



# Tailings: what do we do....

Generate



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Soil Covers



**AMD** 



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Treat AMD



R&D

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More Waste



Monitor

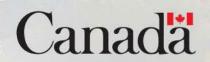
Regulate...

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## **Evolution of Tailings Innovations**

Understanding deficiencies

Agricultural practices

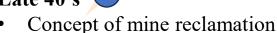
"simple" grass covers

Lime, fertilizer, seeding









- Mostly to control dust
- Limited success with vegetation



50's/60's

### 60's-70's

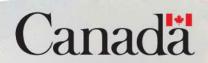
- Successional approach/trees
- Make it "green"
- Recognition of acid mine drainage
- "Vegetation will help control AMD"
- Soil covers
- Seismic stability in dam design
- Erosion
- Thickened tailings
- Water management
- ALARA/BATEA
- CLRA (Recl. Assoc)

#### 80's - 90's

- Focus on AMD
- Tailings backfill
- Water covers
- Predicting post-closure H<sub>2</sub>O
- Passive treatment
- High Density Sludge (HDS)
- Liners synthetic/clay
- Closure Plans & bonds
- End land use
- NUTP
- RATS
- MEND/NOAMI







## Evolution of Tailings Innovations cont...













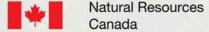
- Dry Stack
- Dam Safety
- ESG
- Climate Change Impacts
- Traditional Ecological Knowledge
- Green Mines Green Energy (Biosolids)
- Towards Sustainable Mining
- Canadian Minerals and Metals Plan
- Global Industry Standard on Tailings Management
- Mining Value from Waste (reprocessing)

### **Today**

- Circular Economy
- Resource vs Waste
- Inventory
- Full(er) Utilization
- Liability Reduction
- Critical Minerals







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<sup>1</sup> Photo Credit: Restoration and Recovery of an Industrial Region. 1995. John Gunn Ed., Springer Link

