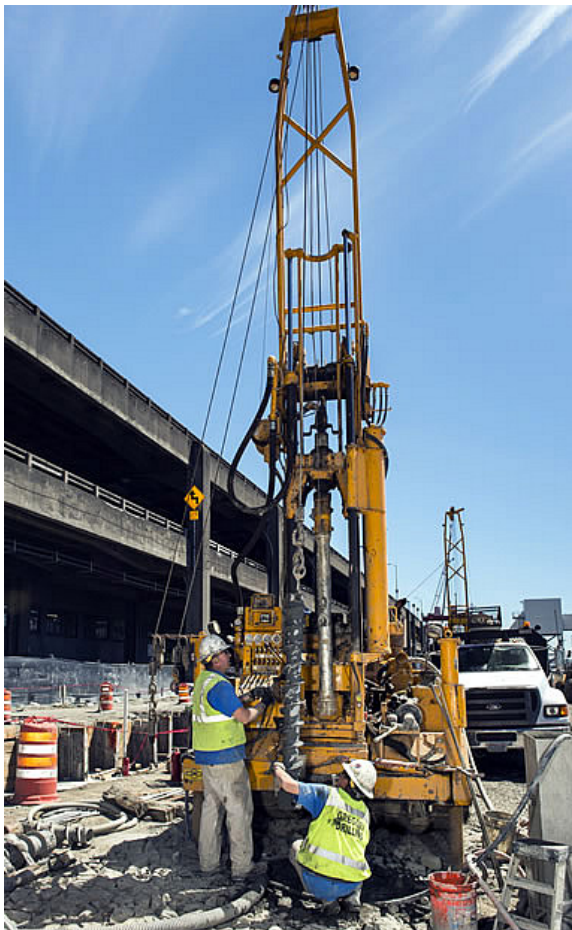


# Auger technology

## Purpose

To use a mobile, tank-side, waterless, auger retrieval tool system to remove dried sludge from single-shell tanks (SSTs).

The auger waste removal tool and process equipment will be designed to support tank-side retrieval operations and be designed to facilitate relocation of the retrieval equipment to support the treatment of additional tanks containing dry waste.



Gregory drilling industrial auger

## Technology

The use of a mechanical auger-type tool minimizes liquid addition and minimizes the need to dry the resulting product via evaporation or alternate drying technologies. To ensure success of the project, Orano has teamed with two auger



Core sampler

companies with complimentary experience that will support the design of the equipment that could be used to recover the dry waste. Both companies will bring direct experience of operating the mechanical drilling/auger on a regular basis

## Problem

This project addresses the Hanford problem of how to empty tanks of sludge with a process that does not significantly increase the risk of environmental contamination, while decreasing significantly the volume of water to be processed via the 242-A evaporator or stored in double shell tanks (DSTs).

## Solution

The technology being proposed will be designed to support a skid-mounted, tank-side process to facilitate using the same retrieval system for the full array of SSTs to be retrieved. Depending on the retrieval method and the sludge characteristics, the retrieved sludge may either be ready for final disposition or subsequent treatment, including some degree of sludge drying to meet regulatory disposal requirements.

## Orano Auger technology

This project will study a dry, mechanical auger tool system that will retrieve tank wastes while reducing both direct costs (of the waste removal, no supernate/waste transfers, interaction with other operating facilities), and indirect costs (associated with evaporation/drying of the solids, tank volume in DSTs), while addressing the potential for offsite disposal. Reducing the total waste retrieved will directly translate to total lifecycle cost reduction.

This technology also:

- Provides a method for supplemental treatment not requiring additional liquid to retrieve solids.
- Reduces the need or total number of new tanks that are being discussed for the Hanford site due

to a reduction in water usage, and hence storage capacity required.

- Minimizes dependence on the 242-A onsite evaporator and provides an alternate work source if the evaporator were to require extended maintenance.
- Reduces the complexity and functionality of future permanent on site treatment facilities.
- Reduces the complexity and size of a supplemental treatment facility.
- Provides an early tank closure method.
- Reduces the load on the Waste Treatment Plant at an estimated operations cost of \$1M/day for two months for the 11 CH-TRU tanks.

