

Single Stream Recycling

County Waste Facility

Albany, NY



Single Stream Facility Stats

- County Waste's MRF (Materials Recovery Facility) serves an area North of Tappan Zee Bridge and South of Lake George
- The Facility brings in 380-420 tons/day of material and processes approx. 35 tons/hour
- An estimated 80% of recyclables at the plant originate in the Capital Region
- The facility has two, 9-hour operation shifts, employing 42 workers on each shift, and 6 hours of maintenance every 24 hours



The process begins on the tipping room's concrete floor, where trucks dump their recycling loads...

Large rigid items such as plastics (laundry tubs, baby pools) and scrap metal are removed by hand and placed in separated bays to be processed later.







A loader pushes the material into a “charge box” with a “metering bin” attached. The metering bin meters (counts) the rate of flow of the material into the operation.





The materials are fed onto a conveyor which takes the materials up and into the second story level, where they then go through a quality sort station.



This station includes 2 picking lines where about a dozen workers pull out items like any remaining plastic bags, shredded paper (which is too light and small to go through the machinery)...

...garden hoses (which can get caught and tangle in the equipment), and even dead animals (believe it or not), and drop them below into separate bins or dispose of them.



Bin below collects plastic bags and other materials that shouldn't go through the system...



The material then proceeds over an initial set of “star screens”...

At this first set of screens, glass bottles are crushed and fall below into a bin. It is shipped as a crushed glass aggregate.



The remaining materials go over the screens and continue down the line.

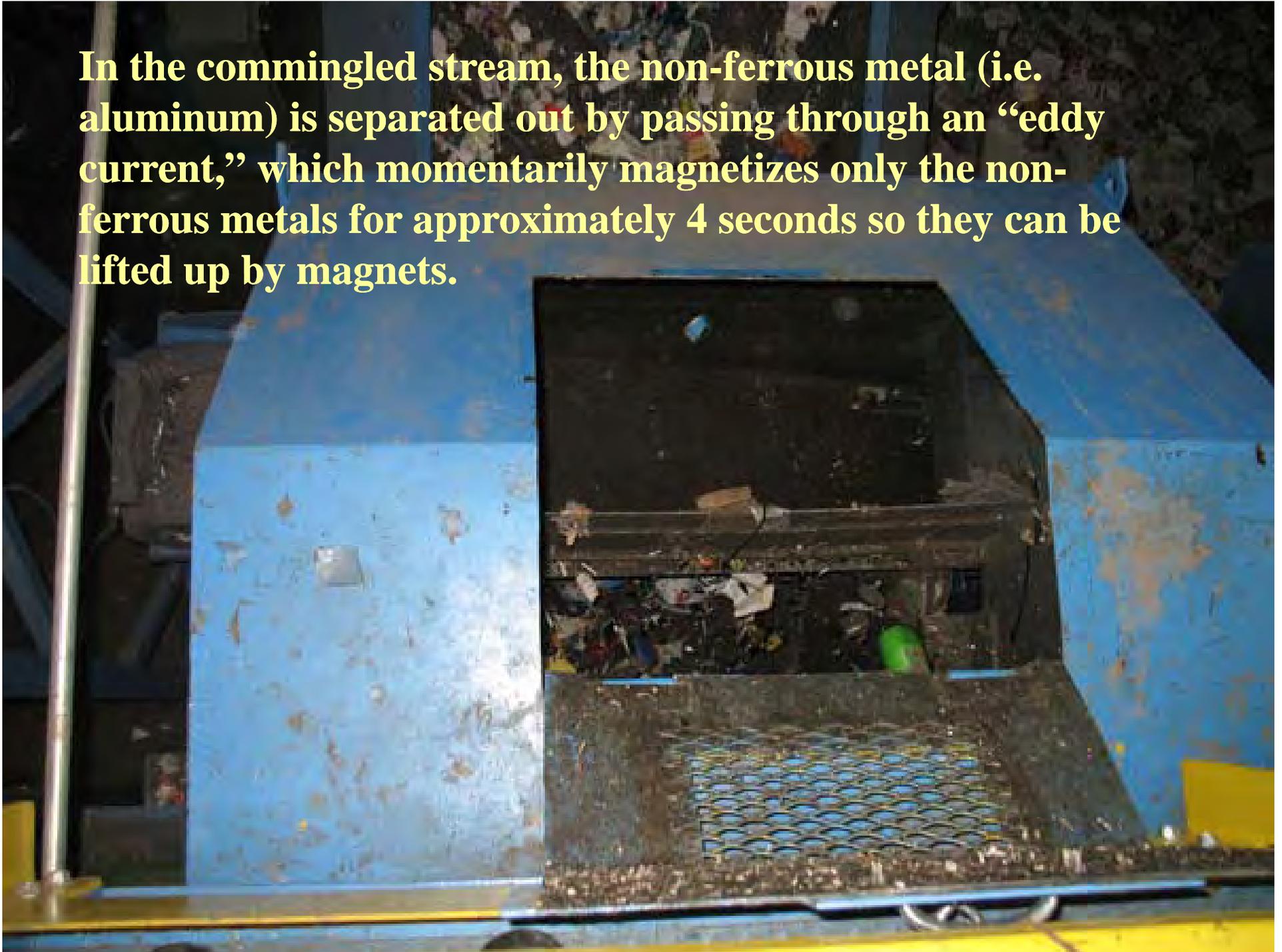
The next series of screens sort out the plastic containers and metal cans which fall through, while fiber (paper and cardboard) floats up and over the screens, and the fiber stream goes off on a conveyer to the right.

The fiber stream is separated into cardboard and paper.





In the commingled stream, the non-ferrous metal (i.e. aluminum) is separated out by passing through an “eddy current,” which momentarily magnetizes only the non-ferrous metals for approximately 4 seconds so they can be lifted up by magnets.





The aluminum goes on a separate conveyor to its own bin for later baling.





The ferrous metal cans are then lifted by a separate series of rotating magnets and drop into a separate bin for later baling.



The commingled stream now consists of plastics, and it passes through a series of “Green Machine” optical scanners which use DOD technology to sort plastics by type. An “air knife” pops selected plastics onto a conveyor where they go into separate bins.



**#2 plastic,
natural color
(milk jugs)**





Material in each of the aforementioned bins is sent to be baled as the bin fills to capacity.



Baled materials are shipped to national and international markets.



A large stack of compressed cardboard boxes, likely in a warehouse or recycling facility. The boxes are tightly packed and secured with metal bands. The background shows a concrete floor and a wall with a grid pattern.

About half of all of the paper and cardboard is sold overseas—Taiwan is currently the biggest buyer—and half is sold domestically.

This is to ensure adequate domestic markets, should overseas markets change or fail suddenly.



**Old curbside recycling bins
baled for recycling.**

**Newspapers in cardboard bales
are acceptable, but not vice versa.**

Approximately 90% of the other recyclable materials (i.e. plastic, metal, glass, etc.) are sold domestically.



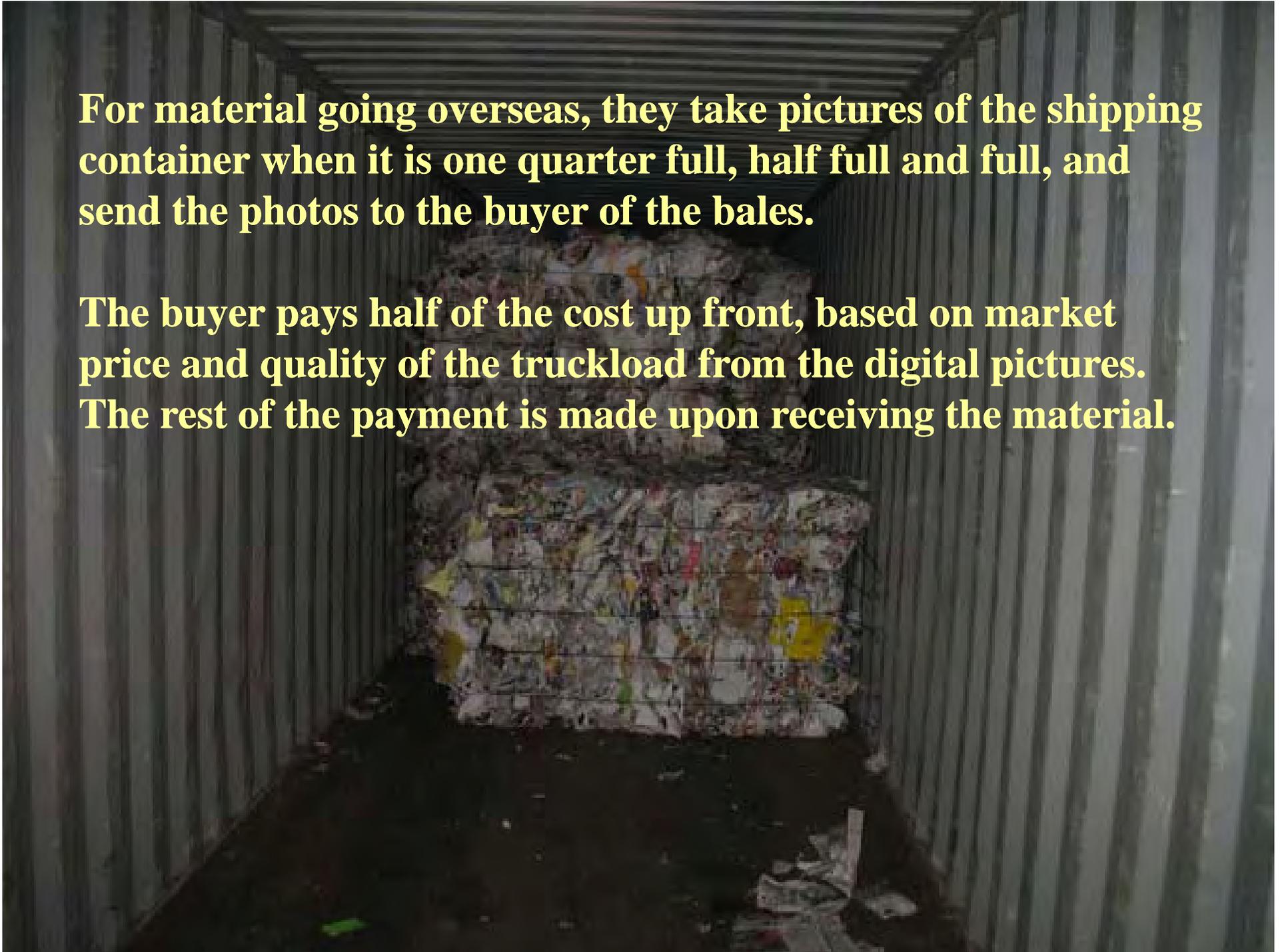






For material going overseas, they take pictures of the shipping container when it is one quarter full, half full and full, and send the photos to the buyer of the bales.

The buyer pays half of the cost up front, based on market price and quality of the truckload from the digital pictures. The rest of the payment is made upon receiving the material.



County Waste reports that their “residual” (contamination) rate of outgoing material is under 3%, compared to a 9% national average for single stream facilities.

Plastic lids and caps are allowed. The only plastics not accepted are plastic bags and film (though they plan to add plastic film recycling in the future to deal with the film they are receiving anyway), polystyrene (Styrofoam) of any kind, hazardous or contaminated plastics, and biodegradable or compostable plastics.

They will also accept most metals (except hazardous or contaminated objects, dangerous items like sharp saw blades, or wires that can tangle the machinery), all paper/cardboard (except heavily waxed boxes), and all glass food containers.

This slideshow was developed by Dan Rain from information provided by County Waste during tours of their Albany single stream facility on 10/22/10 and 2/10/11.

For more info. on recycling in the Town of Bethlehem:

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*For info. on the County Waste Facility:
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