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2003 Upgrades at the GVRD Waste-to-Energy Facility

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Montenay Inc. has operated the Greater Vancouver Regional District's (GVRD) Waste-to-Energy Facility since it began commercial operation in 1988. The facility has a throughput of 720 tonnes (800 tons) per day in three lines. It utilizes Martin grate technology and dry lime injection with a reverse pulse jet fabric filter. The original facility design did not include a steam turbogenerator for energy recovery. The facility produced process steam at near saturation temperature to supply a recycle paper mill. The aging mill has reduced the fraction of steam used in recent years. This caused the GVRD and Montenay Inc. to cooperate in a major facility upgrade that began in 2001 and was completed in August of 2003. The complete project includes a turbogenerator, major boiler improvements and modernization of the boiler controls, while continuing to service the recycle paper mill.

The \$25 million USD upgrade project completed in 2003 was the latest in a series of continuous improvements made to the facility since 1988, including carbon injection, NOx control, CEMS upgrades, and complete replacement of the DCS. Future improvements contemplated are an addition of a District Heating system and further upgrades to increase electrical production. This will highlight the operational performance of these modifications and the challenges and solutions of integrating major modifications into an operating facility. The importance of staying technologically current to ensure the extended life of the facility and how these and other upgrades will contribute to the GVRD goals of sustainability.

Data to be presented includes: Cycle efficiencies before and after modifications. Downtime and availability data through the upgrade phase. Environmental performance and emission limits. Electrical power prices in British Columbia. Summary sheet of past and future projects and costs. Key Conclusions Include: Facility upgrades ensure long term viability of WTE facilities. Upgrades must be evaluated with a long term view, with a "triple bottom line" approach, not simply on financial return. Modernization opens opportunities for increasing revenues through increases in incremental throughput and energy efficiencies. A proactive approach to environmental control demonstrates leadership that engenders public acceptance and keeps regulators and owners happy.

Ron Richter is a First Class Power Engineer with experience in various industries including pulp & paper, electrical generation, oil & gas and, for the past 17 years, at Montenay's waste

to energy facility in Vancouver. He has been the Plant Manager for the past 5 years. Ron Richter co-wrote a paper for NAWTEC 11 on design and construction of a 25 MW turbogenerator. Ron was also a member of Vancouver's winning team for Cities Plus, a worldwide competition for a 100 year plan for sustainability of major cities.