

**STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION**

_____)
In the Matter of:)
)
PROPOSED AMENDMENT)
TO 20.60.2 NMAC (Dairy Rules))
_____)

No. WQCC 09-13(R)

**NOTICE OF INTENT TO PRESENT TECHNICAL TESTIMONY OF DR. JOHN
SWEETEN ON BEHALF OF THE
DAIRY INDUSTRY GROUP FOR A CLEAN ENVIRONMENT**

The Dairy Industry Group for a Clean Environment (hereinafter, "DIGCE") hereby submits this Notice of Intent to Present Technical Testimony of Dr. John M. Sweeten on behalf DIGCE.

Due to the proposed hearing schedule, Dr. Auvermann has a scheduling conflict and is unavailable to testify on behalf of DIGCE on June 14 . Consequently, Dr. John M. Sweeten will present a summary of the pre-filed direct testimony of Dr. Auvermann and will stand for cross-examination on that testimony on that date. Dr. Sweeten is a member of the interdisciplinary team of agricultural scientists and engineers who have provided advice to DIGCE regarding the best current science and engineering practices for water quality protection in the dairy industry. DIGCE's counsel has consulted with counsel for NMED and the Environmental Coalition and both have consented to Dr. Sweeten appearing for this testimony in place of Dr. Auvermann. In the event that there is any objection to Dr. Auvermann's pre-filed direct testimony on the basis of Dr. Sweeten's appearance in Dr. Auvermann's place, then DIGCE reserves the right to call Dr. Auvermann to support that testimony.

1. **Procedural Order Requirement: identify the person for whom the witness(es) will testify.**

Dr. Sweeten will testify for DIGCE and its members.

2. **Procedural Order Requirement: identify each technical witness the person intends to present and state the qualifications of that witness including a description of their educational and work background.**

A statement of qualifications for Dr. Sweeten, including a description of his educational and work background, is set forth in DIGCE-16 and DIGCE-16a.

3. **Procedural Order Requirement: attach the full direct testimony in writing of each technical witness.**

Dr. Sweeten will adopt Dr. Auvermann's pre-filed direct testimony on behalf of DIGCE, DIGCE Exhibit 4, and will provide a summary of that testimony. Dr. Sweeten further will stand for cross-examination on Dr. Auvermann's direct testimony. While the current procedural order does not require a Notice of Intent for surrebuttal testimony, DIGCE advises that Dr. Sweeten will provide surrebuttal testimony, summarized as follows.

- a. Dr. Sweeten will provide surrebuttal testimony in response to the pre-filed written rebuttal testimony of William C. Olson on the topic of synthetic versus clay liners for wastewater and stormwater impoundments at dairy facilities. Specifically, the surrebuttal testimony will respond to Mr. Olson's rebuttal testimony on pages 37-48 of NMED Rebuttal Attachment 3 and any related rebuttal testimony filed by NMED or any other party.
- b. Dr. Sweeten will provide surrebuttal testimony in response to the pre-filed written rebuttal testimony of William C. Olson and George Schuman on the topic of ground water monitoring well requirements for all dairy facilities. Specifically, the surrebuttal testimony will respond to Messrs. Olson's and Schuman's rebuttal testimony on pages 74-89 of NMED Rebuttal Attachment 3 and any related rebuttal testimony filed by NMED or any other party.
- c. Dr. Sweeten will provide surrebuttal testimony in response to the pre-filed written rebuttal testimony of Kathy Martin on the topic of impoundment liners on pages 15-19 of Ms. Martin's pre-filed rebuttal testimony dated March 22, 2010 and any related rebuttal testimony filed by any party.
- d. Dr. Sweeten will provide surrebuttal testimony in response to the pre-filed written rebuttal testimony of Kathy Martin on the topic of ground water monitoring on pages 21-22 of Ms. Martin's pre-filed rebuttal testimony dated March 22, 2010 and any related rebuttal testimony filed by any party.

4. **Procedural Order Requirement: include the text of any recommended modifications to the proposed regulatory change, provided, however, that any person proposing substantive modifications must file proposed regulatory changes and statement of basis by the applicable deadline specified in the Scheduling Order.**

Recommended modifications to the proposed regulatory change were introduced as DIGCE-8, and this exhibit includes a statement of basis for the recommended modifications.

5. **Procedural Order Requirement: identify and attach all exhibits to be offered by the person.**

All other exhibits to be used by Dr. Sweeten for DIGCE at the hearing and known at this time are identified and were previously submitted.

WHEREFORE, DIGCE respectfully requests that the Water Quality Control Commission accept this Notice of Intent to Present Technical Testimony of Dr. John Sweeten on behalf of Dairy Industry Group for a Clean Environment.

Respectfully Submitted,



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Certificate of Service:

I hereby certify that a true and accurate copy of the foregoing pleading was served upon the following parties this, Friday, June 04, 2010:

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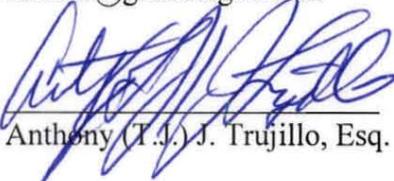
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FACULTY VITA

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<u>Degree</u>	<u>Field</u>	<u>Institution</u>	<u>Date</u>
B. S.	Agricultural Engineering	Texas Tech University	1965
M. S.	Agricultural Engineering	Oklahoma State University	1967
Ph. D.	Agricultural Engineering	Oklahoma State University	1969

SERVICE ON FACULTY OF TEXAS A&M UNIVERSITY SYSTEM: Years of Service: 37

1996-present	Professor and Resident Director, Texas AgriLife Research. Texas AgriLife Research and Extension Center- Amarillo, TX; and Professor, West Texas A&M University, Division of Agriculture, Canyon, TX
2008-present	Professor and Resident Director, Texas AgriLife Research. Texas AgriLife Research and Extension Center- Vernon TX
1990-95	Professor, Associate Department Head and Program Leader for Extension Agricultural Engineering, Department of Agricultural Engineering, Texas Cooperative Extension (TCE), Texas A&M University System, TAMUS.
1989-90	Interim Program Leader and Extension Agricultural Engineer -- Waste Management, Department of Agricultural Engineering and TCE
1984-91	Professor & Extension Agricultural Engineer, TCE & Agricultural Engineering Department, TAMUS.
1981-84	Associate Professor, Agricultural Engineering Department
1972-89	Agricultural Engineer/Waste Management, TCE, TAMUS.

PROFESSIONAL REGISTRATION: Texas Board of Professional Engineers (PE), License No. 33690 in Texas

MEMBERSHIPS:

American Society of Biological and Agricultural Engineers/ASABE (44 years); Fellow, 1990
 Council for Agricultural Science and Technology
 Research Centers Administrators Society
 Texas Farm Bureau
 Texas Sheep & Goat Raisers Association

HONORS AND AWARDS:

Vice Chancellor's Award in Excellence, Texas A&M University System Agriculture Program (Industry/Agency/University/Association Team), 2003
 Distinguished Achievement Award, (National) Epsilon Sigma Phi, Water Quality Education, 1996
 USDA Award for Superior Service (Co-Winner, Extension Water Quality Initiative Team), 1995
 Environmental Excellence Award, U. S. Environmental Protection Agency (USEPA) Region VI, 1994
 Environmental Excellence Award, Texas Cattle Feeders Association, 1990
 Fellow, American Society of Agricultural Engineers (ASAE), 1990
 G. B. Gunlogson Countryside Engineering Award, ASAE, 1989

INDUSTRY/GOVERNMENTAL/EXTERNAL COMMITTEES:

Project Director, USDA-CSREES Special Research Grant, Air Quality: Reducing Emissions from Cattle Feedlots & Dairies (TX & KS), 2002-2010
 USDA Agricultural Air Quality Task Force, 1997-2004
 Panhandle Regional Water Planning Group, Member, 1999-2009
 Harrington Regional Medical Center, Board of Directors, 1999-2009

- Administrators Council, 1996-2009; Chairman, 2003 – 2004
- Executive Committee, 2003 - 2004

 National Center for Manure & Animal Waste Management (14-States USDA-CSREES), Operations Committee-2000-2003
 National Pork Producers Council

- Agricultural Technology Evaluation Program, 2000
- Odor Subcommittee/Research Committee, 1994-96

 National Cattlemen's Beef Association, Effluent Limitations Guidelines Task Force, 1998-99
 Texas Natural Resource Conservation Commission, Agricultural Advisory Committee, 1992-98
 National Cattlemen's Beef Association, Environmental Stewardship Award Committee, 1991-98

PATENT ACTIVITY

- Annamalai, K., **J.M. Sweeten** and M. Freeman. 2009. A Reburn Injection System and Optimization with Animal Waste Based Biomass Fuels (ANB) for NO_x and Hg Reduction in Power Plants. Submitted to TAMUS Office of Technology Commercialization (OTC), Texas A&M University System, College Station, TX.
- Sweeten, J.M.**, K. Annamalai, K. Heflin, B.W. Auvermann, L.A. McDonald, L.W. Greene and D. Tolleson. 2008. Production of Thermally-Advanced Feedlot Biomass for Use as Fuel. Texas AgriLife Research-Amarillo. Submitted to U.S. Patent Office, Washington, D.C. Application No. 12/152,374. May 14, 2008.
- Annamalai, K., and **J.M. Sweeten**. 2005. Reburn System with Feedlot Biomass. U.S. Patent No. US6,973,883 B-1. U.S. Patent & Trademark Office, Washington, D.C. 20331. Date of issue: December 3, 2005. 12 p.

PRINCIPAL RECENT PUBLICATIONS, Last 5 Years (career total= 597):

- Lawrence, B., K. Annamalai, **J.M. Sweeten** and K. Heflin. 2009. Co-firing Coal and Dairy Biomass in a 29 KWt Furnace. Applied Energy. October. pp. 2359-2372.
- Carlin, N. T., K. Annamalai, W. L. Harman, and **J.M. Sweeten**. 2009. The Economics of Re-burning with Cattle Manure-based Bioenergy in Existing Coal-Fired Power Plants for NO_x and CO₂ Emissions Control. Journal of Biomass Energy. April, pp. 1139-1157.
- Annamalai, K., **J.M. Sweeten**. 2009. Ash Deposition during Combustion of Cattle Biomass as a Reburn Fuel in a Small-Scale Boiler Burner Facility under Unsteady Transition Conditions. International Journal of Energy Research. May. Accepted. 34 pg.
- Sweeten, J.M.**, K. Heflin, K. Annamalai, B.W. Auvermann, F.T. McCollum, and D.B. Parker. 2009. Combustion-Fuel Properties of Manure or Compost from Paved vs. Un-Paved Cattle Feedlots. In: Proceedings of Texas Animal Manure Management Issues Conference, Texas A&M University System, Round Rock, TX. September 29-30. Pp. 167-180.
- Oh, H., P.G. Goughnour, B. Thien, K. Annamalai and J.M. Sweeten. 2008. NO_x Reduction using Cattle Feedlot Biomass as Reburn Fuel in Coal-Fired Boilers. Energy and Fuels. April. 34 Pg.
- Carlin, N.T., K. Annamalai, H. Oh, G.G. Avizo, B. Lawrence, U. Arcot, **J.M. Sweeten**, K. Keflin and W.L. Harman. 2008. Co-Combustion and Gasification of Coal and Cattle Biomass: A Review of Research and Experimentation. Progress in Green Energy. (Accepted).
- Carlin, N., K. Annamalai, **J.M. Sweeten**, S. Mukhtar. 2007. Thermo-Chemical Conversion Analysis On Dairy Manure-Based Biomass Through Direct Combustion. International Journal of Green Energy. 4: 133-159.
- Annamalai, K., S. Priyadarsan, S. Arumagam, **J.M. Sweeten**. 2007. Principles of Energy Conversion for Coal, Animal Waste, and Biomass Fuels. Encyclopedia of Energy Engineering. Encyclopedia of Energy Engineering and Technology, 1:1, 476-497. 21 p.
- Annamalai, K., B. Martin, **J. M. Sweeten**, K. Heflin. 2006. Pyrolysis, Ignition and Fuel Characteristics of Coal, Feedlot Biomass, and Coal: Feedlot Biomass Blends. Task 1: Fuel Properties. Texas Engineering Experiment Station & Texas Agricultural Experiment Station, Texas A&M University System. Submitted to Texas Commission on Environmental Quality, Austin, TX March 31, 2006. 11 p.
- Annamalai, K., P.G. Goughnour, H. Oh, U. Arcot, and **J.M. Sweeten**. 2006. NO_x and Hg Capture Using Coal, Feedlot Biomass (Cattle Manure) as Reburn Fuels. Task 2: Reburn Experiments for NO_x and Hg Reduction. Texas Engineering Experiment Station & Texas Agricultural Experiment Station, Texas A&M University System. Submitted to Texas Commission on Environmental Quality, Austin, TX August 31, 2006. 22 p.
- Casey, K.D., D.B. Parker, K. **Sweeten, J.M.**, B.W. Auvermann, S. Mukhtar, J.A. Koziel. 2006. Hydrogen Sulfide Emissions from Southern Great Plains Beef Feedlots: A Review. Workshop on Agricultural Air Quality: State of the Science, Potomac, MD. June 5-8. Pp 186-188.
- Casey, K.D., D.B. Parker, K. **Sweeten, J.M.**, B.W. Auvermann, S. Mukhtar, J.A. Koziel. 2006. Hydrogen Sulfide Emissions from Southern Great Plains Beef Feedlots: A Review. In: 2006 Beef Cattle Research in Texas, Department of Animal Science. Texas A&M University, College Station, TX. August. Pp 27-29.
- Colmegna, G., M.B. Puchakagala, K. Annamalai, **J.M. Sweeten**, and K. Heflin. 2006. A Reburn Model for Production of NO_x and Hg Capture with Coal and Feedlot Biomass (Cattle Manure) as Reburn Fuels. Task 4: Model Development. Texas Engineering Experiment Station & Texas Agricultural Experiment Station, Texas A&M University System. Submitted to Texas Commission on Environmental Quality, Austin, TX August 1, 2006. 25 p.
- Megel, A.J., D.B. Parker, R. Mitra, **J.M. Sweeten**. 2006. Assessment of Chemical and Physical Characteristics of Bottom, Cyclone and Baghouse Ashes from the Combustion of Manure. Paper No. 064043, Proceedings, 2006 ASABE (American Society of Agricultural & Biological Engineers), Annual International Meeting, Portland, OR, July 9-12. p.11.
- Sweeten, J.M.**, D.B. Parker, K.D. Casey, S. Mukhtar, J.A. Koziel. 2006. Hydrogen Sulfide Emissions from Southern Great Plains Beef Feedlots & Dairy Corrals. In: Proceedings, Air Quality Conference, Potomac, MD. June 5-7.
- Sweeten, J.M.**, B.W. Auvermann. 2006. What's Ahead in Water, Air & Environmental Quality Issues Affecting the Beef Feedlot Industry: A Southern Great Plains Perspective. Proceedings, Visions for Animal Agriculture & the Environment, John M. Airy Symposium, Iowa State University, Ames, Iowa. January 5-6. 11 p.
- Sweeten, J.M.**, K. Heflin, K. Annamalai, B.W. Auvermann, F.T. McCollum, D.B. Parker. 2006. Combustion-Fuel Properties of Manure or Compost from Paved vs. Un-paved Cattle Feedlots. Paper No. 064143, Proceedings, 2006 ASABE (American Society of Agricultural & Biological Engineers), Annual International Meeting, Portland, OR, July 9-12. 12 p.