



Good morning Mr. Chair and members of the Board. My name is Wendy Wyels and I'm an Environmental Program Manager in the Sacramento office. I'm here today to present an update on the regulation of food processing waste discharges to land.

Purpose

- Describe water quality issues at food processing facilities
 - Discharge of waste to land
- Update Board regarding staff's activities since Jan 2005 item
- Allows for public discussion

2

There are three main reasons for this presentation. The first is to describe the water quality issues facing the food processing industry, in particular, with the discharge of waste to land. Second we wanted to update the Board as to staff's activities with regard to food processors since the January 2005 Information Item. And finally, the industry has been requesting the opportunity to discuss issues with the Board members, and this informational item allows for a public discussion.

Central Valley Food Processing

- Major component of economy
- Some of the largest facilities in the nation
- “Food processors” include tomato packers, fruit canners, seed washers, wineries, cheese manufacturers, pickle briners, slaughterhouses
- Waste is high in organics, nutrients, salt

3

Food production and processing is a major component of the Central Valley’s economy, and employs up to 35 percent of the workforce in some counties. Some of the largest food processing facilities in the nation are found in the Central Valley region. The Regional Board regulates such diverse food processors as tomato packers, fruit canneries, seed washers, wineries, cheese manufactures, pickle briners, and slaughterhouses. The waste generated from these industries contains significant quantities of organic matter, nutrients, and salts.

Comparison of Untreated Wastewater

	<u>Winery</u>	<u>Domestic</u>
pH	2 - 11	6 - 8
Biochemical oxygen demand	300- 30,000	100 - 400
Total dissolved solids (TDS)	80 – 7,000	250 – 1,000
Nitrogen	1 - 225	20 - 50

4

Food processing wastewater is typically much higher strength than domestic wastewater. While this table highlights the concentrations seen in winery wastewater, monitoring reports submitted by other food processors (such as cheese manufacturers, olive processors, and tomato canneries) show that these facilities also discharge extremely high strength waste. The fact that such high strength waste is being discharged to land raises concerns about the potential impacts to groundwater.

Central Valley Facilities

- Of the 640 known food processors, 20% discharge directly to POTWs
- The remaining 80% (about 525 sites) discharge waste to land
 - 212 regulated under individual WDRs
 - Over 62 enrolled under Small Food Processor waiver
 - Over 250 wineries discharging without Regional Board oversight

5

The Central Valley region has the largest concentration of food processors within the state. Of the 640 known food processors within our region, about 20% discharge directly into a Publicly Owned Treatment Works. These treatment plants receive waste from a variety of sources and are regulated by either an NPDES permit or by WDRs.

This presentation focuses on the remaining 80% of the food processors in our region, which discharge their waste directly to land. These sites can be broken into three categories. First, there are 212 food processors that are regulated under individual WDRs. Next, we have enrolled over 62 facilities under the Small Food Processor Waiver. And finally, staff are aware of over 250 sites, mainly wineries, that are discharging waste to land without having submitted a report of waste discharge, which staff need to begin the permitting process. Because these facilities are not permitted by the Regional Board, they are operating in violation of the California Water Code.

Prior Permitting Focus

- Apply waste to land at rates that:
 - Allow soil to break down organic matter
 - Allow nutrients to be taken up by crops
 - Prevent nuisance odors
- No recognition of salt in waste
- Minimal monitoring required
- Staff concerned - groundwater impacts?

6

In the past, we wrote WDRs requiring that food processing waste be applied to land at rates which we thought would accomplish three things. First, organic matter would be broken down by the microorganisms within the soil; second nutrients would be taken up by the crops grown on the disposal ground, and third, nuisance odors would be prevented. There was no recognition of the fact that many food processing wastes are very salty and that most inorganic salt will simply move through the soil into groundwater. Staff relied on guidelines prepared by the industry to determine acceptable loading rates, especially for winery waste, and we required only minimal monitoring of the discharge. However, over time staff became concerned about whether these application rates were excessive, and we began requiring food processors to install groundwater monitoring wells to determine if the waste discharge was impacting water quality.

Review of Groundwater Monitoring Data

- Reviewed data from the 105 sites with groundwater monitoring
- Almost half are impacting groundwater
- Natural attenuation not always protective
- Needed to refine our regulatory approach to fully protect groundwater

7

In late 2004, staff reviewed the groundwater monitoring data from the 105 food processing facilities that had been required to install groundwater monitoring wells, and found that almost half the sites have caused groundwater pollution or degradation, in violation of their WDRs and State policies. From this evaluation, it became obvious that the concept of natural attenuation of waste within the soil column is not always appropriate for this type of high strength waste, as it does not always protect water quality. We realized that we needed to refine our regulatory approach toward food processing sites in order to comply with State policies and to fully protect groundwater.

Staff Report: Jan 2005 Informational Item

- Known water quality impacts
- Case studies (pollution vs. upgrades)
- Ineffective past regulatory measures
- Phased approach for proper regulation
 - Complies with State policies
 - Incorporates existing regulations
 - Implement after evaluating individual sites

8

In late 2004, several Board members asked for a presentation regarding the water quality impacts from food processing facilities, and staff prepared an informational item for the January 2005 Board meeting. As part of that, we wrote a very detailed staff report, which was mailed to over 350 dischargers and interested parties and is still posted on the Regional Board website. Among other items, the staff report describes the known water quality impacts from the discharge of food processing waste to land; provides case studies of four processors that are polluting groundwater, and contrasts that with case studies of three processors who have invested in the upgrades to manage their waste so that they are no longer impacting water quality.

The staff report also describes how our past regulatory practices have been ineffective to protect water quality; and it includes a phased approach to properly regulate food processing sites in a manner that complies with State policies and procedures. This phased approach simply incorporates existing regulations, and is *not* a change to any regulation. Staff have been using this approach in the last year, and as always, we evaluate each facility individually to determine whether it is impacting water quality.

Phased Approach

- Update MRPs on facility-specific basis
- If groundwater impacted, either:
 - Make changes to stop impacts (i.e., source control, diversion, treatment, lined ponds, better management of land disposal area)
 - **OR** regulate under Title 27
- If groundwater unreasonably impacted, prepare a C&A Order

9

This phased approach consists of three main steps:

First, we review facilities on a site-by-site basis to determine if any individual Monitoring and Reporting Programs need to be updated. An update is necessary when it's not possible to determine from the monitoring whether the site is complying with its waste discharge requirements, including its Groundwater Limitations. Each MRP update is specific to an individual facility, and requires an evaluation of site-specific conditions and how the waste is treated and discharged.

Second, if groundwater degradation is either threatened or documented at a particular facility, then staff are preparing revised WDRs or an enforcement order requiring the discharger to make changes to stop unreasonable groundwater impacts and to comply with applicable plans and policies. These changes could include such measures as source control, diversion of high strength waste streams, better treatment of the waste, lined ponds, and better management of the land disposal area. However, if the discharge can't be modified so that it will not unreasonably impact groundwater, then we will follow our Basin Plan and the Water Code, and we will regulate the site under Title 27, which typically requires full containment of the waste.

And third, if groundwater has been unreasonably impacted from the discharge of waste, then staff will prepare a Cleanup and Abatement Order requiring the groundwater to be cleaned up consistent with the State Board Cleanup Policy. As with any Cleanup and Abatement Order, the Discharger will have the option of asking for a hearing before the Regional Board.

Recent Actions

- Feb 2005: Senate Committee on Agriculture hearing
 - Provided testimony and follow-up letters
- April 2005: California League of Food Processors
 - *Manual of Good Practice*
 - Not as effective as envisioned
 - Will continue meeting and work on revisions

10

Now I'll describe the actions staff have taken with regard to food processing issues since the January 2005 Informational Item.

Last February, we were asked to provide written and verbal testimony to the Senate Committee on Agriculture regarding the impacts of the Regional Board's regulation of food processors. The hearing concluded with Senator Denham requesting additional information from staff, which we provided in two follow-up letters.

In April, staff met with the California League of Food Processors and their consultants, to continue discussions regarding the League's Manual of Good Practice. Many of staff's earlier concerns and comments have not been reflected in the Manual, and therefore the League has stated that the Manual is less effective than originally envisioned. Staff will continue to meet with the League in an effort to revise the manual to accurately reflect existing policies and regulations, and to describe certain practices, which if implemented, should protect water quality. The League has now proposed a workshop for late April, and staff will continue to be fully involved in the process.

Recent Actions, continued

- Ongoing: Wine Institute Study
 - Spreading basin study
 - Staff provided comments
 - Concerns expressed by peer reviewers
 - Attending regular meetings
 - Salinity source control study
 - Results soon

11

Several years ago, the Wine Institute began a study to show whether the soil within spreading basins can treat winery wastewater to a level that won't unreasonably impact water quality. Staff previously provided comments on the documents, and in 2005, the State Board commissioned a peer review of the study. The peer reviewers had a number of concerns, and staff are now attending regular meetings with State Board staff and the Wine Institute to determine how to move forward. The Wine Institute is also conducting a salinity source reduction study to determine methods to prevent the amount of salt entering winery wastes. We haven't seen any data yet, but understand that the results will be available soon.

Recent Actions, continued

- July 2005: State Board workshop
 - Written comments; verbal testimony by the Executive Officer

- Jan 2006: State/Regional Board workshop
 - Provided testimony
 - Committee formed to study/develop solutions
 - Long term impacts on food processing wastes

12

As a result of our January 2005 informational item, the State Water Board held a workshop last July to receive information about several issues surrounding the regulation of food processing wastes, including whether the land application of these wastes threatens water quality and whether there are economical methods to reduce the high concentrations of salt in this waste. In addition to submitting written comments, the Executive Officer attended the workshop and provided verbal testimony.

In January, the State and Regional Board held a joint workshop to discuss the threat of salinity to the Central Valley's surface waters and groundwaters. This workshop was partially in response to the concerns raised by the food processors at the July workshop, but was expanded to include many other salinity-related issues. Staff provided testimony at the workshop, which concluded with the formation of a sub-committee, headed by Dr. Longley, to develop a new policy to regulate salt discharges in the Central Valley. Staff have been asked to provide technical support to this committee, and it is expected that in the long-term, this work will have an impact on the treatment and disposal of food processing waste.

Salinity Issues

- Easier to prevent salt from entering waste stream than to remove it
- Industry should oversee salinity source control studies
- Existing technology to remove salt; industry should compile information
- No reason to wait to implement these tasks

13

I'd like to remind the Board that staff addressed the issue of the saline wastes generated by food processors during last year's informational item. At that time, we stated that it is easier to *prevent* salt from entering a waste stream than to *remove* it from the waste later. Therefore, we suggested that industry groups help their members by conducting salinity source control studies. There's also existing technology to remove salt from a waste stream, and we suggested that industry groups compile this information. While the Wine Institute has begun a source control study at wineries, we strongly suggest that other food processing groups also take the initiative to begin these studies, and that individual food processors voluntarily implement salinity source control measures. We believe that there is no reason to wait, and that these tasks will nicely complement the new policy under preparation by Dr. Longley's sub-committee.

Recent Actions, continued

- On-going: Stanislaus County Waiver
 - Discharge of *solid* food waste
 - County requested that Board waive WDRs
 - October: draft waiver; November: tentative waiver; January: revised tentative waiver
 - Third version of tentative out soon; incorporates industry's proposal for a study in lieu of groundwater monitoring

14

Stanislaus County has developed a program to oversee the discharge of solid food processing waste, and last year asked that the Regional Board waive waste discharge requirements for those entities enrolled in the County program. Staff has spent considerable time reviewing the County's program, and last October sent a draft waiver to the County. After meeting with the County, the draft was revised, and the tentative waiver was sent out for public comments in November. Based on comments and meetings, the tentative waiver was revised and sent out again in January. It was originally scheduled to be heard at this meeting, but based on industry requests, it is not on the agenda. A third version of the tentative waiver will be sent out soon and will incorporate the industry's proposal to study whether the application of solid food processing waste to land has the potential to impact water quality. This study has been proposed in lieu of the requirement to install groundwater monitoring wells at the land application areas. Staff are committed to work with the industry on this study, and we understand that other parties, including environmental groups, will also be invited to participate.

Recent Regulatory Actions (food processors only)

- Regulate food processors in conjunction with other land dischargers
- Prioritize work:
 - Known or suspected groundwater pollution
 - Discharge of high strength waste
 - Complaints
 - Enforcement necessary
- Fraction of the work completed by staff

15

Since the January 2006 informational item, staff have continued to regulate food processors in conjunction with all the other types of dischargers that we regulate under the Waste Discharge to Land program. We attempt to prioritize our work based on known or suspected groundwater pollution, a discharge of high strength waste, whether complaints have been received, and whether enforcement actions are needed. We also attempt to review and respond to Reports of Waste in a timely manner. This next slide summarizes the work that we've done in the last year ONLY with respect to food processors; please realize that food processors represent only one segment of the dischargers regulated under the Waste Discharge to Land Program, and therefore these numbers represent only a fraction of the work that our group has completed.

Recent Regulatory Actions (food processors only)

- Review RWDs: 48 sites
- Prepare WDRs: 5 sites
- Enroll under Waiver: 29 sites
- Other waivers: 3 sites
- Revise monitoring programs: 7 sites
- New enforcement: 26 sites
- Continue major enforcement: 11 sites

16

Staff have implemented the phased approach toward regulating food processors, and in the last year, we have reviewed 48 reports of waste discharge, prepared 5 waste discharge requirements for the Board's consideration, enrolled 29 sites under the Small Food Processor waiver, issued other waivers or no-further-action letters for 3 sites, revised individual Monitoring and Reporting Programs for 7 sites, issued new enforcement actions at 26 sites, and continued to work on major enforcement actions at 11 sites. In addition to this, we continue to inspect facilities, review CEQA documents, review monitoring reports and technical reports, and request Reports of Waste Discharge from the food processors that are discharging waste without a permit.

Part of the reason for describing the work completed by staff is that some people within the industry feared that there would be a wholesale shift in our priorities, and that staff would focus exclusively on regulating food processors. We're working as efficiently as we can, but if you recall that there are over 500 food processors that discharge to land, then you'll realize that food processing sites receive no higher priority than any other site that discharges waste to land, and that we prioritize our work on an over-all basis, not by the type of discharger.

Recent Actions, continued

- Attend multi-state conference
- Idaho and Washington require:
 - Crop tissue analysis
 - Extensive monitoring well networks
 - Lined storage ponds
 - Stringent numerical loading limits
- South Africa restricts winery waste (electrical conductivity <700 umho/cm over source)
- Continue to research other regulations

17

Finally, I'd like to let you know that for the last few years, staff have attended an annual land application conference in Idaho, and have discussed food processing waste discharges with our counterparts in Idaho, Oregon, and Washington. We've been surprised to learn the other states have more stringent regulations for food processing waste discharges than California. For example, Idaho and Washington require crop tissue analysis to determine proper loading rates; they require more extensive groundwater monitoring well networks; and they require that storage ponds be lined. In addition, they have developed stringent numerical loading limits for organics. Staff are also beginning to research discharge requirements from other areas; for example, we've learned that South Africa restricts winery waste discharges to an electrical conductivity of less than 700 micro mhos per centimeter over the source water. This is significantly more stringent than the discharge limit for the majority of our sites. Staff will continue to research how food processing wastes are regulated elsewhere to see what may be relevant to use in the Central Valley.

Response to Comments

Comment: major change; underground regulations; review by Office of Admin. Law

Response:

- Taking a closer look; implementing existing policies and regulations
- Site-by-site decisions
- Legal: complies with Admin. Procedures Act

18

Almost four weeks ago, we mailed the Staff Report for this Information Item to about 400 interested parties. We encouraged written comments and to date have received 9 letters, which is significantly less than we received for last year's information item. The Board members have received copies of all the letters, and I'll take a few minutes now to go through a couple of the common themes.

The first comment is one that we've heard many times in the last year, but bears discussion again. The industry believes that the Regional Board has "significantly adjusted our regulatory approach" toward food processors, that we are using underground regulations, and that we need the Office of Administrative Law to review our program to determine if it complies with the Administrative Procedures Act. Our response is that there has not been a significant adjustment to our regulatory approach. What we are doing is taking a closer look at individual food processing sites, using the knowledge we've gained about the potential for this type of waste to impact water quality, and we are simply implementing existing policies and regulations. All of our regulatory decisions are made on a site-by-site basis and take into account the specific type of waste, method of treatment, type of disposal, and soil and groundwater conditions at that specific facility. We are not advocating any sort of generalized monitoring program or any type of general WDR. We checked with our legal counsel again, and were told that our phased approach does NOT constitute underground regulations and we are in full compliance with the Administrative Procedures Act.

Response to Comments **(Stanislaus County waiver)**

Comment: Have not shown that there *is* a water quality problem

Response:

- Have not shown that there *isn't* a problem
- No groundwater or appropriate soil monitoring
- Only data is from the waste: high salinity and BOD, which could affect groundwater

19

The majority of the comments are about Stanislaus County's program for the discharge of solid food waste. As I said earlier, we'll be bringing that proposed waiver to another Board meeting, so I don't want to go into specifics today. However, there are a few points that I need to respond to.

First, the industry and County continue to state that "the Regional Board has not shown that there's a water quality problem" from the application of solid food processing waste to land. While it is true that there is no data showing that there IS a problem, the converse is also true. And that is, neither Stanislaus County nor the dischargers have collected data to show that there ISN'T a water quality problem. There has been no groundwater monitoring at these sites, and the majority of the soil samples aren't even from the fields to which the waste has been applied. The only real data is from samples taken of the waste itself, and that information indicates that we should be very concerned about salinity and BOD. Based on our analysis of the data submitted by the industry, it is appropriate to proceed with a conditional waiver that implements the County's program but contains a few additional restrictions and increased monitoring.

Response to Comments **(Stanislaus County waiver)**

Comment: Be satisfied with agronomic rate.

Response: Appropriate for nitrogen but not salt, BOD, or acidic/basic waste.

Comment: This is “re-use”. Rules should be less onerous than for disposal

Response: Re-use must still protect water quality, and the minimal data raises concerns. Industry study to answer questions.

20

Many commenters state that the Regional Board should be satisfied as long as the waste is applied at agronomic rates. We agree that agronomic rates are absolutely appropriate for nitrogen. But food processing waste contains extremely high concentrations of salt and BOD, and can be very acidic or very basic. There are no agronomic rates for these constituents, and because they can degrade groundwater, we must regulate the waste discharge by a method other than JUST agronomic rates.

Finally, a comment has been made that the discharge of solid food processing waste to land should be considered “re-use” instead of “disposal”, and that we shouldn’t regulate re-use as stringently. Staff definitely agree that it’s better to re-use waste materials in a beneficial manner rather than to take them to a landfill. However, that re-use must still comply with state policies and regulations. And in the case of the solid food waste, while we certainly hope that we can regulate this re-use in a less stringent manner than a straight disposal site; the data that we have seen to date raises concerns. As I stated earlier, the industry has proposed a study to determine the water quality impacts of the discharge of solid food processing waste to land, and staff have committed to fully participate. Hopefully, this study will resolve the questions on how to regulate solid food processing wastes.

Summary

- Regional Board charged with protecting water quality
- Discharge of food process waste has impacted groundwater at many sites
- Regulate sites on a case-by-case basis, consistent with existing State regulations and policies
- Continue to work with the industry while regulating individual sites

21

To summarize, this Regional Board is charged with protecting the quality of surface waters and groundwaters within the Central Valley. The discharge of liquid food processing waste to land has the potential to degrade water quality – and self-monitoring reports show that in many cases groundwater has already been impacted. Therefore, it's appropriate to regulate food processing sites on a case-by-case basis, in a manner consistent with existing State policies and regulations. Staff will continue to work with the industry groups to provide overall direction and education to their members, and at the same time, will continue to regulate individual food processing sites, including taking enforcement action when appropriate.

This ends my presentation. I'd be happy to answer any of your questions.