

Project Overview

Industrial Placement

Intern: Deborah Hemphill
Major: Chemical Engineering
School: Kansas State University



The Company

ASA Albion, LLC, is a division of ASAlliances Biofuels, based in Dallas, Texas. ASA Albion, LLC, is a dry-grind 100 million gallon per year (GPY) ethanol facility, scheduled to begin production in mid-September 2007. The facility is being built by Fagen and was designed by ICM, Inc., to include efficiencies such as recycling process water and creating methane to reduce the natural gas used. A Cargill grain elevator is co-located with each ASAlliances Biofuels facility. Cargill is a partner in the ethanol production at these facilities, providing the corn, and selling the dried distillers' grain (DDG).

The Project

The goals of the 2007 Partners in Pollution Prevention project at ASA Albion, LLC, were to put together a Spill Prevention Control and Countermeasure (SPCC) Plan for review by a Professional Engineer (PE), to seek out other pollution prevention (P2) opportunities and to assist where needed.

Pollution Prevention Benefits

The primary benefit of having a SPCC Plan properly prepared, reviewed and signed is providing regulatory compliance with the EPA's Oil Pollution Prevention regulations, primarily 40 CFR 112. The SPCC Plan and the forms and logs in Appendices B and C of the SPCC Plan can be used to document the EPA required testing, training and reporting. Testing the integrity of the tanks and associated pipes, valves and hoses, then providing regular maintenance or replacing them as need be will lead to fewer oil spills to land or water.

Some general P2 opportunities were identified, primarily recycling options. Additionally, a Utilities Savings Calculator was developed for assessing the savings generated using lower wattage devices or reducing the length of time a light or other energy consuming device is operated.

Results

The results and recommendations related to this project are summarized in the table below.

Pollution Prevention Results & Recommendations

Pollution Prevention Opportunity	Benefit	Waste Reduced	Cost Savings
Prepare SPCC	Regulatory compliance; Avoid fines and negative publicity; Increase awareness of training, reporting, procedures and installations required		
Choose beverage machine with aluminum cans, recycle cans	Recycle through Albion Recycling Center	23.4 yd ³ /year	\$290 over plastic bottles landfilled; \$467 over recycling plastic bottles
Recycle office paper	Recycle through City of Albion	785.4 lbs/yr	\$64/year
Recycle cardboard	Recycle through City of Albion	4 yd ³ /mo	\$270/year
Recycle used oil	Les Daniels, County Shop: (402) 386-5286	110 gal/mo	Avoided regulatory fees for improper disposal
Replace bulbs with LEDs or low wattage bulbs where possible as the technology becomes available	Note: see “Utilities Savings Calculator” on Albion hard drive under “Environmental”	Energy use rate: \$0.027/kWh; Demand rate: \$6.90/kW per month	\$1,595/year if 100 bulbs are replaced with bulbs each using 50 watts less