

Abstract

Membrane Autopsies: Techniques Utilized, and a Statistical Presentation of Results of 100 Autopsies

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Abstract Text

A membrane autopsy is a commonly carried out procedure to troubleshoot an operating membrane system. The driving force behind a membrane autopsy may be technical, in order to solve the problem, or commercial, in order to identify if the plant designer or the supplier of a component (eg, the membrane manufacturer) is at fault. As such, the membrane autopsy provider is often seen as being an "Expert Witness" in settling disputes between the various parties involved in a membrane system.

Avista have been carrying out membrane autopsies for almost 10 years, and this paper sets out the procedures used during the autopsy, what kind of faults can be found and the typical cost of identifying the problems.

A summary of the last 100 membrane autopsies will then be presented, showing the most common faults found within membrane systems. The most common fault found in the membrane systems was oxidation of the membrane surface. Fortunately this is generally found quite quickly and at low cost. Other common problems identified were membrane scaling, delamination (caused by backpressure) and biological fouling.