

# SUSTAINABILITY REPORT PIPESTONE MANAGEMENT



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# Welcome to Our Sustainability Report

2020 has been a challenging year for many, including the pork industry. The Covid-19 pandemic has reinforced the need for a long-term sustainable food supply chain. We believe sustainability is a balance between the economic, social and environmental factors – or as we say Pigs, People, and the Planet. I am proud to report great strides made in each of these areas throughout this report, and below are just a few of the highlights:

- 1. Carbon Footprint:** We convened a Carbon Neutral Pig Panel of scientific experts to validate our calculation methods and craft a plan of action to reach a carbon neutral pig. The key areas we focused on for carbon reduction were Land Use, Manure, and Energy.
- 2. Land Use:** We identified the top 3 ways our corn and soybean growers can reduce their carbon footprint.
- 3. Manure:** We completed a methane digester feasibility study that would convert methane to natural gas and produce carbon credits.
- 4. Energy:** We explored multiple options for renewable energy sources including on-site solar, on-site wind, and purchasing Renewable Energy Credits (RECs).
- 5. Waste:** We started recycling efforts on 9 sow farms, reducing the amount of waste we send to landfill by 4% overall.
- 6. Antibiotic Use:** We measured antibiotic use through PART, tracked antibiotic resistance through IMAGINE, and defined an antibiotic use policy for our sow farms.
- 7. Animal Welfare:** We launched our new animal welfare campaign “Commitment to Caring.” The campaign brings animal welfare to the forefront with animal welfare pledge renewals, training, and auditing feedback.
- 8. Talent Development:** We exceeded our goal and had 74 team members experience career advancements in 2020.
- 9. Safety:** We implemented health and safety procedures to protect the well-being of our team members.
- 10. Community:** To combat hunger during times of crisis, we donated over 800,000 servings of pork to local food banks through our MEAT the Need initiative.

This sustainability report is our effort to be transparent, provide authentic and accurate data, and seek continuous improvement. We are reporting our on-farm data in accordance with the Global Reporting Initiative (GRI) standards, which are the most widely used sustainability standards in the world.

Thank you to the family farmer owners of the Pipestone Management sow farms for your trust and support in 2020.

We enter 2021 with a renewed energy to be the best pig farmers on the planet, for the planet.



## Molly Peterson

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## Helpings Farmers Today Create the Farms of Tomorrow

**450+**  
**Independent**  
**Farms**

Founded as a veterinary clinic in 1942, our mission is “Helping Farmers Today Create the Farms of Tomorrow.” Pipestone Management provides farrow to finish management services to 69 sow farms for over 450 family farmers across the mid-west in the United States. The producers we work with benefit from our expertise and scale while they maintain ownership and have access to healthy pigs to raise on their farm.

**800+**  
**Employees**

Managing over 270,000 sows for independent producers makes Pipestone Management the third largest sow production company in the U.S.A.

**270K+**  
**Managed**  
**Sows**

Pipestone Management Overview	2017	2018	2019	2020
Total Employees	732	792	917	863
Sows Managed	213,820	230,756	283,551	270,797
Weaned Pigs Produced	4,776,692	5,697,292	6,798,338	7,337,559

## Our Values

**INTEGRITY      CARING      COMMITMENT**  
**GROWTH      TEAMWORK**

# Goal Summary

Our sustainability goals are being measured against base years 2019 and 2020 and include Pigs, People, and Planet goals.



## Pigs

### Antibiotic Use

- **Establish, implement, and monitor a tiered Antibiotic Use Policy for Pipestone Veterinary Services.**  
**Achieved:** Pipestone Veterinarians established the Pipestone Antibiotic Use Standards (PORK) as a tool for producers and their veterinarians to define their current “level” of antibiotic use and develop a plan (if desired) to transition forward. Read more about PORK in the Antibiotic Use section of this report.
- **Identify third party certification options for validation of Antibiotic Use Policy by end of 2020.**  
**In Progress**

### Antibiotic Resistance

- **Develop and implement a surveillance program to proactively monitor and document antibiotic resistance in pigs and pig environments.**  
**Achieved:** IMAGINE (our antibiotic resistance surveillance program) has compiled one years worth of data. Learn more in the Antibiotic Use section of this report.
- **Collaborate with outside experts to collect and analyze surveillance data.**  
**In Progress**

### Animal Welfare

- **All team members annually sign welfare commitment statements.**  
**Achieved:** New animal commitment statements were sent to the barns and signed by team members.  
**2021 Goal:** Create animal welfare panel with industry and non-industry individuals.
- **All team members pass the animal welfare training exams with an average score of >90%.**  
**In Progress**  
**2021 Goal:** Implement monthly training courses on animal welfare.
- **Continue validation of performance for each sow farm through:**
  - Monthly veterinary visits for animal welfare assessments and training
  - 6 internal audits completed annually with score over 90%
  - 1 third party audit every 24 months with score over 90%**In Progress:** COVID paused third party audits.



# People

## Wages & Benefits

- **Maintain wages & benefits combined in the top 1/3 of our industry as benchmarked by third parties.**  
**Achieved**

## Culture

- **Manage farm team turnover at 35% or less.**  
**Achieved:**  
**2021 Goal:** Manage farm team turnover at 33% or less.
- **Manage OSHA recordable injury rate at 7% or less.**  
**In Progress:** Ended OSHA recordable rate for PIPESTONE with 7.1%
- **Achieve employee satisfaction scores of satisfied or higher on >80% of the team.**  
**Achieved:** 97% of employees were either very satisfied, satisfied or neutral.

## Career Advancement

- **Complete 10 hours of formal training with each team member annually using MyPipestone courses.**  
**Achieved**  
**2021 Goal:** 35 hours of formal training with each team member annually using MyPipestone courses.
- **Complete Formal Leadership Training for 25 or more team members in 2020.**  
**Achieved:** Each member achieved 30 hours of training.  
**2021 Goal:** Advanced Training for 15% of our leadership staff.

## Our Communities

- **Re-invest \$0.05 per pig in our local communities every year through the Pipestone Cares program.**  
**In Progress:** Paused due to COVID and resumed with the farms that were financially able.
- **Reward team member involvement in community leadership through recognition and a flexible work schedule.**  
**Achieved:** Recognition on social media and the Pipestone Post, our internal team member newsletter.





# Planet

## Environment

- Operate in full compliance with all county, state, and national rules and regulations for swine production facilities.

Achieved

## Carbon Footprint

- Convene an expert panel to validate carbon footprint calculations for swine production.

**Achieved:** Gained a better understanding for the differing models to calculate the carbon footprint of a pig farm. Learn more about our findings in the Carbon Footprint section of this report.

**2021 Goal:** Identify programs producers can participate in to lower their carbon footprint while selling carbon credits.

## Feed

- Optimize on farm feeding protocols and diet formulation to manage feed use to pig requirements plus or minus 5% of total feed use as validated by an expert nutrition panel.

**Achieved:** Ended the year under 3.1% budget.

- Design feeding systems and feeding protocols to reduce waste to less than 2% of total use.

In Progress

## Manure

- Fully compliant nutrient management programs with state and third party verification at all sites.

Achieved

- Complete direct injection manure application for greater than 95% of gallons.

Achieved

- Document gallons of manure produced per sow and set usage goals by end of 2020.

Achieved

**2021 Goal:** Have manure usage under 4 gallons per sow per day.

## Energy

- Continue to document energy use and set usage goals by end of 2020.

Achieved

- Validate new technology and equipment to lower total energy use.

Achieved

- Explore renewable energy options in 2020

**Achieved:** Explored options for renewable energy options on farm including on-site methane digesters, solar panels, and wind towers, lease options, as well as purchasing RECs.

**2021 Goal:** Use 50% renewable energy for Pipestone Management.

## Water

- Continue to document total water use and set usage goals by the end of 2020.

Achieved

- Validate new technology, equipment, and protocols to reduce total water usage.

**Achieved:** Approved 55 sow farms to have water meters installed in 2021 to improve water readings and catch possible leaks/overuse faster.

## Waste

- Better document and monitor waste that ends in landfill and set goals for waste management by end of 2020

**Achieved:** Implemented recycling on 9 sow farms reducing overall waste.

- Implement a plan and protocols for plastic recycling at all sites by the end of 2020.

In Progress

**2021 Goal:** Implement a recycling program on 50% of our sow farms.

# Contributions to UN Goals



## Goal 2: Zero Hunger

With operations in the United States, Mexico, and China, PIPESTONE is dedicated to providing a safe, nutritious, and affordable protein option for families across the globe. We do this by helping family farms gain production efficiencies on farm, resulting in a lower cost product with the same quality you've come to expect. In 2020, our Meat the Need campaign donated over 800,000 meals of pork across the Midwest, helping families during economic stress caused by Covid-19. In addition, we funded six local backpack programs, and supported the building of a new food shelf facility in Sioux Falls, SD. Our internal "Gifts for Good" campaign raised money to help with a kitchen/dining hall upgrade in Ethiopia, Africa, clean water drinking wells in New Dehli, India, food lunches in Haiti, and a food distribution in Guadalupe, Mexico.



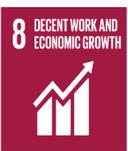
## Goal 4: Quality Education

Obtaining a quality education is the foundation to improving people's lives and sustainable development. PIPESTONE partners with educational initiatives including FFA, 4-H, Ag in the Classroom and local scholarship programs. In 2019, we supported Tapestries of Life with funds to help build a new orphanage and school for children in Guadalupe, Mexico. Our internal "Gifts for Good" campaign raised funds to support new literacy buildings in New Dehli, India and helped build a new community center that will be used for tutoring in Haiti.



## Goal 7: Affordable and Clean Energy

In 2020, we explored options to supply renewable energy projects including building on site solar arrays and wind towers, lease options and purchasing renewable energy credits. Our goal is to use 50% renewable energy by 2022.



## Goal 8: Decent Work and Economic Growth

With more than 800 team members across 9 states, we offer a competitive wage and benefit plan, a work environment focused on safety, training and career advancement opportunities. Our "Gifts for Good" internal campaign was able to raise money to help upgrade a brooder house in Haiti and build a chicken/egg facility in Ethiopia, Africa.



## Goal 12: Responsible Consumption and Production

In 2020, we implemented protocol changes that reduced energy and water intensity at our farms. We reduced the amount of waste we were sending to landfill by starting recycling programs at 9 of our sow farms.



## Goal 13: Climate Action

In 2020, we convened an expert panel to validate carbon footprint calculations for swine production, identify carbon reduction strategies, and identify a path to carbon neutral for a pig farm



## Goal 15: Life on Land

In 2020, we have identified several farms that we plan to implement monarch habitat plots. These are plots that are filled with a diverse array of other flowers to provide nectar for adult monarchs throughout their life cycle and seasonal migrations.

# Boundary & Data Summary

This boundary and data summary chart provides you a quick glance on key metrics year over year for sows managed by Pipestone Management. Any exceptions to this are described in the chart below.

Type	Unit	2017	2018	2019	2020	Additional Information
<b>Employees</b>	number	732	792	917	853	Includes All
<b>Pounds of Live Weight Produced</b>	lbs	98,888,999	121,564,528	144,350,007	174,081,576	Includes All
<b>Energy</b>	kWh/lb of pork by live weight	1.11	1.18	1.17	0.93	Includes All
<b>Water</b>	gallons/lb of pork by live weight	3.11	3.51	3.25	3.25	Includes All
<b>Manure</b>	gallons/lb of pork by live weight	2.33	2.52	2.64	2.32	Includes All
<b>Feed</b>	lbs/lb of pork by live weight	4.88	4.79	4.77	4.57	Includes All
<b>Animal Welfare Audits - External</b>	number	17	23	33	7	Includes All
<b>Animal Welfare Audits - External</b>	score	95.2	91.5	91.4	97.6	Includes All
<b>Animal Welfare Audits - Internal</b>	number	465	582	637	542	Includes All
<b>Animal Welfare Audits - Internal</b>	score	9.4	9.6	9.7	9.7	Includes All
<b>Antibiotic Use</b>	mg/lb of Live weight	161.1	122.9	137.4	115.6	Includes All
<b>Employee Turnover Rate</b>	percentage	N/A	N/A	29%	36%	Includes All
<b>Training Hours</b>	average number of hours per employee	25.00	25.00	25.00	30.00	Includes All
<b>Total Case Incident Rate (TCIR)</b>	number of recordable incidents per 100 full-time employee	7.24	8.30	7.66	9.40	Includes All
<b>Days Away from Work Injury and Illness (DAFWII)</b>	number of cases that involve days away from work	31	41	36	41	Includes All
<b>Safety Audits</b>	number	N/A	N/A	672	1380	Includes All

# GRI Content Index

Our 2020 Sustainability Report has been prepared in accordance with the standards developed by the Global Reporting Initiative (GRI), the internationally recognized and widely adopted global standards for sustainability reporting.

The table below indicates the GRI Standards used and the location within this report.

GRI 102: General Disclosure		
Organization Profile		
GRI STANDARD	DESCRIPTION	PAGE LOCATION
102-1	Name of the organization	About Pipestone Management
102-2	Activities, brands, products, and services	About Pipestone Management
102-3	Location of headquarters	About Pipestone Management
102-4	Location of operations	About Pipestone Management
102-5	Ownership and legal form	About Pipestone Management
102-6	Markets served	About Pipestone Management
102-8	Information on employees and other workers	About Our Team
102-9	Supply chain	Responsible Sourcing
102-10	Supply chain	Responsible Sourcing
102-11	Supply chain	Responsible Sourcing

Governance		
GRI STANDARD	DESCRIPTION	PAGE LOCATION
102-18	Governance structure	Responsible Sourcing
102-47	List of material topics	Boundary & Data Summary
103-1	Explanation of the material topic and its Boundary	Welcome Letter, Boundary & Data Summary, Animal Care, Antibiotic Use, Antibiotic Resistance, About Our Team, Employee Benefits, Training, Safety, Feed, Manure, Energy, Water
103-2	The management approach and its components	Welcome Letter, Our Goals, Boundary & Data Summary, Animal Care, Antibiotic Use, Antibiotic Resistance, About Our Team, Employee Benefits, Training, Safety, Feed, Manure, Energy, Water
103-3	Evaluation of the management approach	Boundary & Data Summary, Our Goals, Boundary & Data Summary, Animal Care, Antibiotic Use, Antibiotic Resistance, About Our Team, Employee Benefits, Training, Safety, Feed, Manure, Energy, Water

## GRI 300: Environment

### GRI: 302: Energy

GRI STANDARD	DESCRIPTION	PAGE LOCATION
302-1	Energy consumption within the organization	Energy
302-3	Energy intensity	Energy

### GRI 303: Water & Effluents

GRI STANDARD	DESCRIPTION	PAGE LOCATION
303-3	Water withdrawal	Water

### Water & Effluents

GRI STANDARD	DESCRIPTION	PAGE LOCATION
306-2	Waste by type and disposal method	Effluents & Waste
306-3	Significant spills	Effluents & Waste

### GRI 307: Environmental Compliance

GRI STANDARD	DESCRIPTION	PAGE LOCATION
307-1	Non-compliance with environmental laws and regulations	Manure Management

## GRI 400: Social

### GRI 401: Employment

GRI STANDARD	DESCRIPTION	PAGE LOCATION
401-1	New employee hires and employee turnover	Training, Employee Satisfaction
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Employee Benefits
403-1	Occupational health and safety management system	Safety
403-4	Worker participation, consultation, and communication on occupational health and safety	Safety
403-5	Worker training on occupational health and safety	Safety
403-8	Workers covered by an occupational health and safety management system	Safety



# PIGS

# Animal Care

Animal care has remained at the center of what we do since founded as a veterinary clinic in 1942. In 2020, we've advanced animal care at Pipestone Management sow farms through our Commitment to Caring initiative and implementing our Antibiotic Use Policy.

## Commitment to Caring:

In 2020, we revitalized our animal care focus by launching our Commitment to Caring program led by our Animal Welfare Director, Dr. Carissa Odland.

## Audit and Feedback Loop:

We have regular internal and third-party audits completed. Validus performs our third-party audits on a two year rotation. Our Animal Welfare Director (Dr. Carissa Odland, DVM), and management team review the results to identify areas of strength or room for improvement to share with the greater team.

In addition, we conduct internal animal care and biosecurity audits. This includes a ten-point inspection that is then reported to the Animal Welfare Director, Veterinarian, and farm team.

## Third-Party Audits

	2017	2018	2019	2020
<b>Average Audit Score</b>	95.2	91.5	91.4	97.6
<b>Number of Audits</b>	17.0	23.0	33.0	7.0

\* Postponed due to COVID safety measures.

## Internal Audits

	2017	2018	2019	2020
<b>Average Audit Score</b>	9.4	9.6	9.7	9.7
<b>Number of Audits</b>	465.0	582.0	637.0	542.0

\* Postponed due to COVID safety measures.

## Renewing Our Commitment:

Every Pipestone Management sow farm and employee was challenged to renew their Commitment to Caring by reviewing the Animal Welfare Policy and signing the pledge board as a team. The pledge boards were hung up in the break rooms as a daily reminder of their commitments.

- Provide the best living- environment and quality care.
- Promote compassion and outstanding animal husbandry.
- Protect our animals from abuse & neglect.

## Training:

Our Animal Welfare Committee directs areas of training based on audit results and efforts to advance animal care. Training is completed both through in-person sessions with their supervisors, specialized trainers visiting the farm, and our online training program with videos and quizzes.

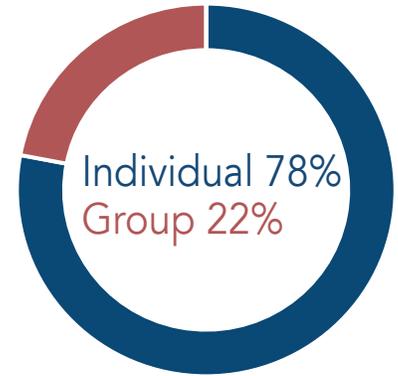
Every employee takes a monthly animal welfare/ biosecurity training course covering topics such as animal handling, daily observations, animal husbandry, and preparations for emergency situations.

All employees are Pork Quality Assurance® Plus (PQA®+) certified and all pig transporters are Transport Quality Assurance® (TQA®) certified.

# Animal Care

## Animal Housing:

We take the topic of animal care very seriously, and believe that individual stalls and gestation pens for sows and boars are acceptable when monitored and maintained by responsible, trained animal caretakers. Sows in stalls must be able to lie down and stand up freely. Sows in pens must be able to lie down freely and access feed freely. Today, Pipestone Management has 78% of our sows in individual maternity stalls and 22% in group housing.



In addition, all facilities must have adequate and comfortable lighting, temperature and ventilation for the animals.

## Record Keeping:

Maintaining good records on individual sows have been key to the care of the animal. These include any previous birthing records, piglet health, lactation length, and treatment records for any medication they received. These records help the farrowing attendees give the best care possible to the sow.

This year we transitioned from all paper records to utilizing an online application. This has not only improved the accuracy of our records, but real-time availability of records to veterinarians and supervisors helps us make quicker decisions to improve animal care.



## Euthanasia:

Proper and timely euthanasia is important for pig well-being and human safety. Employees are trained on how to properly euthanize in accordance with the American Association of Swine Veterinarians (AASV) and the National Pork Board (NPB).



### 2021 Goals

- Create a sow mortality panel with industry and non-industry individuals.
- Implement monthly training courses on animal welfare.
- Continue validation of performance for each sow farm.
  - Monthly veterinary visits for animal welfare assessments and training
  - 6 internal audits completed annually with score over 90%
  - 1 third party audit every 24 months with score over 90%

PHASE OF PRODUCTION	EUTHANASIA METHOD	ALTERNATIVE METHOD
<b>Farrowing Piglets</b> (<5 days)	Zephyr Euthanasia Device	Blunt Force Trauma
<b>Farrowing Piglets</b> (≥5 days)	Electrocution	Zephyr Euthanasia Device or Blunt Force Trauma
<b>Nursery (&lt;70lbs)</b>	Electrocution or Penetrating Captive Bolt	Back up Penetrating Captive Bolt OR Call Veterinarian/ Supervisor
<b>Grow/Finish</b> (up to market wt)	Penetrating Captive Bolt	Back up Penetrating Captive Bolt OR Call Veterinarian/ Supervisor
<b>Mature Animals</b> (sows, boars)	Penetrating Captive Bolt	Back up Penetrating Captive Bolt OR Call Veterinarian/ Supervisor

## Biosecurity

Our biosecurity practices help us keep diseases out of the farm and prevent animals from getting sick. To start, all employees and visitors shower in and out of the farm. Visitors coming from a different farm are only allowed if the farm was of a higher health status. Livestock trailers and animal health supply trucks adhere to biosecurity protocols. All to protect the health of our herd!

## Video Surveillance:

Cameras have been installed in approximately 15% of our sow farms with the goal of installation in all sow farms in the next 3 years. Cameras are currently located in critical access and critical animal handling areas of the farm (for example, entryway into the farm, load out area, etc.). Our welfare audit team assists with reviewing all cull load video footage from these farms to monitor animal handling techniques, biosecurity practices and implementation of safety protocols. Feedback is communicated to the farm teams to encourage continuation of good practices and strive for continuous improvement in areas not meeting our expectations.

## Foreign Animal Diseases

As our sow farm team advances animal care inside the barn, our researchers and veterinarians are working on keeping Foreign Animal Diseases (FAD) out of the U.S. A FAD outbreak like African Swine Fever poses significant risks to the animals and farmers livelihoods.

Research trials conducted by Dr. Scott Dee and the Pipestone Applied Research team have proven that ingredients and complete feed have the potential to carry and harbor detrimental bacteria and viruses. These ingredients and complete feed not only have the potential to introduce pathogens themselves but also create a central hub for pathogens to enter a system via various types of traffic, including transportation trucks and foot traffic.

As a result, the Pipestone Nutrition team identified best practices for responsible imports of vitamins and amino acids, and worked with our ingredient suppliers on their biosecurity procedures.

Pipestone Nutrition also conducts an annual biosecurity audit for each of our feed mills.



# Antibiotic Resistance

## IMAGINE: 2020 Update

IMAGINE is the U.S. swine industry's first attempt to conduct surveillance of antimicrobial resistance (AMR) at the level of the farm, in conjunction with the tracking of antibiotic use. IMAGINE was funded by the National Pork Board, the Foundation for Food and Agricultural Research, and PIPESTONE.

The project is being conducted across farms subscribing to the Pipestone Antibiotic Resistance Tracker (PART), which includes a total of 160 farms, including Pipestone Management sow farms and more than 80 wean to finish producers involved in the PART program.

Although we think more data is necessary before any conclusion can be made, we wanted to share some preliminary results.

We have demonstrated that the sampling programs can successfully isolate important bacteria from both the pigs and the environment, and that the laboratory (South Dakota State University) can accurately measure the level of AMR across all samples. Bacteria we have successfully identified from the environment include the 4 target pathogens from the National Antibiotic Resistance Monitoring System (NARMS): *Enterococcus* sp., *Salmonella* sp., *Campylobacter* sp. and *E. coli*. Bacteria we are targeting from pigs include *E. coli*, *Streptococcus suis*, *Actinobacillus suis*, *Glaxserella* (*Haemophilus*) *parasuis*, and *Salmonella* sp.

1. We sampled both Pig Pathogens and NARMS (National Antimicrobial Resistance Monitoring System) pathogens for human health.

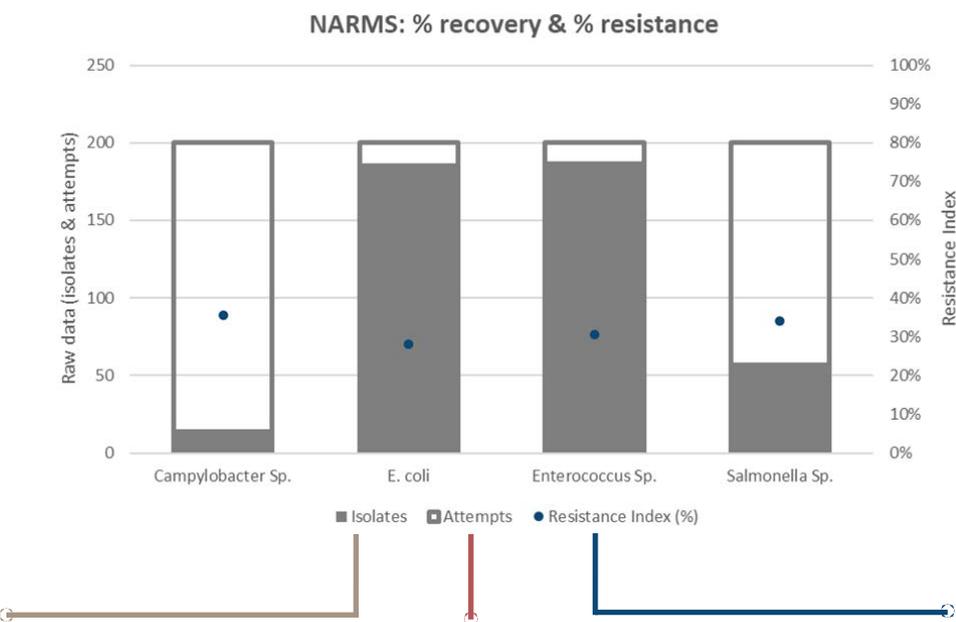
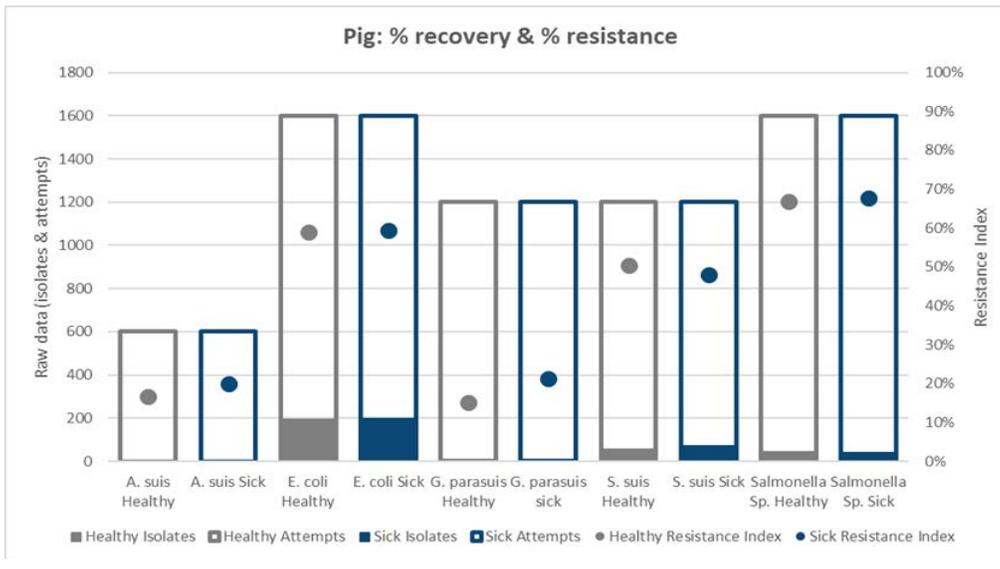
2. Samples were taken twice a year for bacterial culture and antibiotic resistance are collected from pigs, both sick and healthy, and from the swine farm environment.



### 2021 Goal

- Collaborate with outside experts to collect and analyze surveillance data.





The number of isolates represents the number of times a pathogen was recovered on culture.

The number of attempts represents the number of times a pathogen was attempted to be grown in the lab.

The resistance index represents the number of isolates that were resistant.

With one full-year of data available, our focus in 2021 will be to:

1. Continue sampling and building the database.
2. Overlay this data with PART antibiotic use to evaluate whether antibiotic resistance correlates at all with antibiotic use.
3. Learn if/how antibiotic use in livestock contributes to antibiotic resistance.

Thank you to all of the PART subscribers and Pipestone Management sow farms for participating as we IMAGINE what a world without Antibiotic Resistance could look like.

# Pipestone Antibiotic Use Standards (PORK)

PIPESTONE provides veterinary services to pork farmers all over the world. We recognize the growing global concern over Antimicrobial Resistance (AMR), its impact for human medicine, veterinary medicine, public and animal health, as well as society and the shared concern of antibiotic use's influence on AMR. PIPESTONE's commitment to Responsible Antibiotic Use and reduced AMR serves as the framework for our Pipestone Antibiotic Use Standards (PORK).

The PORK Standards will serve as a tool for producers and their veterinarians to define their current "Level" of antibiotic use and develop a plan (if desired) to transition levels. Our goal for the PORK Standards is to further demonstrate and communicate responsible antibiotic use, protect the efficacy of antibiotics for human and veterinary medicine, and create a potential value-added opportunity for participating producers.

## Criteria

The PORK standards are built on the following priorities:

- 1.) Veterinary oversight of all antibiotic use.
- 2.) OWN approach. Antibiotics should be used Only When Necessary.
- 3.) Focus on reducing the use of antibiotics that are critically important to human medicine as defined by the FDA.
- 4.) Proper documentation.
- 5.) Standardized methods for verification, goal tracking, and 3rd party validation.

A producer certifies the production of hogs for PORK at one of three levels as set forth below (and summarized in Table 1). These levels apply to all phases of swine production, including breeding, farrowing, nursery, and grow-finish operations.



**Table 1: Responsible Antibiotic Use Standard**

Summary	Level 0	Level 1	Level 2	Level 3
1. Antibiotics administration is under valid VCPR	No tracking of antibiotics	Yes	Yes	Yes
2. Antibiotics used only when necessary		Yes	Yes	Yes
3. Proper documentation of all antibiotics administered		Yes	Yes	Yes
4. No antibiotics used for growth promotion		Yes	Yes	Yes
5. Antibiotic Use		Use for disease treatment and control only after diagnosis has been determined	No use of <b>critically important</b> antibiotics	No use of <b>ANY</b> antibiotic

**Pork Level Summary**

Based on PART data, to the right is a summary of Pipestone Management sow farm breakdown for 2020 antibiotic use.

Pork Level	Number of Farms in Level
Level 0	5
Level 1	53
Level 2	0
Level 3	0



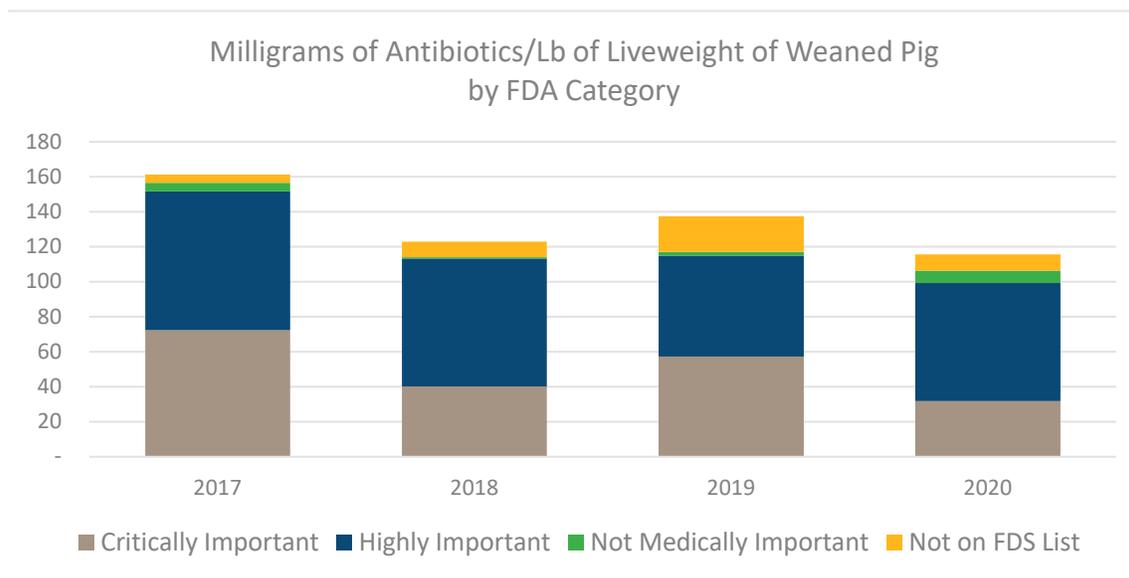
# Antibiotic Use

Antibiotics are one of many great tools that farmers and Veterinarians use to keep animals healthy. Below are some ways that we practice responsible antibiotic use:

1. Administering medication under the guidance of a veterinarian
2. Following the directions on the approved product label
3. Using only the amount needed to treat the problem
4. Recommending safe treatment options, including alternatives to antibiotics
5. Using antibiotic sensitivity assessments conducted by veterinarians to determine an effective treatment option
6. Using the PART platform to track antibiotic use and monitor antibiotic resistance patterns

Using data allows us to make better decisions to continue to improving animal care and produce a safer food supply. Below is a summary of the milligrams of antibiotics used per pound of live weight of weaned pig by FDA category. It is important to note we are measuring on a weaned pig basis not market hogs.

For more information about PART, visit [www.PipestonePart.com](http://www.PipestonePart.com).



## 2021 Goal

- Identify third party certification options for validation of Antibiotic Use Policy by end of 2021.

# PEOPLE



# People

We have the whole PIPESTONE team to thank for overcoming the many challenges with faced this year due to COVID-19.

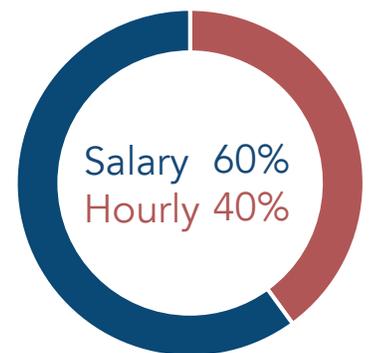
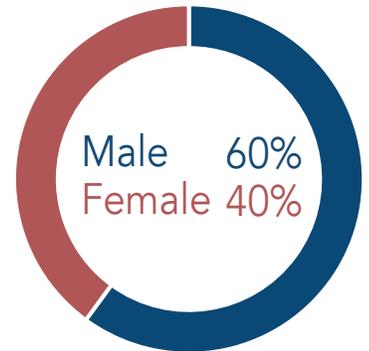
PIPESTONE continues to balance COVID-19 concern with our ongoing responsibility to continue to care for animals, provide a safe food supply for the world, provide a needed source of income for the families on our team, and a safe workplace environment.

In 2020, we implemented numerous health and safety measures in response to the COVID-19 outbreak. To ensure our employees safety, we implemented daily health checks, social distancing, frequent cleaning and disinfecting, and ongoing training.

Great emphasis was placed on training our team in methods to reduce their exposure risk, both away from work as well as while at work. PIPESTONE followed CDC guidelines to encourage people to stay home if they were ill. Additional paid time off was made available for those directly affected by COVID. We monitor each positive case and created internal tracing within the company to help ensure employees safety and limit the spread of COVID. We have implemented different protocols to help prevent transmission from location to location. We will continue to monitor and adjust our COVID Preparedness Plan as things change in this new world we live in to help protect our employees.

Despite COVID, we continued to focus on training initiatives, leadership advancement, and on-going safety initiatives.

853  
Employees



## Age Demographics

Age Range	% of Employees
15 to 19	4%
20 to 29	35%
30 to 39	36%
40 to 49	14%
50 to 59	8%
60 to 69	2%
70 to 79	0%
80 to 89	0%

## Ethnicity Demographics

Ethnicity	% of Employees
American Indian/Alaska Native	0%
Asian	1%
Black or African American	1%
Hispanic or Latino	55%
Not Specified	1%
Two or More Races	1%
White	42%

# Employee Benefits

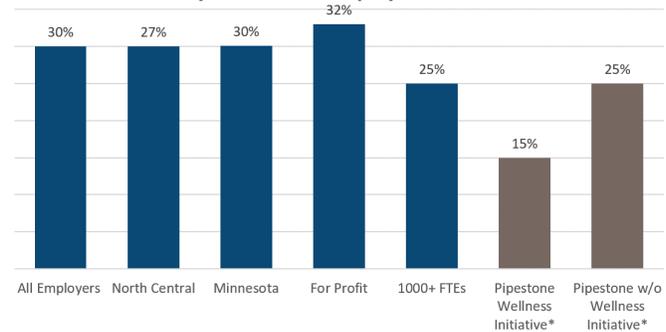
The pork industry had hardships last year; however, we have taken great pride in continuing to offer a competitive wage and benefit plan for full-time farm employees. In fact, our wages and benefits rank in the top 1/3 of the industry. Here are a few of the benefits our company offers:

- Competitive Wages – based on position and experience
- 401K – up to 6% of gross wages employment matches
- Health Insurance
- Dental Insurance
- Vision Insurance
- Short Term Disability Insurance
- Long Term Disability Insurance
- Life Insurance/Accidental Death Benefit
- Supplemental Group Term Life Insurance
- Paid Holidays and Paid Time Off (PTO)
- Referral Bonus Program
- Scholarship Program
- Bereavement Leave
- Production Bonus
- Flexible Spending Account (FSA)
- Jury Duty

Individual Health Plan-Employee Contribution



Family Health Plan-Employee Contribution



## Benchmarking our Benefits:

The benchmark graphs to the right compare PIPESTONE to the 2020 Arthur J. Gallagher National Benchmark Survey.

We are proud to offer a competitive 0% employee contribution for an individual plan and 15% for a family plan.



### 2021 Goal

- Maintain wages & benefits combined in the top 1/3 of our industry as benchmarked by third parties.

# Training

Training takes a different shape and focus at different stages in a career. That's why we've tailored training programs from new hire to management. We want to prepare our employees for success throughout every step of their career.

## New Hire:

Every new hire completes courses through our online training platform. In 2020, there were 353 new employees hired, and each new hire completed 12 hours of training on a variety of topics from production protocols, to safety practices and benefit plans.

## Skill Development:

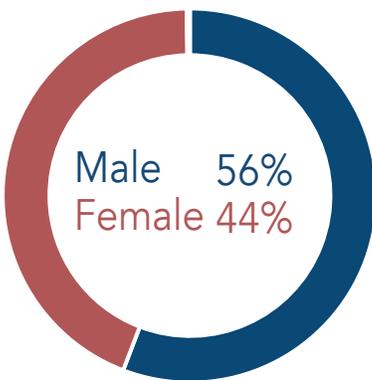
The success of our farms hinges on the success and development of our employees. Continual skill development and training is provided annually to staff through online training courses, employee meetings, weekly quizzes, and audits/training focused on animal welfare, biosecurity, and safety. The average employee completes 30 hours of training in a year.

## Career Advancement:

We provide our employees the opportunity for career advancement. In 2020, 73 employees experienced career advancement into a leadership role.

## Pipestone Emerging Leaders:

To help nurture leadership and professional skill sets we developed the Pipestone Emerging Leaders program. Employees who demonstrate leadership potential are nominated as candidates for the program. In 2020, 76 employees participated in the program.



New Hire Breakdown	
Age Range	% of Employees
15 to 19	12%
20 to 29	47%
30 to 39	28%
40 to 49	9%
50 to 59	2%
60 to 69	1%
70 to 79	0%
80 to 89	0%



## 2021 Goals

- Advanced Training for 15% of our leadership staff.
- Complete 10 hours of formal training with each team member annually using MyPipestone courses.
- Create a paid training time benefit.

# Safety

## The Safe Way, The Only Way

Having a robust occupational health and safety management system is important when it comes to working with animals and equipment. Our Pipestone Safe program complies with OSHA requirements and focuses on bringing safety awareness and training specific to a swine production environment.

We established a Safety Committee that is comprised of multiple levels of employees including safety department personnel, farm managers and farm workers. Our Safety Committee meets quarterly to review safety concerns/suggestions, is responsible for identifying new procedures or improvements in equipment/technology to reduce injuries, and developing our training platform, and evaluating the overall program.

100% of our team members are enrolled in the Pipestone Safe program and receive health and safety training through hands-on workshops facilitated by our training managers, on-line classes, monthly quizzes, and weekly communication on our message boards. Training topics range from safe animal movement, handling procedures, to proper use of PPE, heat illness, manure gas safety, and other hazards.

The Pipestone Safe program is audited regularly by well-trained internal auditors that visit the farm and report their findings and recommendations to the farm team and management.

For 2020, we set a goal of having a OSHA recordable injury rate of 7% or less. We ended 2020 at 7.1% in Pipestone Management overall.

Injury/Illness Rate	2017	2018	2019	2020
<b>Total OSHA Recordable Injury Rate</b>	7.24	8.3	7.66	9.4
<b>Number of Cases that involve days away from work</b>	31	41	36	41



**1380**  
Safety Audits  
Performed at  
Sow Farms



**8278.3**  
Training Hours  
Focused on  
Safety



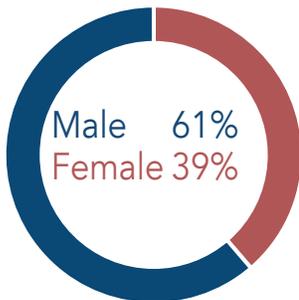
### 2021 Goal

- Manage OSHA recordable injury rate at 5% or less.

# Employee Insight

Employee satisfaction is one measurement of the health of our company culture. We use employee turnover rate and employee surveys as a means to keep a pulse on employee satisfaction.

**35.6%**  
Employee Turnover



Age	% of Turnover
18-24	20%
25-34	42%
35-44	24%
45-54	11%
55-64	1%
Over 65	1%

**97%**  
Employee Satisfaction Rating

As with many industries, COVID put great stress on the pork industry. Even amidst all the challenges in 2020, we are proud to see our employee satisfaction rating. 97% of employees marked they were either very satisfied, satisfied, or neutral while working at PIPESTONE, with only 3% of employees being dissatisfied. Thank you to the whole PIPESTONE team for all your hard work and great teamwork this year!



## 2021 Goals

- Manage farm team turnover at 33% or less.
- Achieve employee satisfaction scores of satisfied or higher on >80% of the team.



# Pipestone Cares

## Pipestone Management Cares - Our Greater Community

As a core value of our company, CARING in the communities we touch is an important part of PIPESTONE Culture.

With the help of farm managers, supervisors, relationship managers and some shareholders, we placed over \$165,000 in communities where Pipestone Management managed farms are located. Nearly all funds were spent in the home or neighboring towns of our farms.

In March 2020, facing severe market disruption and uncertainty, we opted to “pause” community donations from all farms. Some farms were able to resume in November.

2020 has been a challenge to farmers and small communities on so many fronts. In spite of the adversity, our farm has been blessed with great people, leaders and the ability to give back. Thank you for opening your heart and supporting the Pipestone Cares initiative.



**\$165,110.08**  
**Total 2020**  
**Donations**

**10**  
**Hunger Relief**  
**Programs**

**23**  
**FFA/4H**  
**Programs**

**32**  
**Youth/School**  
**Activities**

**50**  
**First**  
**Responders**



### 2021 Goal

- Re-invest \$0.05 per pig in our local communities every year through the Pipestone Cares program.



# Meat the Need

## Pork Donation: 800 Thousand Servings

As COVID-19 brought financial stress and uncertainty to many households, PIPESTONE launched into action for our farmers and communities. PIPESTONE's MEAT the Need campaign ran May through September and brought pork contributions to food pantry agencies in the Midwest. The combined inputs of PIPESTONE and contributing partners resulted in raising \$372,000 which our team turned into over 800,000 servings of pork donated.

Treasure was combined with talent as our team members also personally assisted in food distribution events at several locations. "Feeding South Dakota is so incredibly grateful for our partnership with PIPESTONE. So many families in our communities will benefit from this amazing gift of pork protein," said Matt Gassen, CEO, Feeding South Dakota.

The campaign added pork to pantry menus in these communities:

- Fremont, NE
- Independence, IA
- Orange City, IA
- Ottumwa, IA
- Pipestone, MN
- Pulaski County, MO
- Rensselaer, IN
- Sioux Falls, SD
- Sycamore, IL



Thank you to our platinum sponsors: PIPESTONE, PIC, Boehringer-Ingelheim, AB Vista, Bill Barr, Alltech, First Bank & Trust, Merck, Zoetis and Spronk Brothers.

Other contributions provided by: ADM, Ani-Tek, Kemin, SAM Nutrition, Hamlet, DSM, Eide Bailey, First Choice, Chr. Hansen, KSI, Biomatrix, Kerry, CJ America, PIPESTONE employees and customers.



**413  
Hours  
Volunteered**



**198,000  
lbs. Donated**

"Caring is one of our core values. Even though these are stressful times for pig farmers, we still feel a responsibility to help those in need where we can. Special thanks to all of the vendors, partners and employees of PIPESTONE, and pig farmers for their contributions to MEAT the Need."

- Dr. Luke Minion,  
CEO PIPESTONE



# Gifts for Good

One of the core values we live by at PIPESTONE is Caring. Caring means caring for our team members, animals, and communities. Our charitable efforts aim to make a difference in the lives of our local and global community members. Domestically, we donate to the Children's Home Society, Atlas, The Banquet in Sioux Falls, local animal shelters, local backpack programs, Meat the Need by donating pork to food shelters, as well as our Pipestone Cares donations to local emergency services, children organization/clubs, and 4-H or FFA programs.

Similar to our local programs, our international efforts focus on helping children and hunger. In 2020, we launched a campaign called Gifts for Good where we identified 5 different projects in 4 countries aimed at helping just that. Gifts for Good gave PIPESTONE team members the opportunity to make a donation and have it matched by PIPESTONE. The goal was to raise \$200,000 in 30 days and fund all 5 projects. The response we got was overwhelming. With \$100,000 donated from the PIPESTONE team and a \$100,000 match from PIPESTONE, we were able to fully fund all the projects listed below.



## Adams Thermal Foundation

Location: Ethiopia, Africa

Adams Thermal Foundation operates two schools, grades K-12, for at-risk children. These schools also administer "Self-Help" programs so that women and mothers of students can learn business and job skills.

**Gifts for Good Overview:** Building a new dining hall that would also serve as a large group meeting area and communal space for other activities. Build a self-help chicken/egg training facility to help generate income, learn business skills, and provide protein for the meal program at the schools.

Learn more: <https://atf.reachapp.co/>

**"There are about 1,200 student over there right now. We can't express how great the needs are from hunger, starvation and just education in general."**

- Dr. Jay Bobb, PIPESTONE

# Gifts for Good

## India Evangelical Team

Location: New Delhi, India

IET focuses on rescuing children at risk, taking care of orphans, eradicating illiteracy in villages, physical healing through medical cares, disaster relief work, educating the poor, and much more.

**Gifts for Good Overview:** Build new adult literacy buildings where adults and children can gather for literacy classes and worship. The other project is digging clean water wells for the clean water initiative, helping to lower the risk of disease transmission and burden on women and girls to fetch the water. Most villagers use ponds or streams to wash, bath, and use for cooking and drinking.

Learn more: <https://ietmissions.org/>



**“It is believed that India alone has more than 287 million illiterate adults, the highest in the world. 1 out of 3 illiterate women in the world, live in India.”**

- Aby Kallimel, India Evangelical Team

## Tapestries of Life

Location: Guadalupe, Mexico

This orphanage will be able to house over 200 children making it the largest in Latin America once it is finished being built. Tapestries of Life has been a constant presence in many Border communities—feeding, educating, and rescuing children to the glory of God. Today, they are close to finishing what will be the most effective tool in setting a child’s future on a new course.

**Gifts for Good Overview:** Provide nutrient filled food to over 300 local families and fund part of the elevator in the House of Gems orphanage for the handicap girls to get to their floor and living quarters.

Learn more: <https://www.tapestriesoflife.com/>



**“When the governor came to visit, he informed me that we have approximately 6,000 homeless children today that are waiting to be placed. Thank you PIPESTONE family, I love your heart, I love your desire to sacrifice and help other people around the world, not just the United States.”**

- Steve Brewer, Tapestries of Life

## New Roots Haiti

Location: Haiti

New Roots Haiti is dedicated to empowering parents to care for the needs of their families through education, employment, and nutrition assistance. Its mission is to use agriculture as a tool to invest in people's lives. They have a feed mill (supplied by PIPESTONE in 2019) that is used to feed the chickens and pigs, along with a butcher shop where they distribute their product.

**Gifts for Good Overview:** Upgrade the brooder house to hold around 3,000 chicks and chickens and a better design than what they currently have. The other project is to help build a community center that will be used for children in after school programs.

Learn more: <http://www.newrootshaiti.org/>



## Children of the Promise

Location: Haiti

It's mission is to help have a healthy Christian home and family for every Haitian child. Their family strengthening programs work towards keeping Haitian families together and to build strong future families through the investment in Haiti's youth.

**Gifts for Good Overview:** Help the nutrition program at the school by providing a breakfast and lunch for the school year at the Lagossette Christian School. For some students, these meals are a bulk of what they will eat each day.

Learn more: <https://childrenofthepromise.org/>



**“Education is so important; we are in an area where poverty is really high. For a lot of our students, the meal that they receive at school is their primary nutrition for the day.”**

-Jamie Groen, Children of the Promise

Through Gifts for Good, PIPESTONE and our team supported a dining hall in Ethiopia, literacy buildings in India, chicken facilities in Haiti, an elevator to assist handicapped children in Mexico and nutrition programs across the board. It is difficult to imagine the impact Gifts for Good has made – but we are grateful to share a little with you.

# PLANET

# Carbon Footprint

In 2019, we learned about the carbon footprint calculations for a pig farm. In 2020, we convened a panel of experts to validate our carbon calculation and help us identify hot spots of how to reach a carbon neutral pig.

## Carbon Footprint Model Comparison

Upon review of the National Pork Board Carbon Footprint Model with our scientific experts, we learned there are a few distinctions to keep in mind about carbon footprints. The first is the scope and boundaries of your footprint, and the second is Life Cycle Assessment (LCA) methodologies.

### Emission Scope and Boundaries

The Scope of your carbon footprint helps define what sources you are including. Below is a nice summary of Scope 1, Scope 2, and Scope 3 emissions as defined by the World Resource Council/World Business Council. Our calculations include all of Scope 1, 2, and 3 below. Our “boundary” is from the field to farm gate. We do not include any emissions associated with the packing plant or retail process at this time.

‘Scope 1’ indicates direct greenhouse gas (GHG) emissions that are from sources owned or controlled by the reporting entity. An example on a pig farm would be emissions from the pig or manure.

‘Scope 2’ indicates indirect GHG emissions associated with the production of electricity purchased by the reporting entity. An example on a pig farm would be emissions associated with the electricity and propane we purchase.

‘Scope 3’ indicates all other indirect emissions, i.e., emissions associated with the extraction and production of purchased materials, fuels, and services, including transport in vehicles not owned or controlled by the reporting entity. An example on a pig farm would be emissions from the feed ingredients we purchase.

### LCA Models

We learned that different Life Cycle Assessment (LCA) models that can be used to calculate a carbon footprint. The two main ones are Attributional and Consequential.

The Attributional methodology (currently used by the National Pork Board) provides information about the impacts of the processes used to produce, consume, and dispose of a product.

The Consequential methodology provides information about the impacts of the processes AND considers indirect effects arising from changes in the output of a product.

What does this mean for a pig farm? Manure is a valuable output from a pig farm. An indirect effect of manure is less synthetic fertilizer is used. The consequential model accounts for the offset of synthetic fertilizer that organic fertilizer creates, and gives the pig farm a “credit,” lowering the overall carbon footprint.

# Carbon Footprint

After learning about the different models, we compared the Attributional versus Consequential model outputs. We found that changing LCA methodologies can show a 40% lower carbon footprint for the same farm.

Attributional Model: 1.87 lbs of CO<sub>2</sub>/lb of liveweight

Consequential Model: 1.11 lbs of CO<sub>2</sub>/lb of liveweight

Additionally, we compared different attributional and consequential models to each other. Again, using the same farm data, we saw 50% variations.

Source	Lbs of CO <sub>2</sub> /Pig	Lbs of CO <sub>2</sub> /lb of Liveweight
PIPESTONE Actual	523	1.8
NPB Attribution	603	2.08
Panel's Attributional	541.08	1.87
Panel's Consequential	322.09	1.11
Intellyn ConseQual	666.2	2.3

After consulting with three universities, two consulting companies, and two allied industry members, we were unable to come to a consensus on the “correct” calculation for a pig farm. What we did learn is that the science is still emerging and needs more validation.

## Carbon Reduction Strategies

The Carbon Neutral Pig Panel of scientific experts identified the most effective carbon reduction strategies for a pig. Regardless of the LCA methodology used, the two main contributors remained Feed and Manure. Knowing this, we focused our efforts in these two areas.



### 2021 Goal

- Identify programs producers can participate in to lower their carbon footprint while selling carbon credits.
- Finalize selection of carbon footprint model.

## Manure

Manure accounts for roughly 30% of the carbon footprint at our sow farms. Our Carbon Neutral Pig Panel determined the most effective way to avoid manure emissions was a methane digester. We identified a group called ACT Commodities that builds methane digesters to convert methane to natural gas, and in turn sells carbon credits through the LCFS (Low-Carbon Fuel Standard) in California.

We worked with ACT Commodities and Eco Engineers, to complete a feasibility study for a methane digester on a sow farm. Because manure storage can greatly impact methane emissions, we completed the study on both a lagoon and deep pit site. Below were our main findings:

1. The study showed a methane digester could capture four times more methane off of a lagoon site compared to a deep pit.
  - a. Deep pit: 500 lbs of CO<sub>2</sub> avoided per animal
  - b. Lagoon: 2,000 lbs of CO<sub>2</sub> avoided per animal
2. Because avoided emissions are so low on a deep pit site, the project would not show a great enough return for ACT Commodity investors to participate.
3. A lagoon site project could be financially viable if there were enough sows in close proximity. As most of Pipestone Management sites are deep pits, this would not work for our production model.

With current technology and carbon credit markets, a methane digester would not be economically viable for the family farmer owners of Pipestone Management sow farms. We are hopeful that new technologies or economic models may make this a viable option in the future.

The study further validated our practice of building new sow farms with deep pits as they have an overall lower carbon footprint compared to lagoon sites.

## Feed/Land Use

Feed makes up over 47% of our sow farms carbon footprint. Our expert panel identified fertilizer type, tillage practices, and cover crops as the most effective ways to reduce the carbon footprint of the corn and soybeans purchased for the pig farm. Utilizing the USDA's COMET Farm Tool Calculator, the panel was able to model how much each strategy would reduce the carbon footprint.

The baseline is planting corn on corn in southwestern Minnesota using synthetic fertilizer, intensive till, with no cover crops. The reductions indicated below would be assuming all acres raising corn for a farrow to finish operation implemented each strategy accordingly.

1. Using Organic Fertilizer: 28% carbon footprint reduction
2. Reduced Till: 26% carbon footprint reduction
3. No Till: 87% carbon footprint reduction
4. Cover Crops with Reduced Till: 38% carbon footprint reduction
5. Organic Fertilizer + No Till + Cover Crops: net negative carbon footprint

# Carbon Footprint

The current National Pork Board model assumes all feed is purchased through a similar baseline model mentioned above. Knowing pig farmers often implement one or more of the above reduction strategies, we are exploring the easiest way to capture information about on-field practices and if producers can receive incentives for implementing carbon reduction practices on-farm.

## Summary

In the past year, we have learned a lot about carbon footprints on a pig farm summarized below:

1. The science is still emerging and needs more validation.
2. Pork is only a small portion of the GHGs in the United States. Regardless, we believe the industry needs to position itself as a solution in the climate change challenge.
3. We recognize that Carbon is not the only sustainability indicator, and true sustainability requires a balance between environmental, social, and economic impacts.

As companies start to use “carbon neutral” as a marketing tool, it is disheartening to see the lack of consistency of carbon accounting.

PIPESTONE’s number 1 goal on this journey has been to remain transparent and authentic. Since carbon accounting has several discrepancies, we felt the most transparent and authentic way to show the carbon impact of our farm was with the raw data. In other words, lbs of feed are lbs of feed and kWh used are kWh used. You can find all of the raw data needed to calculate a carbon footprint in this report, along with our goals on how to capture efficiencies in each area.



# Feed

We are focused on improving feed efficiency; not only because feed is the number one cost of hog production, but because using less feed reduces the resource intensity of the land needed to feed our pigs. Feed accounts for 43% of a sow farms carbon footprint.

Because of our fiduciary responsibility to our shareholders and commitment to animal care, we are constantly seeking ways to be better. These include areas like diet formulation, genetic selection, and facility design, which have all played a role in increased feed efficiencies over the years.

## Reviewing Gestation Feed Maintenance Settings:

The goal of our sow nutrition program is to achieve high level performance with the least amount of feed. Gestation feed consists of 70% of the total consumption of a sow and therefore has been the focus for feed saving.

We conducted a feeding experiment on a commercial sow farm where 5 groups of mid-gestation sows were fed increasing amounts of feed from 3.5 to 5.5 lb/day. Results suggest that 3.75 lb of gestation diet per day provides sufficient energy and nutrients to maintain sow condition. After adjusting for winter temperature and new crop corn moisture, our conclusion landed on 4 lb/day as the maintenance setting for our management sow farms.

The updated program involves customization of feeding protocol for each individual farm as an effort to reduce farm-to-farm variation on feed usage. With a greater level of precision feeding, we are on track to a more efficient and sustainable sow production.



### 2021 Goals

- Optimize on farm feeding protocols and diet formulation to manage feed use to pig requirements plus or minus 5% of total feed use as validated by an expert nutrition panel.



# Feed

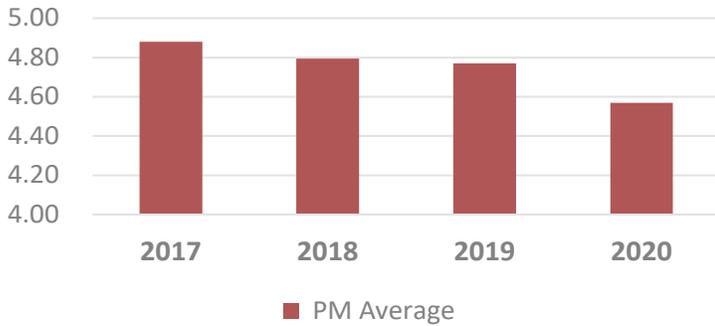
## Ideal Body Conditions

Achieving ideal sow body condition plays an important role during many stages of a sow’s reproductive cycle including embryo survival, sow milk production, piglet weaning weight and wean to first service interval. Historically, we would evaluate sow body condition with our eyes and handling of the sows, which would create a lot of variation since everyone has a slightly different opinion of “ideal” condition.

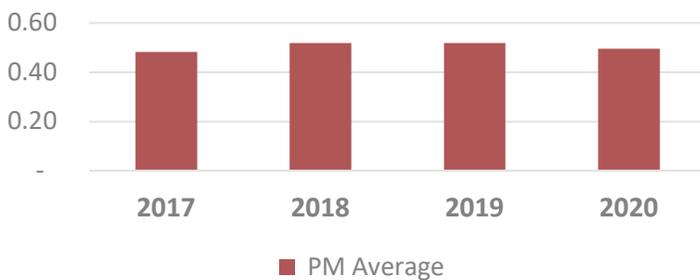
We recently implemented the use of the sow caliper. This tool provides an objective measurement on sow body condition. Anyone can be trained to use the caliper and identify if a sow is thin, ideal or fat, then adjust the feed box accordingly. This tool has allowed us to reduce the variation in sow body condition and feed usage across the Pipestone Management sow farms. On average, sow feed intake decreased by 0.1 lb/day, a feed savings of \$750,000 per year across 280,000 sows.



Feed (lbs/lb of live weight)



Feed (\$/lb of live weight)

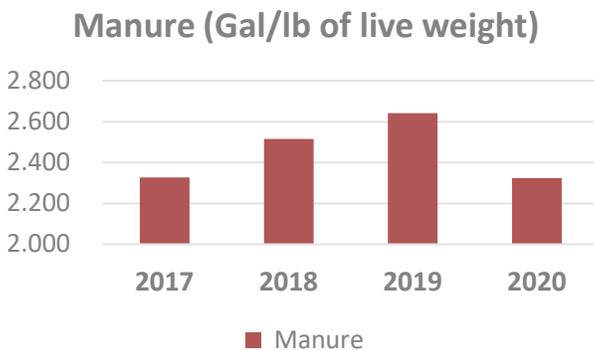


Total Lbs. of Feed Used	
	Pipestone Management
2017	485,570,603
2018	583,389,285
2019	682,466,252
2020	712,745,071

# Manure

Manure is a valuable natural resource for farmers that we manage with precision. Below are just a few of the ways we responsibly manage manure.

1. As stewards of this natural resource and the land, we complete a Comprehensive Nutrient Management Plan (CNMP) for each sow farm. This plan outlines management practices to ensure manure is used in a safe way to improve soil health, improve crop productivity, and protect natural resources.
2. When comparing the greenhouse gas emissions of hog facilities that utilize under barn manure storage (pits) versus lagoons, lagoons emit twice the greenhouse gas emissions. Today, 75% of Pipestone Management sow farms have under barn manure storage areas.
3. When weather and space allows, we arrange for pumping the manure pits in both the fall and the spring. Pumping the pit twice a year versus once reduces GHGs.
4. We utilize direct injection and incorporation when applying manure to the fields. Not only does this help eliminate odor for our neighbors, but allows us to most efficiently utilize the manure.



Total Gallons of Manure					
	Acres Applied	Gallons Pumped	N	P	K
<b>2017</b>	22,011	198,618,362	21	9	15
<b>2018</b>	26,861	247,851,740	21	9	15
<b>2019</b>	32,340	329,899,397	20	9	13
<b>2020</b>	36,679	364,133,080	22	10	15

## Organic Fertilizer:

Farmers who use manure to organically fertilize their crops not only save the expense of buying a commercial fertilizer; but they save the natural resource intensity of electricity, fuel, water, etc. needed to produce a commercial fertilizer.

Corn raised using organic fertilizer has roughly a 28% lower carbon footprint than corn raised with synthetic fertilizer. Although tracking specific feed sourcing practices can be difficult, we know that Pipestone Management produced enough manure to organically fertilize 76% of the corn bought to feed our pigs.



## 2021 Goals

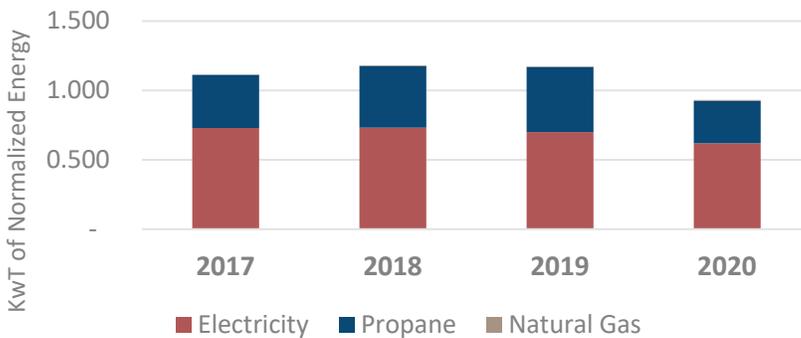
- Fully compliant nutrient management programs with state and third party verification at all sites.
- Complete direct injection manure application for greater than 95% of gallons.
- Have manure usage under 4 gallons per sow per day and feeding protocols to reduce waste to less than 2% of total use.

# Energy

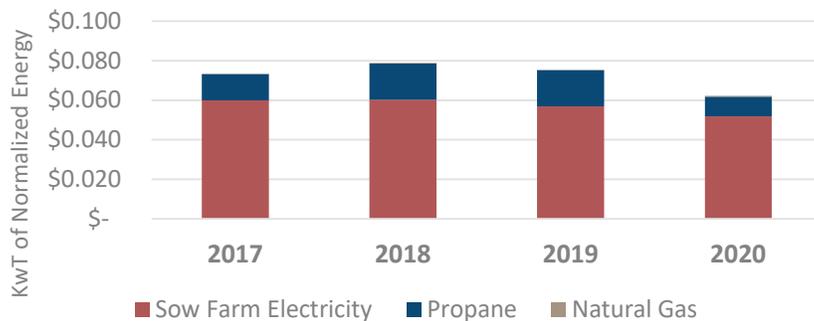
Our energy use includes non-renewable energy sources of electricity and propane. The energy use has been compiled based off the total kWh of electricity, total gallons of propane, natural gas and fuel for which each sow farm was billed. We then convert 1 gallon of propane to equal 25 kWh and 1 gallon of natural gas to equal 5.9 kWh in accordance with the Alternative Fuels Data Center.

In 2020, Pipestone Management sow farm averaged .923 kWt/lbs of weaned pig.

**kWh of Energy/lb of Live Weight**



**\$ of Energy/lb of Live Weight**



## Night Time Hours:

After trailing at a couple of farms to ensure no negative impact on pig health or behavior, we increased our “night time” hours from 8 hours a night to 12 hours. This protocol change along with others allowed us to see a **11.7%** decrease in energy use in 2020 overall in Pipestone Management.

## Renewable Energy Research:

We consulted with multiple renewable energy companies on having on-site solar panels or wind towers. We learned that the profitability of these projects greatly relies on tax incentives which our farms are not able to take advantage of. As an alternative to support renewable energy projects, we researched the purchase of REC’s (Renewable Energy Credits) from our local utility companies. We found that many of our sow farms can purchase REC’s at a reasonable rate, and have incorporated this into our 2021 energy goals.

Total Kwh Used				
	Kwh of Electricity	Gallons of Propane	Gallons of Natural Gas	Total KWh
2017	70,289,287	1,487,520	32,292	107,705,919
2018	86,978,222	2,200,002	47,622	142,315,430
2019	100,529,358	2,665,012	140,591	168,150,042
2020	95,117,337	2,071,082	155,786	147,997,349



## 2021 Goals

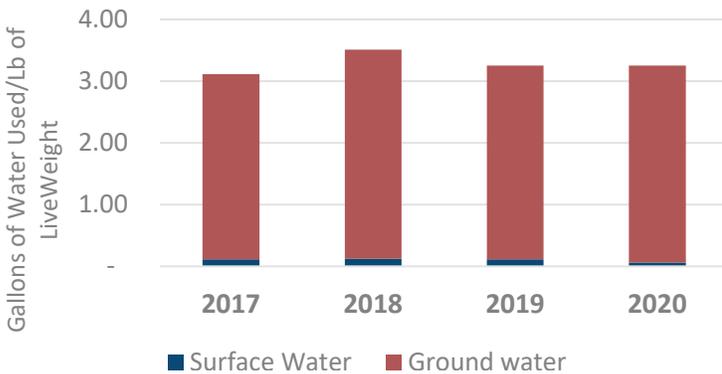
- Validate new technology and equipment to lower total energy use.
- Reduce energy use by 5%
- Use 50% renewable energy for Pipestone Management

# Water

We use water for animal consumption and barn sanitation. Water sources include municipal utilities and farm owned wells.

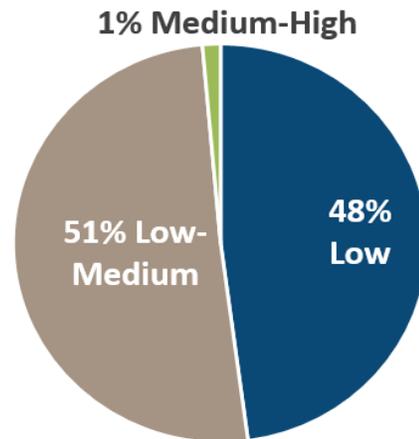
The Pipestone Management sow farm average was 3.25 gallons per lb of weaned pig.

**Gallons of Water Used/lb of Live Weight**



## Water Scarcity:

Pipestone Management evaluated their sow farms to determine if any operated in water-scare regions. By using the World Resources Institute’s Aqueduct Water Risk Atlas, we found that no Pipestone Management farms operate in high or extremely high water risk regions.



**Total Gallons of Water Used**

	Surface Water	Ground Water	Total
<b>2017</b>	8,703,406	229,027,153	237,730,559
<b>2018</b>	12,517,832	345,704,772	358,222,604
<b>2019</b>	12,894,246	356,836,273	369,730,519
<b>2020</b>	8,517,547	424,110,041	432,627,588

## Water Use Monitoring:

Current well water use monitoring relies on monthly manual entries of water use at each site. For months that were missing data entries, we assumed an average sow farm usage for that month. We identified a water meter to more accurately monitor our water use, and plan to implement on 83% of our sow farms in 2021.



### 2021 Goals

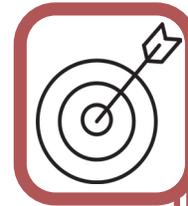
- Continue to document total water use and set usage goals by end of 2020.
- Validate new technology, equipment, and protocols to reduce total water usage.

# Waste

## Solid Waste:

We use a local company to provide sanitation services. Since dumpsters are not weighed upon pick up, we were unable to determine the actual weight of solid waste sent to the landfill. To get an estimate on the amount of waste sent to the landfill every year, we took the size of the dumpster at each of our facilities, multiplied by the number of pick ups per year, and assumed the dumpsters were full upon each pick up time.

	2019	2020
<b>Cubic Feet Solid Waste</b>	335,554	297,446
<b>Recycling</b>	0	11,040



### 2021 Goal

- Implement a recycling program on 50% of our sow farms.

## Recycling Initiatives:

In 2019 we were sending all waste from our sow farms to the landfill. In 2020, we were able to add recycling services on 9 sow farms, reducing our waste to landfill by 4%.

Because of our rural locations, recycling pick up is not always offered by the sanitation company. Determined to recycle more, we started PIPESTONE recycling route that picks up at 6 sow farms. This route was able to save sow farms money by reducing landfill pick ups.

## Composting:

Composting is a natural process where microorganisms convert organic materials into a soil-like material. We practice mortality composting which serves as an organic fertilizer. Composting also helps us maintain biosecurity by eliminating the movement of dead animals and possible transmission of disease between farms, as well as eliminating trips to the landfill.

	2017	2018	2019	2020
<b>Lbs. Composted</b>	11,984,847	15,840,953	18,744,360	24,710,062

# Monarch Habitat

Habitat loss and fragmentation has occurred throughout the monarch's range. We have identified several PIPESTONE farms that have the availability to have a monarch habitat plot planted. This is a plot of milkweed and other blooming species that provide nectar for adult monarchs in their life cycles and seasonal migrations.

# Responsible Sourcing

Our intricate supply chain includes everything from genetic sourcing, to feed ingredients, to animal health products. Our success and the health of our animals depends upon the quality and safety of the products we source.

The Board of Directors at PIPESTONE oversees all activities at Pipestone Management and recognizes the impact sustainability practices have on our financial performance. In 2021, we will work to develop a more formal policy to evaluate new supply chain partners addressing risks for the environment, animal welfare, employee health and other sustainability issues.

## References

### 1. Global Reporting Initiative (GRI) Standards

GRI is an independent international organization that has pioneered sustainability reporting since 1997. The GRI Standards are the first global standards for sustainability reporting. They feature a modular, interrelated structure, and represent the global best practice for reporting on a range of economic, environmental and social impacts. Learn more at [www.globalreporting.org](http://www.globalreporting.org).

### 2. The Sustainability Consortium (TSC)

The Sustainability Consortium (TSC) is a global non-profit organization partnering with leading companies to define, develop, and deliver more sustainable products. Through collaborating with their broad membership base—which includes manufacturers, retailers, corporations, and NGOs—and other stakeholders, they drive innovation for a new generation of products and more sustainable supply networks. Their research database is one of the world's largest, housing scientific evidence on environmental and social hot spots and improvement opportunities within a product's life cycle, covering nearly 90% of the total impacts in all consumer product categories across 8 industry sectors. Learn more at [www.sustainabilityconsortium.org](http://www.sustainabilityconsortium.org).

### 3. Alternative Fuels Data Center

The Alternative Fuels Data Center (AFDC) (through the U.S. Department of Energy) provides information, data, and tools to help fleets and other transportation decision makers find ways to reach their energy and economic goals through the use of alternative and renewable fuels, advanced vehicles, and other fuel-saving measures. Learn more at [www.afdc.energy.gov](http://www.afdc.energy.gov).

### 4. World Resources Institute's Aqueduct Water Risk Atlas

Aqueduct's global water risk mapping tool helps companies, investors, governments, and other users understand where and how water risks and opportunities are emerging worldwide. The Atlas uses a robust, peer reviewed methodology. Learn more at [wri.org/resources/maps/aqueduct-water-risk-atlas](http://wri.org/resources/maps/aqueduct-water-risk-atlas).

