



Headworks' Inc. MS® Bar Screen – Once Again Proves Superior to Our Competition's Step Screen

Background

Portland Water District's East End Wastewater Treatment Facility in Portland, Maine, is the largest wastewater treatment facility in the Portland Metropolitan area. It serves a population of 60,000 and can handle a peak flow of 80 million gallons a day.

Prior to 2008, Portland Water District had been using step screens for seven years which had been creating maintenance and performance issues. Additionally, these screens were affecting downstream processes. The odor control system, for example, relied on an air intake via the screenings channel. In winter, the screenings falling back into the channel from the step screen would form a hardened "log" and block the screen face, thus affecting the intake to the odor system. The "screenings mat" philosophy used by step screens hindered air intake even in the summer. The operators needed a screen with which would actually thoroughly clean the screenfield so that the air intake would not be blocked rather than depend on a "screenings mat" to form before the step screen could effectively do its job.

QUALITY THAT NEVER QUILTS™



Customer: Portland Water District
Industry: Municipal

KEY FACTS

One MS® Bar Screens in 2010

- **Max. Specific Flow:** 1.75 m³/s (40 MGD)
- **Bar Spacing:** 9.65 mm (0.38 in)
- **Screen Size:** 4.40 m long (14.45 ft)
1.62 m wide (5.32 ft)
- **Channel Size:** 2.25 m deep (7.38 ft)
1.37 m wide (4.50 ft)
- **Water Depth:** 1.52 m (5.00 ft)
- **Discharge Level:** 1.07 m (3.50 ft)

Process

After considerable research, Scott Firmin, the district's director of operations, and his team selected the Headworks Bar Screen as the equipment best suited to fit their requirements. Scott handled the equipment selection and engineering in-house, which gave him an in-depth understanding of our product and its unique features. In 2008, Portland Water District received their first Headworks Bar Screen.

One year into service, Headworks Bar Screen's advantages over the step screen were clearly evident to the operations team. It brought a host of technical advantages to the table including its patented auto reverse feature and the high speed operation during storm flow events. The issue of screenings log forming in front of the screen completely disappeared which considerably reduced the odor problem.

Based on their success with our screen and the fact that Headworks had several similar trouble free

installations in the area as well as in major cities across USA, the district decided to purchase their second Headworks Bar Screen for their east end facility in 2010.

Outcome

By opting to go with our Bar Screen, Portland avoided the typical problems associated with step screens such as grit accumulation between the elements and its consequent damage to the screen. In deeper channels, the step screen lamella gets heavy which eventually wears out the bearing. And as mentioned earlier, screenings can fall back off the front of a step screen into the channel and forming a rolling "log". This latter problem is exacerbated during high flow surges.

As the step screen runs faster, additional screenings fall back in the channel more frequently which adds to the size of the log. Ultimately the log has to be manually removed by the operators so the equipment can run properly.

In sharp contrast, the picture below shows the steeper installation angle of the Headworks Bar Screen (yellow motor) as opposed to the adjacent step screen behind it. This means that less real estate is taken up by the Headworks Bar Screen, a critical factor in many locations such as pump stations or channels with other physical limitations. This steeper angle also dramatically reduces the possibility of a log forming in front of the screen field, thus exponentially reducing odor problems as well as operator maintenance issues.

After 7 years into operation since the first screen was installed in 2008, we recently checked back with Scott who oversees operation for not only the east end facility, but also all of the pump stations in the district including Cottage Place and East Bridge St Pump Stations where Headworks Bar Screens are in operation. Scott replied back saying, "The screens have performed as advertised. They are well built and able to perform in our combined sewer system."

Once again, Headworks' technology and quality outshines the competition and proves to be a great value addition to a plant's performance. The Portland Water District is part of long term Headworks International Inc. customers and we truly appreciate their loyalty.



Headworks MS® Bar Screens installed – Portland Water District

