

TURN BYPRODUCTS INTO PROFITS

TURN CRUSHER DUST TO SPEC SAND

The growing demand for washed aggregates in the Pennsylvania Area and utilization of crusher dust drove H&K Group, Inc to collaborate with ***Emerald Equipment Systems*** on the design of a ***sand classification and closed loop water management system***

H&K, an existing customer of Emerald Equipment Systems operate a dry crushing and screening operation at their Birdsboro Materials facility.

They decided the introduction of washing to this site would significantly improve the quality of material they were able to produce for their asphalt plants across the company.

“Our vision of this project was to cut down on the #200 particle size in our AASHTO #10 product and keep a consistent gradation. We struggled to do so with our dry application. The turnkey project supplied by Emerald has been a success from start to finish.” - H&K

H&K decided to upgrade their process to include a full sand washing plant incorporating a closed loop water and silt management system to negate the use of ponds which would have had a huge financial implication for both cleanout and labor costs.

SandMAX Compact was proven to consistently produce high quality, low moisture asphalt sand from the **AASHTO #10 ie crusher dust**. The system efficiently captured all of the saleable material which would have been otherwise lost to the pond, generating additional revenue and reducing cleanout costs.

The **WaterMAX** clarifier allows operators an efficient means of recycling up to 90% of the water used in the washing process.



Incorporating the sludge management system eliminates the need for sludge ponds by reducing the volume of sludge through high pressure filtering and dehydration in the filter press.

The stainless steel clarifier functions by dosing slurry (waste) water with a small amount of polyelectrolyte which forces the fine particles in the waste water to settle to the bottom of the deep cone tank. The clean water then overflows a weir at the edge of the tank and is stored before being re-circulated back around the washing plant. The thickened sludge is automatically discharged from the silo and pumped at high pressure to the plate filter press for filtering and dehydration. The press promotes maximum recovery of water present in the sludge, reduces the volume of silt and clays eliminates the requirement for sludge settlement ponds.



DRY STACKABLE SILT CAKE



FILTERED WATER

“The SandMAX and WaterMAX water / sludge management plant is proving very successful in the industry says Mike Tormey of EES®“This combination of equipment is proving to be a very efficient means of producing high quality washed manufactured sand, while significantly reducing the water required to feed the plant through the introduction of recycling through the Matec system. The addition of the Plate Press negates sludge ponds completely allowing significantly reducing cleanout costs for the end user “

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LEGACY SCREENINGS TO ASPHALT SAND

Legacy piles of crusher dust and the declining need for screenings pushed **Stavola** to investigate several methods of reducing the fines in their product to achieve a high consistency cleaner material for the asphalt industry. After several unsuccessful trials to remove the 200mesh, the only option was to wash the material. This led **Stavola** to partner with **Emerald Equipment** on their newest venture project at Boundbrook Quarry.

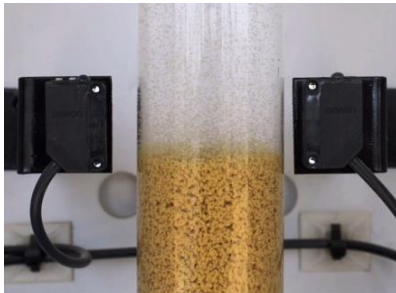
“ The turnkey solution Emerald Equipment Systems offered was the natural choice for the Boundbrook Project. Emerald’s specialized equipment exceeds our project requirements producing a consistently washed high grade material and eliminating the requirement for costly settling ponds. ” - Stavola

“The high production plant allows us to process both the legacy pile of screenings and the current #10 product from the crushing plant generating higher revenue streams and freeing up value quarry footprint area”



EES® offered an advanced wash plant offering optimized production with maximum return on investment. The washplant was designed to accept feed from the current crushing plant with the option of a supplement feed from the existing legacy pile. The raw material is rinsed and screened on a 20' x 8' dual shaft triple deck wet screen . The sand slurry is fed to a **SandMAX** BW which separates the waste material and produces a clean, low moisture high quality manufactured asphalt sand for immediate market utilization.

The **WaterMAX** water management system is equipped with a 2 stage dosing system which constantly monitors the varying silt levels in the feed material and adjusts the dosage automatically. The stainless-steel clarifier promotes rapid separation of the particles with over 90% clean water over- flowing the weirs for recycling back to the **SandMAX** sandplant.



DOSON: SLURRY SEPARATION



STACKABLE SILT CAKES

As the thickened sludge in the silo reaches optimum density, is it discharged and pumped to the plate filter press for further dehydration. Incorporating a core blow into the sludge management process produces drier cakes which are stackable and easier to handle. The closed loop system ensures zero ground water discharge anywhere in the process