

*Public Issues and Concerns with
Animal Feeding Operations in EPA Region 6:
Summary Report
July, 1998*

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I. INTRODUCTION

The animal feeding industry in the United States has dramatically changed over the last several years. For example, the number of animal feeding operations (AFOs) has decreased while the number of animals confined at each AFO has increased, based on the draft EPA AFO Strategy¹. Currently, there are about 450,000 AFOs nationwide, down from 1,000,000 in 1982. However, the total number of animal units increased by about 3 percent between 1987 and 1992. This consolidation of the small "family" farms into larger "mega" operations has been good for the industry, although it has raised public concerns about water quality and human health issues, particularly in communities where there is a large concentration of AFOs.

In October 1997, EPA Region 6 began an extensive effort to address growing water quality problems and public health concerns related to AFOs. A regional Animal Operations (AO) workgroup was formed consisting of staff from various program areas, (e.g., nonpoint source, NPDES permits, enforcement, NEPA, and ground water) to: (1) better coordinate on-going efforts by the various programs to address AFO-related water quality problems, and (2) effectively respond to inquiries from Congress and the general public on AFO-related issues. One of the initial tasks of the AO Workgroup was to initiate a dialogue between EPA and the major stakeholders involved in or affected by AFO-related activities. The Workgroup organized two meetings on April 1 and 2, 1998, in Dallas to initiate this dialogue. Participants in the Dallas meetings included representatives from industry and environmental groups, state and federal regulators, and community leaders. The major objectives of the Dallas meetings were to (1) provide a forum for a high level open dialogue and discussion on EPA initiatives for addressing AFO-related issues, and (2) find possible solutions to AFO-related problems within EPA Region 6. In addition to the Dallas meetings, the AO Workgroup also organized three community meetings in watersheds that have been impaired by AFO-related activities. The purpose of the community meetings was to listen and gather information from the area population regarding AFO-related water quality impacts in the watershed. These information gathering activities are consistent with the overall National effort to address environmental and human health issues related to AFOs, as outlined in the Clean Water Action Plan (CWAP)² and the AFO Strategy.

This report summarizes the information collected at the meetings. The report also includes the conclusion and recommendations of the AFO Workgroup based on the information gathered during the meetings as well as on-going CWAP implementation activities.

¹"Strategy for Addressing Environmental and Public Health Impacts from Animal Feeding Operations", published by the U.S. EPA, Washington, DC 20460, March 1998.

²"Clean Water Action Plan: Restoring and Protecting America's Waters" was developed by EPA and USDA in response to the Vice President's directive of October 18, 1997, and was announced to the public by the President and Vice President on February 19, 1998.

II. SUMMARY OF THE DALLAS MEETINGS

A. Opening Remarks

On April 1 and 2, 1998, EPA Region 6 hosted two meetings to discuss water quality issues associated with AFOs. The major objectives of the Dallas meetings were to initiate dialogue, among key stakeholders, on AFO-related issues, including EPA initiatives, public and EPA concerns, and possible solutions for water quality and human health issues associated with the expansion and consolidation of AFOs in the Region. The Dallas meetings were attended by about 75 people representing EPA, State agencies, industry, and community groups. Participants in the first meeting on April 1, 1998, included representatives of environmental and community groups. Industry representatives attended the meeting on April 2, 1998. Federal/State agency representatives participated in both meetings.

Acting EPA Region 6 Administrator, Jerry Clifford, and USDA Natural Resources Conservation Service (NRCS) South Central Regional Conservationist, Judy Johnson, opened the Dallas meetings. Both expressed the need for all federal and state agencies to work closely together to assure that programs are implemented in support of the CWAP. Mr. Clifford briefly described how the CWAP would help expedite both EPA's and USDA's efforts to address AFO-related concerns. He also described the regulatory approaches and proposals included in the Agency's AFO Strategy. Ms. Johnson emphasized the need to continue supporting the voluntary efforts of the NRCS, growers and producers. She also indicated that new regulations would hinder current NRCS efforts to implement the Environmental Quality Incentives Program (EQIP). Following the introductory remarks, Bill Hathaway, EPA Region 6 Director of the Water Quality Protection Division, moderated the meetings. In his remarks, Mr. Hathaway outlined the objectives of the meetings and expressed EPA Region 6's concern about the impacts of AFOs on water quality.

B. Comments During Open Dialogue

The animal operations industry was well represented during the Dallas meetings. However, the environmental and community groups were not well represented, even though several major cities, towns and environmental groups were contacted and invited to participate in the dialogue. Federal and State agencies were also well represented. State and federal representatives actively participated in the dialogue during both meetings.

The comments from State representatives varied. For the most part, however, state representatives indicated that providing technical expertise to landowners is a critical need. State representatives also suggested that there was a need to increase staffing and resources to adequately address AFO-related issues. Some state representatives indicated that incentives for small operators are needed in order to achieve greater participation in the implementation of best management practices (BMPs). Most state representatives agreed that federal agencies need to work together and to have shared priorities to better assist both the states and industry in complying with regulations

and to implement BMPs designed to protect water quality. Another area of concern was the issue of voluntary measures. Most state representatives agreed that voluntary programs are working and will continue to work. However, representatives from water quality State agencies indicated that phosphorus pollution associated with spreading of manure on land application fields was a major issue and that phosphorus limits need to be included in nutrient management plans.

The comments from industry representatives focused on two main issues: (1) that voluntary programs were working, and (2) that no new regulations were needed if EPA would consistently enforce the existing regulations. There was a general concern that EPA was in the process of formulating "new" regulations in a "reactive" response to the "phiesteria hysteria" issues in the Northeast of the U.S.

Like state representatives, industry representatives also agreed that education and training of the growers and producers is needed to achieve greater water quality protection from AFOs. Some industry representatives advocated the philosophy that allowing growers to write their own management plans would be a useful concept because it would encourage the operators to become familiar with the BMPs specified in the plan and to implement such BMPs during their farming operations.

Another concern expressed by industry representatives was the issue of inconsistent policies and regulations imposed by federal and state enforcement agencies. Yet one integrator made statements that conflicted or were not consistent with these concerns by saying that "there is a blanket policy for everyone", suggesting that "one size doesn't fit all." There was no suggestion offered to resolve this issue.

Because of the low turnout by community and environmental groups, there was very little feedback or input from these groups.

III. SUMMARY OF THE Mt. PLEASANT MEETING

A. Introductory Comments

The meeting in Mt. Pleasant, Texas, was held on April 16, 1998. This meeting was attended by about 100 to 125 people from the Mt. Pleasant community and surrounding areas. Most of the speakers at this meeting represented the poultry industry. However, other individuals and groups, including the City Attorney for Longview, the Camp County Judge, and representatives of the Agricultural Extension Services, NRCS, Texas Natural Resources Conservation Commission (TNRCC), Texas Parks & Wildlife, Texas Association of Dairyman, Texas Farm Bureau, Civic Administrators, and other interested parties also made presentations.

At about 7:00 p.m., Richard Hoppers, EPA Region 6 Chief of the Ecosystems Branch, opened the meeting by explaining why EPA was conducting the meeting, and what the procedures of

the meeting would be. Brad Lamb, EPA Region 6 Nonpoint Source Program Coordinator, provided some information on the major issues associated with AFOs, including particular issues of concern, such as nutrient enrichment, bacteria, odor, etc. Mr. Lamb encouraged meeting participants to examine the maps (Attachments 1 and 2) generated by EPA Region 6. The maps show manure production rates (by county) and watersheds that have been impaired by AFO-related activities. Also, information concerning the status of the EPA Region 6 draft permits for concentrated animal feeding operations (CAFOs) and the source water program was provided to the meeting participants. The public comment period began at about 7:20 p.m. A total of 24 people signed up to speak. Mr. Hoppers officially concluded the comment period at about 8:50 p.m. However, EPA personnel continued the dialogue with meeting participants until about 10:00 p.m.

B. Comments from the Public

A majority of the speakers were affiliated with the poultry industry, and to a lesser extent the dairy industry. Most speakers suspected that the real purpose of this meeting was for the EPA to initiate the process for imposing new regulations on the industry and expressed the view that there was no need for new regulations. The overall view of the speakers was that most producers are doing a good job managing their operations, and are conscious of protecting water quality. They used expressions such as the following (1) "broilers generally don't impact water quality", (2) "farmers are deeply committed to protecting water quality", (3) farmers "need guidance and assistance to keep up with regulations, and to maintain their farm systems to develop better markets for composted manure, (4) "farmers don't need more regulations, they need help, and "cooperation" from EPA.

However, other speakers did not agree that producers and farmers are doing everything they can to protect water quality. One city official stated that communities were "tired of poultry operations polluting their water supply." The official provided a report prepared for the Northeast Texas Municipal Water District, dated February 1997³ which highlights results of TNRCC's 1996 Regional Assessment of Water Quality for the Cypress Creek Basin. The report indicates that "Segment 404 was determined to have the highest ranking with regard to existing water quality problems." The report also indicates that elevated levels of various pollutants from both point and nonpoint sources are impacting the watershed. The Texas Parks and Wildlife Department also reported that fresh water mussels (very sensitive indicators of water quality) in this water body are being impacted.

The Texas Farmers Union (TFU) provided a prepared statement that listed eight elements to consider in preventing water quality impacts from AFOs. These elements included instituting national policy uniformly in all states, developing a national standard for animal waste disposal, and requiring bonding of AFOs to cover the cost of cleaning up impacts to water quality. The TFU also

³"Chicken Production and Processing in Segment 404 of Big Cypress Creek Basin: Water Quality Implications, prepared for Northeast Texas Municipal Water District, Hughes Spring, Texas, February 1997.

supported the use of the USDA's Environmental Quality Incentives Program (EQIP) to assist farmers to comply with environmental laws.

IV. SUMMARY OF THE SILOAM SPRINGS MEETING

A. Introductory Comments

The meeting in Siloam Springs, Arkansas was held on April 23, 1998. About 230 people attended the meeting. Fifty two people signed up to speak. A variety of organizations and interests were represented at the meeting, including State and local governments, local business owners, dairy and poultry associations, the Oklahoma and Arkansas Farm Bureaus, NRCS and integrator, growers, producers and farmers. The Tribal representative of the Quapaw Indians and a member of the Cherokee Tribe also spoke during the meeting. Representatives of environmental groups from northern Arkansas and Oklahoma also made presentations.

Jack Ferguson, EPA Region 6 Chief of the Permits Branch opened the meeting with a prepared statement that set the tone and specified procedures for the meeting. Brad Lamb provided additional information on topics to be covered in the open session and provided a national perspective on AFO-related issues. Mr. Kalven Trice, Arkansas' NRCS State Conservationist, also made a short statement stressing the need for all stakeholders to work together for the good of the industry and the environment.

B. Comments from the Public

Most speakers strongly supported the poultry producers and indicated that the voluntary approach to environmental protection was the best (and only) method needed to address AFO-related issues. Most speakers indicated that all (except maybe one or two percent of producers) are good stewards of the environment. They also indicated that additional regulations were not needed and probably would have a negative effect on addressing AFO-related issues. Most speakers agreed that EPA should take appropriate actions against those "few bad apples" who are not doing a good job and are not complying with the existing regulations. If EPA imposes additional regulations on the small farmers many will be driven out of business.

Another common comment was that any new regulations put in place should address specific issues in a defined watershed because the "one size fits all" concept is not appropriate. "What is good for New York City will not work in other parts of the country." Producers must be given the opportunity to operate according to the needs of their specific area. Pollution in one county stream may not be considered pollution in another area. Almost without exception, speakers wanted additional funds to be made available to assist the producers to comply with the various regulations. Many producers indicated that they were reluctant to hire independent experts to assist them in developing the needed and required Pollution Prevention Plans, BMP's, etc. They preferred that the

NRCS provide technical assistance to them for free. The overall view was that if producers could not obtain the technical assistance for free, then they would not develop the plans. However, the NRCS representatives indicated that at the current staffing level, this agency can only provide technical assistance to about half of the AFOs in Arkansas in the next two years.

The following is a summary of the comments made by individuals, Farm Bureau representatives, Oklahoma Department of Environmental Quality personnel, Dairy Farmers of America, Inc., Arkansas Soil and Water Conservation Commission representatives, and representatives from Indian tribes and the Arkansas Department of Pollution Control and Ecology (ADPC&E):

- ! No new regulations;
- ! Need more economic aid;
- ! Support for the voluntary compliance system;
- ! Don't punish the family farmers with more regulations;
- ! Do more research before implementing phosphorus limits;
- ! Look for alternative solutions for manure disposal;
- ! Do more research in all areas before issuing additional regulations;
- ! Do not use the EPA's Cumulative Risk Index Analysis (CRIA) model to dictate where landowners can locate AFOs on their properties.

V. SUMMARY OF THE GUYMON MEETING

A. Introductory Comments

The Guymon, Oklahoma meeting was held on May 14, 1998. About 300 people attended the meeting and 55 people signed up to speak during the meeting. Because of the large number of speakers, some of the people who signed up to speak did not do so. The majority of the meeting participants were industry supporters and prominently displayed "ProAg" stickers. A large number of people at the meeting worked for the pork and beef industries and some of these people spoke in support of the industry. The speakers included representatives of individual farming operations, the Mayor of Guymon, representatives of the Texas Pork Producers, the Oklahoma Pork Council, the Oklahoma Cattlemen's Association, the Texas Cattle Feeders Association, the North Plains Ground Water Conservation District No. 2 (of Dumas, TX), a pharmaceutical company representative, and representatives from the Sierra Club and Save Oklahoma Resources. Speakers also included individual citizens who testified about the impact of the AFOs on their personal lives, and an engineer

working for citizens negatively impacted by AFOs.

Jane Watson, EPA Region 6 Chief of the Permits Section opened the meeting at 7:00 p.m. by welcoming the meeting participants. She also explained the purpose of the meeting and described the rules and procedures for speakers. Dr. Watson then introduced Ron Clark, NRCS State Conservationist for Oklahoma, and other EPA and NRCS staff present at the meeting. After a few introductory remarks by Clark, Brad Lamb of EPA Region 6 provided further information on EPA's concerns regarding AFOs.

B. Comments from the Public

Many speakers thanked EPA for coming out to the community to gather information on AFO-related issues. A majority of the speakers at this meeting commented favorably on the pork and beef industry operations. A major theme was the beneficial economic impact that these industries have had on the Panhandle area by providing jobs, stimulating business and revitalizing an economy that had long been in decline. Several people reported personal experiences concerning how their livelihood had been saved by the arrival of these industries in the area. Most of these speakers also asserted that the AFO operators were good stewards of the environment and that there were no environmental problems.

Many speakers pointed out that the High Plains area was chosen by the AFO industry because of its unique features and natural conditions; in particular the low rainfall, high evaporation rate, low permeability soils and deep ground water of this area make the area suitable for this industry. The deep water table was frequently cited as a major factor protecting ground water from contamination by AFOs. Two speakers challenged EPA's reliance on the state's 305(b) reports for identifying water quality problems, citing a 1993 U.S. Geological Survey report which purportedly criticized the 305(b) reports as being inaccurate or biased.

Those speaking in favor of the AFO industry generally stressed that no new regulations were needed. Others called for uniform requirements across the country, but another opinion was that the Panhandle area should not be treated the same as other areas with higher rainfall and more permeable soils.

An opinion expressed by some supporters as well as detractors of the AFO industry was the lack of adequate enforcement, by EPA, of the existing regulations. However, there was little discussion of the inadequacy of the current regulations for AFOs; most of the attention was directed toward the prospects for new regulations. Many speakers urged EPA to "get the facts" and to not base decisions on emotional arguments. Some said that EPA needed to learn more about the industry.

Two local landowners reported the problems they had experienced or observed by living next to large CAFO operations: flies, odor problems affecting asthma patients, drifting of effluent spray and weeds infesting lagoons which might penetrate liners. One speaker asserted that land adjacent to

the large CAFOs had declined in value by drastic amounts and could not be sold for even half its appraised value. EPA was called on to conduct air quality monitoring in the area.

Other speakers objecting to various aspects of the AFO operations, pointed out the very large volumes of animal waste generated, the high concentrations of contaminants in the lagoon fluids, the lack of wastewater analyses for the operations, the occurrence of known spills at some sites, the potential for contamination when wastes are land-applied during freezing temperatures and the questionable use of clay soils as liners. It was suggested that CAFOs need individual permits because the general permit does not allow EPA to take into account cumulative impacts.

The need for adopting and using new and innovative technology in waste treatment and disposal was emphasized by some of the speakers. One speaker suggested that the pig operations could be operated by using dry manure systems, instead of liquid manure systems.

VI. CONCLUSION AND RECOMMENDATIONS

Overall, the three community focus meetings were well attended by people that either work for or support the AFO industry. For EPA, the meetings resulted in greater awareness of the many environmental and other issues associated with AFOs. These issues range from economic viability and sustainability of the industry, to water quality impacts associated with nutrient-rich runoff from land application fields, to ground water impacts from leaking swine lagoons. Stakeholders from the AFO industry expressed a desire for EPA to (1) use existing regulations to control the "bad actors", (2) let the "voluntary actions" continue to be the main mechanism for protecting water quality, (3) use good science to make policy decisions, and (4) provide more funding to assist farmers in implementing BMPs. Concerned citizens expressed a desire for EPA to use existing regulations to keep AFOs from impacting water quality.

Based on the information gathered during these meetings, and in support of the ongoing CWAP initiatives, EPA/USDA joint AFO Strategy, and EPA Region 6 NPDES permitting initiatives, the AFO Workgroup recommends that:

- ! The AFO Workgroup continue to improve coordination and consistency between the various EPA programs designed to address AFO-related issues;
- ! States monitor and evaluate water quality impacts from nutrients and bacteria where there are high concentrations of AFOs, and where USDA census data indicate high manure production rates;
- ! Permitting and enforcement activities focus on priority watersheds that have been impaired by nutrients and bacteria;
- ! Increase inspection and enforcement activities at AFOs, particularly AFOs in impaired watersheds;

- ! States target a proportional amount of federal funds in priority watersheds;
- ! EPA work with states and industry to improve education and provide technical support for operators of AFOs.

APPENDIX 1. LIST OF SPEAKERS

A. Mt. Pleasant, Texas Meeting

Jon Johnson - Texas Farm Bureau
James Maxton - Texas Farm Bureau - self
B. B. Beers - B W Organics, Inc.
Vernon Rowe - National Broiler Council
Mike Thompson - Agriculture Producers
Dale Raney - Sulphur-Cypress Soil & Water
David Windham - Tyson Foods, Inc.
Daren Duncan - Pilgrim's Pride - Sales Mgr.
Bo Pilgrim - Pilgrim's Pride
William J. Henton - Henton Dairy

David Alders - Texas Farm Bureau
Dennis Smith - Texas Ag. Ext. Service - Camp County
Gary Spraggins - Dairyland Automation
B. L. Beavers - Lake O' the Pines Civic Association
Melvin Reynolds - Private Landowner
Wes Sims - Texas Farmers Union
Larry Schenk - City Attorney - City of Longview
Michael J. Ryan - Texas Parks and Wildlife
Alford L. Flanagan - Broiler Grower
Vincent Haby - Texas Ag. Experiment Station

B. Siloam Springs, Arkansas Meeting

Donald Alten -Arkansas Poultry Federation
Don Richardson -Arkansas Assn. of Consv Dist.
Sam Johnston -Poultry Assoc.
Earl Smith -Arkansas Soil & Water Consv. Comm.
Judith Read -Lakeshore Property Owners Assoc.
Riley Needham -CCGCC
Bill Berry -CCGCC
Earl Hatley -Quapaw Tribe
Jim Durham (St. Rep.-Jerry Hunton) -Simmons Foods
Freed Reed -Benton County (AR) Conservation District
Jim Hancock -Dairy Farmers of America, Inc.
Mason Mungle -Oklahoma Farmers Union
Keith Morgan -Farmer
John Craig & Joyce Craig
Gary Fisher -Oklahoma Farm Bureau
Walter Collin -Law-office
Bill Haak - Haak Dairy
Ron Danehower -Sunwest
Bill & Katharine Yancey -Poultry Grower Tyson Foods
C.W. Galloway
Jarvis Teague -Poultry/Cattle Farmer
Rex Johns -General Chemical
Fred Reed -Benton County Conservation District
Jerry Masters -Arkansas Pork Producers Assn.
David Hohcombe -Delaware Conservation District

Claud Rutherford -Simmons Foods
Robin Landrum -Oklahoma Farm Bureau
David Evans -Self
Duane Heitzman -Concerned Citizens for Green Country Conservation (CCGCC)
Donald Read -Lakeshore Property Owners Assoc.
Joel McGough
Roy Mahler
Joe Chappelle
Rebecca Jim -L.E.A.D. Agency, Inc.
Robert McAllister
Mildred Hamilton -Adair County Consv District
Paul Hairston -Tyson Foods
James Widner
Larry Million -Million Farms
Butch Pond -Self
Bill Moeller -Tyson Foods Pork Group
Garry Million
Bob Morgan -Arkansas Soil & Water
Keith Brown -Arkansas Dept. Pollution Control & Ecology
Dwayne Davis -Farmer
Gene Pharr
Travis Justice -Arkansas Farm Bureau
Bobby Pianalto -Gina Marie Farms Inc.
Ryan Anglin

C. Guymon, Oklahoma Meeting

Jess Nelson -City of Guyman, Mayor
Ken Horton -Texas Pork Producers Assn.
Louis Long, Jr. -Long Farms
Don Clift -TX Farm
Kathy Martin -Martin Environmental Services
Ken Stonecipher -Pro Ag
Joe Young -Seaboard
Greg Good -Texas Farm, Inc.
Chip Newell -T.C.F.A.-Oklahoma Cattlemen's Assoc.
Jim Shantz -Murphy Family Farms
John Taylor -Jasper Supply
Sam Fouquet
Pat Burt -Hitch Pork Producers
Brian Mitchell -Mitchell Farms
Keith Smith -Sierra Club
Bob Lemon -Pro Ag
Jim Sarchet
Vancy Elliott -Safe OK Resource Development
Alvie Stegman
Mr. & Mrs. Howard Dunn
J. B. Stewart
Lynn Sheets -Rolla Co-op
Tim Stedie
Paul Harland
Lewis & Anna Mayer
Michael Hawkins -Mike Hawkins Co.
John Jones -Hitch Feedlot, Inc.
Donnie Dendy -Accord Ag Inc.
Susie Shields -Sierra Club, Oklahoma Chapter

Connie Wilhoit -Seaboard
Melva Little -Contract Grower
Dennis McKilligan -Pharmacia-UpJohn
Al Chill -Retired Farmer
Mac Safley -Agri-Waste Technology, Inc.
Richard Bowers -North Plains Groundwater Dist.
Shane Boothe -President, Oklahoma Park Council
Velma Kingsland
Keith Siemsen -Seaboard Farms, Inc.
Dale Taylor -Pro Ag
Phyllis Johnson -Seaboard
Ross Wilson -Texas Cattle Feeders Association
Paul Hitch -Hitch Enterprises
Valois Ramon -Sierra Club
Ricky Smith -Pro Ag
Charles Ayers, Jr. -Tire Recyclers, Inc.
Mike Brandherm -Hitch Enterprises
Delmer Elliott -Farmer-Safe OK Resource Development
David O'Sullivan -Pro Ag
Burnell Focks -Retired
Larry Bowers
Will Burth -Student
Calvin Weir -Seaboard Farms, Inc.
Mike Lindsay -COFC Pro Ag Farmer Businessman
Larry Franks
Rod Schemm -Hitch Enterprises
Bill Newman
Lana Tharp

APPENDIX 2. LIST OF EPA STAFF AT THE MEETINGS

A. Mt. Pleasant, Texas

Richard Hoppers, 6WQ-E
Ellen Caldwell, 6WQ-CA
Abu Senkayi, 6WQ-PP
Sylvia Ritzky, 6WQ-AT
Brad Lamb, 6WQ-EW

Joe Swick, 6EN-XP
Ted Palit, 6EN-WT
Marcella Hutchinson, 6WQ-SD
Carl Hutcherson, 6WQ-EW*

B. Siloam Springs, Arkansas

Brad Lamb, 6WQ-EW
Jack Ferguson, 6WQ-P
Abu Senkayi, 6WQ-PP
Sharon Osowski, 6EN-XP
Len Pardee, 6WQ-AT

Marcella Hutchinson, 6WQ-SD
John Stacy, 6EN-WT
Gerald Carney, 6EN-XP
Ellen Caldwell, 6WQ-CA
Carl Hutcherson, 6WQ-EW*

C. Guymon, Oklahoma

Jane Watson, 6WQ-PP
Carl Hutcherson, 6WQ-EW*
John Stacy, 6EN-WT
Gerald Carney, 6EN-XP

Brad Lamb, 6WQ-EW
Ellen Caldwell, 6WQ-CA
Joe Swick, 6EN-XP
Clay Chesney, 6WQ-SG

* Liaison between USDA and NRCS

ATTACHMENT 1

EPA REGION 6 MANURE PRODUCTION RATES BY COUNTY

ATTACHMENT 2

EPA REGION 6 WATERSHEDS IMPAIRED BY AFOs