LETTER 22 - Aaron Isherwood, Sierra Club

Response to Comment 22-1

The comment is noted for the record.

Response to Comment 22-2

The comment is noted for the record. The commentor is referred to Responses to Comments 22-3 through 22-85 for specific discussion of comments.

Response to Comment 22-3

The comment is noted for the record. The comment indicates that "many states ... have enacted various types of moratoria on" confined animal facilities. California has not enacted such a moratorium. It is not the intention of the County to prevent development of dairies or other livestock operations within the County. However, it is the intention of the County to adopt an Element that establishes and implements effective and feasible controls on potential environmental impacts related to dairy development.

Response to Comment 22-4

The comment is noted for the record. The commentor is referred to Responses to Comments 22-6 through 22-85 for specific discussion of comments.

Response to Comment 22-5

The comment is noted for the record. The County does not agree with the commentor's assertion that the Element is inconsistent with the General Plan. The commentor is referred to Responses to Comments 22-70 through 22-84 for specific discussion of comments regarding the consistency of the Element with other elements of the Kings County General Plan.

Response to Comment 22-6

The Element proposes an approach whereby dairies meeting certain criteria would be subject to a site plan review, a ministerial approval. This approach does not thwart the goals of CEQA as suggested by the commentor for two reasons. First, environmental review of the Element is occurring at the program level; and second, because the approval is ministerial, the Zoning Administrator cannot shape projects in a way that would respond to concerns raised in further environmental review. Further environmental review would, therefore, be futile. (See *Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105, 117.) In addition, projects not meeting the standards of the Element would be required to conduct additional site-specific environmental review under the conditional

use process. The comment that site plan review approvals would not be ministerial is addressed below in Response to Comment 22-10.

Response to Comment 22-7

The Kings County General Plan identifies sensitive area and habitat in the Biological Resources Survey (Hansen Report) referred to on page RC-5, Section V. Paragraph A. **Policy DE 3.1a.I.** (now **3.1a.H**) and **Policy DE 3.3a** address this issue.

There is no support for the comment that "[i]n several areas of the PEIR, the County announces that it has not addressed particular impacts of the Dairy Element, stating instead that it is deferring such analysis until specific dairy projects are proposed." The County's wetlands and sensitive species resources are discussed in the Biological Resources section of the Draft PEIR, pages 4.4-1 to 4.4-7. Impact 4.4-1 recognized the possibility that dairy development could result in conversion of existing vegetative cover and associated wildlife habitat, including habitat for special-status species or sensitive natural communities. Impact 4.4-2 recognized the potential for the loss and modification of wetlands. **Policy DE 1.2e** of the Element prohibits the locating of new dairies on wetlands and undisturbed wildlife habitat. **Policy DE 3.3a** has been modified, and requires that biological and wetlands surveys be conducted in compliance with U.S. Fish and Wildlife Service, California Department of Fish and Game, and U.S. Army Corps of Engineers guidelines before issuance of a site plan review. If the surveys identify impacts on biological or wetland resources, then the applicant will not be eligible to obtain site plan review approval by the Zoning Administrator and will instead complete the conditional use permit process, which will in itself require additional environmental review. If there are possible impacts to biological resources or wetlands that are not discussed in the PEIR, a conditional use permit will be required. Therefore, there is no deferred discussion of impacts to wetlands or sensitive species.

The County is not attempting to "side step" any legal obligations. The approval of dairies under the site plan review process is a ministerial act because the Element requires the Zoning Administrator to act on site plan review applications according to the standards of the Element and does not allow the Zoning Administrator to use his personal judgment or discretion. CEQA, therefore, does not apply to those approvals (CEQA Guidelines, section 15002, subd. (i)(1)).

Response to Comment 22-8

The comment is noted for the record. It should also be noted that the citation to the "fair argument" standard is inapplicable to projects approved under the site plan review process, as those approvals are ministerial and, therefore, CEQA would not apply (Pub. Resources Code, § 21801, subd. (b)(1)).

Response to Comment 22-9

The nature of the approvals for new or expanded dairies under the Element (whether they are ministerial or discretionary approvals) is discussed below in Response to Comment 22-10. In response to the assertion that CEQA review would be required for future approvals because it would be "the only point at which the environmental impact of the project may be publicly considered," it should be noted that one of the purposes of this PEIR is to provide the public with an opportunity to consider and comment on the environmental impacts of dairy approvals in the County.

Response to Comment 22-10

The requirements for adequate technical reports are detailed in Appendix J of the Dairy Element. The Zoning Administrator's role in approving dairies under the site plan review process is limited to ensuring that the required reports are complete and the standards in Appendix J are satisfied. In approving a dairy under the site plan review process, the Zoning Administrator cannot use personal or subjective judgment in deciding whether or how the project should be carried out. The approval is therefore ministerial (CEQA Guidelines, §15369).

Response to Comment 22-11

The text of Appendix J of the Element has been modified in response to the comment.

Response to Comment 22-12

In approving a dairy project under the site plan review process, the Zoning Administrator applies only fixed standards and objective measurements. The Zoning Administrator cannot apply personal or subjective judgment in determining whether or not a particular project should be approved. The decision of the Zoning Administrator is therefore ministerial (CEQA Guidelines, § 15369). Each of the specific policies cited in the comment has been changed. **Policy DE 3.2a** now states:

> The Technical Report shall address water issues in the Groundwater Evaluation ..., including:
>
> A. Minimum separation from the bottom of all lagoons, manure and feed storage areas, and corrals and the groundwater level shall be at least five (5) feet at all times.
> B. The source of potable water for the Dairy Facility and nearby properties, and the safeguards to protect that water source must be identified.

C. Identify adjacent watercourses and the improvements to protect those watercourses from discharges from a dairy into watercourses or water bodies.

In the event there is a variance between these standards and the RWQCB requirements, the more restrictive requirement shall prevail, unless RWQCB specifies a lesser standard in a Waste Discharge Requirement (WDR). In the latter case, the RWQCB standard will prevail.

Policy DE 3.2b now states:

The Geotechnical Report ... shall:

A. Demonstrate the soil type's capacity at the dairy site to assimilate the various nutrients in the dairy process water and manure produced on the dairy for crop production.
B. Demonstrate the agronomic rates for crop production needs for the nutrients for the various crops that are grown on cropland irrigated with dairy process water and fertilized with solid manure generated by the dairy, with consideration for the soil types and depth to groundwater.

Policy DE 3.2e now states:

Each dairy shall apply dairy process water to crops at agronomic rates, and ensure even distribution of nutrients over the entire crop area so excessive amounts of nutrients do not cause "hot spots," where excessive amounts of the nutrients cause crop damage and migrate below the root zone where they cannot be used by the crops.

Response to Comment 22-13

The comment that the County "would essentially be rubber-stamping every dairy application" it receives is inaccurate. Project applicants must meet the standards required in the technical reports for dairies to be approved under the site plan review process. The reports required by the Element serve to ensure that certain standards will be met to protect the public health and safety and the environment. The Zoning Administrator's role is to ensure that the provisions of the Element are met and that manure treatment technologies meet the performance standards and are operated as indicated in the Technical Report.

Response to Comment 22-14

The County has not relied on CEQA Guidelines, §§ 15064 (h), 15064 (i)(3), 15152 (f)(2) nor 15152 (f)(3)(C) in developing the Element or the PEIR.

Response to Comment 22-15

The commentor's opinion is noted for the record.

Response to Comment 22-16

The County elected to use the guidelines set by the RWQCB as the basis for determining the "theoretical maximum daily herd" because this guideline in the most commonly applied methodology for determining the amount of land required for conventional reuse of manure and process water. This methodology allows for an approximation of how much land within the DDOZs and NSOZs would be needed for this critical aspect of dairy management. The methodology allows a linking of available land and dairy cow populations. No such linkage is available if one were to attempt to define the herd on the basis of air emissions. There are no existing regulations or regulatory guidelines established by CARB or U.S. EPA or any other agency for limiting the cattle population to control air emissions. Therefore, the County established the maximum herd on the basis of available land and nutrient spreading to determine the maximum number of animals that the DDOZs and NSOZs could accommodate. Following this reasonable approach, the Element and PEIR analyzed potential impacts of the "buildout" of the theoretical herd for all environmental aspects, including air quality. Upon identification of impacts, the Element and PEIR developed feasible mitigation to reduce potential impacts.

Response to Comment 22-17

The comment is noted for the record. The commentor is referred to Responses to Comments 24-26 through 24-32, which explain the rationale for not quantifying construction emissions.

Response to Comment 22-18

The comment is noted for the record. The commentor is referred to Responses to Comments 24-27 through 24-32.

Response to Comment 22-19

As indicated in Response to Comment 24-47, the PEIR acknowledges that ammonium nitrate particles in the $PM_{2.5}$ range could result from reactions between ammonia and nitric acid. The PEIR also provides an estimate of the potential ammonia emissions that could result from proposed dairy operations. As indicated in Response to Comment 24-47, an

estimate of $PM_{2.5}$ emissions that could result from ammonia emissions have been included in the PEIR.

Response to Comment 22-20

The PEIR quantifies exhaust emissions from agricultural and dairy equipment for a 5,000-milk cow dairy facility within a 100 acre area. Providing a reasonable quantification of the total potential exhaust emissions from all dairies subject to the Element cannot be accurately estimated because of the variable site-specific factors involved. However, for a general estimate, it can be assumed that dairy development under the Element could allow for operation of 52 additional 5,000 cow dairies to accommodate buildout of the remaining available capacity (257,312 milk cows) for the proposed theoretical herd. In response to the comment, Impacts 4.2-4 and 4.2-10 have been removed from the PEIR and the analysis of exhaust emissions has been incorporated into Impacts 4.2-3 and 4.2-6 (now Impact 4.2-5). Estimates of ROG, NOx, and PM_{10} from equipment and vehicular traffic have been made as suggested by the commentor. Tables 4.2-5a, 4.2-5b, and 4.2-5c have also been amended to reflect these estimates.

Response to Comment 22-21

Please refer to Response to Comment 24-54.

Response to Comment 22-22

The comment is noted for the record. The commentor is referred to Responses to Comments 22-17 through 22-21.

Response to Comment 22-23

The Draft PEIR (pages 4.2-53 through 4.2-60) describes which policies contained in the Element serve as mitigation for the generation of fugitive dust and how the policies minimize fugitive dust emission. The comment asserts that the impact discussion "consists exclusively of a list of Dairy Element policies." The comment does not acknowledge the analysis of the policies presented in the PEIR. The analysis of the policies leads to the determination that the policies present the most appropriate and feasible mitigation measures.

The commentor indicates that the construction of freestall barns for housing support stock should be included as a mitigation measure for the control of particulate matter emissions. The use of unpaved corrals for raising dairy support stock is a practice that is standard to the dairy industry throughout California and the United States. The requirement to build such facilities is not imposed by any land use or regulatory authority in California. The construction of freestall barns for support stock would essentially double the cost of constructing support stock housing at dairy facilities. Considering that the support stock

herd is expected to be approximately as large as the milk cow herd, the overall cost of constructing the dairy cattle housing could increase by more than 40 percent. This additional cost would be an economic burden that would threaten the opportunity for the County to achieve the goal of attracting dairy development and its economic benefits to the County.

Housing support stock in freestalls would also increase operational costs, energy use, and water use. It is questionable whether young cattle could adapt to a freestall setting. Unlike milk cows, younger cattle are less sedentary. Running on paved surfaces would likely result in increased injuries. Construction of freestall barns for housing support stock is therefore considered an impractical and economically infeasible mitigation.

Response to Comment 22-24

The efficiency of volatile solids removal under various advanced treatment facilities is described on pages 4.2-21 through 4.2-24 of the Draft PEIR. As noted (Draft PEIR, pages 4.2-23 and 4.2-24), the efficiency of anaerobic digestion in removing volatile solids from dairy manure is expected to be lower than that achieved for swine manure. The commentor states Colorado requires a 60 percent reduction of volatile solids but fails to point out, as noted in the PEIR, that this standard applies to swine manure treatment. The preparers of the PEIR consulted with experts at U.S. EPA's AgSTAR program to determine the expected feasible standard for dairy manure. The basis for choosing the 50 percent volatile solids reduction was clearly supported in the PEIR, but that basis is not acknowledged by the comment.

Response to Comment 22-25

The commentor suggests that Mr. Alan Gay presents "scientific methods" for "establishment of gas reduction standards"... However, the comments presented by Mr. Gay only identify methods for measurement of gas concentration and do not address setting standards. In fact, Mr. Gay comments that "(A)ctually, quantification is not necessary to determine whether air pollutants are emitted from treated manure" and that "it is relatively easy to detect and distinguish trace amounts of ammonia, hydrogen sulfide, and ROG" by their odor threshold. The County does not concur with the commentor's assertion that more detailed individual air emissions analysis would be beneficial or necessary.

Response to Comment 22-26

The County considers that the expansion of an existing dairy to the existing herd capacity to be a currently permitted right. The County chose to set the herd limit on the basis of SJVUAPCD reactive organic gases because a regulatory emission threshold has been set for

these compounds. The only other emission for which a threshold has been set is particulate matter (PM_{10}). It was determined that ROG threshold was the limiting factor.

Response to Comment 22-27

The comment refers to recommended odor control techniques suggested by Mr. Alan Gay, which include:

- apply manure only during periods of low wind speeds;
- minimize spreading or agitating manure when the wind is blowing toward populated areas;
- apply treated manure during periods of low humidity;
- plant wind breaks to enhance a chimney effect so that odors rise and dissipate before reaching residential areas;
- apply manure to fields at agronomic rates.

Recommended measures 1 through 3 are reasonable practices that are typically followed by dairy farmers and could be incorporated into the Odor Management Plans required by **Policy DE 5.1b**. Control measure 5 is already required by **Policy DE 3.2b**. The planting of windbreaks would not be necessary because all manure would be treated by either aerobic, controlled anaerobic, or combined aerobic/anaerobic treatment systems, which are proven technologies for significantly reducing odor from manure management.

Response to Comment 22-28

The PEIR does not, as the commentor asserts, defer development of mitigation. **Policy DE 5.1c** requires dairy operators to install advanced manure treatment systems that demonstrate that the performance standard of 50 percent volatile solids is being achieved. The efficacy of manure treatment systems is discussed in the PEIR. It is not possible at the present time to accurately estimate the emission of all gases that could be potentially released during or after advanced treatment.

Response to Comment 22-29

Please refer to Response to Comment 24-60 for a discussion of background surface water information.

Response to Comment 22-30

Please refer to Response to Comment 24-57.

Response to Comment 22-31

The potential impacts on water resources during dairy construction were discussed in the Draft PEIR (pages 4.3-14 and 4.3-15). Storm water discharges from construction sites could

potentially contain industrial chemicals and sediment. Control of such discharges are addressed by the General Permit for Storm Water Discharges Associated with Construction Activity. The permit requires implementation of best management practices for the control of runoff. Quantification of the potential impact (i.e., estimation of pollutant loading associated with accidental spills of hazardous materials or suspended sediment) cannot be performed without knowing specific information associated with the location and timing of the construction activities. However, the required best management practices would minimize the potential discharges to the extent feasible.

Response to Comment 22-32

The comment incorrectly states that the PEIR does not identify or discuss potential impacts associated with alteration of drainage patterns. In the discussion of Impact 4.3-2, the PEIR identifies potential impacts, such as alteration of drainage patterns in flood prone areas, potential redirection of runoff onto adjacent properties, discharge of runoff into receiving water bodies, and topographic modification in areas of excessive slope. The commentor suggests that "quantification" of the impact is required but does not indicate what can or needs to be quantified. The preparers of the PEIR believe that the impact has been adequately described and cannot identify any aspect of the impact that could be reasonably quantified.

Response to Comment 22-33

The County established the setback between manured areas and wells or surface water bodies on the basis of guidance provided in the California Well Standards and the RWQCB *Guidelines for Waste Disposal from Land Developments*. It is noted for the record that the setback is equivalent to or exceeds State standards for minimum confined animal facility setbacks from private wells set by Arizona, Colorado, Delaware, Iowa, Michigan, Minnesota, New Mexico, North Carolina, Oregon, Pennsylvania, Texas, Vermont, and Virginia.

Response to Comment 22-34

The meaning or concept of "unanticipated flooding" introduced by the comment is not clear to the preparers of the PEIR. The potential for flooding is generally described as a probability. For example, a 100-year flood has a one percent probability of occurring; the probability of a 25-year flood is four percent. The Element requires that manure not be spread in floodplains during flooding or threat of flooding. Flooding conditions are obvious to the agriculturalist and the threat of flooding can be determined from readily available weather and stream flow information. The potential impact of spreading manure under such conditions (i.e., potential water quality degradation related to the release of nutrients and microorganisms to surface or ground water) is described on page 4.3-18 of the Draft PEIR.

Response to Comment 22-35

The potential impact on water quality related to atmospheric fallout of nutrients was discussed on pages 4.3-20 and 4.3-21 of the Draft PEIR. Nitrogen-containing fertilizers are applied to crops at rates on the order of tens to hundreds of pounds per acre per year in the San Joaquin Valley. Current rates of atmospheric fallout of nitrogen are on the order of three to four pounds per acre per year. It is reasonable for the PEIR to deduce that atmospheric fallout of nitrogen would be beneficial (i.e., as a nitrogen source) to crop growth. Recent air quality modeling prepared for two 7,200 milk cow dairies in Kern County indicates that the maximum ammonia concentrations in air would be 30 $\mu g/m^3$ and would be reduced to less than 10 $\mu g/m^3$ within approximately two miles of the dairies.

Response to Comment 22-36

The comment does not present any information that atmospheric fallout of nutrients is causing or contributing significantly to surface water quality degradation in the San Joaquin Valley Air Basin. The fact that the air quality analysis identifies ammonia emissions as a significant air quality impact does not lead to the conclusion that these emissions are a significant water quality impact.

Response to Comment 22-37

The comment correctly indicates that the "PEIR relies in part on **Policy DE 4.1b**" to provide mitigation of potential impacts on surface water quality. The commentor, however, does not acknowledge all of the other policies discussed in the Draft PEIR (pages 4.3-20 to 4.3-22) that provide mitigation for the potential degradation of surface water quality. These mitigating policies include siting requirements, provisions for adequate storage of process water and runoff, advanced treatment of manure and process water, land management to minimize erosion, and control of runoff from irrigated fields. The combined effect of these controls prompted the PEIR preparers to determine that the potential impact of dairy development under the Element would be a less-than-significant impact on surface water quality.

The comment is incorrect in its assertion that neither the Element nor the PEIR identifies any guidelines or standards for the Manure Nutrient Management Plan required by **Policy DE 4.1b**. The commentor is referred to Appendix J of the Element (pages J-4 through J-6), which provides guidelines for the preparation of the plans.

Response to Comment 22-38

Implementation of the Element would result in continued agricultural use within the designated DDOZs and NSOZs. As discussed in the Draft PEIR (pages 4.3-22 and 4.3-23), water demand at dairy facilities would typically be less than demand for irrigated cropland, the predominant existing and probable future use in these areas. Whereas it is

possible that the water supply may be reduced during drought conditions, the Element would not exacerbate this potential problem.

Response to Comment 22-39

The commentor suggests that implementation of the Element would result in depletion of water resources because an increase in the acreage that is double-cropped (relative to the acreage that is double-cropped under existing conditions) would increase. The preparers of the PEIR agree that, in general, total water demand for double-cropping generally exceeds the requirements for single-cropping (depending on the types of crops). Under current conditions, there are no regulations or limitations (other than economic) that dictate how much acreage a grower can single- or double-crop.

The Element was designed so that no new incentives would be created to increase double-cropping acreage relative to existing conditions. The size of the theoretical herd (the total number of cows allowed in the County) under the Element was determined based on the acreage available for application of dairy manure (at rates specified as acceptable to the RWQCB). The total manure application rate for the theoretical herd is based on the assimilative capacity of the land under the current cropping patterns (i.e., the current ratio of single- to double-cropped land). Since the number of cows is limited by the ability of the support cropland to accommodate the manure based on current cropping patterns, there would be no new incentives to increase the countywide acreage that is double-cropped.

In addition, the acreage associated with each dairy facility (not the support cropland) would be taken out of agricultural production and no longer irrigated. As described on page 4.3-22 of the Draft PEIR, the actual water consumption at a dairy facility is, in general, considerably less (on an acre-for-acre basis) than for irrigated cropland.

In summary, since there would be no new incentives created under the Element to increase double-cropping (and the associated increase in water use) and substantially less water would be used at the dairy facilities (on an acre-for-acre basis relative to irrigated cropland that a dairy facility is likely to replace), implementation of the Element would likely result in a minor *decrease* in countywide water use.

Response to Comment 22-40

An extensive analysis of the potential impact of dairy development under the Element on groundwater quality was presented in the Draft PEIR (pages 4.3-23 to 4.3-39). The comment does not specifically address the analysis presented in the PEIR. The comment refers to water quality problems that have affected the Chino Basin area but does not present a comparison of the topography, climate, waste management practices, or availability of land for reuse of manure nutrients to conditions within Kings County. Dairy development in the Chino Basin and related environmental impacts occurred under

significantly different conditions and without many of the controls proposed by the Element.

Response to Comment 22-41

The comment is noted for the record. The Element presents a set of performance standards (**Policy DE 4.1a.B.2.a** through **4.1a.B.2.f**) that specify minimum requirements for the design, construction, inspection, and maintenance of liners for process water lagoons and manure separation pits. The liners are required to meet the minimum design standards recommended by the Natural Resource Conservation Service (NRCS). Those standards recommend that the hydraulic conductivity of the liner material (not specified as soil or geomembrane) not exceed 1×10^{-5} cm/sec but also set the maximum seepage velocity (actual rate of seepage) at 1×10^{-6} cm/sec. The volume of seepage estimated by the comment is therefore overestimating the expected seepage through a liner meeting the standard by 10 times. This error increases the nitrogen loading estimated by the commentor by 10 times. Using the commentor's method of estimating seepage and assuming the NRCS seepage velocity standard of 1×10^{-6} cm/sec, the seepage would be 924 gallons per acre of lagoon area per day and 23 pounds of nitrogen per day. This assumption implies that all nitrogen contained in the treated waste would eventually reach groundwater and be in a form that is detrimental to the beneficial uses of the groundwater. It is very important to realize that the commentor's estimate of nitrogen infiltration to groundwater does not account for an adsorption of nitrogen onto clay particles or the immobilization of nitrogen by microorganisms in soils in the unsaturated zone. Ammonium-nitrogen (a common form of nitrogen in anaerobic lagoon water) is readily adsorbed to clay particles in the unsaturated zone. Investigation at lagoons operated for confined animal facilities indicates that ammonium-nitrogen levels in soils beneath anaerobic lagoons used for storage of wastewater from cattle operations decreased to nondetectable levels within three to five feet below the surface.[23]

The comment suggests that the number of acres of process water lagoons and manure separation pits could be estimated by simply projecting lagoon design from an individual dairy design throughout the area of the Element. This is a difficult assumption to make given the fact that the policies of the Element require new and expanded dairy facilities to implement advanced manure treatment by either aerobic or controlled anaerobic treatment. The size of the lagoons would vary dramatically, depending on the proposed advanced treatment technology. For instance, aerobic treatment would promote the design of shallow and larger lagoons whereas liquid storage would be minimized by a plug-flow anaerobic treatment design. In addition, it is noted that the ruling of the Kern County superior court is not binding on this Kings County document.

[23] Ham, J.M. and DeSutter, T.M., 2000, Toward Site-Specific Design Standards for Animal Waste Lagoons: Protecting Ground Water Quality, journal of Environmental Quality, Vol. 29, pp. 1721-1732.

Response to Comment 22-42

Policy DE 4.1a of the Element does not preclude the use of synthetic liners. The effective seepage velocity for soil liners meeting the NRCS guidelines is 1×10^{-6} cm/sec while the estimated seepage from a synthetic liner would be approximately 1×10^{-9} cm/sec. The preparers of the PEIR consider adoption of the NRCS liner guidelines to provide a feasible and effective control on seepage from dairy lagoons. Although seepage from the lined lagoons would be expected, the seepage would be reduced to a rate that would be less than the rate of seepage allowed for domestic septic tank/leach fields.

Single family three bedroom homes with on-site sewage disposal are required to have leach field systems are capable of managing a peak flow of 1,000 gallons per day of septage. Therefore, a single home would need to dispose of 365,000 gallons of septage per year. Assuming an infiltration of approximately 924 gallons of treated manure and/or process water per acre of lined lagoon area per year (see Response to Comment 22-41) approximately 395 acres of lined lagoons would generate an amount of seepage similar to one three-bedroom home.

Response to Comment 22-43

Please note that **Policy DE 6.2a** is now **Policy DE 6.3a**. **Policy DE 7.1b** is now **Policy DE 6.4d**. **Policy DE 8.1c** has been eliminated.

The comment raises two issues: 1) whether the PEIR imposes adequate safeguards to warrant a finding of less than significant impact on groundwater quality, and 2) whether the PEIR contains adequate treatment methods in the event dairy development in the County under the PEIR pollutes groundwater.

As explained in the Draft PEIR (pages 4.3-23 to 4.3-39), numerous policies in the Element provide protections to groundwater quality warranting the finding of a less than significant impact. Those safeguards include: restriction of dairy facilities from Special Flood Hazard Areas (**Policy DE 1.2c**), restriction of dairy facilities from shallow or perched groundwater areas (**Policy DE 1.2d**), requirement of a Hydrologic Sensitivity Assessment prepared by a qualified Certified Hydrogeologist or Professional Engineer (**Policy DE 3.2h**), implementation of a groundwater monitoring program (**Policy DE 6.2f**), the preparation of a Manure Nutrient Management Plan (**Objective DE 4.1**), which requires appropriate reuse of the manure and process water on or off site (**Policy DE 4.1b** and **Policy DE 4.2a**), requirement of adequate storage of manure and process water (**Policy DE 4.1a.B.3**), required management of runoff from manured areas (**Policy DE 4.1a.B.1**), 150 foot minimum setback from surface waters, recharge basins, and floodplains (**Policy DE 3.2c**), requirement of construction of manure separation pits, process water lagoons, and corrals to prevent infiltration of process water to groundwater (**Policy DE 4.1a.B.2**), and

monitoring of groundwater quality on an individual dairy basis (**Policy DE 6.2f**) and on a regional basis.

Furthermore, the Element complies with the Tulare Lake Basin Plan. The County is adopting compliance with the Basin Plan as a threshold of significance for impacts on groundwater quality in conjunction with adoption of the Element. (See CEQA Guidelines, § 15064.7; see also **Policy DE 4.4a** and Draft PEIR page 5-17.)

The second part of the comment refers to the provision of treatment methods in the event of a significant increase in salinity. Under the monitoring required by the Element **(Policy DE 6.3a**), information gathering on a dairy by dairy and on a regional basis will occur. Under the County's police powers, it may act to abate nuisances and other threats to public health and safety, such as groundwater contamination. More specifically, violations of the requirements of the Element may result in revocation of a dairy's zoning permit (see **Policy DE 6.3a** and **Policy DE 4.2d**). The RWQCB, however, is the primary regulator of activities that may affect groundwater quality. As described below in Response to Comment 22-44, the RWQCB has extensive enforcement authority over dairies to protect groundwater quality and to order clean up in specific cases. Thus, it is beyond the scope of this PEIR to prescribe treatment methods for specific problems that may or may not occur in the future.

The Draft PEIR (page 4.3-38) has been modified to reference **Policies DE 4.2d** and **6.3a**, which demonstrate that the Zoning Administrator has the authority to modify and the Planning Commission has the authority to revoke a dairy's zoning permit (Zoning Ordinance Section 2106) if necessary. The PEIR also references the enforcement authority of the RWQCB.

Response to Comment 22-44

The comment expresses that funding for potential groundwater contamination resulting from dairy operations should be ensured by the policies of the Element. The preparers of the PEIR do not agree with this position. The California Water Code ("Water Code") provides the mechanisms for ensuring that parties responsible for discharges of pollutants to water resources are held liable for clean up costs.

Although the proposed policies of the Element described in the PEIR will minimize the potential for groundwater quality degradation, the Element requires new and expanded dairies to install a groundwater monitoring system to ensure early detection of any groundwater quality degradation (see Response to Comment 22-43). Under the Element, annual sampling and analysis of groundwater wells (saturated zone monitoring) and lysimeters (unsaturated zone monitoring) will be performed. The results of the sampling events will be submitted to the RWQCB and the KCPA for review.

If the monitoring indicates that water quality at the site is being degraded, the RWQCB has the responsibility and authority under the Water Code to require further investigation and/or corrective action (i.e., remediation). The Water Code is State law developed to protect the quality of waters in the State, create a structure for controlling potential discharge of wastes that could affect water quality, and remediate water quality problems. The Water Code establishes the issuance and enforcement of waste discharge requirements by the State's regional water quality control boards as the mechanism for controlling potential releases of waste.

Dairy project applicants are required to file a Notice of Intent to comply with the requirements of the General Waste Discharge Requirements for Milk Cow Dairies (Order No. 96-270) or apply for individual Waste Discharge Requirements. Article 1 of Chapter 5 of the Water Code describes the authority of the RWQCB to force corrective action in the event that a discharge of waste is taking place, or threatening to take place, that violates waste discharge requirements. Initially, the RWQCB may issue a cease and desist order to prevent continued discharge of waste. Under such an order, the responsible party is required (Section 13301) to demonstrate how the project would come back into compliance with the waste discharge requirements, present a schedule for returning to compliance, and, in the event of a threatened violation, take appropriate remedial or preventive action. Water Code Section 13301.1 commits the RWQCB to providing available current information on successful and economical water quality control programs and information and assistance in applying for Federal and State funds necessary to comply with the cease and desist order. If the responsible party fails to comply with the order, the State Attorney General can petition the superior court to issue a temporary or permanent injunction restraining the responsible party from continuing the discharge in violation of the order. At the proposed dairy facilities, these laws could result in a court-ordered shutdown of operation of the dairies.

In effect, the process provides an opportunity for the responsible party to develop and implement a remedy for the consequences of a release of waste that threatens water quality. In the case of the proposed dairies, water quality degradation by excessive loading of nitrate or total dissolved solids would be the most likely type of potential "waste discharge." The most reasonable and economical remedy for correcting elevated nitrate or TDS levels in groundwater (if such conditions are indicated by monitoring) would be to identify the practices that are causing infiltration of these compounds. Investigation of the problem could require installation of additional monitoring wells and intensification of sampling. Such additional investigation could cost tens of thousands of dollars. If investigation determines that the source of the problem is seepage from dairy wastewater lagoons at the site, several corrective action options would be available. The water level in the lagoons could be reduced to reduce seepage; concentrations of nitrate or TDS could be reduced by dilution with more fresh water; liners could be inspected and repaired or

replaced, if necessary; precipitation of salts within the lagoons or conversion of nitrate to other forms of nitrogen could be caused by adjusting the chemistry of the wastewater.

If the investigation determines that the water quality degradation is the result of application of manure and wastewater for fertilization and irrigation of cropland, changes in application rates may be the most effective corrective action. Modifications in application of manure and wastewater could include reducing the rate of dry manure application (and transporting excess manure off-site); further dilution of wastewater with fresh water; and adjustment of wastewater chemistry in storage lagoons. In a recent study completed by University of California - Davis researchers (Harter and others, 2001), groundwater quality at a San Joaquin Valley dairy underlain by shallow groundwater with elevated levels of nitrate was dramatically improved by reducing nutrient loading to agronomic rates. Prior to implementation of a targeted manure nutrient management program, nitrate-nitrogen concentration in groundwater at the site averaged 80 to 120 mg/L in the period 1995 through 1997. During this period, total nitrogen applications were estimated to be a minimum of 1,050 pounds per acre per year on fields double cropped with corn and forage crops. Under the manure management plan, the total nitrogen application was eventually reduced to 420 pounds per acre per year in 2000. Following these management changes, the average nitrate-nitrogen concentration in groundwater dropped to 50 mg/L in 2000. These results indicate that successful remediation of nitrate contamination is possible through implementation of appropriate fertilizer/irrigation management, which is required by the Element.

If the RWQCB were to determine that the monitoring results for the dairy projects indicate that groundwater degradation was occurring and that the discharge of waste at the site creates, or threatened to create, "a condition of pollution or nuisance," the RWQCB has the authority to order clean up or abatement of the affected waters (Water Code Section 13304.(a)). If the responsible party fails to comply with a clean up and abatement order, the State Attorney General can petition the superior court to issue an injunction requiring the party to comply with the order. If necessary, the RWQCB may expend available moneys (e.g., State Water Pollution Cleanup and Abatement Account) to perform clean up, abatement, and remediation of a contaminated site (Water Code Section 13304.(b)). The party responsible for the waste discharge is liable to the government for all reasonable costs expended for the clean up (Water Code Section 13304.(c)). Therefore, the operators of dairies would be liable for the costs of clean up (if required) whether the clean up was performed by them or by a government agency. If the pollution problem exists at the site of a nonoperating business, a lien against the property can be recorded. If a discharge has occurred and a clean up and abatement order has been issued, the responsible party is civilly liable in an amount that shall not exceed $15,000 for each day in which the discharge occurs and for each day that the clean up and abatement order is violated (Water Code Section13350.(d)(2)).

Although it is not common, clean up and abatement orders have been issued for dairies in the San Joaquin Valley. Most dairies in the region do not operate under waste discharge requirements and, therefore, are not subject to the provisions of the law described above. However, proposed projects under the Element would be required to comply with RWQCB waste discharge requirements. Therefore, the dairies developed under the Element would be subject to the water quality laws that apply to all types of business operations that discharge waste to land in California. Waste discharge requirements issued by the RWQCB are conditioned on the basis of the potential for the discharge of waste to result in impairment of water quality.

As explained above, the cost of remediation would be the responsibility of the dairy causing the problem. The cost of remediation would vary depending on the extent of the contamination, individual site characteristics, and other factors, thus making it infeasible for this PEIR to provide a meaningful estimate of potential remediation costs. Furthermore, the determination of impact significance is not causally related to the cost of remediation. The fact that Kern County was required to discuss the costs of remediation in a supplemental environmental review ordered by a Kern County court for an individual dairy project is not binding on this Kings County document.

Response to Comment 22-45

As discussed in Response to Comment 22-43, the County has the authority to revoke or modify a dairy's zoning permit under its police powers and under the specific authority in the Element (see **Policy DE 6.3a**, **Policy DE 6.4d**, and **Policy DE 4.2d**). The commentor is referred to minor changes to the Draft PEIR on page 4.3-38 reflecting the County's enforcement authority and referencing the role of the RWQCB. The text of the first full paragraph on page 4.3-38 of the Draft PEIR has been modified to provide clarification.

Response to Comment 22-46

The setback (150 feet) of wells from manured areas and wells or surface water bodies required by **Policy DE 3.2c** was considered appropriate by the preparers of the PEIR because it exceeds the minimum setback requirements for animal facilities (100 feet) presented in the California Well Standards as set by the State Water Resources Control Board. Compliance with the well standards has not resulted in known groundwater or surface water degradation in Kings County.

Response to Comment 22-47

The comment implies that all wells within the DDOZs and NSOZs designated in the Element can and should be inspected prior to adoption or implementation of the Element. This suggestion would be impractical and unwarranted. The location of manured areas for dairies developed under the Element cannot be known *a priori*. Property owners within the

DDOZs and NSOZs have no reason or responsibility to have their existing wells inspected. The inspection would only be necessary if a dairy project were proposed. The County does not have the legal right to review well driller logs, which are confidential under California law.

Policy DE 3.2i of the Element requires that all wells at a proposed dairy development site be inspected by a qualified professional (and repaired if necessary) prior to dairy development. The commentor's opinion that the policy "precludes informed decision-making and public participation" is noted for the record, but is not supported. The professional inspection of wells is the appropriate approach to ensuring integrity of the well seal.

Response to Comment 22-48

The Draft PEIR (pages 4.3-8 through 4.3-11) presented a discussion of groundwater quality within the southern San Joaquin Valley. The discussion specifically described the distribution of total dissolved solids and trace elements. The discussion also presented information regarding surface water quality for the Tulare Lake Drainage District. Specific water quality problems were described in the discussion. The preparers of the PEIR used this information to frame the discussion of the potential impact of implementation of the Element on surface and subsurface water quality.

Response to Comment 22-49

The commentor's opinion that biological surveys are necessary prior to the adoption of the Element is noted. Section 4.3 of the PEIR summarized and discussed the wildlife habitat within Kings County and information (including mapping) on known sensitive habitat areas and occurrences of special-status plant and animal species. This map was developed from the Department of Fish and Game's 2000 California Natural Diversity Data Base. **Policy DE 1.2e** of the Element does not allow dairy development on wetlands and undisturbed wildlife habitat. Most of the land within the DDOZs and NSOZs designated by the Element is currently used for extensive agriculture, which provides limited habitat for wildlife. Conducting field surveys prior to knowing where specific dairy development would occur would not be appropriate. In addition, biological resources are dynamic and the timing of surveys would be most appropriate at the time the dairy development is proposed.

Response to Comment 22-50

The comment presents several nonspecific concerns regarding the completeness of the regional biological resource discussion in the PEIR. The PEIR described the regional biological conditions of Kings County, inclusive of the local areas (DDOZs and NSOZs) that would be directly affected by implementation of the Element. Mapping of sensitive

habitat (based on the 2000 California Natural Diversity Data Base) was extended to areas outside but adjacent to the boundaries of the County. The commentor characterizes the information presented in the PEIR as "severely limited" and "outdated and incomplete" but does not indicate any specific additional pertinent biological resource data that should have been included in the document.

Response to Comment 22-51

The Draft PEIR (pages 4.4-2 through 4.4-6) presents a discussion of special-status species known to occur in Kings County. The location of known occurrences of these animals and plants was presented on Figure 4.4-1. Wetlands within Kings County are also discussed in the Draft PEIR (page 4.4-6). **Policy DE 3.3a** of the Element requires that site-specific biological and wetlands surveys be conducted at each proposed dairy development site. If proposed dairy sites contain wetlands or undisturbed wildlife areas, **Policy DE 1.2e** of the Element would require further environmental review prior to development of dairy facilities in those areas. Therefore, the requirement for site-specific surveys for all proposed dairy development sites and the prohibition of dairy development on wetlands reduce the potential impact on wetlands to a less-than-significant level. It is not necessary or practical to conduct wetland surveys prior to knowing the location of dairies that would be developed under the Element.

Response to Comment 22-52

The commentor is referred to Responses to Comments 22-49, 22-50, and 22-51 regarding the appropriate timing of the biological survey. The requirement for a site-specific biological survey at the time of dairy development is proposed, in part, to effectively address the habitat and activities of the San Joaquin kit fox. Changes in vegetative cover and availability of prey over time result in adjustments in the kit fox's movements. The kit fox's mobility and foraging habits result in changes in the location of its dens. Therefore, the most appropriate time to evaluate an individual dairy site is at the time of proposed development.

Response to Comment 22-53

Typical active agricultural practices conducted in the San Joaquin Valley limit the habitat value of agricultural fields. Under active agriculture, available cover for animals changes throughout the year. Development of natural vegetation is generally prevented in the fields and restricted to the margins of fields. Vegetative cover for animals is limited. Crop rotation is a common practice in Kings County. Under rotation, some fields are left out of production for a growing season or longer. These are fields that the County considers "temporarily fallow" as they are expected to be disturbed by agricultural activities in the near future.

Response to Comment 22-54

In response to the comment, additional text has been added to the sentence on page 4.4-8 of the Draft PEIR referenced in the comment.

Response to Comment 22-55

The commentor's opinion of the conclusions regarding the significance of human health impacts presented in the PEIR is noted for the record. The commentor is referred to Responses to Comments 22-56 through 22-63 for further discussion.

Response to Comment 22-56

The commentor incorrectly assumed that regulations regarding protection of worker health and safety do not apply to the dairy industry. There are no exemptions in the California General Safety Orders for dairy operations. The comment presents no evidence that compliance with existing State and Federal laws and regulations regarding the management of hazardous materials or general worker health and safety would not reduce the potential human health impacts to a less than significant level. The PEIR explains the enforcement authority and responsibilities of agencies that regulate hazardous materials management and worker health and safety.

Response to Comment 22-57

Appendix J of the Element presents additional general guidance for the scope and contents of pest management plans required by **Policy DE 4.3b**. The preparers of the PEIR reviewed the guidelines and requirements of the Kings Mosquito Abatement District and found them to be appropriate. These requirements, in conjunction with the requirements of **Policy DE 4.3b**, provide feasible mitigation for potential impacts related to insect pest management at dairies. The comment suggests that some sort of "projection" of the potential increase in vector infestation should have been included in the PEIR. The preparers of the PEIR have not identified any known methodology for developing such a projection and no methodology was presented in the comment.

Response to Comment 22-58

The potential impact related to public exposure to pathogens was discussed on pages 4.8-10 and 4.8-11 of the Draft PEIR. The discussion identifies the most significant pathogens associated with dairy cattle and manure. The pathways of human exposure and fate of pathogens in the environment are also discussed. The commentor is correct in pointing out that the fate of pathogens in the environment is affected by site-specific conditions, including physical and chemical properties, climate, plant cover, and surface and subsurface hydrology. The Element contains numerous requirements that reduce the potential for public exposure to pathogens, including containment and treatment of manure and process water and control of runoff from agricultural cropland. In addition,

there are no drinking water supplies within Kings County that rely on surface water sources. Therefore, even if pathogens were released to surface waters, they would not be consumed by people.

Several environmental factors in the DDOZs and NSOZs designated by the Element inhibit the migration of pathogens. The warm, arid, sunny climate promotes the drying of applied manure and process water and enhances the bactericidal effect of ultraviolet radiation of sunlight. The surface soils are predominantly fine grained (sandy loams to clay loams) and subsurface horizons are even finer (silt loam to clay). The fine-grained texture reduces the rate of infiltration and increases the potential for adsorption of bacteria and viruses onto soil particles. In addition, most of the surface soils are alkaline, a condition that promotes adsorption.

Response to Comment 22-59

The potential health effects of cryptosporidium were discussed on page 4.8-10 of the Draft PEIR. Some dairy workers (depending on duties) could have an increased risk of exposure to pathogens. Workers who have sustained contact with calves would probably have the highest risk. Some evidence suggests that the potential for infection increases with increasing age. However, when basic sanitation practices are followed, the risk of infection by pathogens would be minimized. It is noted for the record that there have not been any documented cases of cryptosporidiosis in Kings County during the period from 1998 to the present.[24]

Response to Comment 22-60

The proposed minimum setback for wells applies only to dairy sites and not to nutrient spreading areas within the designated Nutrient Spreading Overlay Zones. The manure and process water generated at dairies would undergo advanced aerobic or anaerobic treatment, reducing the risk of significant exposure during nutrient spreading.

Response to Comment 22-61

Antibiotics (also referred to as antimicrobials) are considered vital medicines for the treatment of bacterial infections in humans and animals. The use of these medicines is also recognized as important for sustainable livestock production as well as for the control of animal infections that could be passed on to humans. The development of resistance of organisms to antimicrobial medicines is controlled by genetic changes (acquired through mutation or transfer of genetic material) and subsequent selection processes. Therefore, resistance can develop with or without the use of antimicrobials. However, overuse of

[24] Winkler, Keith, 2002, Director, Kings County Environmental Health Services, personal communication with Kevin O'Dea of BASELINE, 12 February.

antimicrobials can promote the selective success of pathogens that are resistant to the antimicrobials by suppressing susceptible organisms and promoting the growth of resistant mutants. Food-borne microbes that develop a resistance to similar antibiotics used for treatment of human infection can potentially increase the risk of human infection. The use of antibiotics as medicines for human and animal health management is controlled by the Federal Food and Drug Administration (FDA). Judicious use of the antimicrobials is the responsibility of licensed veterinarians.

The commentor is correct in suggesting that residual concentrations of antimicrobials can be released into the environment during treatment and reuse of manure and process water. There is only limited information regarding the release and persistence of antimicrobials at confined animal facilities. In 1998, the Federal Centers for Disease Control and Prevention (CDCP) conducted sampling[25] of liquid manure storage lagoons at large swine facilities in Iowa and nearby wells and streams for the presence of four common antimicrobials. One antimicrobial (tetracycline) was detected in all seven lagoons tested at concentrations ranging from 11 to 540 micrograms per liter. One of the antimicrobials (sulfonamide) was detected in one monitoring well; none of the compounds was detected in two agricultural drainage wells, two drainage ditches, three monitoring wells, a private well, or six drainage tile outlets.

The CDCP recommended that further studies should be conducted. The preparers of the PEIR are not aware of any investigation of antimicrobials in the environment at or proximal to dairy operations. Nearly all attention regarding antimicrobials at confined animal facilities has been targeted at swine facilities. Due to the lack of available studies, the preparers consider that determination of the significance of the environmental impact on the use of antimicrobials at dairy facilities would be speculative. However, the controls on the potential for pollutant releases to surface waters and groundwater included in the Element would also minimize the potential for water quality degradation by the release of antimicrobials.

Response to Comment 22-62

The commentor is incorrect in assuming that the PEIR "relies on an MTMP as a basis for its finding that exposure to residual manure is a less than significant impact." Advanced treatment of manure required by the Element (**Policy DE 5.1c**) would reduce the levels of many pollutants, including pathogens. The treatment would reduce human exposure to pollutants in residual manure. However, the PEIR also considered the provisions of **Policy DE 5.1k** (now **5.1j**), which requires that all dairy operators confirm that residual manure

[25] Centers for Disease Control and Prevention, 1998, Report to the State of Iowa Department of Public Health on the Investigation of the Chemical and Microbial Constituents of Ground and Surface Water Proximal to Large Scale Swine Operations, October-December.

and process water have been removed prior to conversion of the dairy facility to other uses. The comment does not acknowledge this important mitigation, which was considered in the finding that residual manure would be a less than significant impact.

Response to Comment 22-63

The commentor is referred to Responses to Comments 22-38 and 22-39.

Response to Comment 22-64

Contrary to the statement in the comment, the scope of the cumulative impacts analysis is *not* limited to Kings County. Additionally, the comment that the PEIR ignored air quality impacts from related projects outside of Kings County is incorrect. The PEIR considered cumulative air impacts for the entire San Joaquin Valley Air Basin (Draft PEIR, page 5-8).

The cumulative impacts of air emissions from bovine dairies in the San Joaquin Valley Air Basin were estimated semi-quantitatively on the basis of information from the California Department of Food and Agriculture ("CDF&A") and similar assumptions made for estimating emissions presented in Section 4.2 of the PEIR. Estimates of the number of dairies and herd sizes throughout the air basin were provided by CDF&A (Draft PEIR, page 5-8). An estimation of air emissions must also include support stock as well as milk cows. The distribution and number of support stock were estimated using the same assumptions presented in the proposed Element (Table 5 of the Element) (Draft PEIR, page 5-9). The estimated 1999 dairy herd size for each county in the air basin is presented in Table 5-4, and the projected future dairy herds are presented in Table 5-5.

Emissions from the cumulative present and future herds were then estimated using the same assumptions as for the Element. Table 5-6 presents the estimated emissions of ROG, PM_{10}, ammonia, and methane for future cumulative herds in the entire San Joaquin Valley Air Basin (Draft PEIR, page 5-13).

Given the scope of the PEIR's cumulative impacts analysis, the reference to *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, is inappropriate.

Response to Comment 22-65

The comment is noted for the record. The implication that the County omitted data "because it feels it would be too expensive to collect" is unjustified. The preparers of the PEIR went to great lengths to collect all the available information concerning existing and future dairies throughout the San Joaquin Valley Air Basin. The information was then used to estimate emissions and to relate the cumulative air impacts of the dairies throughout the air basin.

Response to Comment 22-66

The comment is noted for the record. Please see Responses to Comments 22-64 through 22-65 and 24-102.

Response to Comment 22-67

The commentor's opinion that the range of alternatives and the analysis of the alternatives presented in the PEIR is "inadequate" is noted for the record. Please refer to Responses to Comments 22-68 and 22-69. With regard to the third issue raised in the comment, the PEIR is not required to speculate on which alternative for the proposed project would be adopted by the Kings County Board of Supervisors.

Response to Comment 22-68

The commentor's opinion that the PEIR "fails to properly analyze alternatives that would actually reduce the adverse unavoidable impacts" is noted. All the alternatives would reduce the unavoidable impacts identified in the PEIR. The preparers of the PEIR do not agree with the commentor's statement that the PEIR deems the ten percent reduction in herd size to be of "minimal environmental benefit." The Ten Percent Reduced Herd Size alternative would result in substantial reductions in air emissions and other significant impacts as shown on Table 6-2 of the PEIR. The Draft PEIR simply states (page 6-12) that neither the Reduced County Herd Size nor the Increased Manure Treatment alternatives would reduce air emission impacts to a less than significant level. It is important to note that the Reduced County Herd Size alternatives incorporate all the mitigating goals, objectives, and policies of the proposed Element. These provisions would substantially reduce the environmental impacts of dairy development relative to the environmental safeguards that are currently in place.

The commentor suggests that "a broader range of environmentally beneficial alternatives should be evaluated." The comment does not suggest feasible alternatives that should have been considered in the PEIR. The alternatives cover the range from no change in dairy development permitting (No Project) to consideration of up to ninety percent of the development that could be allowed under the proposed Element (Ten Percent Reduced County Herd alternative).

Response to Comment 22-69

The commentor's opinion that the PEIR discussion of the comparative effects of the alternatives is "very truncated" is noted for the record. In accordance with CEQA, the PEIR has compared the effect of each of the alternatives in reducing impacts for all the environmental topic areas (e.g., Air Quality, Noise, Water Resources, etc.) evaluated for the proposed project.

Response to Comment 22-70

The comment is noted for the record.

Response to Comment 22-71

The comment is noted for the record.

Response to Comment 22-72

The comment is noted for the record. Please refer to Responses to Comments 22-73 through 22-84, which address specific comments regarding the consistency of the Element with the General Plan.

Response to Comment 22-73

The statements in the General Plan Introduction do not exclude the Element's goals, nor will the Element's policies exclude the effort by the County to produce more retail and service jobs. An increase in dairy production will increase the opportunities in the new job areas mentioned in the Introduction. This includes any of the dairy "spin-off" jobs that may be created in the County.

Response to Comment 22-74

In response to the comment, the following goal will be added to the Land Use Element of the Kings County General Plan:

GOAL 9A: Restrict the locations where dairies may be located to those areas of the County where they are most compatible with surrounding uses and activities and environmental constraints as presented in the *Dairy Element*.

> Objective 9A.1: Use specific standards to avoid potential land use conflicts through the site plan review (SPR) streamlined review process when approving new dairies and expansion of existing dairies.
>
> Policy 9A.1a: Proposed new dairies and expansions of existing dairies, and associated dairy stock replacement facilities, may be approved through the SPR process if they meet all of the standards in the *Dairy Element* concerning siting, design, operation, monitoring and reporting.

In addition, Land Use Program 2 will be updated to address the changes associated with the County's detailed evaluation of dairies through the Element and associated Program EIR effort. Because of this detailed effort, dairies can be addressed through the administrative review process instead of the conditional use permit process The following

amendments to Land Use Program 2 in the Land Use Element will be included with the adoption of the Dairy Element:

Land Use Program 2 (2002 Update):

Bring the Zoning Ordinance into conformance with General Plan policies, as follows:

A. Consider changing zone district boundaries, or relying more heavily on administrative review rather than on the conditional use permit process, in order to streamline the planning process. Retain the opportunity for public review and comment on potentially significant projects.

~~*Amend the Zoning Ordinance to include new zone districts "AG-20," "AG-40," and "Public Facilities." Rename the former "Light Agriculture" zone "Limited Agriculture." Eliminate the zone district formerly known as "Exclusive Agriculture."*~~

B. Continue to apply ~~*Apply*~~ the "General Agriculture" (AG) zone to areas so designated on the General Plan map, with minimum parcel size as indicated (e.g., AG-20 and AG-40). Permit, or permit subject to administrative action, all agricultural uses in the AG zone. Require Conditional Use permits of all ~~*livestock concentration activities,*~~ agricultural service industries, agricultural airports, and other commercial operations which are now permitted, or are permitted subject to administrative approval, in agricultural zone districts.

New and expanding dairies, and dairy replacement stock facilities activities, shall be reviewed and processed as site plan reviews or conditional use permit process consistent with the policies found in the Dairy Element.

C. Apply the "Limited Agriculture" (AL) zone to areas so designated on the General Plan map, with a ten-acre minimum parcel size. Permit new non-intensive, temporary agricultural service activities and uses, such as kennels and veterinary hospitals, to locate in the AL zone. Do not approve uses for new livestock animal concentrations or ~~*nuisance-producing*~~ agricultural service industries in new permanent structures and facilities within areas designated "Limited Agriculture."

~~*Specify the criteria for permitting the division of property for nonagricultural use in areas designated AG and AL. Consider minimum parcel size, length of property ownership, and required degree of consanguinity for recipients of gift parcels for homesites and life estates. Require environmental and agricultural evaluation of the proposed division.*~~

~~*Amend the Zoning Ordinance to eliminate the zoning permit granted by Administrative Approval. Process permits for these uses as either Site Plan Reviews or Conditional Use*~~

~~*Permits, based on whether the particular use is subject to review pursuant to CEQA. Generally, those uses which do not require CEQA review should be processed as Site Plan Reviews, and those uses requiring CEQA review should be processed as Conditional Use Permits.*~~

~~*Define "residences or farm employee housing incidental to an agricultural use" as those units occupied by households deriving at least one-half of their gross income from agricultural sales or labor.*~~

~~*Remove airports and heliports from the list of permitted uses.*~~

~~*The minimum parcel size in the "Rural Residential Agricultural" zone district shall be 20,000 square feet although a larger minimum site area may be required to comply with environmental concerns, building codes, or improvement standards. However, the site shall be not less than one acre in size if both individual water supply and individual sewage waste disposal systems are to be utilized on the site.*~~

~~*However, retain the provision for smaller lot sizes of the existing "Rural Residential Estate" zone district for application to rural residential subdivisions employing a public water system.*~~

~~*Eliminate the existing "Urban Reserve" zone district and apply specific zoning that is consistent with the Land Use Element, but initiate more stringent review of development proposals to ensure compatibility of existing and proposed uses and conformance with adopted policies.*~~

Response to Comment 22-75

See Response to Comment 22-74. In addition, the Element adoption process along with the PEIR provide the public review and comment for the dairy issue that was not available when the General Plan was updated in 1993 when Land Use Program 2 was first adopted.

Response to Comment 22-76

Policy DE 1.2a specifically prohibits new dairies from locating in AL-10 zone districts, but allows existing dairies to apply for a CUP to expand their operation. **Policy DE 2.1g** has been added to clarify the rights of existing dairies, and includes language to ensure that the prohibition of new dairies remains in effect in the AL-10 zone district.

Response to Comment 22-77

Land Use Program 2 has been amended to reflect the new Dairy Element program that includes the Program EIR as the environmental review that analyzes the environmental issues of the entire program.

Response to Comment 22-78

Land Use Program 11 has been amended as follows to reflect the implementation of the Dairy Element and remove from the program the Agricultural Element. Kings County has determined that the dairy issue focus is more timely.

Land Use Program 11 (2002Update):

~~*Prepare an Agriculture*~~ Implement the Dairy Element ~~*to be integrated with the contents of the Land Use, Open Space, and Resource Conservation Elements*~~.

Response to Comment 22-79

The "Kings County Flood Hazard Areas" map (General Plan Figure 11) and "Dairy Development Areas for Kings County" map (DE Figure 2) are both based on the National Flood Insurance Rate Map (FIRM) for Kings County (Community No. 060086). Therefore, there is consistency between General Plan Figure 11 and the Dairy Element. In addition, there is no current or proposed prohibition for using manure as a fertilizer/soil amendment on any farmland regardless of whether it is in a floodplain [Nutrient Spreading Overlay Zones (NSOZ)] or not. The Dairy Element further protects the environment by not allowing dairy facilities to be constructed on floodplains (**Policies DE 1.2c, 3.2d,** and **3.2g**). These policies prohibit spreading of manure and dairy process water on floodplains during periods of flooding or threat of flooding. The Program EIR discusses potential impacts to surface water quality in Impacts 4.3-17 to 4.3-19.

Response to Comment 22-80

Policy DE 3.1a.I (now **3.1a.H**) requires that biological resources be addressed in the applicant's Technical Report. **Policy DE 3.2c.B** requires setbacks or barriers between dairy facilities and surface water. **Policy DE 3.3a** requires surveys of any sensitive biological or wetlands resources prior to issuing a Site Plan Review. Surveys will be conducted on a case by case basis as required by United States Fish and Wildlife Service, California Department of Fish and Game, and the U.S. Army Corps of Engineers guidelines. If these agencies identify potential impacts to biological or wetland resources, then the applicant will not be eligible to obtain an SPR approval by the zoning administrator and will instead complete the CUP application process with additional environmental review under CEQA.

Response to Comment 22-81

Policy 17a of the Resource Conservation Element requires that State or Federal guidelines be followed to protect wetlands. Accordingly, **Policy DE 3.3a** requires applicants to clear the wetlands issues with United States Fish and Wildlife Service, California Department of Fish and Game, and the U.S. Army Corps of Engineers before submitting an application for a new dairy or the expansion of an existing dairy. If, after conducting the required

surveys, these agencies determine that there are wetlands impacts, then the applicant will instead complete the CUP application process with additional environmental review under CEQA. Thus, it is not necessary for the County to further assess wetlands resources in the PEIR.

Response to Comment 22-82

As described in Responses to Comments 22-80 and 22-81, these concerns are addressed in the PEIR. The main purpose of the Element is to analyze environmental impacts of dairy projects in areas designated for use by dairies (DDOZ) where agricultural uses are already established and there is little likelihood of impacts on affected species or natural areas. In the event a proposed project will have impacts on affected species or natural areas, additional environmental review beyond the PEIR will be undertaken. Thus, those types of projects will be subject to the public review and comment process. It would not be feasible for the County to assess all potential impacts on affected species or natural areas at the program level stage of environmental review of the Element.

Response to Comment 22-83

A comparison of General Plan Figure 12 with Element Figure 2, Dairy Development Areas for Kings County, makes it clear that the dairy development areas do not "infringe" on the scenic areas along the Kings River. These scenic areas are between the river levees, which are, in turn, inside the floodplains. Dairy Development Overlay Zone-West stops at the edge of the Kings River flood zone, which averages about one-half mile west of the river. Dairy Development Overlay Zone-1 also stops at the edge of the Kings River and Cross Creek floodplains. No Dairy Development Overlay Zones are located within four miles of the Tule River.

Response to Comment 22-84

Without exception, the areas along the Kings River and Cross Creek are excluded from dairy development areas where new dairies may locate. In addition, all of the Dairy Development Overlay Zones east of Interstate-5 are located on land that is already used as farmland (however, some land may lay idle occasionally). The land in the Kettleman Plain and Sunflower Valley is either farmed or used for grazing cattle. Thus, riparian environments are adequately protected by the Element.

Response to Comment 22-85

The opinions presented in the comment are noted for the record.

Response to Comment 22-86

The comment is noted for the record. **Policy DE 4.1a.B.2.d** requires that the design and construction of lagoon liners be certified by a Professional Engineer or Certified

Engineering Geologist. Furthermore, **Policy DE 4.1a.B.2.f** requires that the construction be inspected to ensure that site-specific geologic heterogeneities are properly mitigated.

Response to Comment 22-87

The performance standard required by **Policy DE 4.1a.B.2.c** of the Element requires that liners for manure separation pits and process water lagoons meet the standards set by the NRCS. Those standards require that soil liners have a specific discharge that does not exceed 10^{-5} cm/sec and assume an additional order of magnitude decrease in seepage attributed to the seal formed by manure solids; the resulting specific discharge is 10^{-6} cm/sec. The County's intention was to require liners that have maximum specific discharge of 10^{-6} cm/sec. The commentor does not recognize that the performance standard of the NRCS guidelines is a specific discharge of 10^{-6} cm/sec. To clarify the County's intention, **Policy DE 4.1a.B.2.c** has been modified to specify the maximum seepage velocity for lagoon liners rather than the permeability of the liner.

Response to Comment 22-88

Please refer to Responses to Comments 22-89 through 22-101. The commentor's opinion regarding the volatile solids removal performance standard is addressed in Response to Comment 22-92.

Response to Comment 22-89

Please refer to Response to Comment 22-23 for a discussion of the commentor's suggestion that construction of enclosed freestall barns for support stock should be required as mitigation for particulate matter emissions. The commentor also suggests that dust suppression by stabilization of unpaved corral surfaces should be required at existing dairies. The proposed project, i.e., the Dairy Element, does not include additional regulation for existing dairies that are not expanding. The County considers PM_{10} emissions from existing dairies to be an existing condition. Therefore, imposing additional requirements regarding the use of stabilizer at existing dairies is beyond the scope of the project. Eventually, the SJVUAPCD may require stabilization of unpaved areas at existing dairies via Regulation VIII. The imposition of these additional controls could eventually reduce PM_{10} emissions from existing dairies.

Response to Comment 22-90

The preparers of the PEIR agree that there are scientific methods available to quantify organic gases emitted from treated manure, which are discussed by the commentor. These methods and similar methods of analysis are used by U.S. EPA to develop emission rates. The preparers of the PEIR also agree with the commentor's opinion that "quantification is not necessary to determine whether residual air pollutants are emitted from treated

manure." The Element and PEIR acknowledge that emissions will occur and the PEIR (Sections 4 and 5) presents estimates of emissions based on available emission rates.

Response to Comment 22-91

Policy DE 4.1b of the Element presents limitations on land application of manure and process water, which generally address suggested controls presented in the comment. The policy requires that the dairy byproducts be applied at agronomic rates. The text of the policy has been modified for clarification. The County is located in an arid region and humidity is low throughout most of the year, including the periods when fertilization and irrigation of crops occur. The policy has been amended to incorporate the commentor's suggestion that manure be applied during periods of low wind speeds and when winds are not directed toward populated areas within one-half mile of the application areas. Hundreds of miles of windbreaks would be required. Tree species suitable for windbreaks would require significant amounts of irrigation to survive in the climate of Kings County. The planting of windbreaks around all potential manure application areas is considered by the preparers of the PEIR to be impractical and infeasible.

Response to Comment 22-92

The preparers of the PEIR consider the performance standard of 50 percent volatile solids (VS) removal to be a standard that could be feasibly met by both aerobic and controlled anaerobic treatment of dairy manure. The standard was established following consultation with researchers at the U.S. EPA AgSTAR program who have extensive knowledge regarding the performance of anaerobic treatment technologies. The rationale for the 50 percent VS removal goal was discussed in the Draft PEIR (pages 4.2-23 and 4.2-24). The volatile solids removal (reported as 64 percent) at the Langerwerf Dairy described in the comment is noted for the record. However, it is noted that the results presented reflect only one dairy facility.

The preparers of the PEIR agree with the commentor's conclusion that "review of the treatment efficacy of a proposed dairy waste management system must be site specific." It is for this reason that the Element requires that each new and expanding dairy application include a site-specific Manure Treatment Management Plan that demonstrates the potential to meet the volatile solids removal performance standard. Please refer to Response to Comment 22-98 for a discussion of public participation.

Response to Comment 22-93

In response to the comment, **Policy DE 5.1c** has been amended to remove the exemption for proposed new or expanding dairies from the requirement for advanced manure treatment, which demonstrates that reactive organic gas emissions would not exceed

SJVUAPCD threshold values for stationary sources. Advanced treatment will be required for all new dairies and the expansion portion of existing dairies.

Response to Comment 22-94

The potential for the generation of electricity from biogas collected in controlled anaerobic manure treatment systems is discussed on pages 4.2-19 through 4.2-21 of the Draft PEIR. The commentor is correct in identifying the potential production of electricity as an option of this type of treatment. However, the preparers of the PEIR consider it important for the public to understand that both aerobic and anaerobic treatment systems are feasible methods for reducing the emissions from manure during and after treatment. As indicated in the comment, aerobic treatment has the advantage over anaerobic treatment in that these systems are generally more efficient in reducing volatile solids. This advantage is influenced by several factors but it is the main reason that most municipal sewage is treated aerobically.

Response to Comment 22-95

The comment is noted for the record. The Element did not use air emissions as the limiting factor for determining the basis of defining the theoretical County dairy herd for a number of reasons. First, accurate information on air emissions is still under development and regulatory thresholds for emissions have not been adopted by regulatory agencies for confined animal facilities. Secondly, limiting the herd size on an emission (i.e., PM_{10}) for which the air basin is in nonattainment would completely restrict development of conventional dairies within Kings County and defeat the County objective to benefit from the economic development associated with the dairy industry. Thus, it is infeasible to use air quality as the limiting factor.

Response to Comment 22-96

The comment implies that presenting a summarized impact statement at the beginning of an in-depth impact analysis is in some way inappropriate. The preparers of the PEIR disagree with this implication. The structure of impact identification and analysis was consistent throughout the PEIR and is commonly used in CEQA documents. The commentor's assessment of the reduction of salt loading resulting from the installation of "impermeable membrane liners" is noted for the record. The expected seepage rate associated with synthetic liners is 10^{-9} cm/sec, which is 1,000 times lower than the seepage rate (10^{-6} cm/sec) required by revised **Policy DE 4.1a.B.2.c**. The performance standard set by **Policy DE 4.1a** reduces the impact of infiltration to a less-than-significant level.

Response to Comment 22-97

Policy DE 4.4a of the Element would effect the adoption of the water quality objectives of the Central Valley Regional Water Quality Control Board's Water Quality Control Plan for

the Tulare Lake Basin ("Basin Plan"). Through this action, the County adopts the water quality objectives of the Basin Plan as thresholds of significance for dairy projects. The "safeguards" that are suggested in the comment are contained in the water quality objectives.

Response to Comment 22-98

The comment is noted for the record. The commentor suggests that the public would be excluded from providing beneficial "non-technical input" or "anecdotal information" regarding dairy development projects proposed under the Element. Such public input has been sought and received through the CEQA process for this PEIR. New and expanded dairies would be required to comply with all provisions of the Element, which is the subject of this PEIR. Dairy projects that cannot conform or choose not to conform with the Element would be required to obtain a Conditional Use Permit and undergo further environmental review under CEQA, which requires public participation. In addition, the public will have the opportunity to interface with the Dairy Monitoring Office that would be established by the Element and present any concerns through the complaint process developed by **Policy DE 7.1a** (now **6.1a.A**).

Response to Comment 22-99

The preparers of the PEIR do not agree with the suggestion made in the comment. The Element requires that all dairy operations meet the liner standards presented in **Policy DE 4.1a.B.2**. Any dairy development project has the option to elect to meet the standard by proposing installation of a synthetic liner. Please also refer to Response to Comment 22-96.

Response to Comment 22-100

Please refer to Response to Comment 22-87.

Response to Comment 22-101

Policy DE 3.1a.C requires that air quality, including ammonia emissions, be addressed in the Technical Report prepared for new and expanded dairy development projects. The policy has been amended to list required components of the Technical Report, including a Manure Treatment Management Plan, Air Quality Assessment, and Odor Management Plan. All of these required plans would address ammonia emissions and their control. The commentor is correct in pointing out the need to control odorless gases, such as methane and oxides of nitrogen. But the comment does not acknowledge the controls (i.e., advanced treatment of manure) that will reduce the emission of the gases required by the Element. The commentor's opinion regarding the need for additional provisions to ensure that dairy development projects demonstrate compliance with California Air Resources Board standards and goals for concentrations of atmospheric gases is noted for the record. As discussed in the PEIR, dairy operations are not currently regulated by CARB or the San

Joaquin Valley Unified Air Pollution Control District. Therefore, these regulatory agencies have not developed performance standards or goals for dairy operations.

Without exception, the areas along the Kings River and Cross Creek are excluded from dairy development areas where new dairies may locate. In addition, all of the Dairy Development Overlay Zones east of Interstate-5 are located on land that is already used as farmland (however some land may lay idle occasionally). The land in the Kettleman Plain and Sunflower Valley is either farmed or used for grazing cattle. Thus, riparian environments are adequately protected by the Element.