LETTER 18 - Jacob de Jong

Response to Comment 18-1

The commentor's concerns regarding changes in dairy regulation within Kings County that would occur under the proposed Element are noted for the record. It is pointed out that the two stated objectives of the Element are to 1) "ensure that the dairy industry of Kings County continues to grow and contribute to the economic health of the County" and 2) "to ensure that the standards established in the *Dairy Element* protect public health and safety and the environment." The County has determined that adoption of standardized procedures for the permitting of dairies is appropriate to facilitate the achievement of these objectives.

The commentor contends that many of the requirements and performance standards for dairy operations presented in the Element are not implemented at dairies operated at universities. The comment is not specific as to which provisions of the PEIR are not implemented at the university dairies. However, the university dairies are not subject to regulation by Kings County and the activities at those dairies have not been subject to the requirements of CEQA.

Response to Comment 18-2

The commentor is correct in asserting that the PEIR acknowledges that a complete understanding of air emissions from dairy operations is not possible at this time. However, the PEIR presents a concise and thorough discussion of the currently available emissions factors and methodologies for estimating the air emissions from dairies. The County considers that the discussion of air quality impacts presented in the PEIR provides the decision makers and the public with an appropriate level of information to understand the magnitude and significance of these impacts.

Response to Comment 18-3

The commentor indicates that few advanced manure treatment facilities are operating in the country and that a "good success rate" has not been established. The U.S. EPA AgSTAR program identifies that there were 31 controlled anaerobic digestion systems operating at concentrated animal feeding operations (CAFOs) (14 at dairy farms) in the U.S. The number of aerobic treatment systems in operation at CAFOs is not known, but the technology is implemented at many facilities to control odors. Currently, WaterPure Technology, Inc. operates aerobic treatment systems at three dairies in the San Joaquin Valley. A recently approved large dairy project (7,200 milking cows at each of two dairies) in Kern County proposes construction and operation of an aerobic treatment system.

The commentor expresses concern that the Element contains provisions that are more appropriate for "east coast areas rather than our arid west coast environment." The commentor specifically questions the appropriateness of consideration of "phosphorous concerns," an impact not specifically identified as significant in the PEIR; the proposal to divert clean water from roofs, a State regulation, unless lagoons are designed to accommodate runoff volumes; and land management practices, such as filter strips, provisions not specifically required by the Element or the PEIR.

Response to Comment 18-4

The County concurs with the commentor's opinion that the dairy industry is a very important component of the County and regional economy. The importance and the economic value of the dairy industry is described in Section I of the Element and an economic analysis of the industry is presented in Section VII. The County recognizes that the provisions of the Element will add environmental costs for the dairy operators. However, the environmental safeguards presented in the Element primarily address existing regulations for protection of public health and the environment.

Response to Comment 18-5

The commentor is correct in assuming that salt loading is typically the limiting factor for determining the amount of land needed for the application of manure and dairy process water. This condition is reflected in the estimation of the theoretical County dairy herd presented in the Element. The estimation of the theoretical herd assumed a nitrogen loss from process water of fifty percent on the basis of guidelines presented in the RWQCB *Fact Sheet 4* for liquid manure stored for over 60 days. This assumption is based on the best available data and consideration that dairy operations are required to have storage capacity for 120 days of liquid manure (manure and process water).

Response to Comment 18-6

The results of evaluations of confined animal facility process water storage presented in the comment were considered during the preparation of the PEIR. The formation of an organic mat at the bottom and sides of anaerobic lagoons was acknowledged on page 4.3-32 of the Draft PEIR. Although evidence described in the comment suggests that infiltration from lagoons is significantly limited by the formation of the mat, long term seepage is not fully addressed in the research. Estimates of the infiltration rates through the "manure seal" are in the range of 10^{-6} centimeters per second (cm/sec). The infiltration rate decreases to this level with time. The preparers of the PEIR consider that the potential infiltration losses during the period the seal is forming could be significant depending on the size of the newly constructed lagoons, the hydraulic head (i.e., depth of water), and the texture of the underlying soils.

The preparers also considered that organic mats in anaerobic lagoons could be disturbed during the periodic solids removal required to maintain lagoon capacity. Additionally, the Element requires that advanced manure treatment be performed at new and expanded dairies. Some dairy facilities may determine that aerobic treatment is the best option for meeting this requirement. It is uncertain whether effective organic mats are maintained under aerobic treatment. However, regardless of whether an anaerobic or aerobic system is chosen, the lagoon design would be required to meet all requirements for liners presented in **Policy DE 4.1a.B.2**.

Response to Comment 18-7

Please refer to Response to Comment 18-6.

Response to Comment 18-8

The commentor's opinion that NRCS guidelines for manure storage lagoons are conservative is noted for the record. However, the County considers a conservative approach to groundwater protection to be a high priority given the hydrogeologic conditions within the designated DDOZs and NSOZs. In most of these areas, uppermost groundwater is encountered at relatively shallow depths (typically less than 100 feet). Although the County does not imply that current and past practices at dairy operations were "irresponsible," it is necessary to set specific performance standards for dairy design and maintenance to allow verification of environmental protection during the permit review process.

In response to the commentor's request regarding citation of the source of information regarding pollutant migration at dairies in Merced and Stanislaus counties, the text of page 4.3-31 and the bibliography in Section 7 of the Draft PEIR have been modified.

Response to Comment 18-9

The PEIR is not able to cite an emission factor for PM_{10} that has been adopted by State, Federal, or local air quality regulators. However, the PEIR discusses the recommendations of the USDA Agricultural Air Quality Task Force that the emissions factor for dairies should be considered to be approximately 20 percent of the cattle feedlot PM_{10} emission factor developed for feedlots by Texas A&M University. The estimates of PM_{10} emissions presented in the PEIR adjusted the available emissions factors to account for San Joaquin Valley precipitation and typical livestock management in dairy corrals. The County considers these estimated emissions factors to be the best available information for estimating PM_{10} emissions from unpaved corrals. Although there is variability in the emissions factors, it is incumbent on the County to present this information to the decision makers and the public.

Response to Comment 18-10

For a discussion of the most recent information on global warming, the commentor is referred to Responses to Comments 21-2 through 21-17. The comment accurately estimates the contribution of methane generated by dairy cattle to the total anthropogenic methane production in the U.S. on the basis of information presented in the PEIR. Although uncertainties remain regarding accurate estimation of the impact of methane generated at dairies, the potential impact of increasing this "greenhouse gas" is an environmental issue that CEQA requires be presented to the decision makers and the public.

Response to Comment 18-11

The commentor's conclusion that the reactive organic gas (ROG) emissions factor presented in the PEIR was developed using data collected over ten years ago and is based on "limited available data" is noted for the record. The preparers of the PEIR confirmed with CARB that these data are the most reliable data available from which to make estimates of ROG emissions.

Policy DE 5.1c of the Element requires applicants for new and expanded dairies to develop and implement a Manure Treatment Management Plan that specifies an advanced treatment technology. The policy recognizes controlled anaerobic digestion, aerobic treatment, and combined aerobic and controlled anaerobic treatment as effective advanced manure treatment technologies. Neither the Element nor the PEIR "tout" anaerobic digesters as "the primary advanced treatment measure to be considered" as indicated by the commentor. The PEIR discusses the advantages and disadvantages of aerobic and anaerobic treatment of manure. The County considers it important to allow dairy operators to choose the most appropriate technology for their specific operation.

Anaerobic digesters would collect biogas, which includes ROG and methane as components. Both ROG and methane are combustible and complete combustion of these gases would release heat, carbon dioxide, and water. Assuming that combustion would not be complete, some organic gases could be released. However, the combustion of the biogas would reduce the ROG content of the biogas, reducing the ROG emitted from the decomposition of manure generated at the dairies at which anaerobic treatment technologies are implemented.

Response to Comment 18-12

The comment is noted for the record. As discussed on page 4.2-71 of the Draft PEIR, ammonia emissions are regulated under the California Air Toxics "Hot Spots" Information and Assessment Act (AB2588).

Response to Comment 18-13

The comment is noted for the record and is generally consistent with information presented in the PEIR. However, as discussed on page 4.2-73 of the Draft PEIR, hydrogen sulfide emissions are regulated under the California Air Toxics "Hot Spots" Information and Assessment Act (AB2588).

Response to Comment 18-14

Aerobic and controlled anaerobic treatment of animal manure are technologies proven to be capable of significantly reducing air emissions and pollutants contained in effluent. These technologies have been successfully implemented for the treatment of organic wastes, including sewage, food processing wastes, and livestock manure. With regard to anaerobic digestion, the PEIR provided information on the Haubenschild dairy digestion system as an example of a well-documented analysis of the feasibility of this treatment technology. As noted in Response to Comment 18-3, U.S. EPA identifies 31 anaerobic digestion systems in operation in 2000 in the United States. The implementation of these advanced treatment technologies are considered to be appropriate and feasible at the present time.

Response to Comment 18-15

The comment expresses concerns regarding implementation of several provisions of the proposed Element. If water spray is used for dust suppression in corrals, the operator would be responsible for maintaining a moisture content that effectively suppresses dust generation. It is not necessary to saturate the soil (a condition favorable for fly and mosquito breeding) to control dust generation. **Policy DE 5.1g** (now **5.1f**) of the Element requires that the owner/operator comply with guidelines set by the SJVUAPCD for air emissions from heavy equipment. For the most part, these guidelines call for proper management and maintenance of equipment and use of standard emissions controls for modern equipment. The use of temporary windbreaks is one of many potential controls recommended by the provisions of the Regulation VIII rules adopted by the SJVUAPCD. Some but not all of the recommended provisions of the regulation would be applicable to individual dairy construction projects. The SJVUAPCD has authority to determine which of the provisions would be required. The removal of manure in a manner that minimizes dust generation is not inconsistent with the recommendation to minimize disturbance of the manure seal in corrals. The seal would be located at the top of the soil profile and disturbance of the seal would suggest that scraping procedures were unnecessarily disturbing the soil profile. Manure removal should be performed to effectively remove solid manure while avoiding disturbance of the soil profile.

Response to Comment 18-16

Policy DE 4.2a of the Element has been modified to specify that an agreement would be required for application of process water at a location not included within the permitted dairy site only if the reuse would occur on another landowner's property.

Response to Comment 18-17

The comment is noted for the record. **Policy DE 3.3a** specifically requires biological surveys for proposed dairy development projects on properties that 1) contain pasture, rangeland, or natural vegetation, 2) have natural waterways or other wetland features, 3) are located within one mile of an established reserve, or 4) are native areas. These conditions do not include actively farmed cropland.

Response to Comment 18-18

Please refer to Response to Comment 1-4.

Response to Comment 18-19

The goal, objectives, and policies are now combined into **Goal DE 6**. **Goal DE 6** has been modified to include the subject matter of **Goal DE 7**. **Objective DE 7.1** was moved to a new **Objective DE 6.1** along with its attendant policy statements. **Objective DE 7.2** was moved to a new **Objective DE 6.4** along with its attendant policy statements. The monitoring of mitigation measures contained in the Element is required by CEQA.