

US EPA ARCHIVE DOCUMENT

Navajo UMTRA Update

Uranium Contamination Stakeholder Workshop
September 14 - 16, 2010
Tuba City, Arizona



Ground Water Remediation

- Tuba City
- Monument Valley
- Shiprock

Mexican Hat

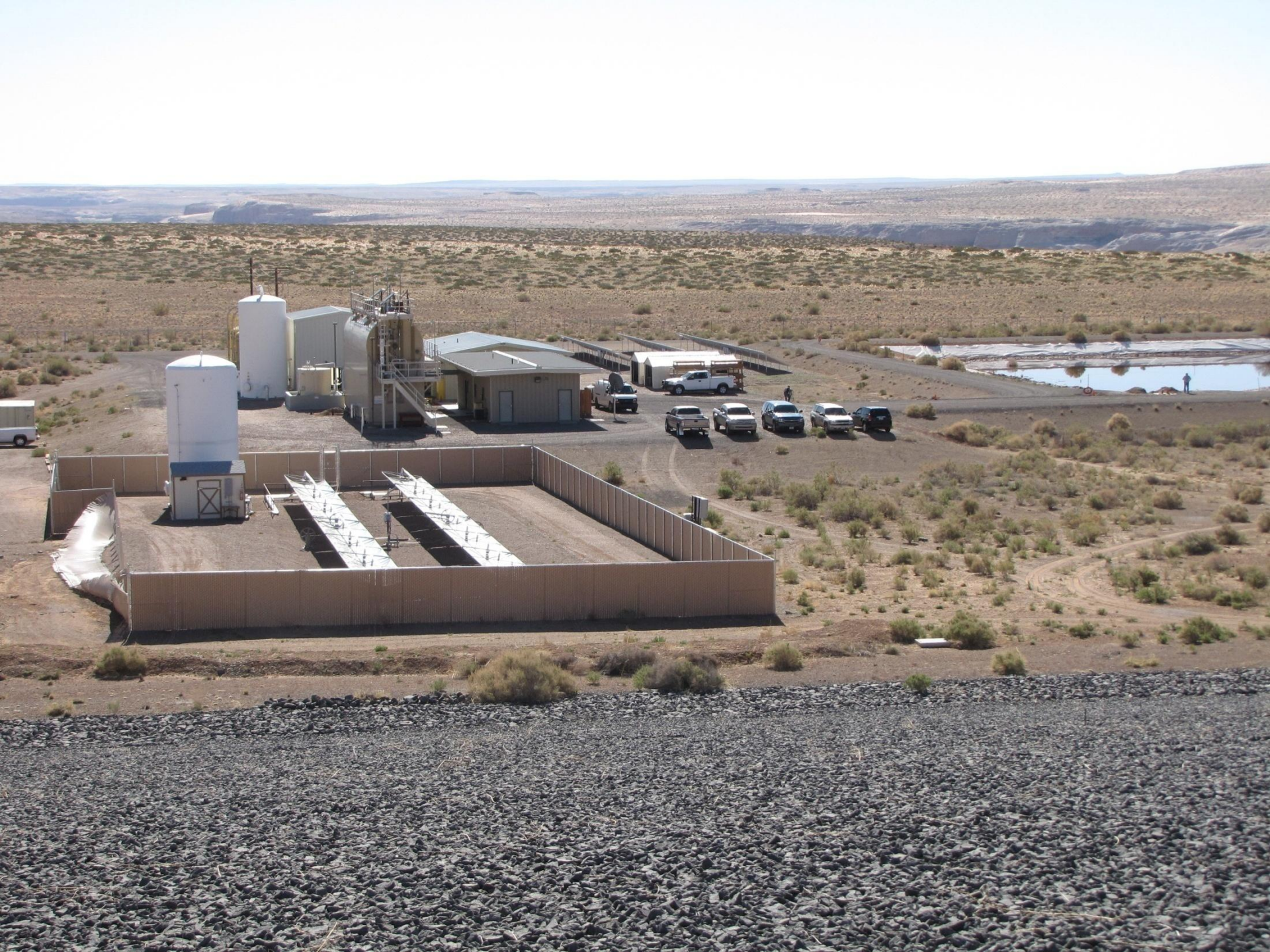
Tuba City GW

- ❑ Water treatment is through ion exchange / distillation unit
- ❑ Extraction wells pump contaminated water for treatment at 100 gallons / minute with a 90% return rate
- ❑ 3.4 million gallons of water extracted & 3.0 million gallon returned as of August 2010
- ❑ Mass removed from the water for Uranium (727 lbs); Nitrate (1.1 million lbs); and Sulfate (2.9 million pounds) moved to the evaporation pond as of July 2010
- ❑ The contaminated ground water plume extents up to 2,000 feet down gradient (SW) of the disposal cell



Tuba City GW, cont.

- Started up solar photovoltaic (PV) system & operating reverse osmosis pilot plant
- Ground water within the plume is not used for domestic or agricultural purposes
- DOE is transferring greenhouse ownership to Dine College
- Staff monitor semi-annual environmental sampling activity
- Staff provides assistance to Navajo EPA concerning the well construction & Site 160 projects
- Staff conducts internal quarterly and participates in the annual LTSM inspections









Monument Valley GW

- ❑ Phytoremediation is the preferred selection for the ground water cleanup
- ❑ Pilot studies (plant uptake & soil moisture) will be completed by end of the year to begin full-scale cleanup
- ❑ Maintain ground water ethanol injection control study to enhance the reduction of the nitrate concentration
- ❑ Staff participate in the environmental sampling (soil, plant tissue, well construction / development and water)
- ❑ Completed radon / gamma radiation assessment for exposure rate to the general public







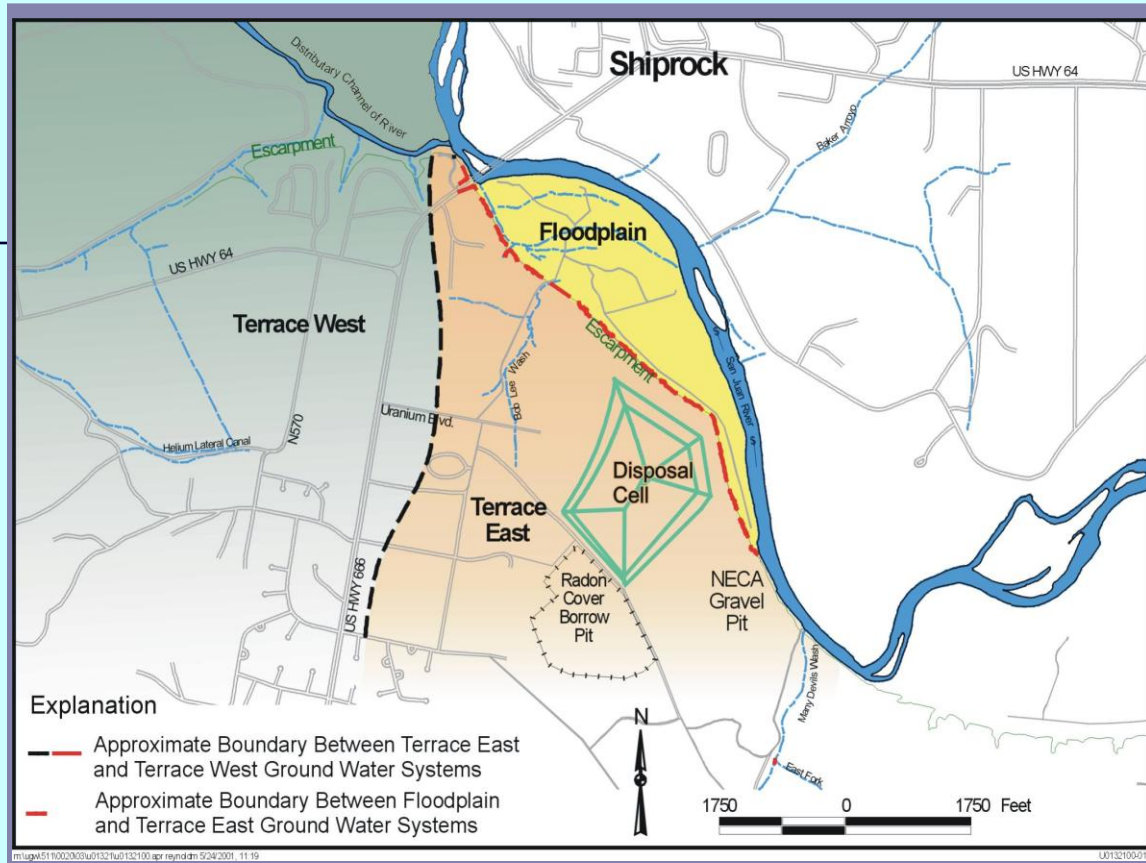
Shiprock GW

- ❑ Site remediation include the extraction control of contaminated water and pump to the evaporation
- ❑ Extraction of 20 million gallons of contaminated water in the terrace & 64 million gallons from the floodplain
- ❑ Additional remedial activities include phytoremediation application to control sub-surface ground water flow
- ❑ Installation of two slurry walls (trench 1 & 2) to capture sub-surface ground water flow into the floodplain area
- ❑ System enhancement to address standing and pooled water from seeps in Many Devils Wash



Shiprock GW, cont.

- Eliminate migratory bird use of the evaporation pond by coloring of contaminated water to reduce algae growth as a food source
- Completed the radon & gamma radiation exposure assessment of the disposal cell in December 2009
- Staff participate in the semi-annual environmental sampling, performs quarterly and participates in the annual LTSM inspections
- Perform weekly inspection of the remediation system
- Draft Environmental Covenant for site application with current review by Navajo EPA and Navajo DOJ



Shiprock UMTRA

Floodplain area highlighted in yellow and both terraces in tan and light green color







04.20.2007



Mexican Hat Activities

- Staff performs quarterly inspection of the disposal cell and down gradient ground water seep locations
- Staff participates in the annual LTSM inspection with DOE personnel







Contact Information

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