



*Technology Services  
For Total Fluid Management*

## Contamination Analysis

### Introduction

The presence of unexpected particulate or microbial contaminants in process fluids can lead to system failure, batch reprocessing or even batch rejection.

It is critical that these contaminants are quickly isolated and identified so that possible sources can be traced and corrective actions applied to the process.

### How Can Pall Help?

Pall has over fifty years experience in contamination analysis and control and offers a range of standard services for analysis of particulate and microbial contaminants.

In the simplest form, we can often provide the necessary advice and corrective actions by telephone or via e-mail.

Alternatively, samples can be sent to a Pall facility for analysis or we can sample on site. These investigations will be fully documented and a technical report supplied following conclusion of the test work and process review, to ensure that any change control is correctly managed and implemented.

### Particulate Contaminants

Pall has available a wide range of microscopic and analytical equipment for the analysis of particulate and / or amorphous contaminants including:

- Optical microscopy
- Scanning electron microscopy
- X-Ray emission spectroscopy
- Fourier Transform Infrared (FTIR) Spectroscopy
- Computer-enhanced image analysis
- Particle size distribution (volumetric & gravimetric)



### Importance of Contaminant Analysis

Filters may be seen as sensitive indicators that reveal process upsets or areas for improvement. Analysis of organic and inorganic particulate on a returned filter may provide a greater understanding of the entire process. Additionally the analysis of microorganisms that are retained by or pass through filters will lead to the optimization of process filtration.

The elimination of damaging contaminants is critical to long-term process equipment reliability. To achieve consistently clean fluid, the technology for a filter medium and its matrix configuration has to be developed to suit the parameters and demands of the particular process. Proper contaminant analysis allows for that proper filter selection. Pall has decades of experience and technical leadership in the area of evaluation of contaminants and their behavior.

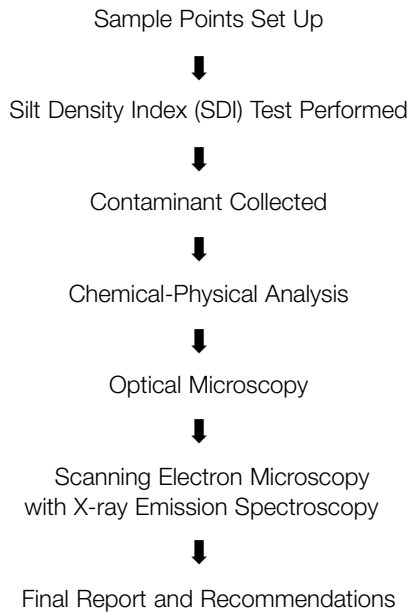
### Microbiological Contaminants

The isolation and identification of microbiological contaminants from process fluids require specialized laboratory facilities and expertise, all of which can be offered by Pall Corporation.

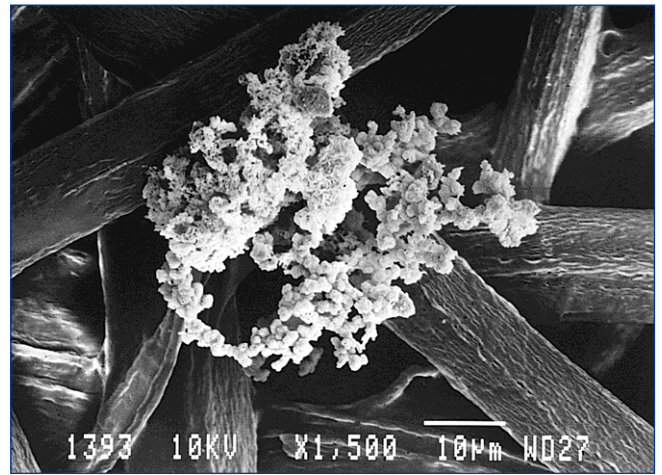
#### Typical microbiological studies include:

- Gross microbiological identification (genus level)
- Total bacterial count
- Bioburden analysis
- Identification and review of process isolates

## Typical Example of an Investigative Procedure for Particulate Contaminants in a Water System



## SEM showing contamination retained by filter medium



### Charges

Wherever possible, we provide a fixed price in advance for the project. Where this is not possible, we will provide an estimate to assist you with budgeting and cost control.

### What's the Next Step?

Simply contact your local Pall representative. They will discuss your specific requirements with you and forward your inquiry to Pall's contamination analysis specialists.



2200 Northern Boulevard  
East Hills, New York 11548-1289

888.873.7255 toll free  
516.484.5400 phone  
516.484.0364 fax

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