



# **Crown Iron Works Company**

## **Good Environmental Stewardship in Biodiesel Production**

**Presented by: Derek Masterson**

**NBB Orlando**

**February 4, 2008**



## Crown Contacts

---

Derek Masterson or Greg Waranica

Crown Iron Works Company

Phone: 1 651 639 8900

Fax: 1 651 639 8051

E-mail: [dmasterson@crowniron.com](mailto:dmasterson@crowniron.com)

[gwaranica@crowniron.com](mailto:gwaranica@crowniron.com)

Web: [www.crowniron.com](http://www.crowniron.com)





# Keys for Designing a Plant

---

- Eliminate methanol emissions
- Eliminate water discharge
- Design for a hazardous environment
- Design for good process control
- Design something that makes biodiesel
- Biodiesel is not the only product



# Eliminate Methanol Emissions

---

- Condense methanol from vapors
- Condense methanol from vapors again
- Scrub all vapors
- Scrub all vapors again
- Use leak-proof components



# Eliminate Water Discharge

---

- Don't use any water at the entire site (not possible)
- Have a plan for cleanup / reuse of water that is in the process
- Reduce non-process water



# Design for a Hazardous Environment

---

- Methanol vapors in the process may explode
- Methanol vapors in storage tanks may explode
- Methanol vapors anywhere they exist may explode
- Need intrinsically safe / explosion-proof equipment including non-process equipment
- What if? process design and safety management



# Design for Good Process Control

---

- Use methanol detection equipment
- Safety systems cannot work correctly in manual mode
- However, complete reliance on a computer for control breeds complacency and increases the potential of safety risks or an environmental disaster (trust, but verify)
- Operators need training
- More efficient processing means a lesser use of chemicals and utilities



# Design Something that Makes Biodiesel

---

- Biodiesel is ASTM D 6751, EN 14214, or other equivalent standard
- Burning a fuel that has not been approved for use may produce harmful emissions



# Biodiesel is not the Only Product

---

- Glycerine discharge
- Other co-product discharge (FFA, soapstock, etc.)
- Water (process) discharge
- Water (non-process) discharge
- Solids discharge



Thank you for your attention.  
Please ask questions!