



## Natural Upcycling Analyzes De-Packaging Equipment for Waste Food

Natural Upcycling is a food scrap and organics collection company currently operating in Linwood, New York and is co-located with the Noblehurst Green Energy Anaerobic Digester. Natural Upcycling collects pre and post-consumer food waste and packaged food waste from businesses and institutions which is used as feedstock in the anaerobic digester or as compost.

### CHALLENGE

Food waste comes in many forms: liquids, solids, by-products, out-of-spec products, and everything in between. Regardless of its form, it can be a valuable source of energy when used in an anaerobic digester. However, the quantity, size and type of packaged food that Natural Upcycling can accept is limited by their current de-packaging equipment and process.

For liquids, Natural Upcycling uses a screw compactor de-packaging system which can process plastic containers up to a half gallon in size and thin aluminum packaging. This screw compactor is typically supported by one full-time employee and 5-6 part-time employees. Additionally, another crew of part-time employees at a separate site manually de-packs solid foods. However, this method is fairly expensive and the throughput is low, therefore, a significant amount of potential packaged organics feedstock is declined and turned away due to limitations.



Compressed HDPE plastic packaging being dispensed from screw compactor

### SOLUTION

The New York State Pollution Prevention Institute (NYSP2I) performed a comparative analysis for Natural Upcycling of their current screw compactor liquids de-packaging equipment and a potential new de-packager, the Scott Equipment Turbo Separator T-30. The results from the analysis will help to provide guidance to Natural Upcycling to enable a more informed purchasing decision regarding de-packaging equipment, including the various Scott Equipment Turbo Separator configuration choices.

### RESULTS

Based upon the work performed by NYSP2I the Scott Turbo Separator Model T-30 was found to process three high-volume packaged liquids at a rate of 1.8 to 3.0 times greater than the current throughput, while at the same time using less per unit labor. This piece of equipment processed larger sized containers and additional materials, such as thick walled tin/steel vegetable cans, as compared to the current Screw Compactor machine.

### CHALLENGE

- Natural Upcycling wanted a comparative analysis between their current de-packaging equipment and the Scott Equipment Turbo Separator Model T-30 de-packager

### SOLUTION

- NYSP2I performed a comparative analysis and provided guidance to enable a more informed purchasing decision regarding de-packaging equipment

### RESULTS

- The Scott Turbo Separator Model T-30 was found to process three high-volume packaged liquids at a rate of 1.8 to 3.0 times greater than the current throughput
- The Scott Turbo Separator Model T-30 processed larger sized containers and additional materials compared to the current Screw Compactor machine used by Natural Upcycling



If Natural Upcycling is to move forward, they should consider process modifications to improve efficiency: how to compact and temporarily store the used packaging and how to minimize handling during transport of the recovered organics to the anaerobic digester.

This increased capability and capacity could lead Natural Upcycling to expanded market share and growth in revenue and jobs that come with such an expansion. In addition, the equipment would allow the diversion of increased amounts of organic waste from landfills, benefiting communities across New York State.

## NYSP2I PARTNERS

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