FOREST PRODUCTS
Project Fact Sheet

REMOVAL OF LIGHT AND STICKY CONTAMINANTS FROM WASTE PAPER

BENEFITS

- Generates significant energy savings
- Increases use of waste paper as feedstock
- Removes tons of material from the solid waste stream each year
- Raises the quality of paper products
- Decreases production costs for industry
- Improves the competitiveness of U.S. technology and paper products

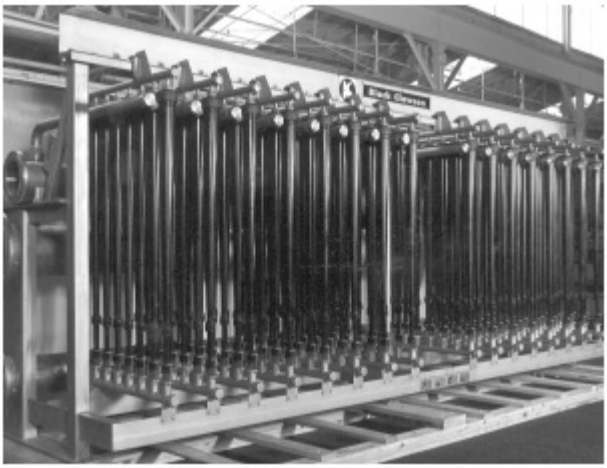
APPLICATIONS

The four units that were developed during this R&D were designed for installation as retrofits on existing plant systems. After the technology was successfully tested in pilot plants, it was introduced quickly into the marketplace.

Removal of "Stickies," Wax, and Other Contaminants Will Turn High-Quality Waste Paper into Feedstock

Certain types of waste paper are virtually unusable because of light contaminants associated with them. Polyethylene-coated papers, wax-coated boxes, post-consumer magazine paper, certain grades of brown paper, and office paper all contain valuable fibers that could be recycled if certain contaminants were removed. Because present-day techniques for sorting and treating contaminated waste paper are inadequate, researchers investigated new methods for removing "stickies," wax, polyethylene, binding glue, and other products so that industry can make increased use of these waste paper fractions.

Replacement of multiple treatment steps with a once-through process is expected to generate energy savings of as much as 50 percent. The use of recycled material as high-quality feedstock will reduce the paper industry's costs significantly and improve its competitiveness in world markets.



OFFICE OF INDUSTRIAL TECHNOLOGIES
ENERGY EFFICIENCY AND RENEWABLE ENERGY • U.S. DEPARTMENT OF ENERGY

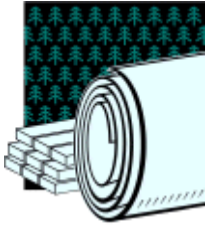
PROJECT DESCRIPTION

Goal: To develop new equipment and processes to improve the removal of certain light contaminants from waste paper, in order to increase the recycling of paper and reuse of secondary fibers as valuable feedstock.

Researchers built onto prototypes of technologies already developed at Black Clawson. Four promising technologies were investigated: (1) An improved kneading or "liberation" unit that will better detach and separate impurities from the waste paper fibers; (2) an improved vortex separation device that allows for greater unit capacity, longer treatment times, and more consistent operation; (3) a new high-air-rate flotation device that can operate at higher consistency and flotate larger particles than conventional flotation devices; and (4) high-turbulence or displacement belt-washing units that can efficiently and effectively remove wax and other colloidal contaminants. These processes can be used in various sequences and combinations, depending on the type of feedstock available and the quality of the product sought.

PROGRESS & MILESTONES

- This project was successfully completed and the technology is commercially available.



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June 1999