

Advances in Gas Separation



Typical Biogas Purification System

By utilizing the Guild PSA System, Intrepid Technologies is now able to produce a valuable natural gas product while benefiting the environment by reducing the production of greenhouse gases.

Intrepid Technologies, LLC., has been operating the first of two PSA Systems supplied by Guild Associates for upgrading biogas at their Whitesides Digester Facility in Idaho. The operation, in the initial one-year time period, has shown the production of pipeline quality gas that meets or exceeds the required specifications.

"We are pleased that this system enabled us to bring the gas to pipeline purity and allow the delivery to an interstate pipeline," said Brad Frazee, Vice-President biomethane operations for Intrepid. "We look forward to future digesters and working with Guild on future projects".

The system treats a water-saturated feed stream containing approximately 40% carbon dioxide and approximately 3,000 ppm of H₂S. In a single processing step, the system dehydrates the feed, removes the H₂S to less than 4 ppm, and reduces the carbon

System Produces Pipeline Quality Gas from Digester Gas

dioxide to less than 2% as required by the pipeline.

Guild Associates has a long history of supplying adsorption based systems for removing contaminants – including N₂, CO₂, H₂O, H₂S and heavy hydrocarbons - from contaminated gas streams. Over two dozen systems of various sizes have been installed to treat contaminated natural gas, coal mine methane, landfill gases and other contaminated methane rich feed streams. Guild's biogas process involves compressing the gas from the digesters to 100 psig then passing it through its PSA system where the water, H₂S and CO₂ are removed to deliver a pipeline quality product stream at near feed pressure. The process requires no expensive consumables or reagents or ancillary H₂S removal equipment. The ability to remove all the contaminants present in the biogas in a single step insures low operating cost. The Guild system is designed to satisfy a range of digester plant sizes with feed rates from less than 500,000 cubic feet per day to over 20 million cubic feet per day.

Major features of the process are the ability to meet pipeline specifications regardless of the feed composition, its high turndown capability, and adaptability to fluctuations in feed flow.

About Intrepid Technology and Resources, Inc.

(ITR) is an Idaho-based, publicly traded (IESV:OB) company specializing in the development of biofuel production projects. Biofuels of consideration are primarily biogas (methane from processing animal waste), with

considerations for ethanol and biodiesel. ITR provides the overall management and engineering/technology for planning, permitting, financing, construction, and operation of biofuel production facilities.

About Guild Associates

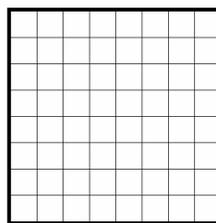
Guild provides adsorption and catalyst systems to a variety of markets as well as shop fabricated engineered systems including Molecular Gate systems. Guild Associates is the exclusive USA licensee of the Molecular Gate technology originally developed by Engelhard Corporation (now a part of the BASF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

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