

# FACT SHEET



*This fact sheet provides information about the surface water and ground water at the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project site.*

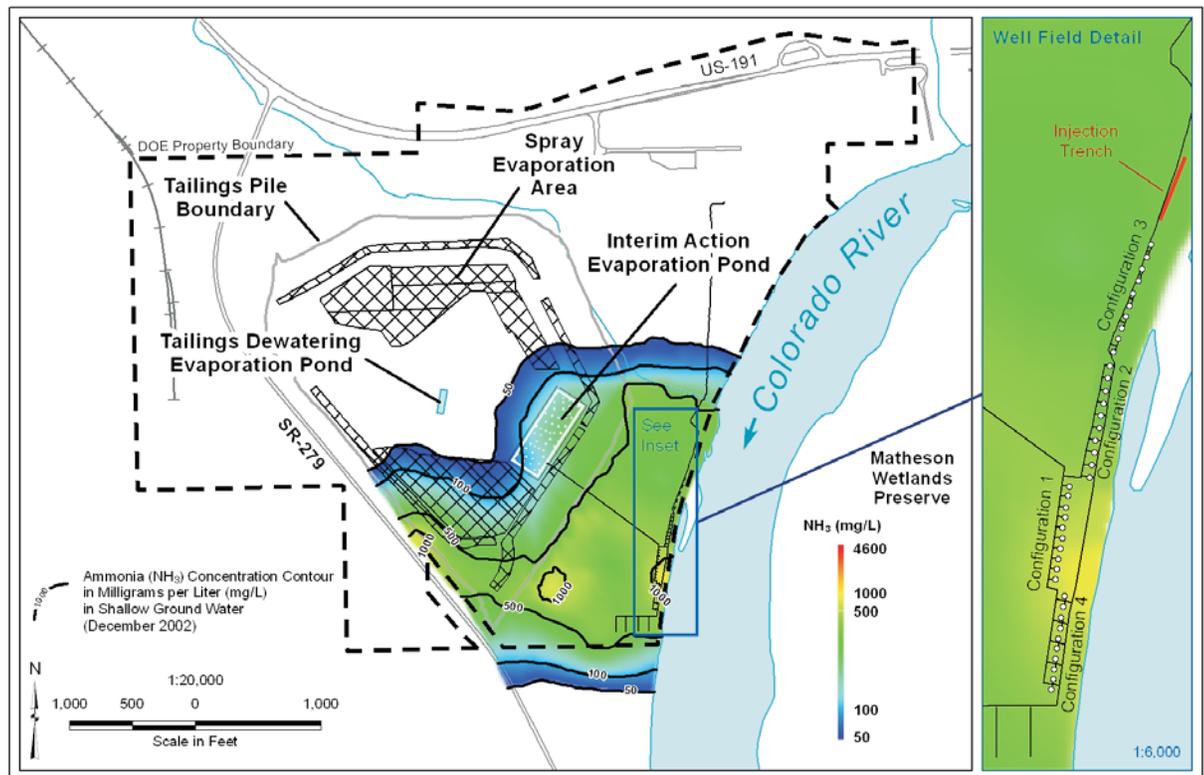
## Surface Water and Ground Water at the Moab UMTRA Project Site

### Interim Action Well Field and Injection Trench

In October 2001, ownership of the former uranium-ore processing site near Moab, Utah, was transferred to the U.S. Department of Energy (DOE) for cleanup and reclamation. While it evaluates long-term solutions to site contamination, DOE has implemented several interim measures at the Moab site.

One of these measures is an interim action system to address concerns about elevated ammonia levels in ground water at the Moab site. Prior to DOE site ownership, no efforts were made to prevent contaminated ground water from reaching the Colorado River. Beginning in 2003, DOE installed a series of extraction wells designed to intercept ammonia in high-concentration areas before it discharges to the Colorado River and potentially affects endangered fish species and critical habitat. The system was expanded over the next few years and now consists of four configurations of 10 wells each. Figure 1 shows the location of the well field relative to the tailings pile and the river.

Some of the well configurations include dual-purpose extraction and freshwater injection wells; however, extraction is currently the primary method used. Ground water is extracted from the shallow aquifer and pumped via pipeline to a lined 4-acre evaporation pond that was constructed on top of the tailings pile outside the 100-year floodplain. As of early June 2007, the extraction wells have captured



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Figure 1. Location of Interim Action Well Field

approximately 81 million gallons of contaminated ground water, which contained 385,200 pounds of ammonia and 1,660 pounds of uranium, before it reached the Colorado River. For comparison purposes, 81 million gallons is approximately the volume of water in 123 Olympic-sized swimming pools with an average depth of 6.5 feet.

A 160-foot long infiltration trench was added to the system north of the Configuration 3 wells in fall 2006. This 10-foot-deep trench is designed to inject filtered freshwater into the subsurface, thus creating a hydraulic barrier between the ammonia plume and the backwater areas of the river. The freshwater injection rate using the trench is being compared to the rate attained through a configuration of injection wells. As of early June 2007, approximately 2.4 million gallons of freshwater has been injected into the trench.

The volume and concentration of contaminants currently reaching the Colorado River are low enough to be protective of both aquatic and human receptors. The effectiveness of the interim action system is being evaluated, and it may eventually become part of the final ground water remedy. The Biological Opinion prepared by the U.S. Fish and Wildlife Service and incorporated into the Record of Decision stipulates that a ground water treatment system be implemented by 2010 and the effectiveness of treatment be demonstrated by 2015.

## Spray Evaporation System

A sprinkler system was installed on top of the tailings pile in spring 2004 to operate in conjunction with the existing evaporation pond to maximize the evaporative capacity of the interim action system. Water from the evaporation pond is sprayed on top of the tailings pile using sprinklers that cover a total of 38 acres. The spray evaporation system is designed to evaporate the water before it percolates through the tailings pile and to provide dust suppression.

## Water Sampling

DOE conducts monthly sampling of the surface water and ground water to assess the performance of the interim action system. Up to 140 wells are sampled on a monthly basis. The primary constituents sampled are ammonia, copper, manganese, selenium, sulfate, uranium, and total dissolved solids. A separate sampling program conducted three times a year involves monitoring constituents from site-wide wells and comparing the concentrations to those found in sampling locations upstream and downstream from the site.

Analytical results from extensive sampling conducted in the Matheson Wetlands Preserve across the Colorado River from the Moab site validates DOE's conceptual model that no contamination is being transported underneath the river to the preserve.

For more information about the Moab UMTRA Project, visit our website at <http://gj.em.doe.gov/moab>.

