

WASTE MANAGEMENT IN THE ARCTIC

Techniques for Better Management



Overview

- ▣ Who is Qikiqtaaluk Environmental Inc.
- ▣ Current Practices
- ▣ Waste Reduction and Waste Management Techniques
- ▣ Management of Hazardous Waste
- ▣ Transport of Dangerous Goods Considerations



Qikiqtaaluk Environmental Inc.

- ▣ Qikiqtaaluk Environmental Inc. (QE) is a partnership between Qikiqtaaluk Corporation and Sanexen Environmental Services
- ▣ QE was established in 2003 to provide environmental remediation services in Nunavut
- ▣ In 2011 QE opened a Waste Transfer Centre in the North 40 and setup a Contaminated Water Treatment Unit
- ▣ Since 2003 QE has shipped over 20,000 Tonnes of waste to the south for disposal
- ▣ QE is an Inuit Owned Company Registered on the NTI Inuit Firm Registry



Current Practices

- ❑ Landfills for Non-Hazardous Waste
- ❑ Limited recycling programs
- ❑ Stockpiling and disposal in the south of Hazardous waste
- ❑ Landfarming for hydrocarbon contaminated soils
 - Other contaminated soils are shipped south for disposal



Waste Reduction and Waste Management Techniques

- ▣ First and most important waste management technique is to not have any waste
 - Limit packaging and promote the use of reusable packaging for materials brought to sites
- ▣ Keep up to date on new products with a reduced environmental impact
 - For example new type of hydraulic fluid that is based on vegetable oil, safe for use around water bodies



Waste Reduction and Waste Management Techniques

- ▣ Government managed deposit programs
- ▣ Examples:
 - Tires
 - ▣ All provinces and Yukon have an additional fee added to the cost of tires to cover cost of disposal at end of life
 - ▣ Garages return used tires to recycling facilities at no cost to them



Waste Reduction and Waste Management Techniques

- ▣ Government managed deposit programs
- ▣ Examples:
 - Used Oil
 - ▣ Quebec has a non-profit organization setup to recover and recycle waste oil
 - ▣ In 2014 84.2% of all oil sold in Quebec was recovered and 77% of all used oil filters



Waste Reduction and Waste Management Techniques

- ▣ Fees should be charged upon the import of these materials to Nunavut, or upon purchase at the counter
 - These fees can then be used to reduce the environmental impact of the waste
- ▣ Mining companies that operate in Quebec benefit from these types of programs helping to reduce disposal costs of hazardous waste
- ▣ Creates local jobs and reduces environmental impact of hazardous materials



Waste Reduction and Waste Management Techniques

- ▣ Use waste for cogeneration at sites
 - A lot of wood packaging is being used to ship materials to sites.
 - This wood usually ends up filling up landfills
 - Wood could be used for heating garages and warehouses
 - Waste oil, fuel and gasoline could be used to heat these buildings as well



Management of Hazardous Waste

- ▣ Hazardous waste presents a major problem in the arctic
- ▣ There are limited facilities to manage hazardous waste
- ▣ Hazardous waste, depending on the type, requires special handling, containment and packaging for transport



Management of Hazardous Waste

- ▣ Some types of hazardous waste can be managed locally
- ▣ Hydrocarbon contaminated soils with gasoline, diesel fuel and oil can be treated on site
 - Landfarming
 - Biopiles
 - SAN-BOX



Management of Hazardous Waste

- ▣ Contaminated water treatment
 - Most types of contaminated water can be easily treated on site
 - New technologies are making water treatment more effective and lower cost.
 - Often generates filter media that will need to be disposed of in the south, but much smaller volumes than the water



Management of Hazardous Waste

- ▣ Many types of on site management of waste may require amendment to existing water licences or other environmental authorizations



Transport of Dangerous Goods Considerations

- Certain types of hazardous waste are regulated by Canadian Transport of Dangerous Goods Regulations (TDGR)
 - Gasoline, batteries, compressed gas cylinders (including “empty” cylinders), etc. must be handled by properly trained personnel and must be packaged according to TDGR.
 - Diesel fuel, oil, glycol, most types of contaminated soils are not controlled by TDGR and do not require special packaging



Transport of Dangerous Goods Considerations

- ❑ “Empty” Compressed gas cylinders are treated the same as full cylinders
- ❑ Cylinders must always be shipped with a cap secured over the valve or with the valve removed
- ❑ Cylinders must be segregated according to type for transport
 - For example oxygen cylinders must not be transported with acetylene cylinders



Transport of Dangerous Goods Considerations

- ❑ Aerosol cans must be transported in a vented container
- ❑ Waste oil filters can be crushed to remove any residual oil and reduce volume for transport and disposal
- ❑ Fluorescent light bulbs can be shredded using a light bulb shredder to reduce volume and eliminate the possibility of mercury emissions during transport



Conclusion

- Management of Waste in Nunavut needs to be re-examined and new, cost effective ways are needed to reduce the environmental impact of waste



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