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Nevada Site Office Environmental Management

EM NEWS FLASH

Historical Disposal Area at NNSS Closed!

The Nevada National Security Site (NNSS, formerly the Nevada Test Site) recently closed a historical 92-acre waste disposal area—completing an important milestone for the U.S. Department of Energy's (DOE) environmental cleanup program.

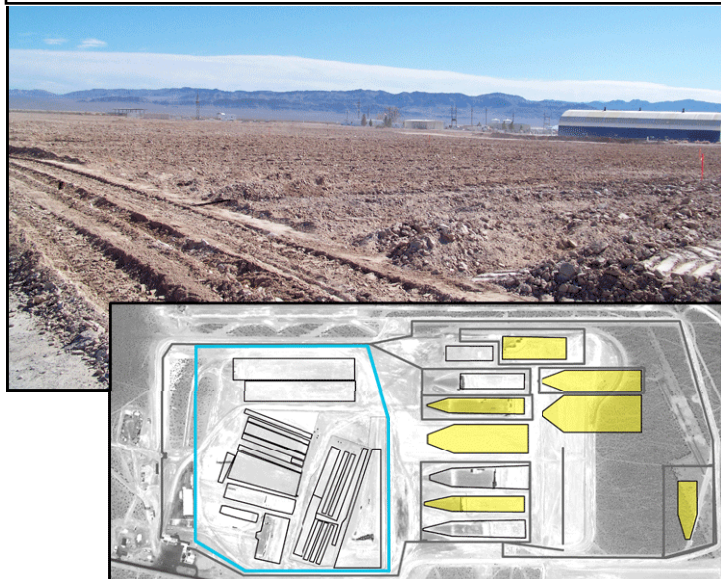
On May 10, 2011, the NNSS waste management team finished construction of engineered covers over the 92-acre plot, located at the Area 5 Radioactive Waste Management Site, using a nearly eight-foot thick layer of alluvial soil. An additional natural barrier, consisting of native vegetation, will be planted in the fall.

The cover, called an *evapotranspiration* cover, extends over a total of 39 disposal units, including excavated trenches and boreholes that contain [low-level](#) and [mixed low-level radioactive waste](#). Some of these units date back to the 1960s.

Evapotranspiration is a term describing the transport of water into the atmosphere from surfaces (**evaporation**) and from vegetation (**transpiration**).

Completing the cover is a significant accomplishment for the [DOE National Nuclear Security Administration Nevada Site Office](#) because it signifies closing the loop in the permanent waste disposal process, according to Federal Project Director, Frank DiSanza. "Closing the 92-acre area," he commented, "allows us to move toward restoring that area to a more natural state while implementing a long-term monitoring program." The Waste Management Project at the NNSS, meanwhile, continues to operate seven engineered, excavated cells for the disposal of containerized low-level and mixed low-level waste.

Photo: Alluvial soil cover at NNSS historic 92-acre disposal area.
Figure: Blue outline shows 92-acre boundary. Yellow areas indicate active disposal units.



The decision to use an evapotranspiration cover was based on several factors, explained DiSanza. These types of covers have been used and tested at the NNSS for 16 years and have shown to be effective in preventing rain water from reaching the level of the waste containers. Studies on similar covers, in fact, have shown zero infiltration below the six-foot mark. NNSS waste experts cite several additional benefits, including:

- Long-term durability
- Ability to withstand erosion and the settling of land
- Minimal maintenance
- Hospitable for native vegetation

In mid October 2011, workers will begin seeding the 92-acre-plot to prepare for a layer of desert vegetation, to include native shrubs and grasses. They will then install a watering system that will help sustain the plants until they are mature enough to thrive on their own.

What geologic conditions make the NNSS suited for waste disposal?

- Extremely arid (12 cm precipitation per year)
- Evapotranspiration 14-times that of precipitation
- Water table approximately 780 feet below surface

Though completing the cover is a major accomplishment for the Nevada Site Office, it also represents important progress for national Environmental Management initiatives, which include establishing permanent disposal options for cleanup sites across the DOE Complex. The NNSS currently receives federal low-level and mixed low-level waste from a national network of waste generators, many of which are dealing with cleanup-related waste.

Closure of the 92-acres was done in accordance with the [Resource Conservation and Recovery Act](#) permit that governs mixed low-level waste management practices at the NNSS and the [Federal Facility Agreement and Consent Order](#) that addresses the remediation and closure of historical contaminated sites on the NNSS.

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