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[54] **DOWNHOLE PASSIVE WATER SAMPLER AND METHOD OF SAMPLING**

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[52] U.S. Cl. **73/863.23; 73/64.56; 73/864.51; 166/264**

[58] Field of Search **73/863.23, 864.51, 73/64.56, 19.12; 166/264**

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[57] **ABSTRACT**

An improved method and apparatus for monitoring the concentration of contaminants, including volatile organic compounds, in groundwater is provided comprising a semipermeable membrane defining an inner chamber therein. The membrane is permeable to contaminants but impermeable to a reference fluid, which is preferably distilled water. The method of sampling comprises placing the semipermeable membrane, which contains the reference fluid, in contact with contaminated groundwater, thereby allowing contaminants to diffuse through the semipermeable membrane and into the inner chamber. Sufficient time is allowed for the contaminant concentrations in the groundwater and in the reference fluid to reach equilibrium. The semipermeable membrane is then removed from contact with the groundwater, and a sample withdrawn from the inner chamber for analysis, preferably through a port communicating with the inner chamber.

20 Claims, 3 Drawing Sheets

