2025 SENATE AGRICULTURE AND VETERANS AFFAIRS

SB 2174

2025 SENATE STANDING COMMITTEE MINUTES

Agriculture and Veterans Affairs Committee
Fort Union Room, State Capitol

SB 2174
1/23/2025

A bill relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operation in counties and townships.

10:30 a.m. Chairman Luick opened the hearing.

Members present: Chairman Luick, Vice-Chair Myrdal, Senator Marcellais, Senator Weston, Senator Weber, Senator Lemm

Discussion Topics:

- Setback requirements
- Model zoning task force and makeup
- Effective date and political subdivisions
- Private property rights
- Odor footprint tool and odor sensitivity formula
- Animal units and varying animals
- Animal feeding operation rules and regulations
- Local control and engagement
- Animal agriculture in ND and growth
- County and township zoning authority and rights
- Odor annoyance free threshold
- Public and environmental health
- Department of Environmental Quality
- Excess road use fee collection
- Local infrastructure and Ag Infrastructure grants
- Property tax exemptions
- Dispute settlements of contaminated wells
- Devil's Lake and Lake Alice
- Abercrombie Township
- Public input
- Department of Water Resources, water quality permits, and water pollution
- Groundwater and well monitoring frequency
- Liability for contamination and compensation

10:31 a.m. Senator Paul Thomas, District 6, testified in favor and introduced the bill.

10:35 a.m. Doug Goehring, ND Agriculture Commissioner, testified in favor.

10:40 a.m. Julie Ellingson, ND Stockmen's Association, testified in favor.

10:44 a.m. Aaron Birst, Association of Counties, testified in favor.

10:46 a.m. Lesley Icenogle, ND Corn Growers Association, testified in favor and submitted testimony # 36192.

10:47 a.m. Matt Purdue, ND Farmer's Union Members, testified in favor and submitted testimony #30951.

10:52 a.m. Parrell Grossman, Legislative Director of the ND Soybean Growers Association, testified in favor and submitted testimony #30988.

10:58 a.m. Pete Hanebutt, policy director of ND Farm Bureau, testified in favor.

11:01 a.m. Larry Syverson, Director of Intergovernmental Relations at ND Township Officers Association, testified in favor.

11:05 a.m. Shaun Quissell, Director of the Grain and Livestock Licensing Division at the ND Departments of Agriculture, testified in favor.

11:13 a.m. Samuel Wagner, Ag and Food Field Organizer with the Dakota Resource Council, testified in opposition and submitted testimony #30900.

11:23 a.m. Jeff Kenner, farmer from Devil's Lake, testified in opposition.

11:36 a.m. Erik Olson, resident of the Abercombie Township in ND, testified in opposition and submitted testimony #30955

11:40 a.m. Lanny Kenner, former resident of Devil's Lake, ND, testified in opposition.

11:44 a.m. Marty Haroldson, Permits Program Manager of the Division of Water Quality within the ND Department of Environmental Quality, testified neutrally and submitted testimony #30902

Additional written testimony:

Karen S. Anderson, resident of Warwick, ND, submitted testimony #30570 in opposition.

Randal Coon, resident of Buffalo ND, submitted testimony #30748 in opposition.

Sandy M. Hansen, ND citizen, submitted testimony #30776 in opposition.

Cindy E. Zick, resident of Wahpeton, ND, submitted testimony #30812 in opposition.

Collen M. Paczkowski, resident of Abercrombie, ND, submitted testimony #30863 in opposition.

Karen R. Ellingson, resident of Christine, ND, submitted testimony #30865 in opposition.

Dennis Hulne, resident of Abercrombie, ND, submitted testimony #30874 in opposition.

Earl Myhre, resident of Wahpeton, ND, submitted testimony #30883 in opposition.

Mary J. Shmid, Crooked Lane Farm Folk School, submitted testimony #30889 in opposition.

Mary F. Sahl, resident of Wahpeton, ND, submitted testimony #30897 in opposition.

Kathrin Volochenko, Treasurer of the Nonpartisan League, submitted testimony #30915 in opposition.

Cynthia Y. Olson, resident of Abercrombie, ND, submitted testimony #30961 in opposition.

11:59 a.m. Chairman Luick closed the hearing.

Audrey Oswald, Committee Clerk

Karen Anderson, 8710 36th St NE, Warwick, ND 58381, 701 739 4722, Benson County

Members of the committee, thank you for taking time to read my testimony not supporting SB 2174. I am a farmer, rancher and RV Site owner on the banks of Devils Lake. I feel the setback changes are unnecessary and dangerous. The final decisions in setback distance should be left to the individual counties and townships. The nuances of each area in the state are better known by those local entities with input from their own citizens.

Shrinking the set back distance is also a device to allow more AFO's to congregate in some areas. Additionally, applying numbers of animals in the set back distance should depend on the species. Cattle and swine waste have quite different olfactory effects.

The idea that setbacks are determined in part by prevailing wind speeds is ludicrous. A high velocity wind event that goes on for one or multiple days without a long break in starting and stopping will impact the living conditions of those people close or outside of the current setback distance. Shrinking those distances by casting a wand from the state is not conducive to the wide-open fresh air that many people in the state enjoy without having to think about it.

The increase in AFOs seems to be the focus of the current ND Agriculture Department and other entities involved in creating more large feeding operations in our state. Please consider the other uses for land that will be affected negatively by decreasing setback distances and do not pass this bill with the distances listed in it.

Please consider not approving these proposed setback changes as North Dakotans hope to continue to live next to agriculture businesses and enjoy the beautiful time spent outdoors in North Dakota.

Testimony in Opposition to SB2174

Prepared by Randy Coon

I would like to encourage the committee to give this bill a "Do Not Pass" recommendation. This bill has the feel of a heavy-handed state government taking local control away from townships. This is a slippery slope, and if this bill is passed it will encourage additional actions like this by the the state government. SB2174 contains two separate agendas regarding Animal Feeding Operations (AFO). The bill attempts to greatly reduce setbacks but tries to mitigate those reductions by including an odor model. The odor model is theoretical and has not been proven to provide adequate protection for those residing near an AFO. The real agenda of this bill is to reduce setbacks so the AFO can locate almost anywhere they desire. The recent AFO attempts to locate in Noth Dakota have been in the eastern portion of the state, close to the Interstate 29 and 94 highway systems. This allows the facility to more easily ship its products south to finishing facilities or processing centers. This area of the state is the most populist area and the greatest number of people will be adversely affected by these reduced setbacks.

In a letter to the editor in the AGWEEK, state representative Paul Thomas stated that animal agriculture can help rural communities thrive. He quoted a multiplier of 1.62 from a University of Nebraska study. This would be a multiplier from an input-output model, and its technical name is input-output interdependence coefficient. A multiplier measures the linkages between sectors of the economy. If a net new dollar is introduced into an economic unit for that sector, it will result in an additional 62 cents of economic activity being generated before it exits that economic unit. By comparison, the North Dakota crops sector has a multiplier of 3.685 (Coon et al 1985). The relatively low level of indirect and induced economic activity is due primarily to the basic structure of the AFO industry. This industry is concentrated and integrated, resulting in a small amount of economic activity in the local economy.

The AFO buildings located in rural areas are not innocent buildings sitting on the prairie. These facilities are major sources of pollution and environmental problems. These facilities can be sources for air, land, and water pollution. SB2174 acknowledges that odors from an AFO are annoying. However, the real problem is that the odors are actually hydrogen sulfide, methene, ammonia, and carbon dioxide. These are all considered toxic gases by the Environmental Protection Agency. Hog AFOs store the animal waste in pits below the barns and use fans to exhaust these gases 24/7/365. Without adequate setbacks these gases can have adverse medical consequences for persons with methicillin-resistant staphylococcus aureus (MRSA), chronic obstructive pulmonary disease (COPD), asthma, and cardio-vascular disease. Dairy AFO operations tend to store the animal waste in lagoons because of the larger volumes of waste.

The proposed dairy near Abercrombie is projected to produce over 100,000,000 gallons of waste annually. The Iowa Environmental Council (2023) has estimated the additional health expenses due to AFOs in the state to reach $167.5 million per year. Reducing the setbacks to the distances proposed in SB2174 reduces the level of protection for rural citizens and could potentially cause detrimental effects to their health.

Water pollution can easily occur if nutrient management plans are not properly implemented. Soil test recommendations should never be exceeded when applying manure to fertilize for the nitrogen and phosphorus crop requirements. Applying manure at recommended rates is fertilizing, but exceeding the recommended rates is simply the dumping of waste. Excess nitrogen run-off results in nitrates in the water and the phosphorus run-off has resulted in the growth of algae blooms. The presence of excess nitrates in the water has been linked to cancer (Schneider 2023), and Iowa, a leading hog producing state, has the fastest growing cancer incidence rate of any state in the United States. The Iowa Institute of Hydraulic Research has monitored the water quality in Iowa and documented the increase in pollution and the lack of response to the problem (Jones 2023). North Dakota has many rivers and streams, and reducing setbacks especially near these bodies of water will cause long-term pollution problems in the state.

Rural residents of North Dakota, many of whom work outdoors, have come to expect a standard of living with clean water, fresh air, and the ability to participate in outdoor activities year around. Reducing the setbacks to the distance proposed in SB2174 will definitely challenge these ideals. With hog AFOs constantly venting their manure pits with fans, the adverse effects of their air pollution can destroy their way of life. This will result in citizen push back against these operations as has been experienced in recent years. People will work to protect their property rights, and the proposed unreasonable setbacks will definitely be viewed as a violation of their freedoms and right to a healthy environment. If the people promoting these proposed reduced setbacks think this will be a benefit for rural North Dakota, they are sorely mistaken. Trom Eayrs (2024) has documented what the proliferation of hog AFOs has done to her local community. About all that is left in her county is large hog AFOs, as most family farms, small businesses, and even the school have disappeared. A similar situation has occurred in Iowa, were a study recorded the destruction of the rural areas. The article written from this study by Charlie Hope-D'Anieri (2022), is titled "Towns Just Turned to Dust". I certainly hope this is not the vison the people promoting the reduced setbacks have for North Dakota. Often, passing laws has unintended and unforeseen consequences. North Dakota will not be immune from the well documented problems that other states are dealing with. What has happened in neighboring states will come here, also. SB2174 was conceived by several special-interest groups without any consideration for the rural people of the state they want to "throw under the bus". This is a bad and unreasonable bill, **PLEASE VOTE NO ON SB2174**. Thank you.

REFERENCES

Coon, Randal C., F. Larry Leistritz, Thor A. Hertsgaard, and Arlen G. Leholm. 1985. Agricultural Economics Report No. 187. Fargo: North Dakota State University, Department of Agricultural Economics.

Hope-D'Anieri, Charlie. 2022. "Towns Just Turned to Dust: How Factory Hog Farms Help Hollow Out Rural Communities". The Guardian. http:www.theguardian.com/environment/2022/05/us-Industrial-hog-farming-rural-towns

Iowa Environmental Council. 2023. "The Costs of CAFOs: Impacts On Your Wallet And Your Health". Des Moines, Iowa.

Jones, Chris. 2023. *The Swine Republic*. Ice Cube Press. North Liberty, Iowa.

Schneider, Keith. 2023. "On Cancer Road, A Group of Southeastern Minnesota Counties Ask If Nitrate Exposure to Blame". MinnPost: Minneapolis, Minnesota.

Trom Eayrs, Sonja. 2024. *Dodge County Inc*. The University of Nebraska Free Press. Lincoln, Nebraska.

Personal Information:

Randy Coon
3666 139th Avenue SE
Buffalo, ND 58011-9627

Cell Phone: 701-238-5479

Testimony in Opposition to SB2174 Prepared by Sandy Hansen, resident of Barnes County, ND I would like to encourage the committee to give this bill a ÒDo Not PassÓ recommendation. The attempt to greatly reduce setback requirements of Animal Feeding Operations (AFO) does not take into consideration the quality of life of our rural citizens.In a very recent essay by Alec T. Goss Đ An Iowa-Focused Impact Analysis of ÔNational Pork Producers v. RossÕ Đ the author points out that ÒThe costs to human health Đ monetary and physical Đ must be prioritized when considering the impacts of industrial agriculture.Ó He further explains that living near an AFO can increase various respiratory conditions, gastrointestinal diseases, and even PTSD symptoms as hydrogen sulfides and semivolatile particles can be linked to feelings of stress and anxiety. There is also the risk of infectious disease in livestock that can pose a threat to nearby homesteads and communities, plus the risk of harm to our dwindling water supplies. And, as always, the loss of value on properties surrounding AFOs because of the risks cited above as well as the Đ letÕs face it Đ inescapable stench.This is a bad and unreasonable bill, PLEASE VOTE NO ON SB2174. Thank you.

Testimony In Opposition to SB 2174

Mike and Cindy Zick, 17795 69th St. SE, Wahpeton, ND 58075,
701-640-1987, Richland County

Committee Members:

We would appreciate you taking time to read our testimony in opposition of SB 2174.

We live 1 mile North of a proposed 12,500 head dairy operation.

Why do these operations need to be closer to people's homes, schools, etc? If anything, you should be increasing the setback of these operations.

It is not just the odor, its the contamination of the air we breathe and the contamination of our soil and precious water which we all require to live.

We have lived all our life in North Dakota and love the abundance of clean air and water.

What's to stop these farms from being built close to new developments which are happening every year near Fargo and Wahpeton? Would the population in ND continue to grow? I think not.

Please DO NOT APPROVE this proposed setback, and let us all continue to enjoy outdoor life in North Dakota.

Thankyou for your time.

I am in opposition to this Bill 2174 and the effects it could have on our community.

Dear Senators Thomas, Conley, Lemm, Weston & Representatives Beltz & Hauck and members of the ND Legislature

With regard to Senate Bill No. 2174

In regards to the proposal to make it easier for CAFOs and feedlots to locate where they want, please let us know that you haven't been bought and paid for by the CAFO industry lobby. The ominous trend in ND is to deregulate industries for the purpose of increasing short term profits. All too often we see where campaign contributions and favors to legislators lead to changes in laws and regulations that benefit industry. You were elected to represent us, not the feedlot industry.

Feedlots are not benign. They create lots of objectionable odors, noises, pollution threats, health threats and truck traffic to mention just a few of the issues they create. If they are allowed at all, they should be isolated in remote rural settings, far far away from residential homes. CAFOs are nothing like normal farming and ranching; they are intensified, high density industrial operations that deteriorate adjacent property values. Who would want to live in a home downwind from a pig, cow, chicken etc. farm? NOBODY! Peoples' single biggest lifetime investment is in their home. Allowing an objectionable industry to locate next door destroys property values not to mention the dangers to health, land and water resources.

When you consider this legislation, please keep in mind all the people that will be subjected to the problems brought by CAFOs. Please put yourself in their shoes. How would you like it if a feedlot was built next door to your home? Ask the people proposing the CAFO if they would live next to this....ask them if they would want their children to go to school next to a field of manure full of nitrates....ask the people of Iowa what they think of their state since allowing the lack of legislation to destroy water, land and other resources.

Take the time to educate yourselves to the ramifications a yes vote on this proposal will mean for the entire state. Show us you know who you are working for and who you represent by voting NO on this proposal. Thank you.

Sincerely,

Karen Ellingson

Karen Ellingson
Christine, ND

Mr. Chairmen and committee Members,

Thank you for allowing me to submit my testimony of opposition to the SB 2174. I live in the area that is proposed and do not want to have to live near this plant .It will not help our community so we shouldn't have to suffer the effects of living next to it. The only people in favor are those that profit from it. Corporations should not take the place of family farms. This bill will clearly benefit the corporations only.

Dennis Hulne

Mr. Chairmen and committee Members,

I am a local resident of Abercrombie Township that wants to be assured that the people of North Dakota are not negatively affected by bill SB 2174. Bills like this while benefiting CAFO projects do not benefit the human population. The proposed 94% odor rating simply allows setback regulations to be minimized. Odor ratings should be a minimum of 98%. Don't allow the state to become another Iowa. Priority should be given to the people of this state - not to a population of cows. Thank you for allowing me to submit my testimony in opposition to SB 2174.

Earl Myhre

As a resident of Richland County, we are writing to you to express our opposition to the proposal easing regulations making it easier for CAFO and feedlots to locate where they want. Within our rural community, we have preserved an environment that is clean and healthy. It is imperative that we are able to continue to live without feedlots that pollute our water and air. It is our hope that you will support the people who have chosen you to support us without being influenced by big industries whose only goal is to make money, not to support the people of North Dakota.

We are small business owners of Crooked Lane Farm Folk School located between Colfax and Abercrombie. Our mission is to preserve our rural way of life through Agri-tourism. We are reliant on our environment being inviting, clean and healthy. A feedlot with its truck traffic, air, and land pollution is a detriment to our business and our states tourist industry.

Please support the preservation of our land, water, and air quality. Please support our quality of life in North Dakota. Please vote No on Senate Bill 2174.

Sincerely,

Mary Jo Schmid

Brent Larson

Crooked Lane Farm Folk School

Colfax, ND

Members of the Committee:
My name is Mary Sahl and I live 1.4 miles from the proposed Abercrombie Dairy. I urge you to give this bill a "Do not Pass" and I am in opposition to this bill for the reasons cited below.

There are numerous health concerns associated with CAFO's at the current set-back distance of 1 mile. These are not normal feed lot operations. These Industrial businesses need to be categorized as such, taxed as such, and held responsible to the levels of Industrial operations like other Industrial businesses in our state. Currently CAFO's have been known to increase miscarriages and increase risk of cancer to sites/residences surrounding them.

To think we can quantify smell, and have smell be the determining factor in set-back distances is ludicrous. We were told numerous times while touring the Tenney, Minnesota Dairy that "smell is objective, and cannot be measured." I find it curious that all of a sudden it is found quantified and measurable. And now, there is a legislative bill saying that 6% of the time it is ok to have smell be so bad that we cannot go outside, that also equals about 22 days each year. The odor footprint the township should have discretion to regulate is an odor footprint up to 98%. Cities should also be allowed extra territorial zoning of one mile for low density agriculture.

When I attended the Farmers Union meeting this year in Bismarck, I was told the Farmers Union had known about this project for over three years. The citizens of Abercrombie did not know about this project until a year ago. It is scary to think that people than our community members were planning our futures.

Dangerous gases are emitted from over 1 million pounds of manure, along with flying dry manure and other noxious fumes. Industrial Ag is not a small matter, it has many consequences felt by communities in other states such as Iowa and Arizona (https://www.hcn.org/issues/53-8/agriculture-a-mega-dairy-is-transforming-arizona's-aquifer-and-farming-lifestyles/). In addition, I have already been taxed for the drainage ditch created for the dairy. It is ditch #1 and it will already cost me $600 for a ditch that does not help drain my grounds, but since my land is nearby, it is being taxed. I'm sure this will also not be a one time tax. I am very nervous to think of the amount of infrastructure that will be needed for roads, bridges etc. in our community. We have heard from various citizens in Dumont, MN that the road traffic and damage to the roads was very disruptive and damaging to the area citizens.

Economic factors are all lined up for CAFO's and the state of Minnesota. Precision Ag is set to support building of a cheese factory in Morris Minnesota. All they need is 50,000 cows to get the plant up and running. Minnesota will get all our free water, all our land to spread manure on, and the state of ND does not get any revenue except the price of a crop of corn off the proposed site. All the processing income in Morris from the proposed cheese plant will go to the state of Minnesota. Why would anyone in ND think this is good economic practice for our state? A central milk and cheese processing plant in central ND would make more economic sense.

We as citizens of this state per the century code are supposed to be #1 on the list for clean water and appropriations. There should be protection for local resident's wells, but there is no governing body to guarantee our rights. We should also be able to breathe clean air, it is the one thing ND citizens are proud of. That is being taken away from us as well. Why should any ND citizen pay taxes on land that becomes uninhabitable? Why would anyone in ND feel safe anymore in a rural setting? I urge you to have a "Do Not Pass" for this bill.
Thank you

Testimony SB2174

Sam Wagner
Ag and Food Field Organizer
Dakota Resource Council
1902 E Divide Ave
Bismarck ND 58501
Testimony in Opposition for SB2174

To the Honorable Chairman and the members of the Committee. We submit these remarks on behalf of DRC.

Mr Chairman,

We stand in opposition to SB2174 for the following reason: Yes we do need a bare minimum standard for all townships regarding AFO laws in our state. I personally have attended the Model Zoning Task Force Meetings where the parameters of this bill were drawn up.

In our previous testimony submitted for the creation of that force, we mentioned that there were too many industry members and not enough experts on public health and safety to consider the needs of the public. As we predicted It became a room of people trying to make a policy as industry-friendly as possible while vilifying Township Board members and local governments at every chance they could get. It was repeatedly stated that they wanted to get these facilities built with as little litigation as possible while ignoring that if done improperly these facilities can cause damage to communities.

We would like break down some of the flaws in SB2174:

1. **Page 2 line 40: This bill strips away remaining township rights..**.By stating that the only things townships will be able to do are prescribed in this law you are effectively stripping all remaining rights from townships and counties.
2. **Page 5 Section 2 amendment. The animal number increases make no sense.** This bill will change the setback numbers for animals drastically but seems to make absolutely no 1000 animals at ¼ mile, 3.500 animals ½ mile, 7,500 ¾ mile,10,000 animals 1 mile, 17,500 1 ¼ miles, 25,000 1 ½ miles, and over 25k at 1 ¾ miles. At ¼ mile to ½ you see a jump of 2,500 animals. ½ to ¾ is a jump of 4,000 animals. But ¾ to 1 mile is 2,500 animals. 1 mile to 1 ¼ miles is 7,500 more animals. 1-1 ½ miles is a jump of 7,500 more animals. There is no rhyme or reason for these setbacks. There is also no differentiation between animals and swine. A 25,000 animal unit operation for swine will have 62,500 animals on site, current regulations ask for a mile and a half for all swine operations at 5000 head or 12.500 swine. You're basically looking at almost 5 times the number of animals packed into a smaller area than previously zoned. This is

not because of technological advancements in livestock management. This is because of greed.

3. **Page 8 Line 8 Odor annoyance-free percentage** This is the section that will cause the most problems with local residents and townships. By enacting this piece of legislation it is a backdoor to reduce setbacks even further. With most animal feeding operations shown during the model zoning committee, the 94% odor free annoyance levels were shown to be significantly smaller than the setback lines drawn in. This hyper-focus on odor ignores other aspects of setbacks such as if there is a biodigester on site storing large quantities of methane that could be explosive, asthma and other pollution triggers that may not smell but harm air quality, or disease transmission. Bird flu has recently been discovered in dairy cattle, and swine operations have various bio security precautions because of large numbers of animals that can transfer disease to humans. Simply put odor is not the only output that needs to be measured to ensure public health and safety. If you want to give townships some semblance of local control you should set the max at 98% odor annoyance, with a minimum of 94%.
4. **Cities Rights. Page 7 line 30 b.** Cities should be given more rights to extend their setbacks for low-density agriculture production areas. We would recommend 1 mile for low density agriculture because typically that is what cities are afforded for their extraterritorial zones.
5. **Township Rights.** If you are to pass this bill you should consider the following options:
    a. Townships should be able to collect fees for road maintenance from the proposed AFO. You can control this by putting a cap on the maximum allowed road fees.
    b. Townships should be allowed to place conditions monitoring wells for contamination and having clear language that can settle disputes if an AFO dries up or contaminates someone's private well.

While a standardization of AFO law is needed, the standards imposed do not do enough to protect citizens and give too much leeway for industry to do what the wish in our communities i for us to support as an organization. If the setbacks were increased to a minimum of 2 miles for operations with 15,000 animals or above, the 94% odor language changed to 98% for townships that want it that could be reduced to no lower than 94% if they wish.and increased protections for cities and townships were permitted we could see this bill as acceptable

However, as it is written. We recommend DO NOT PASS.

From our membership

Please do not support SB 2174 because it lowers the setback distances for CAFO's, it also removes the distinction between hogs and other livestock. Karl Rockman, from the NDDEQ told me hogs should have a greater setback than other livestock and as a retired farrow to finish hog producer and cow/calf producer, I totally agree. ND always has had this distinction. ND Ag Department thinks ND setbacks need to be more inline with other states, have you ever thought we don't want to be like other states that have all those CAFO problems because they are placed to close to rural communities and the rural people. The odor footprint tool has not been proven in ND. The odor footprint tool has not even been developed in ND. If it's been used in Nebraska that's not pertinent to ND. For example weather is not the same in Nebraska as it is in North Dakota. Remember a few sessions ago when we presented our CAFO facts from other states and how they could negatively affect ND?
Well we got shot down because you said our CAFO facts were not pertinent to ND.
Townships used to have the right to increase setback distances by 50%. Legislation took that right away. Swine under 55# used to be counted as a .1 AU (Animal Unit). Legislation took that away. This bill is just more legislation that takes away more local control! People of ND are not being heard!
Lee Fraase. Buffalo ND
Sent from my iPad

NORTH Dakota | Environmental Quality
Be Legendary.™

Testimony in Neutral of
Senate Bill No. 2174

Senate Agriculture and Veterans Affairs Committee
January 23, 2025

TESTIMONY OF
Marty Haroldson, Permits Program Manager

Good morning Chairman Luick and members of the Senate Agriculture and Veterans Affairs Committee. My name is Marty Haroldson, and I am the Permits Program Manager of the Division of Water Quality within the Department of Environmental Quality. I am here to testify in a neutral capacity for Bill 2174.

The Permits Program houses water quality permitting for Animal Feeding Operations or AFOs which includes Concentrated Animal Feeding Operations or CAFOs. Rules and Regulations for the control of pollution from certain livestock enterprises were first issued in 1972 and most recently updated in 2021. Our primary focus is to permit, inspect, and provide oversight on the management of generated manure.

Before our permitting process can begin, approval from the local zoning authority is required. When the local authority does not have zoning for setback determination, the State will determine the setback for a livestock facility. Setback distances are a primary mechanism for all livestock facilities to ensure odor standards can be met.

One item developed during the Sixty-eighth Legislative Assembly was the Model Zoning Task Force. This task force was to look at current livestock zoning in North Dakota and evaluate for appropriate updates. The Department of Environmental Quality took part in Model Zoning meetings. We reviewed odor setback distance development in multiple states and provided input to the Task Force on the proposed odor footprint tool. Based on this review we analyzed previous odor monitoring inspections and found no extra odor violations would have resulted from the proposed setbacks.

We would like to mention that livestock facilities covered under the state setbacks may wish to have the same flexibility as outlined in Sections 1 and 3 of Bill 2174. This committee may want to revisit implementing the odor footprint model as Section 2 is void of this tool when setbacks are determined by the State.

Mr. Chairman and committee members, this concludes my testimony. I would be happy to answer any questions.

Greetings Mr./Madam Chair, members of the Committee, I'm Kathrin Volochenko of the Nonpartisan League.

I request that this committee bring this bill to the floor with a "**Do Not Pass"** recommendation for Senate Bill 1274.

A few of the reasons are as follows:

- Page 2. Lines 20-21: 4.*"~~A~~Except as provided in this section, a board of county commissioners may not preclude the development of an animal feeding operation in the county."*
  This is a blatant attempt to take local control away from counties and townships in the name of profiteering at the expense of the citizens of North Dakota.

- Page 3 Lines 11-16 *"c. A board of county commissioners may not adopt or enforce setbacks applicable to animal feeding operations that exceed the setback distances provided in subsection 7 of section 23.1-06-15, except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A county may not use an odor annoyance-free percentage exceeding ninety-four percent."*
  Setback distances should be at least a 5 statute mile radius from any occupied farmstead, home, or city boundary. Given the <u>proven</u> facts that air that has been polluted by densely packed livestock feeding operations has led to asthma, headaches, sinus issues, and heart disease, not to mention just the horrible stench that permeates everything in the lives of the people that have the misfortune of living near such a facility.

  Please take heed and listen to the concerned citizens of North Dakota and recommend a **"Do Not Pass"** for Senate Bill 1274.

  Thank you for your time and attention.

NORTH DAKOTA Farmers Union

Contact:
Matt Perdue, Lobbyist
mperdue@ndfu.org I 701.641.3303

Testimony of
Matt Perdue
North Dakota Farmers Union
Before the
Senate Agriculture and Veterans Affairs Committee
January 23, 2025

Chairman Luick and members of the committee,

Thank you for the opportunity to testify on Senate Bill No. 2174. My name is Matt Perdue, and I am testifying on behalf of North Dakota Farmers Union's (NDFU) members.

As a member of the Model Zoning Task Force, NDFU supports SB 2174. This legislation is the product of months of discussions among agricultural, county and township stakeholders. It is not the bill our members would have written, but it accurately reflects the discussions, negotiations, and compromises made over the interim.

SB 2174 updates the statutory setback distances for animal feeding operations, the existing versions of which were established in 2000. The legislation generally lowers setback distances for operations with fewer than 7,500 animal units. We appreciate that the legislation also establishes distinct setback distances for operations with greater than 7,500 animal units. The current setbacks reach their upper limit at 5,000 animal units, limiting political subdivisions' ability to respond to large-scale operations.

SB 2174 also allows political subdivisions to extend or reduce setbacks based on the results of an odor footprint tool. At our most recent annual convention, our members adopted policy supporting the development of an odor footprint tool. We think it is important for counties and townships to have the option to choose which zoning mechanism is most appropriate for their residents. The odor footprint tool also gives counties and townships the ability to respond to project-specific factors, including odor mitigation systems.

As I have shared with the Model Zoning Task Force, NDFU is concerned that an odor annoyance free threshold of 94% is too restrictive. We support an odor annoyance free threshold that results in setbacks that, on average, align with the statutory setbacks. An odor footprint tool for North Dakota is currently under development. We look forward to providing a clearer recommendation on the appropriate threshold when that information becomes available.

NDFU also supports amending the bill to clarify the deadline for political subdivisions to update their zoning ordinances. We think it is important to offer adequate time for counties and townships to understand and respond to new statutory setbacks.

Thank you for the opportunity to testify on SB 2174. I will stand for any questions.

Chairman and Members of the committee for Senate Agriculture and Veterans Affairs. My name is Erik Olson and I am a Resident of the Abercrombie Township in North Dakota. I am here today in opposition to the Senate Bill 2174.

The bill before you today showcases how this will provide benefits to animal feeding operations and not the people of North Dakota. As a resident of Abercrombie Township, I am directly being threatened with a new mega dairy planned for in my community. The specific section that states: *"except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A township may not use an odor annoyance free percentage exceeding ninety-four percent."*

My opposition is allowing this be at ninety-four percent and should be no less than ninety-eight percent with the township. This seems as a back door for these mega dairy's to reduce set back distances. Townships should have the allowance to regulate and assure the people that we are protected and not forced out by any mega animal feeding operations.

Thank you for allowing me to testify and I am happy to answer any questions you may have.

Erik Olson

Wahpeton, ND

RE: SB 2174

As many of you know, the majority of the citizens of the City of Abercrombie and Abercrombie Township have expressed their opposition to the proposed Abercrombie Riverview Dairy (see petitions submitted to ND DEQ), yet our concerns seem to fall on deaf ears. We ask that our opposition to this dairy be supported by those elected to represent us.

Now legislation has been introduced to allow even more leeway to these large CAFOs.

Concerns about odors, contamination of drinking water sources, monitoring, spread of diseases, adequate water supplies, etc., must be addressed at the state level before allowing these types of mega operations to be built in our home state.

Thank you.

Cynthia Olson
PO Box 26
Abercrombie, ND

SENATE BILL NO. 2174
SENATE AGRICULTURE AND VETERANS AFFAIRS COMMITTEE
LARRY LUICK, CHAIR
TESTIMONY IN SUPPORT OF SENATE BILL 2174

Chairman Luick and members of the Senate Agriculture and Veterans Affairs Committee, I am Parrell Grossman, and it is my privilege to be the Legislative Director for the North Dakota Soybean Growers Association. I appear in support of Senate Bill 2174.

The North Dakota Soybean Growers Association advocates for 8,900 operations that raise soybeans in North Dakota. In 2024, those soybean farmers planted 6,600,000 acres of soybeans, producing over 245 million bushels of soybeans.

This Committee is already well-aware that, according to a 2022 North Dakota Agriculture Industry Economic Contribution Analysis conducted by the NDSU Department of Agriculture, the economic contribution to North Dakota is $30.8 billion, including $18.8 billion from direct output and $12 billion from secondary output.

The Model Zoning Task Force was facilitated and led by Commissioner Goehring and his staff in the Department of Agriculture. Thank you to that agency and, particularly, to Shaun Quissel, for all their hard work in this area. The task force was comprised of representatives of the Department of Environmental Quality, counties and townships, planners and many different agricultural commodities groups. Each agency, entity, or organization brought significant expertise to the group and process. It consisted of many meetings over a 20-month period which included many discussions, diverse opinions, and research including other states' setback distances laws, as well those states' use of odor footprint tools in determining and regulating setbacks for animal feeding operations, or "AFOs." These scientific odor footprint tools have significantly changed the hard and fast rules of setback distances that are nonscientific or otherwise may be arbitrary.

The Association supports this legislation for many reasons. Standardizing setback distances for AFOs serves several purposes, including balancing agricultural interests, environmental protection, and community concerns.

Among other reasons, standardized setbacks support agricultural growth because AFOs are a market for many crops or value-added products, that are suitable for animal feed, including soybeans, corn, barley, wheat, and oats. Soybean meal is a high-quality protein feed ingredient for many animal species. Soy meal is cost-effective and readily available in North Dakota, ensuring a reliable supply chain for AFOs.

In addition to enhancing crop marketing opportunities for North Dakota farmers there are multiple compelling reasons for standardization include:

1. Protecting public health and quality of life, including odor mitigation, air quality, and water protection. These setbacks reduce the likelihood of odor-related nuisances affecting nearby residents, businesses, and public spaces. These setbacks provide adequate space between AFOs and sensitive areas and help limit exposure to airborne contaminates, such as ammonia and particulate matter. Appropriate setbacks from water sources can help prevent runoff from contaminating drinking wanted supplies, rivers, and lakes.

   Providing predictability and clarity. For producers, farmers and ranchers benefit from clear, uniform setback standards, as they provide predictable requirements when planning new or expanded facilities. For example, an entity considering a dairy operation in North Dakota must be able to know the “rules of the road” in considering whether to locate its operations here. Uniform setbacks reduce delays caused by confusion over inconsistent regulations. Residents and local governments can be confident knowing AFOs will be developed with minimum distances to safeguard their environment and property values.

2. Supporting Agricultural Growth. Standardized rules streamline the permitting and approval process for AFOs, reducing regulatory hurdles. Producers can design facilities knowing they meet state or local standards without fear of subjective or inconsistent decisions.

3. Finally, the use of the odor footprint tool will help align the setbacks with science-based policies. Studies based upon odor dispersion modeling support

the use of an odor footprint tool, allowing both flexibility and maintaining a consistent baseline for all operations.

The Association emphasizes the potential for enhancing the soybean market, and the market for other crops produced by our farmers, as well as the other economic benefits to the surrounding areas of AFOs. This legislation will fairly and effectively allow or facilitate the locations of existing or potential AFOs.

The Agriculture Department and Model Zoning Task Force invested significant expertise and thoughtful debate in this work-product and has proposed this legislation. The Association appreciated the opportunity to participate and recommends this legislation as a favorable result.

Mr. Chairman and members of the Senate Agriculture and Veterans Affairs Committee, the Association respectfully urges you, after thoughtful consideration and debate, to give Senate Bill 2174 a “Do Pass” recommendation.

Thank you for your consideration and I would be pleased to answer any questions.

NORTH DAKOTA CORN GROWERS ASSOCIATION

In Favor of SB 2174

Senate Agriculture and Veterans Affairs

January 23, 2025

Chairman Luick and Committee members:

For the record, my name is Lesley Icenogle. Thank you for the opportunity to testify on behalf of the North Dakota Corn Growers Association (NDCGA) in favor of Senate Bill 2174.

NDCGA was actively engaged in the Model Zoning Task Force, and we support the revised setback distances in the bill. These setbacks, along with the odor footprint tool under development, are based on sound science and best practices. The odor footprint tool will give political subdivisions flexibility to extend or reduce setback distances based on local conditions.

NDCGA does have one concern with the bill, which is the lack of enforcement for local governments with zoning ordinances that are out of compliance. We would support a mechanism other than a lawsuit to address non-compliance.

NDCGA appreciates the Legislature's investments over the last biennium to expand animal agriculture in the state. SB 2174 will continue that important work. Thank you for your consideration, and I will stand for questions.

2025 SENATE STANDING COMMITTEE MINUTES

Agriculture and Veterans Affairs Committee
Fort Union Room, State Capitol

SB 2174
1/23/2025

A bill relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operations in counties and townships; and to provide an effective date.

2:43 p.m. Chairman Luick opened the hearing.

Members present: Chairman Luick, Vice-Chair Myrdal, Senator Marcellais, Senator Weston, Senator Weber, Senator Lemm

Discussion Topics:

- Setbacks and odor tools
- Environmental quality and contaminated wells

2:43 p.m. Chairman Luick led discussion on updates for the bill and waiting for more input.

2:45 p.m. Chairman Luick adjourned the meeting.

Audrey Oswald, Committee Clerk

2025 SENATE STANDING COMMITTEE MINUTES

Agriculture and Veterans Affairs Committee
Fort Union Room, State Capitol

SB 2174
1/30/2025

A bill relating to the regulation of odors in an animal feeding operation.

10:05 a.m. Chairman Luick called the meeting to order.

Members present: Chairman Luick, Vice-Chair Myrdal, Senator Marcellais, Senator Weston, Senator Weber, Senator Lemm

Discussion Topics:

- Encroaching space
- Past efforts and current statue
- Incoming livestock operations
- Local government and authority

10:08 a.m. Senator Lemm moved a Do Not Pass.

10:09 a.m. Senator Weston seconded the motion.

Senators	Vote
Senator Larry Luick	Y
Senator Janne Myrdal	Y
Senator Randy D. Lemm	Y
Senator Richard Marcellais	Y
Senator Mark F. Weber	Y
Senator Kent Weston	Y

Motion passed 6-0-0.

Senator Luick will carry the bill.

10:11 a.m. Chairman Luick closed the hearing.

Audrey Oswald, Committee Clerk

REPORT OF STANDING COMMITTEE
SB 2174 (25.0603.02000)

Agriculture and Veterans Affairs Committee (Sen. Luick, Chairman) recommends **DO NOT PASS** (6 YEAS, 0 NAYS, 0 ABSENT OR EXCUSED AND NOT VOTING). SB 2174 was placed on the Eleventh order on the calendar. This bill does not affect workforce development.

2025 SENATE STANDING COMMITTEE MINUTES

Agriculture and Veterans Affairs Committee
Fort Union Room, State Capitol

SB 2174
2/7/2025

A bill relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operations in counties and townships.

8:44 a.m. Chairman Luick opened the hearing.

Members present: Chairman Luick, Vice-Chair Myrdal, Senator Marcellais, Senator Weston, Senator Weber, Senator Lemm

Discussion Topics:

- Reconsideration
- Original bill
- Interim study
- Maximum allowed setbacks
- Number of animals
- County zoning ordinance
- Proposed amendments
- Odor modeling tool

9:31 a.m. Senator Paul Thomas, District 6, testified in favor.

9:41 a.m. Senator Luick closed the hearing.

Audrey Oswald, Committee Clerk

2025 SENATE STANDING COMMITTEE MINUTES

Agriculture and Veterans Affairs Committee
Fort Union Room, State Capitol

SB 2174
2/13/2025

A bill relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operations in counties and townships.

10:21 a.m. Chairman Luick opened the hearing.

Members present: Chairman Luick, Vice-Chair Myrdal, Senator Marcellais, Senator Weston, Senator Weber, Senator Lemm

Discussion Topics:

- Setback removal
- Odor control tool
- Topography and odor variance
- Townships and counties
- Mandate or ability

10:28 a.m. Shaun Quissell, Division Director for the ND Department of Agriculture, testified in neutral.

10:29 a.m. Senator Weber moved to adopt the amendment LC# 25.0603.02003.

10:30 a.m. Senator Lemm seconded the motion.

Senators	Vote
Senator Larry Luick	Y
Senator Janne Myrdal	Y
Senator Randy D. Lemm	Y
Senator Richard Marcellais	Y
Senator Mark F. Weber	Y
Senator Kent Weston	Y

Motion passes 6-0-0.

10:30 a.m. Senator Lemm moved a Do Pass As Amended.

10:30 a.m. Senator Myrdal seconded the motion.

Senators	Vote
Senator Larry Luick	Y
Senator Janne Myrdal	Y
Senator Randy D. Lemm	Y
Senator Richard Marcellais	N
Senator Mark F. Weber	Y

Senator Kent Weston	Y

Motion passed 5-1-0.

Senator Lemm will carry the bill.

10:31 a.m. Chairman Luick closed the hearing.

Audrey Oswald, Committee Clerk

25.0603.02003
Title.03000

Prepared by the Legislative Council staff for Senator Luick
February 12, 2025

Sixty-ninth
Legislative Assembly
of North Dakota

PROPOSED AMENDMENTS TO

HD 2/13/25 Page 1 of 10

SENATE BILL NO. 2174

Introduced by

Senators Thomas, Conley, Lemm, Weston

Representatives Beltz, Hauck

A BILL for an Act to amend and reenact ~~section~~sections 11-33-02.1~~, subdivision a of subsection 7 of section 23.1-06-15,~~ and ~~section~~ 58-03-11.1 of the North Dakota Century Code, relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operations in counties and townships; and to provide an effective date.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. AMENDMENT. Section 11-33-02.1 of the North Dakota Century Code is amended and reenacted as follows:

11-33-02.1. Farming and ranching regulations - Requirements - Limitations - Definitions.

1. For purposes of this section:
   a. "Animal feeding operation" means a lot or facility, other than normal wintering operations for cattle and an aquatic animal production facility, where the following conditions are met:
      (1) Animals, other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for at least forty-five days in a twelve-month period; and
      (2) Crops, vegetation, forage growth, or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility.

2 of 16

b. "Farming or ranching" means cultivating land for the production of agricultural crops or livestock, or raising, feeding, or producing livestock, poultry, milk, or fruit. The term does not include:

(1) The production of timber or forest products; or

(2) The provision of grain harvesting or other farm services by a processor or distributor of farm products or supplies in accordance with the terms of a contract.

c. "Livestock" includes beef cattle, dairy cattle, sheep, swine, poultry, horses, bison, elk, fur animals raised for their pelts, and any other animals that are raised, fed, or produced as a part of farming or ranching activities.

d. "Location" means the setback distance between a structure, fence, or other boundary enclosing an animal feeding operation, including its animal waste collection system, and the nearest occupied residence, the nearest buildings used for nonfarm or nonranch purposes, or the nearest land zoned for residential, recreational, or commercial purposes. The term does not include the setback distance for the application of manure or for the application of other recycled agricultural material under a nutrient management plan approved by the department of environmental quality.

2. For purposes of this section, animal units are determined as as provided in subdivision c of subsection 7 of section 23.1-06-15.

3. A board of county commissioners may not prohibit or prevent the use of land or buildings for farming or ranching and may not prohibit or prevent any of the normal incidents of farming or ranching.

4. ~~A~~Except as provided in this section, a board of county commissioners may not preclude the development of an animal feeding operation in the county.

5. A board of county commissioners may not prohibit the reasonable diversification or expansion of a farming or ranching operation.

6. A board of county commissioners may adopt regulations that establish different standards for the location of animal feeding operations based on the size of the operation and the species and type being fed.

7. If a regulation would impose a substantial economic burden on an animal feeding operation in existence before the effective date of the regulation, the board of county commissioners shall declare ~~that~~ the regulation ~~is~~ ineffective with respect to any animal feeding operation in existence before the effective date of the regulation.

8. a. A board of county commissioners may establish high-density agricultural production districts in which setback distances for animal feeding operations and related agricultural operations are less than those in other districts.

b. A board of county commissioners may establish, around areas zoned for residential, recreational, or nonagricultural commercial uses, low-density agricultural production districts in which setback distances for animal feeding operations and related agricultural operations are greater than those in other districts; provided, the low-density agricultural production districts may not extend more than one and one-half miles [2.40 kilometers] from the edge of the area zoned for residential, recreational, or nonagricultural commercial uses.

c. A board of county commissioners may not adopt or enforce setbacks applicable to animal feeding operations that exceed the setback distances provided in subsection 7 of section 23.1-06-15, except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A county may not use an odor annoyance free percentage exceeding ninety-four percent.

d. For purposes of this subsection, a "related agricultural operation" means a facility that produces a product or byproduct used by an animal feeding operation.

9. a. A person intending to construct an animal feeding operation may petition the board of county commissioners for a determination whether the animal feeding operation would comply with zoning regulations adopted under this section and filed with the department of environmental quality under section 11-33-22 before the date the petition was received by the county.

b. The petition must contain a description of the nature, scope, and location of the proposed animal feeding operation and a site map showing road access, the location of any structure, and the distance from each structure to the nearest section line.

c. If the board of county commissioners does not validly object to the petition within sixty days of receipt, the animal feeding operation is deemed in compliance with the county zoning regulations. If the county allows animal feeding operations as a conditional use, the conditional use regulations must be limited to the board's authority under this section, and the approval process must comply with this section. The county shall make a valid determination on the application within sixty days of the receipt of a complete conditional use permit application.

d. If the board of county commissioners determines the animal feeding operation would comply with zoning regulations or fails to object under this section, the county may not impose additional zoning regulations relating to the nature, scope, or location of the animal feeding operation later, provided an application is submitted promptly to the department of environmental equality, the department issues a final permit, and construction of the animal feeding operation commences within three years from the date the department issues its final permit and any permit appeals are exhausted. Any objection or determination that subsequently is reversed, set aside, or invalidated by a court of this state, is not a valid objection or decision for the purpose of calculating a procedural timeline under this section.

e. A procedural timeline imposed by this section continues to be in effect during the pendency of any appeal of a county action or determination.

f. A board of county commissioners may not:

~~a.~~ (1) Regulate or impose zoning restrictions or requirements on animal feeding operations or other agricultural operations except as expressly permitted under this section;

~~b.~~ (2) Impose water quality, closure, site security, lagoon, or nutrient plan regulations or requirements on animal feeding operations;

~~c.~~ (3) Charge fees or expenses of any kind totaling, in the aggregate, more than five hundred dollars in connection with any permit, petition, application, or other request relating to animal feeding operations; or

~~d.~~ (4) Require an existing animal feeding operation to have a permit for improvements or other modifications of an operation that is in current

compliance with state and federal regulations or require an existing operation to have a permit for improvements or other modifications that bring the operation into compliance with state or federal regulations, if the modifications or improvements do not cause the operation to exceed animal numbers of the setback requirement.

10. If a party challenges the validity of a county ordinance, determination, decision, or objection related to animal feeding operations, the court shall award the prevailing party actual attorney's fees, costs, and expenses.

~~**SECTION 2. AMENDMENT.** Subdivision a of subsection 7 of section 23.1-06-15 of the North Dakota Century Code is amended and reenacted as follows:~~

~~a. In a county or township that does not regulate the nature, scope, or location of an animal feeding operation under section 11-33-02.1 or section 58-03-11.1, the department shall require that any new animal feeding operation permitted under chapter 61-28 be set back from any existing residence, church, school, business, public building, park, or campground.~~

~~(1) If there are fewer than three hundred animal units, there is no minimum setback requirement.~~

~~(2) If there are at least three hundred animal units but no more than one thousand animal units, the setback for any animal operation is one-half mile [.80 kilometer]one-fourth mile [.40 kilometer].~~

~~(3) If there are at least one thousand one animal units but no more than twothree thousand five hundred animal units, the setback for a hog operation is three-fourths mile [1.20 kilometers], and the setback for any other animal operation is one-half mile [.80 kilometer].~~

~~(4) If there are at least two thousand one animal units but no more than five thousand animal units, the setback for a hog operation is one mile [1.60 kilometers], and the setback for any other animal operation is three-fourths mile [1.20 kilometers].~~

~~(5) If there are at least fivethree thousand five hundred one or moreanimal units but no more than seven thousand five hundred animal units, the setback for a hog operation is one and one-half miles [2.40 kilometers], and the setback~~

~~for any other animal operation is one mile [1.60 kilometers]three-fourths mile [1.20 kilometers].~~

~~(5) If there are at least seven thousand five hundred one animal units but no more than ten thousand animal units, the setback for any animal operation is one mile [1.60 kilometers].~~

~~(6) If there are at least ten thousand one animal units but no more than seventeen thousand five hundred animal units, the setback for any animal operation is one and one-fourth miles [2.01 kilometers].~~

~~(7) If there are at least seventeen thousand five hundred one animal units but no more than twenty-five thousand animal units, the setback for any animal operation is one and one-half miles [2.41 kilometers].~~

~~(8) If there are twenty-five thousand one or more animal units, the setback for any animal operations is one and three-fourths miles [2.82 kilometers].~~

SECTION 2. AMENDMENT. Section 58-03-11.1 of the North Dakota Century Code is amended and reenacted as follows:

58-03-11.1. Farming and ranching regulations - Requirements - Limitations - Definitions.

1. For purposes of this section:
   a. "Animal feeding operation" means a lot or facility, other than normal wintering operations for cattle and an aquatic animal production facility, where the following conditions are met:
      (1) Animals, other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of forty-five days or more in any twelve-month period; and
      (2) Crops, vegetation, forage growth, or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility.
   b. "Farming or ranching" means cultivating land for the production of agricultural crops or livestock, or raising, feeding, or producing livestock, poultry, milk, or fruit. The term does not include:
      (1) The production of timber or forest products; or

(2) The provision of grain harvesting or other farm services by a processor or distributor of farm products or supplies in accordance with the terms of a contract.

c. "Livestock" includes beef cattle, dairy cattle, sheep, swine, poultry, horses, bison, elk, fur animals raised for their pelts, and any other animals that are raised, fed, or produced as a part of farming or ranching activities.

d. "Location" means the setback distance between a structure, fence, or other boundary enclosing an animal feeding operation, including its animal waste collection system, and the nearest occupied residence, the nearest buildings used for nonfarm or nonranch purposes, or the nearest land zoned as a residential, recreational, or commercial zoning district. The term does not include the setback distance for the application of manure or for the application of other recycled agricultural material under a nutrient management plan approved by the department of environmental quality.

2. For purposes of this section, animal units are determined as provided under subdivision c of subsection 7 of section 23.1-06-15.

3. A board of township supervisors may not prohibit or prevent the use of land or buildings for farming or ranching or any of the normal incidents of farming or ranching.

4. ~~A~~Except as provided in this section, a regulation may not preclude the development of an animal feeding operation in the township.

5. A board of township supervisors may not prohibit the reasonable diversification or expansion of a farming or ranching operation.

6. A board of township supervisors may adopt regulations that establish different standards for the location of animal feeding operations based on the size of the operation and the species and type being fed.

7. If a regulation would impose a substantial economic burden on an animal feeding operation in existence before the effective date of the regulation, the board of township supervisors shall declare that the regulation is ineffective with respect to any animal feeding operation in existence before the effective date of the regulation.

8 of 10

8. a. A board of township supervisors may establish high-density agricultural production districts in which setback distances for animal feeding operations and related agricultural operations are less than those in other districts.

b. A board of township supervisors may establish, around areas zoned for residential, recreational, or nonagricultural commercial uses, low-density agricultural production districts in which setback distances for animal feeding operations and related agricultural operations are greater than those in other districts; provided, the low-density agricultural production districts may not extend more than one-half mile [0.80 kilometer] from the edge of the area zoned for residential, recreational, or nonagricultural commercial uses.

c. A board of township supervisors may not adopt or enforce setbacks applicable to animal feeding operations that exceed the setback distances provided in subsection 7 of section 23.1-06-15, except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A township may not use an odor annoyance free percentage exceeding ninety-four percent.

d. For purposes of this subsection, a "related agricultural operation" means a facility that produces a product or byproduct used by an animal feeding operation.

9. a. A person intending to construct an animal feeding operation may petition the board of township supervisors for a determination whether the animal feeding operation would comply with zoning regulations adopted under this section and filed with the department of environmental quality under section 58-03-17 before the date the petition was received by the township.

b. The petition must contain a description of the nature, scope, and location of the proposed animal feeding operation and a site map showing road access, the location of any structure, and the distance from each structure to the nearest section line.

c. If the board of township supervisors does not validly object to the petition within sixty days of receipt, the animal feeding operation is deemed in compliance with the township zoning regulations. If the township allows animal feeding operations as a conditional use, the conditional use regulations must be limited to the

board's authority under this section, and the approval process must comply with this section. The township shall make a valid determination on the application within sixty days of the receipt of a complete conditional use permit application.

d. If the board of township supervisors determines the animal feeding operation would comply with zoning regulations or fails to object under this section, the township may not impose additional zoning regulations relating to the nature, scope, or location of the animal feeding operation later, provided an application is submitted promptly to the department of environmental quality, the department issues a final permit, and construction of the animal feeding operation commences within three years from the date the department issues its final permit and any permit appeals are exhausted. Any objection or determination that subsequently is reversed, set aside, or invalidated by a court of this state, is not a valid objection or decision for the purpose of calculating a procedural timeline under this section.

e. A procedural timeline imposed by this section continues to be in effect during the pendency of any appeal of a township action or determination.

f. A board of township supervisors may not:

~~a.~~ (1) Regulate or impose zoning restrictions or requirements on animal feeding operations or other agricultural operations except as expressly permitted under this section;

~~b.~~ (2) Impose water quality, closure, site security, lagoon, or nutrient plan regulations or requirements on animal feeding operations;

~~c.~~ (3) Charge fees or expenses of any kind totaling, in the aggregate, more than five hundred dollars in connection with any permit, petition, application, or other request relating to animal feeding operations; or

~~d.~~ (4) Require an existing animal feeding operation to have a permit for improvements or other modifications of an operation that is in current compliance with state and federal regulations or require an existing operation to have a permit for improvements or other modifications that bring the operation into compliance with state or federal regulations, if the

modifications or improvements do not cause the operation to exceed animal numbers of the setback requirement.

10. If a party challenges the validity of a township ordinance, determination, decision, or objection related to animal feeding operations, the court shall award the prevailing party actual attorney's fees, costs, and expenses.

SECTION 3. EFFECTIVE DATE. This Act becomes effective on August 1, 2026.

REPORT OF STANDING COMMITTEE
SB 2174

Agriculture and Veterans Affairs Committee (Sen. Luick, Chairman) recommends **AMENDMENTS (25.0603.02003)** and when so amended, recommends **DO PASS** (5 YEAS, 1 NAY, 0 ABSENT OR EXCUSED AND NOT VOTING). SB 2174 was placed on the Sixth order on the calendar. This bill does not affect workforce development.

2025 HOUSE AGRICULTURE

SB 2174

2025 HOUSE STANDING COMMITTEE MINUTES

Agriculture Committee
Room JW327C, State Capitol

SB 2174
3/7/2025

A BILL for an Act to amend and reenact sections 11-33-02.1 and 58-03-11.1 of the North Dakota Century Code, relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operations in counties and townships; and to provide an effective date.

10:15 a.m. Chairman Beltz opened the meeting.

Members Present: Chairman Beltz, Vice Chairman Hauck, Representatives Anderson, Dobervich, Henderson, Holle, Hoverson, Kiefert, Nehring, Olson, Rios, Schreiber-Beck, Tveit, Vollmer

Discussion Topics:

- Zoning, sighting, counties/townships
- Model zoning taskforce
- Setbacks not changing
- Voluntary odor modeling tool
- Property rights balance
- Extra tools to use
- Atmospheric data
- Clarity to political subdivisions
- Science-based information

10:15 a.m. Senator Paul Thomas, District 6, Velva, ND, introduced and testified.

10:41 a.m. Doug Goehring, Commissioner, ND Agriculture Department, testified in favor and submitted testimony #39555 and #39556.

10:56 a.m. Pete Hanebutt, ND Farm Bureau testified in favor.

10:58 a.m. Tamara Heintz, President, ND Pork Council, testified in favor.

11:03 a.m. Drew Courtney, Board Member, ND Corn Growers Association. testified in favor and submitted testimony #39503.

11:06 a.m. Matt Perdue, Government Relations Director, ND Farmers Union, testified in favor and submitted testimony #39499.

11:09 a.m. Parrell Grossman, Legislative Director, ND Soybean Growers Association, testified in favor and submitted testimony #39502.

11:12 a.m. Julie Ellingson, ND Stockmen's Association, testified in favor.

11:13 a.m. Larry Syverson, Director of Intergovernmental Relations at ND Township Officers Association, testified in opposition.

11:17 a.m. Lanny D. Kenner, Bismarck, ND, testified for Jeff Kenner, Devils Lake, ND, in opposition and submitted testimony #39488 and #39489.

11:25 a.m. Madeline Luke, Volunteer, Dakota Resource Council, testified in opposition and submitted testimony #39345 and #39346.

11:36 p.m. Samuel Wagner, Ag and Food Field Organizer, Dakota Resource Council, testified in opposition and submitted testimony #40024.
11:45 a.m. Marty Erickson, Division of Air Quality, ND Department of Environmental Quality, testified as neutral.

11:49 a.m. Shaun Quissell, Grain & Livestock Licensing, Division Director, ND Agriculture Department, testified in favor and submitted testimony #40021.

Additional written testimony:
Karen S. Anderson, Warwick, ND, submitted testimony in opposition #38554.
Kathrin Volochenko, Treasurer, Nonpartisan League, submitted testimony in opposition #38705.
Randal Coon, Kief, ND, submitted testimony in opposition #39172.
Alan D. Meyer, Cedar Bluffs, NE, submitted testimony in opposition #39342.
Nancy Meyer, Cedar Bluffs, NE, testified in opposition and submitted testimony #39350.
Cindy Zick, Wahpeton, ND, submitted testimony in opposition, 39368.
Dennis Hulne, Abercrombie, ND, submitted testimony in opposition #39422
Gerald and Beverly Giwoyna, Wahpeton, ND, submitted testimony in opposition #39424
Kelly Meyer, Morton, ND, submitted testimony in opposition #39430
Matt and Pam Kinneberg, Wahpeton, ND, submitted testimony in opposition #39435
Kent Ringdahl, Wahpeton, ND submitted testimony in opposition #39440
Earl Myhre, Wahpeton, ND, submitted testimony in opposition #39448
Mary Sahl, Wahpeton, ND submitted testimony in opposition #39459
Colleen Paczkowski, Abercrombie, ND, submitted testimony in opposition #39470
Sonja T. Eayrs, submitted testimony in opposition #39477 and #39478
Frank Olson, Abercrombie, ND submitted testimony in opposition #39485
Olivia Schloegel, Natural Resources Professional, submitted testimony in opposition #39591.

11:55 a.m. Chairman Beltz closed the meeting.

Diane Lillis, Committee Clerk

Karen Anderson, 8710 36th St NE, Warwick, ND 58381, 701 739 4722, Benson County

Members of the committee, thank you for taking time to read my testimony not supporting SB 2174. I am a farmer, rancher and RV Site owner on the banks of Devils Lake. I feel the setback changes are unnecessary and dangerous. The final decisions in setback distance should be left to the individual counties and townships. The nuances of each area in the state are better known by those local entities with input from their own citizens.

Shrinking the set back distance is also a device to allow more AFO's to congregate in some areas.

The idea that setbacks are determined in part by prevailing wind speeds is ludicrous. A high velocity wind event that goes on for one or multiple days without a long break in starting and stopping will impact the living conditions of those people close or outside of the current setback distance. Shrinking those distances by casting a wand from the state is not conducive to the wide-open fresh air that many people in the state enjoy without having to think about it.

The increase in AFOs seems to be the focus of the current ND Agriculture Department and other entities involved in creating more large feeding operations in our state. Please consider the other uses for land that will be affected negatively by decreasing setback distances and do not pass this bill with the distances listed in it.

Please consider not approving these proposed setback changes as North Dakotans hope to continue to live next to agriculture businesses and enjoy the beautiful time spent outdoors in North Dakota.

Greetings Mr./Madam Chair, members of the Committee, I'm Kathrin Volochenko of the **Nonpartisan League**.

I request that this committee bring this bill to the floor with a "**Do Not Pass"** recommendation for **Senate Bill 2174**.

A few of the reasons are as follows:

- Page 2. Lines 20-21: 4.*"~~A~~Except as provided in this section, a board of county commissioners may not preclude the development of an animal feeding operation in the county."*
  This is a blatant attempt to take local control away from counties and townships in the name of profiteering at the expense of the citizens of North Dakota.

- Page 3 Lines 11-16 *"c. A board of county commissioners may not adopt or enforce setbacks applicable to animal feeding operations that exceed the setback distances provided in subsection 7 of section 23.1-06-15, except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A county may not use an odor annoyance-free percentage exceeding ninety-four percent."*
  Setback distances should be at least a 5 statute mile radius from any occupied farmstead, home, or city boundary, given the <u>proven</u> facts that air that has been polluted by densely packed livestock feeding operations has led to asthma, headaches, sinus issues, and heart disease, not to mention just the horrible stench that permeates everything in the lives of the people that have the misfortune of living near such a facility.

  I'm not implying that large confinement animal feeding operations are a bad thing. However care must be taken to insure that everyone in the area of a facility has the right to breathe clean unpolluted air.

  Please take heed and listen to the concerned citizens of North Dakota and recommend a **"Do Not Pass"** for Senate Bill **2174.**

  Thank you for your time and attention.

Testimony in Opposition to SB2174

Prepared by Randy Coon

Chairman Beltz and members of the House Agriculture Committee, I would urge a "Do Not Pass" vote on this bill. This "Odor Bill" is an unproven and untested simulation model that should not be passed into law without further testing and evaluation. First and most importantly, odor implies something that is unpleasant. However, this bill is dealing with the gases that are constantly produced and distributed into the atmosphere from Animal Feeding Operations manure pits and lagoons. These gases not only have an odor, but also include the toxic chemicals hydrogen sulfide, methene, ammonia, and carbon dioxide. These gases are not only harmful to the atmosphere but also present serious human health risks. Installing a simulation model to determine setbacks for an Animal Feeding Operation should not be attempted until it has been thoroughly evaluated and tested. I have not seen the methodology used to develop this model, but my understanding is it is basically a wind rose model. This simulation model is much too simplified for the complex problem it will be tasked to solve.

I have been involved in developing simulation models, and typically, the more variables included in the analysis the better the model replicates real-world situations. The "Odor Model" basically includes two variables: wind speed and wind direction. Let me give an example of how more variables produces a better simulation model. If you wanted to develop a model to project North Dakota population, using a regression equation with the historic annual populations could determine a formula to predict population. Different regression equations could be tried until one produces a satisfactory **R squared** coefficient. This model would only use one variable but would produce population projections, although, the projections may not be very accurate. A more accurate model to predict population projections is a cohort survival model. Data in the model would include: county (or subcounty) population numbers by gender and age cohort; mortality rates; birth rates; and, in-migration and out-migration rates. Because of the extensive data involved in this simulation model, the expected accuracy would be much greater than using a simple regression equation. Using this example, the wind rose model with only wind direction and wind speed is unlikely to produce adequate distances for Animal Feeding Operations setbacks.

If an "odor simulation" model is to be used to determine such an important measure as setbacks for an Animal Feeding Operation, it must include atmospheric, geographical, topographic, and medical data variables. These data could greatly affect the results the model would produce. Atmospheric variables should include such things as temperature, humidity,

fog, rain events, cloudy/sunny days, and temperature inversion. It is also important to look at the land elevations, roads and highways, buildings, trees, and rivers/streams. Medical information must be included because of the potential health problems caused by the exhausted gases from an Animal Feeding Operation. Medical studies can be used to determine distances the toxic chemicals can affect persons with health concerns. Persons with asthma, COPD, MRSA, and cardio-vascular disease are at the greatest health risk from the gases exhausted from the Animal Feeding Operation. An inventory of medical problems for residents living near the proposed siting area could prove very beneficial.

The ”Odor Bill” as it is presented is inadequate for the task it is supposed to do. In my opinion, this model needs to add a significant number of pertinent variables to be of any value for setback determination. The importance of getting the proper setback distance can not be understated. Environmental and health concerns should not be the overlooked when locating these facilities. Further study and model development must be undertaken before an “Oder Simulation Model” can be applied to setback determination with any degree of confidence.

Please vote NO on SB2174. Thank you.

Contact Information:

Randy Coon

3666 139th Avenue SE

Buffalo, ND 58011

Cell: 701-238-5479

Economic Realities of Poultry CAFOs

Here in eastern Nebraska when COSTCO / Lincoln Premium Poultry (LPP) began selling the idea of local farmers building chicken producing buildings to supply the chicken processing plant to be built in Fremont, NE, they originally claimed a local farmer could build a four building production facility to produce additional revenue for their farming operation. Some farmers became very excited about this prospect until some local organizations brought in ex-producers from other states that had experience with these poultry Concentrated Animal Feeding Operations (CAFOs), These people did not really tell the local farmers they shouldn't do it, they just warned about some of the pitfalls of trying to run these facilities.

To begin with, operating a poultry CAFO is not a part time job. A farmer who's main source of income is their row crops does not have the time to also run a poultry CAFO. They also do not posses the necessary knowledge or experience to operate a poultry CAFO. It is not at all the same as having a backyard flock and not even the same as having a large flock for market. So, somebody would need to be hired to run the CAFO. Four production buildings do not produce enough revenue to be able to pay somebody to run them. The magic number seems to be ten or more buildings. Here in eastern Nebraska you rarely see fewer than twelve buildings at a facility. It is usually 12 to 16 buildings, and in some cases adjacent properties are used to house as many as 24 buildings together.

The reality of the size required was somewhat reinforced when a local farmer here who had befriended the head of LPP expressed his excitement in building a small CAFO. The head of LPP told the local farmer not to do that. He advised the local farmer to wait until somebody else who built a small facility went bankrupt. He could then buy the operation a lot cheaper than building one on his own land.

The out-of-state ex-producers also warned the local farmers to be very careful about the contracts they sign. These typically leave the CAFO owner with all of the risk should something go wrong. The CAFO owner must use the baby birds which are provided by the company. The CAFO owners must only use the feed provided by the company, at the price set by the company. The finished birds can only be sold to the company at prices set by the company and must meet the company's stringent quality control guidelines or be paid at reduced prices or even have shipments rejected with no recompense.

Local farmers who did not attend these meetings, or who were still interested in building a poultry CAFO, often found out that they could not get a loan to build the facility. The lending institutions were well aware of the risk involved and were loathe to lend to someone with no experience with these types of operations. After all, they were farmers, not CAFO operators.

This left LPP with a problem. They needed the production facilities to supply the chicken processing factory being built in Fremont. LPP was ready for this. They simply turned to out-of-state companies that had the funds and knowledge to build, own, and operate the poultry CAFOs. These companies simply leased the land needed for the production facilities from the local farmers. As part of the lease agreement the farmer would be the local face of the operation and they would be the proud owner of the facility after a set period of time, typically 15 to 20 years. (After the facility is fully depreciated for federal tax purposes). What the farmer likely did not realize is that technology moves on and after that

length of time the facility is often out of date and possibly in need of repair. By having the farmer acquire it the CAFO operating company does not have to pay to tear down the facility and return the land to agriculture.

Some savvy farmers do have a decommissioning agreement in lieu of acquiring the buildings when the lease is up. After all, since they do not actually run the poultry CAFOs they still will not have the time or the experience to do so. If they do not have a decommissioning agreement to return the land to agriculture, they will possibly be stuck with a large number of buildings for which they will have no use.

The local farmers in eastern Nebraska were also told that LPP would be buying the grain to produce the poultry feed from the local farmers. The heavy implication was the grain grown by the farmer with the CAFO on his land would be used to produce the feed for the CAFO. Actually, LPP buys their grain from the grain elevator in Fremont at a contracted price. Most of the CAFOs are too far from Fremont for the farmers to truck their grain to Fremont. The farmers still sell their grain the same as they always have. The CAFOs have had very little to no impact on the price the farmers get for their grain.

Local governments also had to be sold on the concept of the poultry CAFOs. The promise of additional tax revenue, employment, and money coming into the community was alluring, so this was initially an easy sell. However, depending on local and state tax laws, there may or may not be more tax revenue. Since the CAFOs are owned and operated by out-of-state companies, the majority of the profits go out of state. The farmer gets the lease money, and there are a couple or a few people locally running the facility. These folks are not usually hired locally, but are brought in from out of state. This is not enough to have a significant impact on the local economy.

There is also a great deal of “not in my back yard” (NIMBY) feeling from neighbors and some local communities.

The CAFO industry has been prepared for this local push back. They have gone to local governments, typically counties, and had them pass a seemingly innocuous resolution that the county was “livestock friendly”. Now when a county board threatens to not approve the building of a CAFO the county is threatened with a lawsuit. After all, they are designated as “livestock friendly”.

The real issue is CAFO facilities are not really agriculture. There is no real connection with the land. For poultry, the only time the birds have contact with the outside is when they are raw material as chicks and when they are finished product. They are then brought into the CAFO by truck and shipped out to the processing factory by truck. They never touch the ground.

In reality CAFOs are meat factories. They bring in raw materials in the form of young animals and feed and ship out live meat to be processed at another factory. They should be treated as factories, not as agriculture. In particular all CAFO's should be regulated like a factory with the proper odor and air pollution protections.

Chairman Beltz and members of the House Agriculture Committee,

I oppose SB2174:the added provision "except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A township may not use an odor annoyance free percentage exceeding ninety-four percent."

The odor setback bill is the only protection from air pollution for residents living near a proposed CAFO. Bad odors limit outside activities, decrease property values, cause stress, depression and high blood pressure. Odors, however, also indicate that harmful substances that are not obvious are present. PM 2.5, the smallest particles that enter the blood stream and cause inflammation in the blood vessels are created by off gassing of manure; endotoxin, remnants of bacterial cell walls present in dust, irritate the sinuses and throat. Ammonia, hydrogen sulfide, CO2 are all produced in large amounts by CAFO's.

CAFO's are designed to produce a lot of meat/milk/eggs in a small area which necessarily produce a lot of air and waterborne waste. Although called farms, they are indeed factories*("a building or buildings in which things are manufactured"* Collins Dictionary). Quoting from the SD Odor Footpint Tool (SDOFT),Part1:Principles and Tool Formulation)

"The livestock industry in the U.S. is largely exempt from the Clean Air Act, the most relevant environmental law dealing with air quality management. For most industrial sources, air permitting is required before commencing the construction of a new facility or expansion of an existing facility.
Two air dispersion models are currently listed by the U.S. EPA as regulatory models: AERMOD and CALPUFF. Both models demand numerous input parameters, including meteorological conditions, terrains, emission source characteristics, receptors, modeling options, output options, etc. As a result, air dispersion modeling is usually done by professionals for a fee."
… The purpose of the modeling is to simulate the movement and dilution of air pollutants in the outdoor air so that the air pollutant concentrations at the locations of interest or concern (e.g., a residential community)can be calculated."

The present bill allows for the use of an odor footprint tool to determine a setback perimeter. The SDOFT is a short cut of the EPA sanctioned models. It uses emission averaged from a sample of Midwestern farms with a specified animal type, manure storage type and production area, odor abatement measures rather than actual site data. It incorporates previous weather patterns for a whole section of a state but not topography, temperature, humidity, number of animals for an individual site. It addresses odor, but not other air quality standards. Furthermore, at the proposed 94% maximum, 22 days of odor so bad you change your activity would be allowable.
You get what you pay for: this SDOFT is a cheap but likely inadequate tool to protect CAFO neighbors**.**
I propose that the odor footprint tool be dropped from this bill. Alternatively, you could study requiring a site specific EPA approved dispersion model which would address both odor and air pollutants that have standards. This should be an acceptable cost to a developer like Riverview Farms which will spend 90 million dollars in Abercrombie and 180 dollars million in Traill County.

This bill fails to promote community acceptance of CAFO's. Townships or counties have the authority to regulate zoning EXCEPT in the case of CAFO's. This is rightfully viewed as an overreach by the state legislature and industry.
When the present setbacks were codified, CAFO's over 5000 AU were not considered .Yet here we are with 12,500 dairy cows 1 mile away from a family home. They are facing 2 manure lagoons totaling the equivalent of 20 Football fields full of waste- consider the odor, flies, dust, traffic, noise.
I propose that you return the right of a local zoning entity to increase the defined setbacks by 50%. Giving the township the ability to increase the setback to 1.5 miles for these largest CAFO's especially, would help with acceptability.

Finally, please remove the provision which allows a CAFO to have the ability to increase the number of animals by 25% without a triggering a higher setback distance(23.1-06-15 subsection 8). This provision is outmoded, enacted when CAFO's were relatively small. Allowing an operation like the Herberg Dairy to increase by 6,250 animals would make the permitted nutrient management plan and odor setback meaningless.

Thank you for your consideration,
Madeline Luke
747 6th St NE, Valley City ND
701 306 7339
mzlnd@yahoo.com
March 7,2025

Enc: SD Odor Footprint Tool (SDOFT),Part1:Principles and Tool Formulation

Foot notes

1. Malodor as a Trigger of Stress and Negative Mood in Neighbors of Industrial Hog Operations Rachel Avery Horton [1,✉], Steve Wing [1], Stephen W Marshall [1], Kimberly A Brownley [1] Am J Public Health 2009 Nov;99(Suppl 3):S610–S615
2. https://www.nar.realtor/animal-feedlots
3. Air Pollution from Industrial Swine Operations and Blood Pressure of Neighboring ResidentsAuthors: Steve Wing, Rachel Avery Horton, and Kathryn M. RoseAuthors Info & Affiliations Environmental Health Perspectives Volume 121, Issue 1 Pages 92 - 96

SDSU Extension

livestock

AUGUST 2020

SOUTH DAKOTA STATE UNIVERSITY®
AGRICULTURAL & BIOSYSTEMS ENGINEERING DEPARTMENT

South Dakota Odor Footprint Tool (SDOFT), Part I: Principles and Tool Formulation

Xufei Yang | Assistant Professor & SDSU Extension Environmental Quality Engineer
Robert Thaler | Professor & SDSU Extension Swine Specialist
Ryan Samuel | Assistant Professor & SDSU Extension Swine Specialist
Richard Nicolai | Associate Professor

Introduction

Livestock and poultry producers continually face economical and time restraint challenges. They seek a lifestyle that does not demand 10 to 16 hours of labor each day. As a result, producers have expanded and concentrated their operations in recent years to make the operation more efficient and bring in additional labor to share the workload. However, this expansion has also resulted in a community concern about emissions of air pollutants, especially odorants. Because of this concern, there has been an increase in complaints towards animal production facilities (Figure 1).

To address these concerns between livestock production facilities and community residences, local regulators establish minimum setback (separation) distances through local zoning and/or state regulatory procedures. Unfortunately, very few of these setback requirements have a scientific basis because the science did not exist and decisions by local officials were based on empirical rules or emotions.

To provide the needed science, air quality researchers at South Dakota State University, University of Nebraska, and University of Minnesota developed the South Dakota Odor Footprint Tool (SDOFT) for estimating odor impacts from livestock and poultry facilities to the surrounding community. These estimates are useful for local government land-use planners and citizens concerned about the odor impact of existing, expanding, or new animal production sites.

The SDOFT involves a two-step procedure. Step 1 estimates the average emissions from a variety of animal facilities and manure storages. This estimate is based on odor measurements from livestock and poultry farms in the upper Midwest. Step 2 estimates the atmospheric dispersion of the emissions from the site. This dispersion is simulated based on AERMOD, an Environmental Protection Agency (EPA) approved air dispersion model using South Dakota climatic conditions.

The SDOFT results provide rural communities and local government officials with the information needed to incorporate science and objectivity into the permitting process. They decide what levels of odors are acceptable and then determine the consequence of the "acceptance" level. Also, the tool provides the livestock producers with science-based information that can be used to properly site livestock facilities.

Why Dispersion Modeling? Why SDOFT?

The livestock industry in the U.S. is largely exempt from the Clean Air Act, the most relevant environmental law dealing with air quality management. However, this exemption has been challenged by environmentalists and other non-farm groups. A recent example of such efforts was a court ruling made by the Court of Appeals for the D.C. in 2017, which demands livestock farms to report the releases of air pollutants such as hydrogen sulfide and ammonia. Although the rule was later repealed, possible new regulations or enforcement of existing regulations could come in the future. Thus, it is helpful to take a look at how air emissions from industrial sources are regulated under the Clean Air Act.

For most industrial sources, air permitting is required before commencing the construction of a new facility or expansion of an existing facility. In general, there are

two air permits involved: a New Source Review (NSR) permit and a Title V operating permit. For both permits, air dispersion modeling is usually mandatory. The purpose of the modeling is to simulate the movement and dilution of air pollutants in the outdoor air so that the air pollutant concentrations at the locations of interest or concern (e.g., a residential community) can be calculated. By comparing the predicted concentrations with air quality standards, regulatory agencies, such as the South Dakota Department of the Environment and Natural Resources, can then determine whether the facility construction or expansion should be permitted, or whether a control technology or practice should be implemented for the facility to reduce its air pollutant emissions.

Two air dispersion models are currently listed by the U.S. EPA as regulatory models: AERMOD and CALPUFF. That is to say, only the modeling results generated by the two models can be used for regulatory purposes, including the determination of compliance with air quality regulations. Both models demand numerous input parameters, including meteorological conditions, terrains, emission source characteristics, receptors, modeling options, output options, etc. As a result, air dispersion modeling is usually done by professionals for a fee.

Again, the livestock industry is currently exempt from the Clean Air Act but this exemption could be removed in the future. To address the air quality challenges related to livestock production, simplified air dispersion modeling tools have been developed and they are free to the general public. Examples include SDOFT for South Dakota, OFFSET for Minnesota (https://extension.umn.edu/manure-management/manure-air-and-water-quality), and NOFT for Nebraska (https://water.unl.edu/manure/odor-footprint-tool). These tools are structured similarly to the U.S. EPA's regulatory air dispersion models but have been substantially simplified and streamlined so that producers, land-use planners, and community residents can understand and use those tools for air quality management.

Different from general-purpose air dispersion models such as AERMOD and CALPUFF, SDOFT is specifically for odor dispersion modeling. Instead of calculating the average odor concentrations downwind from a livestock farm and comparing the concentrations with air quality standards, SDOFT calculates the probability of the occurrence of odor annoyance. A greater distance between the farm and its neighbor(s) would result in a lower chance (frequency) of odor annoyance. Since in most counties of South Dakota odor annoyance is discussed and managed based on its occurrence frequency, the modeling results from SDOFT are expressed in setback (separation) distances required for a target frequency or frequencies.

What Assumptions are Used in SDOFT?

Again, the SDOFT by nature is an air dispersion model but deeply simplified and customized for establishing odor setback distances. For any dispersion models, they require three types of input data: source data, meteorological data, and receptor data. Here, receptors can be neighbors of a livestock farm or any spots near the farm where odor annoyance may take place. Meteorological data include wind speed, wind direction, temperature, solar radiation, etc. that influence odor dispersion in the outdoor air. Sources here are livestock facilities, including livestock barns, lots, and manure storages.

To simplify odor dispersion modeling, the SDOFT has adopted some major assumptions. For sources, it assumes that:

- Livestock barns/houses, lots, and manure storages are all area sources, that is, odor is emitted uniformly throughout the land area of a barn, lot, or storage. This assumption is used when we calculate the total odor emission rate from a livestock farm.
- Odor is emitted at the ground level.
- A livestock farm consisting of multiple houses, lots, and/or storages can however be considered as a point source when we conduct dispersion modeling.
- No high buildings or significant ground objects are located near the livestock farm (and therefore interfere with air movement).

For meteorology, the SDOFT assumes that:

- Historical weather conditions can be used to predict air movement including odor dispersion in the outdoor air.
- For a livestock farm, its historical weather conditions can be approximated by and acquired from the nearest local weather stations that run as part of the state's Mesonet climatology network.
- For counties with similar weather conditions,

they can be pooled together to share the same meteorological dataset.

For receptors, the SDOFT assumes that:

- All receptors are located at the ground level.
- All receptors and sources are located on flat terrain.

How is SDOFT Formulated?

As previously mentioned, the SDOFT involves a two-step procedure. Step 1 estimates the total odor emission rate from a farm site and Step 2 determines the distance and frequency of odor event through dispersion modeling. Our discussion about the tool formulation follows the two-step procedure as well.

Step 1 – Determining the total odor emission rate from a farm site

Emission rate and emission factor are among the most important concepts for air emissions management. They can be confusing to general readers. To clarify, an emission rate refers to the amount of an air pollutant emitted per unit of time. For example, the emission of carbon monoxide (CO) from a boiler is 1000 pounds over 10 days. In this case, the emission rate is 100 lbs CO/day. For dispersion models like the SDOFT, the total emission rate of an air pollutant must be determined before we run the models. An emission factor is a normalized emission rate. The normalization can be done based on material consumption, production, area, volume, etc. In the boiler example, if the boiler burns 20 tons of coals over the 10 days, the emission factor can be calculated by normalizing the CO emission rate (100 lbs CO/day) with the coal consumption rate (2 tons/day) and the result is 50 lbs CO/ton coal. The rationale of using the emission factor is that the emission rate can be highly variable whereas the emission factor is relatively constant. It is unnecessary to measure the CO emission rates from all individual boilers. Instead, we can select representative boilers and measure their average CO emission factors and use them, together with coal consumption records, to estimate the CO emission rates from other boilers. The same philosophy applies here to odor emission determination. Odor emission factors were derived from the measurement of farm sites typical of the Upper Midwest. These emission factors were odor emission rates per unit of land area occupied by a barn, lot, or storage. By multiplying the odor emission factor by the area of a facility, the odor emission rate from the facility can be determined.

With that being said, the total odor emission rate from a farm site is the sum of odor emission rates from all main odor sources on the site. An odor emission rate needs to be calculated for each odor source. If multiple facilities are of similar type (e.g., two swine finishing barns) on the site, the combined areas can be used to simplify the calculations. For each odor source, its odor emission rates (OER) can be calculated with the following equation:

$$\text{OER} = \frac{\text{Odor emission factor} \times \text{Plan area} \times \text{Odor control factor}}{10{,}000}$$

Odor emission factors

The SDOFT bases the odor emission factors on measured odor emissions obtained from measurements made on farms located in the Upper Midwest. In those measurements, odor levels were quantitated with the olfactometry method and presented in the unit of odor unit (OU)/ft^3. Correspondingly, the odor emission factors were in the unit of OU/ft^2-sec. Average values for a series of measurements from each odor source type are in Tables 1 and 2. Average values must be used since wide variation between sites with similar sources existed. Variation is related to such factors as farm management, animal diet, or such things as ambient temperature, humidity, and wind speed. Therefore, the actual odor from a given site may vary as compared to the results from this tool because of the same factors.

Plan area

Plan area is the ground area occupied by a livestock house, lot, or manure storage. To be consistent with other items in the equation, a unit of ft^2 (square foot) must be used. The plan area can be acquired from blueprints, field measurements, aerial or satellite images.

Odor control factors

Several technologies are currently available to control odor, although little testing and research have been done to document their effectiveness (Figure 1). The only technologies where sufficient information is available to determine likely reductions in odor emissions for field conditions are listed in Table 3. The factors vary from 0.1 to 1 and carry no unit; where 1 indicates no odor control and 0.1 indicates 90% odor reduction. Changes and additions to the odor control

Table 1. Odor emission factors for animal housing with an average management level.

Species	Type/Stage of Production	Type of Facility	Odor Emission Factor (OU/ft²-sec)
Cattle	Beef	Dirt/concrete lot; Free stall, scrape	19
	Dairy	Free stall, deep pit; Loose housing, scrape	29
		Tie stall	10
Swine	Gestation	Deep pit, natural or mechanical	243
		Pull plug, natural or mechanical	146
	Farrowing	Pull plug, natural or mechanical	68
	Nursery	Deep pit or pull plug, natural or mechanical	204
	Finishing	Deep pit, natural or mechanical	165
		Pull plug, natural or mechanical	97
		Hoop barn, deep bedded, scrape	19
		Cargill/ open front, scrape Loose housing, scrape Open concrete lot, scrape	53
Poultry	Broiler	Litter	5
	Turkey	Litter	10

Table 2. Odor emission factors for manure handling facilities.

Type of Facility*			Odor Emission Factor (OU/ ft²-sec)
Manure storage facility	Earthen basin		63
	Steel or concrete tank, above or below ground		136
	Crusted stockpile		9
Treatment facility	Anaerobic lagoon	Purple (phototrophic)	2
		Non-phototrophic (non-purple)	3

** Earthen basins are designed for manure storage without any treatment. Lagoons are anaerobic treatment systems.*

Table 3. Odor control factors.

Odor Control Technology		Odor Control Factor
No supplemental odor control implemented on the facility		1.0
Biofilters receiving 100% of air from all exhaust fans		0.1
Oil sprinkling used to control dust within building		0.5
Geotextile cover (at least 2.4 mm thick)		0.5
Straw or natural crust on manure	2" thick	0.5
	4" thick	0.4
	6" thick	0.3
	8" thick	0.2
Impermeable cover		0.1

factors (Table 3) will be made as more research is conducted and more technologies are developed. Currently, there is no standard procedure for getting odor control technologies listed in Table 3, nor is it required by the SDOFT to allow only odor control technologies listed in Table 3. However, estimated reductions in odor emissions should be based on sound scientific research.

Figure 1. Odor control is critical for reducing the frequency of annoying odor events. Shown in this picture is a horizontal biofilter that treats exhaust air from pit fans.

The relative impacts of various odorous sources can be assessed by comparing the size of individual odor emission rates. For example, if a manure storage facility has an odor emission rate of 150×10^4 OU/sec compared to 100×10^4 OU/sec for the housing facility, then the manure storage facility can be projected to have 50% greater influence than the housing facility on the minimum desired setback distance and the resulting overall odor impact on neighbors. The relative size of the odor emission rates also is a good indicator of where odor control would be most beneficial. Generally, you want to spend resources where they will have the greatest benefit overall – on the sources with the largest odor emission rate.

Once the odor emission rates (in the unit of 10^4 OU/sec) from all individual odor sources on a farm site are calculated, they are added together to estimate the total odor emission rate (in the unit of 10^4 OU/sec) from the site. As previously mentioned, the entire farm is assumed as a point source (i.e. a single point on a map) when we move to the next step–odor dispersion modeling. This assumption creates uncertainties and we address this uncertainty issue in the Data Interpretation section in Part 2 of this fact sheet.

Step 2 – Determining distance and frequency of odor events through dispersion modeling

Once the total odor emission rate is calculated, the frequency of odor occurrences at various distances from the farm site can be estimated using Figures S1-S12. The horizontal axis is the total odor emission rate calculated from Step 1. The vertical axis is the distance from the farm site. There are three sets of figures with each set containing 4 figures. Each set is devoted to an area in South Dakota (Figure 2). The four figures in a set provide setback annoyance-free distances for each direction from the odor emitting site. All these figures were generated from AERMOD modeling.

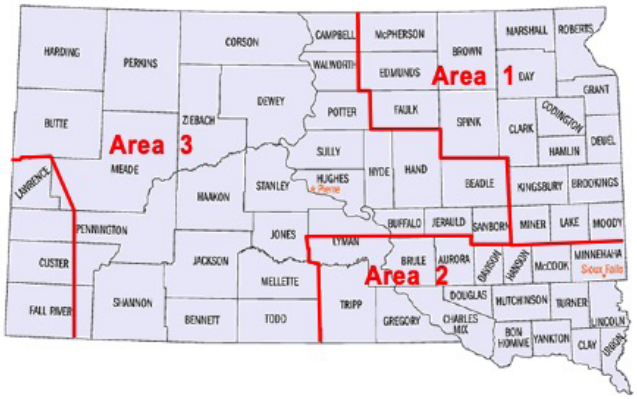


Figure 2. Three areas adopted by the SDOFT.

Annoyance-free frequency

The curves in Figures S1-S12 are known as odor annoyance-free frequency curves. These curves represent different frequencies of time when odors will not be at levels considered "annoying." Options include 91%, 94%, 96%, 97%, 98%, and 99%, and these numbers represent the percent of time during the spring-through-fall period where odors are possibly detected but at a level that is NOT typically considered annoying. An odor intensity level less than 2 on an intensity scale of 0 to 5 is defined as not annoying. Odors with an intensity of less than 2 are weak or mild odors that are not likely to be annoying. A small percentage of the population is highly sensitive to odors. These individuals may detect odors at very low levels and be annoyed at intensities less than 2.

To further clarify, the AERMOD model uses the odor emission rate in the unit of OU/sec as its model input. OU is the odor unit determined using the olfactometry method and it is a different measure than

odor intensity. Correspondingly, the AERMOD model output is also based on OU. To translate the model-predicted odor concentration (in the unit of OU/m^3 air) to odor intensity, a relationship (75 OU/m^3 equivalent to the odor intensity level of 2) established from a previous study is used in the SDOFT. Thus, an odor concentration of less than 75 OU/m^3 is interpreted as not annoying.

The curve selected represents the minimum proportion of hours during which a residence situated at or beyond the setback distance should not be exposed to annoying levels of odor coming from the particular livestock site. Odor annoyance-free frequencies of 99%, 98%, 97%, 96%, 94%, and 91% correspond to 7, 15, 22, 29, 44, and 66 hours/month of annoying odors during April through October. These are the warmer months when odor annoyance is of particular concern. Odor is usually not an issue during winter when the activity of odor-producing microbes is suppressed by low temperatures. Since these predicted frequencies are based on "average" weather conditions, actual frequencies of odor events may be significantly different.

To find the setback distance for a specific frequency curve and total odor emission rate, simply find the total odor emission rate on the horizontal axis, then move vertically to the desired annoyance-free frequency curve, and then move horizontally to the vertical axis. The number on the vertical axis is the separation distance (in feet) needed to achieve the desired frequency of odors. For example, if the 96% curve is chosen, odors at a location within the setback distance would be expected to be at annoying levels more than 4% (100% - 96%) of the time, while odors at a location beyond the setback distance would be expected to be at annoying levels less than 4% of the time.

Different odor annoyance-free frequencies result in different setback distances for the same total odor emission rate. For example, to achieve an odor annoyance-free frequency of 99% for a facility with a total odor emission rate of 150 requires a separation distance of 1.5 miles. (This separation distance is measured from the edge of the nearest odor source.) During the rest of the time (1% or 7 hours per month), annoying odors will be detected at this distance. Reducing the frequency of annoyance-free odors to 96% would require a separation distance of less than 0.5 miles. At this distance, annoying odors would be experienced 4% of the time or 29 hours per month.

Meteorological data – Why three areas?

As a regulatory air dispersion model, AERMOD requires two meteorological data files to simulate the transport of air pollutants including odor in the outdoor air: surface meteorological data and upper air meteorological data. The surface meteorological data characterize the meteorological conditions at the ground level, including temperature, humidity, wind speed, wind direction, etc. The upper air meteorological data characterize the vertical profile of atmospheric conditions, e.g., changes in temperature and wind speed with altitude. For the surface data, they are available through the state and local weather stations. In South Dakota, nearly every county has at least one such station. Some counties have multiple weather stations. For the upper air data, their measurements require the use of balloons or other airborne devices. Thus, only a limited number of stations can do such measurements. In South Dakota, only two stations (Aberdeen and Rapid City) provide upper air data.

An important step for AERMOD modeling is to decide the surface and upper air data sets applicable to a given site. A general rule is that one should use the data acquired from the nearest weather stations with land use and topographic conditions similar to the farm site. Following this rule, the Aberdeen upper air data were selected during the SDOFT formulation. For surface data, the situation is more complicated given a large number of weather stations in the state. Theoretically, the data from all these stations can be utilized. However, this would make the SDOFT too bulky to use. For simplicity, the 66 counties (and county sections) of South Dakota were combined into four areas based on their similar surface meteorological conditions. The area at the southwestern corner is largely covered by the Black Hills, with little livestock production. Thus, it is excluded from the SDOFT. The rest areas were designated as Areas 1, 2, and 3. AERMOD modeling was done for each area to develop the odor annoyance-free curves (four charts/figures for each area).

Since there is considerable variability in meteorological conditions for any location, the SDOFT could over- or underestimate an odor event in any given month. It

is also noteworthy that only the meteorological data from April through October were used to develop the annoyance-free curves. These archived historical data (1996-2005) were retrieved from the federal and state meteorological databases such as NOAA NDCD and NOAA/ESRL Radiosonde databases.

Wind roses

Wind roses were used to study the similarity of surface meteorological conditions in different locations. A wind rose (Figure 3) shows the information about the distribution of wind speeds and the frequency of the varying wind directions. Wind roses vary from one location to another but neighboring areas are often fairly similar. For more information about South Dakota wind roses, visit the website at https://climate.sdstate.edu/tools/windrose/windrose.shtm.

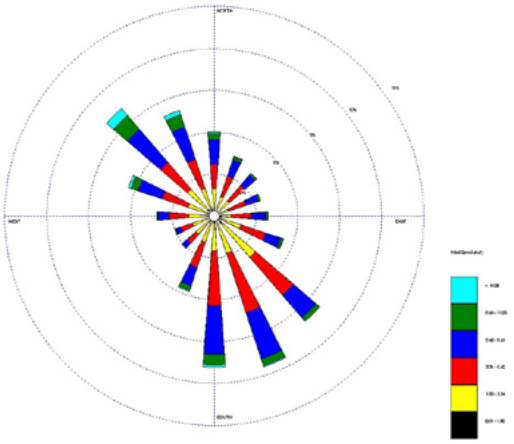


Figure 3. A yearly wind rose for Brookings, SD.

Topography

The odor annoyance-free curves given in Figure S1-S12 were obtained assuming flat terrain with no obstructions. However, the impact of topography (e.g., hills and valleys) on odor dispersion is significant and complicated. For example, winds are the primary factor governing the dispersion of air pollutants including odor in the outdoor air. Wind speeds and directions can be influenced by topography. In general, the residence situated on wind facing slopes would be more prone to odor annoyance caused by upwind livestock farms, as relative to the communities on a flatland; while those on lee slopes are less prone to odor annoyance. However, it is noteworthy that this general rule does not always stand. When winds are strong, the turbulence (i.e., air vortexes) over lee slopes could pull down odor-laden air from higher altitudes, causing a nuisance.

The SDOFT was developed based on AERMOD, a regulatory air dispersion model frequently used for air permitting purposes. For livestock farms, no air permitting is currently required. But if a permit is required in the future, we anticipate that AERMOD will be the tool to use. Complex terrain, such as rolling hills, can be handled by AERMOD through its terrain preprocessor AERMAP. Thus, it is feasible to include the impact of topography in the future SDOFT but this would require significant time and effort. The current SDOFT should be sufficient for most zoning and planning purposes. For scenarios where the impact of terrains must be considered, several suggestions are given in the Data Interpretation section in Part 2 of this fact sheet.

Cumulative Impact

The SDOFT may have the ability to consider the cumulative odor impact of multiple farm sites. However, to do this accurately would require site-specific information, e.g., the relative locations of farm sites. A general idea of cumulative impact on a specific location could be demonstrated by adding the annoyance-free frequencies from the surrounding farm sites. For example, if a residence is located beyond the 97% odor annoyance-free line of site 1 and the 96% annoyance-free line of site 2, the residence would experience odor annoyance in less than 7% (3% + 4%) of time from April through October.

Acknowledgments

The authors acknowledge the research done at the University of Minnesota for developing the basis for this model and compiling the odor emission database. Also, acknowledgment is noted for the work done at the University of Nebraska – Lincoln in running the AERMOD dispersion model. The funding to develop the SDOFT was provided by the South Dakota Pork Producers.

References

Guo, H., Jacobson, L. D., Schmidt, D. R., & Nicolai, R. E. (2001). Calibrating Inpuff–2 model by resident–panelists for long–distance odor dispersion from animal production sites. Applied Engineering in Agriculture, 17(6), 859.

Guo, H., Jacobson, L. D., Schmidt, D. R., Nicolai, R. E., Zhu, J., & Janni, K. A. (2005). Development of the OFFSET model for determination of odor-

annoyance-free setback distances from animal production sites: Part II. Model development and evaluations. Transactions of the ASAE, 48(6), 2269-2276.

Turner, B., & Schultz, R. (2007). Practical Guide to Atmospheric Dispersion Modeling. Trinity Consultants, Inc.: Dallas, TX.

Zhu, J., Jacobson, L. D., Schmidt, D. R., & Nicolai, R. (2000). Evaluation of INPUFF-2 model for predicting downwind odors from animal production facilities. Applied Engineering in Agriculture, 16(2), 159.

P-00178

Appendix

Area 1

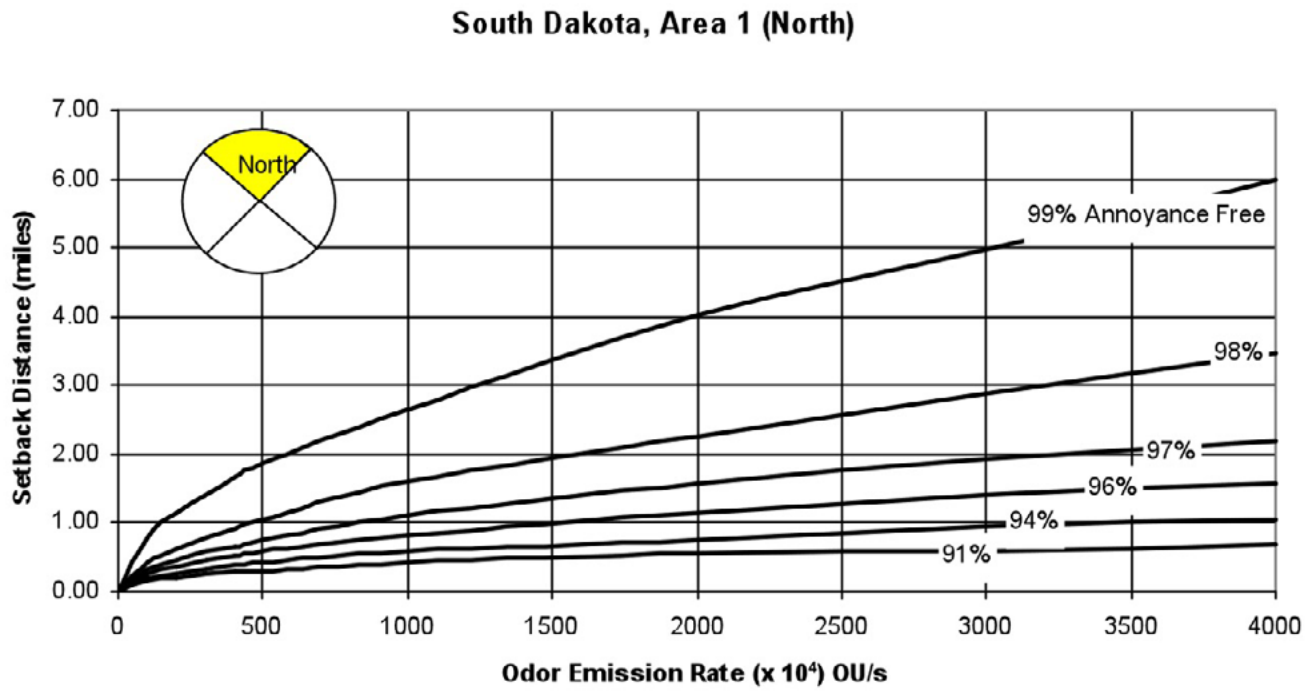


Figure S1. Estimated setback distances (miles) in Northeast South Dakota to the north of a farm at different odor annoyance-free frequency requirement.

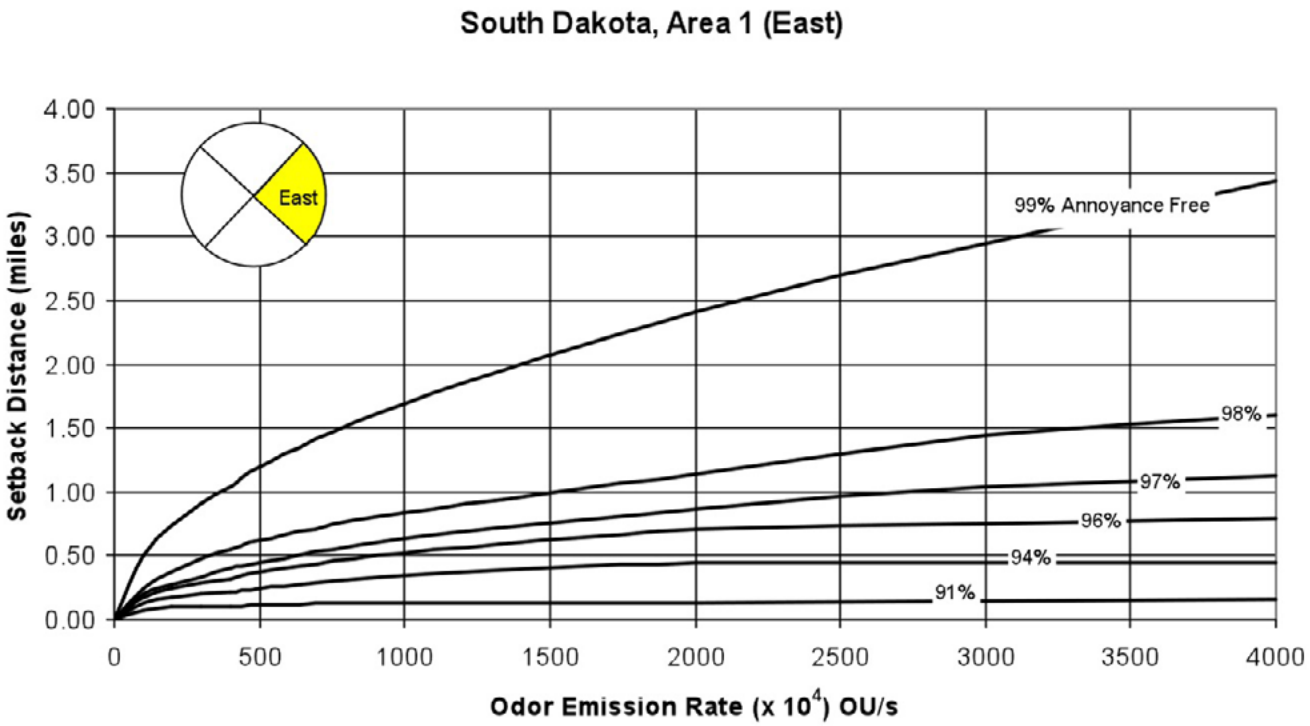


Figure S2. Estimated setback distances (miles) in Northeast South Dakota to the east of a farm at different odor annoyance-free frequency requirement.

Area 1

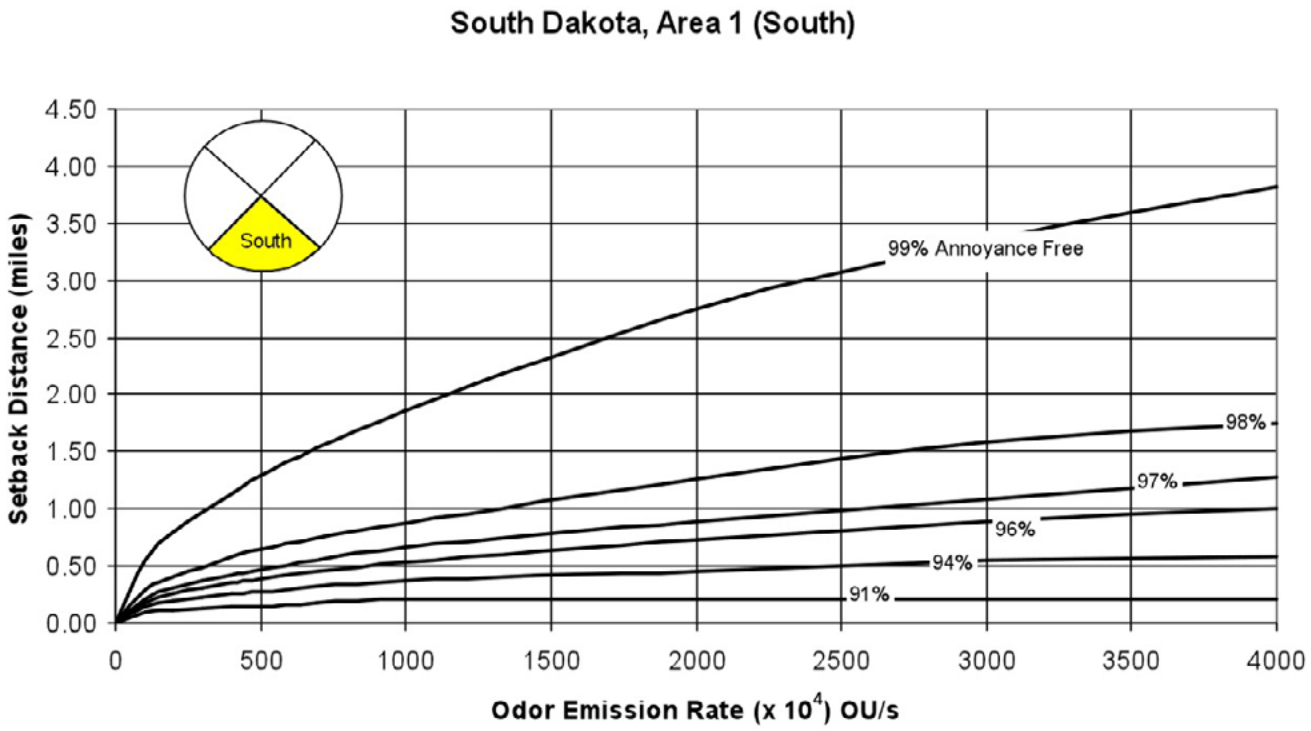


Figure S3. Estimated setback distances (miles) in Northeast South Dakota to the south of a farm at different odor annoyance-free frequency requirement.

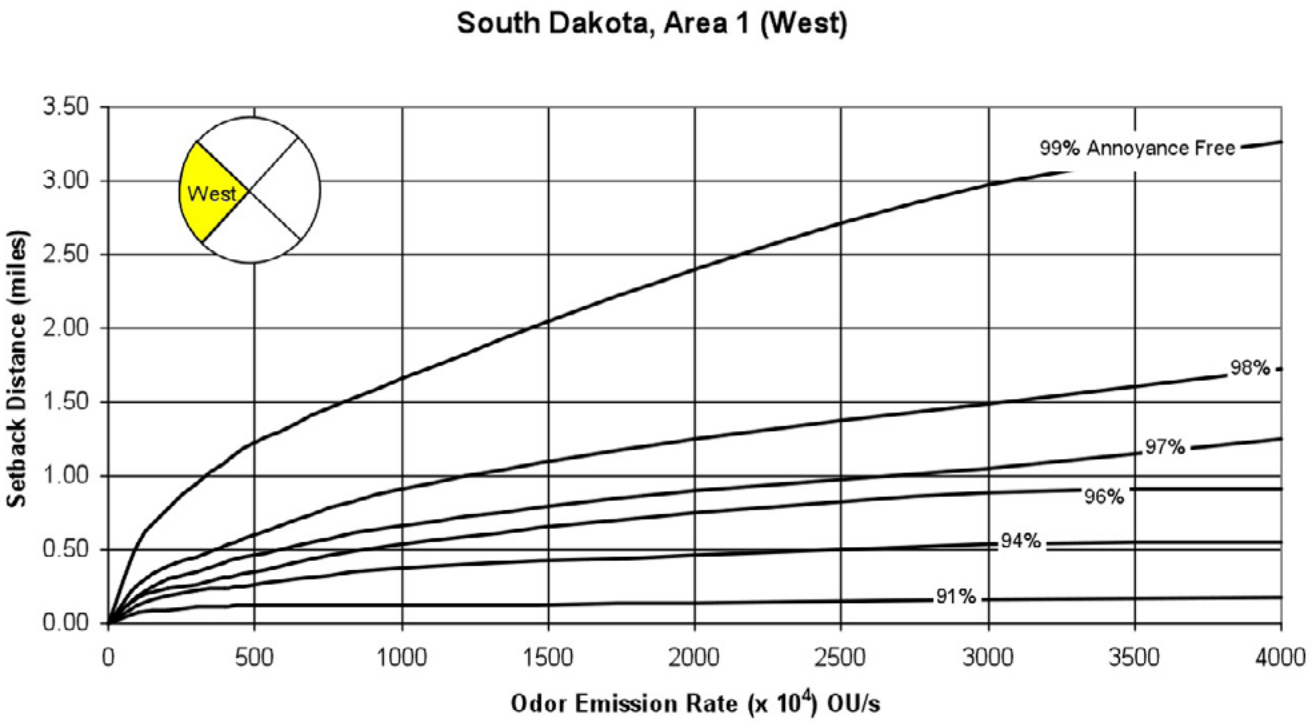


Figure S4. Estimated setback distances (miles) in Northeast South Dakota to the west of a farm at different odor annoyance-free frequency requirement.

Area 2

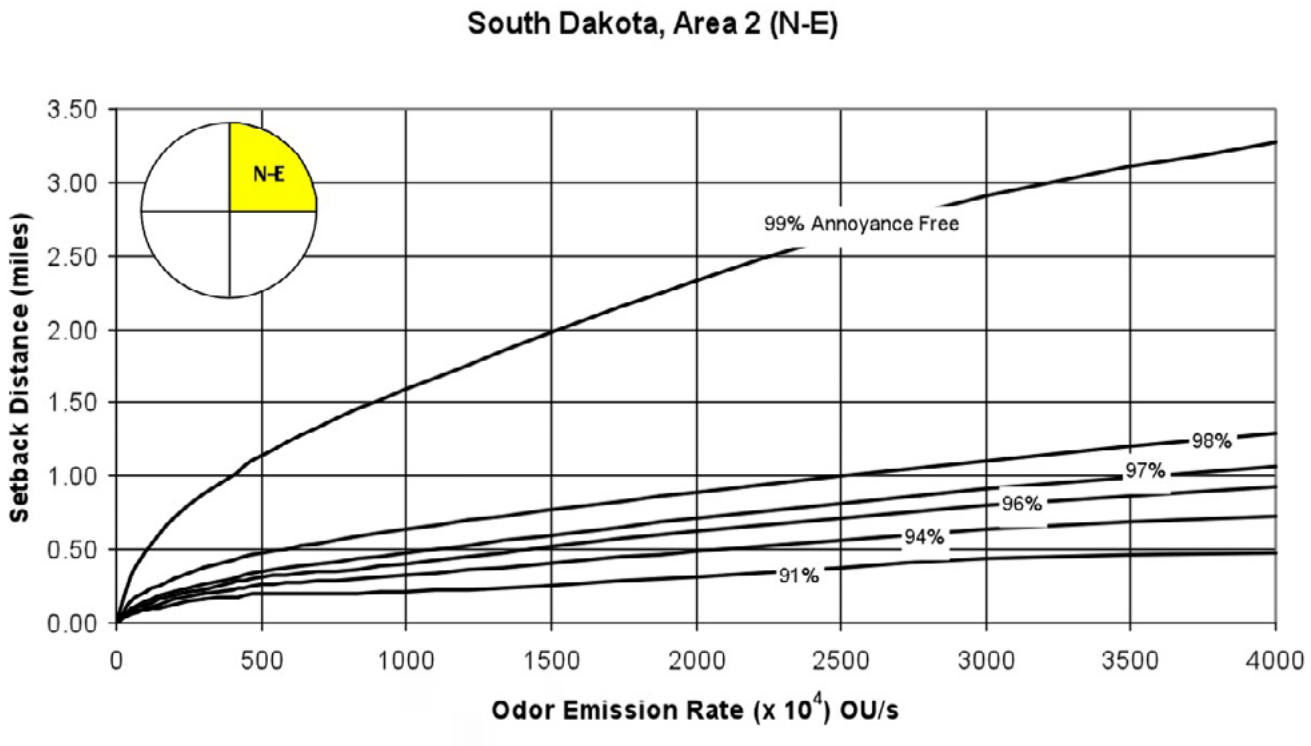


Figure S5. Estimated setback distances (miles) in Southeast South Dakota to the northeast of a farm at different odor annoyance-free frequency requirement.

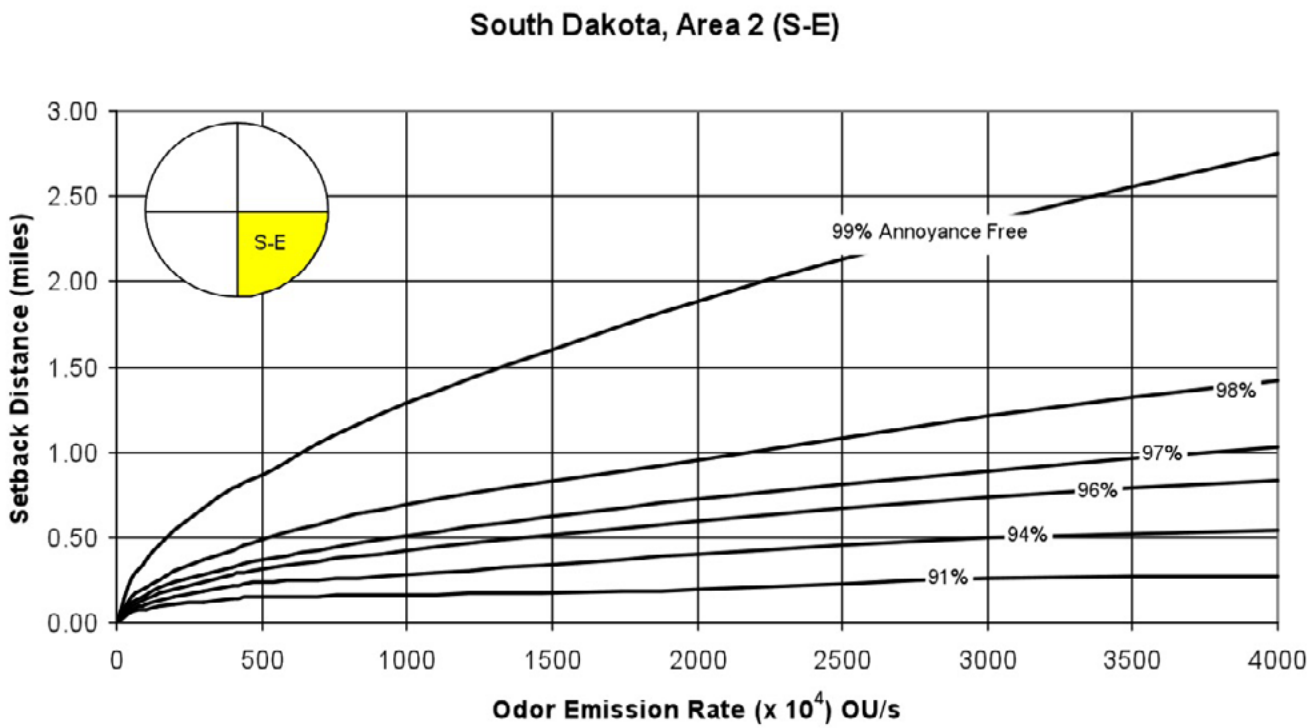


Figure S6. Estimated setback distances (miles) in Southeast South Dakota to the southeast of a farm at different odor annoyance-free frequency requirement.

Area 2

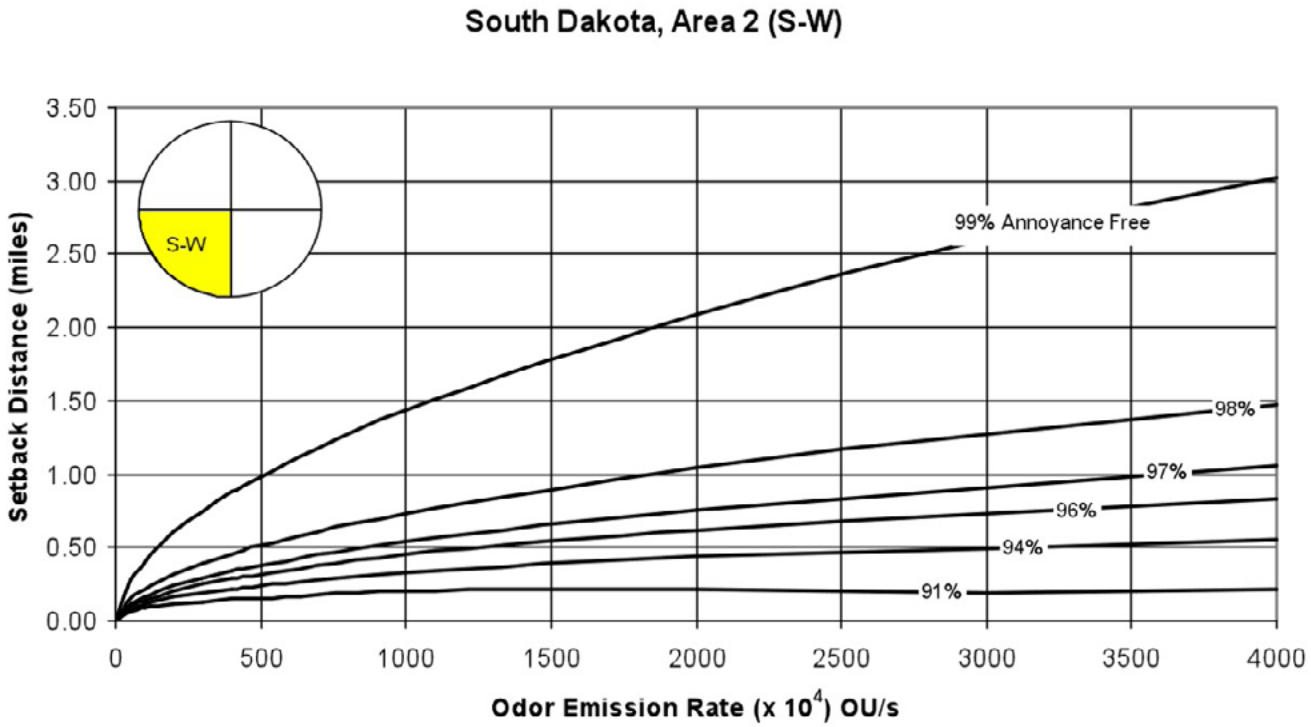


Figure S7. Estimated setback distances (miles) in Southeast South Dakota to the southwest of a farm at different odor annoyance-free frequency requirement.

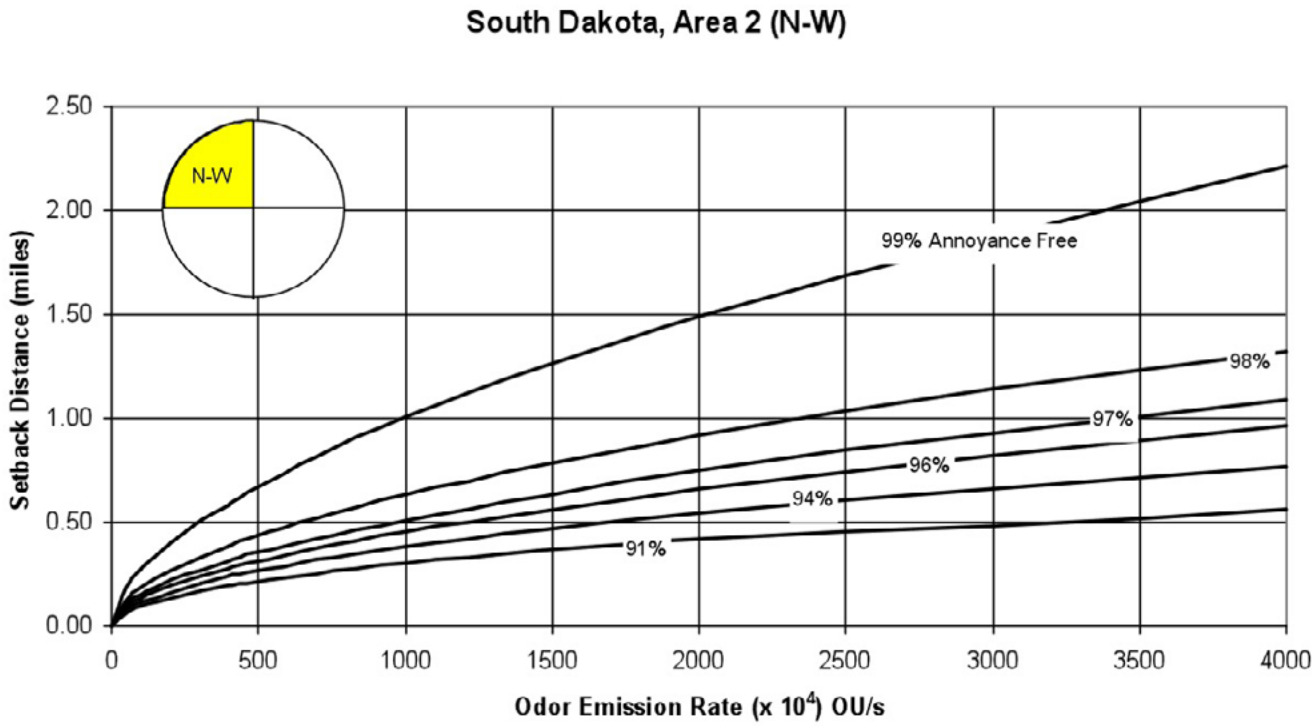


Figure S8. Estimated setback distances (miles) in Southeast South Dakota to the northwest of a farm at different odor annoyance-free frequency requirement.

Area 3

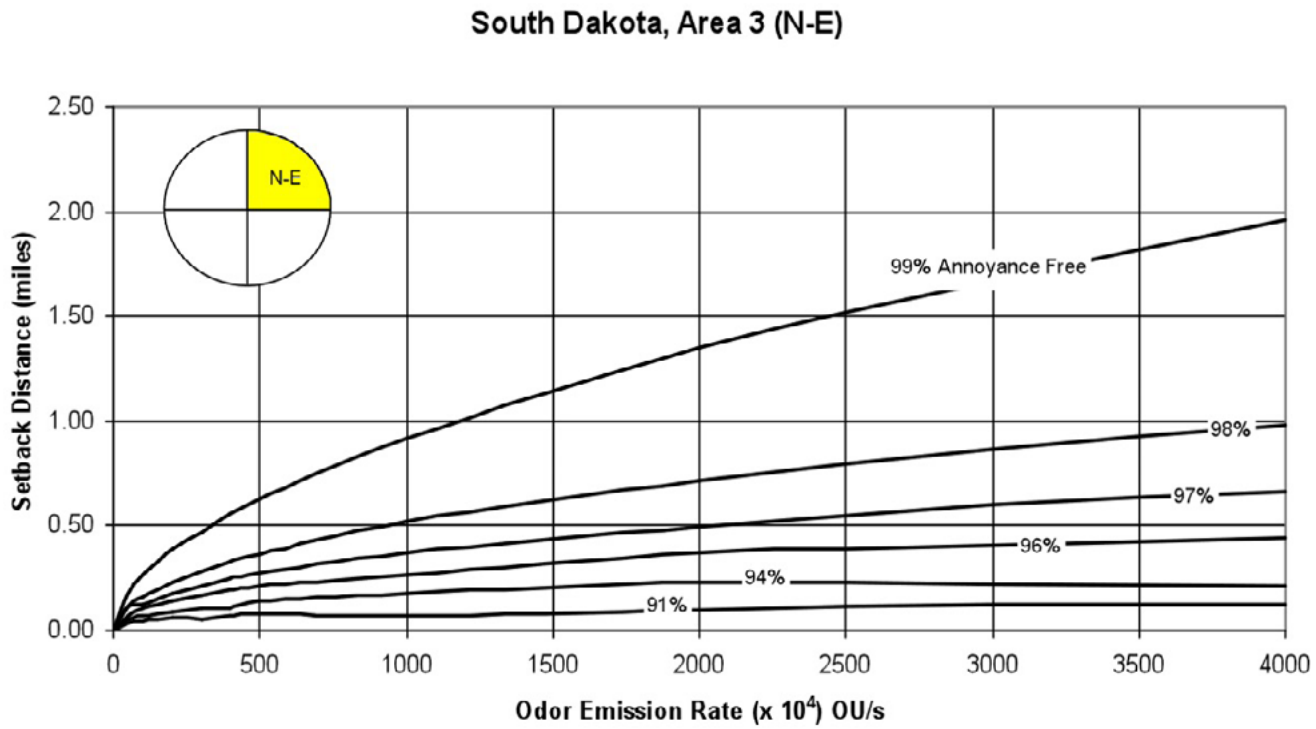


Figure S9. Estimated setback distances (miles) in western South Dakota to the northeast of a farm at different odor annoyance-free frequency requirement.

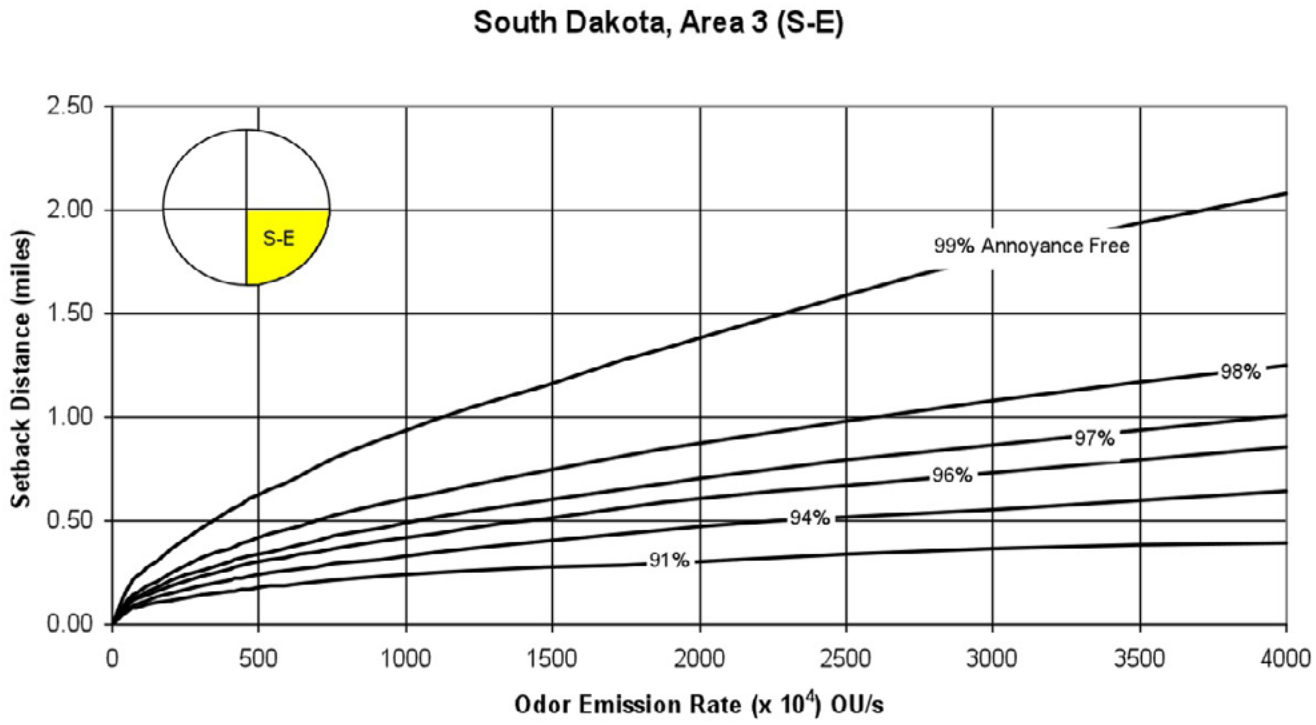


Figure S10. Estimated setback distances (miles) in western South Dakota to the southeast of a farm at different odor annoyance-free frequency requirement.

Area 3

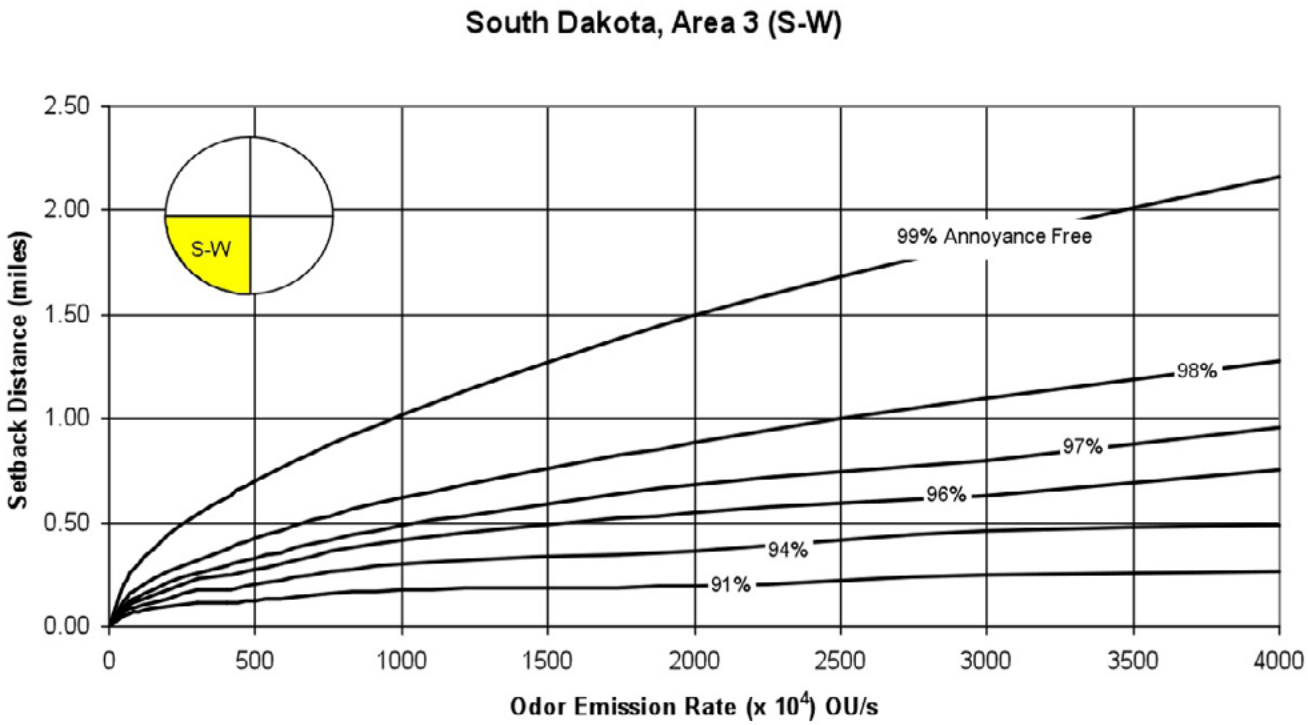


Figure S11. Estimated setback distances (miles) in western South Dakota to the southwest of a farm at different odor annoyance-free frequency requirement.

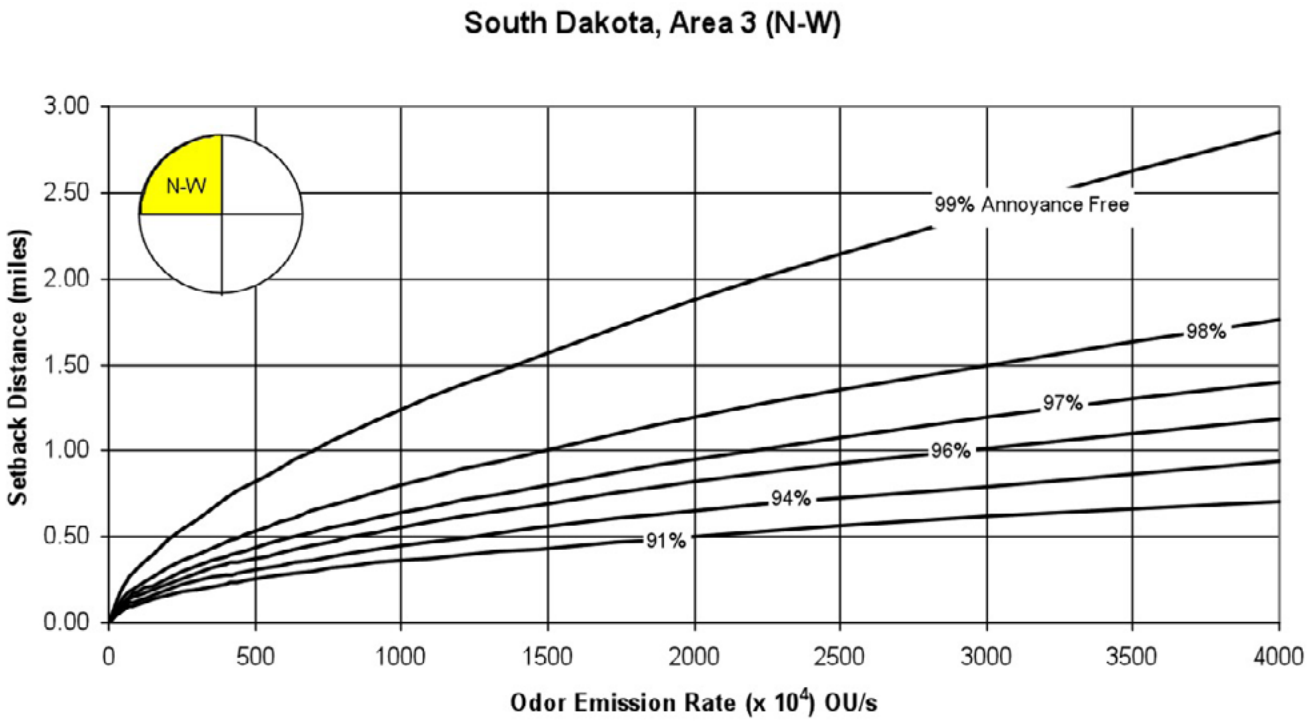


Figure S12. Estimated setback distances (miles) in western South Dakota to the northwest of a farm at different odor annoyance-free frequency requirement.

SB 2174 Testimony in Opposition 3/7/25

Nancy Meyer
2043 County Road Y
Cedar Bluffs, NE 68015

My husband grew up in Nebraska. Twenty-six years ago he convinced me to drop my career and move our young family across the country to a home in the middle of cornfields. I was reluctant, but I soon came to love living here.

We returned to Nebraska to raise our children in a healthy and safe rural environment. These values have been eroded by the invasion of industrial meat production operations known as CAFOs moving into our rural neighborhood. The CAFO that moved in just 3.5 miles from our home six years ago houses nearly 4 million chickens per year. When their manure and dead birds are spread on the field across from our property, I cannot go outside my home for days because the stench burns my eyes and throat. Complaints go unheeded because there is not enough manpower for enforcement of the few regulations we have.

When I see manure and dead birds spread on top of fields near my home, I wonder how much of that material contains an undetected infection like bird flu. That infection can easily spread to my animals, the wild animals that visit our property, and to neighbors in my community. Nebraska has already had to depopulate several CAFOs due to bird flu.

Local economic interests depend on aggressive infection outbreak containment. These economic interests include rural livestock owners, as well as hunters and bird watchers who make up a large portion of our tourism industry. The Platte River Valley where I live is eighth in the nation for bird watching[1] and upland bird hunting attracts 20,000 nonresidents to the state annually[2]. Tourism is considered Nebraska's third largest industry[3], accounting for $4.6

[1] Country Living Magazine, April 2024 issue. https://www.countryliving.com/life/travel/g60277934/places-to-bird-watch-america-guide/

[2] Bryan O'Connor, Upland Game Program Manager, Nebraska Game and Parks Commission. 90,000-137,000 total upland bird hunters annually.

[3] UNL Extension publication G1858 https://extensionpubs.unl.edu/publication/g1858/2008/html/view

billion in revenue in 2023[4]. Yet we are endangering all of this with CAFOs that are natural incubators for diseases like bird and swine flu.

When we moved to Nebraska in 2000, our well water was clean and safe to drink. We have seen the nitrate levels rise steadily over the years, and have had to install a reverse-osmosis system to make it safe to drink. This system cost us approximately $575 to install and $108 annually to maintain with replacement filters[5]. High nitrate levels are associated with proximity to animal feeding operations and are correlated to cancer outbreaks.

Because of this, my husband, a born and raised Nebraska farm boy, now wants to move ***out*** of state. We don't want to be trapped living on property while its value is steadily diminished by industrial facilities moving in next door.[6]

Many of Nebraska's farmers who could not get loans to build the 1540 CAFOs in our state had to turn to out-of-state investment companies who own and operate the facilities. The farmers get a land lease agreement in return for a requirement to buy livestock feed of a type and at a price controlled by the slaughterhouse. Farmers assume all liability and maintenance of buildings that are not even theirs until the barns have become fully depreciated, outdated and in need of repair at their own expense in order to continue being contracted to the slaughterhouse. Moreover, people outside the state are brought in to run the CAFO; they are not local workers. I understand the worker turnover rate is 35% and with the bird flu outbreak that has now spread to hogs, cattle, and humans, it could go higher.

Local control is very important to rural residents. I'm a big fan of local control, having served elected positions on my district's school board and on a regional Natural Resources

[4] Travel and Tour World, Nov 2024 issue. https://www.travelandtourworld.com/news/article/nebraska-tourism-soars-to-new-heights-with-4-6-billion-spending-and-record-breaking-12-6-million-overnight-visitors/

[5] Amazon purchase price for Ice Springs model. 3-4 filters/year at a cost of $216 for 2-year set.

[6] "property values near CAFOs may be reduced by up to 40% depending on distance, wind direction and other factors. The diminution in property values is due to CAFO odors, flies and a negative impact on the quality of life for nearby residents." Lawrence Daniels, Professional Geologist. https://vertexeng.com/insights/the-environmental-impacts-of-concentrated-animal-feeding-operations-cafos/

District here in Nebraska. As those of you who serve in government know, these bodies understand their geographies and constituents best. Local authorities are beholden to local residents who count on them to preserve the livability of an area.

Without local control and local accountability, state citizens' power disappears. Moving into its place will most certainly be outside entities that do not have the best interests of your state in mind. Rural states should not make themselves irresistibly attractive to out-of-state and foreign interests who wish to invest in nuisance industrial operations that are located as far as possible from their *own* homes and shores. Legislators should consider doing a thorough independent cost-benefit analysis before sacrificing a state's natural resources to any development, and particularly CAFOs. Yet here we Nebraskans are, with contaminated water, horrific odors, increased disease risk for both animals and humans, exploitation of our land and water by out-of-state interests, and decreasing property values. All because we thought CAFOs just *sounded* like a good idea for our economy.

Trust me, your state does not want to be like Nebraska in this way. Don't make setbacks friendlier for CAFOs to locate next to your neighbors, who have a preexisting right to enjoy their rural homes and property values.

Testimony In Opposition to SB 2174 3/7/25

Chairman and members of the committee for House Agriculture. We would appreciate you taking the time to read our testimony in opposition of SB 2174.

We live 1 mile north of a proposed 12,500 head dairy operation. We feel the setback changes in this bill are dangerous as it could and will cause detrimental effects to people's health. The contamination of our soil, the air we breathe, and the precious water we all require to live. Once that contamination happens, there is no going back and undoing it! Is reducing setbacks worth the enormous risk?

Shrinking the setback distance is really a device to allow more AFO's to congregate in some areas where they **should not be allowed**. The odor footprint tool has not been proven to provide enough protection for those people residing near an AFO. We are finding MANY residents at current CAFO's who are suffering the consequences of these large operations and their deceptions. CAFO's are very new to North Dakota; please find out all the **true facts** before approving them in our beautiful state. There is something to be said about family farms...as bigger is not always better!

Setbacks should be returned to the bill with 50% **increase** in distance to be at the discretion of the **township.** Please **DO NOT PASS** this bill.

Please let us all continue to enjoy the outdoor life in North Dakota.

Thank you,

Mike and Cindy Zick
17795 69 St. SE
Wahpeton, ND 58075
701-640-1987, Richland County

Chairman Beltz and members of the House Agriculture Committee. Thank you for allowing me to submit a testimony for Bill 2174. I oppose the changes proposed in this bill. After reading testimony from people that have lived near CAFOs I fear that these big operations are detrimental to our health. Please consider people over corporations. This dairy will cause health problems along with financial. There isn't any benefit to the community and plenty of cost. Please don't accept what the big producers say without checking it.

Chairman Beltz and members of the House Agriculture Committee. Thank you for allowing us to submit a testimony for Bill 2174. We oppose the changes proposed in this bill. Our names are Beverly and Gerald Giwoyna and we currently live 1 mile south of the proposed Abercrombie mega dairy of 12,500 head. We are senior citizens and we plan on living our days at our farmstead. We have seen what happens from the Mindak Farmers Coop beet plant when they start using up so much water, our flowing well went dry that we fed our cattle with and also the odor got so bad that unless you had air conditioning in the house, you could hardly stand living there for many years. We want to ensure that our State is protecting us and residents and protecting our water. Rural residents should not get pushed off their owned land because of the water and odor problem that we'll be faced with from these CAFOs coming into our State. Property value will be negatively affected. Please don't allow this bill to pass and show the people you care about us and not the benefits of corporations.

Chairman Beltz and members of the House Agriculture Committee. Thank you for allowing me to submit a testimony for Bill 2174. My name is Kelly Meyer and am a resident of Dwight, ND and I oppose the changes proposed in this bill. The lack of tax revenue and infrastructure for this proposed mega dairy that the Abercrombie Township is being threatened with, is nonexistent. Having worked for the large corporation in the area, the problems with the wastewater is going to be monumental and have lasting negative effects. The changes in this bill shows lack of benefit to community members in the entire State of North Dakota that could be affected by these CAFOs.

Members of the Committee House Agriculture.

We live approximately 1 ½ west of the proposed 12,500 head dairy farm near Abercrombie, ND. Our concerns have seemed to go by the wayside. First the dairy farm is in the middle of 2 rivers a mile from each. My first concern is my drinking water as I am on the same aquifer as this dairy farm would be. The testing by hydrologists say it WILL contaminate my well. They also will be spreading manure next to my house. This bill shows a benefit to livestock over residents.

Please DO NO pass this bill. How would you feel if this was in your back yard? Thank you for allowing me to submit my testimony.

Matt and Pam Kinneberg

17460 69th St. SE

Wahpeton, ND 58075

Members of the Committee House Agriculture. My name is Kent Ringdahl and I am a resident of Abercrombie Township. I am submitting a testimony in opposition to bill 2174. Setbacks need to be put in place at a distance of at least 4 miles away from any farmstead or business. The smell needs to be regulated on a monthly basis and required metered water usage needs to be turned in on a monthly basis as well.

DO NOT pass bill 2174.

Chairmen and committee Members,

I am a local resident of Abercrombie Township that wants to be assured that the people of North Dakota are not negatively affected by bill 2174. The proposed 94% odor rating simply allows setback regulations to be minimized. Changes made to this bill have proven to have no benefit to residents of the state and puts livestock corporations ahead of people. Odor ratings should be a minimum of 98%. Don't allow the state to become another Iowa. Priority should be given to the people of this state - not to a population of cows.

Thank you for allowing me to submit my testimony in opposition to 2174. Earl Myhre

Chairmen Beltz and Members of the House Agriculture Committee,

My name is Mary Sahl and I am a resident of Abercrombie Township in North Dakota. I am writing a testimony in opposition to bill 2174. The provisions to the bill have changed the setbacks that will not protect residents in rural settings. The former setbacks that were in the original bill should be reestablished. These setbacks are at least measurable and can be quantified. If the odor footprint tool is accepted, the floor to the percentage of acceptable days without odor should be 94% and the ceiling should be 98%.

As an oncology nurse health hazards via aerosol exposure are a great concern as we live only a mile away from the proposed site of a mega dairy. In conjunction, contamination of the water has always been my biggest concern as numerous reports indicate nitrate levels rise to unacceptable levels around CAFO sights over a short period of time. These unacceptable levels cause cancer and cannot be boiled out of the water. Reverse Osmosis is needed. I've experienced many epidemics and serious health events myself both professionally and personally. I have put my life on the line for citizens of North Dakota during the Aids epidemic and the Covid epidemic. I have done my part to be a responsible citizen of this state and now my rights as a citizen are being taken away.

Being so close to the site will rob me and my family of any future enjoyment outside on our lawn or perhaps even in our home. The traffic from the trucks hauling food to the site and trucks hauling manure away will leave a constant stream of disturbing traffic and odor.

Please consider your rural residents who are supposed to be protected under the century code to have rights as tax paying citizens of North Dakota. I have done my part as a North Dakota citizen. Now it is your turn to do yours. Your Vote Matters!

Chairman Beltz and members of the House Agriculture Committee,

My name is Colleen Paczkowski and I have been a resident of Abercrombie, ND for 35 years. It goes without saying that my roots run deep in this community. Our small town is very close as many other small towns in North Dakota are, which is a big reason why many people chose to live in this State. The news of the dairy barn coming to our area has caused great concern. Air pollution and water quality / availability are issues that are we are being threatened with. This bill seems to have been weakened and shows that it would give less benefits to rural communities, revealing the rights of the people are being diminished. Many people of the community have concerns for possible devaluation of their property along with their health, if such a mega dairy gets built.

I ask that you please consider the residents of the state and think carefully about the risks to small towns when bills like this are proposed that show more concern for livestock corporations than the people.

Please vote DO NOT PASS for bill 2174.

15
The Three-Day Stink Out

"Livestock manure is a valuable source of organic nutrients for crops; however, manure can cause odors. Livestock facilities are engineered to minimize odors. Farmers follow best management practices when applying manure to crop land in order to limit odors and protect water quality."
—MINNESOTA FARM BUREAU FOUNDATION, "Moving to the Country"

After the appeals court's decision, my family's feeling of unease in the Dodge County community continued but with new contours and nuances of psychology. Industry insiders already acted as if Dodge County was their mini fiefdom, and now they had proven that resistance was futile. Despite the transparent machinations, despite the mounting evidence of local pollution, despite the illegal maneuver to strip required information from feedlot applications, the county prevailed. We settled into the certainty that the newest and nearest feedlot to our farm wasn't going anywhere, and it wouldn't be subject to adequate oversight.

It didn't take long for the implications of this situation to be made known in spectacularly smelly fashion.

In mid-November 2017 Douglas and I went home for the weekend to join my father on the combine for the fall harvest. We stopped at the grocery store on our way out of the Twin Cities and loaded up on the typical staples required for a weekend visit. With my mother in the nursing home, I frequently made homemade carrot cake, apple crisp, or cookies to leave at the farm for my father and brothers. We also brought the basics, including organic eggs, organic milk, and other healthy items that Lowell didn't have access to at the local grocery. Such a dreadful irony—right in the center of America's heartland, the shelves of area stores were filled with industrial foods that are "not fit to eat," according to my father.

After quickly unloading the groceries, Douglas drove me to the field and dropped me off. I eagerly waited for my father to approach in the

combine. He understood my passion for fall harvest and this special time together, and he readily accommodated the annual father-daughter proceedings. Some daughters join their fathers on annual fishing trips; Lowell and I bonded over combine rides.

It was the end of fall harvest. I admired the progress my dad and brothers had already made, as many of the fields were bare and ready for tillage. The northern portion of our land, though, awaited the combine. Cornfields, a pure deep green during the summer months, turn a deep yellow as fall approaches. The corn stalks stand upright while the ears of corn bend down to the ground, a sign of maturity. Against this honey-gold backdrop, spotting the green John Deere was easy as my father traversed the field.

Lowell, wearing his legendary blue-and-white striped overalls, beige coveralls, and matching beige seed cap, opened the heavy cabin door to greet me. I bent over to give him a kiss, then buckled into the jump seat next to him. My father lowered the corn head, adjusted the throttle, engaged the autosteer function, lined up the corn head with the corn, and expertly maneuvered through the dense ocean of gold.

The late-autumn day was particularly gorgeous. The sun shone brightly, and the air was crisp as we made several rounds in the 360-acre field we lovingly refer to as "the Ponderosa." We were working from east to west, picking the final 100 acres or so of corn. I took a moment to admire the rich rural landscape stretching before me as far as the eye could see.

And then I was hit with the overpowering stench of CAFO manure. It was not the normal farm smell we all know and accept. This was the concentrated, liquified olfactory output of millions of gallons that have been stored for months before being released all at once onto land that can't hold it. It's the kind of odor that's not just a smell but a toxin-laden health hazard that leads to dizziness, headaches, and vomiting if you don't get out of its way. It's a malodor that has destroyed lives and livelihoods, chasing people out of their homes and robbing them of the value of their land.

Beyond the northern edge of our Ponderosa was a 240-acre parcel that the landowner rented to Roger Toquam so he could spread manure

from his factory farm one mile to the north. Scanning the landscape, we soon spotted the manure crew doing their work. I was appalled, but not surprised, that they were spreading an estimated two million gallons of manure on frozen ground. It was too late in the season for such large-scale spreading because frozen ground increases risk of runoff. The best time to land apply manure has a very small window—that is, after all the fields are harvested but before the ground freezes.

With the loss of pasture-grazed animals and the conversion of farmland to strictly corn and soybeans, punctuated by the occasional CAFO, manure is now commonly spread on the land all at once later in the fall, when the land is more likely to be frozen. This problematic practice, necessitated by the combination of CAFOs and monoculture, causes polluted lakes, degraded ambient air quality, and contaminated waters.

I called Douglas to ask if he could pick me up. Evidently Toquam was emptying his manure pits, and I wanted to see for myself how the manure was transferred from the pits to the semi tankers and then to the field applicators, which injected it into the soil. While I'd been smelling these epic pit cleanings for years and understood the timing of the process, I'd never had the chance to observe the full scope of it in action.

Douglas showed up in short order, and we drove north. Through the partially harvested cornfields bordering the road, we could easily see Roger Toquam's swine facilities and spotted the manure being transferred from an underground pit to several manure semi tankers. These tankers are a specialized type of semitruck with equipment to transfer the liquified waste from the tanker to the field applicators. We slowed for a moment on the township road and observed the proceedings. We were a good quarter mile away but could see the basics of the process even from our distance.

We continued west on 690th Street, a narrow township road, and observed a field where a tractor was pulling a manure applicator, a massive vehicle with specialized machinery that injects manure into the ground. Minutes later, we watched as a manure semi pulled up to the side of the road, then slowly extended its long hydraulic boom to the waiting applicator sitting at the edge of the field. The waste was

transferred via the semi's discharge pipe into a large rectangular fill opening at the top of the applicator. With the two massive vehicles briefly connected in this way, thousands of gallons of liquid manure were transferred from the tanker to the applicator.

The applicator then discharged the waste to concave discs that incorporate manure with the top layer of the soil. As the applicator went back and forth in the field, the sharp disks sliced the harvested ground, turning the soil laced with manure a pure pitch black. I was amazed by how quickly the manure was laid down—a deceptively fast process with such far-reaching and harmful consequences.

Our curiosity sated, we headed in the direction of Blooming Prairie to visit my mother at the nursing home. Douglas turned around in a large circular drive near the intersection at 690th Street and 120th Avenue so we could return back east. As we made the turnaround, we realized a manure semi tanker was headed toward the same circular drive. Soon enough, the tanker was in our rearview mirror. Up ahead, a tractor with an attached manure applicator waited at the edge of the field for the tanker to arrive and transfer manure. We passed the tractor and headed toward the Claremont Road.

Looking in the rearview mirror, we were startled to see the semi tanker still behind us. It had not stopped to transfer the manure. Instead, the tanker picked up speed, tailgating us. As it came within a few feet of our vehicle, hurled dust enveloped us. Was the driver trying to run us off the road?

Douglas began to panic. I rolled down my window and stuck out my digital camera, showing the driver, only a few feet from us now, that we intended to document the unfolding event. I quickly managed to snap a photo or two.

It seemed to work. The driver slowed down, and the tanker receded in the rearview mirror. My heart continued to pound for several minutes afterward, the adrenaline pumping. Thankfully, we had a fifteen-minute drive to Blooming Prairie and time to regain our bearings before visiting with my mother.

Within a few minutes of arriving at the nursing home, I received a text from my brother Jim asking why a Dodge County sheriff's deputy

was pulling into our farmyard. I called to quickly explain what had happened. We were both amused and infuriated. This wasn't the first time feedlot operators had used the sheriff's department as an instrument to intimidate us. Jim relayed that the deputy drove around the yard, likely searching for our white SUV, then left.

I subsequently obtained a copy of the call for service, which identified Roger Toquam as the complainant. The notes specified that the complainant "states there are protestors blocking his path down the road. They are trying to spread manure. . . . [Complainant] is not currently on the scene but states that the people are using their vehicles to block the road. . ∴ 2–3 people taking pics and blocking the road refusing to move."[1]

There was not an ounce of truth to this complaint, but we knew that the sheriff's department tended to believe feedlot operators, many of whom serve as community leaders. That the Toquams were willing to call in a false report to law enforcement was unsettling. If they were willing to bend the truth on this occasion, what else did we have in store?

That night at the Trom farm, Douglas and I settled into the master bedroom upstairs to discuss the day's troubling events. My father routinely slept in a recliner in the downstairs family room, so we always slept in my parents' bedroom during weekend visits. The space is elegant and dignified, yet cozy and warm—a reflection of my mother's refined style. Before Parkinson's limited her day-to-day functioning, my mother, Evelyn, had loved interior design and redecorated the entire house. The master bedroom had gold-pleated drapes, gold-and-white wallpaper, a bright red-and-gold damask bedspread, and a small chandelier.

I fell asleep that night to the hum of the grain dryer operating fifty yards away. Jim was still at work. During the fall harvest, he diligently watched the settings on the grain dryer and dried the corn to the proper moisture content. Farmers don't risk storing grain if the moisture content is too high, which can cause moldy grains. The process of drying corn is slow and tedious. It takes several hours, and the hum of the dryer can be heard until 3 or 4 a.m. After drying, the corn

is transported via an auger system to tall steel storage bins, where it remains for several months.

Douglas and I woke up early the following morning, a Sunday, and drove half an hour north to attend Douglas's home church, United Church of Christ, in Berne. Afterward I dropped him off at the Eayrs farm and drove back home to continue helping my father with the last of the corn.

I was dispirited to discover that the manure-spreading activities were continuing for a second day. To my astonishment, the same 240-acre parcel just north of our cornfield appeared to have been coated with a second layer of manure. If so, it was a flagrant violation of the most commonsense parameters of land applying manure and the exact kind of violation that feedlot owners swear up and down during permitting that they won't commit. The area was pitch black; the manure pooled on top of the ground. Dozens of gulls pecked away at the surface.

For a lifelong farm girl who'd seen many a field fertilized the proper way, I thought the birds' appearance was a strange sight. Gulls do not eat manure. Later I learned that CAFO manure attracts the birds because of the mixed-in pig carcasses. Pigs packed into CAFOs are prone to fighting and even cannibalizing one another, and the body parts fall through the slats in the floor to the manure pit below. A soup of decomposed bones, muscle, intestines, and flesh likely dotted the field's surface, along with nitrates, phosphorus, growth hormones, and antibiotics—all lying atop frozen ground just a mile upstream from the headwaters of the Cedar River. The stench coated my nose and throat.

As these manure-spreading activities continued, Lowell and I had no choice but to return outside to finish fall harvest. Abandoning the fields at this time of year would be financially calamitous. Knowing that hydrogen sulfide poisoning was a real possibility, I covered my face with a cloth and advised my father to do the same.

The manure crew moved operations across the road to the old Bass farm. During my youth, Ray and Audrey Bass sponsored summer horse camps there. My parents owned farmland immediately adjacent to the south, our "northwest eighty." As with the final hundred acres of the Ponderosa we had worked the previous day, the northwest eighty had

yet to be harvested. The manure crew set to work injecting manure into an area immediately bordering our field.

By this point, it was apparent that Toquam intended to spread millions of gallons of manure that weekend. We were trapped in the center of an endless loop of manure tankers and field applicators. The semis loaded up at the Toquam swine feedlots, drove south along the Claremont Road, turned west onto 690th Street, and turned south to the manure applicators waiting in the fields. The waste was pumped from tanker to applicator, then the tankers drove by our farm before heading back for another load. These vehicles made countless laps that day around the same mile square where my father was finishing fall harvest. Brad was likewise caught in the dangerous cloud of noxious fumes and dust as he moved grain wagons to and from the field and our farm.

At one point I took a break from the combine and drove over to survey our northwest eighty, just across the road. I pulled into the field driveway leading to our land and sat in my vehicle for a few minutes, watching the manure applicators do their work in the adjacent field. I got out of my SUV and quickly took a few photos, then got right back in, and made certain the windows were rolled up as the fumes were overwhelming.

As I shifted into reverse to head back home, the first semi driver had just finished unloading his toxic cargo into the field applicator. There was a good hundred yards between us. He pulled into the middle of the road, exited the semi cab, and ran toward my vehicle. As he approached the passenger side, I checked that my doors were locked and opened the passenger window a few inches.

"What's your problem?" he shouted, waiving both arms in the air. "I'm calling the sheriff!"

I calmly responded, "What's your name?" He didn't respond but ran back to his semi, got in, and began to drive toward me.

I pulled over to the side of the road, rolled down the driver's side window, and waved my hand to the driver, signaling him to pass my vehicle. Given the false report to the sheriff's department the day before, I wanted to make clear that I had no intention of interfering

with his activities. It's a narrow road for semis. Thanks to the constant commercial activity associated with the area CAFOs, driving on rural roads in Dodge has become harrowing. They are used as two-lane roads, but nothing is demarcated. When you see a semi or tractor pulling machinery coming from the other direction, you really don't have much room to spare to avoid a head-on collision.

After the semi passed, I drove to our farm, pulled into our driveway, and went into the house. Within fifteen minutes, a sheriff's deputy arrived, informing me that he had received a complaint that protestors were blocking the road. I laughed at this version of events and explained what really happened, as well as what occurred the day prior when a truck tried to run us off the road. I offered to share photos documenting the events that weekend, but the deputy declined. Determined to show my unwillingness to be bullied, I stated emphatically to the deputy, "They're calling *you* to get to *me*, and you tell them it's not working!"

Once again the call for service later identified Roger Toquam as the complainant. The report states, "2–3 people protesting again. . . . Subjects are blocking the road so the manure spreaders are unable to get by."[2]

The deputy left after our short conversation, and that marked the end of my long-anticipated daddy-daughter fall harvest weekend. It did not go the way I'd imagined.

When the Regulators Don't Regulate

As Douglas and I drove back to the Twin Cities early that evening, my father called from his cell to report that he had become dizzy while picking corn and had stepped off the combine to vomit. I advised him to leave the field immediately and get to the house. I was disgusted and didn't know whether to cry or yell.

Factory farm operators receive education and training—though inadequate—on safety precautions to take when stored CAFO manure is agitated and moved, including when the manure is pumped from the pits, transferred to the applicators, and spread onto the fields. These safety measures represent an implicit acknowledgment of the dangers associated with these activities. As noted in chapter 11, manure releases

concentrated quantities of hydrogen sulfide when agitated, and the gas has caused dozens of deaths among factory farm workers along with health problems in neighboring populations.

Yet CAFO operators are not required to alert immediately adjacent neighbors about a planned pump-out, and the industry frequently underplays and ridicules the complaints of area residents who experience poor associated health outcomes. Its prevailing philosophy amounts to this: there's nothing you can do about it, so get the hell out of our way!

The great stink out of 2017 did not end with the weekend. The next day, Monday, my dad called to inform me that the brand-spanking-new CAFO across the road was pumping out manure. It appeared that Nick Masching had chosen this day, of all days, to empty his million-gallon-plus manure pit and spread the contents on the Toquams' land immediately surrounding his six-acre feedlot.[3]

We suspected that Toquam and Masching had coordinated their schedules so that they would empty their manure on multiple fields surrounding our farm contemporaneously and during a time that interfered with our fall harvest activities. Toquam's three-hundred-acre parcel is directly across the road from our northwest acreage, the very field that my father had saved for last to harvest. He finally got to the parcel that Monday, and lo and behold, Masching emptied his pits and lathered the parcel immediately to the south the same day.

It was the grand finale of a three-day stink out, a juvenile yet dangerous payback for my parents' lawsuit. Manure canons laced with hazardous levels of hydrogen sulfide, ammonia, methane, and other gases blasted their target—elderly Lowell—just steps away from where he was picking the last few acres of corn.

That Monday night, my family and I talked it over and decided to contact the Minnesota Pollution Control Agency. My father's dizziness and vomiting were the last straws. Besides, we had witnessed manure spread on frozen ground. We also suspected that manure was spread twice on the same parcel and that with multiple operations unloading millions of gallons on a dense cluster of acreage, the hydrogen sulfide

levels in the ambient air were likely well above 0.03 parts per million, the state's public safety standard.

The MPCA holds emergency powers under state law to "direct the immediate discontinuance or abatement" of polluting activities that pose an immediate risk to human health. Per the EPA, the MPCA's Air Emissions Planning document further states that the agency "is required to monitor feedlots for H_2S [hydrogen sulfide] and take enforcement action when needed," and adds that "inspection and enforcement of a CAFO's air emissions plan is largely driven by complaints received by MPCA."[4]

The MPCA's rules further clarify that "smaller feedlots also must comply with the H_2S standard." This distinction is important because only larger feedlots that exceed a thousand AUs, or 2,400 hogs, are required to obtain an NPDES permit and submit an environmental impact statement as part of the initial feedlot permitting process. Among other requirements, the EIS compels feedlot operators to submit an air emissions plan that delineates the mitigating methods the operator will use during manure removal and to create a plan "to mitigate air emissions in the event of an exceedance of the state ambient hydrogen sulfide standard."

By specifying that "smaller feedlots must also comply" with H_2S standards, the MPCA is communicating that any feedlot, regardless of size, cannot poison the air with hydrogen sulfide, whether the feedlot possesses an existing air emissions plan or not. While the spirit behind this clarification is commendable, its enforcement is another story.

The Toquams' CAFOs are large enough that they should have been required to submit an air emissions plan for them. The two facilities collectively hold 1,176 AUs, but for reasons that are unclear to me, the Toquams were not issued an NPDES permit for feedlots exceeding 1,000 AUs until 2011, nearly thirteen years after their facilities reached that benchmark. Regardless, it does not appear that the Toquams submitted an EIS or created an air emissions plan, so we assumed that the hydrogen sulfide emissions of their facilities weren't being monitored.[5]

If the MPCA couldn't bother with ensuring an EIS was submitted when the Toquams' feedlots were initially permitted and constructed,

why would the regulators take our concerns seriously years later? We contacted the MPCA as a matter of principle and hoped that it could help us. But our expectations were not high.

I spoke with a feedlot compliance officer at the MPCA's southeast region office in Rochester and reported dangerous levels of hydrogen sulfide in the one-mile-square area where the manure spreading bonanza was taking place. We waited. Nothing happened. I later accessed our complaint file and found that the compliance officer had gone on vacation soon after our conversation and later left these notes: "MPCA did not investigate the land application site after returning from vacation on the 27th. The 27th was two weeks after the manure had been applied, as a result the possibility that any hydrogen sulfide would still be present would be eliminated."[6]

Where do you go for help when the regulators do not regulate? The following spring, I filed another complaint with the MPCA after family members experienced additional episodes of dizziness and headaches. I again spoke with a feedlot compliance officer. In May 2018 he suggested that my father complete an "odor log" and sent me a form titled "Oder Event Recording Log." This was a senseless exercise, as Minnesota feedlots are exempt from odor rules but not from ambient air quality standards. Besides, hydrogen sulfide is odorless when it reaches dangerous levels.

Nothing happened, or so we thought. Three years later, in 2020, I discovered unexpectedly that the MPCA had indeed conducted several tests at the property line of the Toquams' CAFO in 2018 and 2019 as a result of my complaints. Per the MPCA, these tests, called "H_2S Flex Surveys," are conducted based on neighbor complaints and "used to gather preliminary data on hydrogen sulfide levels." If a property fails the initial test, the MPCA is supposed to conduct continuous air monitoring at the facility and follow up with fines and compliance measures to reduce the facility's H_2S output.

The Toquam facility failed the first test, conducted in October 2018, with several readings over the safety limit of 0.03 parts per million.[7] A failure is meant to trigger continuous monitoring; instead, the MPCA returned the following week for another flex test. Presumably the agency

wanted to confirm the finding before bothering the owners with results as apparently trivial as hazardous levels of hydrogen sulfide.

The result? Another failure.[8] And still nothing was done.

The MPCA returned to the property again in July 2019. The regulators appeared to be keeping their fingers perpetually crossed that the Toquams would pass the next test so that the agency didn't have to deal with the issue.

The results this time around, however, were significantly worse: thirty-five recordings registered above 0.03 parts per million, with the highest reading coming in at more than *seven times* the safety standard.[9]

Given the serious dangers associated with hydrogen sulfide poisoning, at this point the MPCA should have immediately ordered continuous air monitoring, which is required for any flex test failure, let alone a failure of this magnitude.[10] The agency did not. Instead, it tested the property again the following week and recorded another failure.[11]

I discovered the existence of these results only because a reporter with Minneapolis's *Star Tribune* was investigating the MPCA's feedlot oversight capabilities and contacted me to speak about my family's experiences. The reporter had obtained the monitoring data from the MPCA and shared it with me. Noting how odd it was that the agency conducted four tests when enforcement action was required after the first failure, the reporter surmised, "Either the MPCA was sitting on their hands, or they were trying to work with Toquam on a solution. . . . I don't know."[12]

The reporter asked the MPCA why it hadn't installed the required continuous air monitoring. In response, the agency said it planned to do so some time in 2020.

I waited patiently for an update. In September 2022 I drove by the Toquams' facilities. Nearly four years after the first failed test in October 2018, I finally saw a continuous air monitor equidistant between the two swine CAFOs.

Our experience aligns with how the MPCA systemically responds to factory farms that breach air emissions standards. Complaints are ignored; emissions tracking, on the rare occasion that it occurs at all, only occurs after a disaster, a tragedy, or a series of complaints have

been lodged. In our case, apparently the MPCA took the matter seriously only after our repeated complaints and the inquiries from a reporter. It's very rare for a CAFO to be fined or asked to enact measures to mitigate emissions. The agency's after-the-fact compliance system does little beyond creating the illusion that the industry is being regulated.

I find it difficult, though, to lay blame at the feet of the MPCA or even frankly at the feet of the feedlot operators. Human nature is what it is, and people are unlikely to spend extra money on hydrogen sulfide monitors unless they're told they must. The animal livestock industry is exempted from reporting emissions under the multiple relevant federal air pollution acts. In the absence of federal regulation, air emissions reporting and standards are left to state or local governments. For the most part, the states don't go beyond what is required federally, although they absolutely should. A small handful of localities have required emissions analyzers and detailed manure management plans, or have implemented a ban on new CAFOs after a series of local disasters, as occurred in North Carolina. But they are the exceptions.

The great tragedy of the government's continuing failure to regulate is that simple regulations would undoubtedly save lives. While hydrogen sulfide is the air pollutant most likely to cause emergency health situations, the fine particulate matter (PM 2.5) and one of PM 2.5's precursors, ammonia, cause the most mortality and morbidity among the livestock industry's prevalent toxins. Chronic exposure to fine particulate matter and ammonia can lead to lung diseases, heart diseases, and a number of cancers. As mentioned in chapter 11, a groundbreaking 2021 report found that ammonia emissions contribute to 12,400 deaths annually in the United States, and animal agriculture is the leading cause of such emissions. The scientists concluded that changes in farming practices, most importantly in manure and fertilizer management, could reduce these deaths by half.[13]

In Dodge County, feedlot operators would not accept these findings as truth, nor would county officials. At least I hope they wouldn't. Otherwise, I find it impossible to understand why the county doesn't require the mitigations that residents consistently advocate for during feedlot CUP public hearings: installations of odor-reducing biofilters on

all factory farms; inspections to ensure that biofilters, once installed, are in proper working order; hydrogen sulfide analyzers to test air emissions; limits on the size of factory farms in the county; a cap on the concentration of factory farms in the county; and increased setback requirements beyond the state-mandated minimum so that CAFOs are sited farther from the nearest neighbor.

I prefer to believe that county officials, who refuse to implement these measures time and again, reject them out of ignorance rather than other motives.

Declaration of Sonja Trom Eayrs

I, Sonja Trom Eayrs, being duly sworn, state as follows:

1. My great grandfather, Ed Trom, immigrated to the United States from Norway in 1892. Imagine the mixed emotions as he left his home in Hemsedal, Norway, and embarked upon a new continent with his two cousins. My great grandfather settled in Dodge County, while his two cousins settled in North Dakota. I have always felt a special kinship to the people of North Dakota.

2. I grew up on the family farm in Dodge County and help manage the Trom multi-generational farm today. I am also a practicing attorney in Minneapolis, Minnesota. I recently authored ***Dodge County, Incorporated: Big Ag and the Undoing of Rural America*** (University of Nebraska Press).

3. Today, I make this declaration in opposition to Senate Bill 2174 regarding setbacks.

4. During my youth, Dodge County was home to many sustainable family farms and a strong rural community. Our family farm was and continues to serve as an important part of this community, including as the site of many outdoor gatherings and celebrations. These events can no longer occur due to the overwhelming stench from neighboring hog factory farms.

5. Our beautiful farm is situated at the headwaters of the Cedar River, which flows south into Iowa and eventually into the Mississippi River. Throughout my childhood, I learned to farm with nature, respect the environment, and appreciate the diverse wildlife in the area. Protecting air and water quality is a value my parents instilled in me from a young age.

6. The area began to change in the early 1990's, when industrial-scale hog factory farms began to move into the immediate area. In 1993, the first hog factory farm was built about a mile north of our farm, and many more have since been constructed in the area. There are now 12 hog factory farms within a three-mile radius of our farm, confining an estimated 30,000 pigs.

7. This influx of factory farms and their air pollution and industrial waste has severely harmed the environment and quality of life in our community. Hog factory farms produce dangerous air emissions, including methane, ammonia, hydrogen sulfide and other pollutants.

8. I cannot begin to capture the significant changes to my home community in the two to three minutes allotted for oral testimony. To provide you with a sense of the dangerous air emissions from area factory farms and the impact upon my family and other neighboring farm families, I encourage you to read the attached chapter 15, "The Three-Day Stink Out" from my book, ***Dodge County, Incorporated: Big Ag and the Undoing of Rural America***.

9. As I describe in chapter 15, in November 2017, the neighboring hog factory farm operator was engaged in fall pump-out and spread an

estimated 2 million gallons of manure just yards from where my father was finishing fall harvest. As my father picked corn, dangerous air emissions infiltrated the combine cab, and my father had to step off the combine to vomit. He suffered for days thereafter, undoubtedly a victim of hydrogen sulfide poisoning.

10. As I note in chapter 15:

> While hydrogen sulfide is the air pollutant most likely to cause emergency health situations, the fine particulate matter (PM 2.5) and one of PM 2.5's precursors, ammonia, cause the most mortality and morbidity among the livestock industry's prevalent toxins. Chronic exposure to fine particulate matter and ammonia can lead to lung diseases, heart diseases, and a number of other cancers. As mentioned in chapter 11, a groundbreaking 2022 report found that ammonia emissions contribute to 12,400 deaths annually in the United States, and animal agriculture is the leading cause of such emissions. The scientists concluded that changes in farming practices, most importantly in manure and fertilizer management, could reduce these deaths by half.

11. In addition to dangerous air emissions, factory farms produce incredible amounts of liquified waste, which contain pharmaceuticals, heavy metals, and pathogens in addition to the nitrogen and phosphorus used as a "fertilizer." Factory farms dispose of this waste on cropland in our area, leading to degradation of local waterways. Over-application of factory farm waste that cannot be utilized by crops is prone to running off into the fields when it rains or leaching into the groundwater that most of our rural community relies on for drinking water. Additionally, I have observed excessive application of manure on crop land, which I believe was done as a waste disposal effort rather than to provide nutrients for crops.

12. There is no magic setback number. Setbacks or no setbacks, dangerous emissions from factory farms will directly impact farmers and farm families. "Safe setbacks" do not exist, particularly in farm country where farmers and farm families live on the land and work the land, perhaps adjacent to a factory farm or near manure-spreading activities.

13. Industry giants have ruined my home county – don't allow industry giants to ruin beautiful North Dakota, too.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 6, 2025

Sonja Trom Eayrs

Chairman Beltz and Members of the House Agriculture Committee,

My name is Erik Olson and I currently live in Richland County. Just a few years ago, my wife and I recently moved back to the town where I grew up and have loved so much called Abercrombie, ND. We have put our entire life savings into fixing up an old farmstead just south of town where we have planned to spend the rest of our lives together along with our future family. Now, we are being threatened with a mega dairy just 2 miles from our farmstead. This has just about completely shattered what we have worked for so hard to create.

The developers who have produced these odor footprint tools, clearly are for the betterment of the livestock industry and not for the people.

These odor footprint tools look at so many different scientific factors to come up with specific results. The factors needed to "estimate the amount of odor emitted" from a particular livestock site, include: Animal species, housing types, manure storage, manure handling methods, size of the odor source, implementation of odor control technologies, and the location related to local climate. But what about the factors of the people and how this will negatively affect us? This tool was designed to address concerns between livestock production facilities and community residences. But again, doesn't take local residents within the actual calculation. These are people that have lived in rural communities for their entire lives that won't ever get to be included in determining such results for either existing, expanding, or new animal production sites.

There are residents from all over pleading for our government to take a stand with us and to protect us in our State against what is ultimately going to negatively impact and cause irreversible damage. This bill is something that would benefit the exact unwanted dairy that my community is being threatened with. We feel that we are being bullied by our government and pushed aside to let these CAFOs come into our state. We look to the elected officials to do what is right for us. Please ask yourself without any government pressure…Is this bill going to benefit the people of the state? Just look at the all the opposition testimonies that have been submitted and understand that these are voices from the people that are asking you to consider us as individuals who love our state, over these livestock corporations.

I appreciate you giving me the time to speak with you today and I ask that you vote for a DO NOT PASS on bill 2174. I will be happy to answer any questions you may have.

Thank you.

Testimony in Opposition to SB 2174

My name is Jeff Kenner. I live on a farm on the shores of Devils Lake. I oppose SB 2174, and I will tell you why after some background information.

I'm Jeff Kenner that wishes I would have been a township officer back in 1999. The townships and counties were tricked in to giving up most of their rights and went along with Senate bills 2355 and 2365. They believed that these bills would be set in stone in the Century Code. They were even told that "the local governments have discretion to alter the model to address local concerns and to meet local needs". More lies.

The legislature has been taking more and more township rights away by passing several bills throughout the years and with Farm Bureau's help writing the bills. Extremely unethical. Good old boys network.

I'm also the Jeff Kenner that is a Farm Bureau member. I believe that they do a lot of good things, but not when it comes to animal feeding operations. Why try to bully your way and get as close to a town, residence, lake, or business. There are miles and miles of open land to put animal feeding operations on.

I'm the Jeff Kenner that believes wholeheartedly, do unto others as you would have them do unto you. I care deeply for people.

A friend of mine asked the owner of a hog-feeding operation, "How did you get your operation?" He said that you just keep suing them! That is what Farm Bureau tried to do multiple times against Pelican Township and the one I live in, Grand Harbor Township. By the grace of God, help from over 1500 Lake Region Concerned Citizens, and the Spirit Lake Tribe south of Devils Lake, we prevailed on stopping a proposed hog operation that would have been closer than one-quarter mile to the shores of Devils Lake, which is a closed-basin lake.

The Spirit Lake Tribe said they would never allow a hog-feeding operation near the sacred waters of Devils Lake. Why does this have to be a fight? Where is the common sense? Simply stay far enough away from people, watersheds, lakes, and rivers. Don't spit on your neighbor. Treat them with dignity and respect.

I also want you to know that I am the same Jeff Kenner that is not against animal feeding operations. There is lots of room in our state for them. Don't put profit over people! Just be honest and ethical! I have had several legislators, and the Ag Commissioner lie to me in person. Makes me sad. I get a feeling of losing all hope in those we have elected to represent '<u>us</u>', the people that would be directly affected by this.

One more thing about where I, Jeff Kenner live. I live right on Devils Lake that is being polluted by Lake Alice, to the north. According to a study that was done by the federal government that manages Lake Alice, it says that upstream animal feeding operations are polluting it. Nothing is being done about it. Deaf ears at the North Dakota Health Department, Division of Water Quality.

I strongly urge a DO NOT PASS on SB 2174 because it is just more trickery from Farm Bureau, and we will lose more than what was taken from our townships last session in HB 1423.

We would like our 50 percent setback tool put back in the Century Code, please.

I know you get a lot of bills sent your way, and some of you, admittingly, have not read ones you have signed off on. You are told that it is a good bill. SB 2174 is trickery on page 3.

An odor footprint tool developed by the Ag Commissioner? One hundred years of the weather being tracked and reported. They can't even get that right most of the time.

Don't be fooled by the county and township representatives, because they did not even consult with counties or townships regarding this bill. Also, don't be fooled by the Ag Commissioners' taskforce, which is mainly represented by groups that have the most to gain from animal-feeding operations. It's the classic fox guarding the hen house scenario.

Don't forget the human aspect of it. These are real lives and the environment that would be negatively impacted. True family farms. Family-owned businesses. Children and grandchildren that would be subject to the pollution from these operations. All because some people are desperate to get more animal-feeding operations into North Dakota.

These operations don't need to be almost on top of subdivisions, cities, residences, people and right next to bodies of water!

I have mentioned my name several times and you'll probably remember it. But I would rather have you remember God in all your decision-making. Stay honest. Stay ethical. Use your moral compass that He gives you. Don't hurt your neighbor or give somebody else power to hurt their neighbor by passing horrible bills that become law. How about just love your neighbor. God bless you, and thank you for your time.

Jeff Kenner , Chairman of Grand Harbor Township in Ramsey County

For any questions, please call me at (701) 740-5673 or email me at jeffkenner701@gmail.com.

Lanny Kenner
District 7

Chairman Beltz and committee members:
I am asking for NO votes for SB 2174.

1. We need to keep local control to not be controlled by some AI smell test.

2. Our prevailing winds are not always that predictable in North Dakota. In areas such as Devil's Lake where tourism from hunting and fishing are huge, having CAFO's would be bad.

3. CAFO's manure can leach nitrates into well systems causing farmers and anyone with a water well for drinking to buy systems like reverse osmosis systems which still may not make the water safe to drink.

4. Just ask people from many other states who have Concentrated Animal Feeding Operations and they will tell you the horror stories of how CAFO's have wrecked their lives!

5. With all the crazy diseases these days like bird flu and who knows what is coming next, CAFO's could spread these diseases easily.

6. Please keep ND healthy and not smelly by voting NO on SB 2174.

Thank you, Lanny Kenner

NORTH DAKOTA Farmers Union

Contact:
Matt Perdue, Lobbyist
mperdue@ndfu.org I 701.641.3303

Testimony of
Matt Perdue
North Dakota Farmers Union
In support of SB 2174
House Agriculture Committee
March 7, 2025

Chairman Beltz and members of the committee,

Thank you for the opportunity to testify on Senate Bill No. 2174. My name is Matt Perdue, and I am testifying on behalf of North Dakota Farmers Union's members. NDFU supports SB 2174.

NDFU was a member of the interim Model Zoning Task Force, which consisted of agricultural, county and township stakeholders. The Model Zoning Task Force was required to develop updates to the model zoning ordinance and review various other aspects of local zoning for animal feeding operations. SB 2174 embodies the Senate-approved recommendations of the Model Zoning Task Force.

SB 2174 makes identical changes in two different chapters of Century Code. Section 1 of the bill addresses county zoning authority, while Section 2 of the bill addresses township zoning authority. The bill makes two changes to state law governing local zoning:

1. Paragraph 4 clarifies that a county or township may not preclude development of an animal feeding operation except as provided by state zoning law. This is important clarity for counties and townships who have shared feeling somewhat uncertain about where there authority starts and ends.
2. Paragraph 8(c) authorizes counties or townships to increase or decrease setbacks based on the results of an odor footprint tool. An odor footprint tool is a science-based tool for determining the dispersion of odor emissions from a livestock facility. NDFU's member-driven Policy & Action supports the development of an odor footprint tool for North Dakota. The odor footprint tool offers counties and townships an alternative to standard zoning methods, allowing the community to respond to local conditions and project-specific factors. To be clear, SB 2174 gives counties and townships the *option* to use the odor footprint tool on a *voluntary* basis.

Thank you for your consideration of my testimony. We respectfully request a "Do Pass" recommendation on SB 2174. I will stand for any questions.

SENATE BILL NO. 2174
HOUSE AGRICULTURE COMMITTEE
MIKE BELTZ, CHAIR
TESTIMONY IN SUPPORT OF SENATE BILL 2174
MARCH 7, 2025

Chairman Beltz and members of the House Agriculture Committee, I am Parrell Grossman, and it is my privilege to be the Legislative Director for the North Dakota Soybean Growers Association. I appear in support of Senate Bill 2174.

The Association advocates for 8,900 operations that raise soybeans in North Dakota. In 2024, those soybean farmers planted 6.6 million acres of soybeans, producing over 245 million bushels of soybeans.

This Committee is aware that, according to a 2024 North Dakota Agriculture Industry Economic Contribution Analysis conducted by the NDSU Department of Agriculture, the economic contribution to North Dakota is $41.3 billion, including $26 billion from direct output and $15.3 billion from secondary output.

The Model Zoning Task Force was facilitated and led by Commissioner Goehring and his staff in the Department of Agriculture. The task force was comprised of representatives of the Department of Environmental Quality, counties and townships, planners and many different agricultural commodities groups. Each agency, entity, or organization brought significant expertise to the group and process. It consisted of many meetings over a 20-month period which included many discussions, diverse opinions, and research including other states'

setback distances laws, as well those states' use of odor footprint tools in determining and regulating setbacks for animal feeding operations, or "AFOs." These scientific odor footprint tools have significantly changed the hard and fast rules of setback distances that are nonscientific or otherwise may be arbitrary.

Setback rules are important for agricultural growth because AFOs are a market for many crops or value-added products, that are suitable for animal feed, including soybeans, corn, barley, wheat, and oats. Soybean meal is a high-quality protein feed ingredient for many animal species. Soy meal is cost-effective and readily available in North Dakota, ensuring a reliable supply chain for AFOs.

The original legislation, prior to amendment, was the product of the Model Zoning Task Force and contained various setback adjustments and the use of an odor footprint tool. The Senate Agriculture and Veterans Affairs Committee, during the hearing process, determined the setback changes were not acceptable. However, the Committee agreed to the new provision for an odor footprint tool that would allow the use of that tool for flexibility purposes.

The use of the odor footprint tool will help align the setbacks with science-based policies. Studies based upon odor dispersion modeling support the use of an odor footprint tool, allowing both flexibility and maintaining a consistent baseline for all operations. The Association agrees with the amended legislation passed by the Senate, as contained in the First Engrossment.

The Association emphasizes the potential for enhancing the soybean market, and the market for other crops produced by our farmers, as well as the other economic benefits to the surrounding areas of AFOs. This legislation will fairly and effectively allow or facilitate the locations of existing or potential AFOs.

The Agriculture Department and Model Zoning Task Force invested significant expertise and thoughtful debate in this work-product and has

proposed this legislation. The Association appreciated the opportunity to participate and recommends this legislation as a favorable result.

Mr. Chairman and members of the House Agriculture Committee, the Association respectfully urges you, after thoughtful consideration and debate, to give Senate Bill 2174 a “Do Pass” recommendation.

Thank you for your consideration and I would be pleased to answer any questions.

In Favor of SB 2174

House Agriculture

March 7, 2025

Chairman Beltz and Committee members:

For the record, my name is Drew Courtney. I farm in Oakes and serve as a board member for the North Dakota Corn Growers Association. Thank you for the opportunity to testify in favor of Senate Bill 2174.

The Corn Growers were actively engaged in the Model Zoning Task Force that reviewed this portion of Century Code during the interim. We support the inclusion of the odor footprint tool developed by the Agriculture Commissioner. This tool will give political subdivisions flexibility to extend or reduce setback distances based on local conditions.

We do have one concern with the bill, which is the lack of enforcement for local governments with zoning ordinances that are out of compliance. We would support a mechanism other than a lawsuit to address non-compliance.

We appreciate the Legislature's investments over the last biennium to expand animal agriculture in the state. SB 2174 will continue that important work, and we urge a "Do Pass" recommendation. Thank you for your consideration, and I will stand for questions.

COMMISSIONER
DOUG GOEHRING

ndda@nd.gov
www.agdepartment.com

Testimony of Doug Goehring
Agriculture Commissioner
House Agriculture Committee
Room 327C
March 7, 2025

Chairman Beltz and members of the House Agriculture Committee, I am Agriculture Commissioner Doug Goehring. I am here today in support of SB 2174 which updates the state's model zoning ordinance

Over the interim, I chaired the model zoning task force which provided the information listed in the bill. The task force was made up of county commissioner, township officers, planning and zoning and agriculture groups working together create a balanced approach to zoning policy. I believe the biggest contribution from the task force were the effort to create the livestock odor modeling tool for our state. This is currently being developed by South Dakota State University through a contract with Lake Agassiz regional council and several ag groups. I have asked Shaun from my office to demonstrate the tool based on Nebraska's current version to the committee today.

Chairman Beltz and committee members, thank you for your consideration of SB 2174. I would be happy to answer any questions you may have.

NEBRASKA ODOR FOOTPRINT TOOL

Separation Distance Results

PROJECT DETAILS

Project Title:

Animal Capacity of Site:

Description of this Evaluation or Comparison:

Site Location: 4P5M+MQ Hoskins, NE, USA

Location for Weather Data: Norfolk, Neb. (Northeast Neb.)

Prepared For:

Prepared By:

Date Prepared: 1/22/2025

FACILITIES

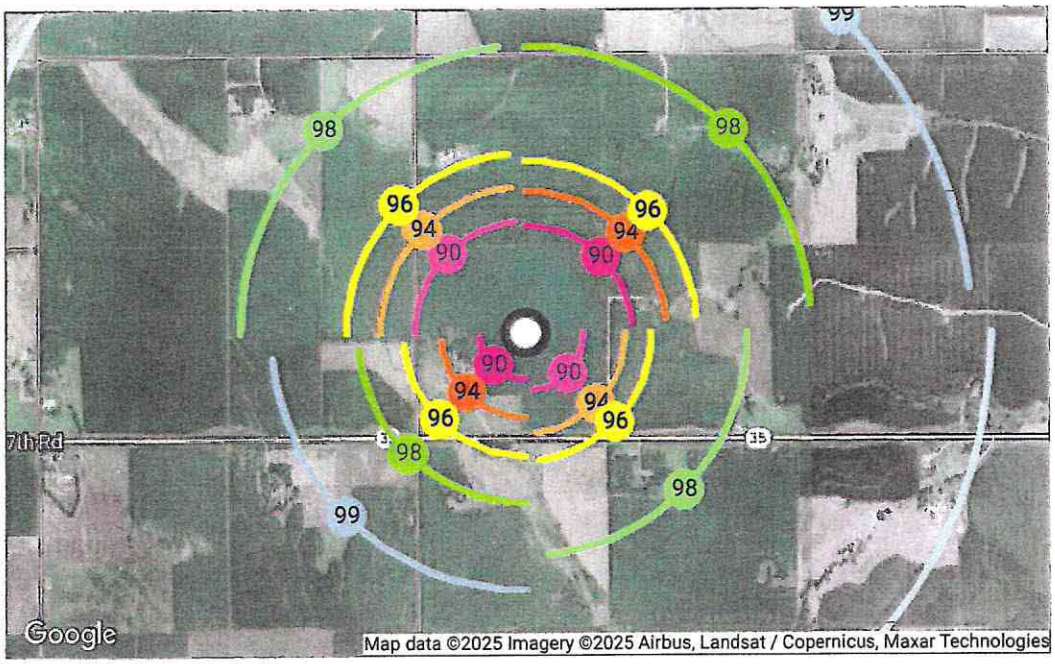
Source Facility 1

Type of Facility		Deep pit Fin
Odor Source		Swine, Finishing Bldg
Area		38,986 ft^2
Odor Emission Number		165
Base Plan	**Odor Control**	No supplemental odor control implemented
	Percent of Total Odor	100
	Odor Control Factor	1
	Odor Emission Rate	6.43×10^6

Base Plan

Separation Distance (miles)

		Northeast	Southeast	Southwest	Northwest
Odor Annoyance-Free Frequency	99%	1.17	1.22	0.67	1.53
	98%	0.75	0.58	0.44	0.75
	96%	0.45	0.33	0.32	0.47
	94%	0.37	0.26	0.22	0.38
	90%	0.28	0.15	0.12	0.29



Map Options

Directions

- ☑ Northeast
- ☑ Southeast
- ☑ Southwest
- ☑ Northwest

Percentages

- ☑ 99%
- ☑ 98%
- ☑ 96%
- ☑ 94%
- ☑ 90%

☐ Unlock Location

AgSitePlanner.unl.edu

manure.unl.edu

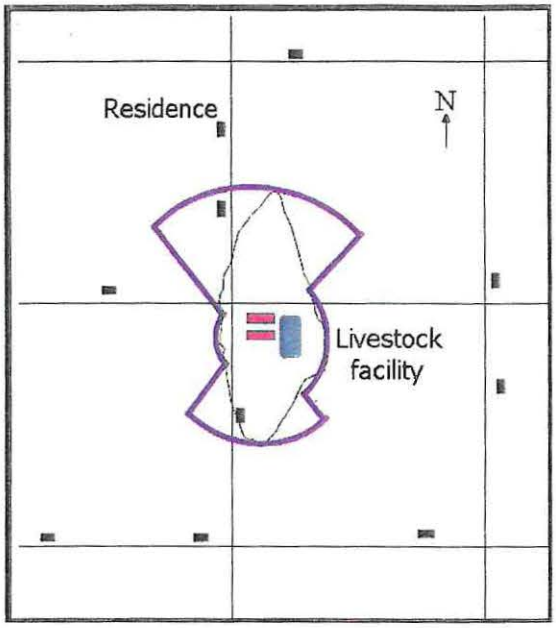
University of Nebraska Lincoln EXTENSION

Understanding Odor Footprints and the Odor Footprint Tool

Q. What is an *odor footprint*?

A. An odor footprint is a visual picture (top view) of the risk-based odor impact of livestock facilities. Specifically, it outlines the area that is not expected to meet a selected target for avoiding odor annoyance. The minimum separation (or 'setback') distance needed from the livestock facility in a given direction is the extent of an odor footprint in that direction.

Odor footprints generated directly from dispersion modeling show the extent of risk-based odor impact in precise detail, but require specialized resources and expertise. Once baseline modeling is performed for a location, simplified footprints can be developed fairly readily for the region using commonly available resources and expertise. Simplified footprints show risk-based impact areas based upon the largest setbacks needed in one or more directions. The resulting footprints typically show fairly conservative pictures of risk-based impact areas.



Odor footprints illustrate the risk-based odor impact of livestock

Q. What is the Odor Footprint Tool?

A. The Odor Footprint Tool is a worksheet/spreadsheet that provides objective, science-based information on the risk-based impact of odors generated by livestock facilities. The user enters information about the livestock facilities for a given site, the site location (for getting weather data), use of supplemental odor control, and special terrain. After using the Odor Footprint Tool, the user obtains minimum setback distances in four directions (matching up with targets for avoiding odor annoyance).

NEBRASKA ODOR FOOTPRINT TOOL
Setback Distance Results

Project title:	Example			Prepared for:
Site location:	Southeast, NE			Prepared by:
				Date prepared:
		Source Facility 1	Source Facility 2	Source Facility 3
Type of facility:		Swine, Finishing Bldg Deep pit	Swine, Nursery Bldg Deep pit or Shallow pit	Manure Storage Steel/concrete tank
Number of identical facilities:		4	1	1
Total plan area:	(sq. ft.)	32,000	6,000	707
Total number of animals:		4,000	1,500	1,500
Base odor control:		No supplemental odor control implemented	No supplemental odor control implemented	No supplemental odor control implemented
Alternate odor control:		Biofilter: All cool season air is vented.	No supplemental odor control implemented	Geotextile cover (at least 2.4 mm thick)
		North	East	South
Terrain:		Flat terrain	Flat terrain	Flat terrain
		Terrain Adjusted Separation Distance (miles)		
		North	East	South
BASE PLAN	90%	0.33	0.07	0.24
	94%	0.45	0.14	0.39
	96%	0.62	0.26	0.52
	98%	1.12	0.41	0.98
	99%	1.97	0.69	1.84

An example of information provided and results obtained when using the Odor Footprint Tool.

This document is being reviewed by the University of Nebraska – Lincoln Air Quality Team: Rick Stowell, Dennis Schulte, Chris Henry and Crystal Powers.

Q. What do the results mean?

A. The separation distances produced using the Odor Footprint Tool correspond to levels of risk – or more accurately, risk avoidance. The Odor Footprint Tool is used to predict separation distances based on user-selectable frequencies of hours during which odor levels will be below the cutoff or threshold for annoyance (see following question on what constitutes an annoying odor). Odor annoyance-free frequencies listed in Nebraska's version of the tool are 90%, 94%, 96%, 98% and 99%.

Setbacks are related to a frequency of annoyance.

For example, a 94% odor annoyance-free frequency means that at least 94% of the time, on an hourly basis, the odor level at locations the specified distance away from the livestock operation will either be undetectable or below the established threshold. The rest of the time (up to 6% or about 6 hours, on average, over a 4-day period), odors may exist at levels above the threshold. To reduce the risk that neighbors will experience annoying odor levels, either more separation is needed or some form of proven odor control needs to be implemented.

Q. What is an annoying odor?

A. What primarily defines an annoying odor is the likelihood that it will negatively influence behavior. When evaluating threshold levels for odor annoyance, the main question asked is "would this state of odor make more than one or two people in a large group want to change what they were doing to lessen their exposure to the odor?" For the modeling behind the Odor Footprint Tool, an annoying odor is 'a faint odor that the average person might detect if attention was called to it, but would not otherwise attract attention'.

Odor intensity is used to define an annoying odor.

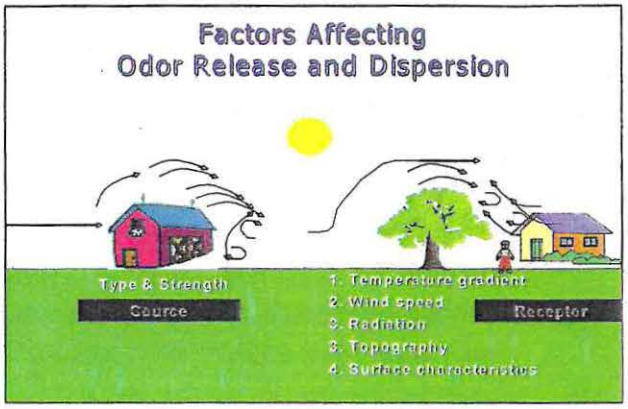
In measurable terms, annoying odors have an intensity of 2 or stronger on a standardized 0-to-5 reference scale. The nonlinear reference scale is designed so an odor intensity of 4 is much more than twice as concentrated as an intensity of 2. When someone asks if you like their new perfume or cologne, and you had not even noticed the smell until you were asked about it; the odor very likely had an intensity of 2. Since many people consider odors from livestock facilities unpleasant, a reasonably conservative intensity threshold was desired. In a Nebraska field study conducted near a swine finishing facility, the threshold intensity of 2 accounted well for the vast majority of odor conditions that would have made the non-partisan assessors modify plans for an outdoor gathering.

This document is being reviewed by the University of Nebraska – Lincoln Air Quality Team: Rick Stowell, Dennis Schulte, Chris Henry and Crystal Powers.

Q. What's the science behind the Odor Footprint Tool?

A. The Odor Footprint Tool is based upon atmospheric dispersion modeling; specifically, a model developed and approved by the U.S. EPA for predicting the movement of airborne pollutants. Dispersion modeling is based upon the physics of atmospheric processes and requires access to quality meteorological data [weather records].

Dispersion modeling is not new, but has become more useful with dramatic improvements in computer capabilities. Advances in processing of data have also contributed to there being much more and higher quality weather information available.

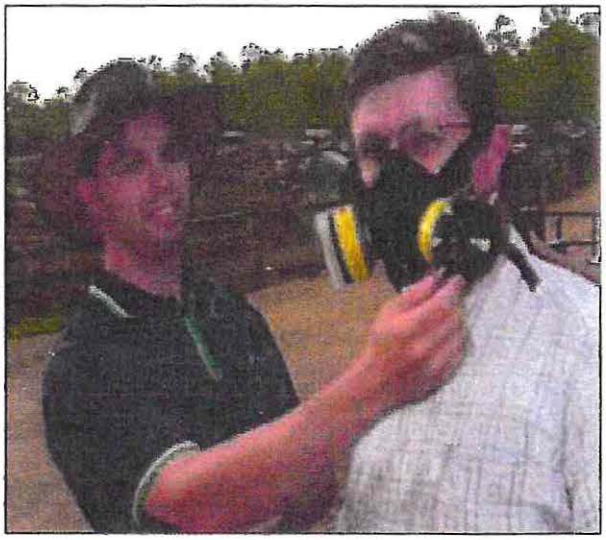


Dispersion models consider the primary factors that influence odor movement and concentrations at neighboring locations.

Q. What has been done to ensure that the modeling / Odor Footprint Tool really works?

A. Modeling odor dispersion requires research-based information on odors. This research includes developing sound methods for measuring odors and a database of odor emission rates from animal production and manure handling facilities. Land-Grant Universities and other public organizations have conducted research and obtained emissions data for several types of animal housing and manure storage facilities.

Modeling's credibility ultimately depends on there being a good correlation between predicted and observed odor events. The modeling behind the Odor Footprint Tool has successfully undergone field validation (ground-truthing) using trained odor assessors and local residents.



The credibility of the Odor Footprint Tool comes largely from comparisons of people's field measurements with model predictions.

Q. How is the Odor Footprint Tool intended to be used?

A. The Odor Footprint Tool is intended to be used as a planning and screening tool to help make timely, well-informed decisions when siting livestock facilities and evaluating odor control options. Producers, their advisors, local officials, and interested rural residents should all find utility in using the Odor Footprint Tool on an informational basis. There are pros and cons of including the Odor Footprint Tool as part of local/county ordinances, and considerable thought needs to be given as to how this can be done expediently and fairly across differing types of animal production operations.

This document is being reviewed by the University of Nebraska – Lincoln Air Quality Team: Rick Stowell, Dennis Schulte, Chris Henry and Crystal Powers.

Q. What is the *right* annoyance-free frequency to use?

A. It depends. While the Odor Footprint Tool is based upon science and best-available research information, selection of the annoyance-free frequency involves a judgment of acceptable risk. Generally speaking, the annoyance-free frequency should match up with the best interests of the rural community. Ideally, a community will determine its best interests by realistically considering its economic, environmental, and social visions for the future in advance of making official decisions about setbacks (e.g. a proposed livestock expansion becomes a 'lightning rod' event).

As a general guide, when local residents have a strong affiliation with animal agriculture and are accustomed to modern production practices, using an odor annoyance-free frequency near 94% may suit the local needs. When most residents are unaffiliated with animal agriculture, or when avoiding odor conflicts is a top priority, an annoyance-free frequency closer to 98% may be more appropriate.

The odor annoyance-free frequency selected greatly affects the resulting separation distances. Wanting to be free of annoying odors 99% of the time may be unrealistic for some areas due to limited options for finding enough land to meet large required setbacks and challenges of applying this high standard to existing operations wanting to expand. On the other hand, having annoying odor levels 6-10% of the time is unrealistic in many areas if good neighbor relations are desired.

Q. How does the Odor Footprint Tool account for spreading of manure on fields?

A. The Odor Footprint Tool presently does not account for odors that may result from land application of manure. These infrequent, but not inconsequential events need to be considered separately for their additional odor impact.

Odors from manure application need to be accounted for separately.

Incorporating material directly into the soil is known to produce much less odor than does surface spreading of the same material. Beyond this, though, it is very challenging to account for application of manure at varying times on potentially differing fields, especially using a "simple tool".

Q. What other clarifications should be made when discussing odor footprints?

A. Like most good information, there are ways in which the information from the Odor Footprint Tool can be given unintended or inaccurate meanings. It may be helpful to consider the following:

- ***The Odor Footprint Tool does not report how far odor will travel.*** This information seems interesting to many people, but has little useful value in assessing odor impact. Under certain weather conditions, odors from even the smallest of farm operations or companion animal facilities will travel relatively long distances.
- ***The separation distances correspond to odor annoyance-free frequencies, not odor-free frequencies*** – a subtle, but important distinction. Rural areas are seldom, if ever, truly odor free. A key element of odor modeling is distinguishing between annoying and non-annoying states of odor, in this case, odor associated with animal production. Most people do not find barely detectable odors to be annoying, so very faint odors are considered inconsequential.

This document is being reviewed by the University of Nebraska – Lincoln Air Quality Team: Rick Stowell, Dennis Schulte, Chris Henry and Crystal Powers.

- ***Odor footprints show areas of 'risk-based odor impact'.*** Residents living beyond specified setbacks (outside an odor footprint) always have a small risk that they may be exposed to annoying odor levels, so use of phrases like "no odor impact" or "no risk" are not accurate or recommended. By analogy, someone who lives outside a 50-year floodplain may reside within the 100-year floodplain, so they should not be told that it will "never flood" on the property.
- ***The Odor Footprint Tool is not used to forecast when odor events will occur.*** Setback information is based upon looking at weather over long periods of time. Fairly consistent weather trends will develop over time within a given region, which helps make risk-based odor footprints more reliable than the weekend weather forecast.
- ***Odor footprints are generally produced for a portion of the year corresponding to an 'odor season'.*** The odor season includes warm conditions when rates of odor generation are higher and people are more likely to be outdoors. The Odor Footprint Tool considers the odor season to extend from April 15th to October 15th. Excluding cold weather conditions and associated low generation rates for odor should result in conservative frequencies of odor annoyance (on a percentage basis) and larger setbacks compared to considering full calendar years.

Prepared by:

Chris Henry, P.E., Extension Engineer, University of Nebraska–Lincoln
217 LW Chase Hall, Lincoln NE 68583-0726
402-472-6529 chenry1@unl.edu

Rick Stowell, Ph.D., P.E. ,Associate Professor, Extension Engineer, University of Nebraska–Lincoln
213 LW Chase Hall, Lincoln NE 68583-0726
402-472-3912 rstowell1@unl.edu

This document is being reviewed by the University of Nebraska – Lincoln Air Quality Team: Rick Stowell, Dennis Schulte, Chris Henry and Crystal Powers.

Members of the House Agriculture Committee,

As it is currently written, I urge a DO NOT pass on SB 2174. As Stutsman County resident and natural resource professional with science background, I have two major concerns with the bill:

1. There was no public health representation on the interim Model Zoning Task Force that proposed the Odor Footprint Tool; commodity interests were heavily weighted, and therefore I do not believe the outcome of that committee was as well-rounded as the residents of North Dakota deserve. I value agriculture and it's role in our state's heritage and economy, which is why I would invite a responsible path forward that truly honors our collective commitment to agriculture in our state- one in which farmers, ranchers, and value-added entities are members of our rural communities, and stewards of the land and resources. Some of my favorite things about living here are the wide open space, clean water, and air. Putting decisions around a how densely we pack these industrial-scale animal feeding operations across our landscape in the hands of tool that was developed with little public health professionals (i.e., doctors, scientists) is irresponsible. I think there are some foundations of a decision-support mechanism in the tool, but they need to be built out and more comprehensive; it should not just be about smell, it should take into account potential toxins in the air, and better draw from the field of public health research (i.e., disease, air quality).

2. The hyper focus on odor seems to neglect other impacts of these massive facilities. I am disappointed to not see any consideration or criteria in the Model Zoning Task Force around flooding considerations (i.e., as they relate to potential runoff from manure storage or nearby field application that would come with most of these facilities) or proximity to recreational and drinking water supplies. Decisions and things like this take time and intention, and I know most folks would not want another "study", but what can this committee do to integrate these considerations into zoning guidance?

To my knowledge, the Model Zoning Task Force was created to "simplify" zoning guidelines to expand the animal agricultural segment of our economy. I think when it comes to our rural communities' health, air, and water, we deserve to take our time and be a little less rash in our pursuit of this simplicity, the immediate effect of which is mostly to cater to out-of-state corporate interests. Proponents of this bill say ND has "fallen behind" other states when it comes to animal ag, but in that comparison forget to look to the lessons other states (ID, NE) have learned about the harm of irresponsibly pushing through these massive operations without appropriate mechanisms, staff, and political will in place for monitoring water, air, and human health quality.

Sincerely,
Olivia Schloegel
Jamestown, ND

SDSU Extension

Livestock Odor Modeling

Dr. Bob Thaler, Extension Swine Specialist
South Dakota State University

What Are Typically the Main Reasons People Object to CAFOs?

- Water contamination
  - Manure storage – designs approved by SD DANR
  - Manure application - approved by SD DANR
- Odor
  - Focus of presentation
- Local impact – roads, labor, water availability
- Fear of the Unknown/Something Different

Primary Sources of Odor

- **Animal housing facilities**

- **Manure storages**

- Land application of manure

$$$$$$$$$$$$$$$$$$$$$$$$$$$$

Odor

- Caused by odorous chemicals in gases and particulate matter
- ***No specific composition***
- Humans can detect over 1 billion different odors
- Difficult to measure
  - There is ***NO*** instrument that accurately measures odor!!!
  - ***How can you regulate what you can't measure??***
  - MN uses hydrogen sulfide levels at property line
- No correlation between individual gas levels (like ammonia) and odor

Olfactometer for Lab Testing

- Dynamic, triangular, forced choice
- Trained panelists

Health Impacts of Odors

- Physiological and psychological symptoms have been reported in various studies
- Systematic study of available literature by O'Connor et al. (2010):
  - A weak and inconsistent association between self-reported disease in people with allergies or familial history of allergies
  - No consistent dose-response relationship between exposure and disease

SDSU Extension

How do I assess air quality?

Assessment Tools

South Dakota Odor Footprint Tool	• https://www.sdstate.edu/abe/research/structures/odor-modeling.cfm
National Air Quality Site Assessment Tool	• http://naqsat.tamu.edu/
Air Management Practices Assessment Tool	• http://www.agronext.iastate.edu/ampat/

National Air Quality Site Assessment Tool

- Qualitative assessment
- Site-specific analysis
- Multiple air pollutants considered
- Survey format
- Adopted by the NRCS

National Air Quality Site Assessment Tool

Select a species to begin:

Swin

Dairy

Beef

Hors

Beef | National Air Quality Site Assessment Tool

Note: Do not use your browser's back button to navigate this form.
Save often using the **Sa**

Animals and Housing

Note to User: Many farms may
one of the choices can be selec
affect their results. **See user's**
will accomplish that result.

Housing type:

- Under roof - Enclosed pe
- Under roof - Enclosed pa
- Dry lot
- Concrete lots

Save Progress

Housing type:

- Under roof - Enclosed pens
- Under roof - Enclosed pack

Bedding conditions: *(Click on an image below; your selection will highlight in green.)*

No bedding visible, deep manure accumulation, wet, matted manure on hides

<25% bedding visible, moderate manure accumulation, animal hides dirty

25-75% bedding visible, little manure accumulation, mostly clean hides

>75% bedding visible, little manure accumulation, clean hides

tool only
wer will
t practice

Air Management Practices Assessment Tool

- Qualitative assessment
- Conservative estimate of the range in effectiveness for ammonia, hydrogen sulfide, dust, odor, volatile organic compounds, and greenhouse gases
- Relative cost

Animal Housing

	Ammonia	H_2S	Odor	Dust & Particulates	VOC	GHG	Cost
Barriers	red	red	yellow	green	red	red	$
Biofilters	yellow	green	green	green	green	blank	$$
Chimneys	red	red	yellow	yellow	red	red	$
Diet Manipulation	yellow	yellow	yellow	green	blank	blank	$
Electrostatic Precipitation	red	blank	yellow	green	red	red	$$
Landscaping	yellow	blank	yellow	yellow	blank	blank	$
Oil Sprinkling	red	yellow	yellow	green	blank	blank	$
Pit Ventilation	red	red	red	red	red	blank	$$
Scrubbers	green	blank	green	green	green	blank	$$$
Siting	red	red	green	red	red	blank	$
Urine/Feces Segregation	green	green	green	blank	blank	green	$$-$$$
UV Light	blank	red	yellow	blank	green	blank	$$

H_2S = Hydrogen Sulfide; VOC = Volatile Organic Compounds; GHG = Greenhouse Gases

red - low impact; yellow - medium impact; green - high impact; blank - insufficient data

The table is laid out as a score card. Each technology within the tool is laid out on the vertical axis on the left. The pollutants are laid out on the horizontal axis at the top. A green color indicates a particular technology has a high impact on that particular pollutant. Likewise, yellow and red indicate medium and low impact respectively. As an example, if a person were concerned about a potential odor problem from animal housing, you would scan down the list under the "odor" column at the top. You would find that "Siting", "Scrubbers" and "Biofilters" have green bars, meaning they have high impact on odors. You could then investigate them further or check out some of the yellow bars that have a medium impact. Consequently red bars, would have low impact or would not be suitable for addressing that pollutant.

Source: http://www.agronext.iastate.edu/ampat/animalhousing/homepage.html

South Dakota Odor Footprint Tool

- Estimate odor impacts (setback distances needed)
- Assumes flat terrain
  - Odor "flows" like a liquid
- **Starting point for discussion**

- Factors:
  - Animal Species
  - Manure Storage
  - Housing Type
  - Size of Odor Emitting Surface
  - Historical Weather
  - Mitigation Methods

County of Site	Brookings				
	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Swine Barn	Swine Barn	Manure Storage	Manure Storage	Cattle Yard
Housing Type or Manure Storage	Finishing - Deep Pit	Finishing - Pull Plug	Earthen Storage Basin	Earthen Storage Basin	Dirt/Concrete lot
Emitting Factor	165	97	63	63	19
Emitting Surface					
Width (ft)	70	70	200	0	0
Length (ft)	350	230	200	0	0
Emitting Area (sq ft)	24500	16100	40000	0	0
Odor Control Techr	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control
Odor Control Factor	1	1	1	1	1
Source Emitting Factor	404	156	252	0	0
			Total Odor Emitting Factor (TOEF)		812

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
North	12423	7414	5149	3910	2817	1993
East	7983	3980	2964	2446	1662	638
South	8730	4204	3104	2565	1779	986
West	7909	4220	3097	2441	1745	655

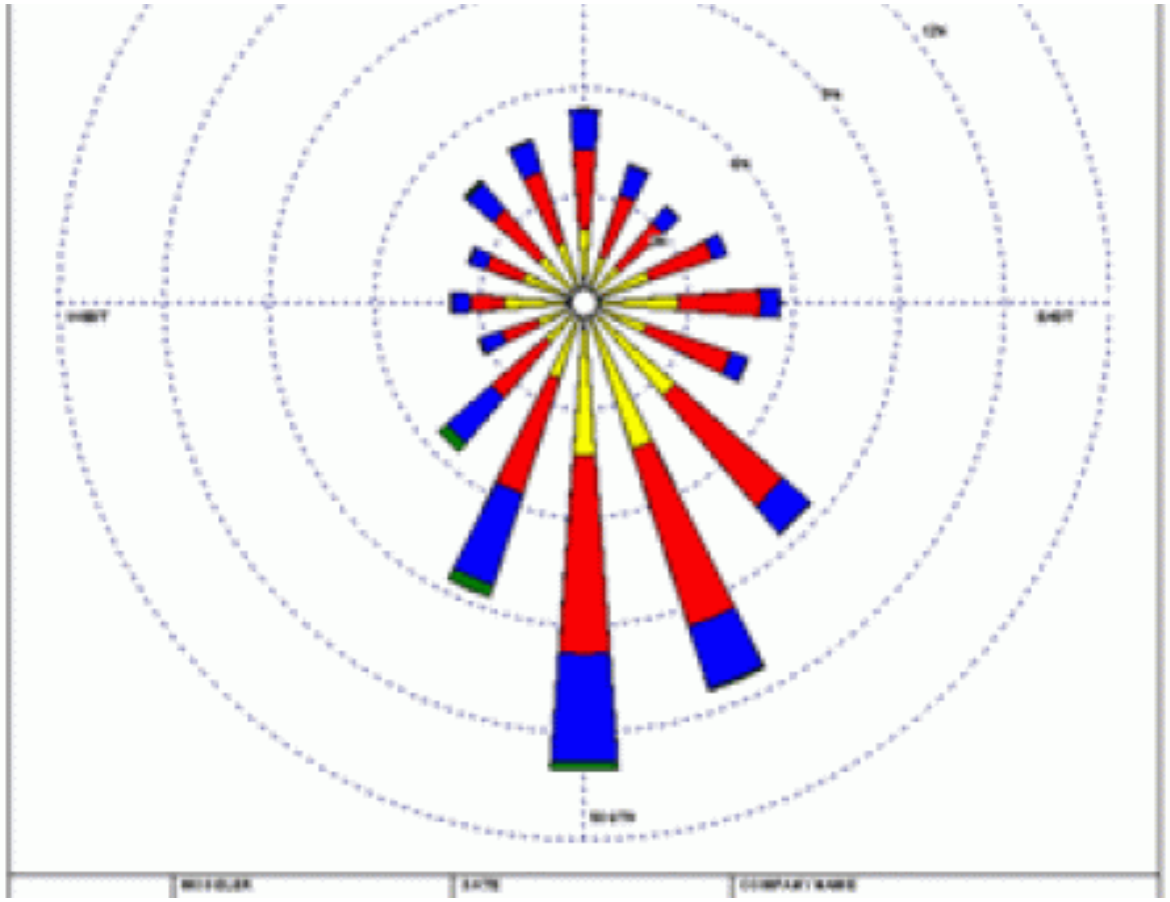
Emission

Select destination and press ENTER or choose Paste

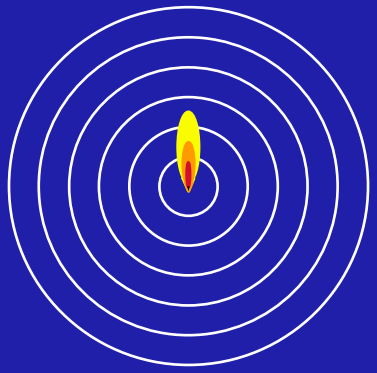
Type here to search

SD Odor Footprint Tool (SDOFT)

- **Select a county**



Weather/Terrain Impact Odor Plumes

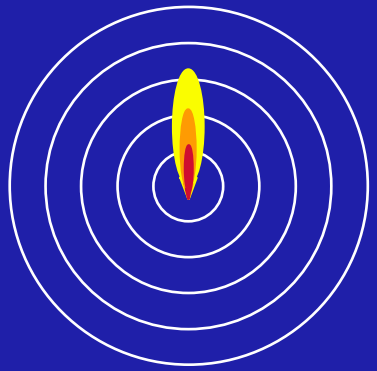


South wind at 10 mph, Summer day With a few broken clouds, Open flat terrain

South wind at 10 mph, Clear summer night, Open flat terrain

South wind at 2 mph, Summer day with a few broken clouds, Open flat terrain

- 5+ odor units
- 2-4 odor units
- 1 odor unit



South wind at 10 mph, Clear summer night, Trees down-wind of odor source

SD Odor Footprint Tool (SDOFT)

- Select a county
- **Select an Odor Source**
  - Cattle yard
  - Dairy Barn
  - Swine Barn
  - Manure Storage
  - Poultry Barns

SD Odor Footprint Tool (SDOFT)

- Select a county
- Select an Odor Source
- **Housing Type or Manure Storage**

Housing Type or Manure Storage

- Cattle Yard
  - Dirt/concrete lot
  - Free stall/scrape
- Dairy Barn
  - Free stall
  - Loose housing
  - Tie Stalls
- Manure Storage
  - Earthen basin
  - Steel/concrete tank
  - Crusted stockpile
- Swine Barn
  - Gestation deep pit
  - Gestation pull-plug
  - Farrowing
  - Finishing deep pit
  - Finishing hoop barn
  - Finishing pull-plug

SD Odor Footprint Tool (SDOFT)

- Select a county
- Select an Odor Source
- Housing Type or Manure Storage
- **Emitting Surface (dimensions)**
  - **Length & width**
  - For swine barns with deep pits, only use building dimensions since research was done with them as one unit

SD Odor Footprint Tool (SDOFT)

- Select a county
- Select an Odor Source
- Housing Type or Manure Storage
- Emitting Surface (dimensions)
- **Odor Control**
  - Biofilter
  - Impermeable cover
  - Straw cover at either 2”, 4”, 6”, or 8”
  - Geotextile cover
  - Oil sprinkling

County of Site	Brookings				
	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Swine Barn	Swine Barn	Manure Storage	Manure Storage	Cattle Yard
Housing Type or Manure Storage	Finishing - Deep Pit	Finishing - Pull Plug	Earthen Storage Basin	Earthen Storage Basin	Dirt/Concrete lot
Emitting Factor	165	97	63	63	19
Emitting Surface					
Width (ft)	70	70	200	0	0
Length (ft)	350	230	200	0	0
Emitting Area (sq ft)	24500	16100	40000	0	0
Odor Control Techr	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control
Odor Control Factor	1	1	1	1	1
Source Emitting Factor	404	156	252	0	0
			Total Odor Emitting Factor (TOEF)		812

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
North	12423	7414	5149	3910	2817	1993
East	7983	3980	2964	2446	1662	638
South	8730	4204	3104	2565	1779	986
West	7909	4220	3097	2441	1745	655

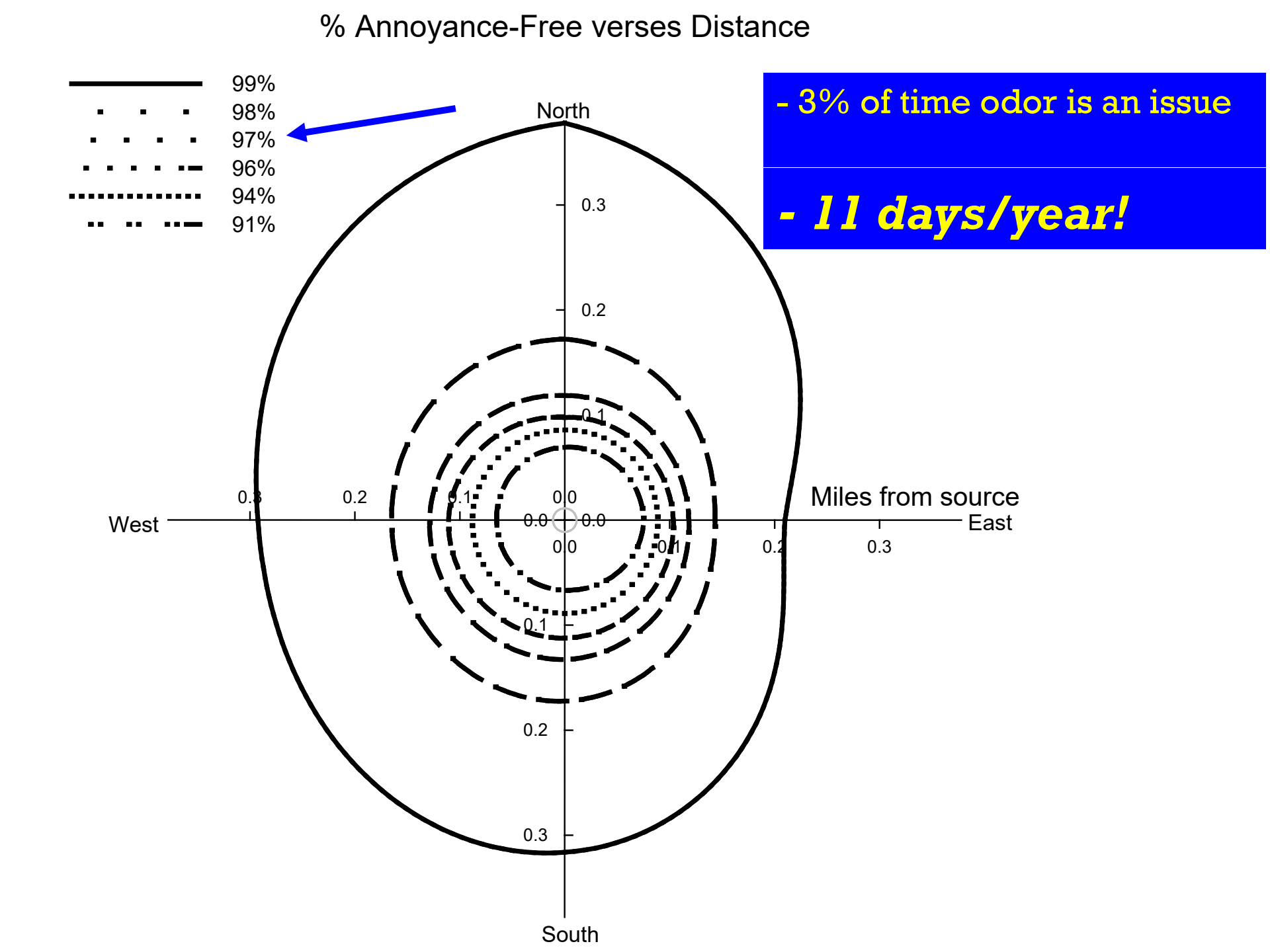
Select which annoyance-free curves to show on graph

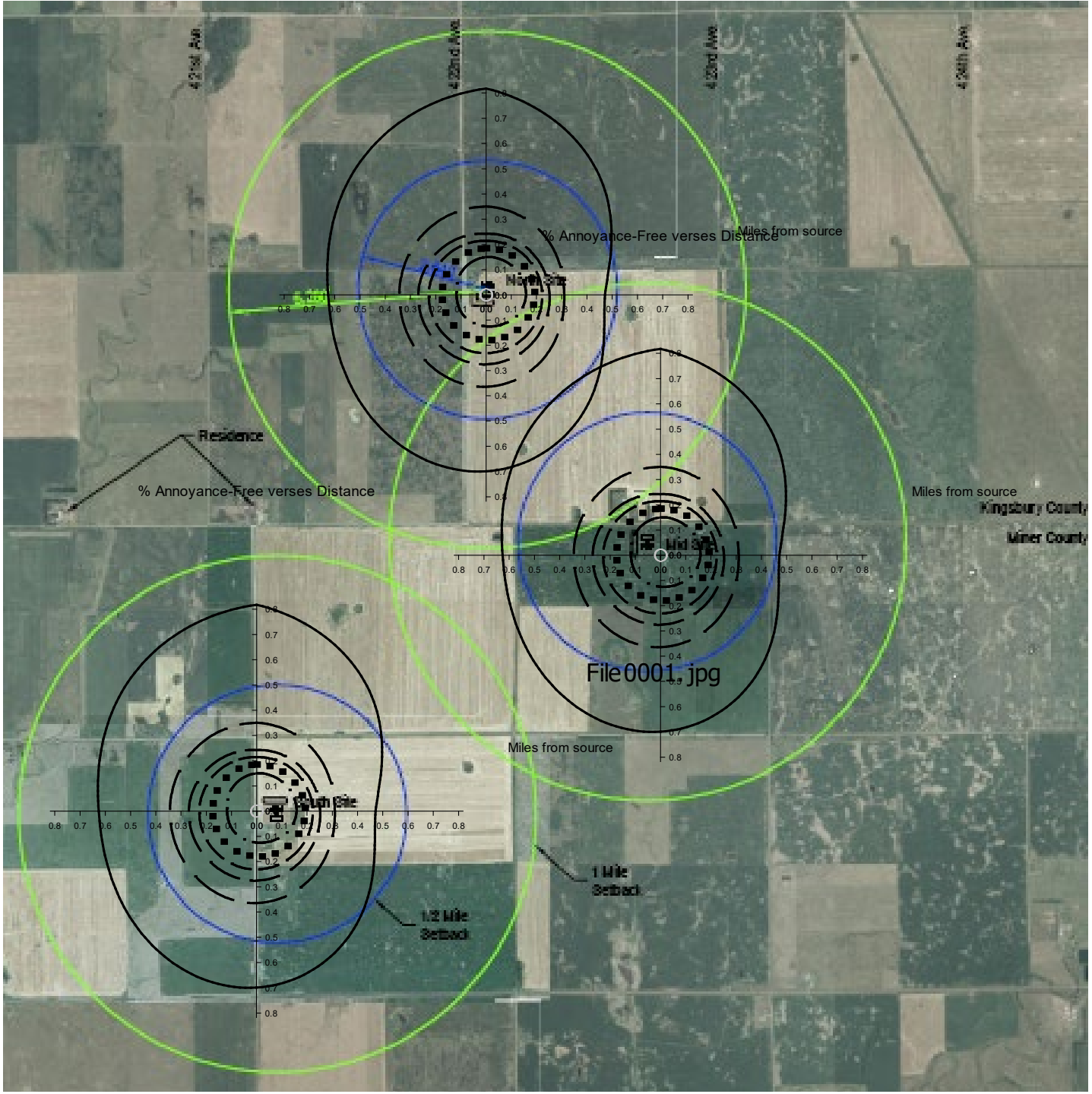
99%

Emission

Select destination and press ENTER or choose Paste

Type here to search


% Annoyance-Free verses Distance
99%
98%
97%
96%
94%
91%
North
South
West
East
Miles from source
0.3
0.2
0.1
0.0
- 3% of time odor is an issue
- 11 days/year!


% Annoyance-Free verses Distance
Miles from source
North Site
Residence
% Annoyance-Free verses Distance
Miles from source
Kingsbury County
Miner County
Mid Site
File0001.jpg
Miles from source
South Site
1 Mile Setback
1/2 Mile Setback

Version 4.1

SOUTH DAKOTA ODOR FOOTPRINT TOOL

Procedure to use SDOFT:

1 Select South Dakota County from drop down list where site is located.
2 Select Odor Source Type from drop down list for each odor source at the site.
3 Select housing or manure storage type from drop down list for each odor source at the site.
4 Enter size (width and length) of emitting surface for each odor source at the site.
5 Enter odor control technology if any from drop down list for each odor source at the site.
6 View annoyance-free distances at bottom of page (scroll down).
7 Select the annoyance-free curves to be graphed by checking the square on the left bottom of this page.

County of Site: Yankton

	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Swine Barn	Swine Barn	Manure Storage	Manure Storage	Cattle Yard
Housing Type or Manure Storage	Finishing - Deep Pit	Finishing - Pull Plug	Earthen Storage Basin	Earthen Storage Basin	Dirt/Concrete lot
Emitting Factor	165	97	63	63	19
Emitting Surface Width (ft)	61	0	0	0	0
Emitting Surface Length (ft)	140	0	0	0	0
Emitting Area (sq ft)	8540	0	0	0	0
Odor Control Techno	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control
Odor Control Factor	1	1	1	1	1
Source Emitting Factor	141	0	0	0	0

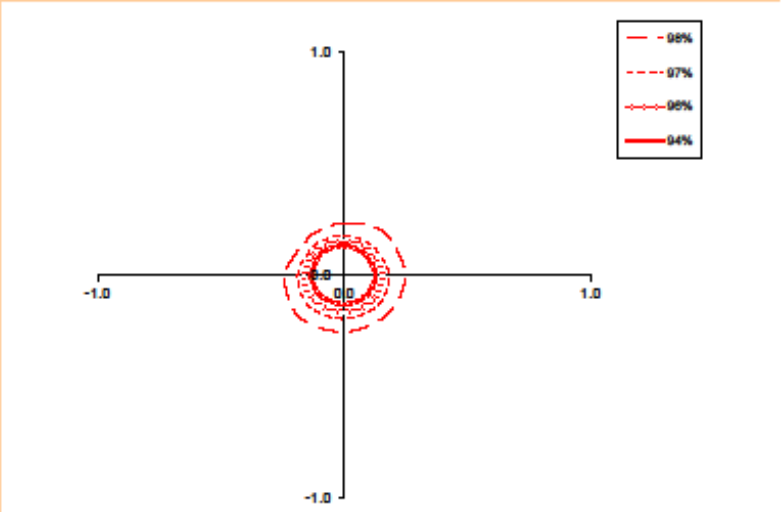
Total Odor Emitting Factor (TOEF): 141

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
Northeast	3072	1331	928	796	672	553
Southeast	2330	1306	1008	857	673	471
Southwest	2587	1367	1044	878	690	499
Northwest	1728	1154	948	829	714	598

Select which annoyance-free curves to show on graph

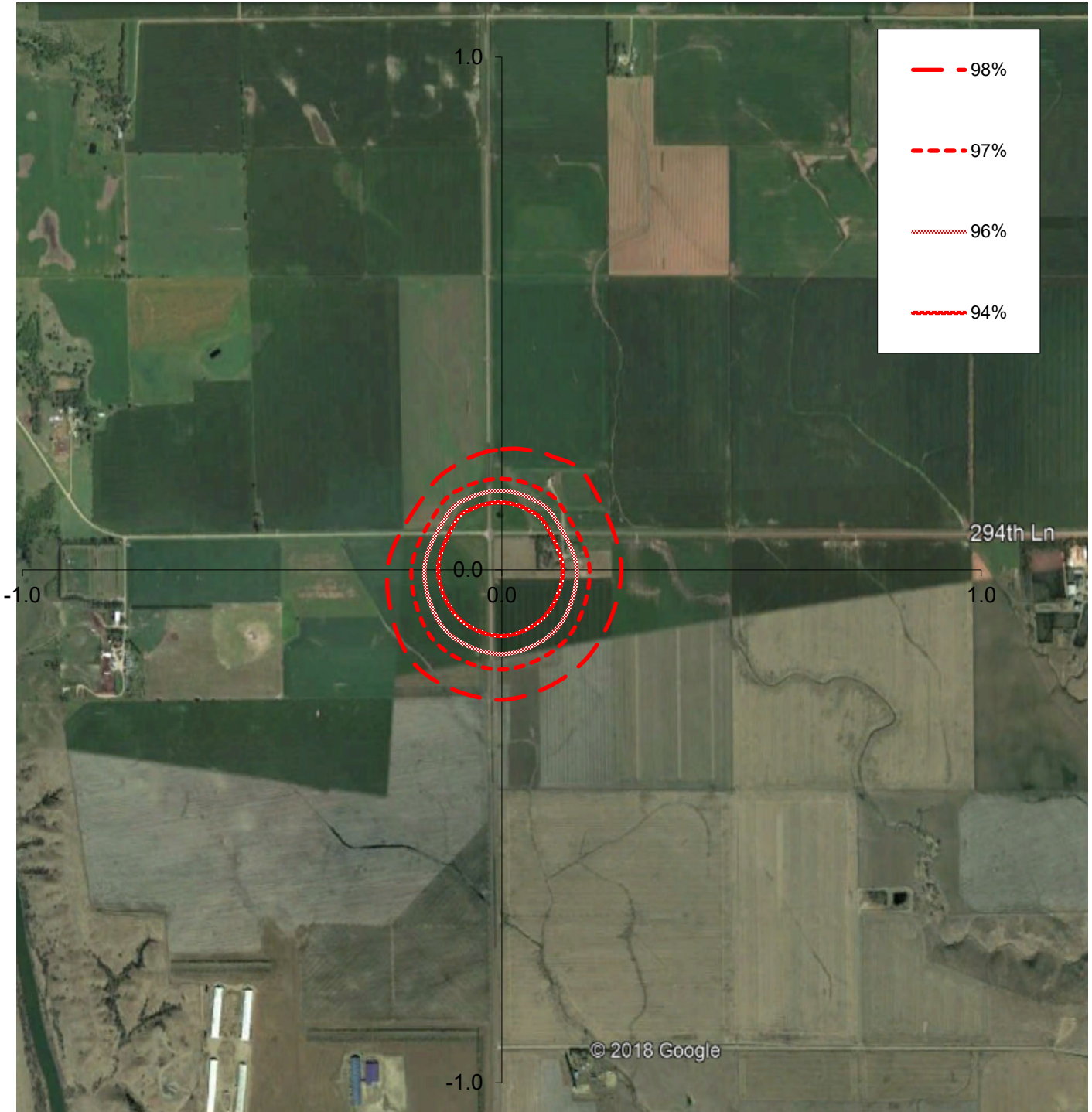
- [ ] 99% Annoyance-free
- [x] 98% Annoyance-free
- [x] 97% Annoyance-free
- [ ] 96% Annoyance-free
- [ ] 94% Annoyance-free
- [ ] 91% Annoyance-free



2,400 head Nursery

SDSU Extension

iGrow.org


98%
97%
96%
94%
1.0
0.0
-1.0
0.0
-1.0
1.0
294th Ln
© 2018 Google

Version 4.1

SOUTH DAKOTA ODOR FOOTPRINT TOOL

Procedure to use SDOFT:

1 Select South Dakota County from drop down list where site is located.
2 Select Odor Source Type from drop down list for each odor source at the site.
3 Select housing or manure storage type from drop down list for each odor source at the site.
4 Enter size (width and length) of emitting surface for each odor source at the site.
5 Enter odor control technology if any from drop down list for each odor source at the site.
6 View annoyance-free distances at bottom of page (scroll down).
7 Select the annoyance-free curves to be graphed by checking the square on the left bottom of this page.

County of Site: McPherson

	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Swine Barn	Swine Barn	Manure Storage	Manure Storage	Cattle Yard
Housing Type or Manure Storage	Finishing - Deep Pit	Finishing - Deep Pit	Earthen Storage Basin	Earthen Storage Basin	Dirt/Concrete lot
Emitting Factor	165	165	63	63	19
Emitting Surface Width (ft)	101.83	101.83	0	0	0
Length (ft)	193	193	0	0	0
Emitting Area (sq ft)	19653.19	19653.19	0	0	0
Odor Control Techno	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control
Odor Control Factor	1	1	1	1	1
Source Emitting Factor	324	324	0	0	0

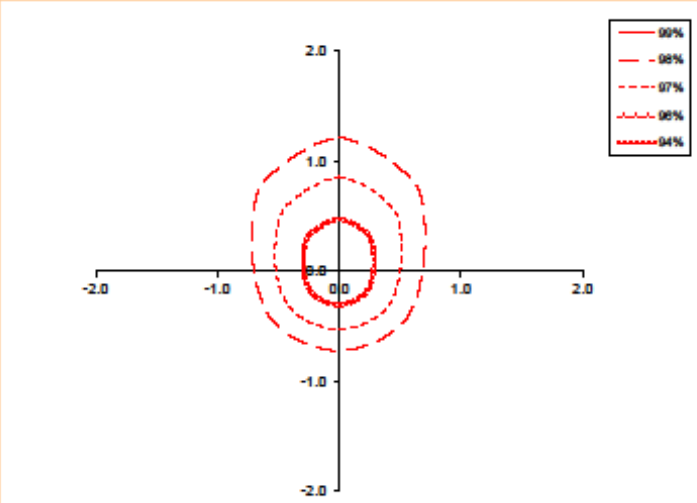
Total Odor Emitting Factor (TOEF): 649

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
North	11069	6465	4554	3496	2531	1800
East	7135	3623	2646	2195	1488	627
South	7753	3811	2783	2315	1605	893
West	7155	3685	2745	2123	1542	655

Select which annoyance-free curves to show on graph

- [ ] 99% Annoyance-free
- [x] 98% Annoyance-free
- [x] 97% Annoyance-free
- [ ] 96% Annoyance-free
- [x] 94% Annoyance-free
- [ ] 91% Annoyance-free



Two 2,400 head Finishing Barns

SDSU Extension

iGrow.org

Version 4.1

SOUTH DAKOTA ODOR FOOTPRINT TOOL

Procedure to use SDOFT:

1 Select South Dakota County from drop down list where site is located.
2 Select Odor Source Type from drop down list for each odor source at the site.
3 Select housing or manure storage type from drop down list for each odor source at the site.
4 Enter size (width and length) of emitting surface for each odor source at the site.
5 Enter odor control technology if any from drop down list for each odor source at the site.
6 View annoyance-free distances at bottom of page (scroll down).
7 Select the annoyance-free curves to be graphed by checking the square on the left bottom of this page.

County of Site: Faulk

	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Swine Barn	Swine Barn	Swine Barn	Manure Storage	Cattle Yard
Housing Type or Manure Storage	Farrowing	Gestation - Deep Pit	Finishing - Deep Pit	Earthen Storage Basin	Dirt/Concrete lot
Emitting Factor	68	243	165	63	19
Emitting Surface Width (ft)	185	171.83	98	0	0
Emitting Surface Length (ft)	466	642	313.33	0	0
Emitting Area (sq ft)	86210	110314.86	30706.34	0	0
Odor Control Techno	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control
Odor Control Factor	1	1	1	1	1
Source Emitting Factor	586	2681	507	0	0

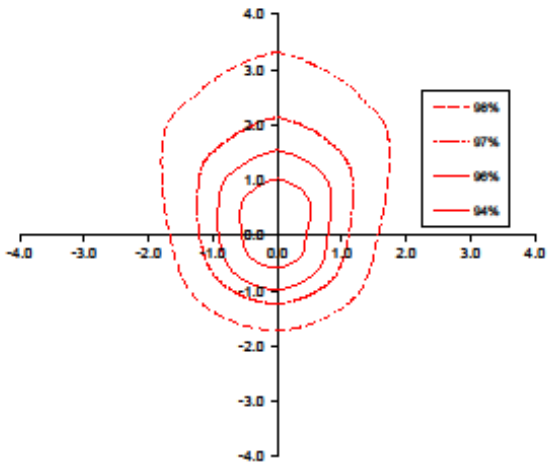
Total Odor Emitting Factor (TOEF): 3774

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
North	30402	17603	11315	8124	5407	3543
East	17541	8277	5864	4135	2357	814
South	19577	9068	6502	5145	3063	1093
West	16879	8801	6373	4790	2682	889

Select which annoyance-free curves to show on graph

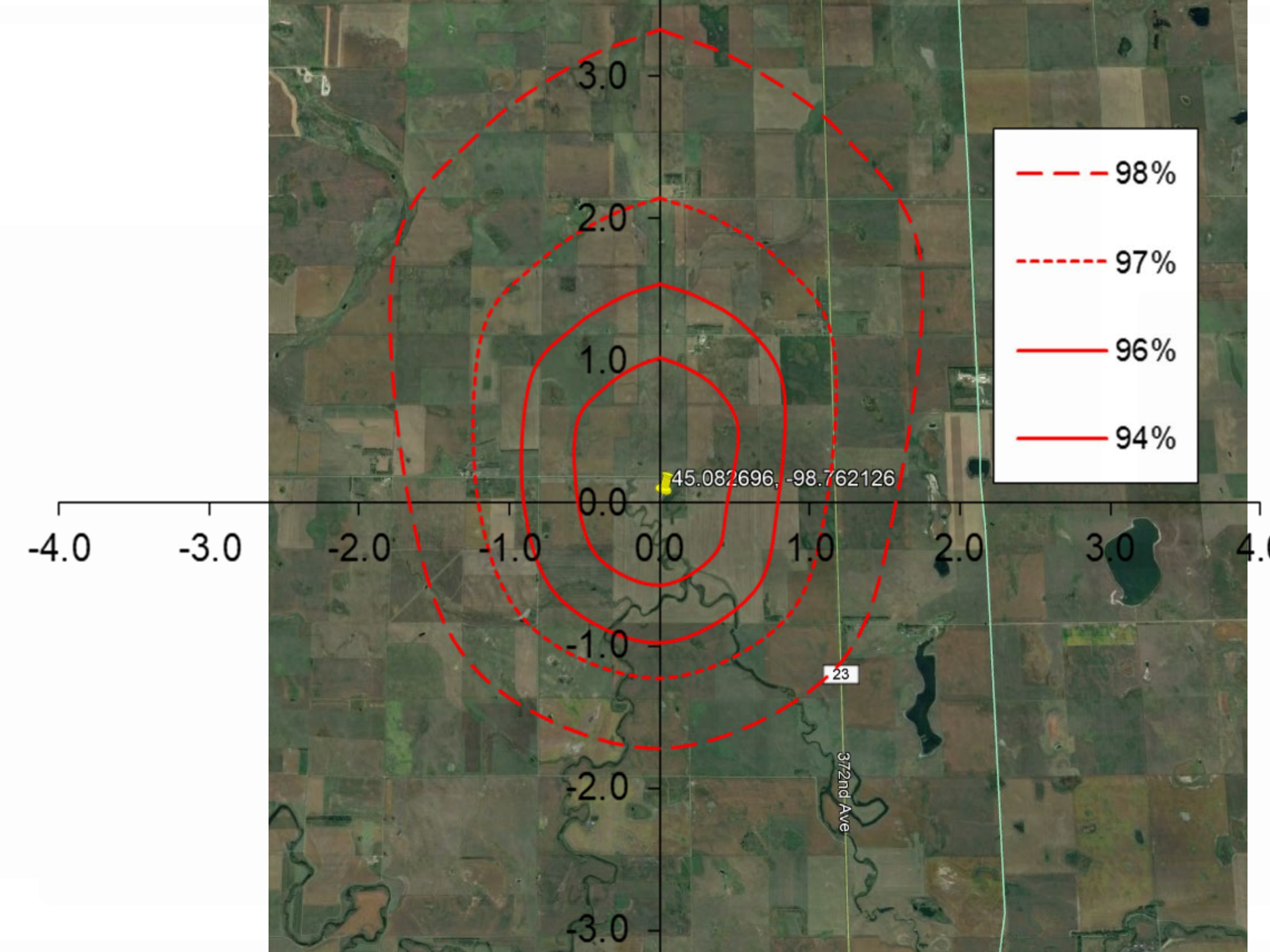
- [ ] 99% Annoyance-free
- [ ] 98% Annoyance-free
- [x] 97% Annoyance-free
- [ ] 96% Annoyance-free
- [ ] 94% Annoyance-free
- [ ] 91% Annoyance-free



5,400 Sow Complex

SDSU Extension

iGrow.org


98%
97%
96%
94%
45.082696, -98.762126
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
23
372nd Ave

Version 4.1

SOUTH DAKOTA ODOR FOOTPRINT TOOL

Procedure to use SDOFT:

1 Select South Dakota County from drop down list where site is located.
2 Select Odor Source Type from drop down list for each odor source at the site.
3 Select housing or manure storage type from drop down list for each odor source at the site.
4 Enter size (width and length) of emitting surface for each odor source at the site.
5 Enter odor control technology if any from drop down list for each odor source at the site.
6 View annoyance-free distances at bottom of page (scroll down).
7 Select the annoyance-free curves to be graphed by checking the square on the left bottom of this page.

County of Site: Faulk

	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Swine Barn	Swine Barn	Swine Barn	Manure Storage	Cattle Yard
Housing Type or Manure Storage	Farrowing	Gestation - Deep Pit	Finishing - Deep Pit	Earthen Storage Basin	Dirt/Concrete lot
Emitting Factor	68	243	165	63	19
Emitting Surface Width (ft)	185	171.83	98	0	0
Length (ft)	466	642	313.33	0	0
Emitting Area (sq ft)	86210	110314.86	30706.34	0	0
Odor Control Technol	Biofilter	Biofilter	Biofilter	A No Odor Control	A No Odor Control
Odor Control Factor	0.1	0.1	0.1	1	1
Source Emitting Factor	59	268	51	0	0

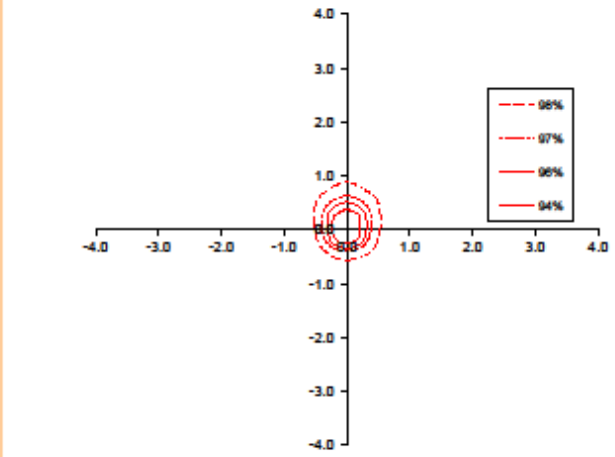
Total Odor Emitting Factor (TOEF): 377

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
North	8479	4703	3412	2718	1989	1477
East	5346	2788	2030	1649	1125	550
South	5789	2956	2135	1816	1340	753
West	5586	2667	2085	1603	1210	611

Select which annoyance-free curves to show on graph

- [ ] 99% Annoyance-free
- [x] 98% Annoyance-free
- [x] 97% Annoyance-free
- [ ] 96% Annoyance-free
- [ ] 94% Annoyance-free
- [ ] 91% Annoyance-free

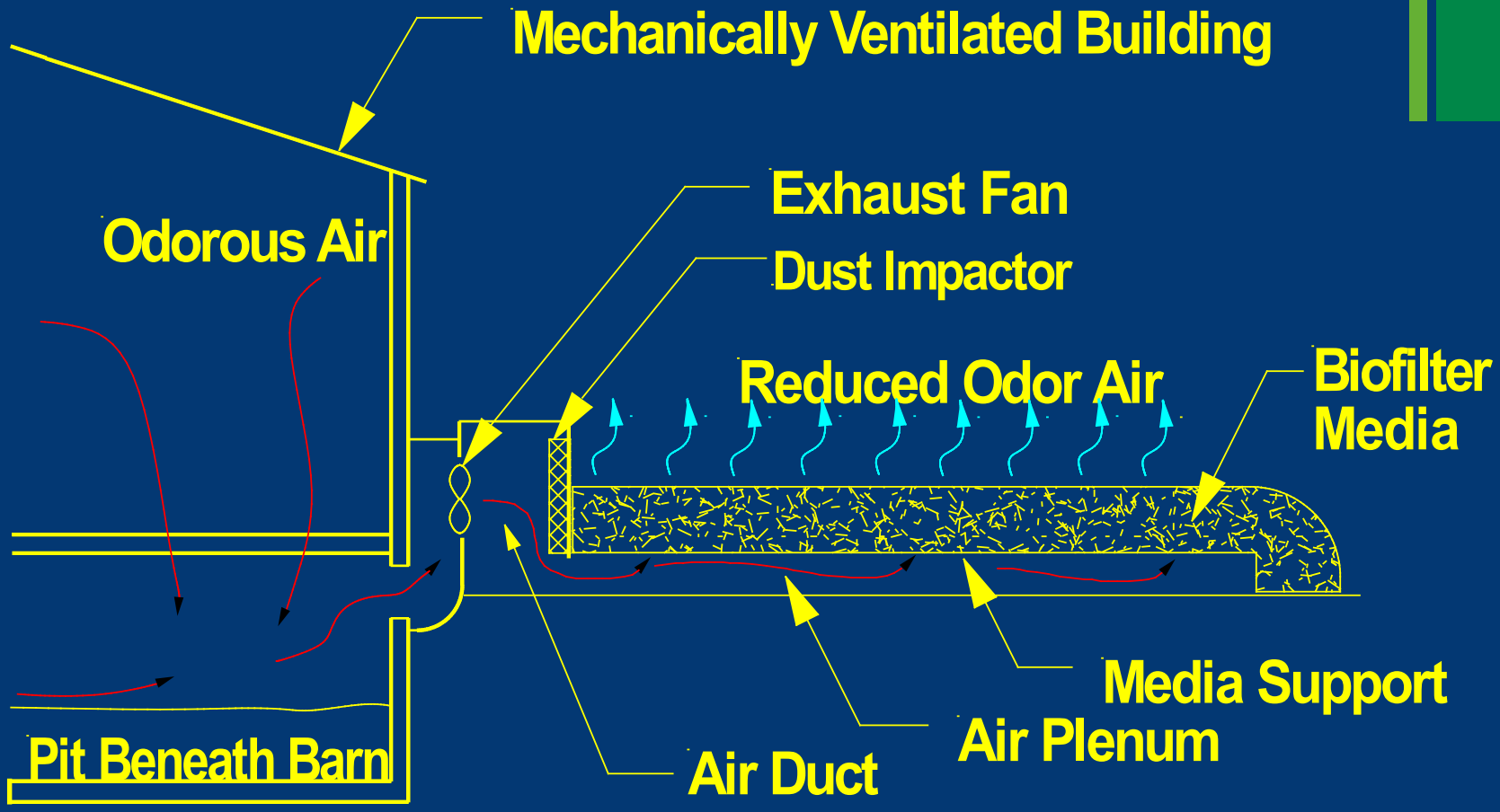


5,400 Sow Complex with ***Biofilters***

SDSU Extension

iGrow.org

Biofilter


Mechanically Ventilated Building
Exhaust Fan
Dust Impactor
Odorous Air
Reduced Odor Air
Biofilter Media
Media Support
Air Plenum
Air Duct
Pit Beneath Barn

Biofilter on MN 1500 Sow Unit

Vertical Biofilter

Biofilter Performance

- Odor reduction = 80% - 90%
- H_2S reduction = 80% - 90%
- NH_3 reduction = 50% - 60%
- Different designs & ***effectiveness***
- They are a tool that should be used when appropriate
- ***Only on cold weather fans***

Version 4.1

SOUTH DAKOTA ODOR FOOTPRINT TOOL

Procedure to use SDOFT:

1 Select South Dakota County from drop down list where site is located.
2 Select Odor Source Type from drop down list for each odor source at the site.
3 Select housing or manure storage type from drop down list for each odor source at the site.
4 Enter size (width and length) of emitting surface for each odor source at the site.
5 Enter odor control technology if any from drop down list for each odor source at the site.
6 View annoyance-free distances at bottom of page (scroll down).
7 Select the annoyance-free curves to be graphed by checking the square on the left bottom of this page.

County of Site: Lincoln

	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Cattle Yard	Cattle Yard	Manure Storage	Manure Storage	Cattle Yard
Housing Type or Manure Storage	Dirt/Concrete lot	Dirt/Concrete lot	Crusted Stockpile	Earthen Storage Basin	Dirt/Concrete lot
Emitting Factor	19	19	9	63	19
Emitting Surface Width (ft)	400	150	75	0	0
Emitting Surface Length (ft)	200	50	75	0	0
Emitting Area (sq ft)	80000	7500	5625	0	0
Odor Control Techno	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control
Odor Control Factor	1	1	1	1	1
Source Emitting Factor	152	14	5	0	0

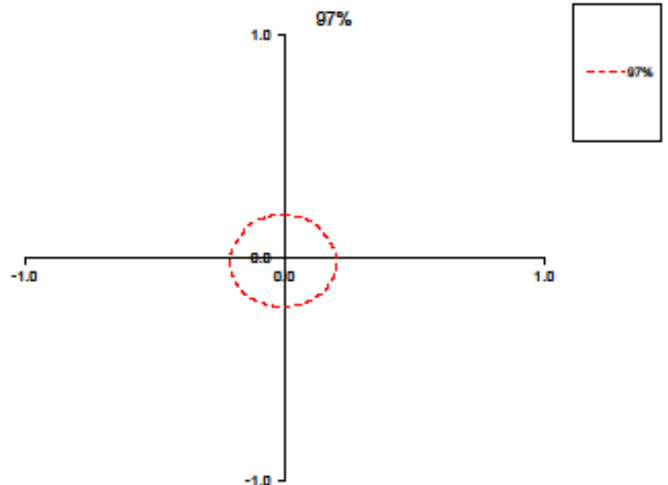
Total Odor Emitting Factor (TOEF): 171

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
Northeast	3418	1472	1027	893	756	620
Southeast	2600	1449	1123	957	748	522
Southwest	2908	1526	1160	974	763	544
Northwest	1939	1286	1056	925	795	662

Select which annoyance-free curves to show on graph

- [ ] 99% Annoyance-free
- [ ] 98% Annoyance-free
- [x] 97% Annoyance-free
- [ ] 96% Annoyance-free
- [ ] 94% Annoyance-free
- [ ] 91% Annoyance-free



Beef Feedlot

- 400’ x 200’
- 150’ x 50’
- Stockpile manure

SDSU Extension

iGrow.org


97%
1.0
0.0
-1.0
-1.0
0.0
1.0
97%

SOUTH DAKOTA ODOR FOOTPRINT TOOL

Procedure to use SDOFT:

1 Select South Dakota County from drop down list where site is located.
2 Select Odor Source Type from drop down list for each odor source at the site.
3 Select housing or manure storage type from drop down list for each odor source at the site.
4 Enter size (width and length) of emitting surface for each odor source at the site.
5 Enter odor control technology if any from drop down list for each odor source at the site.
6 View annoyance-free distances at bottom of page (scroll down).
7 Select the annoyance-free curves to be graphed by checking the square on the left bottom of this page.

NOTE: Worksheet was modified by E. Cortus using a non-public version of the SDOFT that enables TOEF values greater than 4000

County of Site: Lincoln

	Source 1	Source 2	Source 3	Source 4	Source 5
Source Type	Cattle Yard	Manure Storage	Manure Storage	Cattle Yard	Manure Storage
Housing Type or Manure Storage	Dirt/Concrete lot	Earthen Storage Basin	Earthen Storage Basin	Dirt/Concrete lot	Earthen Storage Basin
Emitting Factor	19	63	63	19	63
Emitting Surface Width (ft)	1000	375	90	800	300
Emitting Surface Length (ft)	2250	350	515	1000	600
Emitting Area (sq ft)	2250000	131250	46350	800000	180000
Odor Control Techno	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control	A No Odor Control
Odor Control Factor	1	1	1	1	1
Source Emitting Factor	4275	827	292	1520	1134

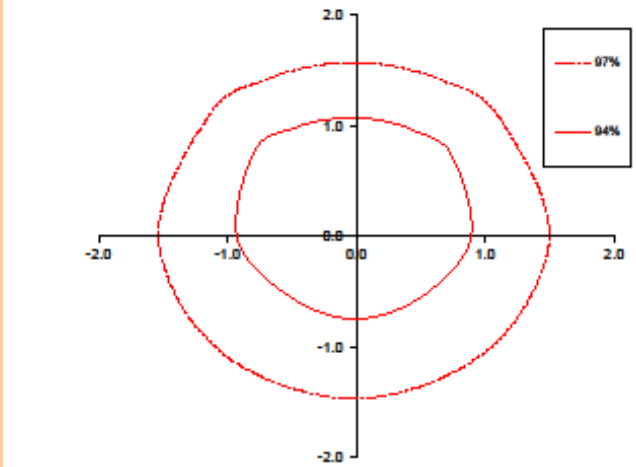
Total Odor Emitting Factor (TOEF) 8048

SETBACK DISTANCES FROM ODOR SOURCE AT VARIOUS ODOR ANNOYANCE-FREE FREQUENCIES IN FEET

Direction from source	99% Annoyance-free	98% Annoyance-free	97% Annoyance-free	96% Annoyance-free	94% Annoyance-free	91% Annoyance-free
Northeast	25100	9397	8198	7116	5496	3391
Southeast	21283	10632	7646	6186	3916	1797
Southwest	23370	11118	7824	6174	3942	1433
Northwest	17427	10159	8393	7351	5825	4118

Select which annoyance-free curves to show on graph

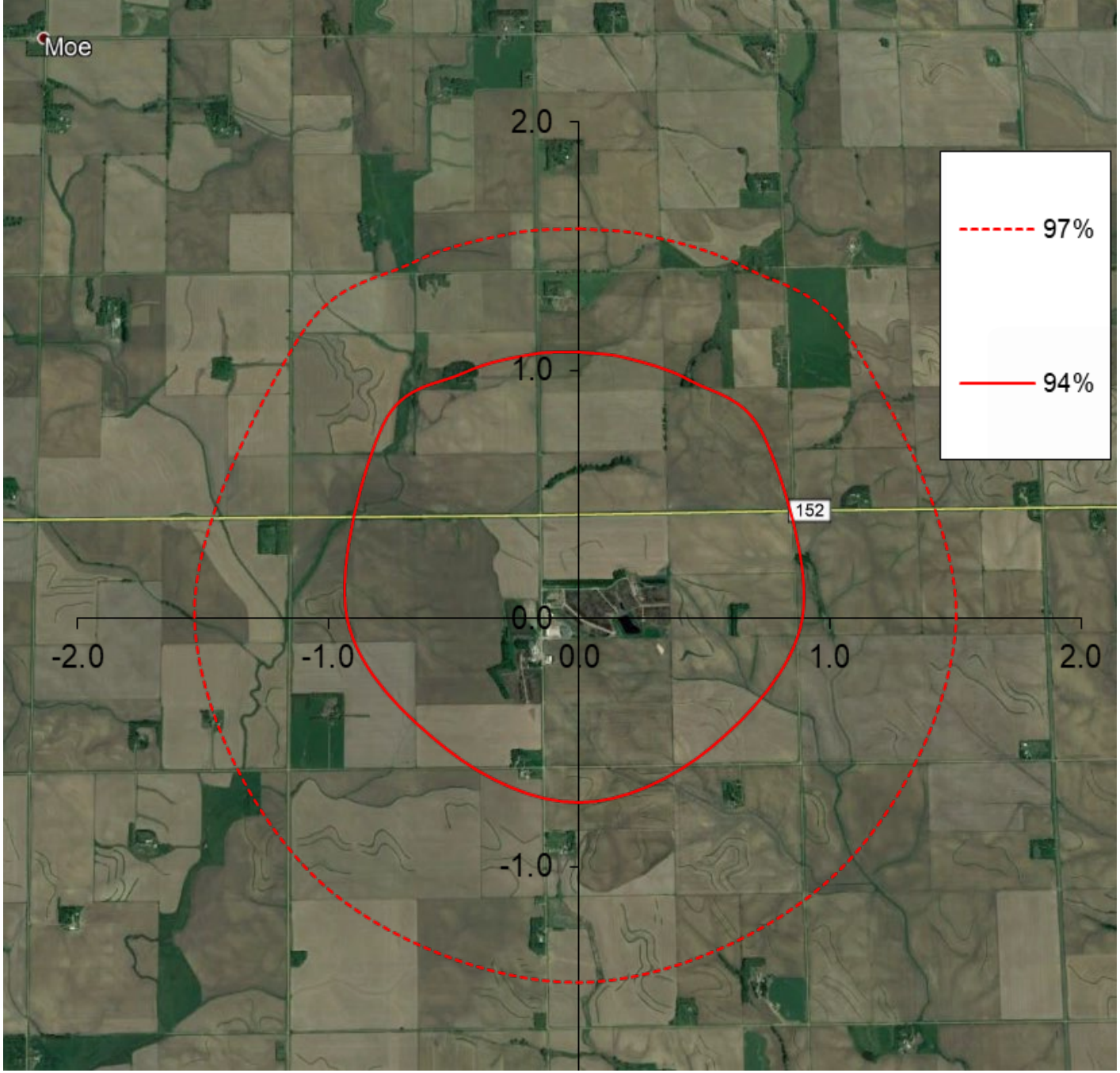
- [ ] 99% Annoyance-free
- [ ] 98% Annoyance-free
- [x] 97% Annoyance-free
- [ ] 96% Annoyance-free
- [x] 94% Annoyance-free
- [ ] 91% Annoyance-free



2 Beef Feedlots

SDSU Extension

iGrow.org



Summary

- SD Odor Footprint Tool is a science-based program
- Provides a solid starting point for discussion
- Not perfect
- Common sense!

Natural Windbreaks

- Take some time to establish
- Odor reduction not well researched, but thought to be beneficial
  - Mixing
  - Dispersion
  - Absorption
- Esthetically pleasing

Page 3 8. section c. Lines 17-20 , except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A county may establish an odor annoyance free percentage between 94 and 98 percent. The data for any footprint tool must be updated a minimum of every 5 years.

(Explanation: There is a huge loophole here that would get rid of setbacks completely if you only set the ceiling at 94%. If you want to have a baseline of the foot print tool, this can achieve your desire of making a setback that is flexible as possible while allowing the townships that want to regulate. But there is still the possibility of some local control.

Page 5 SECTION 2 (2) Keep the same 1000 units ½ mile
(3) 1000-3000 Units ¾ mile
(4) 3000-6000 units 1 mile
(5) 6000-9000 units 1 ¼ mile
(6) 9,000-12,000 units 1 ½ mile
(7) 12,000-15,000 units 1 ¾ mile
(8) 15,000-18,000 units 2 miles
(9) above 18,000 animal units would require an odor footprint survey, and full review of the DEQ and local water districts to determine the feasibility of the project.

(Explanation)
We have to ask what science has changed to allow the footprint to be reduced and ask the DEQ how they came up with these numbers? With these regulations it's a steady 3,000 animal increase across the board and recognizes that If you want to attempt over 18,000 animals which is more on the rare side anyway it is done in a safer manner.

Page 8 Line 4-10 - letter b.

A board of township supervisors may establish, around areas zoned for residential, recreational, or nonagricultural commercial uses, low-density agricultural production districts in which setback distances for animal feeding operations and related agricultural operations are greater than those in other districts; provided, the low-density agricultural production districts may not extend more than one and one-half mile [2.41 kilometers] from the edge of the area zoned for residential, recreational, or nonagricultural commercial uses

This keeps Township Law consistent with County Law

Page 8 line 13-16 letter c.

except setback distances may be reduced or extended based on the results of the odor footprint tool developed by the agriculture commissioner. A township may use an odor annoyance free percentage between ninety-four percent and ninety-eight percent. The data for any footprint tool must be updated a minimum of every 5 years.

Same as above but for the township level

********ADD: a Township or county may increase the setback distances by 50% at its own discretion

Page 9

Remove
10. If a party challenges the validity of a township ordinance, determination, decision, or objection related to animal feeding operations, the court shall award the prevailing party actual attorney's fees, costs, and expenses.

Add

10. If an animal feeding operation causes damage to personal property despite following DEQ regulations, the animal feeding operation will cover the costs of all expenses, restoration, mitigation, or devaluation of local property and asset damages for the following:

a.) Private well contamination
b.) Private well abandonment due to lack of water
c.) Surface and subsurface contamination of waters for recreational use

This would make it extremely clear that contamination of wells or drying wells would be the responsibility of the operation to clean up or compensate for damage.

--
Samuel Wagner
701-371-5474
Ag Field Organizer
Dakota Resource Council

2025 HOUSE STANDING COMMITTEE MINUTES

Agriculture Committee
Room JW327C, State Capitol

SB 2174
3/20/2025

A BILL for an Act to amend and reenact sections 11-33-02.1 and 58-03-11.1 of the North Dakota Century Code, relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operations in counties and townships; and to provide an effective date.

2:41 p.m. Chairman Beltz called the meeting to order.

Members Present: Chairman Beltz, Vice Chairman Hauck, Representatives Anderson, Dobervich, Handerson, Holle, Hoverson, Kiefert, Nehring, Olson, Rios, Schreiber-Beck, Tveit, Vollmer

Discussion Topics:

- Committee Action

2:42 p.m. Representative Vollmer moved Do Pass.

2:42 p.m. Representative Schreiber-Beck seconded the motion.

Representatives	Vote
Representative Mike Beltz	Y
Representative Dori Hauck	Y
Representative Karen A. Anderson	Y
Representative Gretchen Dobervich	Y
Representative Donna Henderson	N
Representative Dawson Holle	N
Representative Jeff Hoverson	N
Representative Dwight Kiefert	Y
Representative Dennis Nehring	Y
Representative SuAnn Olson	N
Representative Nico Rios	N
Representative Cynthia Schreiber-Beck	Y
Representative Bill Tveit	Y
Representative Daniel R. Vollmer	Y

Motion passed 9-5-0.

2:56 p.m. Representative Hauck will carry the bill.

Additional written testimony:

Representative Beltz, submitted testimony #43314 on behalf of Ron Stadum.

2:56 p.m. Chairman Beltz closed the hearing.

Diane Lillis, Committee Clerk

REPORT OF STANDING COMMITTEE
ENGROSSED SB 2174 (25.0603.03000)

Agriculture Committee (Rep. Beltz, Chairman) recommends **DO PASS** (9 YEAS, 5 NAYS, 0 ABSENT OR EXCUSED AND NOT VOTING). SB 2174 was placed on the Fourteenth order on the calendar.

RESOLUTION OF
BENSON COUNTY BOARD OF COMMISSIONERS

WHEREAS, Senators Thomas, Conley, Lemm and Weston and Representatives Beltz and Hauck are introducing House Bill No. 2174 which would amend and reenact sections 11-33-02.1 and 58-03-11.1 of the North Dakota Century Code, relating to the regulation of odors in an animal feeding operation and zoning authority over animal feeding operations in counties and townships; and to provide an effective date; and

WHEREAS, the Benson County Board of Commissioners believe implementation of this bill would adversely impact and severely lessen the power of counties and townships in making decisions regarding Animal Feeding Operations within the counties and townships and indeed remove local zoning insight; and

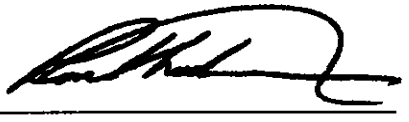
WHEREAS, the State of ND is continuously implementing more stringent laws and regulations which interfere with local government control within counties and townships throughout the State of ND; and

WHEREAS, it should be up to each respective county and township in the State of ND to determine the setback distances and other regulations that will work best for these entities; and

NOW, THEREFORE, BE IT RESOLVED that the Benson County Board of Commissioners is opposed to Senate Bill No. 2174.

Dated at Minnewaukan, ND, this 18th day of March, 2025.

Benson County Board of Commissioners:

By: 

Ron Stadum, Chair