



## Quinplex® Synthetic Food Grade Oil (4046)

*Marquette Water Filtration Plant – Marquette, Mich.*

*Atlas Copco Air Compressors*

- Stopped compressors from running hot and shutting off automatically
- Eliminated oil seepage
- Ensured problem-free operation while maintaining:
  - ▶ 8,000-hour oil change intervals
  - ▶ 4,000-hour filter change intervals

### *Customer Profile*

The Marquette Water Filtration Plant was built in 1997. At the time of completion, it was one of a select few in the world to offer microfiltration with onsite chlorine generation. This process starts with one of the finest surface water sources in the world – Lake Superior. To ensure the water is safe, untreated lake water is filtered through a state-of-the-art filtration process using membranes developed by US Filter/MEMCOR.

The City of Marquette received national recognition for use of this water treatment technology. Microfiltration uses hollow membranes with pores that measure 0.2 microns, which the water is pulled through for filtration. The membranes are rewetted and purged via air pressure at 90 psi to return larger particles back out, as service water flushes the membranes to ensure cleanliness. Average production of the facility is 3.5 million gallons per day, with a peak of 6.6 million gallons during the summer months.

Chlorine is produced onsite via electrolyzing saltwater. This is the only facility in the state to accomplish this as of the printing of this report.

### *Application*

The Marquette facility, under the operation of Jim MacDonald, chief operator, uses three Atlas Copco GA 30 air compressors to facilitate a receiver pressure of 135 psi.



*Cutaway of microfiltration equipment*

### *Challenge*

While using a commercial-grade compressor oil, the compressors ran very hot and shut off automatically on high-temperature alarms. They also had excessive oil seepage.



### LE Solution

LE products were introduced to the Marquette Water Filtration Plant shortly after it was built. To maintain the plant's exceptional standards, LE lubrication consultant Greg Klang recommended Quinplex® Synthetic Food Grade Oil (4046), which is cleared for use in USDA-inspected facilities and registered NSF H1 for use in food-processing environments. It contains Quinplex, LE's proprietary impact- and water-resistant additive, and has superior low-temperature performance characteristics.

### Results

There was some concern that oil drain intervals would be compromised by the new lubricant; however, LEAP<sup>SM</sup> oil

analysis confirmed drain intervals of 8,000 hours of service. High pressures demanded by the system did not affect the performance of Quinplex 4046. Filter changes are done at 4,000 hours with no operating problems.

"As we move toward the next expansion, LE will be a part of our team," MacDonald said.

### Other LE Products Used

- Almaplex® Industrial Lubricant (1275) is used in all grease applications throughout the plant with great results due to its exceptional resistance to moisture.
- An Oil Safe® pump unit has greatly improved the ease of lubricant handling and housekeeping.



*Thank you to Jim MacDonald, chief operator, and Greg Klang, LE lubrication consultant (pictured), for providing the information used in this report.*



Quinplex® is a registered trademark and LEAP<sup>SM</sup> is a registered service mark of Lubrication Engineers, Inc. Oil Safe® is a registered trademark of Reliability Brands, LLC.

Based on actual user experience. Individual results may vary. Not intended to supersede manufacturer specifications.

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