

**CITIZEN ADVISORY COMMITTEE for the
GENERIC ENVIRONMENTAL IMPACT
STATEMENT (GEIS) on ANIMAL AGRICULTURE**

**Meeting Notes
January 9 &10, 2001
Holiday Inn, Arden Hills**

CAC members or alternates in attendance: Gary Allen, Ken Albert, Pat Bloomgren, Fraser Hart, Gretchen Sabel, Andy Steensma, Pat Henderson, Harold Stanislawski, Paul Burns, Tim Tracy, David Preisler, Tom Dunnwald, Galen Lisell, Troy Gilchrist, George Raab, Myron Just, Kristin Sigford, Tina Rosenstein, Helen Palmer, Mara Krinke, Dennis Bottem, Bob Ferguson, Dave Roben, Jim Tunheim, Kent Sulem and Larry Schultz

CAC members not represented: Chris Radatz

EQB staff present: George Johnson, Gregg Downing and Angela McGovern

Facilitator: Virginia Pierce, Management Analysis Division

Guests: Paul Toren, EQB Boardmember, Matt Drewitz, MDA, Andy Ottness

The meeting came to order at 9:30 a.m.

Welcome, overview, and introductions

The meeting opened with remarks by George Johnson. He asked the two new alternates, Mara Krinke from the Land Stewardship Project and Dennis Bottem from the Cattleman's Association to introduce themselves. Then Mr. Johnson asked all the CAC members at the table to introduce themselves to our new members.

Mr. Johnson then provided an update on the progress on the Technical Workpapers (TWP's). He indicated that he was sorry about not being able to FedEx the materials for this month's meeting to the CAC members until late the previous week. Many CAC members did not receive their package until the Monday prior to the meeting. This mailing contained two draft TWP's and one interim final TWP along with memos and revised schedules. Most CAC members had very limited opportunity to review their materials prior to the meeting.

Marlene Halverson, the Animal Welfare TWP consultant, who was scheduled to present first thing that morning, had called with car trouble and left a message at the EQB office. She indicated she would be about one half hour late. This gave the CAC an opportunity to discuss several project issues, including scheduling and the development of policy recommendations.

Virginia Pierce discussed the area of policy development and recommendations with the group. She also reiterated the ground rules for CAC discussion. This initiated a preliminary checkin by some CAC members. Mr. Lisell pointed out that our rules of civil discourse work to prevent someone who strongly disagrees with the viewpoint being expressed. The requirement to wait your turn often makes it appear that the group agrees when some members may actually have strong contrary opinions.

Ms. Rosenstein indicated that the facilitator should be sensitive to the nonverbal cues indicating discomfort with the views expressed and occasionally ignore the order of cards raised if someone seems agitated or anxious to speak. Mr. Albrecht advised patience on the part of the group when a controversial point was raised. He indicated that CAC had been debating these topics for more than two years already, anyone should be able to wait a few minutes to have their say, if it is that important to them. He counseled that a little delay often tempers a quick over-reaction to someone else's remark.

Policy development is a difficult long-term process. CAC will need to continue to work on this for the rest of their time together. Part of the reason that CAC was formed was that the Legislature found the issues and policies regarding animal agriculture to be extremely complex and inter-related. The Legislature is somewhat impatient and was expecting CAC to have completed their process prior to the 2001 Session. Any policy suggestions that the CAC is able to reach consensus on, will carry great weight with the EQB and the Legislature given the diversity of stakeholders on the committee and their long deliberations. A mechanism will be provided to list minority viewpoints along with the consensus of the group.

While the Legislature is in session, individual CAC members may talk freely with any elected representative or their staff. However, the CAC member must make it clear that they are speaking for themselves and not expressing the will of the entire CAC. Any request for the CAC or EQB's stand on an issue should be directed to George Johnson or Mike Sullivan for response. Announcements were made on a Livestock Odor workshop and upcoming speakers. Dr. Thomas Blaha from the University of Minnesota indicated that he might be able to speak on the MN Cert program at the February meeting. The EPA Region 5 CAFO manager will be in town and is willing to speak at the March CAC meeting. Due to the heavy workload and time constraints on CAC, speakers will be limited to no more than one per meeting.

Mr. Dunnwald stated that he thought one way to overcome the barrier to policy development was to insert an intermediate step. He thought that after each TWP was presented the group should try to identify the major issue areas first. Once the issues had been elucidated the group could then think about what policies are needed to deal with the issues. Ms. Palmer asked about how we went from TWP's, issues and policies into the draft GEIS. At some point we need to involve our technical writer in the process.

The process of successive revisions as we proceed through the TWP's is rather daunting to the CAC. Mr. Albrecht suggested that we try to focus on positive improvements that could be made to farming practices. Don't be too specific. Allow room for creativity.

We must allow flexibility for things to evolve as changes occur. Mr. Lisell advised that we should not give too many detailed recommendations, which could be ignored. He suggested focusing on a few important things that would be noticed. Dave Roben announced that Ed Heglund's wife had just delivered a baby girl, which was why he could not attend the meeting.

ANIMAL WELFARE TWP

The main topic for discussion on the first day of this meeting was the draft TWP on Animal Welfare by Marlene Halverson. Ms. Halverson began by presenting the rest of her draft TWP, focusing on the housing alternatives and policy differences between Europe and the United States. CAC members were asked to limit their questions during the first portion of her presentation.

Ms. Halverson began by commenting on the discussion that took place following her presentation at the December 2000 CAC meeting. She felt that some of the comments were a personal attack on her credibility. She discussed the broad conceptual and philosophical framework within which CAC would make their recommendations. European codes of practice on treatment of food animals were presented as a potential model. Ms. Halverson rebutted a few of the comments raised by CAC in December's meeting. She talked about the relationship between Salmonella bacteria and bedding. While the allegation was that straw bedding provides a site for the bacteria, Ms. Halverson asserted that in fact the composting which occurred in deep straw bedding actually suppressed Salmonella concentrations. She actually discussed the incident and frequency of mastitis with different types of bedding.

Ms. Halverson compared pork production in the United States and the United Kingdom during the same periods. She indicated that production trends were very similar and could be explained almost entirely to economic forces. In her analyses of the data there did not appear to be substantial differences due to the differing animal welfare practices in the two countries. Ms. Halverson defended the expertise of her project advisors, citing them as world experts in their field. She showed a number of textbooks, journals and thesis' dealing with animal welfare issues. These references largely originated from the European Union. Many of the documents she cited are listed in the bibliography to the Animal Welfare TWP. Many of the European countries heavily stress cooperation between the farmer's groups and the government to promote and protect animal agriculture. Ms. Halverson felt the USA had a great deal to learn from European practices.

Ms. Halverson presented a model she had obtained from the Veterinary Public Health Division of the World Health Organization called the "Health Triad" This model considers the reciprocal relationships between the animals, the environment and people, not just the functionality of the animal unit. The model is a general one that can apply to wildlife as well as domesticated animals. The model provides an easy basis to integrate the holistic environmental concepts of animal welfare. Animal welfare can be seen as a bridging concept between human, animal and environmental health.

Ms. Halverson cited a number of the developments in Sweden and other parts of Europe in the 1960's and 1970's that set the stage for the evolution of their policies on animal welfare. The issues of consumer health and product quality heavily drive their philosophy. Ms. Halverson challenged the CAC to develop their own vision of an approach or philosophy to animal welfare. She stressed that it is important to take this matter seriously. She said that the state of the animal is the common strand that ties together all the aspects of the GEIS.

European law requires that animals used for meat production be provided living conditions that enable them to behave naturally. This involves at a minimum; adequate food, water, and space to allow the animals exhibit their instinctive behaviors. The Swedish government, for example mandated a set of animal welfare standards, published implementation materials and established a ten-year period to phase in the new program.

Ms. Halverson demonstrated some of the swine housing alternatives developed in Sweden in response to changes in animal welfare laws. One major system involved deep-bedded hoop barns with individual feeding stalls. Sufficient area was provided to give swine room to express their natural feeding and rooting behavior. Studies of sow mortality under these conditions showed less fighting decreased animal mortality and increased feed productivity. Deep straw bedding promotes composting of manure and results in better overall sanitation.

Technology transfer is needed to help Sweden adopt U.S. systems. One of the big issues is how are we going to adapt technology to meet the needs of the smaller scale farmers. The issue is do we want more farmers or do we want more commodities. We seem to be losing farmers even as we get more products at lower price. In America, the inertia of progress seems to overwhelm the social goal of preserving family farms. The only viable alternative seems to be directing smaller scale farmers to high quality niche markets or specialty products where they can charge more to offset higher unit costs. Another factor discouraging many people is that farming is extremely hard work involving a great deal of risk-taking. Many Americans today prefer easier ways to make their living.

During the question and answer period Ms. Halverson addressed the issues of Mad Cow Disease (BSE) in Europe. When asked about the major issues requiring policy changes in the US, Ms. Halverson responded that intensive confinement of food animals, genetic selection for limited traits in animals, subtherapeutic antibiotic use in animals for growth promotion were her major concerns. Ms. Halverson was particularly appalled at the surgeries we do on food animals as part of their confinement. These included beak trimming in poultry, tail-docking in cows and pigs. According to Ms. Halverson, it seems like we are trying to fit the animal to the system rather than the system to the animal. Transport and slaughter were raised as areas of particular concern in animal welfare. Ritual slaughter by the Asian community is an increasing difficult social issue in Minnesota. Consumer confidence in meat products is becoming a major economic factor in the United States. People are reducing their consumption of meat, in part due to the health concerns associated with meat production and processing.

One CAC member asked why US producers do not follow the same practices as their European colleagues. Ms. Halverson attributed a great deal of the difference to the social and economic differences between the two societies. Subsidies are used in Europe somewhat differently than in the US. A stronger emphasis is placed on preserving farmland for aesthetic reasons to help preserve European farmland. National food security also seems to be a much more visceral issue to the EU, probably due to the recent memories of famine and deprivations during World War II. Food security is the cause behind many of the European policies.

Ms. Halverson cautioned the group that changes in major policies require a time lag. As new producers come on line and old producers upgrade and expand, they can gradually move forward progressively towards improved policies. Ms. Halverson also pointed out that US producers should admit that they are getting nearly as much in subsidies as European farmers. US subsidies are hidden more deeply and called other things, but it is a major misnomer to call American agriculture an example of free-market capitalism. If we want to compare farms in the United States and Europe we need to account for the hidden costs in both systems.

Establishing niche markets for organic or higher quality agricultural products is one way to allow smaller specialty producers to penetrate the marketplace. There is always a demand for quality, but the vast majority of Americans are concerned mainly with the lowest cost commodities. Mr. Stanislawski posed three major questions. He wanted to know; the cost of food as a per cent of income in the various countries, the incidence of consumer related food illness in USA vs. Europe and “Are the Americans willing to pay the increased costs of these actions?” He also pointed out that many of the issues we were addressing were under federal, not state jurisdiction. Mr. Stanislawski stated that one solution to the problem of differing food quality would be to develop certification standards for food products. This mechanism would allow the marketplace to label items and enable consumers to more intelligently select the food products they desired.

Mr. Bottem from the Cattleman’s Association raised the issue that in Europe they use a concept called the multi-functionality of agriculture. Many Europeans stress that environmental preservation of farmland is an extremely important social good. This attitude is much stronger there than in the USA, where we do not seem to treasure our land so highly. Mr. Bottem provided statistics indicating that European farmers were subsidized at an average level of \$ 300/acre, US farmers at \$ 30/acre. In Japan, farmers are subsidized at approximately \$ 3,000/acre. He also pointed to the disturbing trends in South America converting forest and grasslands to food production with little concern for environmental protection.

Mr. Dunnwald pointed out the important role economics was playing in discussions of animal welfare. He inquired about the level of consumer confidence and the willingness of the Swedish people to pay a higher price for their supposedly higher quality food. Ms. Halverson said that quality was an important issue to the Swedes and they were suffering some problems due to becoming part of the EU.

She said that initially some people switched to lower costs lower quality imports, but that most switched back after discovering that there is some relationship between price and food quality.

Ms. Krinke from Land Stewardship talked about the multi-functionality of agriculture as a source of social stability and aesthetics in rural areas. She stated that the United States provided over 28 billion dollars of agricultural subsidies last year as emergency payments alone. There other subsidies hidden as public costs for power, water and infrastructure which benefit farmers and ranchers disproportionately. She felt that if we are going to spend all that money we should be able to obtain some environmental and social benefits as part of the arrangements. A lot of the multifunctionality approach of other countries was a result of food security issues that occurred mainly during the Second World War. The USA never experienced widespread famine, so they don't have this orientation.

Mr. Johnson made some remarks about the revised flow chart for the TWP and GEIS process dated January 11, 2001. In the discussion about animal welfare many peripheral issues came up. Topics raised included economic impacts, global agricultural markets, social systems, public health, environmental impacts, history, philosophy and international policy. Mr. Johnson passed out an article to the CAC from the September 2000 issue of World Watch magazine titled "Who Needs Farmers?"

The CAC then began its initial policy discussion on animal welfare. This was intended to be a brainstorming session where CAC would try to get its arms around the most important issues they were aware of from the perspective of animal welfare. It was a general check-in on the group's level of comfort with the TWP work.

Mr. Sulem advised the group that we can't dismiss possible changes because these might be controversial. The need for federal involvement in a policy should not prevent CAC from discussing a policy option or recommending that it be adopted at a state level. Dr. Hart raised a point of style. He characterized the difference between "good science" and "bad science". He said that "good science" is not self-conscious. "Bad Science" continually reminds the reader that the work is so scientific. He felt that the Animal welfare TWP over-used the label of science. He felt we were getting an ideology masquerading as science. Dr. Hart stressed that while he felt the ideas were an important part of the GEIS, we actually harmed our credibility attaching an excessively scientific patina to this opinionated material. He noted that in some respect these ideas are anti-American, anti-capitalist and socialistic in orientation.

Mr. Lisell felt Ms. Halverson made a good effort to bring forth scientific information in her work. He felt that the presentation led to some good discussion of options and alternatives. One alternative was to have no rules and follow the rules that are least limiting. The changing markets means that we can't stop at the US borders any more. We need to look at what is going on world wide. This invariably results in American farmers competing against third world countries where health regulations and environmental standards are much less stringent. He asked, "Do we really want to have a third-world environment in our country in order to compete on the world market?" and

“Do we want to pay our farmers according to what they get paid down there?” or “Are we going to go a different route? Set our standards for production a little higher and pay our farmers a living wage?” American farmers just will not be able to compete on a world market given the standards in other places.

Mr. Dunnwald stated that the discussion today was very fruitful. He felt we had raised many important issues. He could now think much deeply on the issue and would be prepared to make policy recommendations at the next meeting. Mr. Albrecht said that we have to raise ourselves beyond our beliefs. Public opinion has shifted dramatically in the past and will do so again. He recommended a book he just read called “Voodoo Science” This book deals with scientific topics and shifting public opinion that resulted in policy changes. This is a continuous process we are participating in. CAC needs to make policy recommendations that will go to the Legislature. They will act on the basis of public opinion and decide what can be enacted into law.

Mr. Preisler mentioned some research that was going on at University of Minnesota Experiment stations looking at alternative animal housing options. The Pork Producers sponsored and supported some of this activity. U of Minnesota just set up a center to research disease eradication in food animals. The MNCert animal agricultural food certification program is conducting a pilot project right now. All of these activities address questions being raised in the GEIS discussion. Mr. Preisler stressed that the producer groups are taking a very proactive approach in trying to deal with some of the perceived problems in animal welfare. He felt that we should not emphasize only the negative aspects while ignoring the positive work that is going on under the auspices of our universities and industry-sponsored research projects. It is more important to build things up rather than tearing things down to make other things look better. Mr. Preisler said you have to be careful how much you regulate things. If you over-regulate a niche market you can drive it right back into a commodity market again.

Ms. Rosenstein stated that we should make mention of the alternative housing systems that University of Minnesota is currently researching. In her estimation the economic viability of the animal industry is so tenuous that we need to be extremely careful of pushing anything over the edge with even slight modifications in rule or standard. She counseled that our policy recommendations go slowly and carefully. Gather the relevant monitoring information on what is happening. The major priorities in her opinion are clean water, clean air and economic viability of our farming economy. Mr. Lisell advised that animal farmers should be required to take a certain amount of continuing education annually to keep up with the changes in the industry. Mr. Stanislawski supplemented this idea by suggesting that every Minnesota High School student be required to take some instruction in Agriculture as part of his or her graduation standards.

Mr. Dunnwald suggested that we need to look at the environmental and economic impacts of any change in agricultural practices. For example, he posed the question what exactly is the economic impact of subtherapeutic use of antibiotics. We seem to be heading towards a policy recommending the restriction of this practice, yet the use must have evolved from rational reasoning. This practice must have had a positive, real

cost-benefit ratio to be as wide-spread as it has become. Mr. Steensma related some of his experiences as a farmer. He indicated that he felt we needed to give the consumers more options. His experience with debeaking chickens and docking pigs led him to believe that this practice was much less barbaric than had been portrayed by Ms. Halverson.

Ms. Sigford elucidated some of the issues she saw as important. These included ;

- What practices promote animal well-being?,
- Should those practices be mandated or just encouraged financially?,
- How much will this cost in a system where the farmer can't always pass on the expense to the next level?,
- How can practices that promote well being be used to advantage in the marketplace?, and
- How can we reach producers and help with educational, financial and technical support?

Ms. Krinke said that we need use labeling and help farmers with processing and distribution, so they can get things to market. Ms. Pierce summarized her observations of the meeting up to that point. She said that towards the end of the meeting several policy recommendations began to appear. First we might be able to agree with the philosophy that Mr. Preisler voiced of building things up, not tearing things down. We need to find ways to support efforts that are already going on. We should build on existing projects and collect relevant data to provide the basis for our recommendations. Mr. Albrecht advised us to always be flexible and anticipate future unforeseen changes to the system.

Air Quality and Human Health TWP's

The main topic for discussion on the second day of this meeting was the draft TWP on Air Quality and the interim TWP on Human Health by EarthTech. Mr. Johnson introduced the alternate for Mr. Steensma, who could not attend the second day of the meeting.. Mr. James Tunheim , a former State Legislator from Northwestern Minnesota is now working for the Farmer's Union.

At the start of the second day of the January meeting CAC was polled on their reactions to the previous day's events. Ms. Pierce typed up the list of CAC's initial ideas from the previous day. She passed this out to the group. Mr. Johnson made some introductory remarks on the topic of Human Health. He indicated that he did understand how complex this topic was. It seems to overlap with every other area of TWP study to some degree.

Mr. Schultz had initially indicated that he felt we had an adequate regulatory system for feedlots. After reviewing the draft TWP on Air Quality he expressed some reluctance with his original statement. Mr. Lisell expressed even stronger reservations with the adequacy of the present regulatory system. His personal experience with MPCA led him to be dissatisfied. He felt that MPCA did not have enough staff in the field to do their job. Mr. Lisell took particular issue with the exemption to air standards permitted during the

pumping of manure pits by the current feedlot law. Ms. Sigford questioned the adequacy of the current regulatory system both with regard to the law and the resources MPCA had to enforce the law. She agreed that further research was required in many areas of feedlots. She also focused major concern on the public health issues of feedlots, particularly BSE. Mr. Albrecht advised against over-specificity in our recommendations and policy ideas. He reminded the group about how much had changed in the last two years. We should stay flexible enough to deal with new challenges as these arise.

Ms. Sabel said that we need to expand the list of unknowns to include PM(10), endotoxins, volatile fatty acids, organic dust, fungi and other allergens. These are some of the topics where additional research is needed. We need to link the concerns for human health with manure application and handling. These issues need to be addressed in the Soils and Manure chapter as well as the Human Health TWP. It must be recognized that manure amended soils are potentially a significant source of agents affecting human health.

CAC has been wrestling with the dilemma that although their charge is only to develop state level policy, Minnesota cannot be isolated from the rest of the country or the world. Several times the issue was raised that some of these policy changes need to take place at the federal or international level to be effective. There was substantial concern that making policy at the state level could backfire on our industry and make our producers non-competitive. One partial solution to this problem is to be sure that our state is an early adopter of the proposed policies taking place at the federal or international level. Our proposed policies should endorse and include some of the actions being proposed by the USEPA and the World Health Organization, among others.

Mr. Bottem reminded the CAC that in some areas the United States was far ahead of the rest of the world. He cited the example of BSE. He stated that one of the reasons this problem had not occurred in the USA is that our country had instituted policies 15 to 20 years ago to prevent this problem. He felt that it was ironic that now we are being called on to adopt policies similar to Britain's to prevent BSE when these policies have been standard operating procedure here for more than twenty years. Mr. Bottem felt that the public is not fully aware of the institutional safeguards used by food producers and processors in the USA. He reiterated his feeling that we have one of the safest, highest quality food supplies in the world.

Ms. Sabel asked Mr. Valentine to expound on what he thought the major issues in the area of Human Health were. Mr. Valentine said that EarthTech had tried to boil down what they thought the key issues were into a policy recommendation section at the end of the Human Health TWP. Mr. Lisell stressed the importance of public perception in dealing with health issues, such as BSE. Even if the science is not yet conclusive, consumers will be making purchasing decisions based on available data and how information is presented. He cited how limited the available data on BSE actually was. He advised that we cannot always wait for conclusive scientific answers before taking action. Mr. Raab suggested that we need to provide public education in front of the science.

Mr. Valentine and Mr. Russell from EarthTech made a brief presentation on the interim final TWP on Human Health. Mr. Valentine remarked on his experience working on issue where the public perception of science was involved. He said that we often overestimate the thoroughness of our scientific understanding. He said there are many cases where public opinion and concern has moved research into areas that needed further study. EarthTech provided a brief document to the CAC indicating specific areas where their previous comments and been used to revise and improve the interim TWP on Human Health. The general sense at CAC was that the document was very well done. CAC did comment on the overall tone and emphasis placed on certain areas.

Mr. Valentine felt one of the most important comments from CAC was the fundamental question of what are we actually trying to say about potential public health risks. He said that depending on which direction you were coming from EarthTech might be seen as overemphasizing issues and scaring people about public health or we were seen as dismissive of important issues. He said that he heard comments from both ends of the spectrum. EarthTech has tried, especially in the Executive Summary to provide a bit more clarity. He stated that while there are real issues, he does not want to minimize, in his opinion there is a good regulatory foundation in Minnesota to deal with existing and any future problems that might occur. While there is always room for improvement in monitoring, enforcement and public education all the components are in place for Minnesota to have an outstanding program.

Mr. Valentine stressed the importance of producers using Best Management Practices (BMPs) and linking these to performance standards. Standardizing production techniques and institutionalizing quality assurance techniques will go a long way to optimize product quality in this industry as it has in virtually every other case where the techniques were applied. As an example, he cited a nitrate standard in water. While it was a very complex issue, companies need to set a standard and stay below that level as a routine operating practice. When that performance standard is exceeded, this flag immediately signals corrective actions be taken to get back into compliance. Mr. Valentine also recognized that problems were not limited to only large or small operations. The quality of operations management at any facility is the most critical determinant of environmental and economic problems. This observation has surfaced from CAC many times in past discussions. However Mr. Valentine did point out that larger units with more animals do have a more serious impact in a case of catastrophic system failure.

Mr. Valentine encouraged the use and development of flexible standards in regulating the animal agriculture industry. He cautioned against a single-minded approach that does not allow any room for creativity and innovation. He advised that this policy recommendation was only a broad overview. In order to implement this approach performance standards based on ambient standards would be a reasonable starting point. He used the complexity of nitrates in water as an example of kinds of interactions one would have to consider in establishing such a set of performance standards.

Mr. Valentine stated that as a basis for moving forward, he felt that we needed to recognize that Minnesota presently has a solid regulatory framework. While there are gaps, which need to be filled, the basic program is in place and flexible enough to be modified as needed. Referring to the 1999 Legislative Auditors report on the Feedlot program, he stated that more follow up and enforcement were needed along with continuous public education. Mr. Valentine asserted that while there is substantial controversy on feedlot issues, all stakeholders are served if there is better information available to the public. Best Management Practices with performance standards are a cornerstone in any policy development scheme. The current regulatory structure needs to be augmented by flexible incentives and increased training of staff.

The USA typically has a difficult time getting all stakeholders together to agree to a consistent vision and coherent policy. The fundamental question here is where do we want to position Minnesota in the world agricultural economy? Do we want to specialize in something? Do we want to position ourselves in a particular market niche? This situation is much like strategic planning in a business. One needs to identify the overriding priorities and then focus all efforts on those priorities. Animal agriculture is similar to other industries, except perhaps there are more different voices sending differing messages. Right now there is no clear vision in agriculture. The producers are saying one thing, the regulators another and the public a third thing. Until all the groups unify behind a single vision, the struggles will continue among the stakeholders. We need to get the answers to the questions consumers are asking, but we also need to support the industry. Minnesota must have a healthy agricultural industry for our state to survive.

Ms. Henderson stressed that in her experience the concept of flexible incentives as proposed by EarthTech was an extremely important tool in accomplishing our objective of developing [policy and encouraging recommended practices. The discussion of the vision for Minnesota Agriculture is not new, but the dynamic seems to be shifting towards that concept of vision due to the increased pace of global change. Ms. Bloomgren indicated that to her and many others there does not appear to be a clear vision for Minnesota agriculture, other than the perception that while farming is good, the small farmer is bad. She wanted to know, Are we supporting all agriculture in Minnesota or just certain groups, big groups? She said that after being on CAC she actually understood the issues less than she did before.

Mr. Preisler reminded CAC of the importance of national politics on Minnesota Animal Agriculture. He said that since we operate in a national and international market, directives from the Federal government are critical to what can be done at the State level. In the USA the vast majority of the wealth and power is concentrated on the east, west and gulf coasts. The agricultural areas in the middle of the country often have limited influence on federal policy due to these demographics. Mr. Preisler opined that with the new President, Minnesota's ability to affect Federal policy might be reduced even further. Ms. Palmer reminded the group that Minnesota had promulgated the Corporate Farm Law, which was designed to keep small and medium size farms in the hands of families. Mr. Valentine commented that while the law was a great statement of philosophy, that unless it had an implementation component, it could not be enforced.

Ms. Sigford reminded the group that they had agreed to a vision in the past. They all agreed to support the preservation of the family farm, promote environmental quality and supported vibrant rural economies. Mr. Valentine said that if there was a vision, then leadership was needed to take this vision forward to the Legislature and the general public. Right now there are dozens of different voices each pleading their particular case. Mr. Albrecht advised us that many of our agricultural policies are remnants of earlier history that never anticipated changes of the modern world. We need to make recommendations that incorporate the changes into regulation. He suggested that our policies remain flexible for future change and do away with some of the archaic holdovers from the past. The group expressed considerable interest in flexible incentives and Mr. Valentine directed the CAC to a book that he used as a source in the reference list. He also identified several key areas where further research is indicated. His basic philosophy was that except in very unusual circumstances, individual farms or facilities should not be required to conduct fundamental research as a condition of permit. The economic burden is unfair and the cost prohibitive in most cases. Mr. Valentine stressed that his experience showed that research is best conducted with public money at large Universities or through public private partnerships between universities and companies.

Several very important topics he wanted to stress included: antimicrobial resistance relative to the fluoroquinolones in particular. Mr. Russell of EarthTech expounded on an FDA proposal to require all pharmaceutical companies to divulge the quantities and purchasers of antibiotics purchased for use in food producing animals. Minnesota some echo this as a policy recommendation in his opinion. This initiative would allow for tracking of the drugs through the ecosystem. It could also help with the assurance of antibiotic-free animal products as a potential market niche. CAC should support the continued monitoring of the transfer of antimicrobial resistance between animals and humans. They should recommend reserving certain and especially newly developed antibiotics for therapeutic use in humans only.

There was also a recommendation from EarthTech to support the development of a faster or quick test using blood or saliva to detect BSE infection in animals showing no outward signs of the disease. CAC should endorse the maintenance of electronic records and bar code labels on the source of animal products, so that in the case of an outbreak these products can be quickly isolated from the marketplace. EarthTech also endorsed increased precautions and public education for veterinary and biology teachers and students in the hazards of dissecting nervous system tissue from animals possibly harboring BSE-like infections. Mr. Schultz indicated that this item was particularly important as many high-school students may dissect these tissues with no awareness of the potential danger. Ms. Sabel indicated that there were some areas that the rules and permits do not cover adequately. This is especially true with regard to emerging concerns such as BSE and GMO's. The technology has gotten ahead of the regulation and certain aspects of the problem are not handled well by the existing structure. Farmers want clarity in the regulation. Regulatory ambiguity and open-ended permit requirements are very difficult to factor into business decisions.

Ms. Rosenstein talked about the air plans required by permit. The unpredictability of the Air Quality provisions has been very difficult for farmers. There are specific provisions for hydrogen sulfide (H₂S) and there are some general provisions under MPCA authority, but most of the Air Quality provisions need the collection of further data to base monitoring decisions on. Air plans beings required now do not fully address the air issues currently a concern. In the interim one needs to incorporate reasonable air pollution control measures before you understand all the impacts that may ultimately be a concern.

Mr. Valentine began the presentation on the initial Air Quality TWP. Jon Sanstedt and Paul Gerbec from EarthTech were on hand to do the main program after Mr. Valentine finished the introduction. The modern Air Quality control and regulation business is approximately thirty years old in the USA and in Minnesota. Animal Agriculture is one of the last frontiers where air quality regulation has been applied. The knowledge of exactly what pollutants are emitted from animal agriculture is rather primitive compared to most other industries. Because of these facts it is at once an exciting and frustrating area. EarthTech does not represent themselves as animal agriculture specialists venturing into air quality. Rather they are air quality experts who will be able to apply knowledge and practices from other industries to the air quality problems of feedlots. The trends in agriculture definitely seem to indicate that farming industries will definitely be subjected increasingly to the same standards of environmental quality expected of other industries.

Mr. Sanstedt began to present the highlights of the Air Quality TWP. His presentation was supplemented by a series of overheads that were also provided in paper form to CAC members. He identified the first few questions as;

- What are the air pollutants?,
- What are the sources of these pollutants within the facility?
- Specifically, what is emitted where and from what process step?
- What are the impacts of these emissions? And
- How can we reduce these emissions?

We also need to ask; How have we dealt with these problems in the past?
How are air quality issues currently addressed in Minnesota?
How have these problems been dealt with historically? And
What is the new approach based on the recent legislation?
What are other states and nations doing about animal agri. odors

Recent Federal regulations on CAFO's has been largely silent on air quality issues. They have focused mainly on water and land use guidance without addressing the air problems. Page 18 & 19 in the TWP gives a fairly comprehensive list of air quality factors. Hydrogen Sulfide and Ammonia have received the most attention due to demonstrated health concerns. Other gases, odorants and particulates have been studied much less, although in some cases these substances could pose significant problems. Odor is probably the most significant emission from feedlots and the measurement of odor is largely based on actions from complaints. That is unfortunate, because complaints are a notoriously difficult and unscientific means of measuring emissions. Complaints are

subjective and do not offer an objective way to quantify emission levels repeatably. The MPCA complaint log was examined and analyzed for trends. Ambient monitoring for air toxins was used was also used to obtain some baseline data. This program was not designed to look at feedlot emissions but it does provide some useful background data for the levels of certain gaseous substances in urban and rural areas throughout the State. Air dispersion modeling is another way to measure the impact a gaseous emission may have on the region around a facility. It is not a measurement tool. It is a predictive tool with some value in estimating how an odor might be sensed in a certain area under certain weather conditions. One of the tasks in the scope of work was to evaluate the feasibility of doing air dispersion modeling on feedlot facilities to predict recommended setback requirements.

A summary of the MPCA complaint database was presented in the Air Quality TWP on page 7, table 2.1. 911 complaints were received from feedlot facilities between 1996 and 2000. About one third of the total complaints come from 1% of the facilities. Two thirds of the complaints come from swine facilities and most of the other third from dairies. Very few odor complaints come from poultry facilities. Correlation of size data and odor complaints is rather poor. This indicates that size alone is not the strongest determinant of the likelihood of odor complaints. The complaints are definitely related to facility-specific or operational problems not size or density alone. Indications are that facility management practices are the major determinant of whether odor complaints are generated. It would be helpful if the complaint system took better data on the nature and extent of the incident. This would also include weather data and better odor descriptors. This data should be automated electronically and the follow-up response needs to be improved.

The state air toxins monitoring system includes about 40 to 50 sites around the state. The system was not designed to monitor feedlots but the data has some use for us. Comparing urban and rural sites with a background site gives an idea of the otherwise unexamined impacts on the air from various practices. One policy recommendation is to modify the air toxins monitoring system to include better background information and also sites adjacent to feedlots to enhance the utility of the database. Mr. Lisell objected to using data from the Warroad area as a background site. He pointed out the recent growth in that area of window manufacturing and tourism make the data suspect for use as background.

Air dispersion modeling is a predictive tool that is cheaper than continuous or even intermittent monitoring. Modeling can be very useful as part of a permit to establish an action plan and corrective measures needed if an odor event does occur. It also allows one to predict the impacts of a facility before it is built. Modeling has been used for many years in industrial source control. Once a facility is up and running modeling can be a useful trouble-shooting tool. It can allow you to test different combinations of mitigative measures and see what combination gives you the best control for the expenditure. Models do have a number of limitations. The quality of input data and weather data can greatly affect model predictions. There are screening models that are fast, require limited input data, and are easy to use. However, screening models tend to

overestimate impacts and don't account well for instantaneous changes. These are worst-case type models and if you can pass these you are usually pretty safe in assuming the emission impact is small.

More sophisticated models exist which will give a more realistic picture. However, these usually require more input data and are more costly and time-consuming to perform. There is a whole stable of regulatory-approved models in use for industrial sources. A model acts like a black box. You load a bunch of data into it. Many complex mathematical transformations are performed on the data. The model outputs a number of predictive diagrams. It is extremely important to remember the concept of garbage in – garbage out when evaluating model performance. The output is only as good as the quality of information you input. Any low quality data can bias the results in almost infinite number of invisible ways. Many people fail to understand this limitation to models. They regard any computer output as a statement of fact. With models the output is often just a S.W.A.G. (I'm sure many of you know this acronym)

To make accurate predictions of impact, you require detailed emission data, which is often unavailable or expensive to collect. Emission source has to be detailed as to type, size , height, temperature of the emission, ambient air temperature, humidity, wind speed and direction, microclimatological effects associated with contours of the facility , it's buildings and their geometry and surrounding land, adjacent land types and buffer zone characteristics. Usually the model will generate a worst-case one-hour maximum concentration. This is generally sufficient for most regulatory purposes. Sometimes a maximal odor event is much more transient, occurring over a matter of seconds or minutes. Continuous monitoring of suspected sources is the only way to capture these events, other than anecdotally.

Emission sources are mainly the facility itself, the storage vessels or lagoons, concentrated feeding areas , landspreading areas for manure, and to a lesser extent grazing areas. General facility design considerations do have impact on emission data especially with regard to air dispersion of concentrated vapors. It becomes very difficult to calculate air emission mass rates, per animal or per facility. A summary of available information was used to look at issues of odor scalability. As part of this process a number of emission estimating tools were identified and evaluated. Emission data is not available for all of the pollutants of interest. Data gaps in air monitoring are quite frequent.

For modeling a single facility, EarthTech recommends the Industrial Source Complex (ISC) model. If one is looking at cumulative impacts from multiple facilities, EarthTech recommends using the "CalPuff" model. It is more difficult and requires more input data, but it will provide a better estimation of overlapping effects from multiple units. Recommendations from examining the emissions data and modeling programs, the existing system is better able to estimate long-term or chronic odor problems. The biggest uncertainty in modeling is in determining the emission rates from odor or air pollutant sources. This is particularly true with the short-term effects.

The next question was how can these emissions be reduced. The TWP identifies a number of reduction technologies on page 61 & 62. Oil sprinkling has been used successfully at a number of swine facilities. Diet manipulation is being studied to try and reduce odor emissions from animal facilities. Physical air filtration, ozonation, biofilters and improved ventilation can all be used to manage odorous emissions. Covers can be useful in open lagoons and some types of storage basins.

Mr. Sullivan from MPCA stated that while odor complaints do drop off in winter, the description of the odor seems to change. Table 5.19 on page 63 gives the range of control efficiencies obtainable with each of the recommended techniques. Mr. Sanstedt went into a more detailed discussion of how emission factors were developed and used in industrial air pollution control. The interested reader is directed to Section 5 of the Air Quality TWP.

Mr. Gerbec from EarthTech took over the presentation to discuss the questions dealing with how Minnesota has historically dealt with air quality operations and specifically those from agriculture. He also will discuss what Minnesota intends to do with its new regulations and also what other states are doing in this area. In the past, Air Quality regulation was almost entirely driven by complaints. There is a health-based hydrogen sulfide standard and in recent years there has been a dramatic increase in the amount of monitoring. The system is set up so that when a complaint comes in they do a screening monitoring. If that gives positive results, they initiate more formal monitoring and enforcement agreements. There is a strong need to do better research to identify in a much better sense what exactly is coming from these facilities. This is especially true for endotoxins, pathogens, volatile fatty acids and fine particles where the existing data is very limited.

Air quality plans as an integral part of facility permits is an essential component to upgrading air quality monitoring and enforcement. The MPCA is trying to become more proactive in anticipating and preventing air quality problems before they occur at new facilities and those where the permit is renewed. On all permits for facilities over 1,000 animal units, air emission plans are a mandatory part of the permit. Local governments also have considerable power to place requirements on their conditional use permits for feedlots if they desired. Traditionally, local units have not imposed air quality conditions on zoning permits other than general dust, noise and nuisance language. They have generally deferred to the technical expertise and enforcement powers of the State and Federal environmental authorities in setting standards for air quality at a site.

Mr. Gerbec gave some examples of what other state and local agencies have done to deal with this problem. This data is found in Section 6 of the report. These programs represent a range from the least to the most stringent types of programs. Iowa has a minimal program. There is a nuisance odor rule, but agricultural operations are specifically exempted from it. Complaints to Iowa DNR about odor are filed away and receive no further response. The politics is changing and individuals can bring private nuisance suits against facilities.

In Harris County, Texas, (the Houston area) they have an innovative nonregulatory program which was set up by the industry. This region has a large chemical and petrochemical industry. They established a nuisance odor network where complaints can be registered and actions initiated. Facility personnel are responsible for activating an odor response action. The success is limited due to the complexity of odor combinations being detected. It serves mainly as a lightning rod to help satisfy citizen's complaints.

Wyoming has recently passed new rules somewhat similar to Minnesota's. These rules are water-quality based. Permittee need to identify how they will deal with reducing odors based on using best available technology. The Wyoming program only applies to new or expanding facilities. Permit renewals are likely to be grandfathered in with less stringent requirements than new units coming on line. The report has text and tabular description of the other state programs.

North Carolina has a unique approach. There is a prescribed method for dealing with complaints. North Carolina sets a standard for determining if an odor is objectionable. The complainant is asked to collect an odor logbook for one month to determine if there is an actual air quality problem. Then they try to decide if the odor is, in fact objectionable. Then the facility can be designated as an objectionable generator. If this is done that facility will be subject to more stringent enforcement and monitoring requirements. Full term from initial complaint to actual reduced odors could take as long as six months to one year. There is not much information on the long-term effectiveness or costs of this program.

Missouri has new rules, which apply only to facilities over seven thousand animal units. It is housed in their air quality division. Missouri's system is similar to EPA's BACT system, which is used for large power plants. Colorado is out there. They are the most stringent of all states in dealing with odor. They treat odor just like it was a health problem. They establish ambient standards and write air emission permits. The permits from Colorado appear very similar to Title 5 Air Quality permits. The general sentiment is that Colorado has gone too far too fast. However this new law applies only to swine not cattle. As the animal agriculture industry seems to be moving towards fewer larger units, it is likely that stricter air quality regulation will be applied increasingly.

One of the first requirements would be to fill the major data gaps in facility monitoring and emission rates. This task is probably too expensive for the State of Minnesota to do alone. National or even multi-national groups may have to provide some of the basic research needed. Feedlots need to be compared with other industries that generate similar emissions. Pulp and paper industries and wastewater treatment plants have similar emissions to feedlots. We need to identify what does make a good facility management plan? What kinds of steps are most cost-effective in controlling odorous emissions?

Following the EarthTech presentation there were a number of comments and questions from the CAC. During the question and answer period, EarthTech staff, Mr. Valentine, Mr. Russell, Mr. Gerbec and Mr. Sanstedt were on-hand, as well as Mr. Sullivan from MPCA, Air Quality Division.

Ms. Sabel asked how the TWP dealt with the question of cumulative impacts. Mr. Sullivan answered that some of the data did look at the combination of sources. The rudimentary data was not able to apportion the emission contribution from various sources. Mr. Schultz commented that when he read through the document he was surprised at how much we did not know about air emissions and odors. He asked EarthTech what they thought of the North Carolina approach where there go out in response to a complaint of an odor without trying to speciate the components of the odor. He replied that it was important to know what the components of the odor were.

Mr. Sanstedt discussed some of the ongoing research efforts, including the University of Minnesota OFFSET model., which is discussed in Section 5 of the TWP. Mr. Sullivan pointed out that the science of quantifying odor by components has improved dramatically in the last five years. The Europeans have done a great deal of work in this area. Ms. Rosenstein pointed out that Nicollet County has adopted the OFFSET model as part of their feedlot regulation program. Her experience was that this OFFSET tool was easily useable and comprehensible to most people. Three other Minnesota counties are now field testing this model for their own use.

Mr. Valentine indicated that in his opinion OFFSET was a useful interim tool. It was far better than doing nothing. However ultimately we will need to collect more detailed monitoring data, odor chemical speciation and improve air dispersion modeling to deal with the complexities of this problem. To really understand the problem, you need to identify the chemical components so you can take corrective actions and initiate better source control.

Mr. Lisell pointed out the problems of severe winter weather as it relates to odor generation at manure pits. He indicated that straw cover earlier in the year could be a useful practice. Mr. Sullivan has had some experiences with straw cover, both good and bad. Mr. Lisell also pointed out the importance the synergistic effects of the complex combinations of chemicals in a odor mixture. Mr. Valentine agreed strongly with this concern. He indicated that this problem was the primary reason that air quality control programs were moving towards more complete chemical speciation as the programs matured.

A Number of questions were directed at the policy of focusing on hydrogen sulfide and ammonia gases. Mr. Sanstedt indicated that this emphasis was somewhat of a historical artifact. Studies of volatile fatty acids and other constituents indicates that in the future air quality programs will broaden the number of constituents they look at, increase the frequency of monitoring emissions and lower the allowable concentrations of air pollutants emitted. Mr. Sullivan made some highly technical comments on how detection and annoyance monitoring thresholds were determined.

There was considerable discussion on the limitations of using the complaint logs as a source of scientific information. The data was heavily analyzed and the graphs showed limited relationships were derivable from the data. EarthTech justified their analysis and indicated that they were well aware of the limitations.

Mr. Downing pointed out that we did ask EarthTech to examine this data as part of their scope of work. Later discussion with EarthTech yielded an agreement that this data and the graphs would be moved into an appendix towards the end of the report. Some CAC members felt that the inclusion of this data cast negative aspersions on animal agriculture that unduly biased agriculture.

Ms. Sigford strongly advocated the inclusion of the complaint data into the report. She indicated that this is critical information that should not be ignored. Ms. Krinke suggested that we should include some explanation of the limitations of using complaint data. Ms. Rosenstein asked about the statistical validity of inferences drawn from the available data. Mr. Sanstedt stated while the data was not as complete as desired, they were able to extract certain useable relationships from the available data. He said the data is a work in progress always. Mr. Sullivan stressed the importance of providing explanation of the methodologies used in collecting the emission data.

Mr. Preisler raised the question of a policy consideration that instead of setting standards at the property line, set a lower standard at the closest receptor. Essentially, the industrial community would support this idea readily. This idea is intriguing but has some negative zoning ramifications.

It would be useful to collect more detailed information on those nine facilities that have received the most odor complaints. Mr. Tracy asked the question about whether we could examine complaint information before and after remedial actions at a given facility. This process would give us a much better idea of the effectiveness of various odor control technologies and techniques applied to real world situations. Mr. Sullivan indicated that MPCA can and has done this and would provide some information. He said a complaint is an untested hypothesis, an unanswered question.

Mr. Preisler informed the CAC of some recent research he was aware of. One was on feed additives and their effects on odors. He referred to page 63 of the TWP regarding the item in the table controlling feed coating. Ms. Sigford raised some major issues on air quality narration in the TWP. She stressed the dominant contribution of animal agriculture to emissions of hydrogen sulfide and ammonia. She referred to some past work done by Greg Pratt at MPCA. Ms. Sigford felt that in the summary they were using the term “ambient air” in different senses of the word, which may be quite confusing to a lay reader. She suggested clarifying this usage. Ms. Sigford felt that the report did not adequately address the frequency of the existing violations of the ambient air quality standards. She felt that this item needed to be emphasized much more strongly or there would be an outcry from knowledgeable members of the public. She took issue with statement that the MPCA was doing an adequate job enforcing air quality ambient standards.

Mr. Sullivan talked briefly about MPCA’s 1999 monitoring program and the data comparing odor and hydrogen sulfide concentrations. There is also anecdotal evidence that some complaints are suppressed by people’s fear of retribution by permittee.

Ms. Sigford related her problems in trying to interpret the complaint data due to changes in how MPCA logs complaints and stores data. This loss of detail and public accountability has created a significant public relations problem.

Different MPCA regions are apparently quite inconsistent in how they deal with odor complaint. Dr. Hart indicated that we are over analyzing the available complaint data. He suggested a short narrative paragraph indicating that statistical analysis of the data did not yield any useful relationship. He advocated removing the graphs of complaint data as misleading to the general reader. Mr. Just agreed with this sentiment and suggested some additional narrative on how the program was working would be of most interest to the report's audience.

Mr. Sullivan indicated that management changes at MPCA have made it difficult to compare the data from year to year. Mr. Downing reminded the CAC that the Role of Government TWP is scoped to deal with some of his question. Mr. Gerbec referred the CAC to reexamine the 1999 Legislative Auditors report. Mr. Sullivan addressed this question. He was involved in the response to this report. Many of the areas were addressed by MPCA within the limits of the staff and money available. The legislative Auditor focused on the water quality aspects of the feedlot program and did not deal extensively with air quality issues.

Mr. Lisell expressed the frustration that many complainants feel about the slow response time to their concerns by MPCA. Another issue is the perception of a presumption of exaggeration in the complaint. The burden of proof is often placed on the complainant to prove that a problem actually exists. He emphasized that these odors are very real and very serious problems to those who live in the vicinity of a feedlot with air quality problems. Ms. Henderson asked the EarthTech staff which of the other states regulatory program is most workable. Mr. Gerbec indicated that Colorado and Missouri both had positive aspects we could learn from. He stressed the fundamental importance of having an active real-time complaint response system in place.

Mr. Burns felt that there were some good ideas in the report, but he felt that there was not enough supporting data. He cautioned the CAC against the dangers of putting too much reliance on complaints as a driver to facility regulation. He strongly advocated the collection of missing air quality data through the efforts being undertaken with the University of Minnesota and FMMAC and their development of the OFFSET model. Ms. Rosenstein and Mr. Albrecht voiced their support for collecting more information to support rational policy development. As the question and answer period ended, Mr. Johnson reminded all CAC members that this was a preliminary session. If they had any additional questions or comments which were not addressed or occur later to write these down and forward these to EQB.

Virginia Pierce then asked CAC to initiate a policy discussion phase of the meeting. We began by trying to identify the key issues that had been raised by the Air Quality TWP. One issue that definitely arose is that we have insufficient information on air emissions to set regulatory policy. Gathering more data is necessary to proceed with rational policy

recommendation. We need to fund basic research on the chemistry of odor. We don't want to put the burden of fundamental research on any one facility. We should encourage public institutions and public-private partnerships to study the basic questions to better inform our decisions.

We need to know whether the present regulatory systems are working adequately. There is an under-current showing a lack of confidence in MPCA's ability to deal with feedlot air quality to the satisfaction of the facilities and the general public. We need to do an evaluation of the hydrogen sulfide program and its effectiveness. You have to look at the complaints, the response to complaints, the field data taken at the site, and MPCA's follow-up.

Another concern is that the permit language does not seem to offer much flexibility in dealing with air issues. The issue of cumulative effects of air emissions and the relative contribution to air problems from animal facilities needs to be addressed. It is hard to know the scale of the problem and how much agriculture is involved compared to transportation contributions to air pollution. The MPCA staff resource usage and limitation is a major issue. Does our data on PM-10 emission factors allow us to determine compliance with national ambient air quality standards? The TWP focuses exclusively on regulatory structure. It largely ignore the needs of and resources available from the producer community. We need to focus on those types of facilities with the most significant odor problems and direct our research to these.

Does the State of Minnesota need a pollution budget which calculates total income and total outgo? People want to know how much pollution is coming from what sources and where is it going? There needs to be more of an emphasis on the positive actions many producers are taking. Minnesota needs to talk about some of the positive things our producers are doing. The public is largely ignorant of all the care taken to bring them the safe, pure food supply they have. The tone of the TWP is somewhat alarmist. The problems are controllable. We are moving in the right direction, just more slowly than some people would like. The ban on open air lagoons is scheduled to expire with the publication of CAC's Final GEIS report. We need to recommend an incentive program to help move farmers to adopting the practices needed to reduce pollution. CAC members were interested in an update on Legislative initiatives regarding feedlot issues this year.

Virginia asked the new members for their reflections on the first CAC meeting they attended. Ms. Krinke was generally pleased with the process. Mr. Bottem advised that the group needed to keep moving and not talk about issues endlessly. At some point we have to stop our deliberations and move forward with recommendations. It was mentioned that some CAC members and alternates were not frequent contributors and that everyone should participate more fully.

The key talking points from this month's meeting were that the group did make a good attempt to do policy development and recommendation. CAC wanted to see some proposed policy recommendations by next months meeting. CAC was advised that it is expected to suggest policy options. If they do not, then staff will make their best efforts to

capture the ideas and bring these forward. Ms. Rosenstein expressed her confidence in the staff's ability to do the preliminary work on policy. CAC is going to start to receive more information and the policy process will have to accelerate as we move into spring. All documents sent to CAC members are theirs to distribute as they see fit. CAC members are to make sure that if they release any material from draft documents that they clearly convey the documents status to the recipient. The group worked on policy development for Human Health and Air Quality issues. CAC also discussed the major policy issues associated with Animal Welfare.

The Air Quality document submitted by EarthTech will be revised and presented at the February 2001 meeting along with the draft TWP on Animal Welfare. We will also work on policy development and begin the process of extracting text from the Human Health TWP for the Draft GEIS. The February meeting is expected to be a two-day event dealing primarily with the three issue areas and associated policy. Michael Valentine of EarthTech and his staff will present their work; answer questions and take comments for document finalization.

4:45 Summary/Checkin

5:00 Meeting Adjourned