



## Compressed Air System Assessments

### The Problem

Many mines don't fully understand how much compressed air is used, how efficiently the compressed air system is operating, how much air ends up as air leaks and what the true cost of compressed air is.

### The Solution

Facilities may undertake compressed air system assessments, possibly through a qualified consultant, or contractor. Comprehensive compressed air system analysis should contain an examination of both air supply and usage and the interaction amongst the supply and demand. Losses and poor performance caused by system leaks, inappropriate uses, demand events, poor system design, system misuse and total system dynamics need to be calculated. Common areas for investigation include:

**Load Profile.** A compressed air load profile indicates how demand for air changes over time. It is necessary to install flow measurement instrumentation to develop load profiles.

**Operational Improvements.** Equipment and processes that use compressed air should also be evaluated. Common questions include:

- Can the equipment operate at lower pressure?
- Is any compressed air being used inappropriately?
- Can the equipment or process benefit from local air storage receivers?

**Compressor Package.** The compressors are evaluated for appropriateness of the intended use as well as overall condition. The compressor installation is also evaluated for location, air intake, ventilation and heat recovery.

**Filters.** Filters should be examined for cleanliness and appropriateness for the application. Pressure drops across the filters should be evaluated to estimate energy losses attributable to the filter.

**Aftercooler and Oil Separators.** Aftercooler, oil and moisture separator efficiency, cooling effectiveness, can be measured and feasible modifications, or alternative systems, are recommended.

**Automatic Drains.** The location, condition, and effectiveness of all drains needs to be evaluated and energy efficient alternatives recommended where appropriate.

**Primary and Secondary Receivers.** The effectiveness of the receiver tank should be evaluated for location and size. Moreover, the receiver drain trap needs to be examined to determine proper operation. Secondary air receivers to control demand events should also be investigated.

You can  
make a  
difference.  
Fix Leaks.  
Cut Costs.  
Save Energy.