Frances P. Lazear, DVM

20508 Brimstone Rd,

Cedaredge, CO 81413

To Whom it May Concern,

My name is Frances P. Lazear, DVM. I am a local veterinarian, graduate of Cornell Veterinary School, licensed in Colorado since 1976, with an interest in zoonotic diseases and epidemiology. I have twice submitted specific concerns based upon hazards documented in the scientific literature to the BOCC regarding the Western slope Layers farm. I do not feel my concerns have been addressed during either hearing. On the second occasion I included scientific references to back up my statements. My understanding is that my letter and references were dismissed because the commissioners claimed that the referenced journal articles were dealing with larger facilities. This is not true for most of the cases, indicating that the references were not read or considered by the commissioners. A smaller facility can have similar effects as a larger barn in many cases, especially if the setback is not adequate. Since hazards to public health have been documented in similar confinement operations, and public health has already been impacted by the Western Slope Layers operation, the commissioners should be required to justify how these hazards are being addressed rather than being dismissed.

A University of Georgia article, "Nuisance Myths and Poultry Farming" has been used to claim the poultry farm is compatible with a neighborhood. The article is very general and cannot be used to predict what is happening in specific cases. Furthermore it is a cooperative extension article, not a scientific paper, and extension promotes agriculture, leading to bias in statements made in the article. It is stated that the exhausted air from tunnel ventilation systems only extends 50 feet before being dispersed into the atmosphere. This is a misleading statement. The endotoxins, bacteria, and minute particles exhausted will travel much further than this when "dispersed into the atmosphere". It is the concentration and toxicity of the dispersed contaminants that reach the neighbors that determines pathogenic effects on the humans and animals that are exposed. Small particulates, endotoxins, bacteria and mold spores, due to their size, will travel much farther than the dust visible in the fan emissions. Also relative humidity may determine the distance that noxious particles can travel. The conditions in Georgia (high humidity) favor earlier settling of particles and prevents the fans from picking up particles from the hen houses. The very low relative humidity in this area of Delta County favors dispersal of particles from the hen house floor and facilitates much longer dispersal of these particles through the atmosphere. Due to the low humidity of this area, even misters in the building will not provide adequate moisture to mitigate the problem. It just is not possible to raise the relative humidity in the facility to the 70 to 80% relative humidity the design of the hen houses requires for proper functioning. For these

cage-free, tunnel ventilation facilities to work as advertised, the humidity needs to be 70-80%. No amount of misting in that facility can come close to creating that. So without the humidity to help form the manure pack, the manure simply dries quickly and is pulverized by the hens walking, scraping and dusting in it, and then it's discharged in numerous ways.

The U of Georgia extension article further states that many chicken operations are family farms, with the farm family living on the premises implying that there must not be a problem if families can live there. However, some of the references that I quoted in my second letter to the BOCC state that the toxic atmosphere in these barns is such that workers should wear hazard suits and respirators when working in the barns, and that the suits should be disposed of at the facility. Workers who wear contaminated clothing home have been known to cause allergic illnesses in families from exposure to particles clinging to the clothes. If the chicken farm in question is not adhering to these standards it is likely they are out of compliance with recommended procedure. (see Donham et al. Dose-response relationships between occupational aerosol exposures and cross-shift declines of lung function in poultry workers: recommendations for exposure limits. J. Occup Environ Med. 2000 Mar; 42(3): 260-9). Also see Heederik D, et al. Health Effects of Airborne Exposures from Concentrated Animal Feeding Operations. Environ Health Perspect. 2007 February; 115(2): 298-302. Also see Langley R. Consequences of Respiratory Exposures in the Farm Environment. N C Med J. 2011; 72(6):477-480. These three references were included in my second letter to BOCC.

My concerns involving the air testing done by Plateau Incorporated for Delta County:

1. The test was not done as a surprise visit, and the Hostelers applied a layer of sawdust to the floor to prevent the dispersal of particles associated with the manure several days prior to the test. Also the vent fans were run at low speed rather than the normal high speed used during warm afternoons. When looking for problems with air quality the testing must be done during conditions which favor the maximum dispersal of contaminants. For these reasons this survey was slanted in favor of the applicant. I also have concerns that Plateau's type of testing is based on OSHA industrial air regulations (Mr Lakin is an industrial hygienist engineer) and was not the type of testing that needs to be done here, where medical issues are a special concern. Note that severe illnesses have been occurring in neighbors bordering the facility, compatible with illnesses associated with hen houses. Letters to Mr. Nordstrom document these health problems, but action has not been taken to address these issues. This represents a distinct cluster of illnesses which has appeared since the henhouse operation began. Timing of the illness cluster should be a red flag and the health department should be addressing the problems aggressively. The serious nature of the health problems should require the shutting down of the operation to see if the illnesses abate over time. Anything short of this reaction constitutes an unconscionable disregard for the health of the neighbors.

2. I am concerned about the lactose fermenting gram negative rod they found in their testing. It was not identified by genus and species even though it was listed as an organism of concern. It was overwhelmed by other growth on the plates. However it is likely that it could have been identified if further testing had been pursued. Note that Yersinia species fall into this category, and plague is one of them. Plague can be transmitted by aerosols. When inhaled it causes the most deadly form of plague, a very fast acting pneumonia. I feel identification of this organism should have been further pursued.
3. There were a large number of particulates 1 micron and smaller. Note that particulates 1 micron and smaller are able to penetrate deeply into the lungs, and are much more likely to cause problems (including severe lung damage) than larger particulates.
4. The elevated ammonia levels in the chicken house and air evacuations can be a significant health issue. Cold air drainage can trap both the particulates and ammonia close to the ground at night, resulting in concentrations which are significantly higher than that found during the day, and may be producing some of the illness symptoms described by the neighbors. Further testing would be prudent, especially during conditions conducive to concentration (settling of cold air during very calm nights).

Submitted by:
Frances P Lazear, DVM
Frances P. Lazear, DVM

April 30, 2013