VAN DYK recycling solutions
the right sort

OCTOBER 2017

VAN DYK NEWS

Presenting the newest technologies for cost-efficient recycling.

MEXICO LEAPFROG'S THE US IN PROCESSING TECHNOLOGY

Puebla, Mexico (located just 1.5 hours south of Mexico City) is now home to what is likely the most advanced municipal solid waste (MSW) processing plant in North America.

This unique plant takes in MSW from the surrounding area and creates three streams: organics, refuse-derived fuel (RDF) and recyclables.

The revolutionary system design was developed by the Van Dyk engineering team in close collaboration with its partners at Bollegraaf and TOMRA. It has a rated production capacity of 30 to 50 tons per hour.

"This plant is the first of its kind in Mexico, and we are very proud of it," says Pablo León, principal at Groupo CIP. "We understand that this plant is not only unique to Mexico but unique to all of North America."

The advanced processing system, designed and built expressly for Groupo CIP, which owns and operates the facility, integrates trommels, light/heavy separation, ellipticals, TOMRA optical sorters, magnets and eddy current separators. Inbound material passes through a size-reduction phase to open the bags.

The system yields 30 percent organics, 30 percent RDF and 13 percent recyclables. Plastics, aluminum, ferrous and paper comprise the recyclables stream. Just 25 to 30 percent post processing residuals remain.

All recyclables are baled on-site for sale into their respective commodity markets.

The RDF stream is shredded to 1.5 inch minus and sold to create a significant positive cash flow for the operator.

Van Dyk worked closely with Groupo CIP to develop a technology-driven solution for its market needs. Groupo CIP had opportunities in RDF, but also in organics and recyclables. By leveraging its extensive plant design experience and that of its partners, Van Dyk was able to deliver another breakthrough plant.

"We originally tried manual separation of MSW," León says. "It did not work. Material came by a foot thick, and it was impossible to sort."

He continues, "The current system is automatic and gives us high recovery of recyclables and organics, but also makes 30 percent of our input into sellable 40-millimeter RDF with no chloride content. We were skeptical, but Van Dyk said they could do it, and they did. It's better than we ever thought possible."

PRODUCTION **CAPACITY**

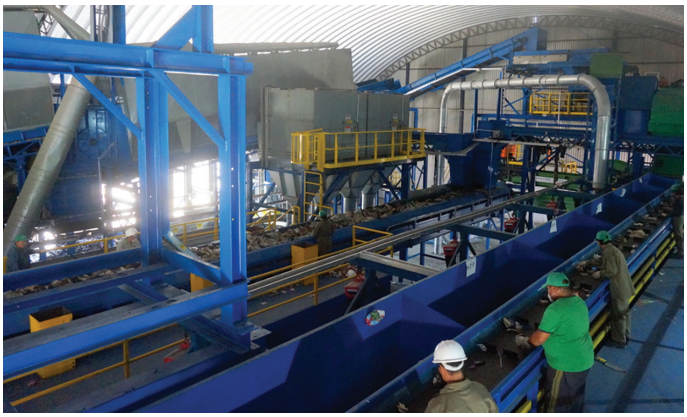
30-50

TONS PER HOUR

SYSTEM RECOVERY:

30%	ORGANICS
30%	RDF
13%	RECYCLABLES

> WE UNDERSTAND THAT THIS PLANT IS NOT ONLY UNIQUE TO MEXICO BUT **UNIQUE TO ALL OF NORTH AMERICA.**



THE NEW WAY TO SEPARATE SINGLE STREAM

When SANCO set out to build a new MRF at its Escondido, CA, facility, it wanted a state-of-the-art solution. What SANCO got was more than it might have imagined.

The SANCO facility is part of the network of facilities run by the Burrtec, EDCO and SANCO family of companies started by industry pioneer Ed Burr. The facility processes single-stream material through a system designed for 50 tons per hour of production.

In its design and operation, this system broke away from traditional single-stream plants. There is no 45-degree screen immediately following the presort area. Instead, infeed material passes over a horizontal anti-wrapping screen (AWS).

Once the AWS is traversed, the smaller fraction heads to four 9-feet wide TOMRA optical sorters that fire on all of the paper in the stream. This creates an exceptionally clean mixed paper stream that eliminates the need for Q.C. pickers on the mixed paper line.

The resulting fiber-free stream heads to an elliptical separator, where 2D and 3D materials are separated. The 3D material then passes through a magnet, an eddy current and then another bank of TOMRA optical sorters to produce clean plastic and metal streams.

The material that passes over the AWS enjoys one further mechanical separation step to liberate any large containers caught in the flow. Otherwise, it's a clean stream of residential fiber.

This facility truly represents a total change in the approach to single-stream processing. The fiber stream is tremendously clean, as are the other materials, because the smaller material is eliminated from the flow early on and then the paper is positively separated by TOMRA opticals.

While the system is more capital intensive at the outset, there is zero wrapping and ongoing maintenance and operating expenses are dramatically reduced. The system also creates very clean paper and reduces pickers by some 50 percent.

SANCO: The new way of processing single stream (at 50 tph)

COMMITTED TO SUPPORT

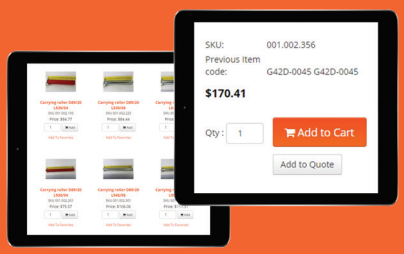
VAN DYK direct

Since 1984, Van Dyk Recycling Solutions has built a tremendous installation base of Bollegraaf and Lubo systems: some 2,400 installations in North America. Ensuring that all those operations are supported is an obligation the company takes seriously.

Van Dyk maintains a 200,000-square-foot facility containing an automated warehouse with $18 million in spare parts. "It provides peace of mind for our customers," says Pieter van Dijk, company president. "They know that no matter what part they may need, no matter how big or small, that we will have it and that we can get it to them in 24 hours."

Earlier in 2017, the company unveiled an industry first: a 24-hours-per-day, seven-days-per-week online parts ordering portal. Called Van Dyk Direct, it is the "Amazon.com" of the recycling industry. It allows users to order parts directly and check the shipping status of any order.

> THE **AMAZON.COM** OF THE RECYCLING INDUSTRY



Customers can view Van Dyk's entire parts inventory—over 13,000 SKUs. Every single listing is complete with detailed photographs of the part to increase accuracy of ordering. Users also can access detailed parts lists for any Van Dyk-supplied machines they operate. This allows easy look up of part numbers and other important information. Van Dyk's same-day fulfillment rate of orders placed by 5 p.m. is more than 99 percent.

WINNER!
NWRA 2017
BEST RECYCLING
FACILITY OF THE
YEAR AWARD

Pieter van Dijk shakes on it with Andrea Rodríguez-Piñero

FCC CHOOSES VAN DYK FOR DALLAS PLANT

In January 2017, FCC Environmental began processing single-stream material collected in the Dallas program. FCC was not a newcomer to the business. With roots reaching back to the early 1900s, the company won its first municipal contract with the city of Barcelona, Spain, in 1915. Today, FCC operates some 225 processing facilities in 35 countries.

Winning the Dallas contract, nonetheless, was not easy. It also required FCC to build its first North American processing facility.

"The city of Dallas released four years of waste characterization," shares Andrea Rodríguez-Piñero, technical director for FCC. "We knew what we were getting into," she continues.

FCC awarded the system design-and-build contract to Van Dyk Recycling Solutions. "The equipment has been running very well," says Rodríguez-Piñero. "From the secondary presort to the nonwrapping screens and the glass cleanup system, we are very happy with the system's performance."

Material collected in the Dallas program has two defining features. Glass was kept in the program, so the system must deal with it. Because of legacy collection programs, the volume of film bags runs at 4 to 5 percent—twice the national average.

Glass is screened out early and cleaned up using a multistage glass cleanup system. That process generates four streams, with the heavies being a clean, sellable glass stream. "Our glass has been very clean and is a positive revenue stream for us," says Rodríguez-Piñero.

What's proven to be a true superstar component of the system is the Lubo Non-Wrapping 440 screen. This nonwrapping screen, placed immediately following the second presort station, is hit with those incoming film bags but experiences very little wrapping. "We've had no downtime due to wrapping. In fact, our team spends maybe 10-15 minutes per shift inspecting and cleaning the screens," shares Rodríguez-Piñero.

The plant also features two independent air systems. One is dedicated to capturing and removing dust in the plant's air. The second features manual hoods placed in ergonomic locations for sorters to remove film bags. This allows nearly every sorter the opportunity to remove bags. All the bags are transported for storage and baling.

Once material has passed through the three single-stream screens, it heads to the unique TOMRA AUTOSORT fiber recovery unit to recover any remaining fiber in the container stream, especially the high concentration of 3D chipboard and boxboard arising from the 'Amazon effect'.

The AUTOSORT is a powerful tool for the facility. It is the only fiber clean up device that recognizes the difference between fiber and film and can choose to eject one and not the other. It also recognizes light sheet (2D) and boxboard and cardboard. All ejected material is sent to the fiber line.

The container stream then passes through three TOMRA sorters, an eddy current and a magnet to deliver clean aluminum, ferrous, PET, color sorted HDPE and 3-7 plastics. The remaining residue is circulated via a "recovery track" back to the TOMRA AUTOSORT to perform a final "last chance" recovery. This allows the 35 -tph sorting system to maintain more than 99 percent recovery of all recyclables.

The system is completed with a fully automatic, redundant, baling system featuring a high-speed Bollegraaf HBC120S baler. The system features a user-friendly SCADA interface, an industrial e-pad mobile remote control unit to allow the supervisor to make changes on the fly and monitor bunker storage.

"Since opening with the Dallas contract, we have added several surrounding cities, and we anticipate adding more. The system's design allows us room to grow and process more volume. Today we are processing at the rated capacity, and the system is doing an optimal job on each ton. We're very pleased," says Rodríguez-Piñero.

"WHAT'S PROVEN TO BE A TRUE SUPERSTAR COMPONENT OF THE SYSTEM IS THE LUBO NON-WRAPPING 440 SCREEN. THIS NONWRAPPING SCREEN, PLACED IMMEDIATELY FOLLOWING THE SECOND PRESORT STATION, IS HIT WITH THOSE INCOMING FILM BAGS BUT EXPERIENCES VERY LITTLE WRAPPING.

BOLLEGRAAF BALER REBUILD FACILITY

Van Dyk Recycling Solutions operates a baler rebuild shop with the capacity to rebuild up to seven balers simultaneously. Because Bollegraaf balers are built on stout frames that offer exceptionally long-life, refurbished machines are a great investment.

Certified preowned machines are available only from Van Dyk. They are fully inspected by factory-trained technicians and updated with OEM (original equipment manufacturer) parts. Each unit is fully tested in the Norwalk facility, providing total confidence to customers.

VAN DYK TEST CENTER

By the end of 2017, Van Dyk will open North America's first fully integrated test facility to allow processors to see how different optical and mechanical sorting equipment and configurations will separate their materials.

The 30,000-square-foot facility will feature Bollegraaf, Lubo and TOMRA equipment, including a TOMRA near-infrared unit, an X-ray unit, a laser unit and a very accurate metal detection (Finder) unit. The looped system allows infinite runs of different configurations to provide valuable insight for system design.

VAN DYK UNIVERSITY

Overlooking the test center is the new training facility. This state-of-the-art 20,000-square-foot space allows Van Dyk to offer both classroom education and hands-on instruction.

The education center provides classes for Bollegraaf, Lubo and TOMRA equipment, as well as operational MRF training. To learn more about Van Dyk's training classes, visit vdrs.com/training.

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