GRISWOLD, LASALLE, COBB, DOWD & GIN, L.L.P.

ATTORNEYS

A California Limited Liability Partnership including Professional Corporations

311 N. DOUTY STREET - P.O. BOX 330
HANFORD, CA 93232

TELEPHONE (559) 584-6656
FACSIMILE (559) 582-3106
E-MAIL: glcoglip@lightspeed.net

MICHAEL E. LA SALLE
ROBERT M. DOWD*
ROBERT W. GIN*
RANDY L. EDWARDS
JIM D. LEE
JEFFREY L. LEVINSON
RAYMOND L. CARLSON
WESLEY J. HAMMOND
TY N. MIZOTE
SCOTT M. MARCONDA
JENNIFER F. HOFFMANN
KRISTINE M. HOWE

*A PROFESSIONAL CORPORATION

LYMAN D. GRISWOLD (1914-2000)
STEVEN W. COBB (1947-1993)
OFFICE ADMINISTRATOR
SARA HALVORSEN

September 10, 2001

William R. Zumwalt
KINGS COUNTY PLANNING AGENCY
Kings County Government Center
1400 West Lacey Boulevard
Hanford, CA 93230

Re: Draft Dairy Element Of The Kings County General Plan

Dear Mr. Zumwalt:

On behalf of a number of clients who are identified at the end of this letter, all of whom are residents of Kings County and members of the local public, I am pleased to submit herewith our comments to the Draft Dairy Element of the Kings County General Plan--Program Environmental Impact Report ("PEIR").

The PEIR has been examined in light of the following relevant questions:

1. What is the purpose of an Environmental Impact Report as declared under the California Environmental Quality Act ("CEQA")?

2. What is the standard of findings under CEQA?

3. As to each alleged effect on the environment, does the PEIR meet those standards?

4. Where the PEIR does not meet those standards, what are the consequences under CEQA?

21-1

CEQA provides the answer to questions No. 1 and 2:

". . .

"(a) The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify

> *alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.*
>
> . . . "[1]

Therefore, the inquiry under CEQA is whether a project may have significant effects on the environment. CEQA goes on to define "significant effect" as follows:

> " *'Significant effect on the environment' means a substantial, or potentially substantial, adverse change in the environment.*"[2]

Upon what is an EIR to rely in order to make its determinations? CEQA answers that also:

> ". . .
>
> *"(c) If a lead agency determines that a proposed project . . . would not have a significant effect on the environment, the lead agency shall adopt a negative declaration to that effect. The negative declaration shall be prepared for the proposed project in either of the following circumstances:*
>
> " *(1) There is no substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment.*
>
> ". . .
>
> *"(e) (2) Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous . . . .*"[3]

21-1
Cont.

---

1 *Public Resources Code*, Section 21002.1; *see also* 21151.

2 *Public Resources Code*, Section 21068.

3 *Public Resources Code*, Section 21080; *see also* 21082.2.

Moreover:

> *"If, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact."*[4]

21-1 Cont.

With the foregoing in mind, we have evaluated the PEIR's treatment of the professed effects of methane, reactive organic gases ("ROGs"), hydrogen sulfide ("H_2S"), ammonia ("NH_3"), and nitrogen oxide ("NO_x") on air quality, as well as the claimed effects of wastewater lagoons on water quality. Our comments are as follows:

I. AIR QUALITY ISSUES

A. METHANE (CH_4)

The PEIR claims that "[m]ethane has been determined to be the second most significant greenhouse gas (following carbon dioxide) that contributes to global warming," and that "the effects of greenhouse gases have been recognized as a world-wide problem and international efforts are being made to reduce the emission of these gases." (PEIR, p.4.2-3, 4.2-4, 4.2-13). Methane, a product of anaerobic decomposition of organic material, is emitted from many sources, such as wetlands, swamps and marshes. It also comes from livestock—from the anaerobic decomposition of their manure and from the enteric fermentation processes that take place in their digestive systems.[5]

21-2

The comments in the PEIR about global warming and methane give the impression that these issues are well settled; that the Earth's atmosphere is warming, that the consequences thereof are adverse to mankind, that dairy cattle are a major contributor to such warming, and that we in Kings County should take steps to mitigate methane production in new and expanding dairies. But is all this true? Are there any reputable scientists, studies, data, or evidence which question or place in dispute any of the foregoing? If there are, the public has a right to expect that the PEIR contains a fair and full airing of all such credible evidence.

---

4 *CEQA Guidelines*, Section 15145.

5 U. S. Environmental Protection Agency, *U.S. Methane Emissions 1990-2020: Inventories, Projections, and Opportunities for Reductions*, Sept. 1999 (EPA 430-R-99-013), p. 1-1 to 1-5.

1. GROUND BASED TEMPERATURE READINGS

The initial question which should be raised is what evidence is there that we are indeed experiencing a current warming of global atmospheric temperatures? While the popular media reports that most atmospheric scientists claim average temperature readings have been rising, is it not fair to ask whether the measurements are correct and whether they represent a fair appraisal of what is being experienced on a global basis? According to the National Climate Data Center, the trend line for surface air temperatures taken in the United States over a 103 year period, commencing in 1895 and ending in 1997, reveals a modest increase.[6] One must keep in mind, however, that the foregoing measurements were only taken in the United States, and do not represent temperature measurements taken from throughout the surface of the Earth. The majority of all surface air temperatures have been taken at urban sites, such as at airports and in cities. There are a body of scientists who claim that temperatures taken at urban sites are not truly indicative of overall global conditions. Much of the Earth's surface consists of vast expanses of oceans, mountains, deserts, forests, and rural farmland, places where few air temperature readings are taken, in comparison to the urban sites where measurements are taken. Temperature reading sites in urban areas are usually surrounded by concrete and asphalt, which is known to absorb solar energy during the day and re-emit it at night. Scientists have given this phenomena the name "urban heat sink islands." As urban areas have grown over the last 100 years, the urban heat sink island effect would, understandably, become more pronounced and could account for much, if not all, of the small increase in average temperature that some studies show.[7]

21-3

2. SEA LEVEL MEASUREMENTS

Some scientists claim that global warming will and is causing the polar ice caps to melt at increasing rates. This is causing rises in sea levels, which they claim will eventually flood cities and

21-4

---

6 Brown, W.O. and Heim, R.R. (1996) *National Climate Data Center, Climate Variation Bulletin* 8, Historical Climatology Series 4-7, Dec.

7 Hoyt, Douglas V., Schatten, K. H., *The Role of the Sun in Climate Change* (New York: Oxford Univ. Press; 1997) p. 86; Hoyt, D.V. Schatten, K.H. "A Discussion of Plausible Solar Irradiance Variations, 1700-1992," *Journal of Geophysical Research* (1993) Vol. 98 18904; Spencer, R.W., Christy, J. R., Grody, N.C., "*Global Atmospheric Temperature Monitoring With Satellite Microwave Measurements*," *Journal of Climate* 3, pp. 1111-1112; Goodridge, J.D., "Comments on 'Regional Simulations of Greenhouse Warming Including Natural Variability'," *Bulletin of American Meteorological Society,* Vol. 77, p. 1588-1589.

lowlands situated adjacent to the sea. If indeed we have been experiencing global warming over the last 300 years, as the Earth has emerged from the Little Ice Age, there should be plentiful and consistent evidence of rising sea levels. A research paper prepared in 1992 by a researcher at the National Oceanographic Data Center, NOAA, examined tide gauge measurements since about 1900 from 37 locations throughout the globe. The result showed an average increase in sea level of .001 mm per year, or about .1 mm since 1900. This translates to 4/1000 of an inch in 100 years. At this rate, it will take 2500 years for the sea level to rise 1 inch![8] If melting ice caps and rising sea levels are indicators of rises in true air temperatures, then such evidence suggests no appreciable global warming.

21-4 Cont.

3. EFFECTS OF SOLAR LUMINOSITY AND VOLCANIC ACTIVITY

Notwithstanding the foregoing, let us assume for the sake of argument that average surface air temperatures, taken on a truly representative basis throughout the Earth, and not influenced by the urban heat sink island effect, do indeed demonstrate a current warming trend. Within the context of world history, is this unusual? Would this automatically mean that it is the result of human activity? It seems undisputed that the Earth has experienced many ice ages and warm periods, repeated cycles of alternating cooling and heating, most of which occurred before man's activities could have had any hand in it. Such changes have therefore been the work of a multitude of natural forces, many of which are still not clearly understood. Many reputable scientists attribute these cycles to changes in solar output. Various studies have shown a clear and direct correlation between solar luminosity and atmospheric temperature variations. The main exceptions to such correlations have been during periods of unusually high volcanic activity, where immense quantities of ash and dust are put into the upper atmosphere, shading the Earth's surface from the sun.[9]

21-5

4. ARCTIC OCEAN MODEL

Other theories have been developed to explain what causes these natural cycles. For example, there is an oscillating Arctic ice cap hypothesis, called the "Arctic Ocean Model," which was developed about 30 years ago. It is a model largely ignored, but not discredited, which is still

21-6

---

8 Douglas, B.C., (1992) "*Global Sea Level Acceleration*," *Journal of Geophysical Research* 97, pp 12699-12706.

9 Hoyt, D.V. *The Role of the Sun in Climate Change*, (New York: Oxford University Press, 1997); Hoyt, D.V., Schatten, K.H., "A Discussion of Plausible Solar Irradiance Variations, 1700-1992," *Journal of Geophysical Research* (1993) Vol. 98 18895-18906.

endorsed by some scientists today.[10] The ice cap model argues that when the Arctic ice cap is frozen over, the production of new snow and ice falling on the cap is reduced, and the cap beings to shrink. As the ice cap shrinks, the globe experiences warming. When global temperatures rise sufficiently to re-open the Arctic cap, then the exposed Arctic Ocean can once again put more moisture into the atmosphere in the region of the cap, resulting in an increase in snowfall and ice production, which then rebuilds and starts the closing of the gap. This rebuilding of the ice cap begins to cool the Earth's atmosphere, and the cycle continues to repeat itself.

21-6 Cont.

21-7

5. CARBON DIOXIDE: CAUSE OR EFFECT?

It seems that the currently most popular theory is that man's activity is producing an increase in CO_2 levels in the Earth's atmosphere, which in turn is contributing to global warming. What is not ordinarily reported in the popular press is that scientists have analyzed data which have shown rises and falls in CO_2 concentrations in the atmosphere. These studies have shown that CO_2 levels have fallen and risen along with evidence of changes in global atmospheric temperatures. But studies have also shown that the rises and falls in temperatures preceded, not followed, the rises and falls in CO_2 levels. In fact, the changes in CO_2 levels lag changes in temperature by five (5) months, suggesting that CO_2 levels were the result of changes in atmospheric temperature, rather than the cause of the same.[11] This means that if a warming is occurring at this time, it would be impossible to show that it is a result of anything other than natural factors.

21-8

6. METHANE: SIGNIFICANT OR INSIGNIFICANT?

Let me try to put a finer point on this. The County's draft PEIR is raising the issue of global warming for one reason only; because it is contending that the methane, emitted by the livestock and manure on new and expanding dairies in Kings County would play a significant role in raising global temperatures, and for that reason the production of methane must be mitigated by them.

21-9

Parenthetically, I cannot resist observing that wetlands, marshes, and swamps, known as great producers of methane, seem to still be held in high esteem by environmental scientists. Could it be that there is "politically correct" methane and "politically incorrect" methane?

CEQA provides that an EIR shall set forth "... all significant effects on the environment of

---

10 Essenhigh, R. H., "Does CO_2 Really Drive Global Warming?" Chemical Innovation, Vol 31, No. 5 May 2001, pp.44-46.

11 Kuo, C., Lindberg, C., and Thompson, D.J. (1990) *Nature*, 343, pp. 709-713.

the proposed project, . . ."[12] " 'Significant effect on the environment' means a substantial, or potentially substantial, adverse change in the environment."[13] While the PEIR makes a qualitative observation that methane is a greenhouse gas, and no one is disputing that, how can the PEIR reach its conclusion that the production of methane by new dairies in Kings County would have a significant impact on global warming without doing any quantitative analysis? 21-10

Let us take a moment to look at some quantitative facts:

A basic textbook on environmental geoscience describes the Earth's atmosphere as consisting of many different gases. 78.084% of the atmosphere is nitrogen and 20.946% is oxygen. These two gases alone account for over 99% of the atmosphere. Argon represents .934%, so these three gases represent 99.964% of the total atmosphere. The remaining gases are as follows: 21-11

Carbon Dioxide	.033%
Neon	.00182%
Helium	.00053%
Krypton	.00012%
Xenon	.00009%
Hydrogen	.00005%
Nitrous Oxide	.00005%
Methane	.00002% [14]

Therefore, according to this textbook, methane is described as the least abundant gas in the atmosphere. At .00002%, methane represents two-tenths of 1 part per 1,000,000, or 1 part per

---

12 Public Resources Code, Section 21100(b).

13 Public Resources Code, Section 21068; see also CEQA Guidelines, Section 15382.

14 Strahler, A.N., Strahler, A.H., *Environmental Geoscience* (Hamilton Publishing Company, 1973) p. 30.

5,000,000. If we visualize a railroad boxcar (40' X 8' X 8'), which would hold approximately 164,000 baseballs (3" diameter), then it would take 30 boxcars to hold approximately 5,000,000 baseballs, or a train approximately one-quarter mile long. If those 5,000,000 baseballs represent the molecules of nitrogen, oxygen, argon, carbon dioxide, neon, helium, krypton, xenon, hydrogen, nitrous oxide, and methane in a given volume of atmosphere, then one would find only one methane baseball in that entire train of 30 boxcars; an incomprehensibly and unimaginably small amount. The environmentalists worry that methane in the atmosphere has doubled. If true, that means we have gone from ½ to 1 methane baseball on that train! Frightening, isn't it? 21-11 Cont.

7. EFFECT OF WATER VAPOR

Dr. Robert Essenhigh, a Professor of Energy Conversion at Ohio State University, recently wrote a letter to the Wall Street Journal in which he observed that 97% of global thermal trapping that occurs in the atmosphere is caused by water vapor, and that only 3% is caused by carbon dioxide. Professor Essenhigh does not even mention methane as a factor.[15] Indeed, Professor Essenhigh recently published an article in a peer-reviewed scientific journal in which he states that water vapor is the major heat absorbing gas in the atmosphere, and that CO_2 is the only other significant atmospheric absorbing gas, but only at a minor level. Therefore, by exclusion, Dr. Essenhigh has declared that methane is not a significant atmospheric absorbing gas.[16] 21-12

Considering the vastness of the globe's atmosphere, and the relative sparseness of methane in it, the mitigation measures proposed in the PEIR to reduce production of methane on new dairies in Kings County seem as foolhardy as prohibiting us from pouring a bucket of water into the ocean so as to reduce a feared rise in sea levels. 21-13

8. WOULD THE IMPACT OF GLOBAL WARMING BE ADVERSE?

This brings us to the next element that the PEIR must establish. CEQA provides that an EIR must determine whether or not a proposed project will have "the potential to substantially degrade the quality of the environment" or whether it will "cause substantial adverse effects on human 21-14

---

15 Essenhigh, R., Letter to Editor, *Wall Street Journal*, October 10, 2000; see also Lindzen, R.S. (1996) *Climate Sensitivity*, etc., NATO ASI Series, Berlin-Heidelberg, 134, pp. 51-66; and Renno, N.O., et. al., *Journal of Geophysical Research*, 99, pp. 14429-14441.

16 Essenhigh, "Does CO_2 Really Drive Global Warming?" *Chemical Innovation* Vol. 31 No. 5 May 2001, 44-46.

beings."[17] Again, if we assume for the sake of argument that global warming is occurring, and that the unmitigated production of methane by new Kings County dairy herds will indeed significantly effect the environment, the PEIR then needs to explain how such an effect would degrade the environment or cause a substantial adverse effect on us. Esteemed author H. H. Lamb published a comprehensive book on the history of world climate in 1982, and presented an exhaustive discussion of the cyclic changes in weather during the history of mankind. He observed how changes in weather and changes in average atmospheric temperatures have historically produced both good and bad effects on the environment and on mankind. He characterized the "Medieval Warm Period" in the 1100s and 1200s A.D. as generally beneficial, with milder winters, longer growing seasons, and more abundant food production.[18] This era, which some have referred to as the "Medieval Climate Optimum," experienced temperatures warm enough to allow the colonization of Greenland. Indeed, current global temperature averages still remain lower than those of that era. In contrast, the "Little Ice Age" that followed, centered around 1700, was particularly harsh on mankind and plant and animal life.[19] Lamb's book makes it very clear that changes in temperatures, climate and weather can be good in some respects and bad in other respects, and that different areas of the world are not all similarly affected. Thus, the questions must be asked: What is the "correct" temperature? What is the "optimum" temperature? And for whom or for what? Such questions reveal the complete foolishness and futility of this PEIR even attempting to answer these questions, and of being so arrogant and out of touch with reality as to believe that Kings County should impose costly mitigation measures on methane production without knowing whether such mitigations would achieve anything, and even if they did, without knowing who or what might find it adverse or beneficial.

21-14 Cont.

21-15

9. RECOMMEND NEGATIVE DECLARATION FOR METHANE

The PEIR has utterly and completely failed to make its case that the unmitigated production of methane by new dairies in Kings County will have a significant (substantial) adverse effect on the environment or on human beings. It is pure speculation. As mentioned before, the CEQA Guidelines deal with speculation thusly:

21-16

> *"If, after a thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should*

---

17 Public Resources Code, Section 21083 and CEQA Guidelines, Section 15065(d).

18 Lamb, H.H., *Climate, History and the Modern World*, (1982) Routledge, London, pp. 171-210.

19 Lamb, pp. 211-241.

note its conclusion and terminate discussion of the impact."[20]

Considering all evidence before the lead agency, I respectfully submit that the lead agency should find the methane effect too speculative to warrant further discussion, or, at the very least, it should issue a negative declaration with respect to methane, by making a finding that unmitigated production of methane by new dairies in Kings County would have an insignificant effect on the environment. Either finding would result in elimination from the PEIR of all of the various measures described therein intended to mitigate methane production. 21-16 Cont.

10. ANALYSIS OF WATER VAPOR VS. METHANE EMISSIONS

Recognizing the possibility that the lead agency will decline to follow the recommendation that I have made above, then, under such circumstances, I believe the PEIR would need to make the following analysis. Since, as mentioned earlier, water vapor is acknowledged by reputable scientists as a leading factor, if not the preeminent factor, in atmospheric thermal trapping, I believe the PEIR would need to evaluate how a proposed dairy project would impact the emission of water vapor into the atmosphere. One must keep in mind that virtually every new dairy project will be constructed on land which was formerly used as irrigated cropland, upon which an average of 3 acre foot of irrigation water would have been customarily applied per acre per year. Therefore, the PEIR would need to consider and evaluate the significance of this conversion of irrigated cropland to dairy facility use. I submit that it would conclude that there would be a dramatic reduction in water vapor production. Although a dairy uses a considerable amount of water, virtually all of that water ends up in the dairy's wastewater lagoons by way of flushing and draining, and simply becomes part of the irrigation water eventually applied to adjacent cropland. From an atmospheric impact point of view, the only water truly "used" by the dairy project is that which evaporates into the atmosphere. That calculated amount should be compared to the amount of irrigation water formerly "used" by the site when it was irrigated cropland. From a thermal trapping point of view, I am confident that the projected methane emissions from a new dairy would be more than offset by the project's reduction in water vapor emissions, meaning that a dairy project would result in a net reduction in emissions into the atmosphere of components which play, or may play, a role in atmospheric thermal trapping effects. 21-17

B. REACTIVE ORGANIC GASES

The PEIR examines reactive organic gases ("ROGs"), declaring its concern that ROGs are alleged to be precursors to ozone (PEIR 4.2-14). However, the PEIR does not cite its authority for such a claim. 21-18

---

[20] *CEQA Guidelines, Section 15145*

The PEIR states that the San Joaquin Valley is currently in non-attainment for Federal and State ozone standards. (PEIR 4.2-10). The PEIR includes a table setting forth the results of ozone testing in Kings County, admitting that the only location in the County where ozone levels were measured was in the City of Hanford. Table 4.2-3 asserts that ozone appeared in our local urban air at a concentration of over .12 ppm during 3 days in 1998, during 2 days in 1999, and during no days in 2000. Ozone never exceeded .14ppm. Thus, ozone appeared in our urban air at a concentration of about 1 part per 10,000,000, but usually less than that. 21-19

Just as it would seem inappropriate to take air samples from the end of a truck exhaust, does it not also seem inappropriate to obtain ozone results from only one location in the County, and an urban one at that? Should not such studies seek to collect representative data from throughout the County, rural as well as urban, and to average the results? The PEIR also fails to describe the air sampling and testing protocols followed in connection with these samples, and it fails to assure us that all Federal and State regulations and requirements were complied with in connection with its sampling and testing protocols. Finally, the PEIR does not assert that the results shown in Table 4.2-3 were fairly representative of ozone levels in the County. In the absence of such evidence and assurances, these reputed ozone numbers should be stricken from the PEIR and disregarded. 21-20

The PEIR goes on to explain that the intermediate stage of anaerobic decomposition of manure produces volatile fatty acids, aldehydes, alcohols, amines, mercaptors, indoles, and sketols, which the PEIR groups into a category called reactive organic gases (PEIR 4.2-14, 4.2-33). The PEIR further alleges that anaerobic manure decomposition emits ROGs into the atmosphere, basing its claim on a 1988 report done by the Radian Corporation for the Air Resources Board. The PEIR says that the report's ROG emissions "were estimated for existing conditions, assuming that none of the dairy facilities are currently treating generated manure to reduce ROG emissions." (PEIR 4.2-33).

The foregoing assumption is totally false and invalid. One of the resources listed in the PEIR's Bibliography is a research paper, authored by Ruihong Zhang, Associate Professor in the Biological and Agricultural Engineering Department at the University of California, Davis, and entitled "Biology and Engineering of Animal Wastewater Lagoons." Professor Zhang explains that organic acids, amino acids, aldehydes (ROGs), sulfides, and other compounds are **intermediate** products of the anaerobic decomposition of manure in dairy wastewater lagoons. These intermediate products are dissolved in lagoon water until they are further acted upon by methanogens, acidogens, and other similar bacteria to produce carbon dioxide, methane, ammonia, and hydrogen sulfide as end products, which in turn, bubble to the surface and are emitted into the atmosphere.[21] 21-21

[21] Zhang, R., "Biology and Engineering of Animal Wastewater Lagoons," undated, p. 4-6

Professor Zhang makes the important point that wastewater lagoons are "widely used" devices for the "treatment of human, industrial, and animal wastewaters." In other words, dairy wastewater lagoons, which are used on all existing dairies in Kings County and which are a standard part of the construction of new dairy facilities, are "treatments," i.e, mitigations of the emission of ROGs into the air, because the ROGs are transformed into other products before they become atmospheric emissions. "Dry" manure in corrals or wet manure solids applied to fields decompose aerobically, in non-aqueous conditions under which aerobic bacteria degrade the compounds into carbon dioxide, ammonia, and elemental sulfur.[22] 21-21 Cont.

The PEIR recites that the California Air Resources Board (CARB) has estimated that manure decomposition from Kings County livestock produced eight (8) tons of ROGs per day in 1996, basing its estimate on the emission factors contained in the 1988 report done by the Radian Corporation. (PEIR 4.2-33, 4.2-47, 4.2-48, 4.2-49). The Radian report states, among other things, that "We identified no literature that described organic gas emissions from livestock excrement... In lieu of any new data, we used the same emission factors that were used to calculate the preliminary emission estimates. These are the same emission factors used by the South Coast AQMD [Air Quality Management District] (Halberg, 1984)."[23]

So, we looked at the 1984 Halberg report referred to above which was done by Earl Halberg, an air quality engineer employed by the South Coast Air Quality Management District. His report says that "[t]he EPA and ARB have not published any emission factors related to the Biological Decomposition of Animal Manures. The only material found to link animal waste to non-point emissions was a report by KVB."[24] 21-22

The KVB report referred to above was prepared in 1978 by KVB, Inc. for CARB. The KVB report declared that "[r]esults from a recent study (Ref. 2-51) were employed to estimate the emission rates from these sources [livestock manure]."[25] "Ref. 2-51" referred to above was a 1977 paper prepared by Keller and Cowherd. Here is what Halberg had to say about the Keller and

---

22 Zhang. p. 2.

23 Radian Corporation, *Evaluation of Emissions From Selected Uninventoried Sources*, 1988 p. 5-4.

24 Halberg, Earl D., *Engineering Report on Area Source Emissions From Livestock Waste*, 1984, South Coast Air Quality Management District, p. 2.

25 KVB, Inc., *Control of Hydrocarbon Emissions From Stationary Sources in the California South Coast Air Basins*, 1978, prepared for CARB, p. 2-79.

Cowherd source:

"The reference source [Ref. 2-51] quoted in the KVB Report could not be located by the SCAQMD Technical Library Staff," and "[n]one of the emission factors above has been verified by SCAQMD tests and analysis."[26]

In a nutshell, the PEIR relies on a report (CARB) that relies on a report (Radian) that relies on a report (Halberg) that relies on a report (KVB) that relies on a source (Keller et al) that cannot be found. What makes this matter even more unsettling is that Halberg states that his emission estimates proceed on the assumption that "manures have been allowed to reach their full state of decomposition."[27] These reports make no distinction between manure which decomposes in an anaerobic environment, versus that which decomposes in an aerobic environment, even though Professor Zhang has shown that the compounds produced are different under each. Because of a lack of the "original" source (Keller, et. al.), it is impossible to tell under what circumstances and conditions, and upon what assumptions, the "original" source arrived at its emission estimations. It is disgraceful that the PEIR failed to either notice or comment on the errors, flimsiness, and uncertainty of the basis upon which these ROG emission estimates are used in the PEIR. 21-22 Cont.

Therefore, for all of the reasons enumerated above, the PEIR's amount of estimated ROGs estimated to be emitted into the air by existing dairies must be disregarded as being without sufficient foundation. The PEIR fails to credibly quantify the amount of ROGs emitted into the air from the kinds of dairy manure treatment systems presently used in the County. The PEIR fails to explain the chemical processes which allegedly transform ROGs in the air into ozone, and it fails to explain under what circumstances such transformation would occur, in what quantities, and how much that would be expected to change the concentration of ozone in our local air. Until credible studies and data can be produced which show that dairy facilities, as they are built and operated, will significantly increase the amount of ozone in the Valley, then the PEIR cannot legitimately conclude that new or expanding dairies in Kings County would, from an ozone standpoint, produce a significant adverse impact on local air quality.

C. HYDROGEN SULFIDE (H_2S)

The PEIR analyzes hydrogen sulfide, a rotten egg smelling compound that is produced during the anaerobic decomposition of manure. It points out that Section 5155 of Title 8 of the California Code of Regulations specifies that for protection of human health, a person should not be exposed 21-23

---

[26] Halberg, p. 2-3.

[27] Halberg, p. 3.

to concentrations of H_2S in excess of 10 ppm. (PEIR 4.2-36). It says H_2S can be detected in concentrations as low as .01 ppm, but suggests that it is not perceived as offensive until it reaches 3 ppm. (PEIR 4.2-12). The PEIR goes on to report on a 1998 study of 58 Minnesota dairies, where the study found "that the median concentration of hydrogen sulfide at or near the facility boundary was typically less than .02 ppm." (PEIR 4.2-36). This demonstrates the capacity of such compounds to dilute and diffuse throughout the atmosphere. This also tells us that the Minnesota experience was 1/150 of the levels considered offensive. Notwithstanding the PEIR's inclusion of such facts, it still concluded that the projected emissions of hydrogen sulfide by new and expanding dairies in the County would have a significant adverse effect on air quality, which should be mitigated. While the PEIR says the Minnesota study may not be applicable to our local situation, the PEIR fails to produce any credible evidence or data that H_2S, as it leaves a dairy facility boundary on an unmitigated basis, would be in concentrations high enough to be perceived or to represent a significant adverse effect on air quality.

21-23 Cont.

D. AMMONIA (NH_3)

In addressing ammonia, the PEIR notes that NH_3 can be detected by the human nose at concentrations as low as 5 ppm but irritations do not begin until they reach 100 ppm. It also claims that NH_3 is a precursor to $PM_{2.5}$. (PEIR 4.2-12) That manure decomposition produces ammonia is not disputed. Zhang's paper includes NH_3 as a compound produced in anaerobic lagoons.[28]

While the foregoing observations may be a good starting point, the PEIR fails to complete the analysis. It fails to answer the next logical questions: As air leaves a dairy facility, at what concentration is ammonia? Is it at irritating or even detectable levels? Lacking evidence needed to answer these questions, how can the PEIR justify its finding that ammonia emissions by new and expanding dairies will have a significant adverse effect on air quality for which the dairyman must take steps to mitigate? I believe ammonia levels while still on the dairy facility is only a "workplace" issue, to be dealt with by CAL OSHA.

21-24

As the PEIR does its analysis, the studies, research, and data from which it makes its evaluations must relate to the circumstances under which manure is treated and decomposes in the manure handling systems used on dairies today. It must recognize that most manure produced on a modern dairy is "treated" in an anaerobic lagoon. It is further subjected to elements of aerobic treatment when it is pumped from the lagoon and aerated as it flushes feed lanes. Whatever manure solids remain will decompose aerobically when they are applied wet or dry to nearby fields. In the absence of such careful analysis, the conclusions and recommendations made by the PEIR, as they relate to ammonia, are without merit and inappropriate.

21-25

---

[28] Zhang, p. 5.

As I leave the subject of methane, ROGs, hydrogen sulfide and ammonia behind, I cannot resist parenthetically observing that all of these emissions are not only the products of anaerobic decomposition of manure; they are also the natural products of the anaerobic decomposition of other dead and decaying plant material in swamps, marshes, and other wetlands, areas which are revered, promoted, and protected by environmentalists. 21-26

E. NITROGEN OXIDE (NO_x)

The PEIR mentions nitrogen oxide (NO_x), claiming it is a precursor to ozone, and that it is generated by "mobile sources, solvents and fuel combustion." (PEIR 4.2-10) Table 4.2-3 does not claim that NO_x levels in the City of Hanford exceeded State or Federal standards during any days in the last three (3) years. The PEIR never says that NO_x is a product of manure decomposition. (See 4.2-29-37). Yet, the PEIR requires that a new or expanding dairy must submit to the County a Manure Treatment Management Plan under which manure is to be treated to reduce NO_x emissions, among other things (PEIR 4.2-40 and 4.2-68). If the PEIR is serious about this, where is the evidence in the record that establishes that manure decomposition, as it occurs in current dairy systems, on an unmitigated basis, produces sufficient NO_x to significantly affect ozone levels in the County? If there is no such evidence, treatment of manure to reduce NO_x emissions must be deleted from the PEIR. 21-27

F. ODORS.

To the extent that odors produced by dairies are caused by methane, ROGs, hydrogen sulfide, and ammonia, I have already submitted my comments above. To the extent, however, that dairies produce odors caused by other products, the EIR has failed to include any evidence or data whatsoever about any such other products. Therefore, in the absence of such, the PEIR should conclude that such evidence is unavailable and/or too speculative, and that no further discussion or mitigations shall be proposed. The County already has in place "buffer zone" requirements to mitigate odor problems with neighbors. 21-28

G. AIR QUALITY MITIGATIONS

Because the PEIR simply has insufficient credible evidence to show that emissions coming from new and expanding dairies in the County may have a significant effect on air quality, the PEIR should make a finding of insignificant effect, and eliminate consideration of new mitigations for these alleged emissions. Although that is our most fundamental objection to the air quality mitigation sections of the PEIR and the proposed Dairy Element, there are other reasons to criticize the PEIR's treatment of the subject of mitigations. 21-29

We have found the proposed mitigations to be ill-considered, ill-analyzed, and ill-reasoned. They lack analysis of whether the adverse air quality effects of the mitigation measures themselves are as great or greater than the alleged air quality problems they purport to mitigate. For example, the PEIR proposes applying water to unpaved corrals to suppress fugitive dust. (PEIR 4.2-41). Yet, the PEIR fails to mention or evaluate the environmental effect of the water vapor emissions resulting from the water spraying in terms of increased humidity or thermal trapping effects. As another example, the PEIR proposes manure management procedures to reduce emissions from manure decomposition. (PEIR 4.2-67). Yet, it fails to mention or evaluate whether the amount of exhaust emissions from the equipment performing these procedures would be more troublesome to air quality than would be the amount of emissions these procedures were intended to reduce. Boiled down to its most basic, the question should have been whether the "cure" was worse than the "disease." The PEIR fails to cite or include facts or evidence that these mitigations will meaningfully accomplish what they purport to. 21-30

The PEIR fails to adequately analyze its proposed mitigations from the standpoint of their economic feasibility, with one exception. It does address the issue of digester and methane recovery systems, where it expresses concern about whether digesters are economically feasible. (PEIR 4.2-20). As to its other significant mitigations, such as use of chemical additives, lagoon covers, composting, and aerobic treatment, it does not examine whether they would be economically feasible. In order to be an economically viable concern, a dairy must be able to successfully compete on a level playing field with the many existing dairies in the state. With such issues in mind, the PEIR needs to estimate the additional costs of implementing each mitigation measure, and should compare it to the absence of such costs by the many existing dairies in the state which are not subject to these mitigation requirements. The PEIR needs to assess whether the additional costs would be significant enough to make the new operation uneconomic. This brings us to the next difficult aspect of economic feasibility. Such evaluations are highly dependent on assumptions and projections which may turn out to be false. Let us not forget that very recently "experts" were predicting widespread rolling blackouts and $3.00 per gallon gasoline this summer in California. Need I say more? 21-31

In conclusion, we dare not enslave new dairies with costly and burdensome servitudes for which the need therefor or the efficacy thereof has not been clearly made.

II. WATER QUALITY ISSUES

Protection of the County's surface and groundwater is the responsibility of and regulated by the Central Valley Regional Water Quality Control Board ("RWQCB"). For many years, the Kings County Planning Agency issued Conditional Use Permits for new dairies, specifying that the dairy must receive a Report of Waste Discharge permit from RWQCB, as one of its conditions. Such 21-32

permits obligate the dairy to comply with and operate under all state and federal rules and regulations intended to protect surface and ground water. RWQCB has over thirty years of experience in working with and monitoring dairies and should be familiar with what steps and procedures are needed to protect our water resources. In view of this, the PEIR and Dairy Element portion of the County's General Plan does not need to propose any mitigations or requirements relative to surface and ground water protection which are the same as, depart from, or are in addition to, what is required by the RWQCB. All that is needed is for the Dairy Element to require all new and expanding dairies to obtain waste discharge permits from RWQCB. Otherwise, the County's intrusion into this area will only result in unnecessarily duplicative requirements, at best, and confusing or conflicting ones, at worst. RWQCB has clearly pre-empted the subject matter, into which the County should not tread. Thus, with respect to the matter of water quality considerations, the PEIR and the Dairy Element should merely specify that new and expanding dairies must comply with all State, Federal, and RWQCB rules and regulations relative to protection of our water resources.

21-32 Cont.

III. STATEMENT OF OVERRIDING CONSIDERATIONS

"CEQA requires the decision-making agency to balance, as applicable, the economic . . . benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic . . . benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered 'acceptable.'"[29]

21-33

Therefore, let us examine some economic data relevant to Kings County. For the year 2000, the national unemployment rate was 4.0%, the State of California's was 4.9%, and Kings County's was 14.0%, ranking it 53rd out of California's 58 counties. This was not a one year aberration, as Kings County's rate was 13.1% in 1999, 13.8% in 1998, 13.1% in 1997, and so on.[30] Indeed, Kings County's 2000 unemployment rate was higher than the highest unemployment rate ever experienced by the nation since 1940, at the onset of the nation's involvement in World Ward II.[31] The San Joaquin Valley's per capita income in 2000 was $20,364.00, compared to the Bay Area's $41,129,

---

29 CEQA Guidelines, Section 15093(a).

30 Employment Development Department ("EDD"), Labor Market Information.

31 U. S. Government, Bureau of Labor Statistics, Civilian Labor Force Data (ftp://ftp.bls.gov/pub/special.requests/lf/aatl.txt)

less than half.[32]

Many people would agree that Kings County is so depressed economically that it is obligated to do its utmost to attract new employment opportunities to the county. Leprino is presently building a new cheese plant west of Lemoore, creating the need for milk from 100,000 cows. But construction of new dairies has come to a standstill, stopped by a Bay Area organization's concern about what new dairies would do to our local environment. Let us examine what a new dairy does for the economy. Each new 3000 cow dairy would bring $10,000,000.00 of new revenue to the County's economy each year in terms of milk and beef income. Each such new dairy will provide year-round, full-time employment for at least 30 families. And all of the foregoing does not take into account the multiplier effect—the new jobs created to haul and process the milk, to grow the feed and provide the other supplies and services that each new dairy will need. 21-33 Cont.

While the bulk of my comments have been dedicated to showing how and why new dairies will not have a significant effect on air or water quality, I suspect there will be those who still disagree. But for those who disagree, it would be difficult for them to deny that this County's economic distress is of such magnitude that the environmental concerns pale in comparison. They should be willing to agree that the environmental effects are "acceptable," as provided in Section 15903 of the Guidelines. 21-34

Very truly yours,

GRISWOLD, LaSALLE, COBB,
DOWD & GIN, L.L.P.

By: _____
MICHAEL E. LaSALLE

MEL:mjd
Attachment: Appendix of Technical Papers.
Clients represented:

Gary Esajian
Robin Martella
Neves Farms
Newton Farms and Newton Brothers
Westlake Farms
Wood Bros.

c:\wp51\mel\misc\peircomm.nts

[32] Johnson, H., Public Policy Institute of California, from data from Federal Bureau of Economic Analysis.

APPENDIX

TO

GRISWOLD, LaSALLE, COBB, DOWD & GIN, L.L.P.

P.E.I.R. COMMENT LETTER

DATED SEPTEMBER 10, 2001

TAB NO.

1 U. S. Environmental Protection Agency, *U.S. Methane Emissions 1990-2020: Inventories, Projections, and Opportunities for Reductions*, Sept. 1999 (EPA 430-R-99-013), p. 1-1 to 1-5.

2 Hoyt, Douglas V., Schatten, K. H., *The Role of the Sun in Climate Change* (New York: Oxford Univ. Press; 1997) p. 86

3 Hoyt, D.V. Schatten, K.H. "A Discussion of Plausible Solar Irradiance Variations, 1700-1992," *Journal of Geophysical Research* (1993) Vol. 98 18904

4 Spencer, R.W., Christy, J. R., Grody, N.C., "*Global Atmospheric Temperature Monitoring With Satellite Microwave Measurements*," *Journal of Climate* 3, pp. 1111-1112.

5 Douglas, Bruce C. "*Global Sea Level Acceleration*," *Journal of Geophysical Research* 97, pp. 12699-12706.

6 Essenhigh, R. H., "Does CO_2 Really Drive Global Warming?" Chemical Innovation, Vol 31, No. 5 May 2001, pp.44-46.

7 Kuo, C., Lindberg, C., and Thompson, D.J. (1990) *Nature*, 343, pp. 709-713.

8 Strahler, A.N., et. al., Environmental Geoscience (Hamilton Publishing Company: 1973) p. 30.

9 Essenhigh, R., Letter to Editor, *Wall Street Journal*, October 10, 2000; see

10 Lamb, H.H., *Climate, History and the Modern World*, (1982) Routledge, London, pp. 171-210.

11 Zhang, R., "Biology and Engineering of Animal Wastewater Lagoons," undated, p. 4-6

12 Radian Corporation, *Evaluation of Emissions From Selected Uninventoried Sources*, 1988 p. 5-4.

13 Halberg, Earl D., *Engineering Report on Area Source Emissions From Livestock Waste*, 1984, South Coast Air Quality Management District, p. 2.

14 KVB, Inc., *Control of Hydrocarbon Emissions From Stationary Sources in the California South Coast Air Basins*, 1978, prepared for CARB, p. 2-79.

15 U. S. Government, Bureau of Labor Statistics, Civilian Labor Force Data (ftp://ftp.bls,gov/pub/special.requests/lf/aatl.txt)

16 Employment Development Department ("EDD"), Labor Market Information.

United States Environmental Protection Agency

Office of Air and Radiation (6202J)

EPA 430-R-99-013
September 1999

EPA U.S. Methane Emissions 1990 – 2020: Inventories, Projections, and Opportunities for Reductions