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Best Practices... Achieving Sustainability and Zero-Landfill Goals (Case Study Approach)

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Current Customer Example

Automotive Mfg. Plant. Started an on site program in 2008

Achieved Zero-Landfill in 2011

Vision started in 2008 with inception of the contracted on site manager concept. (Personnel and resources dedicated to helping company achieve their goals)


- 61% Recycling
- 7% Beneficial Reuse
- 6% Laundering
- 1% Compost
- 25% Waste to Energy
The Road to Success

After inception of a waste program and dedication to goals companies will achieve many milestones along the way to becoming zero-landfill.

- **Examples**
- Creation of laundering program to reuse absorbent pads and workers gloves.
- Reusable “waste” program - Process created to collect transmission caps and dust covers at frame plants, sent to facility to be washed and then returned to for reuse.
- Baler Program: Installation of balers to handle cardboard, plastics films, plastic, office paper. The segregation and bulking of these materials has led to higher rebates, and lower transportation spend ultimately eliminating these wastes from the landfill or waste to energy.
- Food Waste Composting - Food waste is collected in bio-degradable bags. Organic waste is then sent to large composter as end user.
Continuous Improvement

Waste Management Hierarchy

- **Priority**
  - Source Reduction
  - Recycling
  - Energy Recovery
  - Treatment Incineration
  - Landfill

- Encourage waste reduction by consultation, materials substitution and waste stream separation
- Hazardous and nonhazardous solvents, aerosols, plastics, steel and other metals recycling
- Hazardous and nonhazardous solvents, labpacks, sludges and solids, processing for energy recovery in cement kilns
- Wastewater treatment, low BTU metals, inorganics, and other nonhazardous wastes for landfiling
What does Contractor do for Company and why does it work?

- Contractor provides Company with a labor force specializing in turn-key environmental services.
  - Co-development of site goals
    - Education and setup of recycling programs
    - Beneficial reuse design and implementation
    - Overall environmental experience and expertise which allows you to focus on their product, not their waste.
  - Collection of Company’s waste, recyclables, and beneficial reuse streams
    - Bulk material for disposal/end user.
  - YOU MUST constantly develop new training and education for recycling. Development of these programs leads to better employee participation AND overall lowering the waste to energy volume.
  - Complete a “Waste Sort” of the Cafeteria or plant waste to educate the associates and reveal truly what was being discarded.
The Resource Manager

- Unbiased “Green” Approach
- Financial Strength
- Processing Technology Flexibility
- Exceptional Service
- One-Stop Shopping – Diversification
- Strong Supplier Partnerships
- Lean Manufacturing Labor force optimization and Reduction of manufacturing costs.
- Environmental Sustainability Reduction of waste to landfills.
- Responsible Care Ongoing training and compliance consultation and Decreased exposure to long-term risk.
NEXEO IRM Program

Integrated Resource Management Program

➢ Partner for on-site, turnkey, integrated solutions
  • Recycling management program
  • Innovative material and reuse disposal options
  • Chemical management and conveyance
  • Secure material destruction
  • Supply chain optimization
  • Consolidated vendor management
  • Environmental health & safety expertise
  • Hazmat & safety training
The Zero-Landfill Picture

- Batteries, halide lamps and fluorescent bulbs to recycling
- Waste paper and cardboard to recycling
- Liquid hazardous waste to cement kiln as fuel
- General Trash to Waste-To-Energy Burner (Steam production for energy)
- Resins, Sands, Sludge, etc. to Cement Kiln as recipe ingredient
- Aluminum Cans and Aluminum to vendor for Recycling
- Zero Landfill
Case Study- Mfg. Plant, Alabama

• Site Specific Example 1:
  – Alabama, 8000 employees, 3.2 million square feet facility
  – ZERO WASTE to landfill for last 5+ years
  – Cost per pound reduction: **35-45%**

• Example 2: Mold sand created a problem for a customer being a zero landfill facility. There appeared to be no other options than some type of land application. At production start-up, sand was stock-piled while Nexeo aggressively looked into viable options for reuse and recycling.

• Contractor consulted with a local cement kiln and they agreed to accept the sand at $12/ton as a raw material for cement manufacturing. Transportation for each load to this facility was approaching $1000/load and the manufacturer was averaging 20 loads per month costing approximately $60K per month.

• Contractor researched more cost effective options and finalized negotiations with an even closer cement kiln to accept the sand as raw materials into their process. This kiln agreed to take the sand for $8/ton. Contractor now supplies the daily transportation to this facility with a Nexeo truck and driver, which minimizes freight cost. This reuse initiative has a realized annual savings of $420K.
Case Studies – Engine Plant

- **Zinc Oxide Dust (50% Zinc) generated by plant bag house filters.**
- The customer generated 810 tons annually of Zinc Dust from bag house filters. The dust was being sent to landfill as special waste prior to Nexeo being on-site.
- After Nexeo began waste management at the site, we began to work directly with a supplier of fertilizer and micronutrient products. After 2 months of testing and research and development a solution was found.
- The Zinc Dust will be used as is an ingredient in the formation of a granulated zinc micronutrient product that the company will market and sell to their customers. The customer will now receive $425/ton for the material that was once going to the landfill.
- The customer was previously paying the following for disposal:
  - Disposal of Zinc Dust (Special Waste) $20,050.00
  - Transportation $31,185.00
  - **Total:** $51,235.00 (cost avoidance)
- The customer now receives the following rebate for material:
  - Rebate for Zinc Dust (Beneficial Reuse) **$344,250.00**
Case Study- Heavy Mfg. Site

- South Carolina, 10,000 total employees, 2.2 million square feet facility. Team on site since 2005.
- Current recycle rate is 91% of all waste, up from 60.3%.
- **Collect, sort and prepare** for recycling:
  - Cardboard
  - Pallets and scrap wood
  - Metal (whole cars, shells, partial builds)
  - Plastic
  - E-waste
  - Drums (plastic & steel)
- Increased capture rate with line side pick ups
- Increased rebates
- Documented savings of $1,200,000 over 2 years.