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At a glance

- Completely passive operation
- Eliminates mixing and cross contamination
- Increases operator safety
- Patent pending

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Dissolution Actuated Valve Sampler

Passively operated sampler eliminates cross contamination

Engineers at the Savannah River National Laboratory (SRNL) have invented a new device for retrieving liquid samples. The dissolution actuated valve sampler was developed to obtain pristine samples while operating without the assistance of a mast or messenger device.

Background

A major concern with current sampling technology is the risk of cross contamination. SRNL devised the dissolution actuated valve sampler to eliminate problems caused by mixing of the sample with other fluid layers or non-sterile air. The passive operation of the sampler also significantly reduces the equipment needed for obtaining clean samples. Most existing sampling systems employ pumps and/or vacuums to aid in collecting fluid samples which in effect increases the cost of taking a sample.

How it works

The sampler remains sealed during its descent through the fluid until it reaches the desired depth. Once the appropriate depth is reached, the sampler opens and fluid is allowed to flow in. After the sampler is filled, it is resealed to eliminate mixing with superior fluid levels during its ascent. Because the sampler is remotely sealed, it can be washed prior to handling, decreasing the operator's likelihood of exposure.

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Technology transfer

The Savannah River National Laboratory (SRNL) is the U.S. Department of Energy's (DOE) applied research and development laboratory at the Savannah River Site (SRS).

With its wide spectrum and expertise in areas such as homeland security, hydrogen technology, materials, sensors, and environmental science, SRNL's cutting edge technology delivers high dividends to its customers.

The management and operating contractor for SRS and SRNL is Savannah River Nuclear Solutions, LLC. SRNS is responsible for transferring its technologies to the private sector so that these technologies may have the collateral benefit of enhancing U.S. economic competitiveness.

Adaptable for many applications

The dissolution actuated valve sampler should be useful for applications such as chemical, environmental (groundwater testing, radioactive waste, waste management), medical/ pharmaceutical, oil refining, feed and grain production, food and beverage, aquariums and oceanic testing.

Partnering opportunities

SRNS invites interested companies with proven capabilities in this area of expertise to enter into a licensing agreement with SRNS to market this nuclear material detection system. Interested companies will be requested to submit a business plan setting forth company qualifications, strategies, activities, and milestones for commercializing this invention.

Qualifications should include past experience at bringing similar products to market, reasonable schedule for product launch, sufficient manufacturing capacity, established distribution networks, and evidence of sufficient financial resources for product development and launch.

SRNL-L9100-2010-00114

DECEMBER 2014 13CC00025