



Daily's Premium Meats

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Self-Intro

- Hometown: Grand Junction, CO
 - Lack of water
 - Canyon Times
- Major: Chemical Engineering
- Why join P2?
 - The environment
 - Solution not pollution





Significance

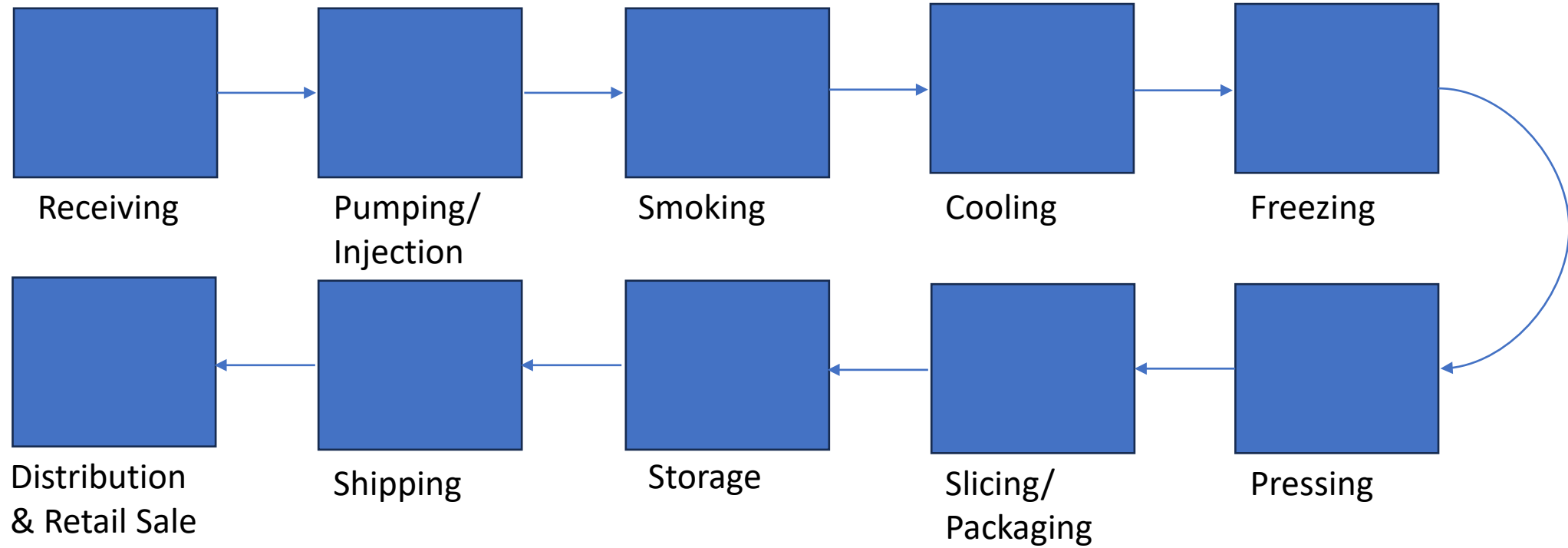
- Pork Industry
- Negative environmental impacts
 - Pork is a top 4 GHG producer
 - On a mass basis, 80 times more manure than strips of bacon
 - Lowering consumption of bacon by 1 serving a week reduces 1,050 lb of manure
- Positive economic impact
 - 829 jobs in MT
 - \$80.7M+ added to GDP (MT) (~1.6% of total MT GDP)
 - \$38.9M+ personal income



Daily's Premium Meats

- Owned by Seaboard Foods and Triumph Foods (50/50)
- Missoula 1893 a meat market called Union Market
- 1980's began focusing on processed meats, especially bacon
- 1992 opened facility in Salt Lake City
- Purchased by Seaboard Foods in 2005
- 2014 Saint Joseph Triumph plant began producing Daily's bacon
- P2 Challenges
 - Dropped Bellies
 - Wastewater
 - Solar Energy

Value Stream Mapping





P2 Areas of Focus

- Wastewater (Phosphates)
 - Phosphates are consistently ~60% of sewage bill
 - 36% of lb phosphates results in 64% of phosphate charge
 - <14 lbP/day is charged at \$4.88/lb P
 - >14 lbP/day is charged at \$14.99/lb P
 - Average of 20.85 lb P/day over past two bills
- Solar and other Energy Saving Tech
 - Power Conditioners can bring down energy bill by ~6% with a 2 year ROI
 - Solar

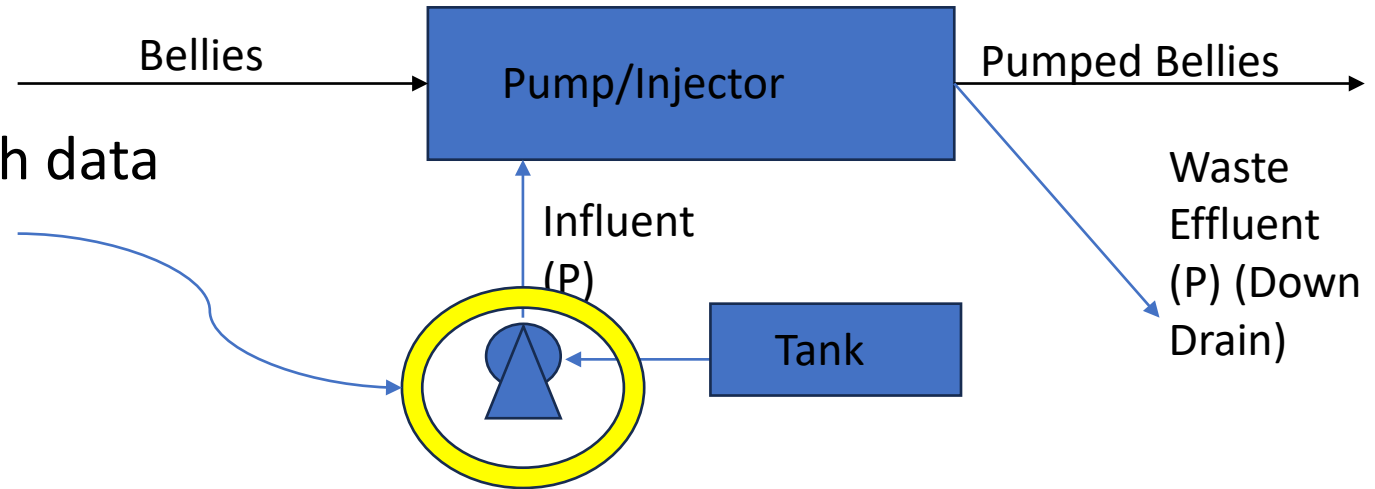
Attempt/Trials

- Phosphates

- Mass balance tuned with data
- Pump was turned down
 - Again, then again
- Data was confusing...
- Recycle system built!

- Solar and Energy Saving

- Met with two companies, received proposals from three
- Satic Solar appeared most experienced and had more technology to offer



P2 Outcomes

Recommended P2 Actions	If Implemented:								If Not Implemented	
	\$		Annual Reductions							
	One Time Cost (\$)	Annual Savings From P2 Action (\$)	Hazardous Material input (lbs)	Hazardous Waste (lbs)	Air emissions (lbs)	Water Pollution (lb)	MTCO ₂ e emissions (tons)	Water use (gal)	Barrier to Implement	Plans to Implement within 5 years?
Injection Reduction	\$3,226	\$60,227	19.3 lb/day	19.4 lb/day (93%)	n/a	19.4 lb/day (minimum)	n/a	70,718 Gal	Data	Already done
Power Conditioners	\$34,520	\$16,383	n/a	n/a	102,363 lb	n/a	46.4 tons	n/a	Cost	Likely
Solar	\$200,000	\$83,130	n/a	n/a	751,233 lb	n/a	340 tons	n/a	Cost	Likely
TOTAL	\$237,746	\$159,740	19.3 lb/day	19.4 lb/day	853,596 lb	19.4 lb/day (minimum)	386.4 tons	70,718 Gal		

Reflections/Recommendations

- Personal Learning
 - Golly... Perspective
 - Data is king
- Recommendations for interns
 - Get plenty of data **before** changing things
- Recommendation for Advisors
 - If phosphate reduction does not work...
 - 42 Biochar offers custom wastewater tech
 - **Iron oxide** impregnated biochar (removes phosphates and organics (fats))
 - If not biochar, lots of ion exchange technology
 - DuPont™ AmberLite™ HPR9200 Cl
 - WWP biodigester and biomass furnace
 - Can offset natural gas by pelletizing waste bacon (~15 kW)
 - High initial costs

Acknowledgement

- We acknowledge and honor that we are on the ancestral territories of the Indigenous Nations and Peoples, including the Apsáalooke (Crow), Niimíipuu (Nez Pierce), Šakówiŋ (Lakota), Piikáni (Blackfeet), Séliš (Salish), Shoshone-Bannock, and Tsétsêhéstâhese (Northern Cheyenne) Nations.
- This project was funded by the Environmental Protection Agency (EPA) Pollution Prevention grant (EPA-HQ-OPPT-2022-001; 66.708). It has not been formally reviewed by EPA. The views expressed in this publication are solely those of the authors and do not necessarily reflect those of the Agency. EPA does not endorse any products or commercial services mentioned in this publication.