



# **Water Reduction Efforts**

## **BF Goodrich Fort Wayne Facility**





# SUMMARY

> General Information

> Past Projects

> Future Projects



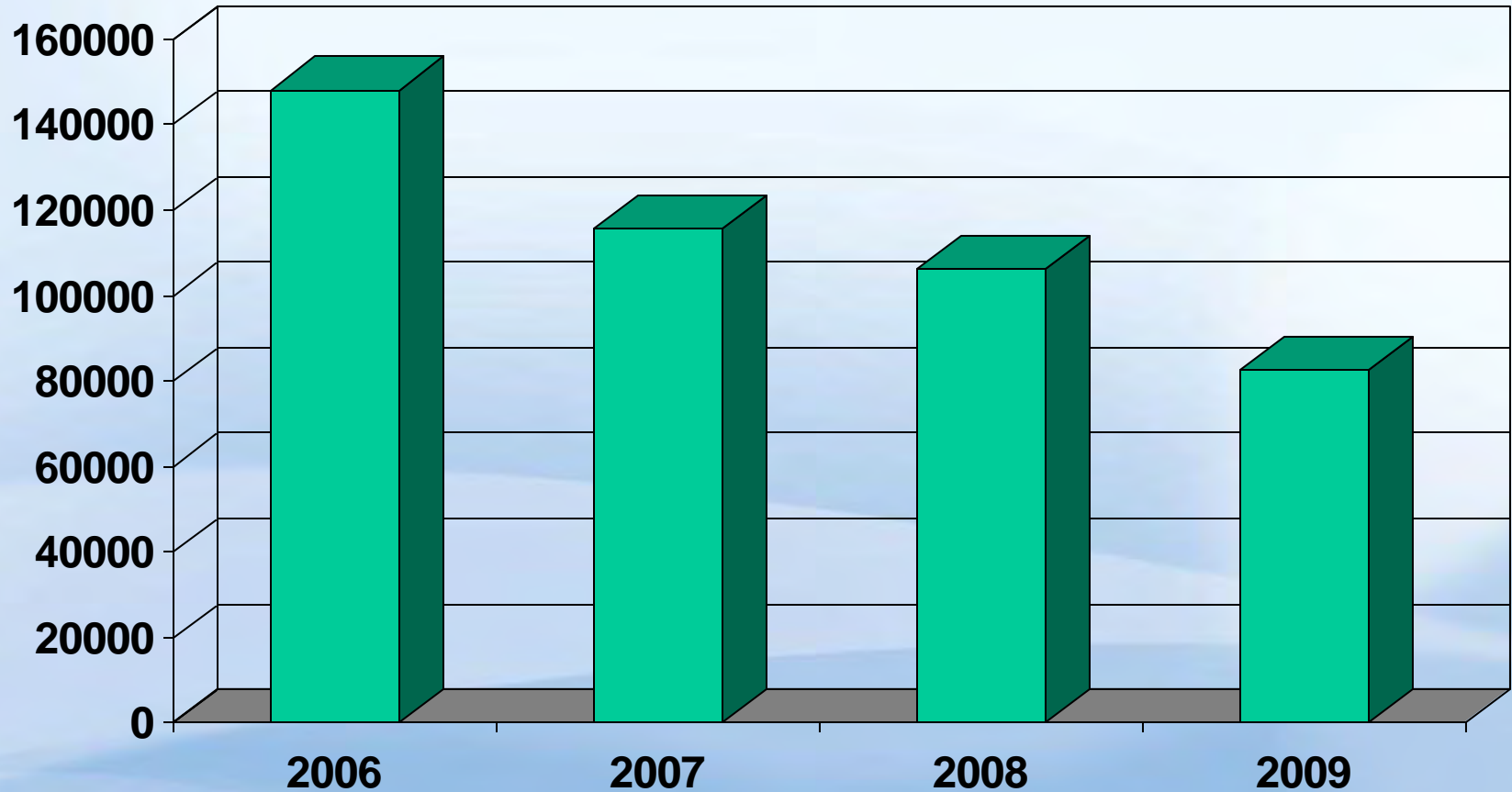
# BF Goodrich Fort Wayne, IN



- **The facility is located on 287 acres.**
- **Three 10” wells are on site at 400’ deep. Capacity 400 gpm**
- **Two water purposes:**
  - **Potable**
  - **Process**



# Water Usage (kgallons)



# Water Reduction

- 21.9 % reduction from 2006 - 2007
- 8.1% reduction from 2007 - 2008
- 22.2% reduction from 2008 - 2009

Average daily water consumption = 226,449  
gallons



# Past Projects

- **2006 – *Installed a 500 ton chiller***

- Cost exceeded \$1 million
- Went from a feed and bleed system to a closed loop system
- Benefits included:

Maintain process temperatures year round to 65 degrees F.

Reduced water consumption by 3 million gallons/month.

Helped reduce product scrap.





# Past Projects

- **2007 – *Installed Reverse Osmosis System***
  - Cost \$250,000
  - Reduce high mineral content (high conductivity) in make up well water for the boiler system.
  - Previous cycles = 7 – 10 (22.1 mgpy)
  - Current cycles = 63 – 73 (12.2 mgpy)
  - Savings = 9.9 mgpy of make up water



# Past Projects

## *Reverse Osmosis*

Additional benefits:

- Energy savings = \$64,337/yr
- Chemical savings = \$72,555/yr
- Steam eliminated = \$127,428/yr

**\*Won 2010 Ecomagination Award from GE\***

## *2007 – Leak-a-Day Program*

Developed program to identify and track air, condensate, and steam leaks. Challenged maintenance personnel to fix at least one leak per day.





# Past Projects

- **2008 – *Central Chiller Sidewall Extruder Hookup***
  - Cost \$250,000
  - Incorporated the sidewall extrusion line to the central chiller
  - Went from feed and bleed to a closed loop system.

## Benefits:

Reduced water consumption by 30,000 + gallons/day

Maintain constant water temperature for greater quality product.



# Future Projects



- *2010 Well Water to R.O. close loop to new cooling tower.*
- Current system is closed loop to air compressors to cooling tower utilizing well water.
- New project will close loop the R.O. system to new cooling tower



# Future Project Continued

Current system:

- Average cycle = 1.2 (high mineral content/high conductivity)
- Proposed cycle = 10 – 15 (thus reducing well make up water)

Estimated saving:

12,000 gallons/day



# Questions?

