

DENVER FEDERAL CENTER
Historic Contamination Cleanup Facts
Wednesday, July 29, 2009



Colorado Department
of Public Health
and Environment

Who is Responsible for the Cleanup

The General Services Administration is responsible for conducting the environmental cleanup activities at the Denver Federal Center on behalf of the United States Government.

The Colorado Department of Public Health and Environment (state health department) is responsible for Oversight of the environmental cleanup activities at the Denver Federal Center.

The state health department is requiring the General Services Administration to investigate, and remediate as necessary, known or potential environmental contamination throughout the Denver Federal Center.

There are four state health department employees conducting oversight of the environmental cleanup activities and the General Services Administration has dedicated six environmental professionals (and numerous consultants) to implement the environmental cleanup of the Denver Federal Center.

The state health department and the General Services Administration work as a team to ensure that the environmental cleanup at the Denver Federal Center is performed in a manner that is safe and protective of human health and the environment.

What has been accomplished to date?

A key point is that a lot of environmental cleanup has already occurred at the Denver Federal Center since work began in earnest in the mid-1990's.

The entire Denver Federal Center has been investigated and we know where and what type of environmental contamination exists at the site.

All environmental contamination that may have been causing an immediate threat to the public or Denver Federal Center tenants has been cleaned up using what we call 'interim measures.'

Approximately one-third of the Denver Federal Center land has been cleaned up to residential/unrestricted use levels.

What About the Nuclear Waste Disposal We Heard About?

Waste from Denver Federal Center Nuclear Reactor

There is one active nuclear research reactor at the Denver Federal Center whose operation is licensed and inspected by the Nuclear Regulatory Commission. All of the nuclear fuel that has been used to power the reactor since it began operation is still in storage within the reactor complex itself. There has been NO DISPOSAL anywhere of the spent fuel that powers the Denver Federal Center reactor.

The purpose of the Denver Federal Center nuclear reactor is to irradiate samples of geologic materials (e.g., rock cores and soil). Researchers then evaluate the radioactive decay that occurs in the sample to identify the mineral content of the geologic material. The researchers who use the irradiated geologic material must be licensed by the Nuclear Regulatory Commission and/or a state regulatory agency. Under existing regulations, the researchers are not allowed to dispose of the irradiated cores until the radiation levels drop to safe levels. The radiation levels in the samples irradiated in the Denver Federal Center nuclear reactor decrease rapidly to background levels.

It is possible that irradiated geologic samples that researchers were finished using were disposed in one of the construction rubble landfills on the Denver Federal Center prior to promulgation of radioactive waste disposal regulations. However, as noted above the radiation levels in these samples decrease rapidly to background. No radiation levels above background were encountered during the excavation of the GSA Area 1 - Southwest Landfill/St. Anthony's Phase II Area landfill.

Is there radioactive groundwater, and uranium, beryllium or arsenic contamination in soil or groundwater at the Denver Federal Center?

Uranium and other metals are ubiquitous in the Colorado environment and occur naturally in the soil and groundwater throughout the entire state, including the Denver Federal Center. The naturally occurring uranium in Colorado's soil and groundwater does cause the soil and groundwater to become slightly radioactive. The radioactive decay of these metals includes the release of radon into the environment. This is the primary reason that radon is such a concern in Colorado.

Thousands of soil samples and groundwater samples from the Denver Federal Center have been analyzed for uranium, beryllium and arsenic to date.

The results of the groundwater samples clearly show that the presence of uranium, beryllium and arsenic in the groundwater are *not* the result of operations at the Denver Federal Center. The concentration and occurrence of these chemicals in the Denver Federal Center groundwater are consistent with the levels found in unimpacted areas throughout the Front Range of Colorado.

Concentrations of uranium and beryllium in every soil sample collected at the Denver Federal Center are below the residential/unrestricted use cleanup level for each chemical. The results are also consistent with the levels found in unimpacted areas throughout the Front Range of Colorado.

The cleanup level for arsenic in soil is very low and the naturally occurring levels of arsenic found in unimpacted areas of the Front Range are almost always higher than the preferred cleanup level. With the exception of several small isolated parts of the Denver Federal Center, the concentration of arsenic found in the soil is consistent with the levels found in unimpacted areas of the Front Range and cleanup is not required. Soil remediation was conducted to address elevated arsenic concentrations that were above what we considered naturally occurring levels.

Has There Ever Been Nuclear Waste Disposal at the Denver Federal Center?

There was a small area outside the north end of Denver Federal Center Building 25 (see map at the end of this document) that was used throughout the 1970s as a disposal site for crushed rock samples collected by research scientists throughout the United States. The rock samples underwent physical and microscope tests inside Building 25 and the excess crushed rock was dumped on the ground just outside the building. Some of the rock samples were naturally occurring radioactive material in the form of cores collected from uranium ore sites throughout the country.

The dumping of the uranium core resulted in a ground surface area approximately 60 feet long and 15 feet wide having radiation levels at the ground surface that were higher than background levels. Radiation levels outside this area were at background levels.

The existence of radiation above background levels was discovered in the 1990's and the Building 25 crushed rock dump site remediation process began in August 2000. The project was completed by December 2002. A total of 23 cubic yards of radioactive uranium waste rock and associated uranium contaminated soil were excavated and the waste was disposed in a licensed disposal facility in Texas. In addition, another 75 cubic yards of soil contaminated with uranium metal and other metals in the soil were excavated and disposed as non-hazardous waste at the Conservation Services facility in Bennett, Colorado.

All radiation levels at the site are now at background levels as are the concentration of metals in the soil. The report of the remediation activities has been approved by the state health department and a no-further action required determination has been made for the site.

What is left to do?

The focus of the Denver Federal Center environmental cleanup program is now cleanup of residual soil and groundwater contamination that still exists at the site. The state health

department will ensure that the remaining cleanup activities are performed in a safe and protective manner, to return the Denver Federal Center land to a fully protective state. There are known and unknown environmental hazards at the Denver Federal Center. You need to know that all environmental cleanup and construction activities at the Denver Federal Center are performed with contingency plans in place to deal with unexpected environmental hazards to ensure protection of the workers, the Denver Federal Center tenants and the general public.

What about the solvent groundwater contamination impacting off-site areas

There are two separate solvent plumes that have impacted the groundwater off of the Denver Federal Center property toward the east. These contaminant plumes will be remediated over time. While the plumes are being remediated, there is no threat to the residents living near or above the plumes since no one is drinking the impacted groundwater. The concentration of solvents in the plumes does not represent a health threat to people breathing the outdoor or indoor air above the plumes.

What is the state health department doing to address the concerns noted in the Rocky Mountain Peace and Justice Center Report?

The state health department has read the Rocky Mountain Peace and Justice Center Report titled "Grounds for Concern." The state health department found that although a lot of information was presented, there was little to act upon that hasn't been addressed already. In addition, no new information was presented that would alter the focus or schedule of the existing Denver Federal Center Cleanup Plan.

