

Trusted Technical Expertise.

According to the Interstate Technical Regulatory Council's (ITRC) Passive Diffusion Team, passive sampling of groundwater refers to collecting a representative sample of the aquifer immediately adjacent to a specific position in a well without active media transport induced by pumping or purging techniques.



Passive sampling significantly reduces the field costs and time associated with groundwater well monitoring, reduces field sampling variability, can provide vertical profiling of contaminate concentrations, and has no known depth limit. Passive samplers are easy to deploy and retrieve and may be used in conjunction with one another.

Columbia Analytical manufactures the RPP Samplers which may be used to collect samples for inorganic constituents and water-soluble organic compounds

RPPs were invented by Don Vroblesky, Ph.D., of the United States Geological Survey (USGS). Columbia Analytical manufactures a prototype that will soon be licensed with the USGS for production under the US Patent Application Serial #10/767,496, entitled "Porous Polyethylene Diffusion Sampler for Groundwater."

RPPs are made of thin sheets of foam-like porous polyethylene with pore sizes of 6-20 microns. When completely filled with water the pores allow a water-water interface,

facilitating the equilibrium of water-soluble analytes in the aquifer adjacent to the well screen with the deionized water of the RPP. Like the majority of passive samplers, it is recommended that they remain deployed for a minimum of 14 days, though the analytes of interest may equilibrate sooner.

The RPPs are deployed with the plug end down and are kept in this position until the contents are placed into sample bottles for transport to the laboratory. This is to avoid leakage from the pores of the sampler.

Primary applications are:

1. Long term groundwater monitoring situations, especially when purged water must be collected and disposed of off-site
2. Well fields in porous/permeable formations with good groundwater recovery
3. All water soluble analytes, like inorganic anions and cations, metals, MEE parameters, 1,4-dioxane, MTBE, hexavalent chromium, explosives, perchlorate and dissolved gases
4. Very useful in deep wells where submersible pumps may not function

Pricing for RPPs

RPP, each	Price
RPP Sampler (6" length, 1.5" diameter, 100 ML)	\$65.00

Accessories for RPPs

Hanging Assemblies and Supplies, each (reusable)	Price
Hanging assembly (custom sized to order)	Call for quote
Weights 8 oz. (5/8" diameter X 7" long)	\$16.00

Please allow one week for RPP delivery.

RPP Benefits

- Samples all water soluble analytes, such as:
 - Perchlorate
 - 1,4-dioxane
 - Inorganic anions and cations
 - Metals
 - MEE parameters
 - MTBE
 - Hexavalent chromium
 - Explosives
 - Dissolved gases
- Long term groundwater monitoring situations, especially when purged water must be collected and disposed of off-site
- Well fields in porous/permeable formations with good groundwater recovery
- Very useful in deep wells where submersible pumps may not function.

The RPP is 5-6 inches long and 2 mm thick, capped at one end and a Delrin® plug at the other. Each RPP holds approximately 110 mL of certified, laboratory grade deionized water. They come in a protective mesh cover that allows attachment to the deployment line with simple cable ties. They are prepackaged in a heat-sealed polyethylene sleeve filled with certified, laboratory-grade, analyte-free, deionized water to ensure that the pores of the RPP do not become air-filled thereby blocking the water-water interface and preventing diffusion. The RPPs may be stacked if additional sample volume is desired. Contact Columbia Analytical for small volume capabilities.

Columbia Analytical is a leader in passive diffusion sampler technology and has been since March 2000 when it began manufacturing and distributing samplers for Volatile Organic Compounds (VOCs). Wide acceptance of these samplers has spurred Columbia Analytical to partner with USGS to develop passive diffusion samplers for common LTM inorganic parameters. Both laboratory and field demonstration studies are ongoing for the use of RPPs for various analytes.. We actively participate in the ITRC and have been instrumental in technological and regulatory advancements in this field.

To order, call: 1.800.695.7222

