

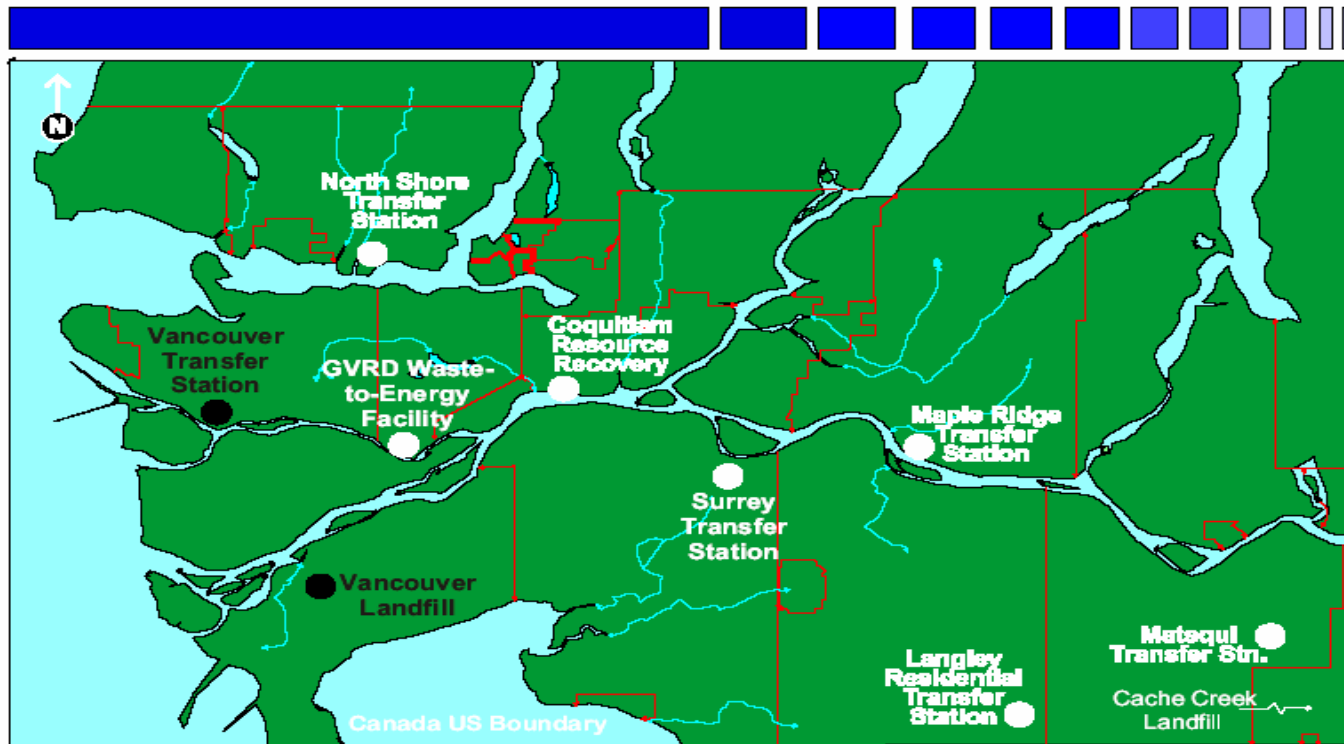
# Greater Vancouver Regional District

## Waste-to-Energy Facility



*Chantal Babensee*  
*Senior Engineer*

# The GVRD WTEF is part of an integrated Waste Management System



# Centrally Located in the GVRD



# A Quick Look Back....

- **Commercial operation started in 1988**
- **State-of-the-art combustion and air pollution control used**
- **Over 50% of the facility is dedicated to air pollution control**
- **Processed over 4.6 million tonnes of municipal solid waste since start-up on a 5 acre site**

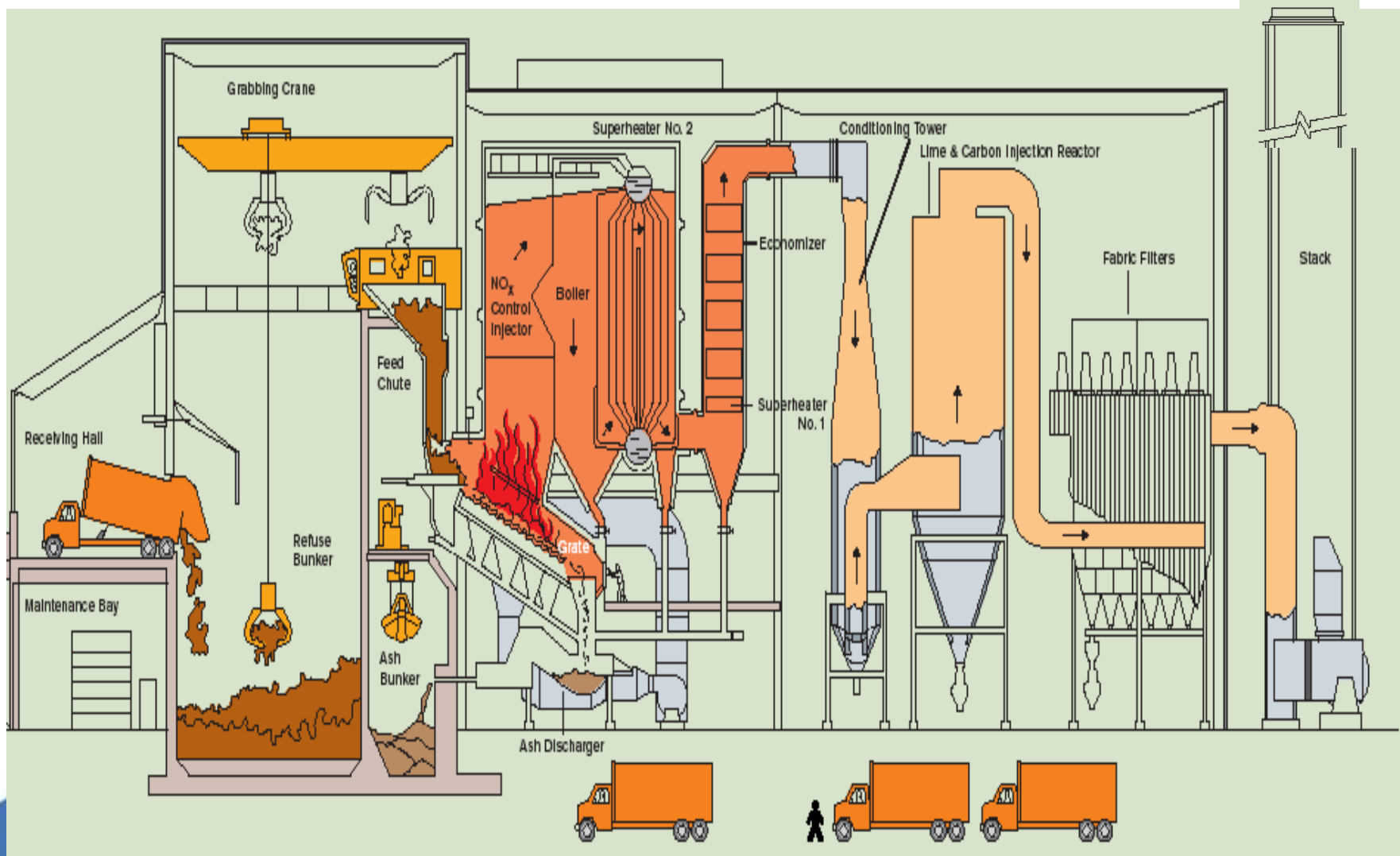


# Eco-Efficient Location

- Originally sited in 1985 to utilize steam through sales to a recycle paper mill
- Central location - minimizes haul length
- Future potential for further eco-efficiency

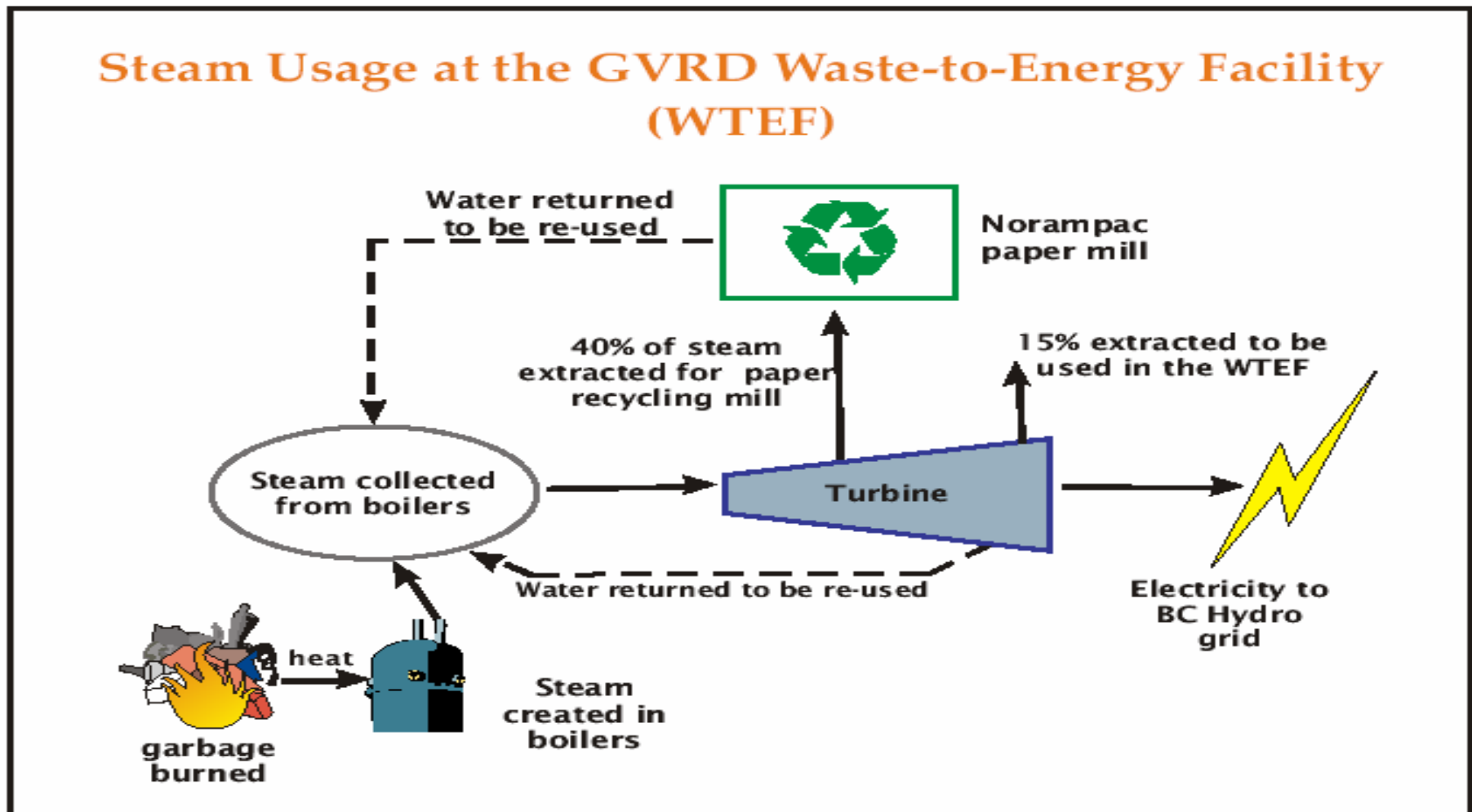


# Schematic of the GVRD WTEF



# Energy from Waste

MSW inherently has energy that can be used to create a sustainable benefit to the people of the Region



# GVRD WTEF and Norampac Inc.



Lex Engineering Ltd  
Aerial Photo  
Feb 22 2003

# Turbogenerator Installation



# Recognition



Honourable Richard Neufeld, BC Minister of Energy, Mines and Petroleum Resources presenting Canadian Institute of Energy Award

- **Solid Waste Association of North America (SWANA) Award in 1990 for best facility**
- **ISO 14001 Certification in 1999**
- **Association of Professional Engineers and Geoscientists of BC inaugural Sustainability Award – 2003**
- **American Society of Mechanical Engineers Award for Large Waste-to-Energy Facility of the Year – 2004**
- **Power Smart Excellence Award – 2004**
- **Federation of Canadian Municipalities Sustainable Communities Award – 2004**
- **Canadian Institute of Energy Award - 2005**



# Focus on Continuous Improvement

## Operational Examples

- ISO 14001 certification – 1999 and ongoing
- Control system upgrade – 1999
- Waste Composition Studies – 1998/2001/2004/2007
- Boiler Modifications – 2003
- Turbogenerator Installation – 2003
- Heat Recovery Upgrades - 2006



## Environmental Examples

- Carbon Injection System – 1993/2005
- Ammonia Injection System – 1996
- Flyash Stabilization System – 1999
- Zero Liquid Discharge – 2001
- Admin Building Upgrade - 2007

# Air Emissions

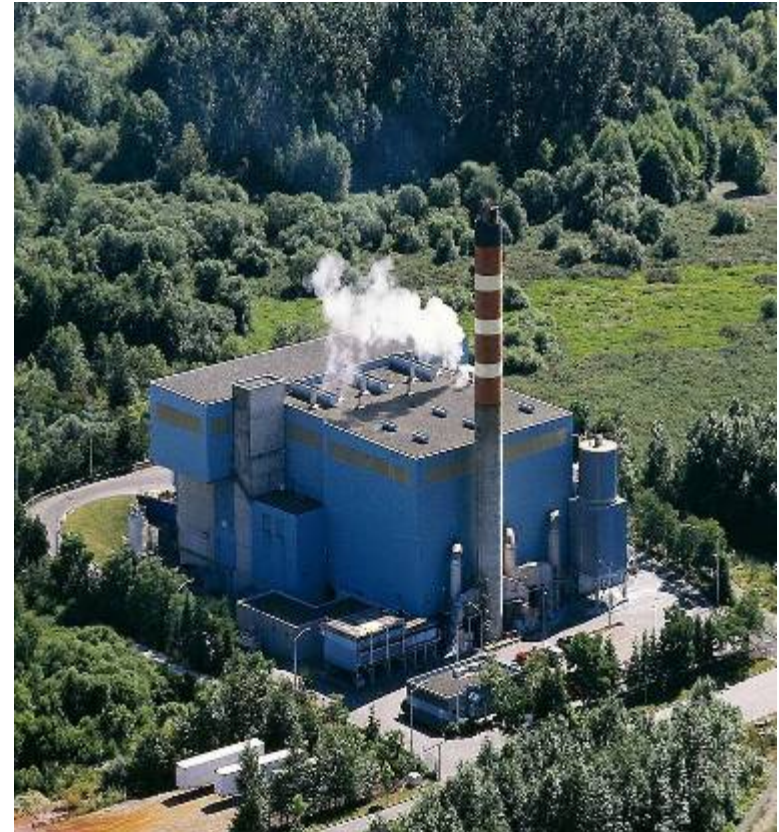


- **Continuous air emissions monitoring**
- **Within all regulated limits**
- **Small percentage of lower mainland emissions (highest is NO<sub>x</sub> at 1%)**
- **One of the cleanest facilities of its kind**



# Greenhouse Gases (GHG)

- All municipal solid waste disposal methods have GHG emissions, including composting
- 5th largest point source of GHG emissions in Fraser Valley airshed
- Offsets from energy recovery are greater than emissions



# Solid and Liquid Residues



- Zero liquid discharge (0%)
- Bottom Ash reused (18% of MSW disposed)
- Metal recovered (3% of MSW disposed)
- Fly ash disposed (4% of MSW disposed)



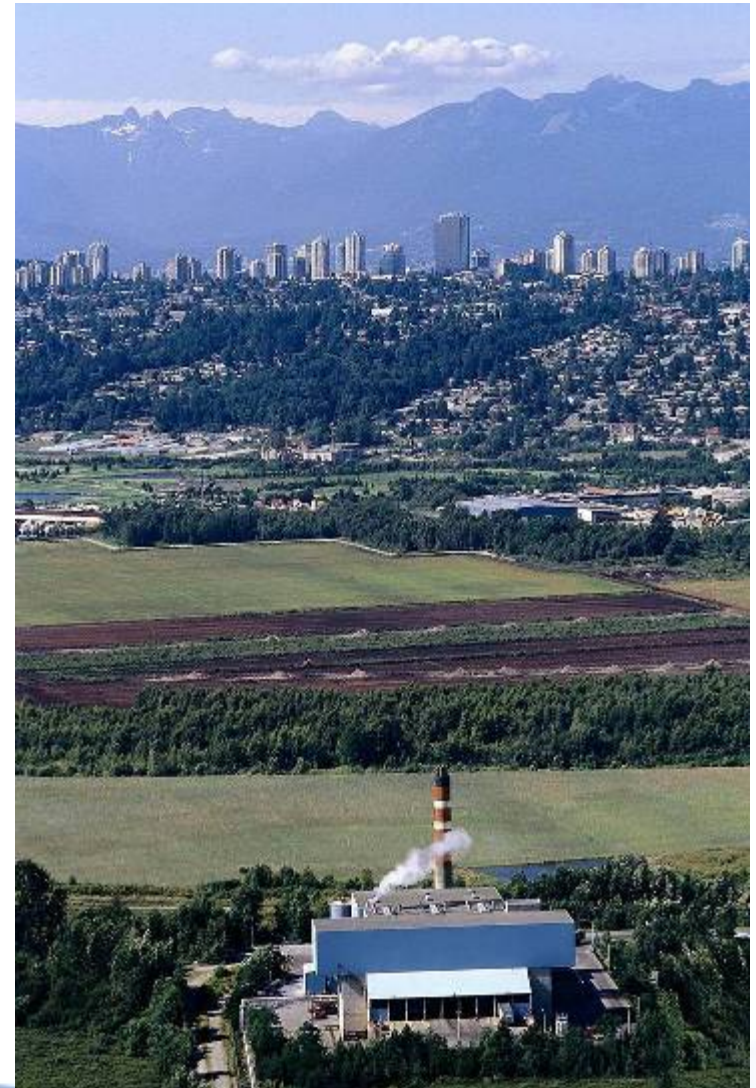


Over 700 people tour each year



# Benefits of WTE

- **Can be located in a dense urban centre**
- **Local disposal solution**
- **Source of renewable energy (Steam and electricity)**
- **Displace use of fossil fuels**



# Questions?

