



U.S. EPA URANIUM AND THORIUM MILL TAILINGS 40 CFR PART 192 REGULATIONS REVIEW

**Loren W. Setlow, CPG
Environmental Protection Agency
Office of Radiation and Indoor Air (6608J)
Ariel Rios Building,
1200 Pennsylvania Ave., N.W.
Washington, DC 20460
E-mail: setlow.loren@epa.gov
Phone: 202-343-9445**

**Uranium Contamination
Stakeholders Workshop
Tuba City, AZ
9/14/2010**

Background

- EPA is reviewing and potentially revising its regulations for uranium and thorium milling
- 40 CFR Part 192 issued under authority of Uranium Mill Tailings Radiation Control Act. Establishes health and environmental protection standards utilized by the NRC and its Agreement States, and DOE for their oversight of uranium and thorium extraction facility licensing, operations, sites, and wastes
- These regulations apply to byproduct material from conventional mills, In Situ Leach/Recovery (ISL/ISR) facilities, and heap leach facilities, but not conventional mines (open pit or underground)



Background



Office of Radiation & Indoor Air
Radiation Protection Division (6608J)
Washington, DC 20460

EPA 402-R-05-007
Revised June 2007

Technologically Enhanced Naturally Occurring Radioactive Materials From Uranium Mining

Volume 1:
Mining and Reclamation
Background



[http://www.epa.gov/radiation/
tenorm/pubs.html](http://www.epa.gov/radiation/tenorm/pubs.html)



Background

Waste

**Work
Exposures**

Air Pollution

**Water
Pollution**

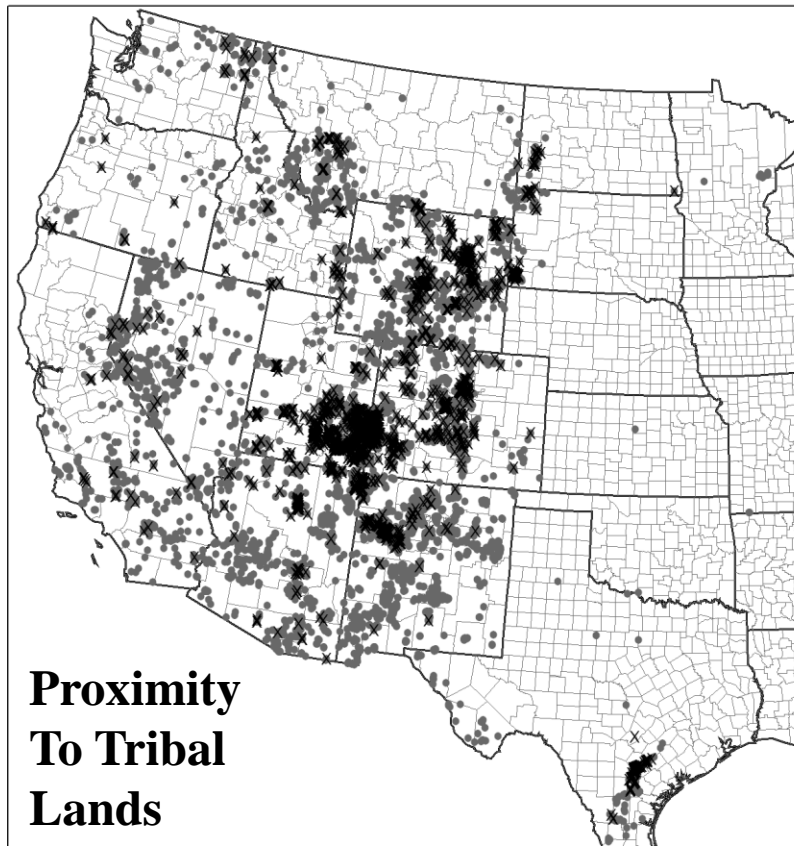


**WATER FROM
THIS WELL
IS NOT SAFE
TO DRINK**

This water has been tested and found to exceed Navajo EPA and U.S.EPA human drinking water standards for uranium or other contaminants.

Navajo Nation policy is that livestock-use-only wells are not to be used for human drinking water.

Western Uranium Locations



**Proximity
To Tribal
Lands**

Legend

- All Uranium Locations
- x MAS/MILS Uranium Mines

Source of Mine Information:
EPA Uranium Location Database

Km
500



40 CFR Part 192

- Provides standards for closed/abandoned mills under DOE jurisdiction
- Provides standards for uranium and thorium mills operating in 1978 as well as new NRC licensed uranium and thorium extraction facilities



40 CFR Part 192

- Over 25 years since originally issued, ~15 years since last update for groundwater protection
- Standards include:
 - Construction standards for mill tailings impoundments
 - Radon emission standards
 - Limits on groundwater concentrations of hazardous substances including radionuclides
 - Remediation standards for contaminated soils/buildings
 - Monitoring, corrective action, post-closure monitoring



Regulatory Review Process (1)

Existing regulations and standards are being reviewed to determine if they are still appropriate in light of:

- Dominant use of ISL/ISR, now principal means of uranium recovery in U.S., and for heap leach facilities
 - Lack of provisions in current regulations
 - How to balance groundwater protection standards while recognizing UMTRCA requirements
- Any advances in technology and design for mill tailings impoundments



Regulatory Review Process (2)

Existing regulations and standards are being reviewed to determine if they are still appropriate also in light of:

- Changes in risk and dose factors for radiation/radon,
- Principal scenarios for exposure,
- Subsistence and cultural lifestyles of affected communities including Tribal, EJ and children's health issues
- Free release of some facility sites after decommissioning -- implications for 40 CFR Part 192



Regulatory Review Process (3)

Existing regulations and standards are being reviewed to determine if they are still appropriate also in light of:

- Changes in EPA protective standards for hazardous substances in groundwater and drinking water for 40 CFR Part 192
- Changes in economics of extraction & site remediation
- Potential for uranium/thorium extraction in different geographic locations
- Court cases



Regulatory Review Process (4)

- Should the review determine a need for new standards EPA will take into consideration:
- How to balance environmental compliance costs and benefits
 - **Public health, environmental protection and safety benefits**
 - **Impacts on implementing agencies**
 - **Impacts on industry**
 - **Economic and societal impacts**



Coordination and Stakeholder Input

Federal Agency Coordination

- NRC and DOE
 - Other involved agencies (Interior, Agriculture...)
 - ISCORS
-
- EPA Intra-agency Workgroups
 - Regional offices
 - HQ – OW, ORD, OSWER, OGC



Coordination and Stakeholder Input

- For 40 CFR Part 192:
- Presentations at State association and other conferences:
 - CRCPD, ASTSWMO,
 - National Mining Association Uranium Recovery Workshop
 - National Tribal Science Forum, National Tribal Water Council
 - Uranium Contamination Stakeholders Workshop
- EPA Regional Offices in coordination with EPA HQ to provide lead role for outreach to:
 - Public
 - Industry
 - States
 - Tribes and EJ populations
 - Environmental and other NGO's



Coordination and Stakeholder Input

- EPA Work Groups are conducting analyses of standards in regulations
- Comparison of existing rule standards with
 - History of performance of facilities
 - Implementation of standards by regulatory agencies
 - Impacts on Tribes, environmental justice communities, children's health, general public
 - Changes in EPA standards, new Executive Orders, new statutes, other national and international protectiveness standards



Coordination and Stakeholder Input

- Geographic Information Study on populations at past, current and potential future extraction sites
- Adjustments of risk and economic assessments to take into account population distributions, plus Tribal and other EJ cultural and subsistence practices in comparison with overall U.S population:
 - Diet, food preparation and consumption, water sources
 - Housing and habitation
 - Occupational, cultural, and recreational exposures
 - Proximity to facilities
 - Age distributions and other appropriate population data



Coordination and Stakeholder Input

- Coordination with Office of International and Tribal Affairs and EPA regional offices to alert all affected Tribes and Tribal organizations of Work Group activities, provide opportunities for input
- Consultation with Tribal elected leaders will be conducted in accordance EO-13175 and EPA Tribal Policy
- Active use of public outreach and agency data collection to obtain information for review



Coordination and Stakeholder Input

- Informal public information meetings
- Stakeholder conferences
- Webinars and/or phone conferences
- Tribal consultations



Coordination and Stakeholder Input



Interactive Internet Site – Discussion Forum

<http://blog.epa.gov/milltailingblog/>

- **Site for public input on discussion topics for this review**
- **Calendar of events**
- **Library of relevant documents**

Email address for additional public input:

UraniumReview@epa.gov



THANK YOU !!

UraniumReview@epa.gov

