

Case Studies in Microscopy

Cryptosporidium and the NYC Watershed

The purpose of this activity is to get you to think about the results and to use the information to make a recommendation regarding *Cryptosporidium* and the effectiveness of watershed protection vs the cost of filtration. Think about the information, and answer these questions on a separate piece of paper as you go through case.

NOTE: do not "cut and paste" from any website. Use your own words to answer each question.

The NYC Watershed Protection Plan (2 pt)

- 1) NY City gets its water from a huge watershed and distribution system that spans over 4 counties. List 2 watershed protection initiatives and explain how each helps protect NY City's drinking water.

Cryptosporidium (2 pt)

- 2) What is *Cryptosporidium*? What symptoms does it cause?
- 3) What are the most likely sources in the NY City watershed?

Methods (2 pts)

4) Of the methods listed, the EPA approved using fluorescent antibodies to detect *Cryptosporidium parvum*. Explain how this method works and why it would be specific for *Cryptosporidium parvum*.

Results

You may find it convenient to put your results in the chart below.

Sample site	# oocytes/field	# oocytes/field	# oocytes /field	# oocytes /field	# oocytes /field

Conclusion (4 pts)

So-- you have all the data -- it's time to argue your case. The final questions is:

5) With respect to Cryptosporidium, should NYC have to build a multi-billion dollar filtration plant, or is watershed protection enough?

Your argument for or against filtration should include information about:

- The nature of *Cryptosporidium* and the disease it causes
- What the results tell you about whether or not *Cryptosporidium* moves through the watershed
- What NYC is currently doing to protect its watershed
- Whether you think this is adequate protection or not, and why

You must refer to your results and include information from the references as needed.