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Fast One-Stop Concrete Washouts

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Fast One-Stop Concrete Washouts

■ Del Williams, Torrance, California

For ready-mixed concrete plants, any delay in washouts – whether due to truck operators driving long distances or the complexity of the process itself – can reduce productivity and profitability. After each delivery, washing out the trucks and equipment is essential to meet mix specifications, reclaim unused material, and keep equipment clean. Ideally, washouts should be fast and efficient, with all reusable material reclaimed.

The challenge is that traditional washout techniques can be time-consuming and labor-intensive, often involving multiple steps. As a solution, industry innovators have created systems that streamline the washout process. These systems can recover sand, stone, and cement for re-sale or re-use using recycled water in a closed-loop system.

The most advanced units allow a driver to complete a washout in minutes at a single onsite location without a washout pit, settling pond or presses of any sort. This keeps concrete trucks on the road making money, instead of wasting time on slow washouts.

"Altogether we are saving hundreds of thousands of dollars a year in driver's time, truck time, and trucking material using a modern washout system," says Frank Gelewski, Director of Operations at Fair Lawn, NJ based Tanis Concrete, Inc., which services major highways, airports, and other state and municipal work throughout Northern New Jersey with three state-of-the-art concrete plants. "Our water usage is also way down because we are reusing it. We are not wasting water to wash out the trucks only to have it evaporate or hydrate into the ground."

Expedited reclamation process can eliminate the need for pits, ponds, and multiple handling while providing total recovery of sand, aggregate, and cement.

Costly, Inefficient Waste Material Handling

In the case of Tanis Concrete, the original process of getting washout water was slow. A concrete truck driver would take the vehicle to the plant water supply to fill tanks with water used to rinse out its mixing barrels. The operator would then drive to a washout pit and discharge the water and leftover materials into the pit.

"About every three months we had to excavate the pit [of washout material], put it in a stockpile, and let it dry out. The material was mixed with clays, fines, stone, and hydrated cement. It was basically a useless product, so we had to pay to have it hauled away to a concrete recycling facility about 12 miles away. At the time, it cost about $200 a load to dump the material, not counting the truck rental; today, it would cost about $500 a load," says Gelewski.

According to Gelewski, the cost of water was also an issue. "We were using metered city water and had to pay for any wasted water. We were offering about 25 different concrete mixes, so the wasted water at the end of each quarter [when we paid our water bill] was excessive."

In addition, he notes that space was constrained with the onsite pit and stockpiles since Tanis Concrete operated on a one-and-a-half-acre site.

Faster, More Efficient Washout

Rather than have concrete truck operators waste time driving to remote locations for washout, the machine is conveniently located at the plant. Concrete truck operators simply drive up, dump, and drive away. This one-stop approach allows for faster washing out of concrete trucks, which reduces downtime and increases productivity. The cumulative time savings across multiple drivers in an eight-hour workday can be substantial.

As an example, the Redi-Wash™ Washout System by Jadair does not require settling ponds, washout pits, or filter presses

With the high-speed washouts, the concrete plant can run fewer trucks with less labor and material handling while still delivering the same amount of material or more.

With the sophisticated systems available today, plants can now complete washout and reclaim any leftover concrete materials faster and more profitably than ever before.

since it has a built-in water clarification capability, unlike traditional reclamation-only units.

Port Washington, WI-based Jadair International, Inc. is a provider of various solutions for the concrete industry including concrete reclaimers and water clarifiers. The company manufactures equipment for mobile and permanent installations in many sizes and configurations, and works with ready-mixed, precast, and other concrete producers.

The washout system provides concrete reclamation and water handling within one self-contained, closed-loop unit. The machine separates and discharges the sand and stone, which enables complete recovery of these items. Sand is not washed out of the aggregate. Spent cement is discharged separately and a loader can handle this cement easily as a dry, clay-like product. The water is directed into a separate area of the machine where it is clarified and reused for washouts.

To perform a washout, the driver simply backs up the concrete truck to the machine. The machine adds recycled water to the truck's rotating cylinder, which mixes the water with any remaining concrete for a couple of minutes. The truck then dumps the washout water and concrete into the machine, which processes and reclaims it.

After searching for a solution, Tanis Concrete installed a three-station, Jadair Redi-Wash Washout System that accommodates three trucks at the same time over a decade ago. The company space efficiently located the system in their onsite truck garage by converting a service bay.

"The water is right there at the washout system. There is no running back and forth from one site to another, so we are saving a significant amount of time compared to the previous washout pit," says Gelewski.

One unique aspect of this approach is that there is no need to "dribble" or "slowly meter" the washout material into the machine. The system is designed to take in 8 yds³ in four minutes or less.

The one-stop approach saves money by eliminating long-distance drives and slow process times. With high-speed washouts, the concrete plant can run fewer trucks with less labor and material handling while still delivering the same amount of material or more.

"Now, we no longer need to have a washout pit or a pile of excess material on the side that we have to pay to truck out," says Gelewski. "The system separates the clays and cements from the sand and gravel. We could have screened out the three-quarter, three-eighths inch stone from the sand and reintroduced it into our mixes, but choose to sell the material," says Gelewski.

Since the machine recycles the water, this approach eliminates the cost of replacing makeup water in ponds and pits, which lose water constantly due to seepage and evaporation. There is also no pond sludge to clean up and no pit to excavate and maintain.

"Our washout system reuses the water, so our water usage costs went way down," says Gelewski. He notes that this capability also helps to prepare the company for a future of potentially greater regulatory scrutiny of water use. ■

FURTHER INFORMATION

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