

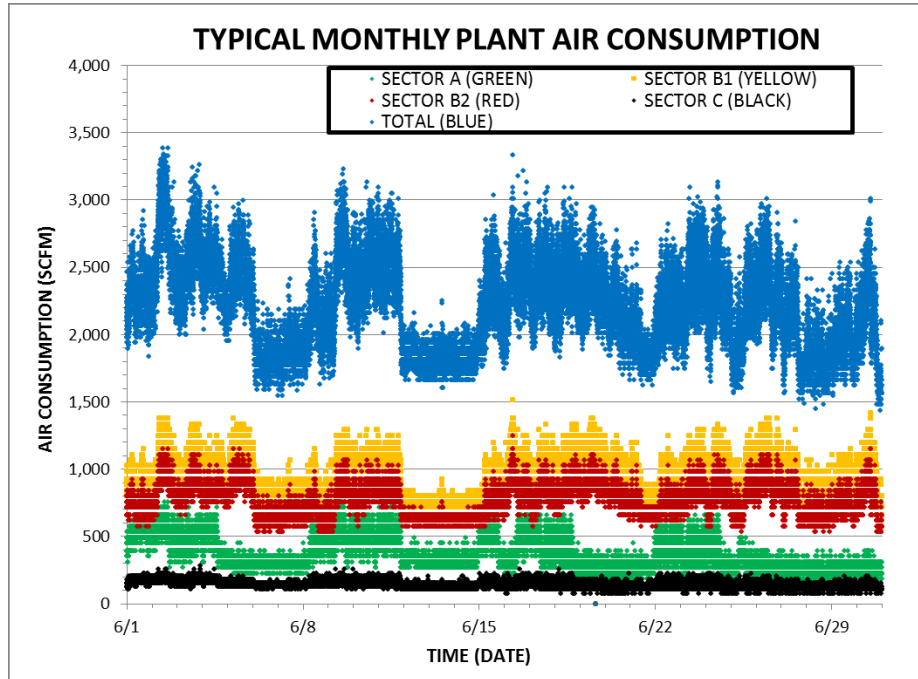
## **ACTION PLAN LESSON FIVE**

### **COST SAVINGS ACTIVITIES**

1. You're leading a team of Reliability and Maintenance staff for a large rubber manufacturing company. The plant has 25 presses with four hydraulic cylinders per press. Failure rates on the hydraulic cylinders are terrible and getting worse (e.g., rebuilding 2 per month at a cost of \$20,000 each, *plus* 48 hours of downtime)! Your oil spend is over \$15,000 per month. To save money three years ago, the purchasing team began sourcing hydraulic oil from a recycler. There is no existing oil analysis program at this facility.
  - A. What is the mean time between failures (MTBF) for the hydraulic cylinders?
  - B. What actions can be taken to reduce the number of failures?
  - C. What actions can be taken to monitor the condition of the hydraulic cylinders?

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2. This chart shows in blue the monthly air consumption for a plant. The plant conducts an air audit. The audit shows a number of leaks are found and air knives are determined to be operational when the plant is shut down. The leaks total 345 SCFM. The air knives are determined to be using 1,036 SCFM continuously when the plant is operational. The plant operates three days per week. Each of the three compressors is capable of producing 1,413 CMF at 100 psig.



A. Complete the table below to calculate the estimated annual savings:

Item	Usage (SCFM)	Power-Output Ratio (kW/SCFM)	Electricity Cost (\$/kW-hr)	Hours Saved (hr/yr)	Estimated Annual Cost/Savings (\$)
Leaks		0.16	\$0.08		
Air Knives		0.16	\$0.08		
				<b>Total:</b>	

B. If the total usage could be brought below 2,800 SCFM, what other benefits are gained?