

Tennessee Pollution Prevention Partnership Success Story



JTEKT Automotive Tennessee-Vonore Co.
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Performer Recycles Grinder Sludge

The Member

JTEKT Automotive Tennessee-Vonore Co. has been in operation in Vonore, TN since 1989. The 375,000 sq. ft. facility employs 690 associates and is located on property adjoining Tellico Lake. JTEKT produces over 8,600 rack and pinion steering systems and 10,800 high-pressure hose assemblies per day for original equipment vehicle manufacturers. JTEKT is a member of the Tennessee Pollution Prevention Partnership at the Performer level. JTEKT is also a member of Monroe County Beautiful, Loudon County Beautiful, TRC and SERDC. In addition, JTEKT is ISO 14001:2004 certified and has a very positive attitude toward environmental management and protecting the environment. JTEKT is committed to reducing and/or eliminating waste to landfills by investigating and categorizing all waste materials generated at the facility.

The Story - Recyclable Grinder Sludge

JTEKT's manufacturing process involves grinding of steel bars while using water based synthetic coolant during the process. The process creates a special sludge that goes to a permitted landfill for disposal. In past years, JTEKT has averaged upwards of 692,000 pounds per year with a cost associated with disposal of \$.154 per pound or \$106,568 for the year. About 90% of the sludge can be recycled due to the water based synthetic coolant. The remaining 10% is from our Honing operation that uses an oil-based fluid during the machining process.

New Idea

In July 2006, a machine was purchased from our parent company, Koyo Seiko Japan, to reduce and recycle the sludge that was being sent to the landfill. The machine separates the steel portion of the sludge from the coolant by compressing the sludge and squeezing out excess coolant.

This process creates a "puck", which is dipped in a hardening solution and cured in an oven. The pucks are collected and sold to a local recycler to be melted for other uses.

Puck Example



The Success

In the nine months the Sludge Puckmaster has been in operation, JTEKT has recovered 178,636 of steel pucks with an additional 20,772 gallons of coolant that is being reclaimed. Reclaimed coolant and puck sales have generated revenue of approximately \$2,960 per month. Cost avoidances include wastewater and grinder sludge disposal that averages \$6,713 per month. Savings and cost avoidances total over \$115,000 per year.

Pollution Prevented

This environmental improvement activity will further reduce JTEKT's annual landfill by 22 tons per month or a 75% reduction.

Future Activities

Through monthly environmental audits and increased employee involvement, the grinder puck operation is continually being improved. Future opportunities for landfill reduction currently include grease bucket recycling, home recycling including employees and local schools initiatives.

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