

Nitrogen Services

Baker Hughes 

Minimize downtime and
reduce risk with engineered
nitrogen solutions

Baker Hughes Process & Pipeline Services (PPS) has a long history of providing nitrogen services to a variety of customers throughout the United States and around the world. Current and past customers include: oil refineries, gas processing plants, and petrochemical plants. With our fleet of nitrogen pumps, liquid nitrogen transports, mobile liquid nitrogen storage units and nitrogen membrane units dedicated to the midstream and downstream sectors, we are able to handle any nitrogen service project.

Nitrogen Equipment

Baker Hughes PPS owns nitrogen equipment that is capable of providing a wide range of temperatures, pressures and flow rates in order to meet customer requirements. PPS equipment is staged throughout the world, allowing us to mobilize and execute projects globally with minimal cost impact for clients.

Nitrogen Services

Our service offerings include: pre-engineering job design/procedure development, accelerated cool

down, hot nitrogen drying/stripping, purging/displacing volatile products, system inerting, pipe freezing, pneumatic testing and nitrogen/helium leak testing. Additionally, PPS has a proprietary accelerated cool down simulator to model specific projects and optimize the time and money required to complete the scope of work.

PPS understands the inherent risks when working in process environments and our personnel are trained specifically for work in the midstream and downstream sectors. From our training to our job execution we work to ensure every project is executed safely and efficiently. PPS uses a standard nitrogen rig-in with multiple risk mitigations included and our pumps are equipped with an over pressure protection switch to automatically shut down the pump in case an over-pressure event occurs.

Applications

- Purging and inerting
- Drying/Stripping
- Accelerated Cooling
- Pneumatic Testing
- Leak Detection
- Freeze Plug Isolations

Features and benefits

- High flow rates – N₂ pump units that can deliver up to 16,000 scf/min (460 m³/min) with a single unit.
- High pressures – N₂ pump units that can deliver pressures of up to 10,000 psi (690 Barg).
- High temperatures – Direct fired N₂ pump units and steam vaporizer units that can deliver nitrogen gas at temperatures up to 572°F (300°C).
- Supply options – Ability to source liquid N₂ from suppliers across the country, minimizing costs and ensuring nearby delivery points. Ability to generate the gaseous N₂ on site with our membrane units.
- Storage options – Large fleet of N₂ storage equipment, including standard capacity and body load transports, as well as King storage units that hold up to 23,000 gal of liquid N₂.



Drying

N₂ gas has been a drying medium in the market since the inception of petrochemical processes. It provides an efficient medium for drying to extremely low dewpoints.

Leak Testing

With a trace of helium, N₂ used for final commissioning verifies the safety and integrity of new and existing facilities, and accurately detects leaks as small as 0.10 scf/year.

Accelerated Cooldowns

N₂ as a 'controlled' cooling agent can greatly reduce the time to cool process systems before pre-commissioning with hydrocarbons or during maintenance turnarounds.

Purging & Blanketing

N₂ replaces hydrocarbon vapor, flammable and toxic gas, or air with an environmentally safe and inert medium for shutdowns, turnarounds, services changes, inspection and maintenance.

Pipeline Product Displacements

Product transfer for pipeline conversions, modifications, revalidation, testing, pigging and decommissioning are accomplished quickly with Baker Hughes PPS high flow rate and high-pressure equipment.

Foam Inerting

Eliminates explosive atmospheres in systems where it is not feasible to remove all hydrocarbons or flammable products. Allows hot cutting on systems still containing flammable liquids.

Freeze Plug Isolations

Used as a temporary isolation tool to freeze water, gel, and some hydrocarbon products in various sized pipes. It provides isolation anywhere in the system, particularly where valves are not available.