

# TENORM Waste Management System Basic Requirements

- ❖ Application and License
- ❖ Acceptance Criteria
- ❖ Prohibitions
- ❖ Design and Siting Criteria
- ❖ Operation and Maintenance Plans
- ❖ Daily Cover Requirements
- ❖ Dust Mitigation Plans
- ❖ Ground Water Monitoring
- ❖ Air Quality Monitoring
- ❖ Radiation Protection and Awareness Program
- ❖ Liquid Restrictions
- ❖ Closure & Post-closure Care Requirements
- ❖ Financial Assurance

## Contact Information

Department of Environmental Quality's  
Solid Waste Program (406) 444-5300

[Learn more at the following link:](http://deq.mt.gov/land/solidwaste/)

<http://deq.mt.gov/land/solidwaste/>



**Waste & Underground  
Tank Management Bureau**



## Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)



Waste material being spread at a TENORM landfill.



Liner being laid down during new landfill construction.

## What is NORM?

❖ NORM stands for “naturally occurring radioactive material”—in other words, a substance that naturally contains one or more radioactive isotopes, also called *radionuclides*. NORM is present at low levels in soil and rocks.



❖ The amount of radioactivity in a material is expressed in units of picocuries per gram (pCi/g). NORM is present in some foods, including bananas at 4 pCi/gm, Brazil nuts at 6 pCi/gm, cat litter at 5 pCi/gm, coffee at 27 pCi/gm, granite countertops at 27 pCi/gm, and phosphate fertilizer at 123 pCi/gm.



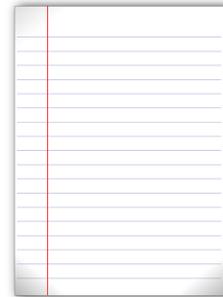
## What is TENORM?

❖ TENORM is NORM that has been concentrated or exposed to the environment as a result of human activities, such as: manufacturing, mineral extraction or water processing.

### Should I be concerned about potential exposure to TENORM?

❖ TENORM is not nuclear waste.

❖ TENORM emits all three common forms of ionizing radiation: alpha particles, beta particles, and gamma radiation. With regard to members of the public off-site, the most important form of TENORM radiation is alpha particles.



❖ Alpha particles can only travel a few feet through the air and can be stopped by a sheet of paper.

❖ Skin stops alpha particles from entering the body, but pose a human health risk if the radioactive material is inhaled or ingested.

## How is TENORM Regulated in Montana?

❖ TENORM waste disposal facilities are regulated under Montana Code Annotated (MCA) Title 75 Environmental Protection, Chapter 10. Waste and Litter Control, Part 2, and Administrative Rules of Montana (ARM), 17.50 Solid Waste Management Subchapters (to see specific ARMs and MCAs go to: <http://deq.mt.gov/Land/solidwaste/lawsrules>).



❖ TENORM disposal facilities are thoroughly evaluated by DEQ before being licensed to receive waste.

❖ Public participation in the DEQ evaluation and licensure of a TENORM disposal facility is mandated by the Montana Environmental Policy Act (MEPA).

❖ There are no federal regulations or guidance specific for managing TENORM waste.