A high-BTU gas project is operating to provide pipeline gas from the City of Billings landfill. The state of the art facility is noted for the minimal process steps, elimination of pretreatment and the removal of N2 contamination.

Production of the pipeline gas included the installation of a gas collection system at the landfill by Wenck Associates. Overall project management was provided by LFG Technologies, Inc and the gas cleanup Molecular Gate PSA systems were provided by Guild Associates, Inc. The project is owned by Montana-Dakota Utilities who uses the gas in their natural gas distribution system.

In the delivery of feed gas at up to 2400 SCFM the raw gas is compressed to 110 psig and routed to two stages of Guild Molecular Gate PSA systems with pipeline quality sales gas delivered at 90 psig. In the first stage water vapor, VOC’s, H2S, siloxanes and CO2 are adsorbed and removed. Heavy impurities and VOC’s are nondetectable in the product from the first stage PSA it is a high quality fuel and used in a genset to provide power to the site.

The two stage approach allows for automatic purity control and independent adjustment of each stage to manage the unavoidable variations in the feed gas composition. The two stage design also eliminates any concern with high levels of CO2 reaching the N2 removal section.

Though deep O2 removal is not required at Billings systems can be designed for O2 removal when required.

To maximize the economical returns for the site the tail gas from the second stage PSA is available as fuel to a genset which in turn can provide much of the power demand of the facility. While it is possible to purge the first stage PSA with the tail gas from the second stage PSA to improve the methane recovery this was not done at the Billing site since the second stage tail gas is genset fuel.

The Billings site now operates the 32nd and 33rd Molecular Gate PSA systems from Guild Associates. To date 12 units have been provided for biogas applications (landfill and digester gases).

About Guild Associates
Guild provides adsorption and catalyst systems to a variety of markets, as well as shop fabricated engineered systems. Guild Associates is the licensee of the Molecular Gate technology originally developed by Engelhard Corporation (now a part of the BASF Group) and has provided all systems to date.

About LFG Technologies
LFG Technologies provides compressors and flares and landfill project expertise with combined experience with over 50 landfill gas projects.

About Wenck Associates
Wenck Associates, Inc. is a leader in engineering, environmental, and consulting services. Wenck provides industries and local, state, and federal agencies a full spectrum of services related to infrastructure, water, air, land, waste, and industrial processes.

About Montana-Dakota Utilities
Montana-Dakota Utilities is a division of MDU Resources and a diversified energy company that provides retail natural gas and/or electric service to MT, ND, SD and WY.

Contact
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