PORTABLE SORBENT INJECTION
The Next Step in Reducing Your Facility’s Emissions

One Simple Step To An Informed, Customized Decision for Emissions Control

Air Pollution Control (APC) requirements in the Power Generation and Industrial markets are a high priority and require a substantial investment for compliance in a short period of time. Demands set forth by local and federal government are forcing facilities to make rapid reductions in emissions of mercury SO2, SO3, HCl and other acid gasses. The systems required for these reductions are unique to each facility and cannot be standardized, leaving many facilities wondering what the best emission control solution actually is for them. Sorbent injection testing allows each facility to choose the appropriate sorbent, optimize injection rates and locations to meet the specific facility configuration and environment.

Already a leader in the sorbent injection market, Clyde Bergemann Power Group Americas Inc. (CBAM) offers a completely mobile Portable Sorbent Injection system to test and demonstrate emission control requirements required for each unit at each facility.

CBAM’s Portable Sorbent Injection (PSI) is a mobile testing platform system designed from our experience in the engineering and supply of permanent sorbent injection systems. CBAM’s PSI fleet offers:

- Capability of handling Carbon (both activated and brominated), Silicates, Hydrated Lime, Trona and Sodium Bicarbonate
- Injection rates of up to 36,000 lbs/hr
- Storage capacities of up to 82,500 pounds
- On board milling using a Sturtevant Simpactor Pin mill capable of a throughput rate of 30 tons an hour
- Gravimetric Measurement – to ensure reliability and accuracy during testing

Clyde Bergemann’s PSI units offer our clients maximum flexibility and accuracy to provide a fully integrated testing package to economically meet air pollution control requirements in an informed manner.
As a provider of PM control devices and materials handling, CBAM recognizes the synergies of these existing systems with the addition of sorbent injection. As part of our testing services, CBAM can perform PM control device and ash handling assessment during testing to ensure all systems are functioning to the OEM specifications.

Once PSI testing is complete, Clyde Bergemann can develop a permanent solution to efficiently meet any facility’s budget.

**Successful PSI Testing Begins With Good Boiler Analysis**

Clyde Bergemann Power Group Americas, Inc. suggests, and can assist in, evaluating the following parameters prior to beginning a PSI test. This ensures the test is addressing precisely the areas – and only the areas – that are affecting your emissions.

- Quantification of Performance
- Choice of Sorbents for Best Performance
- Choice of Sorbents to Minimize Corrosion Potential
- Balance of Plant Impacts
- Testing Time Constrains
- Cost Analysis
- Injection Locations
- Residence Time
- Fuel Analysis
- Calculation of Expected Sorbent Usage Rates
- Sampling Locations
- Stratification of Flue Gas
- Increased Dust Loading Effects from Addition of Sorbent(s)
- Temperature Fluctuations
- Existing Injection Port Locations and Internal Duct Obstructions
- Plant Base Line Emissions Determination
- Continuous Monitoring Requirements
- Balance of Plant Equipment Cycling
- Evaluation of Plant Load Variation
- Evaluation of Plant Fuel Consistency
- Daily Review and Comparison of Test Results
- Sorbent Dispersion and Retention Time
- ESP or Fabric Filter Conditions
- SCR Operating Conditions
- APH Conditions

Once the required PSI parameters are determined, a typical PSI test protocol turnkey solution will be developed including a portable silo, sorbent trailer with feed and control equipment, as well as delivery and set up. Many customers also opt to include operating personnel, injection lines and ports, and sorbent supply for maximum ease and efficiency, eliminating the need to divert key personnel for the testing process.

CBAM’s PSI capability is customized for a facility’s specific equipment, services and support needs, from delivering a PSI system to a wide range of test options.
On site Sorbent Injection for the removal of HG, SO₂, SO₃ & other harmful pollutants

- Site Review To Determine Best Location For Test System
- Erection And Set Up Of Test System
- Computational Fluid Dynamics Modeling Of Available Injection Areas
- Injection Port Installation
- Operating Personnel
- Sorbent Supply and Coordination
- Emissions Monitoring Equipment
- Generation Of Final Test Report With Recommendations for Permanent System Configuration And Sorbent Consumption
- Breakdown And Removal of PSI System And Related Components

Sorbents Covered by Clyde Bergemann’s PSI

Clyde Bergemann's PSI System covers a full array of sorbents for any facility configuration, and modifications can be made to any system, to inject any dry bulk solid.
- Carbon (Standard Powdered Activated Carbon, Brominated, Halogenated, SO₃ Resistant)
- Hydrated Lime (Standard and Custom Refined Specifically For Flue Gas Treatment)
- Trona: Inline Trona Particle Size Reduction Mills Available For Testing
- Sodium Bicarbonate: Inline Sodium Bicarbonate Particle Size Reduction Mills Available for Testing
- Amended Silicates: Inline Amended Silicate Particle Size Reduction Mills Available for Testing
- Clay Based Sorbents

No Matter What Equipment Or Services You Need Clyde Bergemann Power Group Has It

Once a facility has utilized the PSI System the next step is implementing the right solution for your particular needs. Clyde Bergemann also provides a complete set of emission reduction solutions, tailored to almost any configuration.

Why Clyde Bergemann

- Over 60 years of APC System Integration Experience.
- Over 75 years of Material Handling & Injection Experience.
- Over 100 Dry Sorbent Injection Installations.

Allow Clyde Bergemann and the PSI Unit to take the guess work out of your air pollution control needs.

Clyde Bergemann Power Group Americas Inc. Air Pollution Control Systems
- Activated Carbon Injection
- Dry Sorbent Injection Systems
- Portable Sorbent Injection
- Spray Dryer Absorber
- Circulating Dry Scrubber
- Pulse Jet Fabric Filter
- Electrostatic Precipitator