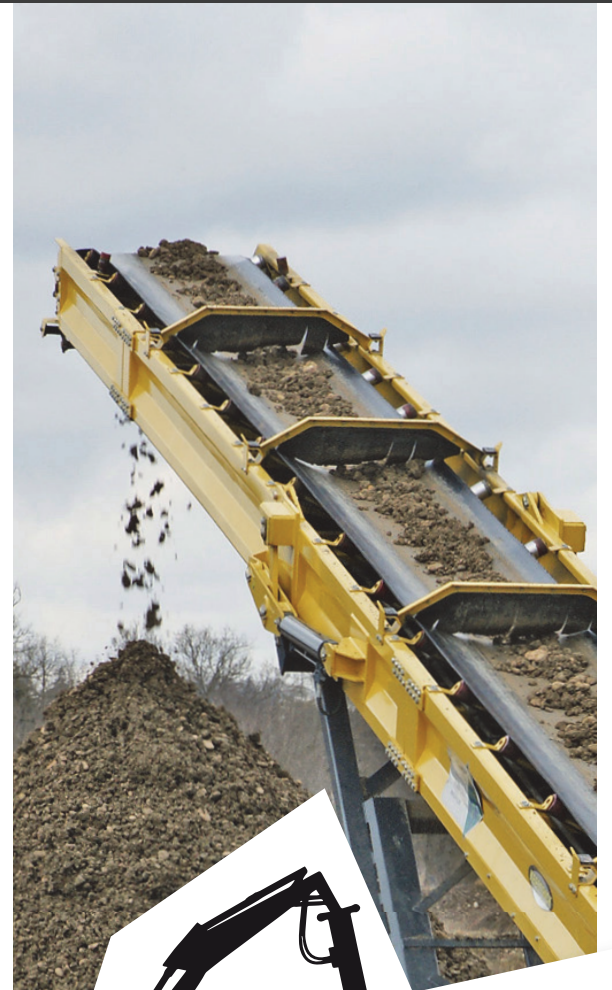
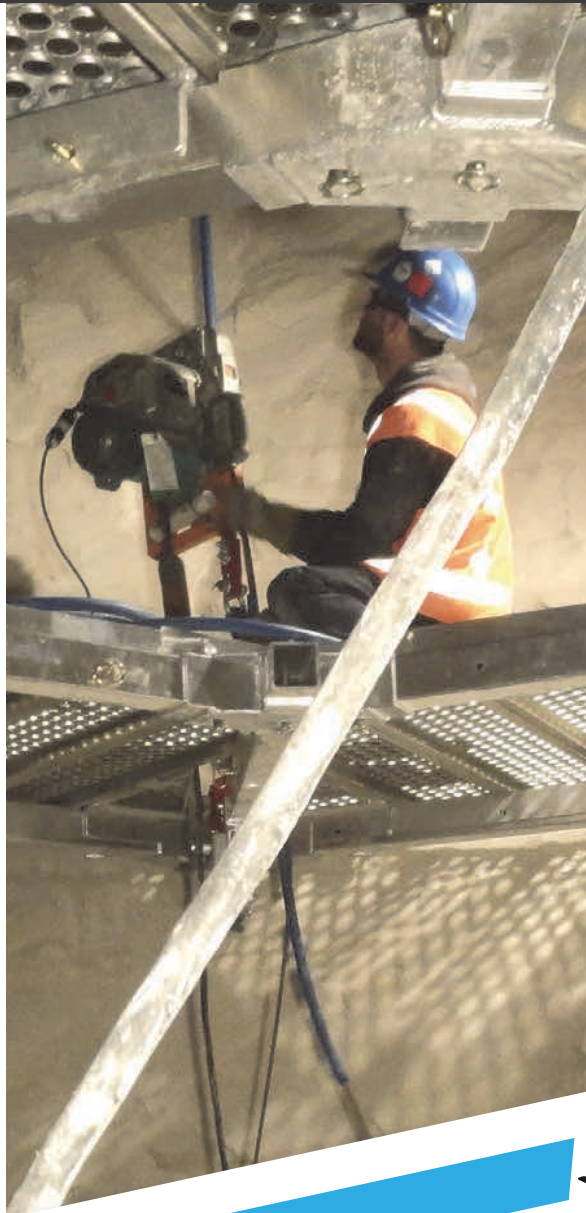


OCTOBER 2019

ROCKROADRECYCLE.COM



**GAME CHANGER FOR  
WASHING PLANT WITH  
DUO, NRS & TEREX**

**CUSTOM SOLUTION FOR  
ANNUAL LIME KILN  
MAINTENANCE**

**TRACKED CONVEYING  
SYSTEMS: GOING STRAIGHT  
TO THE MATERIAL**



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- Washing
- Dust control
- Magnets



Game changer for washing plant with Duo, NRS and Terex open day

by RockRoadRecycle staff writer

On the cover: Duo is a market leading company that provides the aggregate, recycling and material handling industries with comprehensive packages of complete processing solutions.

Photo courtesy of Terex and NRS Woodcote

PG 3

**Frederick W. Lee**  
Publisher, President

**Bruce Button** VP, General Manager  
bbutton@leepub.com

**Jessica Mackay** Production Coordinator  
ext. 137 jmackay@leepub.com

**Colleen Suo** Editor  
ext. 145 csuo@leepub.com

**Gabbie Albrecht** Social Media Coordinator  
ext. 163 galbrecht@leepub.com

**Ad Sales:** 1-800-218-5586

**Matt Stanley** Sales Manager  
ext. 124 mstanley@leepub.com

**Peggy Patrel** Classified Ad Manager  
ext. 111 classified@leepub.com

**Tina Krieger**  
ext. 108 tkrieger@leepub.com

**Scott Duffy**  
802-484-7240 srduffy@together.net

**Andy Haman**  
ext. 160 ahaman@leepub.com

**Fred Mang**  
ext. 161 fmang@leepub.com

**Jessica Waite**  
ext. 116 jwaite@leepub.com

**Christopher Nyce**  
267-261-4235 cnyce@leepub.com

**Christine Attle**  
315-317-0905 christine.leepub@gmail.com

**Patrick Burk**  
585-343-9721 burk.patrick1956@gmail.com

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Lee Newspapers, Inc.  
PO Box 121 / 6113 St. Hwy. 5  
Palatine Bridge, NY 13248  
PH 518•673•3237

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Prairie Dawg Practical

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8

Cement manufacturer takes control of fugitive material



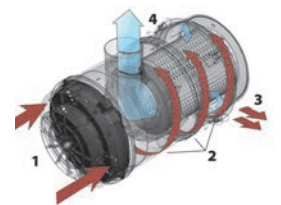
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Crusher operators get clean air, HVAC systems breathe sigh of relief



Associations and affiliations:



## Cement manufacturer takes control of fugitive material



To deliver positive dust containment, each transfer point was outfitted with Martin® ApronSeal™ Skirting, a dual design with two sealing surfaces.

Photos courtesy of Martin Engineering

A global producer of cement, ready-mixed concrete, aggregates and related products has completed a significant upgrade to its bulk material handling conveyors, helping the company eliminate waste and reduce maintenance while minimizing potential risks from airborne dust and fugitive material build-up. By avoiding accumulations that required cleanup, the company is also reducing the need for maintenance personnel to work in close proximity to fast-moving conveyors, helping further diminish the chance of accident or injury.

Grupo Cementos de Chihuahua (GCC) began manufacturing operations in 1943, with a capacity of just 60,000 metric tons. Expanding gradually according to a clear strategic vision, the firm has developed innovative processes and technologies that contribute to dynamic growth while fostering an environmentally-responsible, community-oriented culture.

Like most cement manufacturing sites, GCC Dakota employs an extensive conveyor system to handle raw materials and move finished product. In keeping with its long-range plans to employ industry best practices for bulk handling and fugitive material control in its plants, company officials conducted an extensive assessment of the conveyors. It was determined that significant upgrades could be made on conveyor transfer points to reduce spillage and dust emissions, and they contacted Martin Engineering for a proposal.

“Virtually any time bulk material is moved, especially in large quantities or at high speeds, the potential exists to create and release dust,” explained Martin Engineering Product Engineer Dan Marshall. “Dust accumulation affects both safety and productivity, so it’s really more than just a housekeeping issue. Complicating the situation is the fact that bulk handling systems frequently must accommodate changing weather and material conditions, making

dust management an even bigger challenge.”

### Scope

The upgrade involved a significant overhaul of six transfer points on four conveyors which were originally constructed in the late 1970s. All belts are 24 in (61 cm) wide, and range in length from 40 ft (12.2 m) to 110 ft (33.5 m). During normal operation, they move 200 - 250 tons/hour of clinker

from the storage building and carry it to the bins feeding the finish mills.

“Most of the material handling system at this plant was fairly standard issue for its time, but some of the components were nearing the end of their useful life,” commented GCC Maintenance Manager Ralph Denoski. “We were also aware that significant advancements had been made in some areas of bulk handling and we wanted to take advantage of the newest technologies.”

With a detailed proposal from Martin Engineering in hand, GCC planned the upgrade process for a scheduled shutdown. In addition to supplying the components, Martin Engineering was responsible for planning and supervision of the project, while a mechanical contracting group assisted with the installation.

### Components

Work began on all four conveyors by disconnecting the material inlet chutes from the existing skirtboard system and removing the worn rubber skirt seals, clamps, supports, skirtboard chute walls and tail boxes. Existing idlers were also removed to allow mounting of new belt support systems and troughing roll assemblies.

On each conveyor, three Martin Trac-Mount™ Idlers were installed, spaced to deliver optimum belt support. The unique idler design delivers proper belt carriage while stabilizing the belt line to improve sealing. Its



Each conveyor was fitted with a Martin® Tracker™ for the return side, to help reduce edge damage, prevent spillage and extend belt life.



*The Martin Engineering primary cleaner features a special polyurethane blend to deliver long service life.*

slim profile requires only 8 in (203 mm) of space for 6-in (152-mm) idlers, and the slide-in/slide-out frames allow service without the need to raise the belt or remove adjacent idlers.

With new idlers and troughing roll assemblies in place, each transfer point received one new impact cradle and two belt support cradles. Installed under the loading zone, Martin Impact Cradles absorb the force of falling material in a transfer point and stabilize the belt line to help prevent the escape of dust and fines. Rugged impact bars are composed of a top layer of low-friction, ultra-high molecular weight (UHMW) polymer and a lower layer of energy-absorbing styrene butadiene rubber (SBR).

Working in conjunction with the impact cradles are a pair of Martin Slider Cradles on each conveyor. Installed under the skirtboard of the transfer point, these cradles support the edges of the belt specifically to eliminate sagging. With the proper support in place, pinch points that can trap material and gouge the belts are eliminated, improving both

sealing efficiency and belt life. When the top eventually wears out, the bars can simply be flipped over to provide a second wear surface.

Sixteen-foot sections of skirt board were installed on each transfer point, with new side/center supports and covers. The new skirt board is 7 in (17.8 cm) high on two of the conveyors, and 12 in (30.5 cm) high on the other two. Each system also included internal skirt board wear liners and a new tail box assembly with sealing components.

To deliver positive containment of fugitive dust, each transfer point was outfitted with Martin ApronSeal™ Skirting, a dual design with two sealing surfaces. A primary seal is clamped to the steel skirt board to keep lumps on the belt and a secondary seal or “out-rigger” strip captures any fines or dust particles that may pass beneath the primary seal. The secondary seal lies gently on the belt and self-adjusts to maintain consistent strip-to-belt pressure, despite high-speed material movement and fluctuations in the belt’s line of travel.

Each conveyor was then fitted with a Martin Tracker™ for the return side, installed approximately 10 ft (3 m) ahead of the tail pulley. By providing immediate and continuous precision adjustment of the belts, the Tracker helps reduce edge damage, prevent spillage and extend belt life.

Finally, each belt received one Martin QC1™ Cleaner HD as a primary cleaner and one Martin SQC2S™ Cleaner. The QC #1 features a special polyurethane blend and tungsten carbide tip to deliver service life two to three times longer than conventional urethane blades. Designed to provide excellent cleaning performance immediately, avoiding any break-in period, the assembly maintains consistent tension without frequent adjustment.

### Results

The entire upgrade operation was completed in just 11 days during the scheduled outage, with crews working 12-hour days to accommodate the planned shutdown. While specific cost savings are difficult to quantify, Denoski said the difference is easily observed. “The production team responsible for that area has had nothing but positive feedback about the upgrades,” he commented. “We’re not losing product to spillage and dust, so that material can be sold instead of cleaned up off the floor. The manpower formerly spent on cleanup can now be directed to core business activities.

“Our experience with Martin Engineering has been very positive,” Denoski concluded. “The company’s greatest strengths are its knowledge of bulk material handling problems and the best solutions for addressing them. And the no-excuses guarantee gives us the confidence of knowing that it will stand behind its products.” ■

*Each transfer point received one new impact cradle and two belt support cradles.*

