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August 9, 2024

RE: Completion of Monthly Source Assessment Monitoring with Requirement for Microscopic Particulate Analysis at Public Water System (PWS) #4100854 – Swisshome Village; SRC-BA – Well #1

This letter is to inform you that the Swisshome Village has completed the required monthly assessment monitoring of raw water from:

SRC-BA, Well #1

If your lab has been collecting the monthly assessment samples, please send a copy of this letter to the lab. The requirement was met by submitting monthly raw water coliform samples to OHA Drinking Water Services. Sample results have been reviewed, and none of the samples were confirmed positive for *E. coli*. However, total coliform has been detected in 33% or more of the samples. **Therefore, due to the number of total coliform detections and the presence of surface water in close proximity to the well, we are requiring an additional evaluation to determine if water from this source is under the direct influence of surface water.**

You can see the monitoring results by:

- Going to the “Data Online” feature on the Drinking Water Program’s Web Site - <https://yourwater.oregon.gov/> ;
- Looking up the public water system by name or by number (options at top of page);
- Clicking on the "Coliform Results" heading at the bottom of the water system’s page.

On the Coliform Results page, those listed as "SRC-" under the "Facility" column were reported as source water samples. (SRC stands for "source" and the letters that follow it correspond to each individual water source listed on the main web page for the water system: SRC-AA, SRC-AB, etc.).

Since the monthly assessment monitoring of raw water is complete and the appropriate regulating agency has been notified, the Swisshome Village may discontinue monthly raw water sampling in this source. However, should the geologic conditions, water



MPA analysis (see attached list of *Laboratories that Provide MPAs*). For additional resources, please see the [OHA Drinking Water Services Groundwater Under the Direct Influence of Surface Water webpage](#).

**Two MPA samples will need to be collected, the timing of each sample collection event is to be determined in consultation with OHA Drinking Water Services.** If the MPA samples are not collected as outlined above, OHA Drinking Water Services may invalidate the results and require the source be re-sampled. Prior to selecting and scheduling a laboratory for the analysis, please provide a copy of this letter to the MPA laboratory so they are aware of the monitoring requirements and the time period in which the samples need to be collected within. The following websites may also be used to assist you in determining the best time to collect the samples:

- National Weather Service, River Forecast Center: <http://www.nwrfc.noaa.gov/>
- U.S. Geological Survey, Oregon Water Science Center: <http://or.water.usgs.gov/>

Once you have completed the MPA monitoring, please submit MPA results to:

Oregon Health Authority  
Drinking Water Drinking Water Services  
PO Box 14350, Portland, OR 97293-0350.

I realize the complexity of this requirement. If after reading the enclosed information you still have questions, please contact Shawn Stevenson at (541) 650-1640.

Sincerely,



Tom Pattee, R.G.  
Groundwater Coordinator  
OHA Drinking Water Services

Enclosure

CC: Nicholas Alviani, Lane County Environmental Health  
Amy Bleekman, OHA Drinking Water Services  
Shawn Stevenson, OHA Drinking Water Services

## Groundwater Under the Direct Influence (GWUDI)

The federal Surface Water Treatment Rule requires that all public water systems that use surface water or use groundwater under the direct influence of surface water meet performance standards of filtration and disinfection to deactivate pathogenic organisms within the water. This requirement is addressed in Oregon Administrative Rule 333-061-0032.

### What is groundwater under the direct influence?

Groundwater under the direct influence (GWUDI) of surface water occurs when, because of its proximity to surface water and the character of the aquifer, pathogenic organisms can move from the surface water source to the well or infiltration gallery.

### What are the public health concerns associated with GWUDI?

Pathogens, such as *Giardia* and *Cryptosporidium*, are often found in surface water and can cause gastrointestinal illness and other health risks. In many cases, this water needs to be filtered and disinfected through the use of additives such as chlorine to inactivate (or kill) microbial pathogens.

*Cryptosporidium* is a significant concern in drinking water because it is resistant to chlorine and other disinfectants and it's responsible for waterborne disease outbreaks that have caused severe illness. It may be especially harmful to people with weakened immune systems (e.g., infants and the elderly) and potentially fatal in people with severely compromised immune systems (e.g., cancer and AIDS patients).

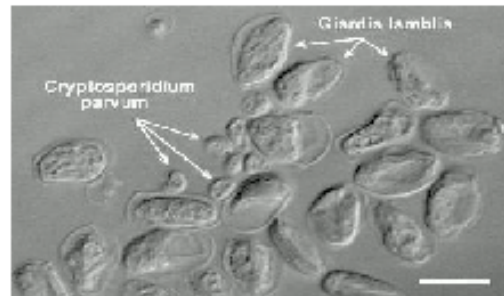
In the photomicrograph on the top right of this page, *Giardia* and *Cryptosporidium* are shown as seen through a microscope. These organisms are very small. The white bar in the diagram is approximately 10 microns (0.0004 inches) in length.

Fact sheets on *Giardia* and *Cryptosporidium* are available at:

<http://www.cdc.gov/parasites/crypto/>

For more information on GWUDI please see:

<https://www.oregon.gov/oha/ph/HealthyEnvironments/DrinkingWater/SourceWater/Pages/gwudi.aspx>



Because of their small size, *Giardia* and *Cryptosporidium* can readily move through the open spaces in the aquifer, i.e., through the openings between sand and gravel size particles or in fractures in bedrock. However, the farther they travel the more likely it is that they will be filtered out of the water by natural processes. Through previous studies, scientists believe that the risk related to these organisms is substantially reduced after travel of 200 feet in sand and gravel and after 500 feet in fractured bedrock or layered volcanic rocks.

### What's involved in determining GWUDI?

Analysis of water for *Giardia* or *Cryptosporidium* is complex and costly. The EPA has indicated that monitoring source water for coliform bacteria may serve as a useful surrogate for the other pathogens. If your source is in proximity to a surface water source and meets the hydrogeologic setting-surface water setback criteria listed in OAR 333-061-0032 (7)(a), OHA-DWS requires monthly coliform testing at the wellhead of the source for a period of up to 12 months. If at any time the system fails to monitor or it experiences a confirmed positive *E. coli* test, the water system is required to have two microscopic particulate analyses (MPAs) performed on the source water. For additional information, see [MPA Fact Sheet](#).

## The Microscopic Particulate Analysis

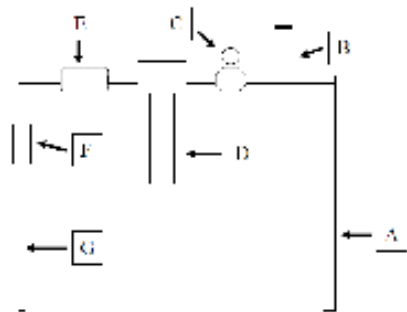
The microscopic particulate analysis (MPA) is the method currently used in Oregon to determine whether a water system is under the influence of surface water. Source water that has been confirmed positive for *E. Coli* indicates that the water system may be at risk from *Giardia* and *Cryptosporidium* and therefore an MPA must be conducted. Surface water organisms such as diatoms, other algae, rotifers and insects are typically abundant in surface water. The MPA capitalizes on this occurrence, and, because diatoms and other algae are approximately the same size as *Giardia* (~10-15 microns<sup>3</sup>), these organisms serve as useful surrogates for the potential occurrence of *Giardia* in the water.

MPAs are used to generate a relative risk factor for pathogenic organisms such as *Giardia* and *Cryptosporidium*. In some instances, surface water pathogens (*Giardia* and *Cryptosporidium*) are filtered out by the natural conditions of the soil and underlying sediment. *Giardia* and *Cryptosporidium* do not occur in all surface water all the time. Therefore, simply testing the water for the presence of these organisms may not be representative of the water people are drinking year-round. The MPA goes one step beyond testing the water alone and provides a mechanism to evaluate the natural filtration and the potential risk of pathogens in the drinking water source.

### Conducting an MPA

Sampling for a microscopic particulate analysis is **not** like a typical “grab sample.” A grab sample requires that the water line is flushed and the sample bottle is filled. Collecting a sample for MPA is a carefully controlled procedure that requires specialized equipment operating over a period of at least eight hours — refer to the diagram below. The MPA sampling requires that a minimum of 500 gallons of water is directed at a rate of approximately 1 gallon per minute through a one-micron nominal cartridge filter. That filter captures all surface water organisms of that size and bigger. The filter is sent to the lab where it is examined under a microscope to identify the organisms present and their abundances. The MPA test then yields a “score” that depends on the type of surface water organisms present and their relative abundances. Refer to OAR 333-061-0032(7)(h) (Table 10: Modified Scoring for MPA).

### MPA Sampling device



- A. Six-foot inlet hose with backflow preventer – (HG-80 female fittings)
- B. Pressure regulator, adjustable, pre-set at 10 psi
- C. Pressure gauge, 0-100 psi
- D. MPA Consensus Method approved filter holder housing and propylene yarn filter
- E. Gallon meter
- F. Limiting flow orifice, 1 gpm (3.79 liters/minute)
- G. Six-foot discharge hose

For technical questions regarding the MPA and scoring please contact the OHA-DWS regional geologist for your area. Go [here](#) for contact information.



# Laboratories that Provide Microscopic Particulate Analyses

Last Updated January 2022

## **Important Information: Please Read Carefully!!!**

Microscopic Particulate Analysis (MPA) is time sensitive so it is very important to contact and coordinate with the laboratory that will be providing the sampling equipment and analysis well in advance of the planned MPA sample event. In order to assist and insure that the samples are collected during the high risk periods of time specified by the State of Oregon, provide a copy of the enclosed MPA Sampling Requirement letter to the laboratory of your choice (see below for a list of laboratories).

In addition to the importance of collecting the sample during the specified high risk period, it is necessary for the water system to consider the timing of the sample collection event, especially the starting and ending times. Once the sample collection has been completed, maximum shipping and holding time for the sample must not exceed 48 hours. In other words, the laboratory must start the analysis within 48 hrs after sample collection has been completed. Failure to start the analysis within 48 hrs will result in invalidation of the sample and a requirement to repeat the sample event. Additional information regarding the sampling equipment, sample collection and laboratory analysis procedures can be found by clicking on the EPA Consensus Method for Determining GWUDI Using MPA link at:

<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/SourceWater/Pages/gwudi.aspx>.

## **Laboratory Information**

Below and on the following page is a list of laboratories that provide MPA services. The approximate equipment rental and analytical cost ranges from \$250-400 per sample event (shipping not included).

### Laboratory: **Biovir Laboratories**

Contact: Dorian Cielo  
Address: 685 Stone Road Unit 6  
City: Benicia State: CA Zip: 94510  
Phone: 800-442-7342 or 707-747-5906  
Fax: 707-747-1751  
e-mail: dmc@biovir.com

### Laboratory: **CH Diagnostic & Consulting Service, Inc.**

Contact: Brec Clay  
Address: 512 5th Street  
City: Berthound State: CO Zip: 80537  
Phone: 970-532-2078  
Fax: 970-532-3558

### Laboratory: **Energy Laboratories**

Contact: Randy Ogden  
Address: 2393 Salt Creek Highway  
City: Casper State: Wyoming Zip: 82602  
Phone: 888-235-0515  
Fax: 307-234-1639

Laboratory: **Grants Pass Water Laboratory**

Contact: Dori Schaafsma  
Address: 964 SE "M" Street  
City: Grants Pass State: OR Zip: 97526  
Phone: 541-476-0733  
Fax: 541-476-8132  
e-mail: doree@gpwaterlab.com

Laboratory: **Lab/Cor, Inc.**

Contact: Derk Wipprecht  
Address: 7619 6<sup>th</sup> Avenue NW  
City: Seattle State: WA Zip: 98117  
Phone: 206-781-0155  
Fax: 206-789-8424  
e-mail: dwipprecht@labcor.net