



C&D Shredding

TO REDUCE, REUSE, AND RECYCLE – SAVING AIR SPACE

STEVE RAINES – PICKENS COUNTY DIRECTOR OF SOLID WASTE

Introduction



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- ▶ November 2020, Our landfill was over capacity by 25,000 cubic yards of material
 - ▶ A transfer station was built on site and opened for C&D in August of 2020
 - ▶ Closure was scheduled to happen in early October of 2020
 - ▶ Due to capacity overage closure could not happen
 - ▶ Transferring to gain compliance was the only resolution

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- ▶ In November of 2020 I became Director of Solid Waste at Pickens County
 - ▶ The C&D Landfill was over capacity
 - ▶ The newly built transfer station was not large enough to handle the intake, nor the overage
 - ▶ We began immediately using the transfer station, as well as, renting dump trailers, and utilizing all assets from our Roads and Bridges Department to move the material
 - ▶ We were taking in 100 tons to 150 tons per day
 - ▶ We were only transferring 35 to 80 tons per day
 - ▶ A fully loaded C&D walking floor trailer was averaging 6 tons per load

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- ▶ I began researching shredders for C&D
 - ▶ In February of 2021 I executed a demo of a C&D Shredder
 - ▶ National Equipment Dealers, Mosley Tractor, and Humdinger Equipment (TANA North America) supplied the machine necessary for our needs
 - ▶ The biggest stipulation was the ability to shred a mattress
 - ▶ Tana billed the machine to perform at a 3:1 reduction ratio





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- ▶ During the demo, we shredded 6) 40 yard containers into 1) 40 yard container
 - ▶ The magnetic belt pulled metals from the material
 - ▶ We reduced the weight by 1 ton
 - ▶ We shredded 1 container of mattresses, 1 container of tires, 1 container of brush, and 3 containers of C&D
 - ▶ Thus proving a reduction of 6:1



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- ▶ We commissioned the shredder into use in mid July of 2021
 - ▶ We immediately began transferring shredded material
 - ▶ We began transferring 160 tons to 200 tons per day
 - ▶ The first month we utilized Roads and Bridges averaging 300 tons per day, then continued with one week per month
 - ▶ We also had Rental dump trailers averaging 80 tons per day
 - ▶ Within the first 2 months we had regained compliance in the landfill
 - ▶ We were transferring incoming material and all loose material from the landfill

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- ▶ By December of 2021 we had reduced our landfill by 73,485 Cubic Yards
 - ▶ We had made \$493,000.00 in reclaimed recycled metals
 - ▶ We reduced trucking cost by 50% by hauling full loads
 - ▶ We reduced time of loading
 - ▶ We reduced manpower by 30%
 - ▶ And we began removing 35% to 40% more than the daily intake allowing us to regain compliance and create additional airspace
 - ▶ With reduced cost in manpower and trucking cost, along with recovered metals, we recovered the cost of the shredder in 6 months



C&D Landfill Challenges

- ▶ Bulky Content which rapidly decreases air space
- ▶ Less compaction even with heavy compactive effort
- ▶ Some materials, furniture, mattresses, etc., are non-compactive
 - ▶ Metals that can leach into ground water
 - ▶ Transfer Stations haul less weight

C&D Shredding

- ▶ Recovery of metals for recycling
- ▶ Creates a “Mulch Like” material that can be much more effectively compacted
- ▶ Non – Treated woods can be ground as mulch and taken out of the landfill
- ▶ The shredded material breaks down approximately 35% faster than the whole materials
 - ▶ And creates much more sustainability in small landfill spaces



Mattresses are a forever void. They cannot be compacted. Nearly 60% of our daily intake are mattresses, and they house metals that can be recovered and recycled.

Mattress Volumes:

King Size = 1.04 Cubic Yards

Queen Size = 0.83 Cubic Yards

Double size = 0.68 Cubic Yards

Twin Size = 0.49 Cubic Yards

Shredding To Create Commodities



Due to COVID, our tire vendors have been short of drivers. Due to this we have remained at permit capacity with tires and unable to accept anymore. Since purchasing the shredder, we have been able to shred the tires. This allows us the options to either transfer, place it in our landfill, or to sell the shredded tires to be used in other areas.

We also now have the opportunity to shred and bale white waste for a premium price rather than sell it as comingled metals. This affords us a higher price on both steel and white waste.



Through no fault of our own, we have continued the tried and true methods of landfilling. It has worked for many years. But with the current "DON Laws", if you have landfill space that is open and permitted, it's in your best interest to remain open as long as possible.

Eventually, there will be no land left to permit. This is why we must work with each other and our regulatory agency, SCDHEC, to move forward and try new technologies. Shredding is not new in landfills, but is very new in South Carolina. If you are able to reduce your landfill 6:1 yearly, that is 6 more years of life you have for every 1 year of air space you own.



In closing, we have found that shredding our C&D will allow us to stay open for many years to come, after nearly being closed with no way of showing demonstration of need. We are currently in the planning stages to permit for a piggy back landfill. This will afford us 20 plus years of C&D landfilling, eliminate the need for transfer, and allow us to extract metals and other materials as commodities, rather than them taking up valuable air space.

QUESTIONS?

