

Aggregating and Trading Anaerobic Digester Carbon Credits

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Who we are.

- Second largest hog producer in the US. Approximately 225,000 sows.
- Operations in Missouri, North Carolina, Texas, and Kansas
- Vertically integrated producer. Own farms and processing plants.
- First swine producer to join the Chicago Climate Exchange

Joining the Chicago Climate Exchange

- 2003 PSF Joined Chicago Climate exchange
- \$10k commitment to reduce CO2 equivalent emissions each year.
- Reduction of 1% first year with additional 1% each year following.

Establishing our baseline

Baseline years from 1998 -2002.
Collected company wide fuel
usages.

Did not count carbon
sequestration via land application
of manure to our credit.

Calculating credits from biogas

- Measured tons of methane burned (produced in digesters) x 18.25 (CO₂ equivalent factor).

Where we get our credits.

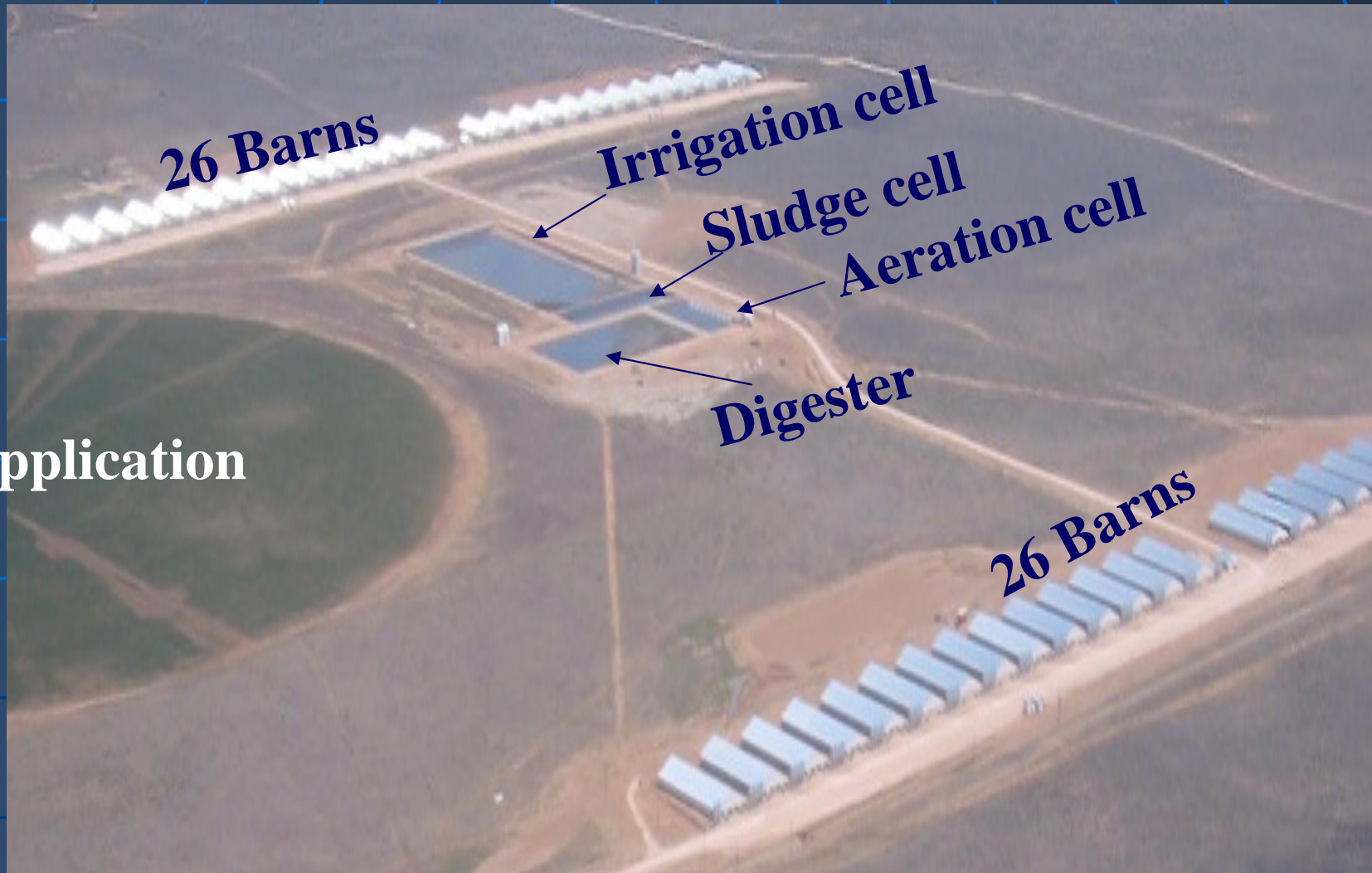
- Two Large Covered Anaerobic Digesters Treating Swine Manure (10,000 Sows & 108,000 Finishers)

- About \$10k in revenue first and second year. Low revenue due to operational issues with metering and digesters as well as carbon ton about \$1/ ton.
- Expect about \$40k this year because of price increase to around \$1.60 and better operation of digesters

S-5 10,000 Sow Site



WF-1 108,000 Finishing Site



Land application

S-5 Digester Cover



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WF-1 Digester Cover



WF-1 Biogas Buildings



America's Premium Pork®

S-5 Boiler



America's Premium Pork®



WF-1 Boiler

S-5 Biogas Blower



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WF-1 Biogas Blowers



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Compare Projected & Actual Anaerobic Effluent BOD₅

- Influent, Projected 6,385 mg/l
- Influent Actual 6,216 mg/l
- Effluent, Projected 958 mg/l
- Effluent Actual 422 mg/l
- % Reduction, Projected 85%
- % Reduction, Actual 93.4%

Lessons learned

- Projected biogas volumes are highly variable due to water usage, number of animals, diet, operator expertise.
- Don't let carbon credit financials drive the project.
- Commitment to doing the right thing and hoping the price goes up.

Where we are going with technology and carbon credits

- Committed to value added technology. Creating product with renewable fuels if possible.

1999 State Consent Decree

- Company agrees to invest \$25 mm over five yrs. to develop *Next Generation* environmental systems
- Implementation of an "Expert Panel"

2001 EPA/CLEAN Consent Decree

- Company agrees to reduce nitrogen content of effluent by 50% on larger farms
- Air monitoring for emissions
- Payment of \$350,000 civil penalty

“Next Generation Technology”

- Odor Control Projects
- Barn and Lagoon Air Monitoring
- Nite/ Denite (AND) System at 70,000 head Farm
- Water Reuse project at Homan Farm
- Crystal Peak Fertilizer with Anaerobic digesters

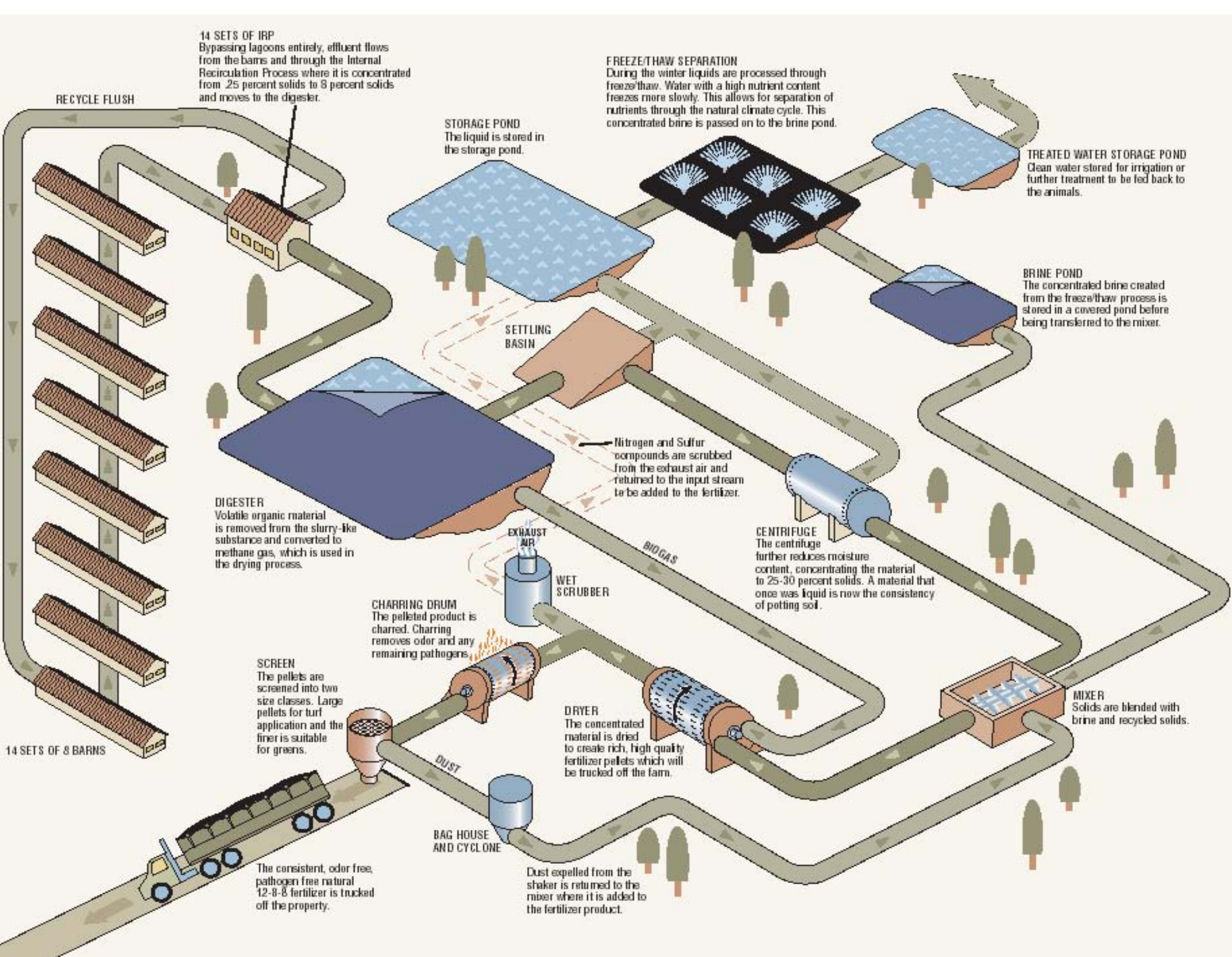
Crystal Peak Fertilizer Process

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Granulated Fertilizer Pellets From Hog Manure

Sample of fertilizer from the CPF pilot project at the Homan Farm







Construction photos at Valley View of Crystal Peak



Crystal Peak Digesters and plant



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Processing plant powered by biogas



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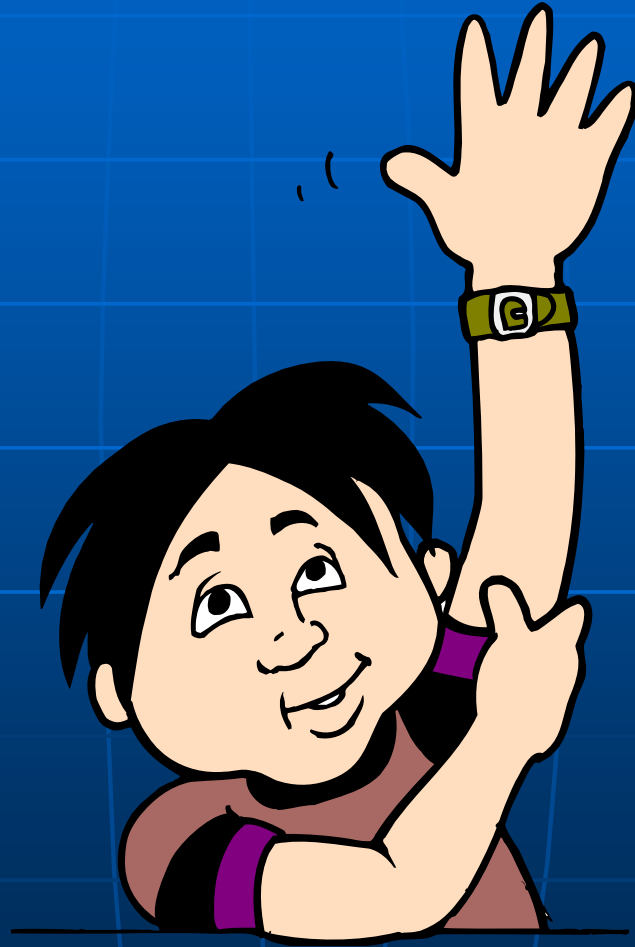
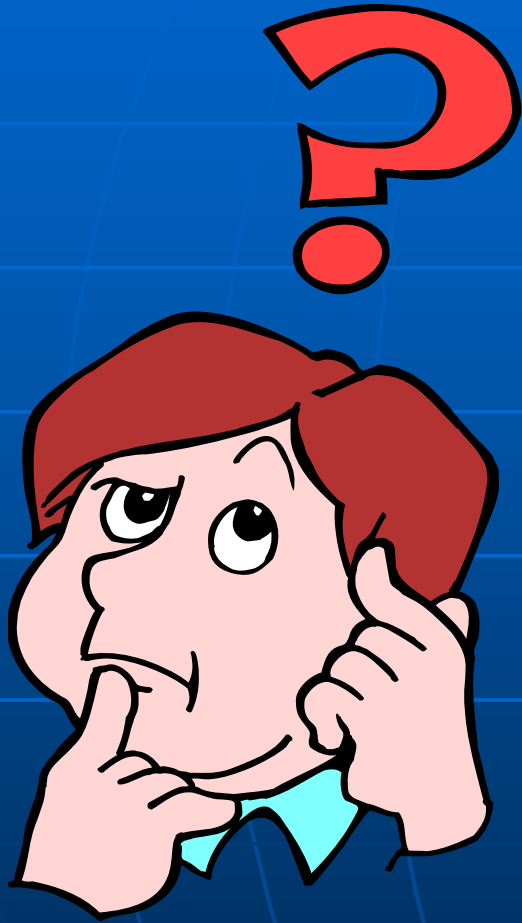
Valley View CPF Plant

- 107,000 average finishing inventory
- Production of 8,674 tons per year 12-8-8 fertilizer
- Product will be charred to remove odor and pathogens
- Earthwork complete
- Digester/dryer start-up this spring
- Product delivery Spring 05
- Carbon credits traded next year

CPF Advantages

- Reduce Odor
- Reduce Air Emissions
- Minimize or Eliminate Irrigation
- Eliminate Lagoons
- Minimize Spill Risk
- Eliminate Phosphorus Issue
- Capture carbon credits

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