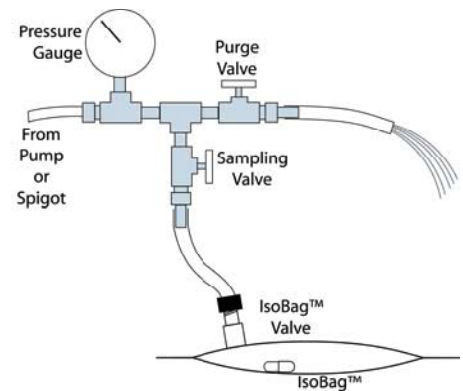


Collection of Ground Water Samples from Domestic and Municipal Water Wells for Dissolved Gas Analysis

- 1. Sampling source:** Water samples should either be collected from a pressurized water system or by using a suitable water pump. When sampling from a pressurized water system, it is recommended to use an outdoor spigot or other source which bypasses any water treatment systems (i.e. water softeners, etc.). When using a pump, it should be capable of maintaining a constant pressure at or above that which exists within the aquifer. This is to ensure that gases dissolved in the water within the aquifer remain dissolved until the water is transferred into an IsoBag[™]. If using a pulsating pump such as a bladder pump, please contact Isotech for additional recommendations.
- 2. Sampling Mechanism:** *After purging the well,* a mechanism consisting of a pressure gauge in line with two valves should be attached to the spigot or pump output (see figure). The **purge valve** (see figure) allows water to be pumped through the system to purge both the well and the tubing. The **sampling valve** (which should point downward), provides a point whereby a sample split can be slowly “bled” off from that water which is being continuously purged out of the system via the **purge valve**. Sampling in this manner allows for collection of a sample over a longer period of time, and as such should provide a sample that is more representative of the water source, in essence creating an “averaging effect” during collection.
- 3. IsoBags[™]:** The gas bags provided have been evacuated in advance. A capsule filled with bactericide has also been inserted.
- 4. Collection of samples:** Slowly open the **purge valve** to purge any gas or air from the tubing. The flow rate should be controlled so as to allow a reasonable flow, while also maintaining a pressure close to the maximum pressure of the water system or pump. When the line has been adequately purged and a steady state situation is achieved, open the sampling valve slightly to purge the air from it. Then, with the water still running at a low rate, connect the fitting to the valve on the IsoBag[™] and proceed to fill the bag (note: the slower the filling rate, the greater the “averaging effect”). The bag should be filled with approximately 500 cc of water (i.e. to a thickness of about 1 inch). When sufficient sample has been collected, close the sampling valve and quickly disconnect the fitting from the IsoBag[™]. The water flow can now be turned off and the hose disconnected. Reattach the cap to the valve of the IsoBag[™].
- 5. Submission of samples.** After recording the sample identification on the attached label, the bag should be placed in its protective box and packed **laying flat**. Complete a Chain-of-Custody/Analysis Request form and include it with the sample(s). **If possible, samples should be shipped the same day collected, via an overnight delivery service. Client MUST inform Isotech of shipment prior to arrival.** Please note Isotech’s receiving hours of **Monday thru Friday 8:00 am to 4:30 p.m.**



Ship samples to:

Isotech Laboratories, Inc.
 1308 Parkland Court
 Champaign, IL 61821

These instructions have been provided to simplify the collection of samples for dissolved gas analysis. Although we try to foresee and avoid problems in the field, it is never possible to predict every situation. If you encounter any difficulties, or if any additions or changes in these instructions would be beneficial, please let us know.

Isotech Laboratories, Inc. makes no warranty as to the applicability and/or safety of the procedures described herein.