GRAB SAMPLING SYSTEMS:

Common Faults, Extraordinary Fixes

A Few Proven and Trusted Recommendations to Make Your Grab Sampling Systems/Process Safer and More Effective and Efficient:

As a key part of its charter, Swagelok's Field Engineering Team thoroughly inspects a vast variety of Liquid and Gas Grab Sampling Systems and Setups globally. Many are optimized; a like number, however, are not. Usually, just a few simple process changes could substantially improve safety, efficiency, performance, and profitability…especially in high-risk applications and conditions:

SAMPLE POINTS SHOULD BE CLEARLY AND SPECIFICALLY LABELED

Operators should develop and deploy a naming convention for quick and easy identification. In addition, an asset register, correlating with each sample point, should include:

- Location
- Fluid sampled, fluid composition, fluid state
- Pressure
- Temperature
- Potential hazards
- Container type
- Critical spares and part numbers
- Sampling frequency
- Flush time per sample

ENSURE SAMPLE QUALITY, REPRESENTATIVENESS, AND CONSISTENCY

It's not a best practice to draw a sample directly from a nozzle. Quality, whether liquid or gas, can easily be compromised. We recommend the use of a probe to eliminate process inefficiencies and the avoidance of particles and additional volume. You'll also ensure that samples come from one-third of the inner pipe wall to the center of the process line – that means superior accuracy characteristics.

CONSIDER ALL VARIABLES WHEN COLLECTING AND HANDLING A SAMPLE

- Never place a captured liquid sample into an open bottle for transport to a lab
- Be extremely careful when open sampling – toxic samples and fumes are possible
- Avoid spillovers and splashing of product during high-pressure liquid sampling
- Always employ fixed-volume liquid sampling to ensure repeatable, accurate volumes

PLACE YOUR SAMPLING STATIONS IN CONVENIENT TEAM LOCATIONS

For example, it's never recommended to house a sampling system over a control valve. When valve is closed, flow is cut off to the system, likely resulting in compromised and unrepresentative samples. If the valve is fully open, no pressure drop occurs, drastically reducing – or even stopping – flow to the system.

Position sample points over a pump, before/after a process stream or in end-product lines. Such practice eliminates any worries about valve operation for your sample collectors. Even more importantly, account for sampling locations during your overall system design phase…to ensure safe and easy access as well as an error-free and cost-effective process.

Support:

Visit swagelok.com/en/blog/fix-grab-sampling-issues

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