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Future Underground Research Labs in Salt: An Expert Survey

Christi Leigh and Frank D. Hansen

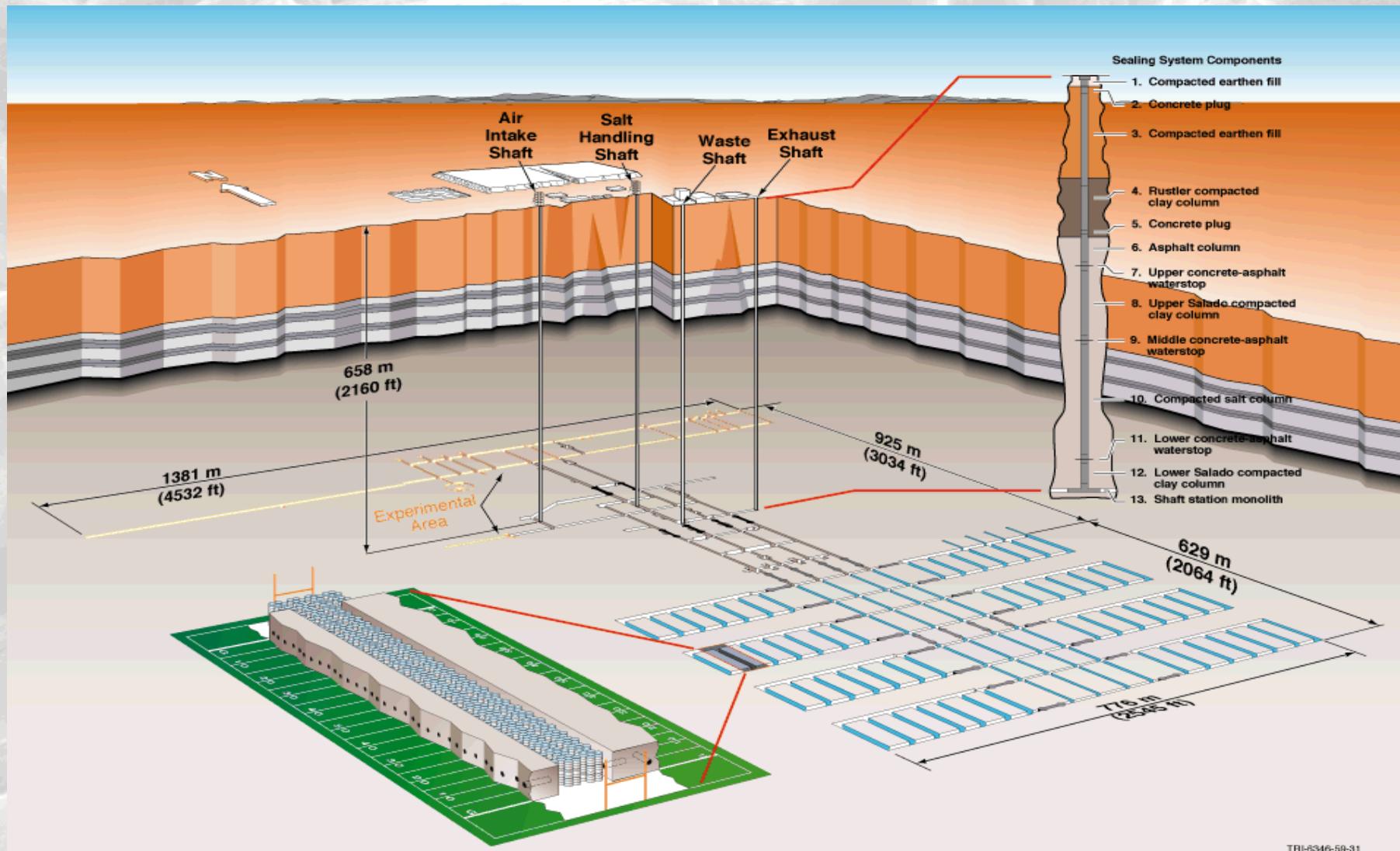
4th US/German Workshop on
Salt Repository Research, Design and Operations

Berlin, Germany
September 17-18, 2013

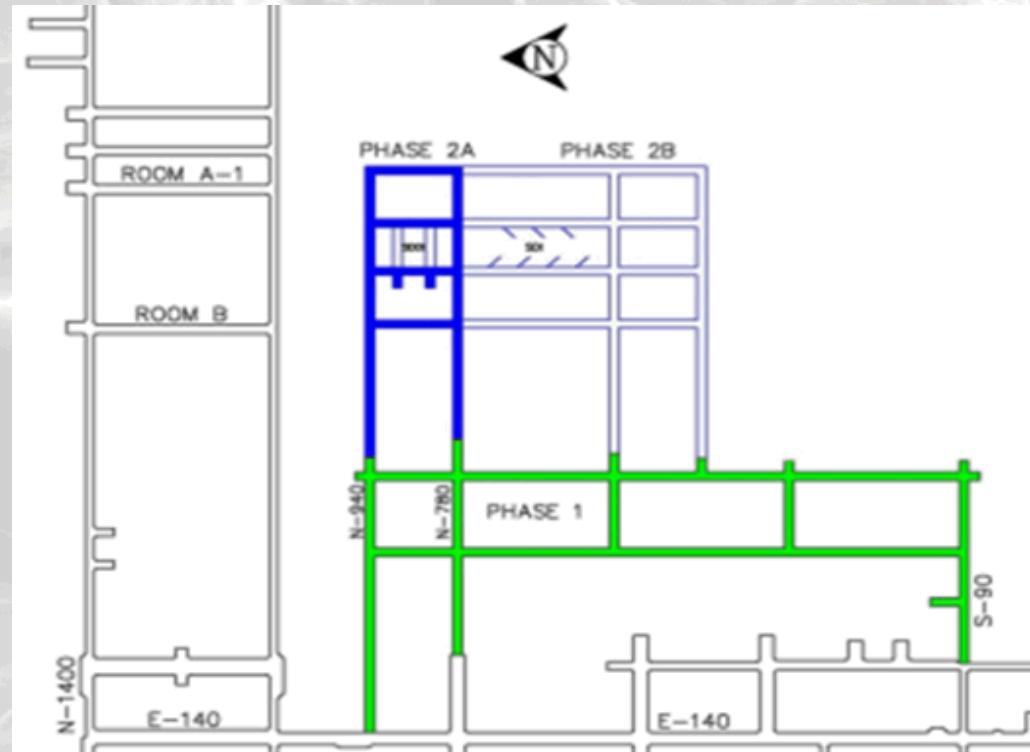
Survey Purpose and Format

- Last Year's Survey was written, filled out ahead of time, and results were presented by Kris Kuhlman to the group and then documented in the workshop proceedings
- Since the workshop last year, we have had a number of exchanges in the U.S that have furthered the conversation about potential uses of a WIPP URL.
- Frank will summarize that information for the group
- Then, Christi will facilitate a discussion designed to identify the relative merits of alternative test proposals.

WIPP Facility Layout



Layout of URL at WIPP



Potential/Intended Uses of WIPP URL

- Salt Defense Disposal Investigations (SDDI)
- Salt Disposal Investigations (SDI)
- Large-Scale Seal Demonstration
- Mining Research
- Wedge Pillar Test
- Mine-By DRZ Measurement
- Single Heater Test
- In Situ Consolidation
- International Test Bed—Suggestions from US/German Workshop #3

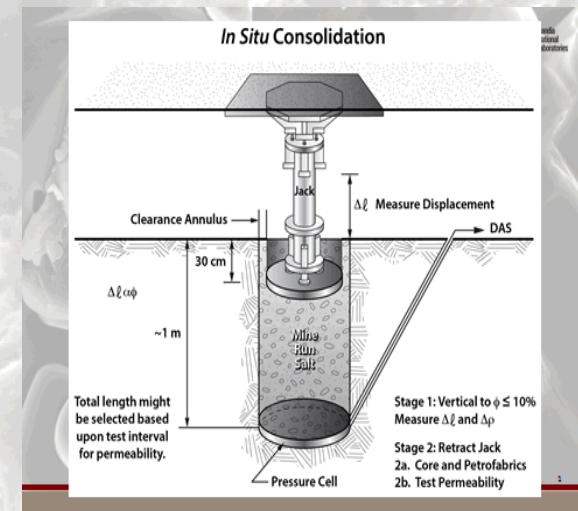
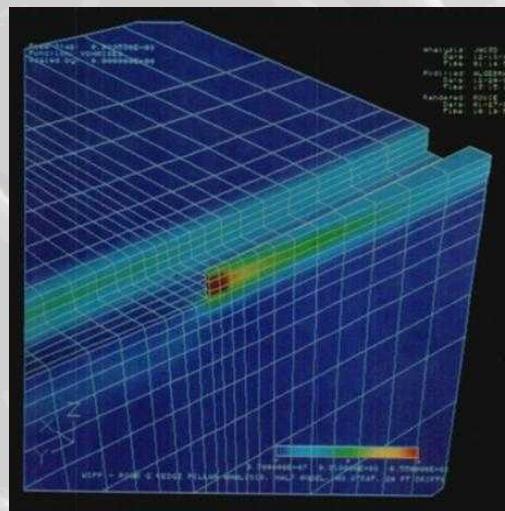
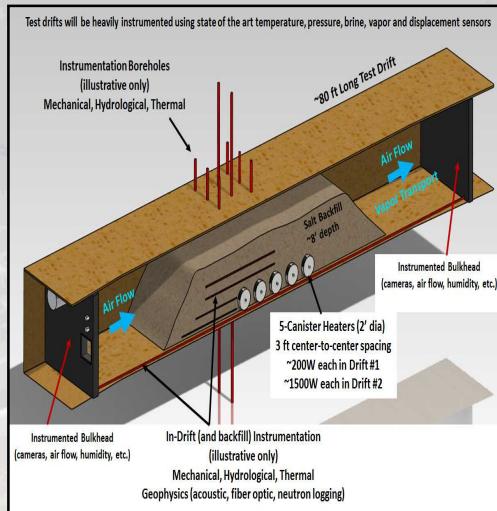
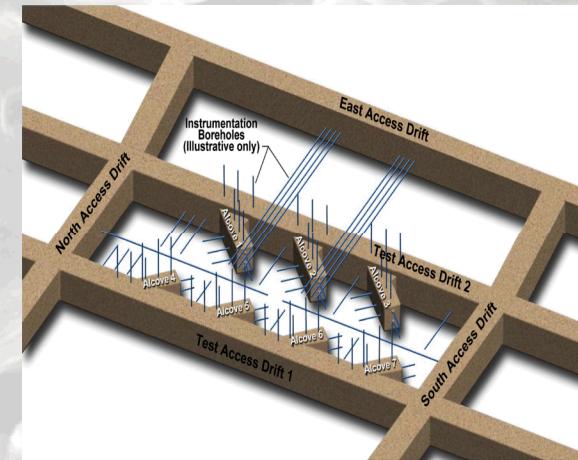
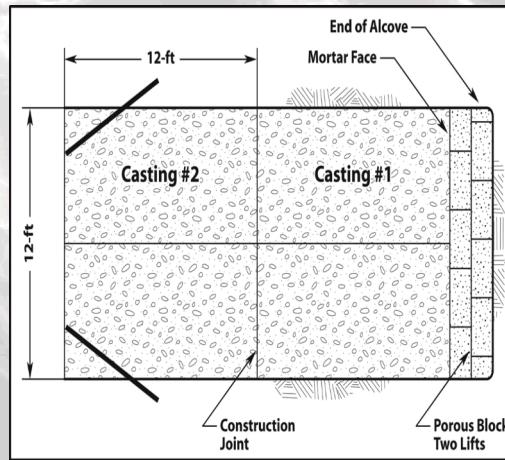
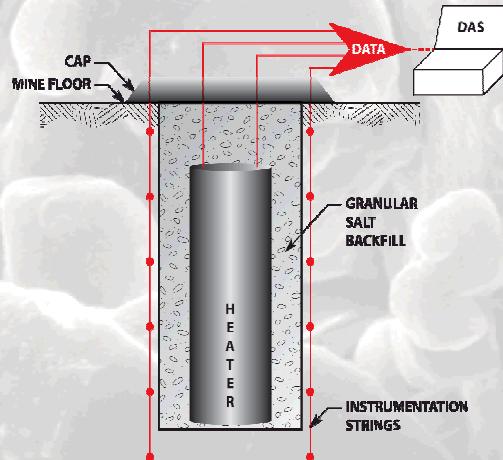
Uses of WIPP URL suggested by partners

1. Single heater test
2. Large seal test for crushed salt parameters
 - Two phase flow
 - Heat transfer
 - Diffusion coefficient of crushed salt
3. 1:1 scale heating test
 - emplacement demonstration and/or
 - collaboration on designing
 - preliminary TM(H) calculations

Salt concrete or MgO concrete large-scale seal test

- Heated chamber behind the seal
- Thermal behavior of concrete, host rock, EDZ
- TM(H) behavior

Schematics of Main URL Activities



Facilitated Discussion of Proposed Test Merits

