



Tank Farm Soil and INTEC Groundwater *Agencies to Release Proposed Plan for Cleanup*

Risk to future workers from contaminated soil and threats to the Snake River Plain Aquifer at the Idaho Nuclear Technology and Engineering Center (INTEC) can be reduced. A proposed plan to remediate contaminated soil sites at the tank farm and INTEC groundwater will be available for review and comment in late summer of 2006. This plan will be released by the Department of Energy (DOE), the Idaho Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA) (the agencies).

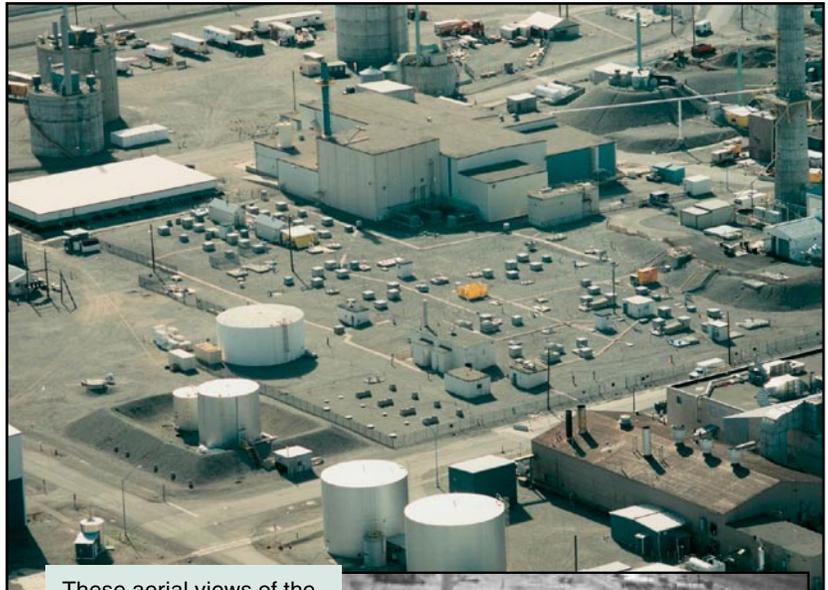
The tank farm was a key part of INTEC, formerly known as the Idaho Chemical Processing Plant. The facility was built in 1951 to dissolve spent nuclear fuel and recover uranium-235. Most of the spent nuclear fuel was removed from naval propulsion reactors. Reprocessing of spent nuclear fuel and related activities produced radioactive liquid wastes that were stored underground in the tank farm.

Contamination Overview

Historical spills from piping and valves, and activities (such as maintenance and sampling) released waste to surrounding soil. Nearly all of the soil contamination under the tank farm is attributed to one event in 1972 when approximately 18,600 gallons of waste leaked while it was being transferred between two underground storage tanks. Contaminants released to the soil include primarily three radionuclides—cesium-137, strontium-90, and technetium-99—and nitrate. No leaks occurred from the tanks.

Most of the cesium-137 in the leaked waste is bound to the soil and remains in place, posing a risk from direct radiation exposure to unprotected workers. Currently, workers are protected from direct exposure to radiation by administrative and engineering controls.

Strontium-90, technetium-99, and nitrate migrated down to underlying perched water, areas where water accumulates on top of less-permeable geologic layers (see diagram on next page). From the perched water system, technetium-99 and nitrate migrated down to the aquifer.



These aerial views of the tank farm at the Idaho Nuclear Technology and Engineering Center show it as it is today and as it looked under construction in the 1950s.

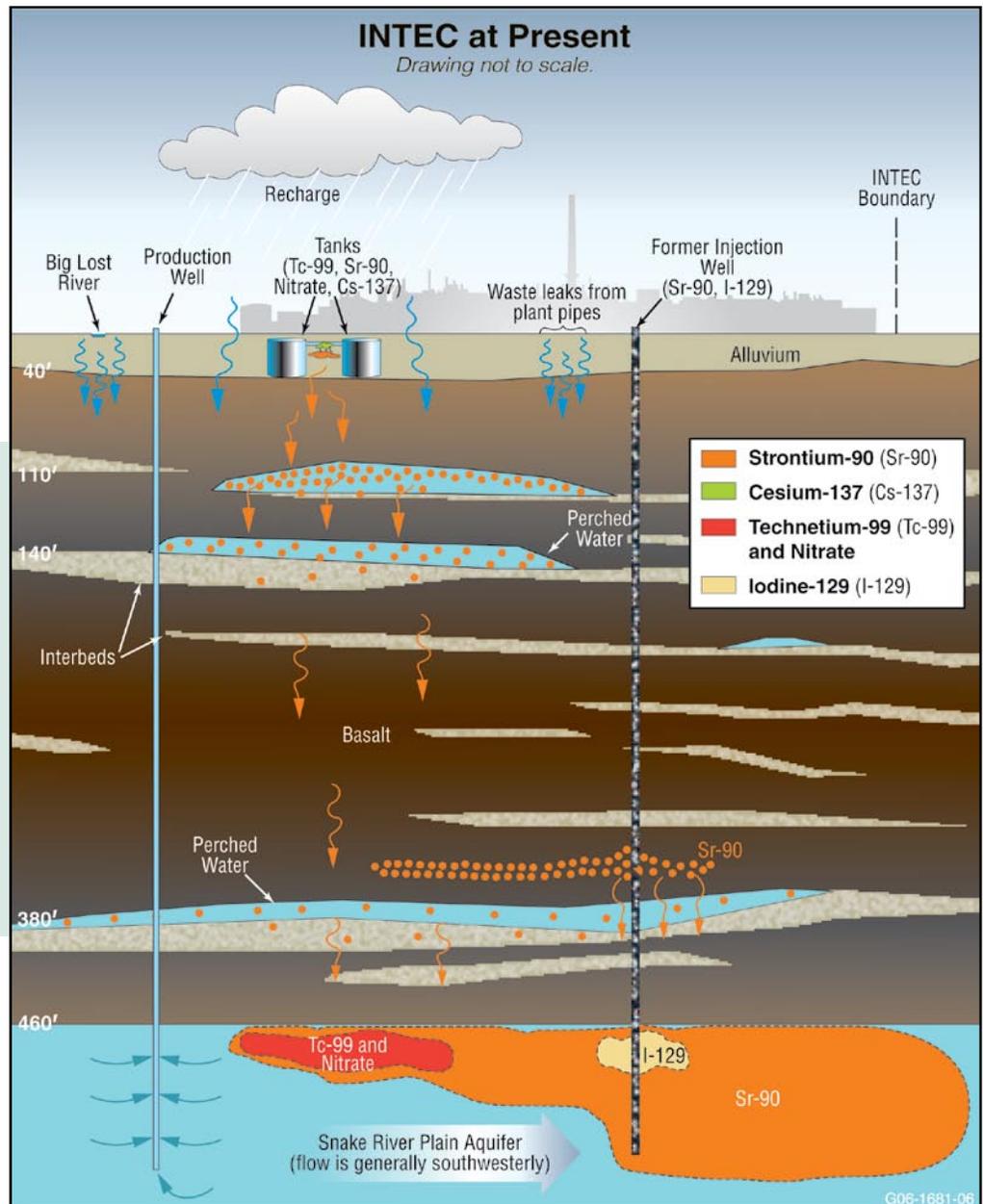


Contamination also came from a former wastewater injection well (plugged in 1989) that released radioactive contaminants (strontium-90 and iodine-129) to the Snake River Plain Aquifer, and above the aquifer when the well casing failed.

Investigations Complete

The Agencies recently published two documents pertaining to the contaminated tank farm soil and groundwater at INTEC, a remedial investigation/baseline risk assessment and a feasibility study.

The remedial investigation/baseline risk assessment details what the Agencies learned about the contamination and the risks it would pose to people and the environment for a range of hypothetical scenarios.



This conceptual diagram of the subsurface shows the contamination currently beneath INTEC and the INTEC tank farm. Some contamination released to the environment remains in the tank farm soil. Some contamination has been carried by water from surface sources into perched water above sedimentary interbeds (layers of silt, clay, sand, and/or gravel) and to the aquifer. Some contamination is from the former INTEC injection well. The aquifer beneath INTEC is contaminated with technetium-99 and nitrate from historical tank farm piping and valve leaks, and with strontium-90 and iodine-129 from the former injection well.

Cesium-137 concentrations in the tank farm soil would pose an unacceptable risk to unprotected workers through external exposure to radiation if no action is taken.

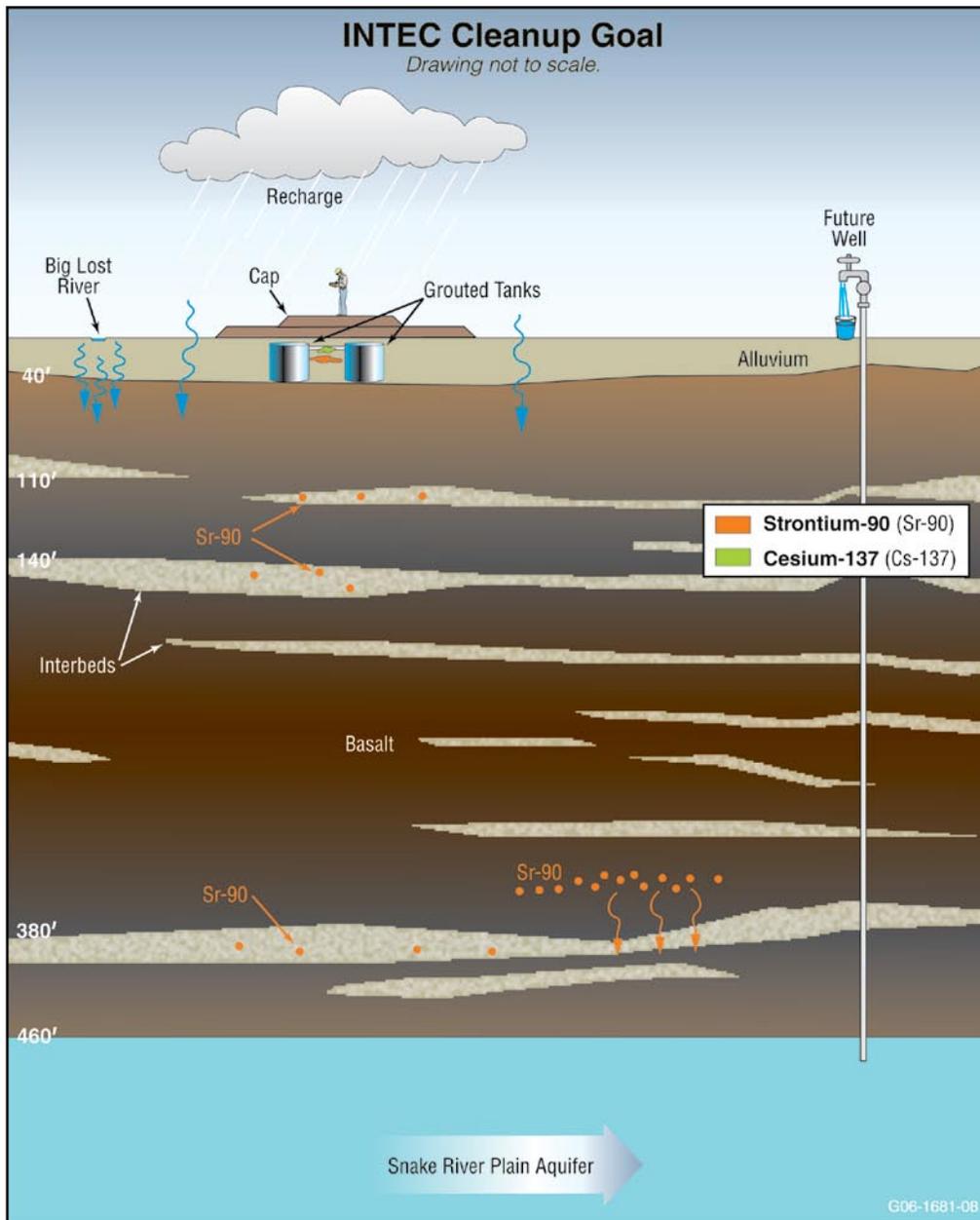
Strontium-90 that originated from the tank farm spills could migrate from the perched water system and cause unacceptable levels in the aquifer extending beyond 2095 if no action is taken.

Radioactive decay and other natural processes would ensure that groundwater quality standards are met for the other contaminants.

The feasibility study outlines remedial action objectives and preliminary remediation goals. These include protecting workers from direct radiation exposure and reducing infiltration to prevent the perched water system from

contaminating the aquifer. The Agencies developed potential remedial action alternatives to reduce risk and protect groundwater. The remedial alternatives studied range from limited action to alternatives involving containment, removal, and treatment of soil and groundwater.

The Agencies are also considering actions to reduce the formation of perched water and minimize the migration of strontium-90 from perched water to the aquifer. These actions, combined with measures to prevent the infiltration of precipitation, are designed to protect the aquifer and reduce contaminant concentrations to achieve water quality standards.



This diagram shows the cleanup goal for contaminated soil in the tank farm and INTEC groundwater. Workers need to be protected from direct exposure to cesium-137 in the soil. This can be accomplished with a cap, a cap with hotspot removal, or a cap with hotspot grouting. Infiltration needs to be minimized to reduce perched water and prevent strontium-90 in the perched water system from moving down to the aquifer. If monitoring indicates the need, the aquifer can be treated to remove strontium-90.

Proposed Plan To Be Issued

The Agencies will release a proposed plan for the tank farm soil and groundwater at INTEC in late summer of 2006. This plan will identify a range of alternatives and the Agencies' preferred alternative. After reviewing and considering all information submitted during the 30-day public comment period for this plan, the Agencies will select a final remedy. The final remedial action of the tank farm soil and groundwater will be coordinated with treating the remaining tank waste and closing the tanks, and with ongoing cleanup under other programs.

As part of an interim action, site workers have paved over portions of the tank farm, diverted stormwater to a lined evaporation pond, and completed other actions to inhibit precipitation from infiltrating to the perched water system and transporting contaminants to the aquifer.



Get Involved

Read this fact sheet and review the remedial investigation/baseline risk assessment, feasibility study, and other related documents in the Idaho National Laboratory Administrative Record at <http://ar.inel.gov>

Visit the INL Technical Library in Idaho Falls (1776 Science Center Drive, 208-526-1185) or the Albertsons Library at Boise State University (1910 University Drive, 208-385-1621, ext. 109).

Call the Idaho Cleanup Project at 800-708-2680 for more information or to schedule a briefing.

Attend a public meeting in late summer to hear more, ask questions, and tell us what you think.

Comment on the proposed plan, which will be available for review in late summer 2006. Public acceptance is one of the criteria used by the Agencies to select the final remedy.

View the Idaho Cleanup Project web site at <http://idahocleanupproject.inel.gov>

The Path to Remediation

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as the Superfund Act, establishes a process to identify, evaluate, and remediate those sites where substances pose an excess risk to people and/or the environment.



Idaho Cleanup Project

Community Relations Office
MS 3940
P.O. Box 1625
Idaho Falls, ID 83415-3940
Address Service Requested

PRESORT STD
U.S. POSTAGE
PAID
IDAHO FALLS, ID
PERMIT NO. 73