

ADDITIONAL STUDIES AND INTERIM ACTIONS

TUBA CITY LANDFILL

February 12, 2008



Overview

- RI/FS and Interim Actions
- Initial Investigations
- Interim Actions
- Limited Additional Studies
- Potential GW Interim Remedies
- Other RI/FS Studies

CERCLA (RI/FS) Goal

“Implement remedies that eliminate, reduce, or control risks to human health and the environment.”

RI/FS Process



Initial Investigations

- Collect and analyze existing data
 - Physical Characteristics
 - Site Conceptual Model
- Identify limited additional studies
- Identify need for Interim Remedies to Mitigate Immediate and Imminent Health Risks
- Develop preliminary remedial action alternatives

Initial Investigations

- Identify need for Treatability Studies
- Identify Applicable Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBCs) information
- Develop RI/FS Work Plan and other deliverables
 - Sampling and Analysis Plan
 - Health and Safety Plan
 - Community Relations Plan

Interim Actions

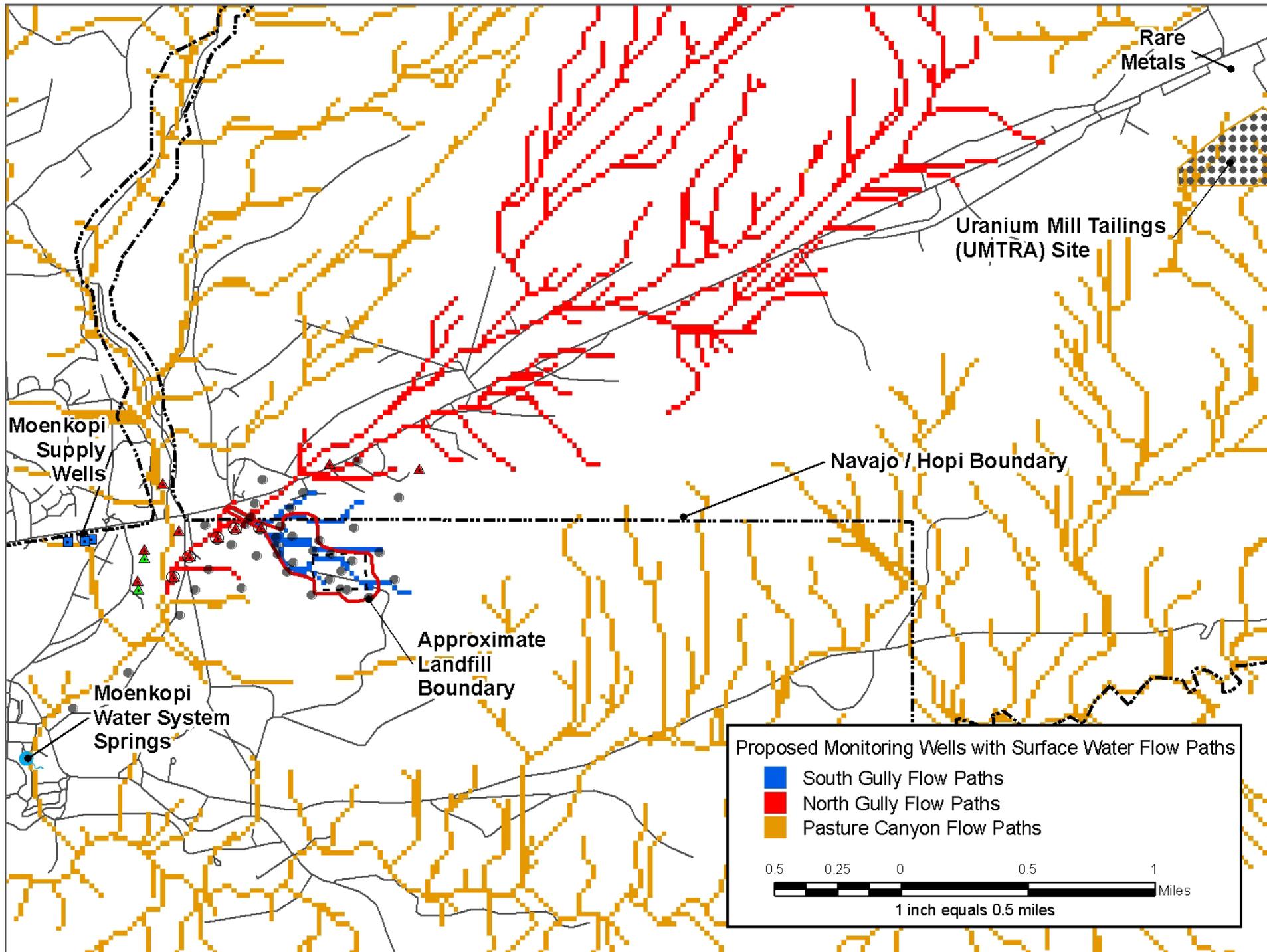
- Close impacted private wells
- Remove waste on residential properties and cover with clean soil
- Fence old landfill cells to limit access and exposure
- Evaluate immediate threat or risk posed by landfill leachate and implement interim remedy to mitigate identified risks

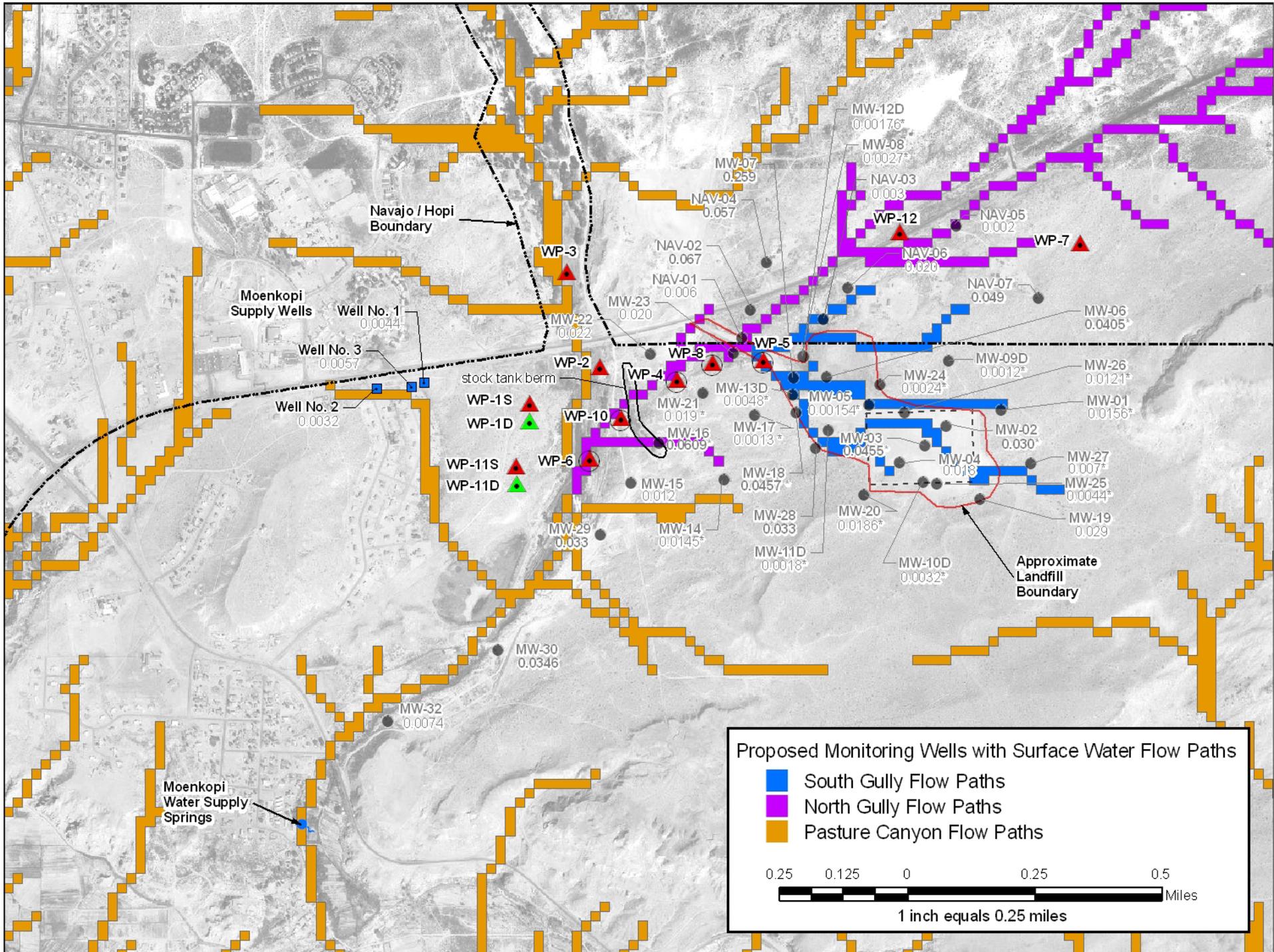
Limited Additional Studies

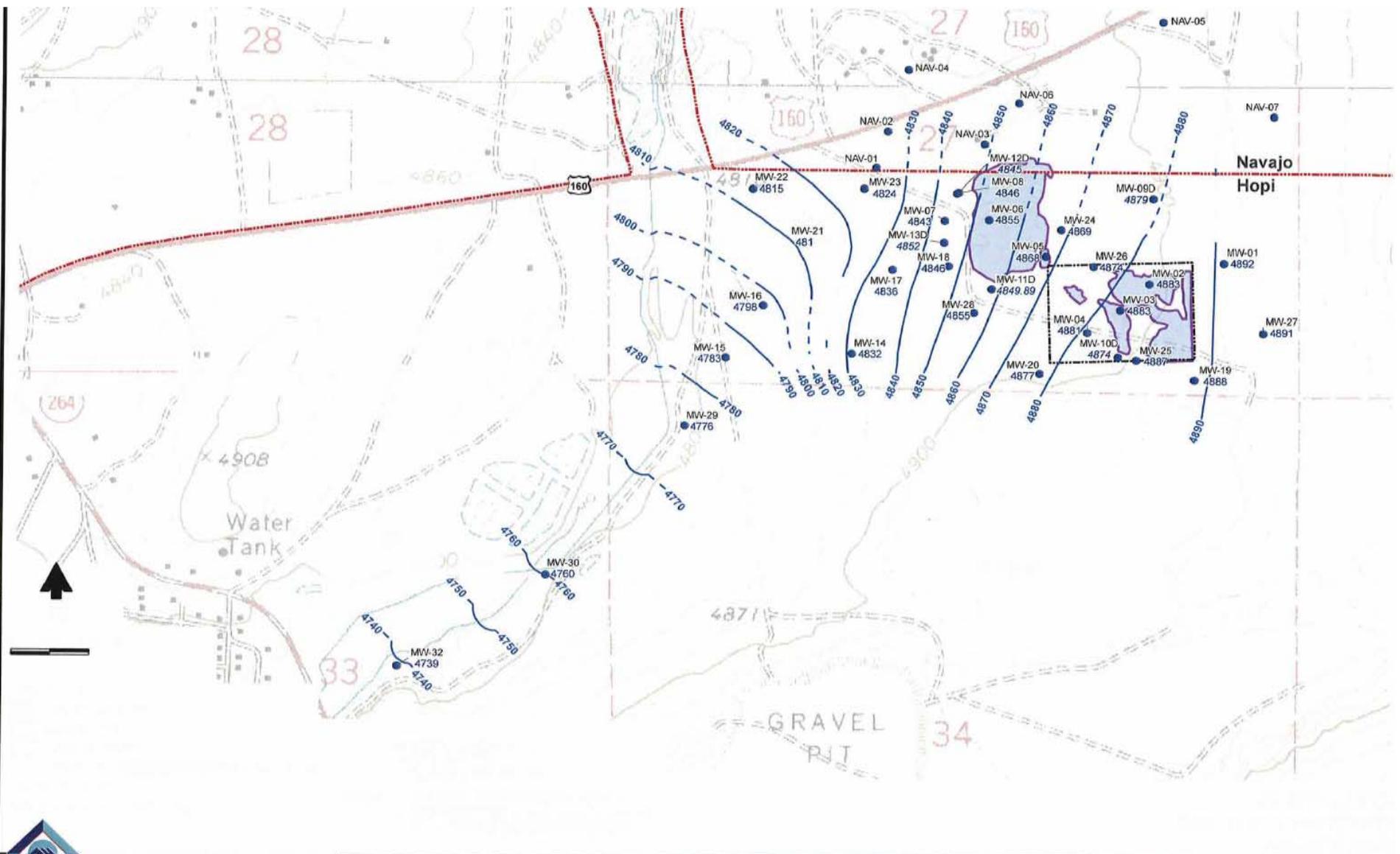
- Geologic Mapping
 - Contour map
 - Evaluate hydrogeologic connection of water supply to the landfill
- Aeolian sand leachability study
- Well Installation
 - Eleven ± shallow GW monitoring wells.
 - Two ± deep monitoring wells.

Limited Additional Studies

- Conduct comprehensive groundwater monitoring event,
 - including three Moenkopi supply wells and up to four springs.
 - Depth discrete sampling in 12 wells
- Conduct pump test
 - One extraction well
 - Two monitoring points
- 13 to 19 slug tests.

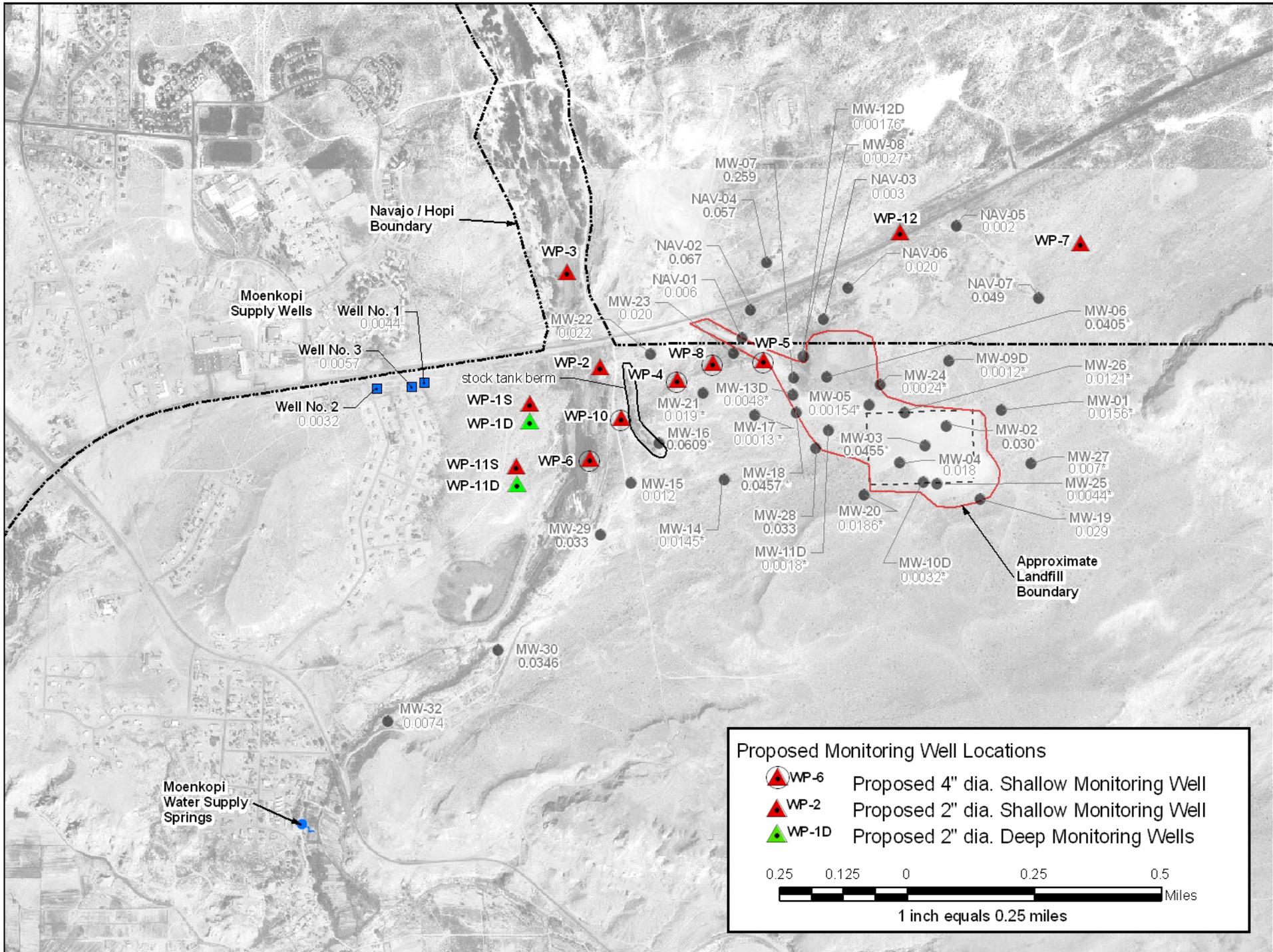






Figure





Potential Groundwater Interim Remedial Alternatives

- Plume containment by pumping
- Alternatives
 - Off site disposal to UMTRA Site
 - Media filtration (MF) and reverse osmosis (RO)
 - MF, RO, inline evaporation
 - MF, RO and ion exchange

Other RI/FS Studies

- Deep wells to assess leachate migration south and west of TCL
- Up-gradient groundwater investigations
- Groundwater treatability studies
- Additional biological receptor surveys
- Landfill characterization (exploratory trenching)
- Geotechnical Investigations
- Baseline Risk Assessment