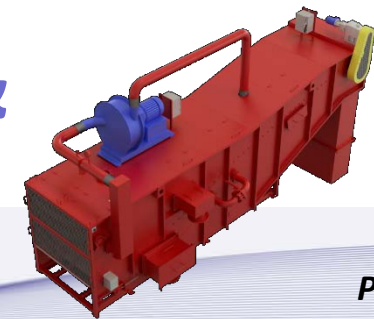


# SLUDGE

# TMMTX Sludge Collection & Water Reduction

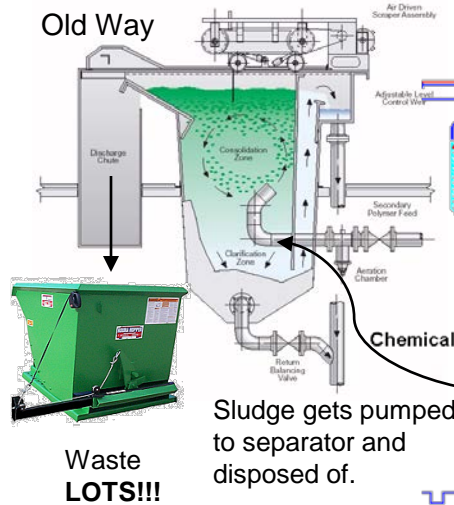
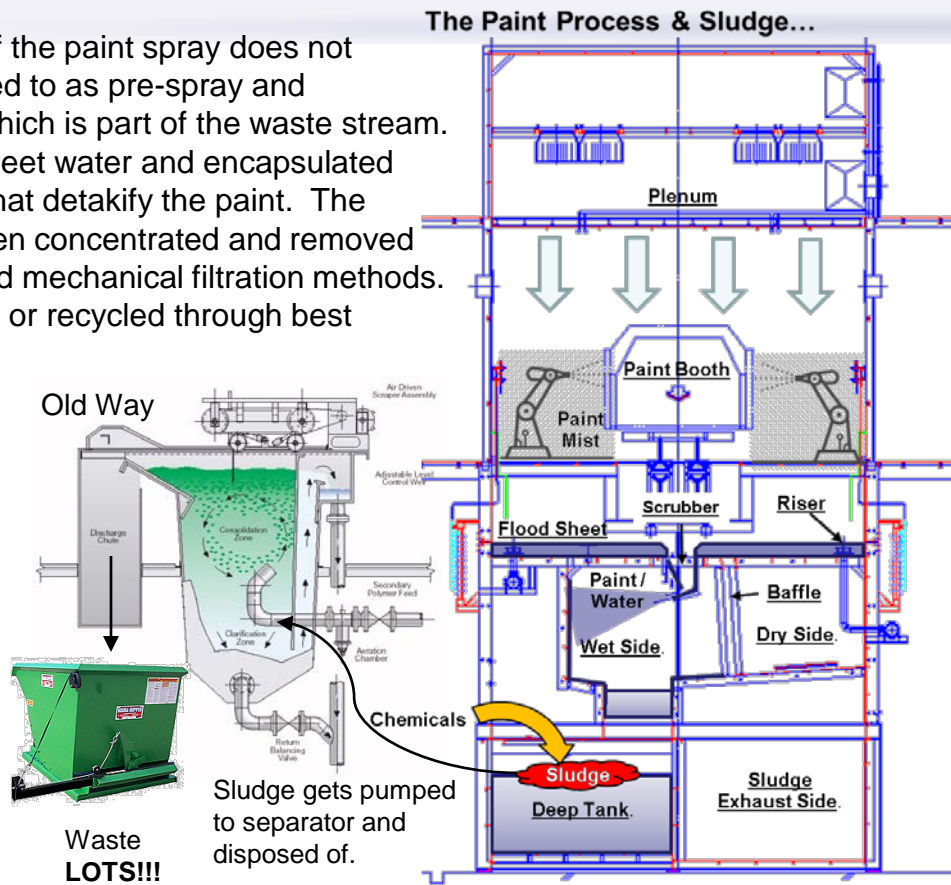
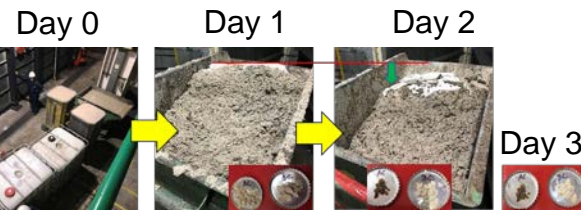


Project BPAK 12947

## Background

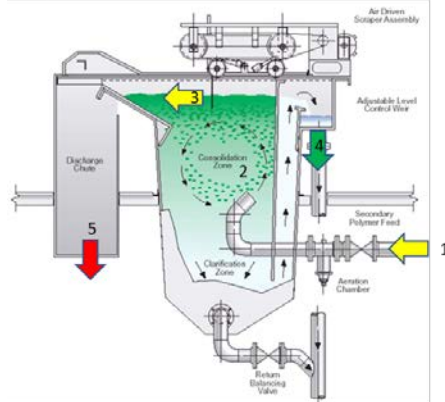
**1** When painting a vehicle a portion of the paint spray does not transfer to the vehicle, this is referred to as pre-spray and overspray of the painting process which is part of the waste stream. The waste gets collected in flood sheet water and encapsulated with specialized sludge chemicals that detakify the paint. The chemically treated paint waste is then concentrated and removed from the water through chemical and mechanical filtration methods. Finally it is dewatered and disposed or recycled through best method.

**2** Through trials we confirmed our concepts and ideas and developed new ideal process for sludge collection and dewatering.



**3** Old Method (Industry Standard): PALIN (Chemical Separation)

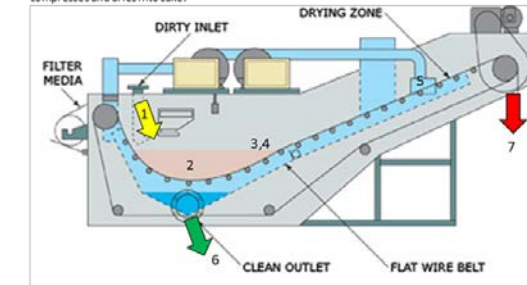
Detail Palin Operation (Old Method): Sludge floats to top and skimmed off (Chemical separation process)



1. Dirty Sludge Slurry fills tank
2. Consolidation zone combines paint particles with chemical polymer
3. Sludge floats to top of tank
4. Cleaner water returns to deep tank
5. Sludge cake drops into removal hopper

New Method: Filtertech (Chemical + Mechanical Separation)

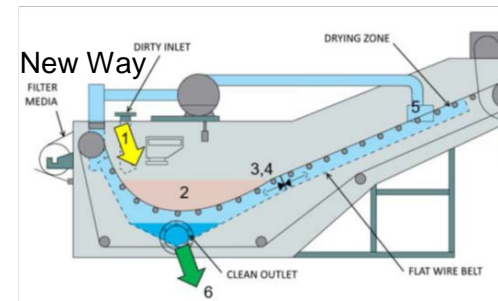
Detail Filtertech Operation (New Method): Sludge is mechanically filtered with filter paper and vacuum compresses and dries into cake.



1. Dirty Sludge Slurry fills inlet tank
2. Through gravity, head pressure, and vacuum suction water is drawn through media
3. Sludge cakes on filter
4. Media movement with low angle carries out the floating sludge with water discharge pushing it onto media ramp
5. Media is dried with discharge of vacuum blower and vacuum
6. Clean water returns to booth
7. Sludge cake is conveyed to sludge removal hopper

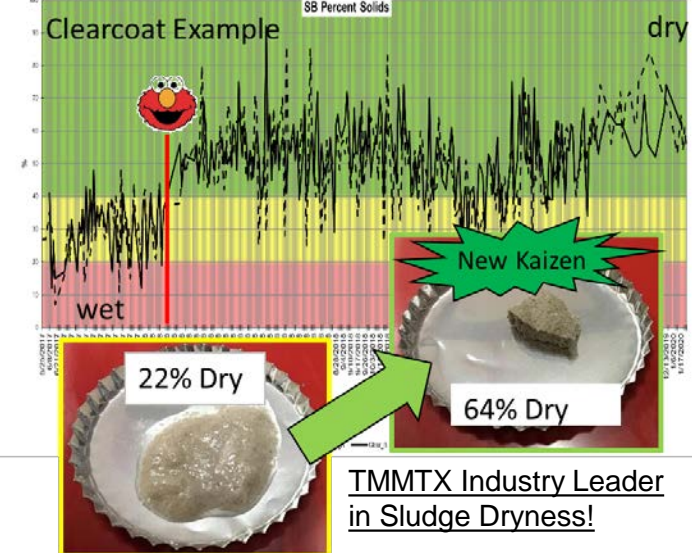
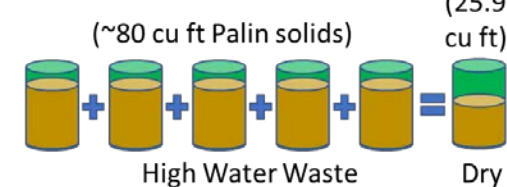
## 4 Next Generation Sludge Collection

Volume Reduction by Water Removal



1. Sludge Slurry fills inlet tank
2. Sludge Pool
3. Sludge cakes on filter
4. Sludge Carry Out on media
5. Air Blow on Sludge
6. Clean water returns to booth
7. Discharge to Sludge Hopper

Initial Trial:



## NEW PROCESS Sludge is dryer!

Equivalent of 5 hoppers from Palin converted to 1 through Filtertech. Massive Volume reduction = less sludge waste!

TMMTX Industry Leader in Sludge Dryness!



Presently up to 65-82% Dryness. Future Near goal is 80%+ Dryness on all Sludge types with Rewinders.

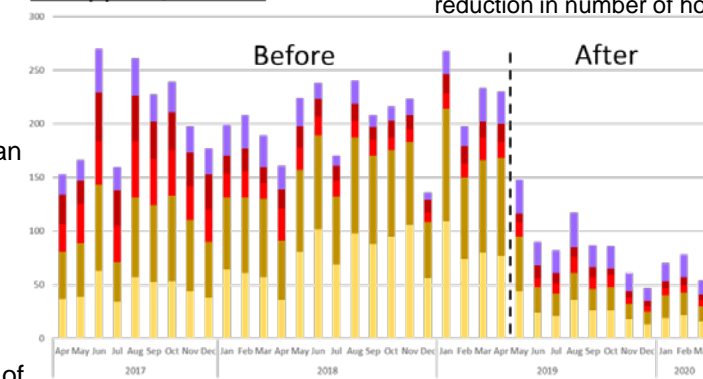
## 5 RESULTS

Create Clean-Lean Sludge Process!!

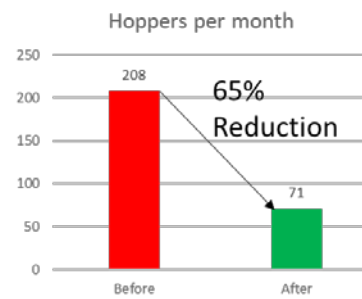
Keeping circulation water clean at spray booths prevents the need to manually dig out the water deep tanks. By not dumping and refilling these tanks a massive amount of water is saved and can be used longer. Digouts are one of the worst 'Dirty Jobs' at TMMTX with challenging conditions for safety! 2017 and Prior there was at least 1 dig out or partial dig out a weekend causing to drain water in the tank.

Year of year you can see as we slowly started to introduce this new technology our water usage going down. We expect to continue to lower the water usage as we finalize process conditions and standards over the next year.

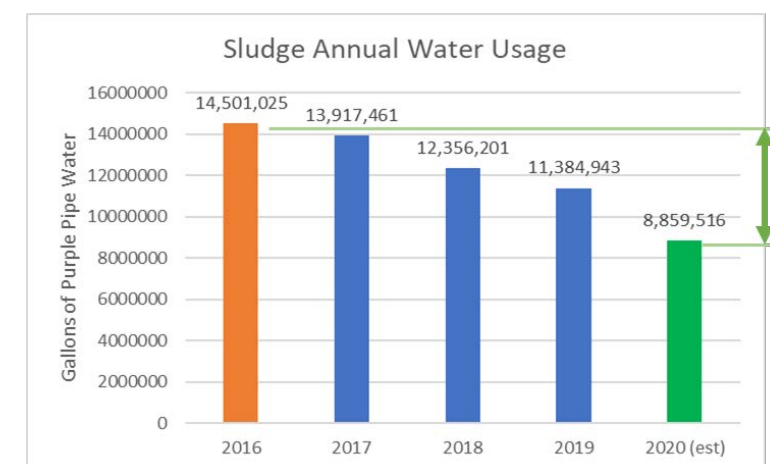
# Hoppers / Month



New Process with Next Generation Filtertech Sludge Filters now have a 65% reduction in number of hoppers produced by sludge collection process and a 22% reduction of pounds of sludge.



5,600,000 Gallons of Water Saved Annually! (estimated)



PROJECT TEAM

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Eddie Hurtado  
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MacLellan Sludge Technician

Joe Scalise  
Filtertech Representative