Greenhouse Gas Technology Center Completes Verification of NATCO's Licensed THIOPAQ® Gas Purification Technology

FOR IMMEDIATE RELEASE

Technology meets regulatory requirements for H_2S levels and helps reduce operating costs

RESEARCH TRIANGLE PARK, NC (January 25, 2005) – The Greenhouse Gas Technology Center (GHG Center) today announced that it has independently verified the performance of the THIOPAQ® gas purification system, developed by Paques® of the Netherlands for processing renewable biogas and sour gas. The technology is distributed under license by National Tank Company, a NATCO Group Inc. subsidiary headquartered in Houston, Texas.

The THIOPAQ system is designed to safely and efficiently remove hydrogen sulfide (H_2S) from biogas and other sour gases while minimizing the generation of harmful emissions or effluents. The process is suitable to applications where the processed gas can be utilized as fuel. The system also allows for regeneration and recycling of caustic solution and the production of elemental sulfur for potential subsequent sale or use. A variation of this technology is Shell Global Solution and Paques' Shell-Paques® system, which operates on the same principles as THIOPAQ, but includes system components that can process low-, medium-, and high-pressure natural gas to treat sour gas and Claus tail gas.

This performance verification was conducted on a THIOPAQ system installed and operating at a Midwestern U.S. water pollution control facility that handles large volumes of industrial and municipal waste. Test results show that the system removed 99.8% of the H_2S from the raw biogas, emitted very low levels of H_2S from the bioreactor, and produced minimal liquid and solid waste discharges. A synopsis and final performance evaluation report can be accessed on the U.S. EPA ETV website at http://www.epa.gov/etv/verifications/vcenter3-13.html.

"While this technology uses traditional caustic scrubbing techniques to remove H_2S from biogas, the innovative bioreactor component of THIOPAQ technology results in significant operational and environmental benefits," said Tim Hansen, deputy director of the GHG Center at Southern Research Institute. "The system's aerobic bioreactor allows for regeneration of a large portion of the caustic solution after gas processing, which eliminates a large liquid waste stream and at the same time produces a potentially useful product as elemental sulfur."

"When equipment suppliers offer new technologies to their clients, this third party verification proves the credibility of the data," said Robert Curcio, senior vice president of product development for the NATCO Group. "The ETV verification, supported by the EPA, assures users that the technology offered will help them in meeting their environmental goals."

The GHG Center is a public/private partnership between the U.S. Environmental Protection Agency (EPA) and Birmingham, Alabama-based Southern Research Institute, operating under the EPA's Environmental Technology Verification (ETV) program. The GHG Center looks for promising greenhouse gas mitigation technologies, subjects them to independent third-party performance testing, and provides performance results to the public free of charge. To date, the GHG Center has verified—or is in the process of verifying—36 different environmental and energy technologies that can significantly impact greenhouse gas and other emissions.

Verifications generally involve the measurement of energy conversion efficiency, air pollution emission rates, secondary environmental impacts, operational performance, cost performance, and other variables

of interest to purchasers and other stakeholders. Technology performance verifications are accomplished using measurement and analysis methods that have been reviewed and approved by independent expert stakeholder panels.

Since 1997, the GHG Center has verified commercial ready technologies in advanced energy production and transportation systems, solid waste management, oil and gas production and distribution, greenhouse gas monitoring, agricultural waste management systems, advanced refrigeration systems, and other areas. Like the THIOPAQ gas processing system, technologies typically evaluated by the GHG Center offer the promise of multiple benefits to users and the environment.

Southern Research is an independent, not-for-profit organization that conducts scientific research at facilities in Birmingham, AL, Frederick, MD, and Research Triangle Park, NC. Southern Research provides contract research in the fields of engineering, automotive research and testing, chemical and biological defense, homeland security, environmental and energy-related research, and pre-clinical drug discovery and drug development. The Institute is affiliated with the University of Alabama at Birmingham (UAB.) For more information, see www.southernresearch.org**.**

Companies interested in verification testing of their environmental technologies can download the Application for Testing at the GHG Center website (www.sri-rtp.com) and submit the form as instructed. For additional information, interested persons may contact Timothy Hansen (hansen@sri.org or 919-806-3456).

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