

case study

LAKOS Protects Coal Prep Plant Intake Water from Zebra Mussels, Sand and Silt

JPX Separator and ISF Self Cleaning Intake Screen Provide Necessary Filtration for Creek Water

- Application:** JPX Separator and ISF Pump Intake Screen Protecting Coal Preparation Plant Wash Down Water
- Solids:** Sand, Silt, Creek Debris, Zebra Mussels
- Liquid:** Creek Water

Problem: Water that is used for the wash down process in a coal preparation plant is pulled from a small creek. The water source creates two difficulties in the plant. The first issue is sand, silt, and other creek debris get pulled into the water system, especially during periods of large weather events. The second issue is zebra mussels get into the piping system and grow into masses that reduce flow and are difficult to remove.

Solution: Initially, the coal preparation plant installed a LAKOS ISF Self-Cleaning Pump Intake Screen with 30 mesh to keep out creek debris and mussels. While this reduced larger solids intake in the water and kept developed zebra mussels out of the system, sand, silt and zebra mussel larvae were able to get past the screen.

LAKOS and the local distributor worked with the coal preparation plant to more fully protect the plant’s assets like pumps, nozzles and water lines throughout the facilities with a LAKOS centrifugal separator.

A custom model JPX-0650-L/FLG/EC/NS separator was designed specifically for this application. The design included using a special, non-toxic, environmentally safe interior coating that did not allow the zebra mussels to attach themselves to the separator.

Because zebra mussels will attach to hard surfaces like metal and collect in areas of low velocity, LAKOS recommended the plant run



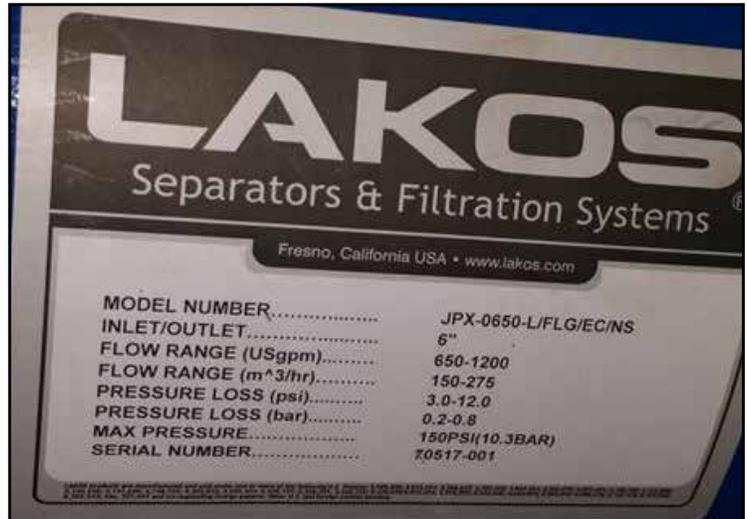
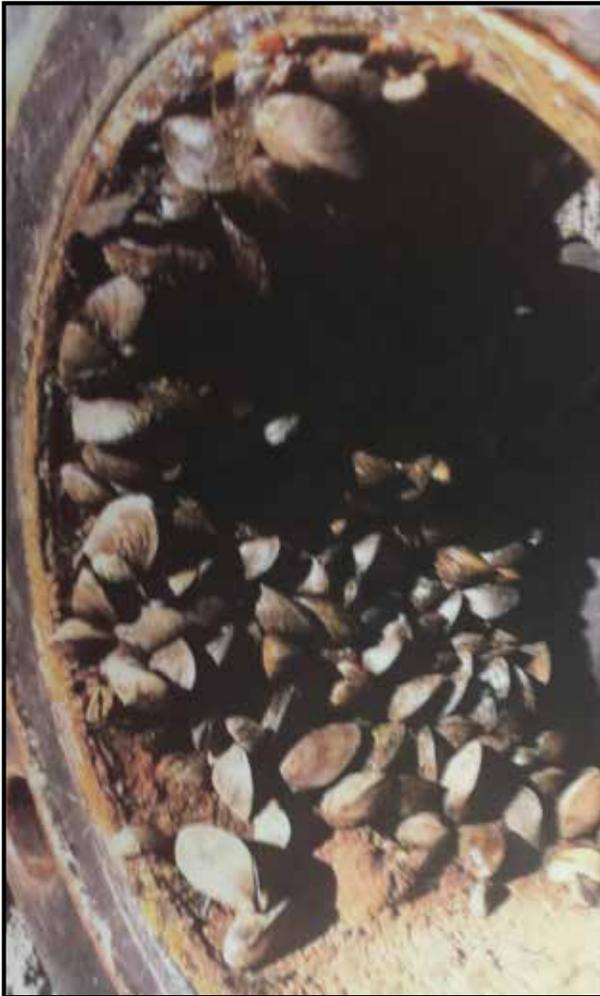
JPX-0650-L/FLG/EC/NS separator was designed specifically for this application.

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their separator with continuous purge to ensure mussels can't build up inside the collection chamber of the separator by attaching to each other. LAKOS also recommended using a pure gum rubber manual pinch valve for the purge. The pinch valve rubber liner is difficult for zebra mussels to attach to.

Results: After a year in service, the plant noted zero zebra mussel build up in their water lines during their summer outage inspection.

It was also noted that during large weather events the pinch valve need to be opened an additional ½ to 1 whole turn to evacuate all of the solids the separator spins out during a shift. The plant noted that the source water contaminants are much higher during large weather events and the separator does a great job removing these solids.



Before installation of the LAKOS JPX Separator, zebra mussels, left, clogged up the intake at the coal preparation plant.



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