

U.S. Department of Energy Grand Junction Office

# Public Information Meetings



## Status of *Environmental Impact Statement* for the **Moab, Utah, Project**

June 17 and 18, 2003



## Meeting Locations

Tuesday, June 17, 2003  
7:00 – 10:00 p.m.

San Juan High School Auditorium  
311 Bronco Boulevard  
Blanding, Utah  
In English only

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Wednesday, June 18, 2003  
9:30 a.m. – 12:30 p.m.

White Mesa Ute Recreation Center  
White Mesa, Utah  
Presented in English  
Translated in Ute  
Translated in Navajo

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Wednesday, June 18, 2003  
7:00 – 10:00 p.m.

Star Hall  
159 East Center Street  
Moab, Utah



# DOE Update on EIS Process Public Scoping Summary

Remediation of the Moab Uranium Mill Tailings  
Grand County, Utah  
*Environmental Impact Statement (EIS)*



## Public Scoping Meetings

- Scoping Period: December 20, 2002, through February 14, 2003
- Six public meetings generated 386 comments
  - ◆ Green River: January 21, 2003 (12 people)
  - ◆ Moab: January 22, 2003 (49 people)
  - ◆ Blanding: January 23, 2003 (60 people)
  - ◆ Blanding meeting with Navajo Nation: January 23, 2003 (32 people)
  - ◆ White Mesa Ute Mountain Tribe: January 23, 2003 (50 people)
  - ◆ East Carbon: January 28, 2003 (48 people)

## Other Scoping Comments

- 175 individuals provided written comments
- 45 individuals provided oral comments via telephone

## **EIS Consideration of Scoping Comments**

- Comments have been reviewed by DOE and contractor staff members
- Comments will be summarized in Draft EIS
- Complete comment record maintained in project files and in Reading Rooms
- Generation of EIS scope, content, and analyses considers scoping comments

## *Moab Project*

Documents are available at the Moab Project Public Reading Rooms located in the

Grand County Library  
25 South 100 East  
Moab, Utah  
(435) 259-5421

Library hours:  
9:00 a.m. to 9:00 p.m. Monday through Friday  
10:00 a.m. to 6:00 p.m. Saturday  
Closed Sunday

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Blanding Branch Library  
25 West 300 South  
Blanding, Utah  
(435) 678-2335

Library hours:  
Noon to 7:00 p.m. Monday through Thursday  
2:00 to 6:00 p.m. Friday  
10:00 a.m. to 2:00 p.m. Saturday

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White Mesa Ute  
Administrative Building  
(off Highway 191)  
White Mesa, Utah  
(435) 678-3397

Library hours:  
8:00 a.m. to 4:30 p.m. Monday through Friday  
Closed weekends

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To contact DOE

Email: [moabcomments@gjo.doe.gov](mailto:moabcomments@gjo.doe.gov)  
Call toll free: 1-800-637-4575



## Proposed Action

- Remediate the Moab millsite
  - ◆ Tailings
  - ◆ Contaminated site soils
  - ◆ Contaminated ground water
  - ◆ Contaminated vicinity properties
- No action alternative
- No preferred alternative in Draft EIS

## Surface Remediation Alternatives

- Cap-in-place
- Off-site disposal
  - ◆ Crescent Junction: single purpose site
  - ◆ Klondike: located near county solid-waste landfill
  - ◆ White Mesa Mill: co-located with existing mill tailings at a site that will become DOE's responsibility for long-term management
- Tailings transport by truck, rail, and pipeline

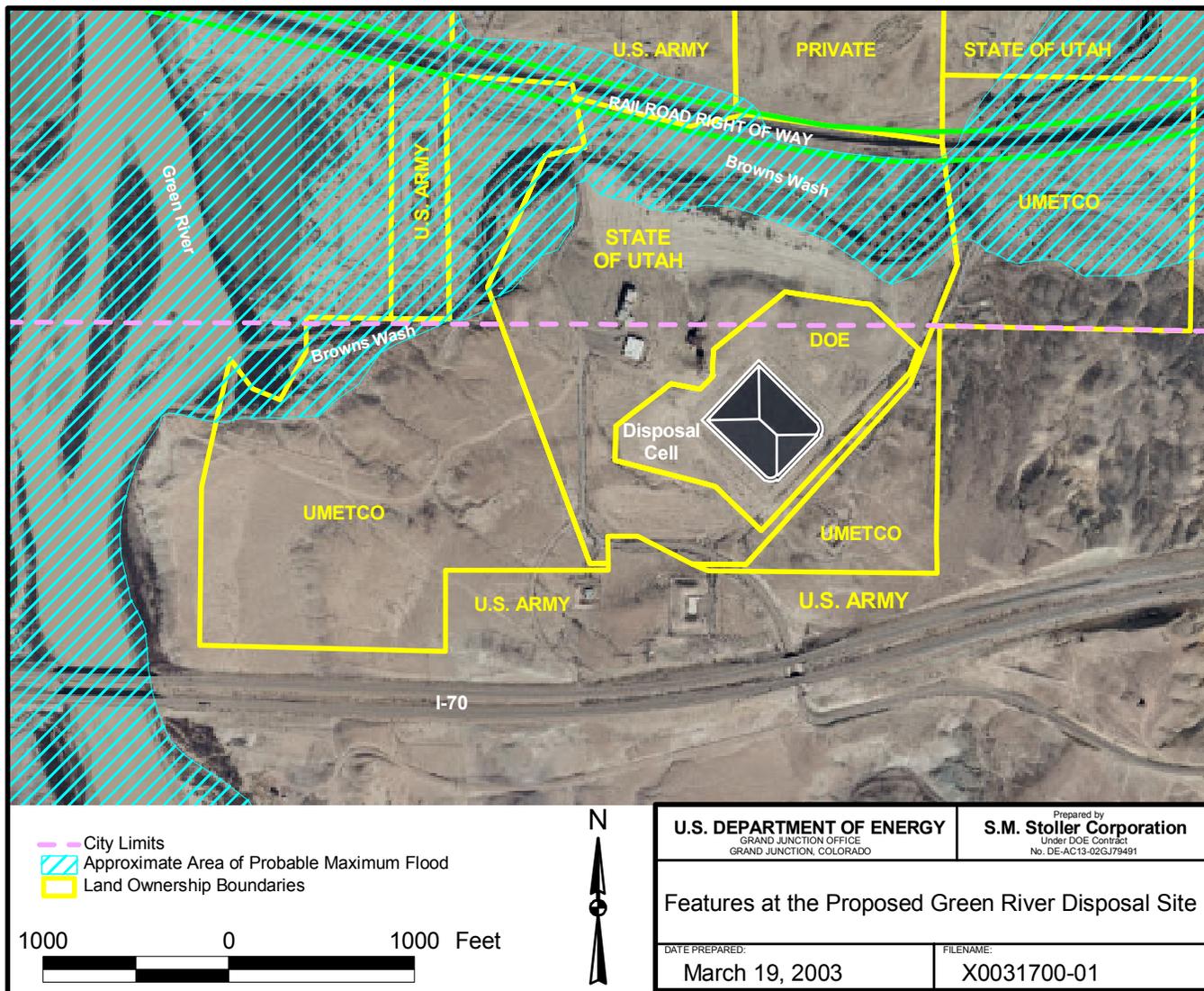
## Alternatives Dismissed From Detailed Evaluation

- Included in the Notice of Intent (NOI)
  - ◆ East Carbon Development Corporation (ECDC) site
- Excluded before NOI
  - ◆ Green River
  - ◆ Box Canyon
  - ◆ Rio Algom Mining Corporation
  - ◆ Cisco
  - ◆ Whipsaw Flats
  - ◆ Others

## Rationale for Site Dismissals

- ECDC formally withdrew its site
- Other sites eliminated for the following reasons
  - ◆ Insufficient land area
  - ◆ Proximity to sensitive environmental factors such as
    - Floodplains
    - Critical habitats
    - Population
  - ◆ Suboptimal hydrologic setting
  - ◆ Failure to add to the range of reasonable alternatives
  - ◆ Proximity to transportation

# Features at the Proposed Green River, Utah, Disposal Site



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## Cooperating Agencies

- National Park Service
- Bureau of Land Management
- U.S. Environmental Protection Agency
- U.S. Nuclear Regulatory Commission
- Army Corps of Engineers
- U.S. Fish and Wildlife Service
- State of Utah
- Ute Mountain Ute Tribe
- San Juan County
- Grand County
- City of Blanding
- Community of Bluff

## **EIS Schedule**

Notice of Intent	December 2002
Scoping	January–February 2003
Public Information Meetings	June 2003; September 2003
Draft EIS Publication	January 2004
Draft EIS Public Meeting	February 2004
Draft EIS Comment Period	January–February 2004
Final EIS Publication	August 2004
<i>Record of Decision</i>	September 2004

# Proposed Surface Remediation



# Proposed Surface Remediation

## Cap-in-place

- Establish site controls
- Construct temporary facilities
- Demolition of existing facilities
- Place non-pile materials on pile
- Regrade pile side slopes
- Monitor consolidation
- Import cover materials
- Construct cover
- Demobilize temporary facilities
- Reclaim millsite
- Realign Moab Wash

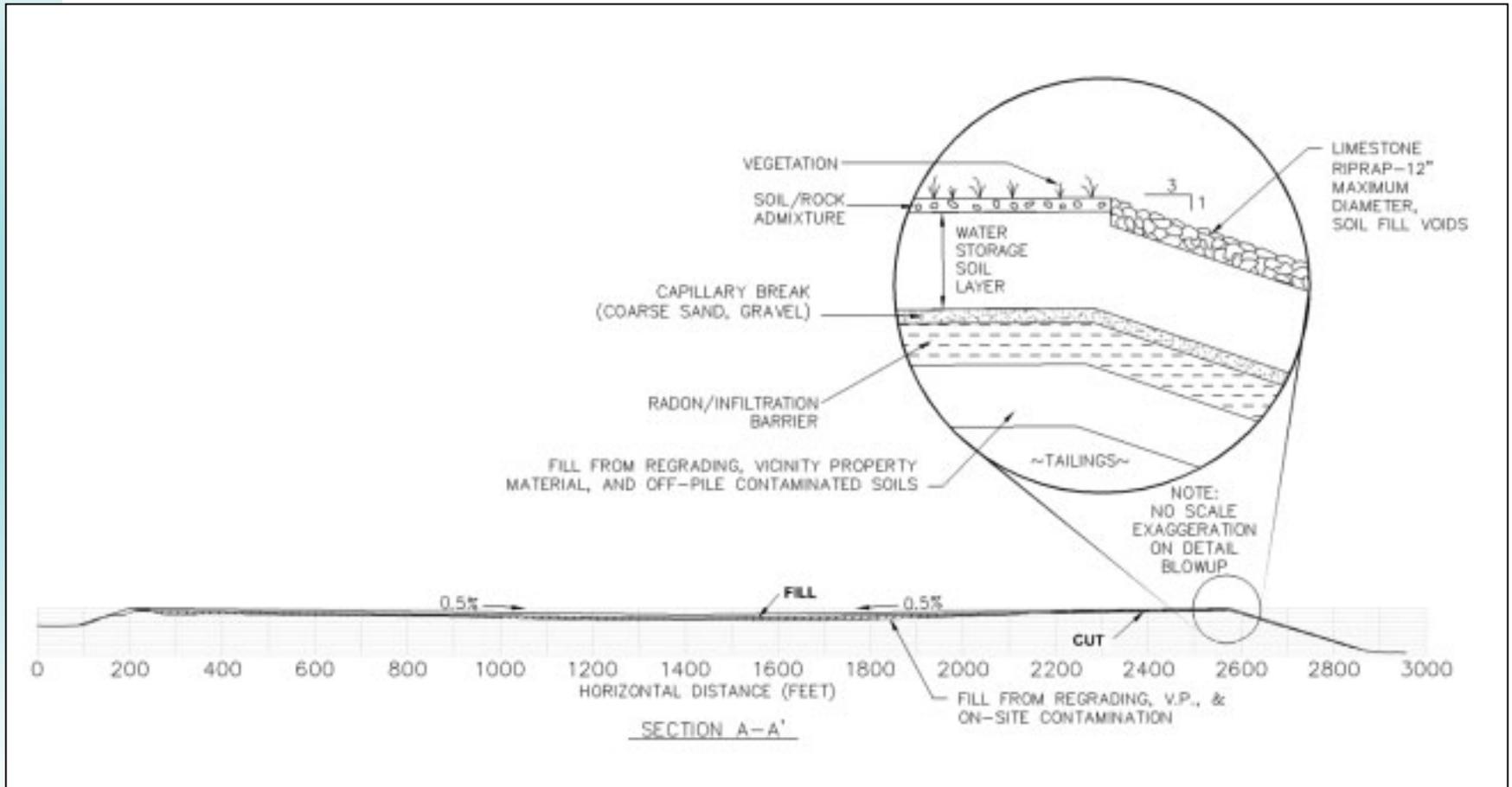
# Final On-Site Disposal Cell



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# Final On-Site Disposal Cell Cross Section



# Proposed Surface Remediation Off-Site Disposal

## Millsite

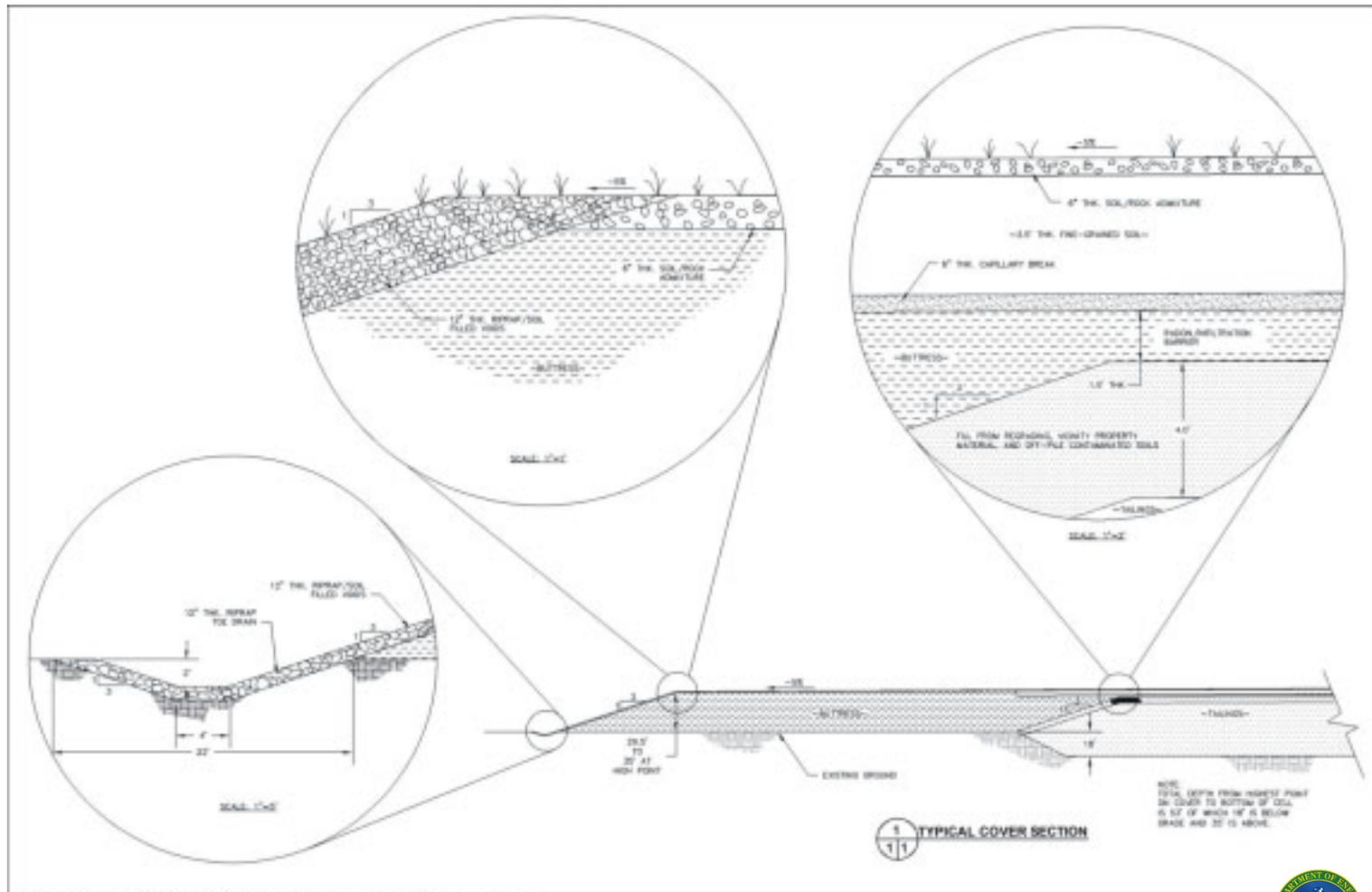
- Establish site controls
- Construct temporary facilities
- Construct load-out facilities
- Excavate non-pile materials
- Demolish existing facilities
- Excavate tailings pile
- Prepare and transport tailings
- Demobilize temporary infrastructure
- Reclaim millsite

## Disposal Site

- Establish site controls
- Construct temporary facilities
- Construct off-load facilities
- Excavate disposal cell
- Place and compact tailings
- Import cover materials
- Place cover
- Demobilize temporary infrastructure



# Reference Disposal Cell Cover Sections

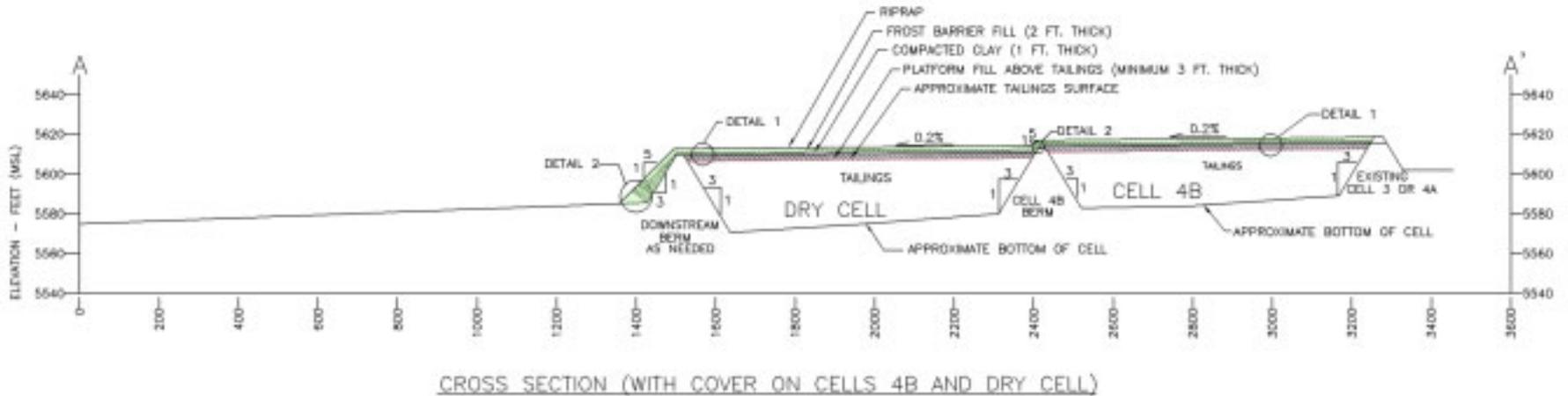


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## White Mesa Mill Site Cell Cover



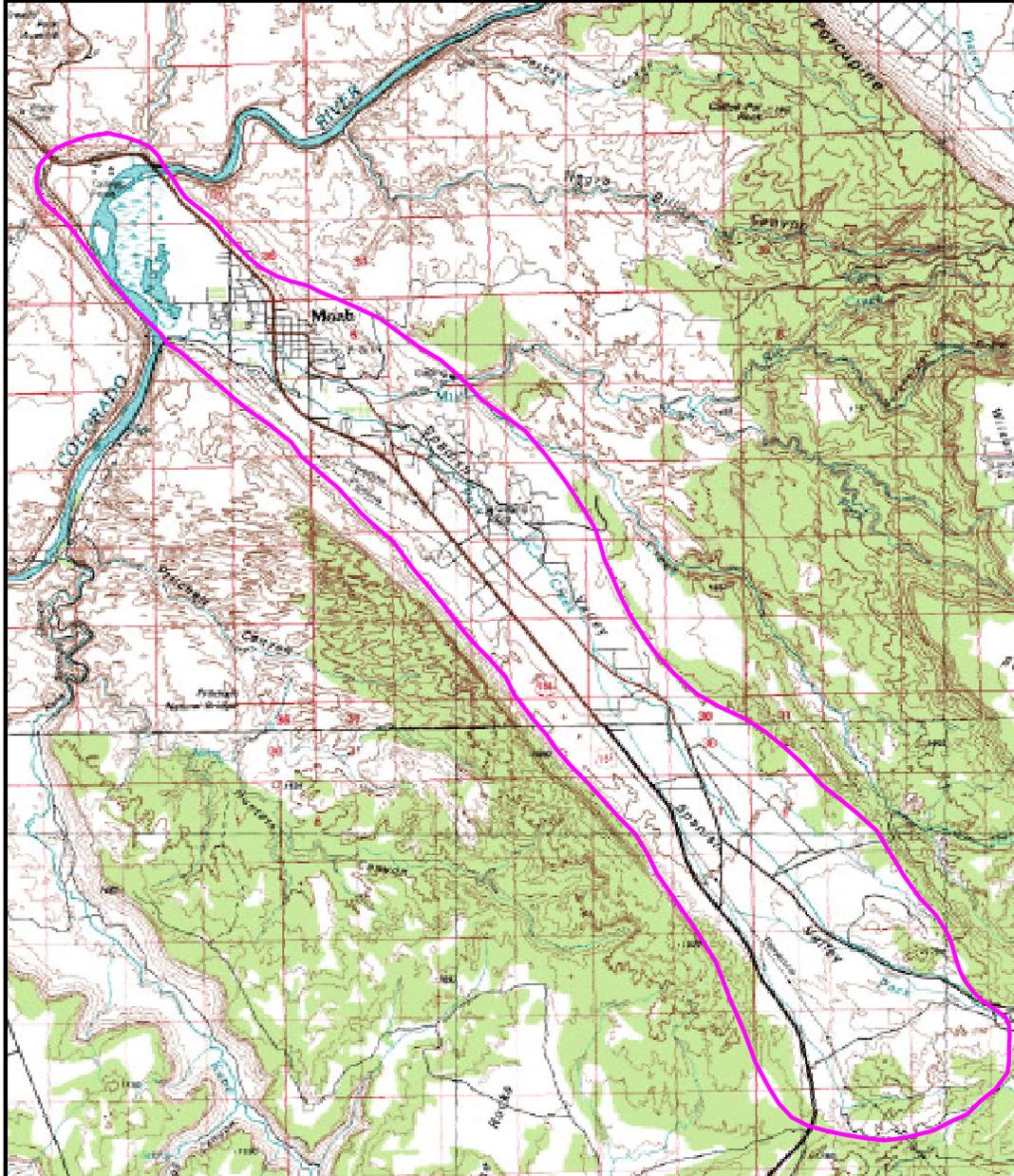
EXISTING GROUND SURFACES SHALL BE REGRADED TO CONSTRUCT THE COVER WITH A FINAL SURFACE THAT IS CONSISTENT WITH THE RECLAMATION COVER GRADING PLAN.

REFERENCE:  
INTERNATIONAL URANIUM (USA) CORPORATION, MOAB TAILINGS PROJECT WHITE MESA SLURRY PIPELINE OPTION, FIGURE 1-2.

## Vicinity Properties

- U.S. Environmental Protection Agency (EPA) set standards for cleanup (40 CFR 192)
- EPA identified 130 properties with elevated gamma anomalies in 1971 survey
- Based on experience in UMTRA Program, DOE estimates 100 vicinity properties in Moab may require remediation
- Focus characterization first on properties with anomalies
- DOE seeking to establish limits of surveys within Moab and Spanish Valley unless property owner has historical knowledge of contamination derived from millsite

# Vicinity Property Inclusion Survey Area



 Vicinity Property Inclusion Survey Area



U.S. DEPARTMENT OF ENERGY  
GRAND JUNCTION OFFICE  
GRAND JUNCTION, COLORADO

Prepared by  
**S.M. Stoller Corporation**  
Under DOE Contract  
No. DE-AC13-G2G79481

Vicinity Property  
Inclusion Survey Area

DATE PREPARED:  
June 3, 2003

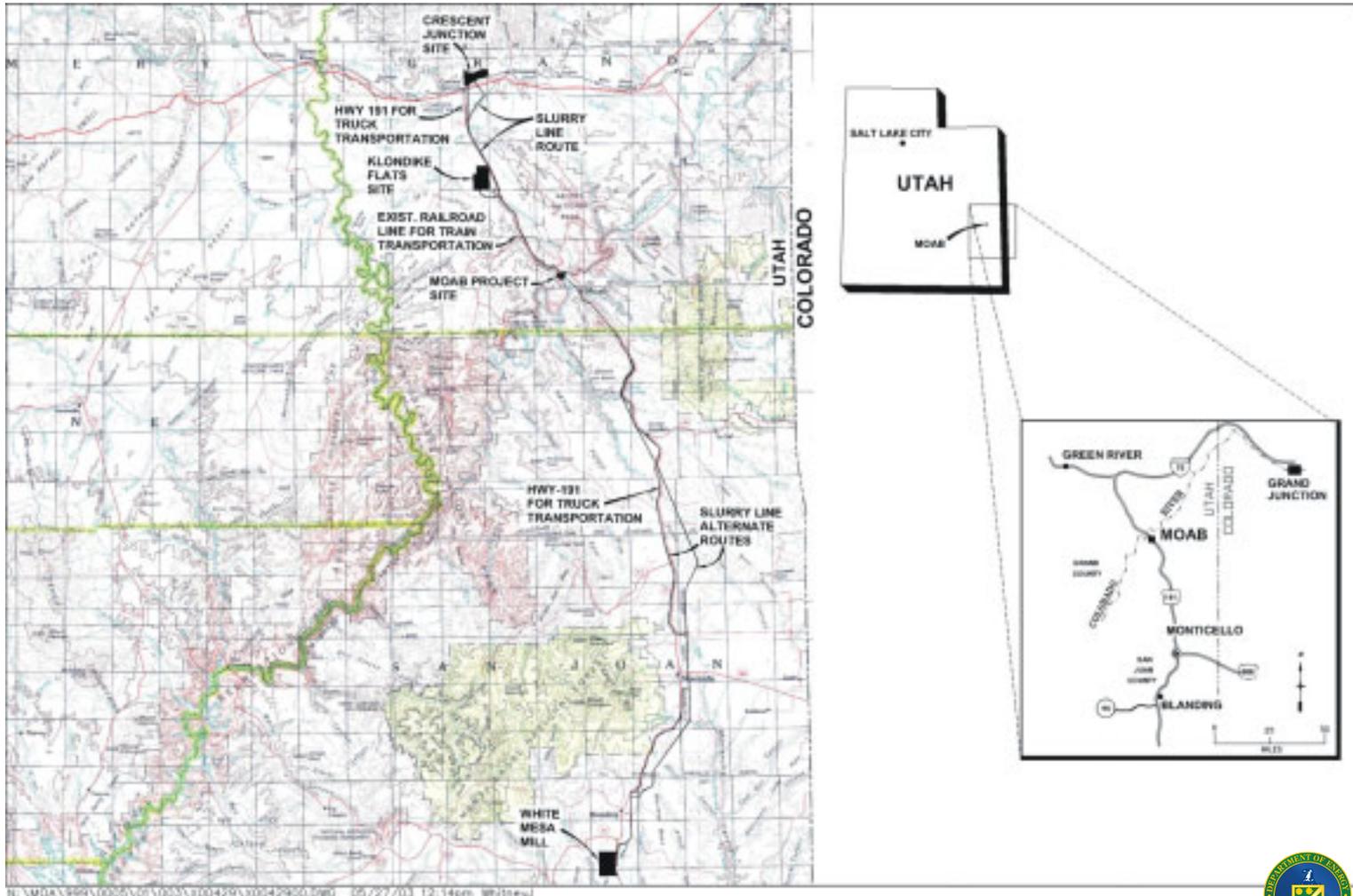
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1-24K\_100KPipeline-03



# Transportation Modes



# Overview of Transportation Alternatives



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## Off-Site Disposal Transportation Modes

<b>Disposal Site</b>	<b>Rail</b>	<b>Truck</b>	<b>Slurry Pipeline</b>
Klondike	Yes	Yes	Yes
Crescent Junction	Yes	Yes	Yes
White Mesa Mill	No	Yes	Yes

# Off-Site Disposal Transportation Modes Tailings Rail Haul

<b>Schedule</b>	<b>Method (30 cars)</b>	<b>Total Train Round Trips per Day</b>	<b>Duration (years)</b>
12-hour shift/ 6-day week	Gondolas	4	3.3
Two 10-hour shifts/6-day week	Gondolas	8	1.6

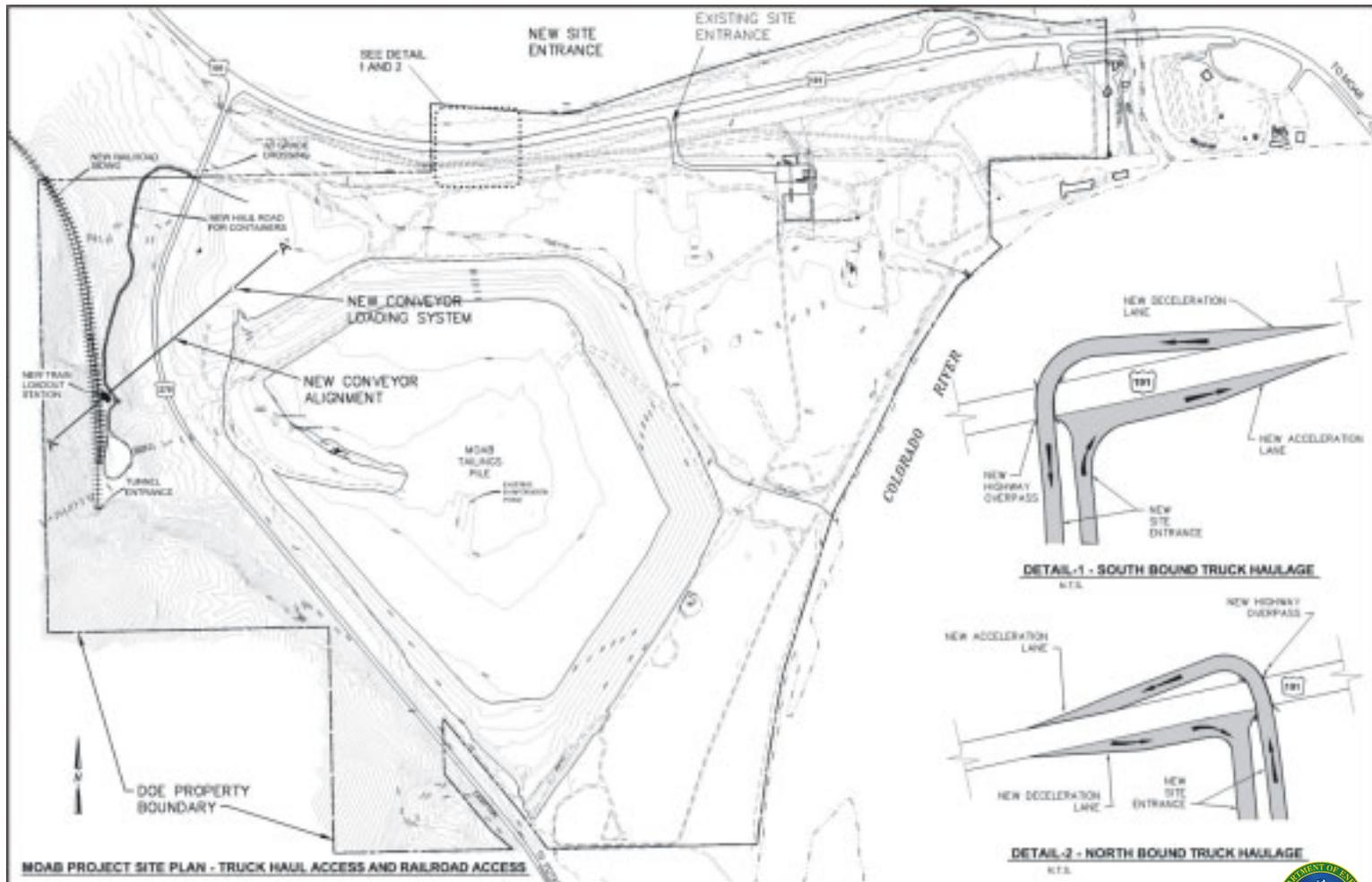
Note: 2,188 truck trips required to haul millsite debris.



# Off-Site Disposal Transportation Modes Tailings Truck Haul

<b>Work Shift</b>	<b>Round Trips per Day</b>	<b>Frequency (minutes)</b>	<b>Duration (years)</b>
12-hour shift/ 7-day week	220	3	3.5
Two 10-hour shifts/7-day week	396	3	2.0

# Truck Haul/Rail Haul Infrastructure Alternatives



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## Tailings Slurry Pipeline

- 24-hour day, 7-day week
- 12- to 14-inch diameter pipeline
- Return water loop (80% of water returned through loop)
- ~400 gallons per minute makeup water
- ~400 tons of slurry transported per hour
- Less than 3.5 years to complete

Note: 2,188 truck trips required to haul millsite debris.



# Maximum Trips per Day for Borrow Material

Borrow Material Source Location	Cap-in-Place		Klondike		Crescent Junction		White Mesa Mill	
	Work Shifts		Work Shifts		Work Shifts		Work Shifts	
	1	2	1	2	1	2	1	2
<b>Cover Soils</b> Floy Wash Crescent Junction Klondike – Tenmile – Courthouse Syncline – Blue Hills Road	34	67	54	86	On site	On site	On site	On site
<b>Radon Barrier Soils</b> Crescent Junction Klondike	16	32	On site	On site	On site	On site	On site	On site
<b>Sand and Gravel</b> Floy Wash Spanish Valley	6	13	9	15	9	15	On site	On site
<b>Riprap</b> Lisbon Valley Blanding	11	22	3	6	3	6	3	6

# Millsite Restoration Top Soil Truck Haul

<b>Alternative</b>	<b>Trucks per Day</b>	<b>1-Year Duration</b>
Cap-in-place	23	Concurrent with borrow material delivery
Off-site disposal	33	Following millsite cleanup

# On-Site Disposal Schedule (calendar year)

Activity	2004	2005	2006	2007	2008	2009	2010	2011
Record of Decision (ROD)	█							
Characterization/Design/Bidding		██████████						
Surcharge Tailings Pile			████████████████████					
Place Cover on Pile				████████████████████				
Project Completion							█	





# Proposed Ground Water Remediation



# Moab Site Conceptual Model

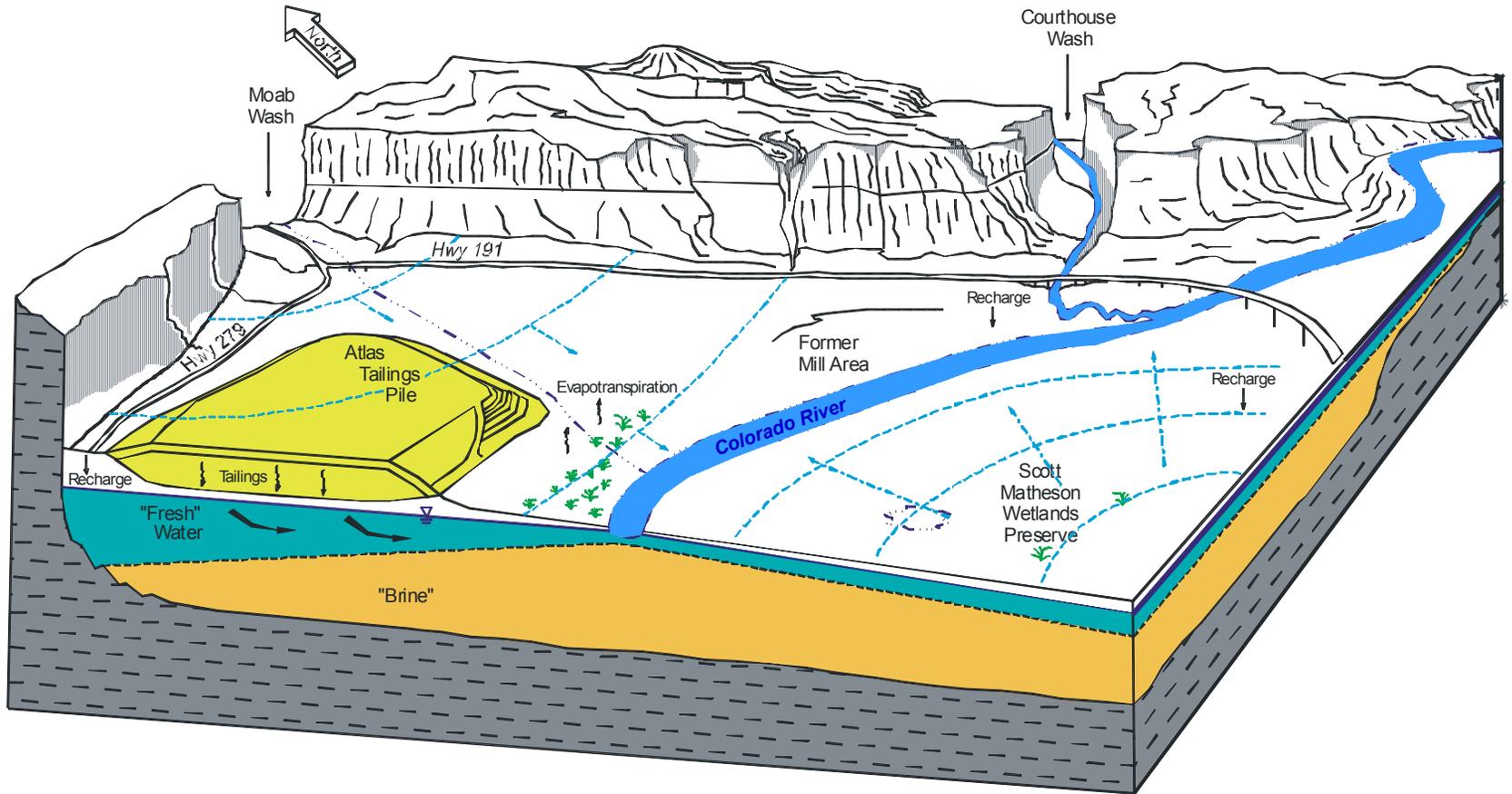
## Complex two-phase system

- Freshwater system overlying salty “brine” system
  - ◆ Freshwater system discharges to Colorado River
  - ◆ Brine system relatively stagnant, loads freshwater system through diffusion and mixing
- Tailings historically contaminated both brine and freshwater system

## Moab Site Conceptual Model

- Freshwater system and brine system both discharge to Colorado River
- Freshwater recharge primarily from Glen Canyon Group bedrock; minor recharge from Moab Wash
- Total ground water flow through freshwater system ~ 400 gal/min
- Limited freshwater on east side of river (Scott Matheson Wetlands Preserve); brine much more shallow

# Moab Site Conceptual Model



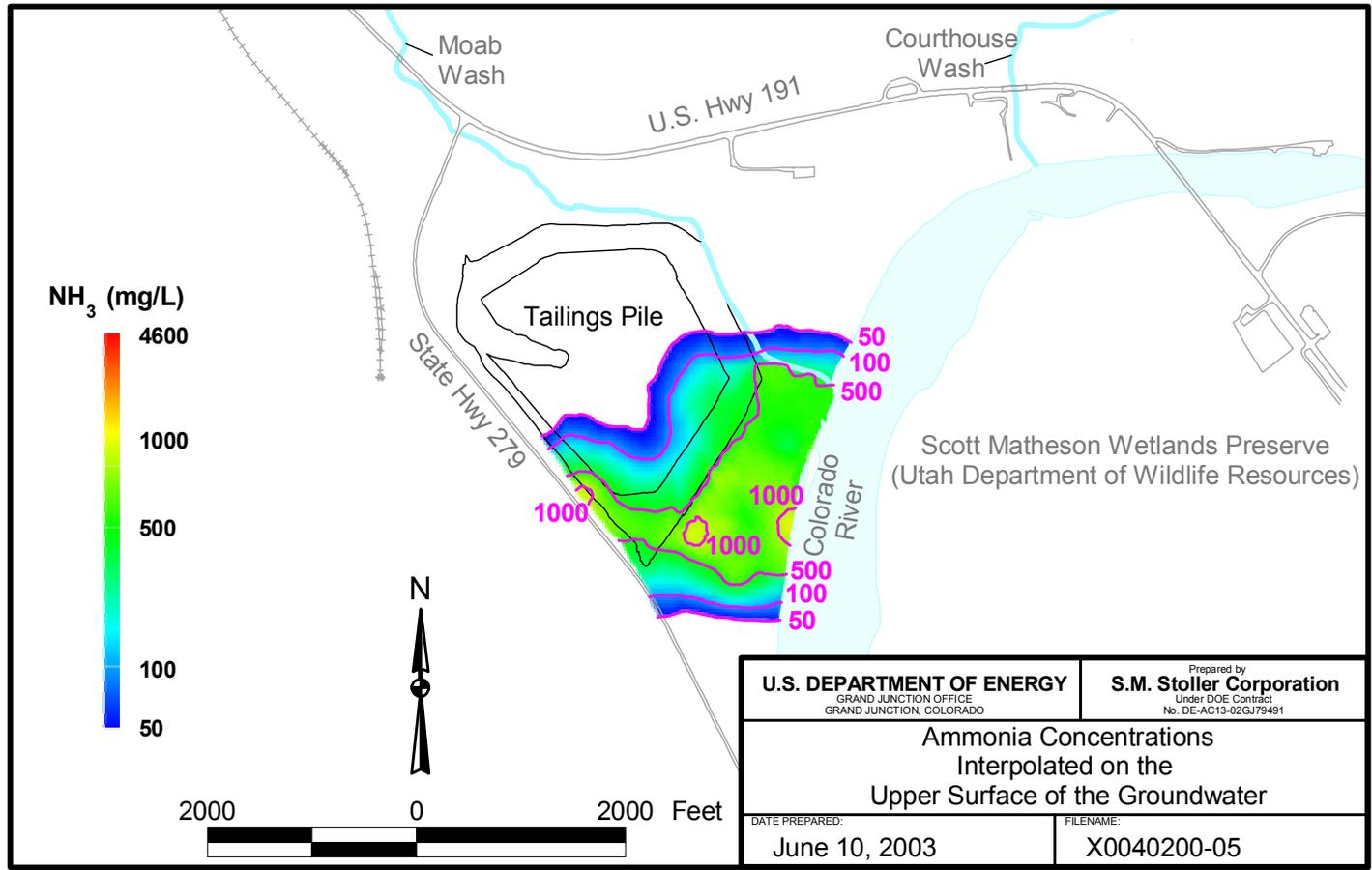


# Ground Water Contaminants and Risk

## Major constituents of potential concern

- Ammonia
- Arsenic
- Manganese
- Molybdenum
- Nitrate
- Uranium
- Vanadium

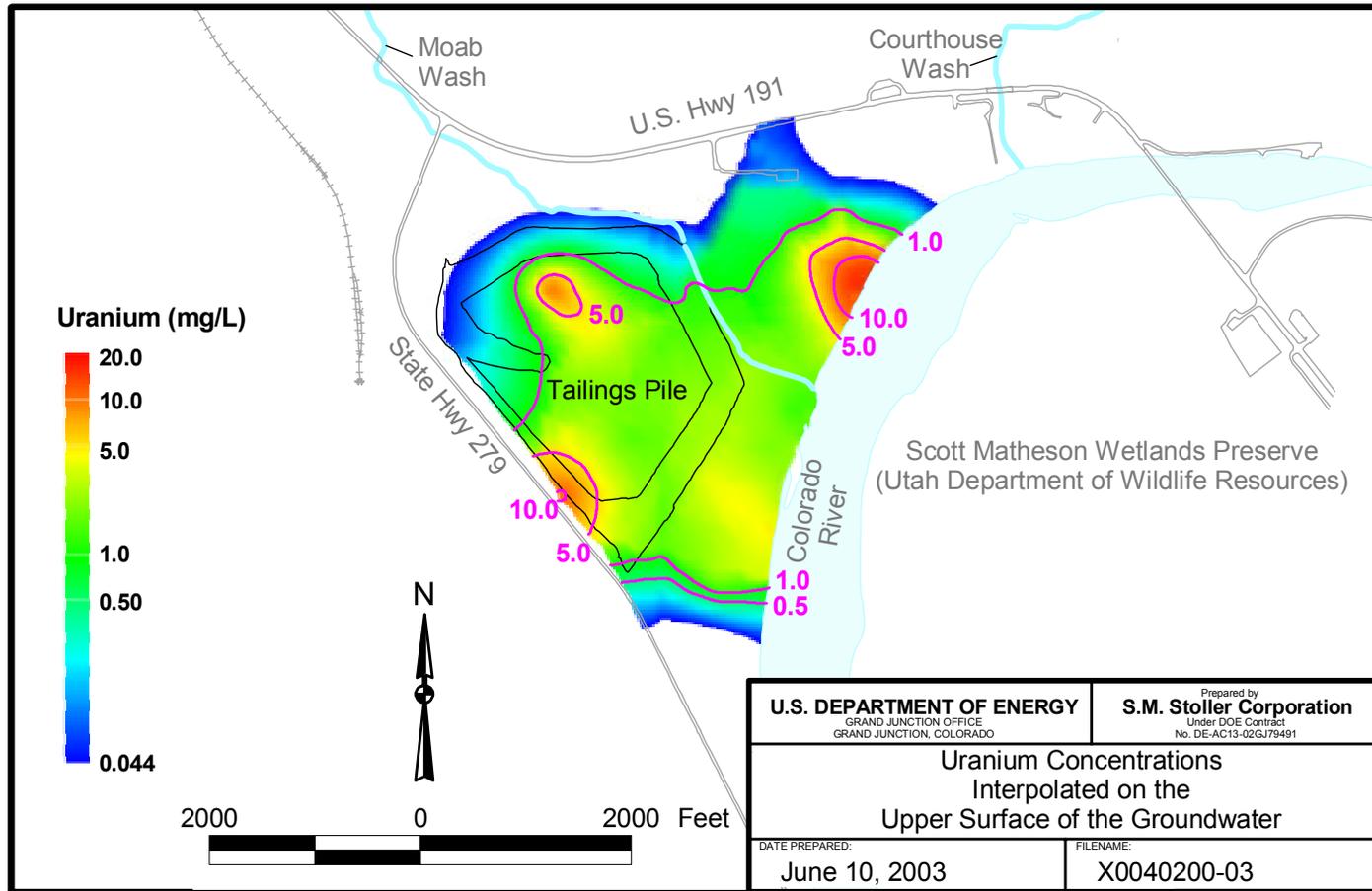
# Ammonia (top of ground water)



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# Uranium (top of ground water)



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# Ground Water Contaminants and Risk

## Summary of risks from ground water

- Ground water is currently not used (no direct risks to human health are occurring)
- Future use of ground water as a source of drinking water would result in unacceptable risks
- Ground water that enters Colorado River
  - ◆ Causes minimal risk impacts to recreational users
  - ◆ May result in unacceptable risks to ecological receptors in backwater areas adjacent to the site, particularly ammonia

# EPA Ground Water Standards

## Objectives

- Compliance with ground water quality standards (EPA regulation at 40 CFR 192)
  - ◆ Protective of human health and environment (40 CFR 192)
  - ◆ State surface water and ground water standards are “to be considered”
  - ◆ Compliance with standards will follow process in *Uranium Mill Tailings Remedial Action Ground Water Project Programmatic Environmental Impact Statement*

## EPA Ground Water Standards

- Long-term protection of ground water
  - ◆ Minimize long-term seepage from disposal cell
- Compliance strategy selection process
  - ◆ *Programmatic Environmental Impact Statement*
  - ◆ No further remedial action
  - ◆ Natural flushing with monitoring and institutional controls
  - ◆ Active engineered treatment
  - ◆ Some combination depending on contaminant

# National Academy of Sciences Comments and Responses



## National Academy of Sciences Comments and Responses

- The Floyd D. Spence National Defense Authorization Act required the National Academy of Sciences (NAS) to provide “technical advice, assistance, and recommendations” for remediation of the Moab site
- NAS released its findings June 11, 2002

## Summary of Major Issues Identified by NAS

- Overall use of bounding analysis
- Potential impacts from failure of tailings pile
- Use experience from similar projects
- Improved understanding of potential tailings pile performance
- Impacts from institutional controls
- Better evaluation of costs
- Effectiveness of long-term management

# Next Steps



## Next Steps

Public Information Meeting	September 2003
Draft EIS Publication	January 2004
Draft EIS Public Meeting	February 2004
Draft EIS Comment Period	January–February 2004
Final EIS Publication	August 2004
<i>Record of Decision</i>	September 2004