Archer Daniels Midland

CASE SUMMARY 2

ARCHER DANIELS MIDLAND (ADM)

Clinton, Iowa
Clinton County
Intern: Iris Caldwell
Major: Civil Engineering
School: Iowa State University

The Company

ADM is a global leader in agricultural processing. Founded in 1902 and incorporated in 1923, ADM has its headquarters in Decatur, Illinois, and operates processing and manufacturing facilities in over 60 different countries worldwide. The company employs over 25,000 people and reported net sales of $35.9 billion at the end of the last fiscal year. ADM-Clinton is a corn processing facility, manufacturing products such as corn oil, fuel alcohol, starch and sweeteners.

Project Background

The plant is located on the Mississippi River and bounded on the other side by the city of Clinton. Due to the plant's close proximity to the waterway, storm water and spill management are of particular importance, especially with increasing responsibility required of companies through environmental regulations. In addition to its existing regulatory-based programs, ADM-Clinton identified several opportunities for improving spill and runoff pollution prevention. These opportunities formed the basis of the summer intern's P2 projects. Additionally, a previous intern identified the potential to expand the plant's recycling program.

Incentives to Change

ADM is committed to promoting positive environmental policy throughout its facilities. The Clinton plant has focused on reducing emissions, modernizing processing techniques, and managing waste streams responsibly. ADM would like to be proactive regarding spill and runoff management. The implementation of additional spill prevention measures would demonstrate the company's commitment to address potentially problematic areas before a damaging event can occur.

Currently, ADM-Clinton spends thousands of dollars a month on disposal fees for solid wastes. Any sort of redirection of material from the general waste stream could carry significant cost savings.

Results

1. Load-Out Spill Prevention

Recommended spill prevention measures at load-out points for trucks and barges. Designs include adequate sumps and pumps, emergency shut-off valves, curbs, and flange guards.

2. Transformer Oil Spill Protection

Recommended constructing secondary containment around transformers to prevent the spill of

mineral oil in the case of a leak or equipment failure. Designs include curbs, sumps, and covers that divert storm water.

3. "Green" Oil Replacement
Recommended replacing the mineral oil in transformers with Envirotemp FR3. This vegetable oil-based dielectric fluid is biodegradable and has properties that extend the life of the insulating paper.

4. Cardboard Recycling
Recommended implementing a cardboard recycling program. ADM would purchase a baler and designate collection points for corrugated cardboard. The recycling vendor would purchase bales according to current market prices. Cardboard recycling would complement existing recycling programs such as pallet recovery, pop bottle/can redemption, and steel recycling.

Project Summary Table

Project Description	Environmental Impact	Economic Cost Savings	Status
Load-Out Spill Prevention	Avoided habitat and wildlife damage	$250-$500 per gallon of avoided product spilled to river	Recommended
Transformer Oil Containment	Avoided habitat and wildlife damage	$250-$500 per gallon of avoided product spilled to river	Recommended
"Green" Oil Replacement			Recommended
Cardboard Recycling	144 tons/year landfill avoidance	$22,000/year	In Progress