

Challenges Facing Soil Treatment Facilities in the Yukon

Presented by:

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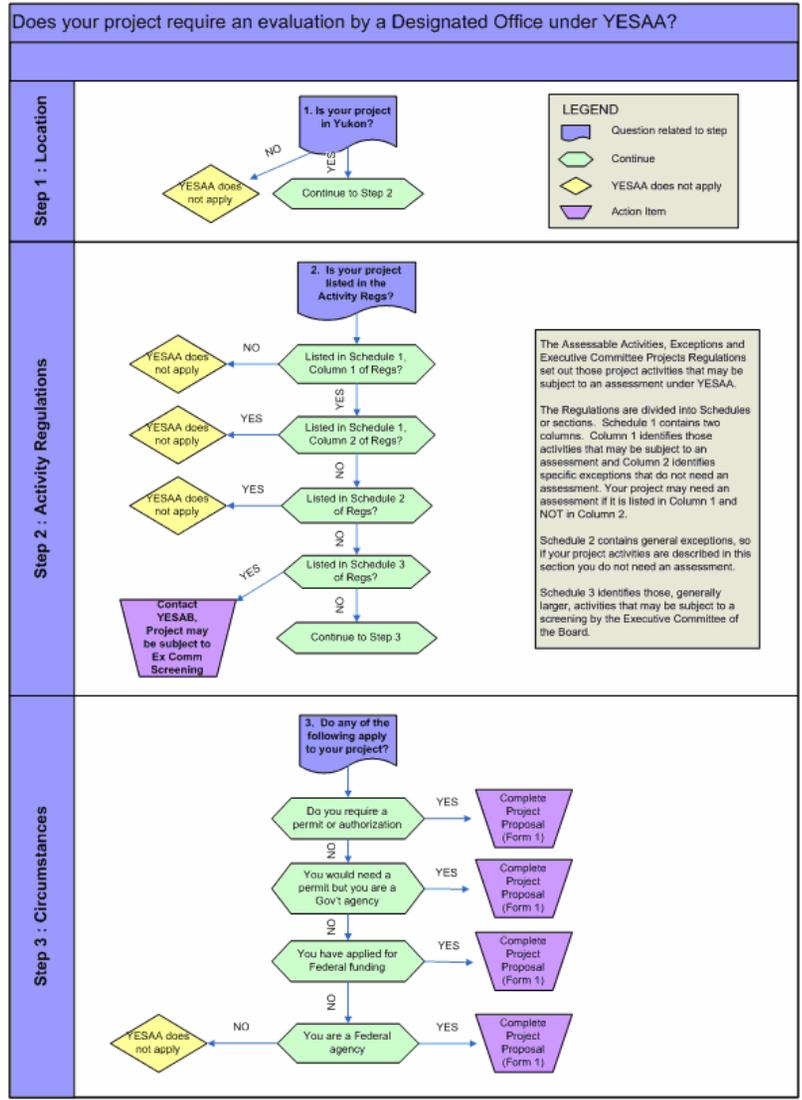
Challenges



- Regulatory Environment (scheduling)
- Available Equipment and Technology
- Operation Issues

- *Contaminated Sites Regulation, Environment Act*
- *Yukon Environmental and Socio-economic Assessment Act - YESAA*

- *Contaminated Sites Regulation, Environment Act*
 - *Permits required for*
 - *Remediation of Designated Contaminated Sites*
 - *Operation of a Land Treatment Facility (LTF)*
- *Yukon Environmental and Socio-economic Assessment Act - YESAA*



YESAA Assessment

- 3 to 4 months

Permit Application

- 1 to 3 months
- May require 3rd party review

- LTF with $>3,000 \text{ m}^3$ capacity
 - Require YESAA Assessment
 - Hydrogeological Assessment
- LTF with $<3,000 \text{ m}^3$ capacity
 - Require specific details of operation
 - Dimensions, slope and height of biopiles
 - Width of aisles between soil treatment areas

Meeting the Challenge



- Planning
- Yukon Environment
 - <http://environmentyukon.gov.yk.ca/>

- Limited market for specialized equipment
 - Lack of qualified personnel
 - Mob/Demob and O&M Costs are significant
- Site access may limit remediation alternatives
- Tendency is to use local resources
 - landfarming / biopiles







Land Treatment Facilities

Sythetic Liners

- Availability of bedding materials
- May require double liner
- Qualified personnel to install or repair

Compacted Silt Liners

- Availability of silty soils
 - >30% Silt
 - Minimum 1 m thick



Meeting the Challenge

- Local contractors/consultants will know the area
- Commercial facilities may already exist

- *Remote sites*
- *Available equipment /power*
- *Weather*



Meeting the Challenge

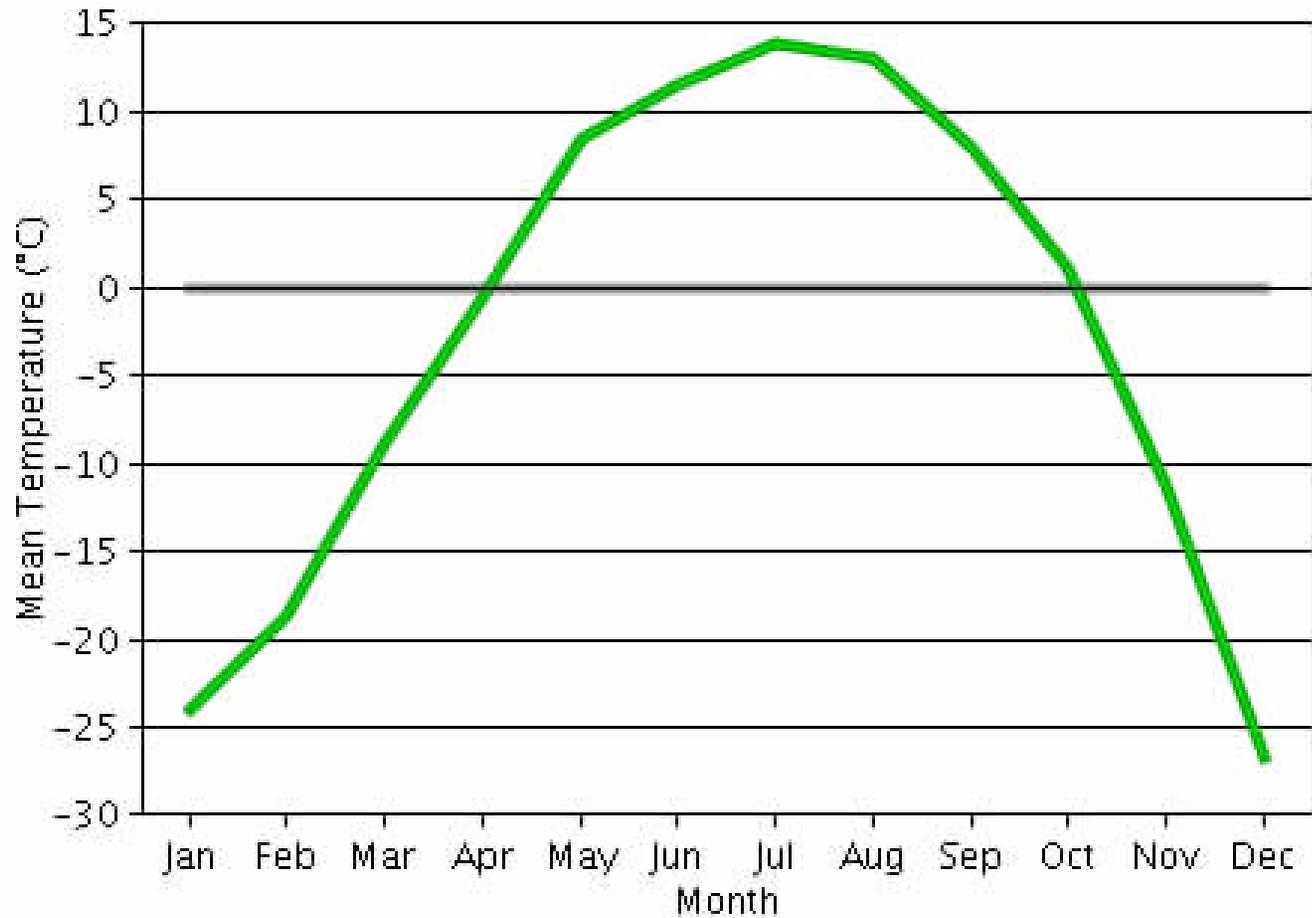
- *Smaller equipment*
- *Remediation systems requiring less maintenance*
- *Rely on indigenous species*



Meeting the Challenge

- *Biopiles vs. landfarming*
- *Design systems that enhance heat retention*
- *Nutrient amendments in remote sites*

Weather - Mean Monthly Temperatures 2008



Weather – Solar Heating



Acknowledgments

- Arctic Backhoe Services
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- Northwestel
- City of Whiterhorse



CREATING AND DELIVERING BETTER SOLUTIONS