

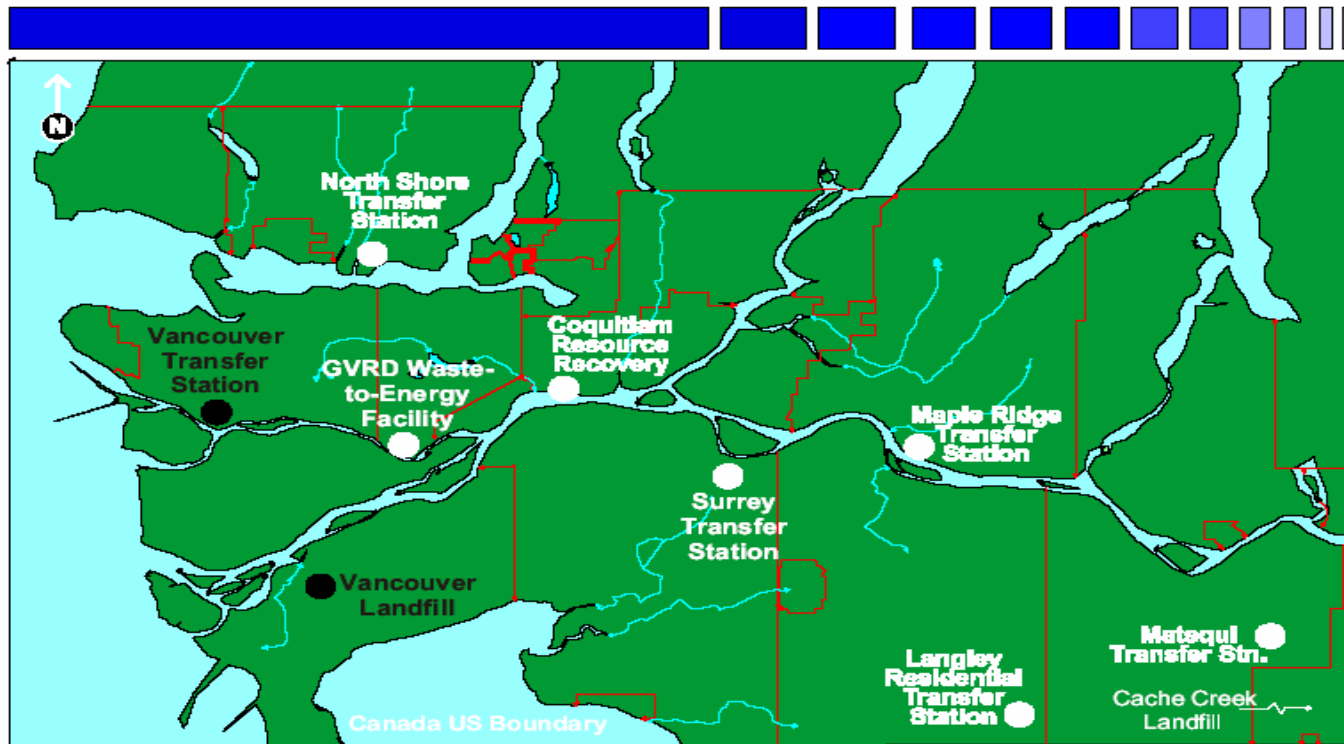
Greater Vancouver Regional District

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**

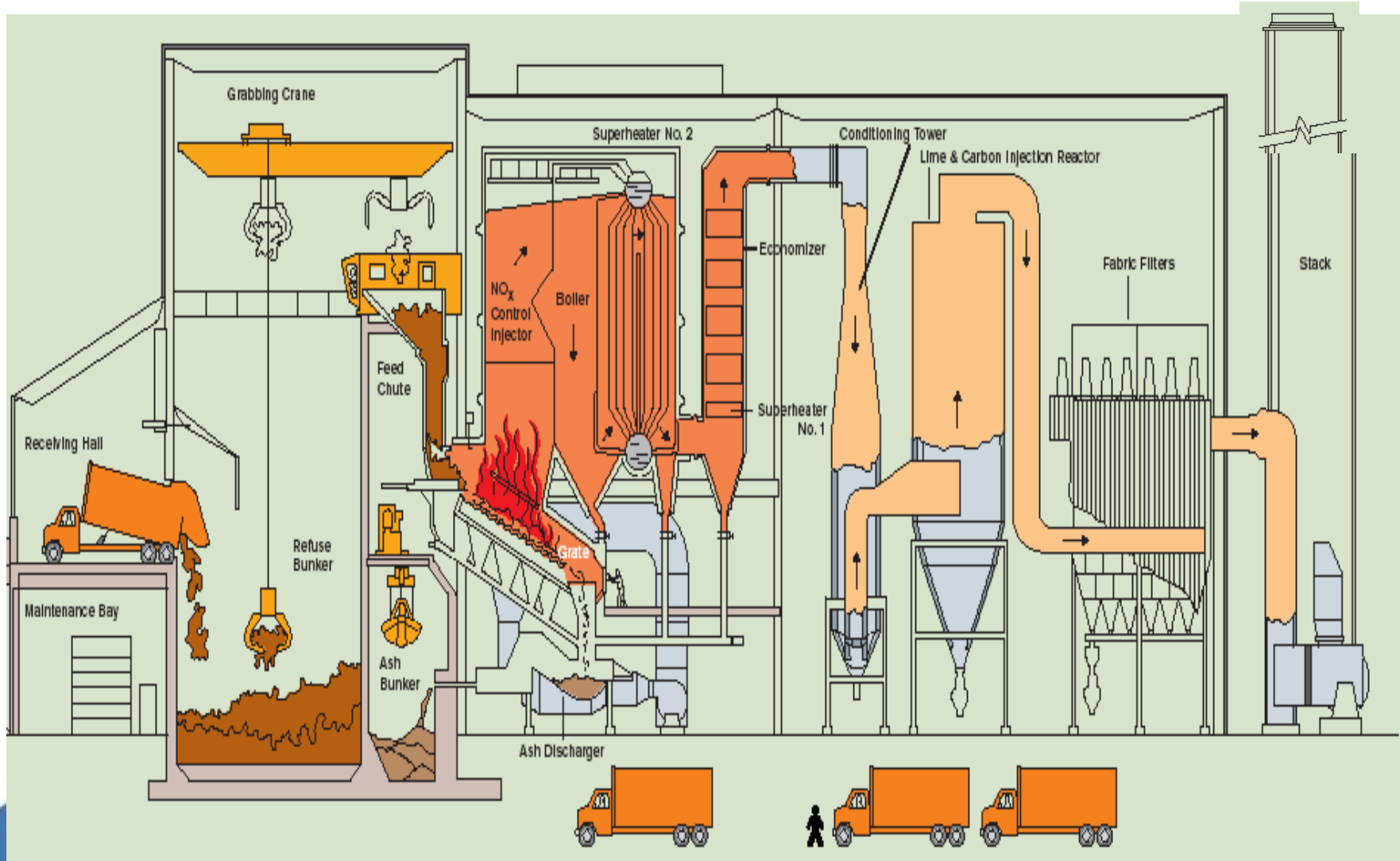


Eco-Efficient Location

- 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

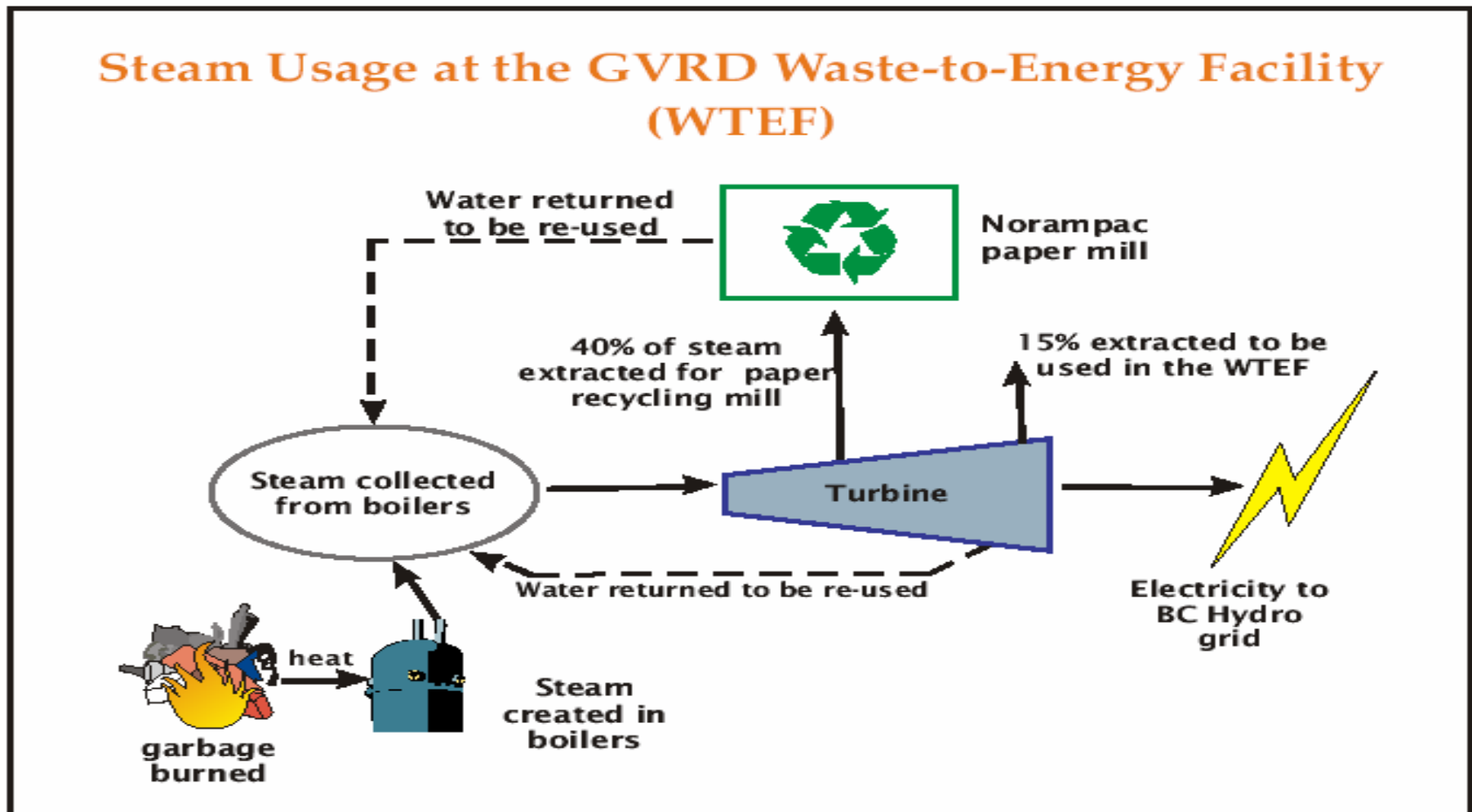


Schematic of the GVRD WTEF



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

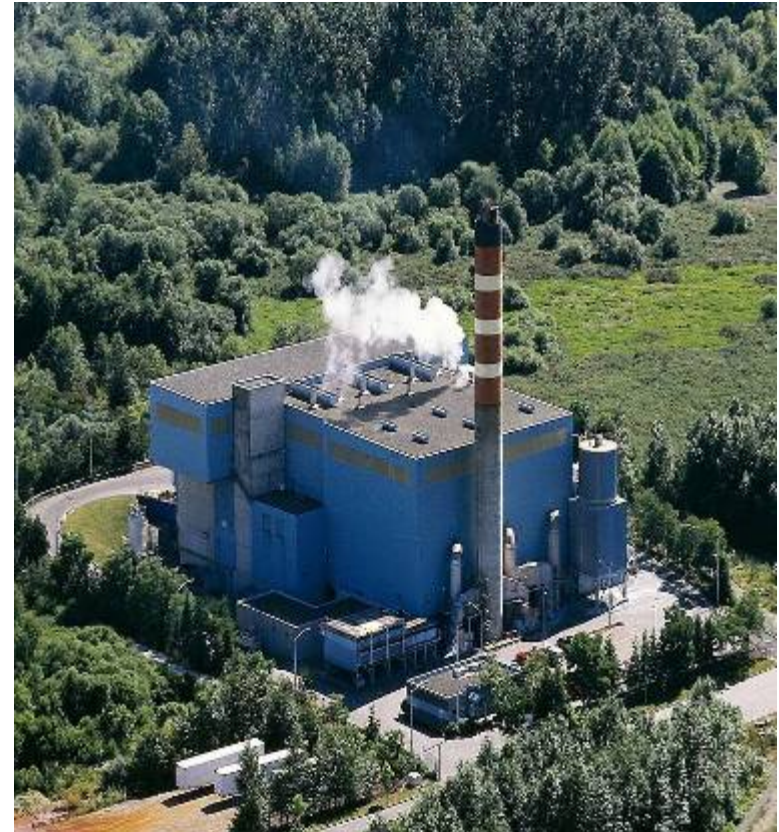


- **Continuous air emissions monitoring**
- **Within all regulated limits**
- **Small percentage of lower mainland emissions (highest is NO_x at 1%)**
- **One of the cleanest facilities of its kind**



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)



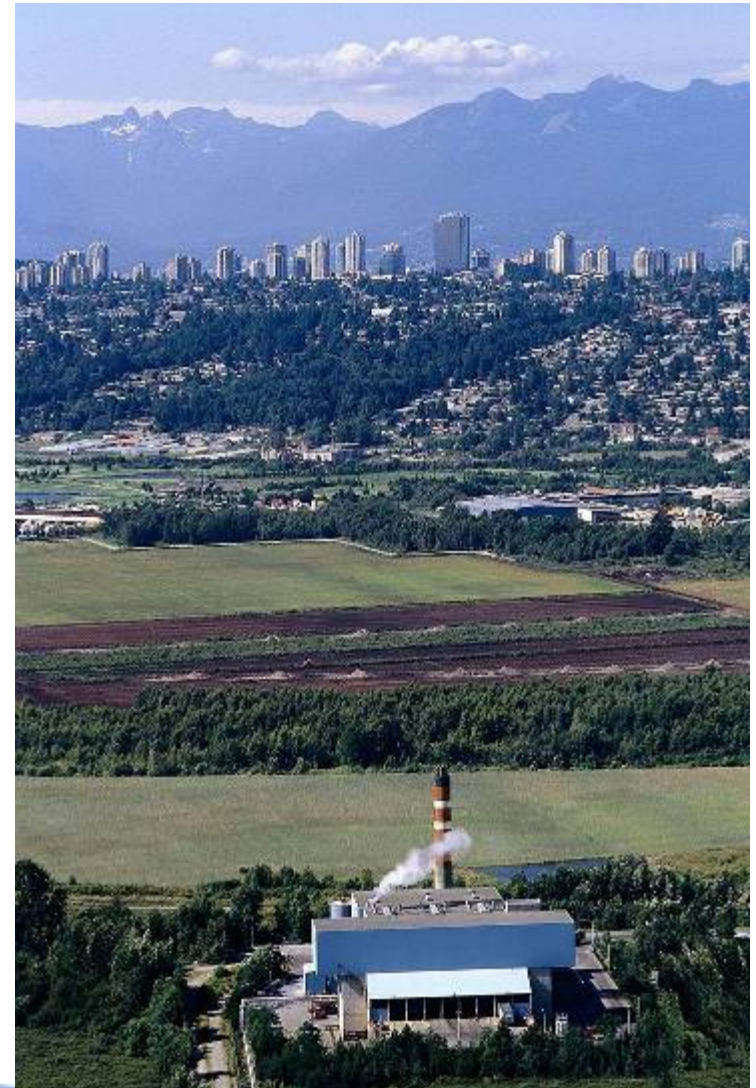


Over 700 people tour each year



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?

