



# Recycling Difficult Materials

MXI ENVIRONMENTAL SERVICES

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VIRGINIA BEACH, VIRGINIA

# Who is MXI

- ▶ MXI Environmental Services is a leading environmental services firm. The family of companies was originally founded by C.G. Potter as a garment hauler. The business has been handed down to multiple generations and has flourished under it's current President and CEO Ron Potter.
- ▶ In 1987 the company obtained an A901 permit to haul hazardous materials as Maumee Express.
- ▶ In the early 1990's, Mr. Potter formed MXI's Environmental Services Division for industrial and commercial generators needing assistance in managing waste materials.

# Who is MXI...

- ▶ The year 2001 was a big year for MXI with the addition of:
  - ▶ New Materials Recovery Facility for universal and industrial waste management and beneficial reuse.
  - ▶ Distilled Spirits Plant to reclaim ethanol waste materials into fuel grade ethanol.
  - ▶ Establishment of MXI's Household Hazardous Waste Management Program.
- ▶ In 2012 MXI formed Dynamic Recycling to focus primarily on ethanol and beverage recycling.
- ▶ In 2013 MXI started it's Latex Paint Recycling program which offers recycling to all current and future HHW clients.

# Material Recovery Facility

- ▶ Like many MRF's the biggest problem area for recyclables centers on these areas:
  - Incomplete or incorrect Material Profile (Composition, physical state, pH, metals concentrations, process of generation, etc.).
  - MXI requires every waste stream to be profiled and must be approved prior to acceptance. Deviation from profile will result in a materials being classified as off-specification and may be rejected and returned to generator.
  - Waste is not in a D.O.T. approved shipping container. (Container integrity).
  - Packaging (typically an issue with ethanol streams).

# MRF Recyclable issues...

## ▶ USED OILS:

- Fluctuating commodity price.
- Emulsified with water.
- Containing PCB's.
- Mixed with solvents.
- Containing debris.
- Mixed with Antifreeze.

# MRF Recyclable issues...

- ▶ Universal waste presents a myriad of issues for our MRF. The most common are:
- ▶ Unsealed containers are a problem for many generators
- ▶ BATTERIES:
  - ▶ Mixed batteries.
  - ▶ Damaged/Leaking batteries.
  - ▶ Water in containers (probably not good for Lithium batteries).
  - ▶ Leads exposed (potential to release energy).
- ▶ LAMPS:
  - ▶ Broken lamps (broken glass).
  - ▶ Lamps taped together (surcharge to remove tape).
  - ▶ Mixed types in same box (4', U-bulbs, CFL's).

# MRF Recyclable issues...

- ▶ GLYCOLS
- ▶ Fluctuating commodity price.
- ▶ Mixed with solvents.
- ▶ Containing debris.
- ▶ Mixed with oils.

# MRF Recyclable issues...

- ▶ CONSUMER PACKAGED MATERIALS:
- ▶ Packaging integrity.
- ▶ In correct description (size of containers or Lotion instead of Perfumery product).
- ▶ Not adequately wrapped.
- ▶ Metal present in lids (slow shear shredder).

# MRF Recyclable issues...

- ▶ PLASTICS:
- ▶ Fluctuating commodity pricing.
- ▶ Segregating types.
- ▶ Residual contents (drums, pails, etc.).
- ▶ Transportation costs.
- ▶ Acceptable sizing.
- ▶ Storage to maximize load.

# MRF Recyclable issues...

- ▶ METALS
- ▶ Fluctuating commodity price.
- ▶ Containers provided (roll-offs).

# Latex paint

- ▶ MXI is proud to be a recycler of the latex paint. We are very fortunate to have customers that do more than talk about recycling, they live it every day. It is these leaders that make our future a better place and I couldn't be more proud to be of part of their team.
- ▶ MXI collects latex paint in a variety of ways. Primarily this is done at household hazardous waste collection events. The paint is collected in lined cubic yard boxes to prevent spillage and shipped to our facility in Abingdon, Virginia.
- ▶ The cubic yard boxes are then unloaded to sorting stations which are equipped with custom designed mechanisms to remove the paint into tanks. When filled, a sample from each tank is sent out to our paint lab. The lab then tests and adds the necessary ingredients to the tank to ensure the paint meets our specifications and quality control standards.

# Latex paint...

- ▶ MXI paint technicians segregate paint into the following colors.
- ▶ 1. WHITE
- ▶ 2. OFF-WHITE
- ▶ 3. CREAM
- ▶ 4. RED
- ▶ 5. YELLOW
- ▶ 6. GREEN
- ▶ 7. BLUE
- ▶ 8. All other paints are put into an “other” category (Brown, Black, Grey).

# Latex paint...

- ▶ PRODUCTS IN DEVELOPMENT:
- ▶ Interior/Exterior coatings.
- ▶ Barn & Fence paint.
- ▶ Chalk paint.
- ▶ Craft paint.
- ▶ Driveway sealer.

# Latex paint recyclable issues

- ▶ MIXING PAINT:
- ▶ Mixing the paint reduces the value and ability find outlets.
- ▶ UNLABELED OR MISLABELED CONTAINERS.
- ▶ CONTAINER INTEGRITY (A little spill goes a long way)!

# Distilled Spirits Plant

- ▶ Manage destruction for off spec, expired, damaged or returned goods in a cost effective and environmentally responsible manner.
- ▶ PRODUCTS WE RECYCLE:
  - ▶ Beer
  - ▶ Wine
  - ▶ Spirits
  - ▶ Energy drinks
  - ▶ Flavorings
  - ▶ Line flush
  - ▶ Perfumery products
  - ▶ Consumer goods

# DSP Recyclable issues

- ▶ Due to the nature of the commodity and the equipment needed to complete the task (i.e. shredders, compactors, pumps and lines and controls, etc.) it is a necessity to have effective systems for a safe workplace.
- ▶ I've identified the fluctuating commodity pricing in each area as it is germane to operating a viable facility, but no other area of commodity price is more important to MXI than the price of ethanol. The swings in price can be very dramatic and as we've seen with the shuttering of numerous recycling facilities throughout the United States in the last few years, reduced commodity prices make it difficult to pour money into new equipment and technology to remain at the forefront of your industry.

# DSP Recyclable issues...

## BULK SHIPMENTS:

- ▶ Sampling tankers (Special baler to obtain a representative sample).
- ▶ GC each load to check for accuracy of material.
- ▶ Loading and off-loading (Potential for release, static discharge, etc.).

## ▶ ALUMINUM:

- ▶ Damaged containers (sharp edges, odors, Drosophila Melanogaster).
- ▶ Effective baling (always looking to increase baling capacity to reduce transportation cost).

## ▶ GLASS:

- ▶ Segregating glass for recycling (Brown/Green/Clear).
- ▶ Damaged containers. (sharp edges, odors, fruit flies).
- ▶ Transportation costs.

# Thank you

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