NEWS RELEASE

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FOR IMMEDIATE RELEASE

Envirogen Introduces New Small-Scale Fluidized Bed Reactor Systems for Treatment of Selenium in Coal Mining Waters

Compact, Containerizable Systems Suited for Remote, Small Flows and Can be "Networked" for Cost-Effective Treatment of Multiple Outfalls

Kingwood, TX, 13 March 2012 -- Envirogen Technologies, Inc. (Envirogen) announced today that it has introduced a new small-footprint fluidized bed reactor (FBR) system designed to treat low flows of selenium-laden coal mining waters economically and efficiently. The new systems will allow coal mine operators to treat flows that start at less than 100 gallons per minute (gpm) to lower than 5 µg/L selenium at discharge – even in the presence of high levels of nitrate. These systems can be automated and delivered in standard-sized ISO containers to difficult-to-reach locations that require minimal site preparation and engineering, and can be monitored remotely. The new small system FBR approach offers coal mine operators the ability to treat selected mining water outfalls with a relatively low initial capital expenditure and the flexibility to relocate the systems to meet changing treatment goals.

Envirogen entered the coal mining selenium treatment business in 2011 with its FBR technology that has been deemed 'best-in-class' for performance and cost effectiveness by an independent study developed for the North American Metals Council. The company now offers containerized and built-in-place FBR systems that can be sized to treat a wide range of flows and influent water compositions, ranging from under 100 gpm to well over 3,000 gpm. Envirogen has recently completed several long-term operational studies with FBR systems in coal mining operations in Appalachia and Western Canada, demonstrating the effectiveness of the technology in the field.

According to David Enegess, Vice President, East Region for Envirogen, the move to develop small FBR systems was motivated by the realities of treating selenium-containing wastewaters in coal mining

operations that have multiple outfalls – often in remote locations – as opposed to a single option that would require the construction of a large, centralized facility. “Coal mining is a very dynamic activity, often conducted in rough, remote terrain. Sometimes it is impractical to pipe all the selenium-containing mining waters to a single, centralized facility from both cost and logistics standpoints. The smaller-sized FBR can meet the treatment and discharge requirements of low-flow outfalls. It can be rapidly implemented with a minimal amount of civil engineering, automated and remotely monitored. These systems become an asset that may be relocated if treatment locations vary on one site, or across multiple sites, through time,” he said. “For mines that have multiple outfalls, we envision these being treated by individual small FBRs, with other activities – such as solids treatment and disposal, chemical supply and spare parts serviced from a lower cost centralized location,” he added.

The Fluidized Bed Reactor – “Best-in-Class” Technology

Envirogen’s FBR is an active, fixed-film bioreactor that fosters the growth of microorganisms on a hydraulically fluidized bed of specified media. FBRs have been shown to have some significant advantages over other biological systems in coal mining environments in treating selenium to less than 5 µg/L. First, they operate in a steady-state ‘plug flow’ manner that avoids channeling, upsets in the controlled growth of organisms and gas binding. This ensures that the microorganisms in the system are optimally utilized. Also, they do not require periodic backwash, as do packed bed reactors, for example. These features allow for significantly higher treatment efficiency, resulting in much lower hydraulic residence times (1/5 to 1/10 as long as packed bed). This efficiency results in smaller overall systems and a smaller system footprint – both of which contribute to the dramatically lower capital and installation costs of the FBR compared to other biological treatment systems. Its flexibility in the choice of electron donor chemicals can translate into capital and operating cost savings with reduced solids generation. It also responds well to changes in feed flow and composition, consistently achieving discharge limit conditions.

With a team that has more than 20 years of experience operating the FBR treating similar inorganic compounds like nitrate and perchlorate, Envirogen has the expertise and the ability to offer performance, cost and asset life guarantees in conjunction with these small FBR installations. According to Mr. Enegess, the focus with any solution development will be low lifecycle cost. “As we look around the coal mining industry today, we see the need for high-performing treatment solutions that are flexible enough to meet each coal mine’s approach to handling selenium abatement. But we also understand that cost is a major issue,” he said. “With our FBR technology, we start with the most robust, cost-effective technology on the market. In partnering with the coal mining industry, we can help design and implement technology and long-term operating solutions that will deliver the lowest lifecycle cost over the course of the treatment program," he added. Mr. Enegess went on to point out that the company is involved in using FBR technology to treat selenium-laden waters in other industries and applications – including other

mining industries, power generation, refinery wastewaters and in agricultural and groundwater remediation applications.

About Envirogen Technologies, Inc.

Headquartered in the Houston suburb of Kingwood, Texas, Envirogen Technologies, Inc. is a 21st century environmental technology and process solutions provider that combines vast experience in water and vapor phase treatment with a track record of exceptional performance, allowing us to deliver long-term, guaranteed solutions in a broad range of treatment and process-related applications. A primary focus for Envirogen is the concept of 'lifecycle performance,' in which the company provides guaranteed, pay-for-performance, long-term contracts at predictable costs that offer customers the lowest total cost over the lifetime of an equipment installation. Primary applications for Envirogen's systems include treatment of groundwater for the delivery of high-quality potable water, groundwater remediation, wastewater treatment, water re-use, nutrient removal, and odor and VOC control for municipal and industrial markets. In industrial markets such as mining, hydrocarbon processing and chemical processing, Envirogen also specializes in process water treatment, byproduct recovery and chemical purification. The company conducts business throughout the United States, with regional offices in Texas, Southern California, Illinois, New Jersey and Tennessee. For more information on the company, visit **www.envirogen.com.**

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