Sampling Intervals and Locations by Equipment Type

Equipment Type	Sampling Interval *Normal/Intermittent Use*	Sampling Location
Diesel Engines	Monthly or at 250-500 Hours/Quarterly Just Prior to Oil Drain	Through Dipstick Retaining Tube or Sampling Valve Installed in Filter Return
Natural Gas Engines	Monthly or at 250-500 Hours/Quarterly Just Prior to Oil Drain	Through Dipstick Retaining Tube or Sampling Valve Installed in Filter Return
Mechanical Transmissions, Differentials, Final Drive/Planetary	At Least Every 500 Hours No Less Than 3 Times Per Year Just Prior to Oil Drain	Through Oil Level Plug or Dipstick Retaining Tube
Hydraulics	Bi-Monthly or Monthly/Quarterly Just Prior to Oil Drain	Through Oil Fill Port of System Reservoir at Mid-Level
Gas Turbines	Monthly or at Least Every 500 Hours	Through Sample Valve Installed Upstream of the Filter on the Return Line or out of the System Reservoir
Steam Turbines	Bi-Monthly or Monthly/Quarterly	Through Sample Valve Installed Upstream of the Filter on the Return Line or out of the System Reservoir
Gas/Air Compressors	Monthly or at 500 Hours/Quarterly	Through Sample Valve Installed Upstream of the Filter on the Return Line or out of the System Reservoir
Refrigeration Compressors	Start, Mid & End of Season	Through Sample Valve Installed Upstream of the Filter on the Return Line or out of the System Reservoir
Gear & Bearing Systems	Bi-Monthly or Monthly/Quarterly	Through Petcock Valve at Exit of Each Gear or Bearing Set or Through System Reservoir

Oil Analysis can detect equipment failures in progress and point you straight to the root cause of problems, enabling you to ***prevent catastrophic shutdowns and costly losses in production***. The two biggest enemies for any industrial application are wear and contamination. Base sampling frequency on the equipment's criticality to production as well as the environmental conditions under which it is forced to operate. The fact that a component's failure could shut down an entire line of production is worth far more consideration than replacement value alone.

Hydraulic Systems operate under extremely close tolerances demanding regular monitoring for fluid cleanliness.

- Particle Count can detect potential wear-causing dirt and contaminants early enough to take action
- Water is biggest concern - it accelerates acid formation, increases oxidation and reduces lubricity - all lead to system failure
- Water by Karl Fischer provides a precise measurement of **how much water** is present in fluid

Gearboxes should also be closely monitored for dirt and water contamination, although the type of wear occurring is usually the biggest concern.

- Direct Read Ferrography provides a ratio of large to small ferrous particles
- DR reports a quantitative value that indicates amount of ferrous wear occurring – provides tremendously helpful trending information

Compressors may not be the most expensive equipment to replace but are often the most critical to production.

- Replacement parts may be difficult to obtain
- Valuable time and money are lost in unscheduled downtime
- Adding Particle Count to routine preventative maintenance testing can predict component failure and give control of the production schedule back to you

Turbine reliability is always critical and oil changes or failure **always expensive**.

- Extreme operating tolerances demand clean fluids
- Routine trend analysis crucial to predictive turbine maintenance - even subtle changes can indicate impending failure
- Combining Analytical Ferrography with routine monthly testing qualifies the type of wear as well as the source