of clean-water laws.

State enforcement inspectors estimated the company saved at least \$27 million by delaying installation of proper waste treatment and disposal equipment.

Currently, the plant dumps an average 700,000 gallons of cheese-making waste daily. The milky soup of whey, salts and chemical cleaners is spread onto nearby land leased from company owners and supplying dairies.

The waste rapidly penetrates the sandy soil and pollutes a shallow aquifer that feeds a much deeper basin from which drinking water is drawn.

In recent years, neighboring residents have complained to regulators of overwhelming sour-milk odors and swarms of flies and, in a few cases, polluted tap water. In addition, the state attorney general's office is investigating a former Hilmar worker's allegations of illegal canal dumping.

Members of the water board generally are not apprised of pollution problems in such detail unless the executive officer asks them to take enforcement action.

But Pinkos, the executive officer since 2002, never recommended a fine or an injunction against Hilmar Cheese. Nor did his predecessor, Gary Carlton, now a Schwarzenegger appointee to the statewide Water Resources Control Board. Carlton said he relied on the

judgement of Loren Harlow, head of the Fresno office, who did not recommend enforcement.

Brizard, an appointee of former Gov. Gray Davis, said he doesn't understand why the violations went unpunished.

"I want to hear from staff why this occurred, why it wasn't brought to us, why enforcement actions weren't taken before now," he said.

Pinkos, who has authority to issue enforcement orders on his own, took the first-ever action against Hilmar Cheese on Dec. 2. He later acknowledged that the timing was tied to The Bee's investigation.

The cleanup-and-abatement order demands an end to the "offensive" odors coming off 124 acres of waste fields by today; the testing of nearly 100 residential and irrigation wells within a half-mile of the plant; and a thorough cleanup of groundwater polluted by the many years of dumping.

John Jeter, Hilmar's chief executive officer, promised regulators that the company "will go above and beyond" measures required in the order. The company is nearing completion of treatment works that should be capable of cleansing its wastewater enough to meet state standards.

Responding to the order, Jeter added in a Dec. 15 letter to the board, "It is unfortunate that the hard work of your staff, as well as that of our environmental staff and consultants, was so unfairly criticized in the recent Sacramento Bee article.

"We believe, however, that the most effective response to this article is proving that the allegations are wrong, by demonstrating our compliance with regional board requirements."

Schneider, the water board chairman, said Friday that The Bee "did the public a service with the story, and we are trying to do our part to protect the waters of the state."

About the writer:

- The Bee's Chris Bowman can be reached at (916) 321-1069 or cbowman@sacbee.com.

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