



The Channel Monster, custom fitted for Santa Ana manhole, slides down a guide rail for an easy access sewage grinder. (credit: Brian Ige, P.E., City of Santa Ana)

Monster Solutions

Channel Monster Cuts Maintenance Costs and Protects Pumps in Santa Ana

By: Perla Lozano, JWC Environmental

In recent years maintenance operators at the Segerstrom Lift Station located in the City of Santa Ana, CA have noticed an escalation in pump ragging and blockages. This has led to an increase in maintenance expenses due to half to full day cleanings and along with an increase in man hours. Engineers sought the help of Costa Mesa based – JWC Environmental – a well-known and highly recommended wastewater treatment manufacturer – who recommended a Channel Monster sewage grinder.

The pump station, surrounded by quiet suburban homes, was built in the mid-80s. Since then, the community and population has expanded and now includes a high school, intermediate and elementary school, and a business park. Currently, the station runs on a quarterly inspection of the Gorman Rupp® pumps and check valves. The station is also supported by a backup alarm system in case of emergency.

The optimal place to position the sewage grinder was a tight fit in the nearest wet-well, upstream of the lift station's system. Seeing that JWCE is known for their custom fitted installations they created the best solution, in this case using guide rails.

Contributing to the unbudgeted expense in maintenance was operators having to break open pump fittings to reach the problem area, to pull the rag balls out. "We had to find a solution," said Nabil Saba, P.E., Acting Water Manager for the City. "Every time the pumps would clog we had to go in there. It's a confined space so, not easy. Every time we had to open the

pumps and break the seals. And every time the workers are exposed to raw sewage."

When the Segerstrom Lift Station, located 35 miles south of Los Angeles, began filling with more and more polyester-reinforced rags – baby wipes, mop heads, and cleaning wipes used at the surrounding schools and homes, it became too much for the pumps to handle. This growing problem would clog the system every other day for 8-9 months, taking hours to clear debris out and fix pumps. The City of Santa Ana needed a sewage grinder that would require low maintenance, protect their pumps upstream and fit their unique setting and it was needed yesterday.

For City engineers a major challenge was finding a waste grinder that would fit outside their lift station in an upstream manhole. The manhole had a diameter of 60 inches (1524 mm) and was underneath a busy street. Pump station operators knew they needed out of the box thinking to solve this dilemma.

In October 2011 a Channel Monster Model 2410 with a max flow of 3.7 MGD (591 m³/h) was installed. The sewage grinder has a 5HP (3.7 kw) immersible motor and now sits beneath a city street deep in a manhole to prevent pump ragging and other debris clogging problems. One year later, City engineers report the sewage grinder is doing well and improved the quality of maintenance.

"It's been a great piece of equipment to use," said Brian Ige, P.E., P.E. for the City of Santa Ana, "Outstanding machinery quality."

PROBLEM: Pump ragging and debris clogging
APPLICATION: Pump Station
SOLUTION: Channel Monster® sewage grinder





Left: Pump ragging & clogging is a problem everywhere and can lead to constant rebuilds and disruption of pump stations. Right: Operator installs the waste grinder in a tight fit to clear out debris.

Mr. Ige came across JWC Environmental's wastewater grinders and made the call. He soon realized the company was located right around the corner from the Pump Station. JWC Environmental offered a tour of the factory and demonstration of their Muffin Monster® sewage grinders. The specs on the project seemed to be a challenge; however JWCE is known for fitting a waste grinder into almost any situation.

The manhole, upstream of Segerstrom Lift Station, required special guide rails and easy access to maintain the sewage grinder. JWCE engineers got to work and developed a system that would meet all of their needs. The sewage grinder was installed about 18' (5 m) deep, perfectly in front of the influent pipe. A stainless steel guide rail affixed to the wall of the wet-well (and lifting bail with chain) attached to the modified frame would allow for easy above ground access to the sewage grinder. No personnel are required to go into the manhole for inspection. The easy access relieved the risk of exposure to wastewater and makes inspections a no hassle task.

When Mr. Saba, with 22 years of experience in the industry, was asked how the station has been running since the installation of the Channel Monster waste grinder, his response was, "Fantastic! Our gauge shows no need to go in." The newly installed system came with Automated PLC monitoring and controls. The

auto load sensing and reversing reduces any interruptions the flow may bring.

They were relieved to find a durable sewage grinder that could not only handle the load but also fit in confined and unique spaces. They are now in the process of considering three more grinders for their other facilities.

The Channel Monster Model 2410 features a dual shafted waste grinder capable of handling a wider variety of solids than a single shafted machine. Counter rotating shafts direct solids toward the center of the waste grinder and three motor options allows precise control and independent operation of the drums and cutter stack.

About JWC Environmental

JWC Environmental's family of wastewater, stormwater and sewage treatment products are legendary for quality and reliability – including the Muffin Monster and Channel Monster sewage grinders, and the Auger Monster®, Screenings Washer Monster® and Monster Separation Systems®, which incorporate a fine screen or band screen with superior sewage screening conditioning. For further details contact JWC Environmental, 290 Paularino Ave., Costa Mesa, CA 92626, USA, Tel: 949-833-3888, Toll-free 800-331-2277, Fax: 949-833-8858, Web: www.jwce.com, E-mail: jwce@jwce.com.



The family of Channel Monster sewage grinders - Clean, powerful, reliable, cost effective and the industry's high-flow grinders of choice!

"It's been a great piece of equipment to use, outstanding machinery quality."

Brian Ige, P.E., City of Santa Ana



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