



## *Last Mustard Ton Container*

**Aug. 18, 2006:** Mustard operations begin with first ton container (TC) punched and drained

**May 16, 2011:** Last mustard TC destroyed

# MUSTARD TC CAMPAIGN FACTS

*DCD's original stockpile of mustard-agent filled TCs:*

**6,399** mustard TCs

- **11,383,554** pounds of mustard agent
- **42%** of DCD total stockpile
- **33%** of the national stockpile of mustard agent

*Challenges and solutions:*



### **Glove Box**

Initial characterization efforts indicated that a portion of the DCD mustard TCs contained hydrogen pressurization, large heels and mercury contamination. A special glove box unit was designed to allow workers to safely take samples, measure heel depths and vent pressurized hydrogen gas.



### **Mustard Characterization**

All mustard TCs were sampled and segregated based on mercury content and/or heel size. This allowed the TOCDF to process TCs with low heels and low mercury contamination while solutions to the high heel and mercury contamination problems were developed, minimizing processing delays.



### **Heel Transfer System (HTS)**

TOCDF designed and installed this system to effectively deal with the mustard TCs containing excessive heels. The HTS used high-pressure, warm-water spray to break up and dissolve a portion of the heel so it could be transferred from the original TC into an empty TC, reducing the weight of the heel to meet the TOCDF's operating permit.



### **Pollution Abatement System (PAS) Filtration System**

TOCDF's existing PAS was modified with an additional filtration system utilizing sulfur-impregnated carbon to safely capture mercury from the furnace exhaust gases.