# LIVE CRYPTOSPORIDIUM

ANSI/NSF Standard 53 includes challenge testing of treatment units using live Cryptosporidium oocysts. By including live Cryptosporidium in the Standard a means for testing mechanical filtration units with an actual organism (of removal claims) is available to manufacturers.

## CRYPTOSPORIDIUM /V/ SURROGATES

Claims of mechanical filtration of oocysts in treatment units which have not actually been challenged with the organism will always be suspect to a certain degree. Oocyst charge, flexibility and general condition will all affect its filterability so correlation of oocysts removal data with test dust and latex sphere challenge data cannot be made with any certainty.

Historically, Standard 53 has challenged filters with high turbidity water and relied on the characterization of the influent and effluent particles to determine cysts removal capabilities of the filter unit. Though oocysts may be present in high turbidity water this is not necessarily the case. By challenging the treatment units with low turbidity water containing the live organism a more realistic and rigorous challenge of the filter's effectiveness can be produced.

## CHALLENGE DOSE

The Standard describes a challenge dose of at least 50,000 oocysts per liter. The treatment units are spiked with oocysts initially for 8 cycles, then 4 cycles after being brought to 25, 50 and 75% reduction in flow using defined high turbidity water.

## ANALYTICAL METHOD

A combination of methods, derived from the EPA Information Collection Rule and EPA Method 1622 protocols, are used to concentrate and analyze the samples. Ultimately the samples are examined by fluorescence microscopy, enumerated and reported in terms of log removal. The target removal for the live Cryptosporidium challenge is 99.95% or approximately $3.3_{log10}$.

## CERTIFICATION, DOCUMENTATION AND REPORTING

BioVir Laboratories has been performing protozoan cyst testing and challenge studies since our inception in 1988. We are California approved for microbiological testing of POU/POE devices and are California ELAP Certified for general microbiology.

BioVir will perform work under Good Laboratory Practices (GLP) documentation. Our data package will be comprehensive and presented in a understandable format.

## SURROGATE CYST CHALLENGE

Should our client decide to test their system using a surrogate described in the Standard, BioVir offers both alternatives: Fluorescent beads and Test Dust.

## CONTACT

Please call our customer service representatives at 1-800-GIARDIA (442-7342) to discuss your testing needs.

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