- 1. Some dairy lagoons are in flood plains. During flooding this would allow chemicals and pathogens to run onto domestic properties and homes, groundwater and nearby streams and rivers. No lagoons should be allowed in any flood plain.
- 2. I am aware that the size of riparian buffers is controversial for farmers and dairy owners. I suggest that the riparian buffers be large enough to protect surface waters and that the legislature be encouraged to provide moneys for farmers and dairy owners for the land that they cannot use.
- 3. Because of anaerobic conditions in manure lagoons the methane produced contributes to climate change. One option is to require aeration of lagoons. Cows on green pasture do not need lagoons and contribute much less to methane production.
- 4. Tile drains can contribute significant amounts of nitrogen and phosphates to waterways. Shouldn't the discharge site be monitored occasionally?
- 5. Because of the effect of high phosphorous in waterways, shouldn't soil be monitored for phosphorous as well as nitrates. Elevation of either should restrict inorganic fertilizer or manure applications on crop land.
- 6. I believe that groundwater monitoring of wells at least twice a year need to be required down current of any CAFO that has over 500 head. How else will the public know that the manure management that the Department of Ecology, Department of Agriculture and the dairy owners are claiming that they practice are actually working. Remember that the Cow Palace case that went to federal court and the measurements done after the court case showed that 60% of wells one mile down current of these dairies had elevated nitrates.
- 7. There is no need for further study of whether synthetic liners are needed to replace earthen nitrate barriers below manure lagoons. Measurement taken below the earthen barriers of evacuated lagoons show significantly elevated nitrate levels in the soil. When the Bosma dairy decommissioned their lagoons, soil testing under just one lagoon showed total nitrogen levels of 83-149 at 0-12", 26.8-103 at 36-48" and 52.8-124.3 at 108-120". Clearly earthen barriers do not work for manure lagoons. Too many innocent neighbors of large dairy companies must buy bottled water or install and maintain reverse osmosis systems. It is time to force the dairy owners to do what is right for their neighbors.
- 8. Down current monitoring of lagoons for nitrates and pathogens should be required if synthetic liners are not required.
- 9. Employees of the Washington State Department of Ecology should lobby the legislature to allow Ecology to monitor the CAFO permit performance rather than Agriculture. Agriculture is biased toward supporting dairies rather than improving the environment for innocent neighbors.

Dean Effler MD, FAAP 2334 Cook Rd. Yakima, WA 98908 509-952-9574 Fotc94@gmail.com