A mine’s success is now tied heavily to its ability to abide by and go beyond environmental regulations. In a capital intensive industry such as mining, environmental impacts are present in every step of the process. Hibbing Taconite’s reliability engineering program has found innovative ways to minimize the risk of impacts to the environment and the communities that surround the mine.

The reliability engineering department at Hibbing Taconite Company has always maintained the vision that a strong PM and PdM program minimizes environmental and economic risk and protects the safety of our workforce. This emphasis formed its roots in the lubrication program. The goal of the lubrication program has always been to keep our lubricants clean, cool, and dry. Embedded into this philosophy is that well-maintained lubricants along with well-maintained machines allow the lubricant to stay in the assets until the lubricant has reached its maximum use. To extend the life of lubricants, Hibbing Taconite has switched many of the mineral oil-based lubricants to synthetic oil based lubricants. Minimizing the amount of lubricant handling from storage to machine to disposal minimizes the risk of spills and exposure to the environment. To minimize costs of synthetic lubricants, many of the synthetic lubricants are reprocessed and repurchased at a reduced price. Another intended benefit of switching from mineral oil to synthetic oil is that the lubricants’ ability to decrease the amount of energy consumed to move the machines. This in turn results in reducing the carbon footprint of the site.

Economic return has been harvested from these efforts by our ability to keep assets in production for longer intervals, decreasing labor hours by extending preventive maintenance intervals, and decreasing overall energy consumption.

Environmental Stewardship is not just a buzz word at Hibbing Taconite; it is a means to the future of the mine, a core value of Cliffs Natural Resources, and a way of life.

**CMMS Software and Predictive Maintenance Instruments/Software**

1. Winroast Oil Analysis Software and Database
2. Emerson CSI 2130 Data Collectors
3. Emerson AMS Machinery Health Manager
4. UE 10,000 Ultrasonic
5. UE Grease Caddy
6. PI Data Historian and Modular Dispatch System
7. Mincom Ellipse
8. Rotalign Ultra Laser Alignment Tools
9. Ultrasonic Thickness Measurement Tools
10. Micron MT800 Infrared Camera
11. PRO-ACT by Reliability Center for RCA