



CERTIFICATION OF SALT REDUCTION IN DAIRY WASTE

Waste Discharge Requirements General Order No. R5-2007-0035 for Existing Milk Cow Dairies (General Order) requires owners and/or operators of existing milk cow dairies (Discharger) to submit by **1 July 2009** a Salinity Report which identifies sources of salt in dairy waste, evaluates measures that can minimize salt in dairy waste and certifies that the Discharger will implement the approved measures identified to minimize salt in dairy waste. The General Order allows the Discharger to refer to an industry-wide report acceptable to the Executive Officer, but the Discharger must still certify that the appropriate measures will be implemented to reduce salt in the dairy's waste. This form may be used to meet this certification requirement.

An industry-wide Salinity Report has been submitted to the Executive Officer by the University of California and is pending approval. The list of management practices in the tables below to reduce the importation or accumulation of salt at a dairy are consistent with those recommended in the industry-wide Salinity Report.

PART I. DAIRY FACILITY INFORMATION

A. Name of Dairy or Business Operating the Dairy:

PHYSICAL ADDRESS OF DAIRY

Number and Street: City: County: Zip Code:

B. Operator Name:

Telephone No:

OPERATOR MAILING ADDRESS

Number and Street: City: County: Zip Code:

C. Owner Name:

Telephone No:

OWNER MAILING ADDRESS

Number and Street: City: County: Zip Code:

MANAGING SALTS ON A DAIRY FARM

Information regarding salt concerns in the Central Valley is available at http://www.waterboards.ca.gov/centralvalley/water_issues/salinity/ There are three types of salt on a dairy facility: salts imported as part of the regular activities of dairy production; salts imported above regular activities; and salts already present (in the aquifer) that are transferred to the waste stream.

Salts are imported as part of the regular activities of dairy production in feed, bedding, and chemicals. The time required for salts in feeds and bedding to be soluble in the waste stream will vary from minutes to years depending on the chemical composition. A potential avenue for reduction of salt importation is in careful selection of the types and sources of materials used for regular dairy production activities. This is most effective when targeting a specific element (i.e. phosphorus) and not necessarily effective to just minimize fixed solids. If materials used in dairy production are going to change be sure there is no milk quality or animal health. Fixed solids are the constituents remaining from dry materials after exposure to 540° C for 4 hours. Fixed solids were used as a surrogate for salts in the Industry-wide Salinity Report and include both chemical constituents as well as inert contaminants (soil).

Salts added to the dairy production facility above regular activities may occur as dietary supplements added to ration(s) in excess of requirements. Management measures may be implemented to reduce or eliminate some, or all, dietary supplements added in excess of metabolic requirements. Accuracy in nutrient monitoring programs for all feed ingredients is essential to accomplish this goal and prevent errors resulting in metabolic challenges to the animals from inadequate supplementation.

Salts already present in the aquifer and transferred to the waste stream via animal use include water used for sanitation and animal hygiene and animal drinking and cooling water. These salts are merely being relocated from the aquifer to the soil surface and opportunities for reductions are minimal without compromising animal health, well-being, and production.

The Central Valley Regional Water Quality Control Board is addressing salt in recently adopted waste discharge requirements to reduce the impact of salts on ground and surface waters, thereby extending the useable lifespan of these water resources. Ultimately, the specific compounds (salts) accumulating in ground and surface waters must be evaluated. Additional

http://www.waterboards.ca.gov/centralvalley/water_issues/salinity/ or <http://www.cvsalinity.org/> .

Two key concerns exist related to salt accumulation. The first is importation of “new salt” into the Central Valley. This salt originates in materials that come from outside of the Central Valley. These are imported in organic materials (plant materials), or inorganic materials (chemicals, salt supplements). Imported salts contribute to the salt load accumulating in surface and ground water resources within the valley. The second concern is the overall accumulation of salt in a localized geographic area, potentially creating a “hot spot” of highly concentrated salts in underlying groundwater sources. The origin of this material, whether it is imported from outside or originates within the Central Valley is irrelevant. Continued accumulation of salts in underlying groundwater may ultimately make the water unusable.

PART II. IDENTIFICATION OF SOURCES OF SALT IN THE WASTE STREAM

I have conducted my own salt report and have submitted it to Central Valley Water Board.

OR

I have received and reviewed a copy of the Industry Wide Salt Report for Existing Milk Cow Dairies.

The following categories responsible for generation of salt are utilized at the above named dairy.

Feed

Bedding (brought into the facility from outside---do not check if you only use dried manure generated on your facility for bedding)

Water

Chemicals (used in the milking parlor or for animal health)

The tables in Part III identify potential management practices that can be implemented to reduce salt accumulation. Reduction in salt accumulation occurs through minimizing importation of salt containing products to the Central Valley, reducing inputs containing salts, and improving efficiency of conversion of salts into outputs. Focus areas include: feed (the largest contributor to salt importation within a production facility), bedding, water use, and chemicals. Implementation of selected management practices must be done without impairing animal health and well being, or inadvertently modify the composition of the waste stream to disrupt implementation of the dairy’s nutrient management plan. It is important to thoroughly consider the ramifications to the sanitation, waste handling, storage, and utilization components of the dairy prior to reducing water use or changing water supplies.

PART III. SELECTION OF MANAGEMENT MEASURES TO IMPLEMENT TO REDUCE SALT ACCUMULATION

Place a mark in one of the boxes in each row to indicate if the management practice is already in place (do now), will be implemented in the short term (by July 1, 2010), long term (by July 1, 2011), or not at all at the dairy facility. Be sure to maintain documentation for practices already implemented as well as those selected for implementation.				
MANAGEMENT PRACTICE TO REDUCE IMPORTATION OF SALTS INTO THE CENTRAL VALLEY OR REDUCE ACCUMULATION OF SALTS AT MY DAIRY	IMPLEMENTATION SCHEDULE			
	Do now	Short term	Long term	Will not implement
Feed ingredient category				
Buy feeds grown locally (from within the Central Valley) whenever possible to reduce additional imports of fixed solids into the Central Valley.				
Choose forages with higher total digestible nutrient values (lower fixed solids concentration).				
Analyze forages for minerals (P, K, Na, Cl, Ca, Mg and S) and use results in diet formulation				
Feed cows in groups specific to their production levels.				
Work with a nutritionist to develop diets formulated for specific production levels.				
Work with a nutritionist to develop diets formulated for specific production levels				
Consult a nutritionist to balance diets to optimize milk yield while minimizing all salt inputs. (Example: if sodium bicarbonate is added to the ration, reduce other sources of dietary sodium.)				
Buy grains, byproducts and protein supplements grown or manufactured in the Central Valley.				
Do not supplement minerals beyond nutritionist's recommendations				

Place a mark in one of the boxes in each row to indicate if the management practice is already in place (do now), will be implemented in the short term (by July 1, 2010), long term (by July 1, 2011), or not at all at the dairy facility. Be sure to maintain documentation for practices already implemented as well as those selected for implementation.

MANAGEMENT PRACTICE TO REDUCE IMPORTATION OF SALTS INTO THE CENTRAL VALLEY OR REDUCE ACCUMULATION OF SALTS AT MY DAIRY	IMPLEMENTATION SCHEDULE			
	Do now	Short term	Long term	Will not implement
Store and offer feeds in a manner that minimizes shrink (loss to the environment) (Example: In a dry, rain protected area/feeder)				
Ensure all personnel responsible for animal feeding are properly informed and trained to ensure proper diet formulation				
Other: explain				
Bedding ingredient category				
Review the types of bedding materials available to the dairy and select bedding sources known to have lower fixed solids values.				
Make infrastructure changes to minimize imported bedding needs.				
Minimize the amount of bedding used.				
Obtain bedding material from local sources.				
Other: explain				
Water use category				
Ensure milking personnel know proper milking practices to ensure sanitation and efficient water use.				

Place a mark in one of the boxes in each row to indicate if the management practice is already in place (do now), will be implemented in the short term (by July 1, 2010), long term (by July 1, 2011), or not at all at the dairy facility. Be sure to maintain documentation for practices already implemented as well as those selected for implementation.

MANAGEMENT PRACTICE TO REDUCE IMPORTATION OF SALTS INTO THE CENTRAL VALLEY OR REDUCE ACCUMULATION OF SALTS AT MY DAIRY	IMPLEMENTATION SCHEDULE			
	Do now	Short term	Long term	Will not implement
Train personnel to identify and fix leaks in the water delivery system (parlor hoses, water troughs, etc.) as soon as possible.				
Maintain animal drinking water facilities to minimize water losses or spillage.				
Reuse water whenever safe to do so within the system (Example: Use plate cooler water to clean parlor floor).				
Install water meter(s) to monitor and minimize actual water use.				
Utilize animal cooling systems only when needed to avoid heat stress.				
Monitor electrical conductivity (EC) of water sources on the dairy and use lower EC sources for parlor or drinking water when the option exists.				
Consult with local experts on which depths supply the best water quality when installing new water supply wells.				
If water softeners requiring salt for recharge are used: Dispose of parlor water softener brine off-site in an approved manner to avoid discharging the brine into the waste stream.				
Minimize the amount of water processed through the softener, e.g. only hot water used in the milking parlor.				
Install alternative systems that do not require brine, if possible.				

Place a mark in one of the boxes in each row to indicate if the management practice is already in place (do now), will be implemented in the short term (by July 1, 2010), long term (by July 1, 2011), or not at all at the dairy facility. Be sure to maintain documentation for practices already implemented as well as those selected for implementation.

MANAGEMENT PRACTICE TO REDUCE IMPORTATION OF SALTS INTO THE CENTRAL VALLEY OR REDUCE ACCUMULATION OF SALTS AT MY DAIRY	IMPLEMENTATION SCHEDULE			
	Do now	Short term	Long term	Will not implement
Chemical ingredient use category				
Test supply well water to determine the appropriate chemical compounds and concentrations needed for effective sanitation.				
Use chemicals according to the manufacturer's specifications.				
Extend footbath use by installation of a pre-bath water rinse to reduce debris and other organic matter entering footbaths (this will increase water use).				
Train all personnel in chemical use and handling procedures to avoid overuse or waste.				
Store chemicals according to manufacturer's instruction to avoid accidental leakage or spills to reduce unnecessary disposal needs.				
Other—explain				
Other—explain				

