Liquid De-Icing Storage Tanks Kansas DOT

- Background
 - KDOT has roughly 200 polyethelene Storage Tanks
 - 145 of those 200 tanks over 10 years old
 - Primarily Store Salt Brine
 - 10,000 gallon tanks





Liquid De-Icing Storage Tanks Kansas DOT

Background

KDOT began using liquid deicers in the mid 1990's

- Assigned a 15 year replacement cycle
- Replacement was NOT a priority







16 year old tank in Atwood, KS

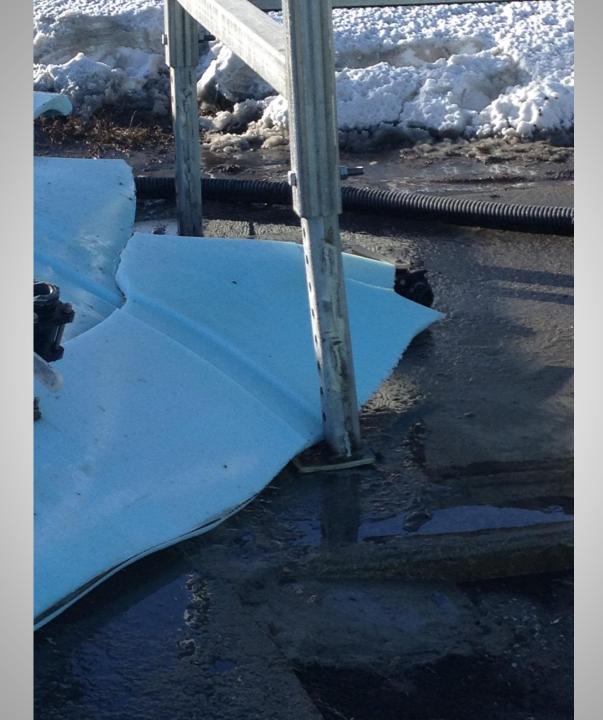
- Collapsed while KDOT employee was making brine and loading into the tank
- He had just climbed off of loader when the collapse occurred

 Pieces of the tank struck the employee injuring his shoulder and cutting his forehead

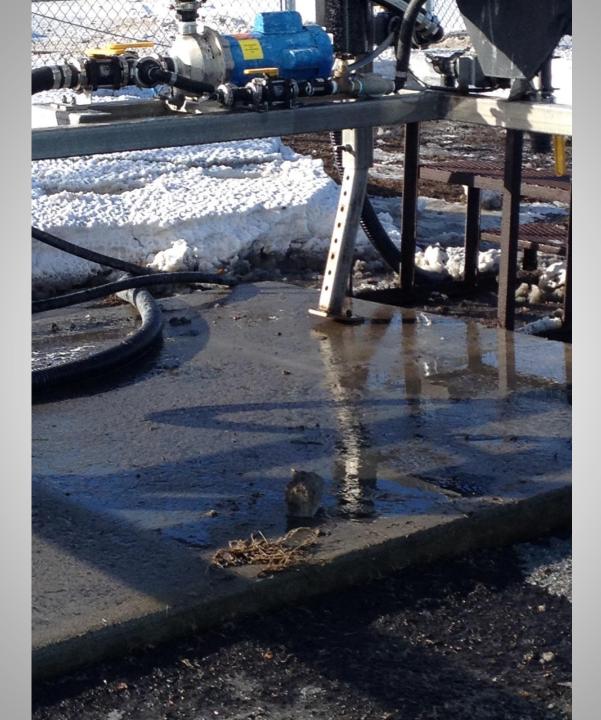












KDOT makes and Stores Brine in every Subarea

 Typical setup includes a brine maker and a 10,000 gallon Storage Tank

 Many remote locations have salt storage and brine storage













Investigation

- Sent questions to other DOTs thru Clear Roads
- Discovered research document developed by Purdue University titled Poly Tanks for Farms and Businesses

 Includes inspection procedures for identifying tanks near failure





Inspection Techniques

 Color a 6" x 6" section of the tank exposed to the sun with a water soluble marker.
 Wipe of marking and look for cracks or crazing

Whack empty tank with a baseball bat





KDOT committed to replacing all MY 2000 and older tanks ASAP

 Determined a need to replace 74 Poly Storage Tanks in the current budget

Estimated to cost \$750,000





Fiberglass as an Alternative to Poly Brine Storage Tanks

- Working life of 25 to 35 years plus
- Options for larger storage capacities
- Price competitive

Made in KANSAS





KDOT signed contract with KBK Industries to supply Fiberglass Tanks

- Average cost delivered
 - 10,000 gallon \$7,500
 - 20,000 gallon -\$10,900
- Comparable Poly
 Price
 - 10,000 gallon \$9,000







KDOT just ordered 64 Storage Tanks

Tanks built to specification

- Delivery to begin 4 weeks after order
- \$630,000 with 2/3 of tanks 20,000 gallon



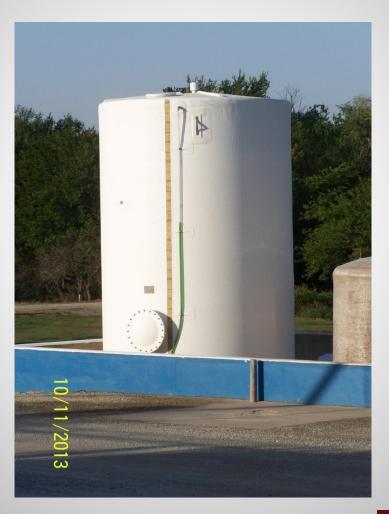
















QUESTIONS?





