ABENGOA BIOENERGY Abengoa Bioenergy Corporation York, Nebraska Plant	P3 – Summer 2006 Project Overview

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Concentration: Chemical & Biomolecular Engineering

The Company

Abengoa Bioenergy Corporation (ABC-York) has been a part of Nebraska's ethanol industry since 1994. It has grown to a production level of 55 million gallons of ethanol annually. The plant, formerly High Plains Ethanol, converts 21 million bushels of corn into ethanol and other valuable products such as carbon dioxide and animal feeds including Wet Distillers Grain Solids (WDGS), Dry Distillers Grain Solids (DDGS), & syrup.

Project Description

ABC-York is participated in the P3 program for the third time. During the summer of 2006 the P2 project was centered on the wastewater sludge and on nutrient accumulation within soils where the sludge is land-applied. Intern Mike Venteicher performed a phosphorus material balance at the plant and recommended an alternative approach to wastewater sludge management. Additionally, three environmental plans/policies (the sludge management plan, the leak detection and repair plan, and the hazardous waste generation plan) were reviewed/updated in compliance with regulatory requirements

Pollution Prevention Benefits

Suggestions made as a result of the phosphorus material balance studies have the potential to prevent the over application of phosphorus to neighboring agricultural fields, thereby reducing future liability and risk of surface water deterioration. Also, a recommendation to use the wastewater sludge as a saleable liquid product to a commercial composting operation, could save the composter approximately 3-4.5 million gallons of water. Table 1, below, lists total benefits potential of the suggestions made.

Table 1: Benefits Summary

P2 Opportunity	Waste Reduced & Materials Saved
Nutrient Balance as a result of Phosphorus Source Mapping	reduced over application: 5,750 lbs P/year
	reduced liability due to over application of Phosphorus
	water usage reduced: 4.5 million gal/year