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Office of Environmental Assessment (OEA)
Attn: Carol Harrison
U.S. EPA, Region 10
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RE: Relation Between Nitrate in Water Wells and Potential Sources in the Lower Yakima Valley, Washington September 2012 Report.

To Whom It May Concern:

The Oregon Dairy Farmers Association is the dairy producer trade association that works on behalf of Oregon's 280 dairy farm families. On behalf of Oregon's dairy farm families, I would like to express multiple concerns with the EPA Report "Relation Between Nitrate in Water Wells and Potential Sources in the Lower Yakima Valley, Washington" September 2012. For my comments, I will refer to the previous mentioned document as the Report.

The outcome of this Report has a much broader impact than just on the dairy farm families that the Report used. The Report challenges best conservation, scientifically-based, proven practices promoted by USDA Natural Resource Conservation Services and land-grant universities. These practices are implemented by dairy farmers across the nation. The impacts of this Report are much broader than that of the farm families within the Yakima community. The Report will affect dairy farm families in the state, the region and the nation. Because of that, ODFA would like to provide the following comments.

ODFA has multiple concerns regarding the scientific credibility of the Report. First off, this Report was published without the completion of a peer-review from the scientific community. A peer- review evaluates the quality of the science by experts within the relevant field. Peer-reviews are completed on scientific studies before they are published to ensure that the study design, methodology, sampling techniques, statistical analysis and conclusions drawn from the study are accurate. This Report tackles multiple complicated scientific topics (i.e. lagoon design and construction, groundwater dating, groundwater movement, etc.) and would have benefited greatly from a review of experts of these topics. Having the Report reviewed by individuals within the agency or using individuals who do not have expertise in the topics studied in the Report does not constitute a peer-review.

ODFA is concerned EPA drawing conclusions when data was missing or not collected. Multiple times throughout the Report EPA noted that they were not able to collect all of the information needed for an analysis. For example, on Page ES-3, EPA states, "information on the depths and screened intervals for the water wells is known for a third of the wells that were sampled." That means, two-thirds of the information EPA was seeking to use for their Report is missing. It is impossible to make a credible, scientific determination when the majority of the information needed is not available. Instead of trying

to draw a conclusion using incomplete information, the data collected from wells with missing information should be discarded.

This is not the only example where EPA has reported that there was missing data. EPA also reported that it "lacks complete information regarding the dairies in this study" and "has limited information about the irrigated crop fields in this study." In general, scientific studies may yield missing data points but the lack of information will impact, and limit, what conclusions can be made. Although EPA acknowledged the lack of information, the agency did not appear to have changed, or limit, the conclusions that were made in the Report.

Existing wells were used for data collection, however, the integrity of these existing wells were not determined. Since no new wells were constructed for sampling, each of the wells should have been inspected to determine the well's integrity. It is unknown whether or not a well's casing is intact, adequate height of the well casing of above the ground, appropriate isolation distances were maintained from sources of contamination when the well was constructed. Without this information, the true source of contamination within the well sample cannot be determined.

ODFA is very concerned about the method EPA used to collect soil samples. Surface soil samples are not an acceptable means for determining the nutrients in a soil profile. Sampling the top inch will yield values that are elevated[1]. Because of the greatest abundance of plant roots, the greatest biological activity and highest nutrient levels occur in the surface layers, the upper 12 inches of soil are used for most analyses[1]. When sampling for mobile nutrients such as nitrogen, samples should be collected every foot to the effective rooting depth of the crop to a depth of 5 to 6 feet unless the soil has a root-limiting layer such as bedrock or hardpan[1].

As for the lagoon samples, it appears that a single sample was collected however, collection of this sample was not discussed in the Report. There are multiple variables that will impact the nutrient content of the lagoon. Nutrient values can vary with seasons, diets of the animal, management of the manure, time of day to name a few. Multiple samples from lagoons should be collected in order to gain a consistent baseline. Technique of lagoon sample collection will also affect the nutrient content of the sample.

There are also significant statistical challenges when only a single sample is collected. With a small sample size, there is very little certainty that the sample population will reflect that of the entire population. Multiple samples are needed for the outcome of the sample population to be applied in a broader sense.

There are many concerns with the Report's use of reference materials. References are crucial for scientific articles, papers and reports. References materials should provide the reader with where the information was sourced and the location of the referenced material. However, the Report has failed to reference information or misused references so the reader is left with an opinion different than that

[1] Soil Sampling Bulletin 704 (Revised) by R.L. Mahler and T.A. Tindall. 1990. University of Idaho Cooperative Extension System.

from the original source. One example where EPA has failed to cite information is the statistic “411,000 persons divided by 25000 dairy cows equals 164 persons per cow.” This statistic is cited three times in the Report. The Report references another EPA report, Risk Assessment Evaluation for Concentrated Animal Feeding Operations, (EPA, 2004) for this statistic. However, the 2004 report does not show evidence as to how this statistic was generated. One example where EPA has used a reference to leave the reader with an opinion different than that of the original source was “Harner and others 2007.”

ODFA supports the use of peer-reviewed scientific information for the development of thoughtful rules and regulations. However, due to the concerns stated above, ODFA does not view this document as a credible piece of science and it should not be used in an attempt to change current scientifically-based, proven conservation practices utilized for dairy farm families.

Sincerely,

Kathryn Walker, Program Director
Oregon Dairy Farmers Association

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