

Monarch Mountain Enjoys Reliability of New EIW Wash Plant

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Francisco Ramirez
Plant Manager

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Monarch Mountain Minerals and Aggregates is an aggregate producer with locations across the United States. As the sand and gravel division of Quikrete, Monarch Mountain produces all the materials needed for their packaged concrete products.

Background

Monarch Mountain required an aggregate washing plant for their greenfield location in Aquilla, Texas, where they would be making a primary concrete sand, along with mason sand, torpedo sand and 1” rock.

They needed equipment that could handle a fluctuating feed in terms of swings in the gradation, as well as a solution for removing the clay from their gravel product.

In addition to the production requirements, Monarch Mountain also had a few older pieces of equipment that they wanted to incorporate into the new plant, so any design would have to include those as well.

Approach

Monarch Mountain reached out to Charles Romero, the manager of Excel Machinery's New Braunfels, Texas, location, to help them design their new plant.

“They sent us the specs on the material,” Romero explained. “We went through AggFlows and everything and figured out the best equipment for the plant. Obviously, the best equipment is Eagle, so we decided to do as much Eagle as we could.”

An Eagle Iron Works dealer since 1994, Excel designed the plant with a 12' x 48', three-cell EIW Classifying Tank to handle the bellies and peaks in Monarch Mountain's feed deposit. All the sand is processed through the tank, which features 11 stations. The larger particles of sand settle in the first few stations, with progressively smaller particles settling in the successive stations along the length of the tank. Valves in each station release the material into collecting-blending flumes, where the particles are combined with sand from the other stations in various percentages to create the desired specification for each of Monarch Mountain's products.

On the gravel side, Excel added an EIW Log Washer to scrub the dirty rock clean of the clay. Rotating shafts equipped with massive, corrugated paddles help to agitate the material and facilitate rock-on-rock scrubbing to break down the clay and liberate it from the sound rock.

The Log Washer selected for the Aquilla site was unique in several ways. First, the amount of rock that the Log Washer would be required to process was too great for EIW's standard machine, so a 48" Log Washer was chosen to handle the higher capacity.

Second, the Log Washer features a 300 horsepower motor, which increased the throughput by 100 tons per hour.

Finally, the Log Washer is unique in that it features a spiral paddle shaft arrangement instead of the traditional straight paddle arrangement. A spiral arrangement moves the material faster without increasing the shaft speed, allowing for a higher throughput with less horsepower.

Another unique feature regarding the Log Washer was in the way Excel designed the structure to accommodate adjustments in the orientation of the machine if the feed changes. Adjusting the degree of incline of the Log Washer can impact the cleanliness of the final product. If the feed becomes dirtier or less dirty, the Log Washer can be inclined or declined to increase or decrease the retention time, which is the amount of time the rock is subject to the scrubbing.

Impact

Since startup, Monarch Mountain has been pleased with the performance of the EIW equipment in their wash plant and is happy with the material that comes off the end.

"In my opinion, Eagle is some of the best equipment I have gotten to work with," said Monarch Mountain Plant Manager Francisco Ramirez. "It's kind of like the Cadillac of sand washing materials, for me. It's pretty good. It runs to its fullest potential all the time, and you know you can count on it, so I'm pretty happy with it."

Ramirez said his favorite thing about the EIW equipment is the reliability.

"It just lasts a lot longer than other pieces of equipment we've been having, so it stands out quite a bit," he said. "You can count on it to push all the material you need through it throughout the day. Production is a big thing in the aggregate industry, so if you can count on the equipment, anybody will like it."

Romero elaborated on the longevity of EIW equipment, saying, "The thing about Eagle is it's locomotive strong. It's bulletproof. It's non-destructible."

"Everybody copies Eagle because it's the best," Romero continued. "It's built well. They're always there for you. They know what they're doing, they've got great people, what else can you say. They have the great technology, and they're getting better."

Featured Equipment



EIW Classifying Tank



EIW Log Washer