

# Excess Process Materials and Solid Waste Management Program

DELTA STONE PRODUCTS

ANSI/NSC 373

## HISTORIC SUMMARY & TRENDS

### OVERVIEW

The only excess process material generated at Delta Stone Products is sludge. Sludge is a bi-product consisting of stone fines from sawing operations. Saw fines are captured in water and transferred to a settling pond where the water and fines will separate, filling the bottom of the pond with sediment or sludge. The ponds measure 200'x20' and although the carrying capacity of the pond is nearly 200,000 gallons, Delta Stone maintains an operating level of 150,000 gallons in the pond. As the settling ponds fill with sludge, they must be cleaned out for proper filtration to take place. Wet sludge is pumped into an un-lined evaporation pond where it will dry. It is estimated that our sludge is 50% solids, which would maintain that Delta Stone Products generates 75,000 gallons or 10,000 cubic feet of dry sludge each time the settling ponds are cleaned. The processing facility manager is responsible for tracking the number of cleanings which take place each year, and that figure is used to estimate total sludge generation each year.

Solid waste at Delta Stone Products consists of trash that is taken to a landfill and metal that is recycled at a local recycling yard. Delta Stone has separate bins for these waste sources, and weights are provided by the waste company, Diamond K Waste, on our invoices each time a bin is emptied. Starting in Q4 of 2020 we started a pallet recycling program with our pallet vendor where we now return to them broken pallets. This should reduce the amount of waste going to our landfill. The pallet company either refurbishes the pallets or turns them into mulch for landscaping.

## OPPORTUNITIES FOR REDUCTION

### SLUDGE

Because sludge is generated only by the width of the saw blade of each saw, there is little opportunity to reduce sludge generation rates per ton produced. Material yield from production is also near maximum ability simply because there is no way to decrease or eliminate the width of the saw blade in fines when material is cut.

### SOLID WASTE

The most substantial portion of Delta Stone Products' solid waste inventory is packaging from imported materials, including shrink wrap, metal banding, wire mesh and other palletizing materials. These sources of waste can best be mitigated by eliminating the need to re-palletize the products throughout processing. If material is transported throughout the manufacturing process on re-useable steel pallets, which do not require wire or banding, waste will be restricted to the original packaging provided by the supplier – much of which is recyclable material (i.e. wood, steel). Using wood pallets or crates to transport stone throughout the facility generates an unnecessary waste stream which can be avoided by the use of re-useable steel pallets. We have produced steel frames to transport material through the facility helping to minimize solid waste.

Other forms of solid waste, including office waste, are generated, but are minimal in quantity when compared to steel and packaging materials waste.

## TARGET GOALS

*It is the goal of Delta Stone Products to have a reduction in excess process materials generated and a reduction in solid waste generation per ton of stone produced over the 2016-2020 period, and a reduction for years following.*

### MANAGEMENT OF EPM & WASTE STREAMS

Although reaching a substantial reduction in either Excess Process Materials or Solid Waste may prove difficult for Delta Stone Products, we believe it is equally important to create a plan to most responsibly manage the waste streams we currently have.

#### MANAGEMENT OF EXCESS PROCESS MATERIAL

Sludge from processing operations will be sold to construction companies to be used as bedding sand or to Mountain Valley Stone to be used as reclamation material in the quarry. Each time a load of this material is sold, it will be tracked by DSP's office manager so that an annual quantity can be measured. It is the goal of Delta Stone Products to divert 100% of sludge generated to reclamation or construction projects. Progress toward this goal will be measured on a log kept by the DSP Office Manager for all sludge material exports. This continues in 2021 as we manage this material weekly as per the goal.

#### MANAGEMENT OF SOLID WASTE

Solid waste of any type will be kept in rented roll-off bins that are picked up either bi-monthly or as needed. Steel waste will be separated from other waste in a separate bin so that it can be recycled. All other waste will be taken to the local landfill by Diamond K Waste.

In order to reduce solid waste generated from packaging materials, Delta Stone Products will begin to use re-useable steel pallets rather than wood pallets and wire or shrink wrap. Re-useable pallets will be used for transportation of material within the processing facility. The implementation of this goal will be evaluated by comparing the annual quantity of packaging materials purchased, such as wood, nails, wire, and shrink wrap.

#### ALTERNATIVE USES FOR EXCESS PROCESS MATERIAL

The current use of sludge for construction bedding sand or reclamation material appears to be the most effective use of the bi-product and poses no hazards or future consequences to the environment or community. As demand grows, however, *all* the sludge may be sold as bedding sand to construction companies, which is the most effective use of the bi-product.

## OFFICE WASTE REDUCTION

In 2013, Delta Stone Products invested heavily in a technology upgrade, providing most employees with a mobile device of some sort so that paper was practically eliminated. This has reduced paper waste in the office drastically. However, because paper is very light and most of the solid waste produced at Delta Stone is steel scrap, the change may not be noticeable in the solid waste inventory.

## REUSE, RECYCLING OR RECLAIM OF GOODS USED IN PROCESSING

The largest quantity of replacements and most expensive good used in processing is the saw blades. Saw blades are made of solid steel with a diamond-composite tip. Because the diamond composite absorbs all the wear on these blades, there is an opportunity to re-tip the blades and save the expense and waste of the steel body. When blades are worn out, they are returned to the manufacturer to be restored and then used again. This practice will continue in Delta Stone's operations.

## PROGRESS

Annually, progress towards target goals will be evaluated on a rolling 5-year period in this section. As of 2021 we continue to track in a positive trend towards these goals.