The Jackson Plant

- 617,000 sq. ft.
- 1200 hourly employees
- 170 salaried employees
- 20 production lines
- +2,000,000 meals a day
- 500 tons of raw material each day
- Vertically integrated….meat and pasta
- USDA inspected
- Unionized – UFCW
- Single site for Manufacturing and Warehousing
Food Waste To Energy

Bellisio Foods Inc.
Jackson, OH

Jeff Wilson & Ryan Wright

March 25, 2008
• Review Existing System & Cost Saving projects for food waste to energy

• Treatment of waste/screenings (and sauces) presently being hauled off site

• Biogas utilization / Existing & Future

• Pay Back Summary
Drivers for Original Pre-treatment Project

- Increasing production and organic load to sewer
- Unload city treatment plant
- Reduce surcharges
- Sludge management
- Search for pre-treatment
  - proven technology
  - industrial-grade
  - cost-effective
Challenges for Pretreatment

- High COD and TSS concentrations
- Peak daily flow and periodic high average flows
- FOG
- Sulfate
Bellisio Foods Inc. - PFD

- Influent Pump Station
- Covered EQ Tank and Pump Station
- Standard Biogas Flare
- Biogas Blowers
- Biogas Vent
- Magox Tank
- ADI-BVF Reactor
- Recycle pump
- WANS
- Sulfur Oxidation
- Aeration Blowers
- To City
System Summary Up-date

- Pre-treatment project completed on time and on budget
- System meeting all effluent requirement
2005-2006-2007-2008 Biological Mass Loading Ave LBS Per Day For Each Period

### Average LBS Per Day

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**Periods:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

**Average Biological Mass Per Day:**
- 2005
- 2006
- 2007
- 2008

**Legend:**
- Period Average Biological Mass Per Day 2005
- Period Average Biological Mass Per Day 2006
- Period Average Biological Mass Per Day 2007
- Period Average Biological Mass Per Day 2008
• Food Waste To Energy
Anaerobic Treatment of Waste/Screenings (and sauces)

- Significant mass of organic waste being hauled offsite
  - screenings/waste
  - waste sauces
- Wastes were characterized over a three month period
Proposed Pretreatment Upgrade

- Upgraded reactor feed pump system with new flow control valves
- A new 5.25 MG BVF reactor identical to existing reactor
- New biogas blowers and biogas train
- Upgraded effluent structure and flow monitoring station
Budget Cost of Waste/Screenings and Sauces Pretreatment

• $4,65 Million (based on comparative scope with original project)
• Cost does not include:
  – Cost of land $400,000
  – Earthworks and special foundations $1,2 Million
  – In-plant modifications including grinding, sewers, pumping stations, etc.
  – $200,000
  – Permits
Preliminary Proposal - Biogas Utilization

- Sized for two BVF reactors and 75,000 lb/d of COD
- System upgrade consists of:
  - New blowers/motors
  - New flame trap assembly and flare
  - Biogas dryer
  - 6 inch diam line to convey biogas
  - Retrofit of 225 hp boiler
- Second boiler (175 hp) to be retrofitted in future
Project Pay Back

- Current Biogas value $500,000 /y
- Biogas value produced from food waste sauces and screenings $400,000.
- Present trucking/disposal for waste $450,000
- Total value of biogas is $1.35million
- Cost of BVF/Biogas Utilization is $6,2 Million
- This is a possible Pay Back of 4.5 year
Reducing Our Carbon Footprint & Green House Gases

- Saves 70 tonnes of CO$_2$/d from the organic break down of the food waste in the land fill
- Saves 76 tonnes of CO$_2$/d by using Methane as an alternative fuel to natural gas
- This totals 43,800 tonnes of CO$_2$/y being saved
Any questions or comments?
Thanks for your time