

For Immediate Release

Press contact: Serena Siegfried, 212/873-1944

## Proven Bioremediation Technology Hydrogen Release Compound (HRC®) Recently Granted Patent



SAN CLEMENTE, CA, August 28, 2002 — RegenesiS' **Hydrogen Release Compound (HRC®)** was recently granted a U.S. Patent on July 16, 2002. HRC is a proprietary polylactate ester used for the purpose of accelerating reductive bioremediation processes that effectively degrade chlorinated contaminants, nitroaromatics and oxyanions in groundwater and saturated soils. HRC also has the capability to remove certain metals from the subsurface through the facilitation of precipitation reactions.

HRC offers a unique, time-release feature that slowly releases lactic acid into contaminated environments for periods of up to 1 to 2 years or more. Lactic acid is widely known as one of the most effective ways to provide hydrogen and electrons to microbial populations as it undergoes microbial breakdown (fermentation). The hydrogen is then exploited by the microbial consortium for the availability of its electrons and, by example, as a replacement for chlorine in chlorinated contaminants. It is in this manner that HRC purposefully allows for prolonged periods of enhanced biodegradation of anaerobically degradable contaminants to occur. Current research indicates that low concentrations of contaminants are optimally treated with low concentrations of hydrogen that can be slowly released over long periods of time. These characteristics are significant when comparing HRC to other soluble substrates in that its' slow-release profile avoids rapid and uncontrolled releases that can be exhausted early on, foster competitive reactions and cause unwanted buildup of potentially dangerous gases like methane in the subsurface. Additionally, HRC, unlike other substrates, is an extremely viscous, thick material that is approximately soluble in water but will not easily be carried away with groundwater flow. Rather it tends to remain where injected or deposited thus generating hydrogen that can be transported within the preferential groundwater flow.

[MORE]

**Proven Bioremediation Technology Hydrogen Release Compound (HRC®)  
Recently Granted Patent, page 2**

HRC has been applied on over 350 sites to date and therefore makes up about 75% of all electron donor applications performed in the U.S. HRC has been used on a wide range of contaminated groundwater sites from dry cleaners and microelectronics manufacturing facilities to chemical depots and agricultural lands. With simple direct-push injection as the preferred method of delivery, HRC can be applied almost anywhere very quickly, unobtrusively and cost-effectively. With the ability to degrade contaminants such as PCE, TCE, pesticides, perchlorates, explosives, chlorofluorocarbons and to precipitate metals, the use of HRC has captured the attention of groundwater remediation professionals around the globe, and is quickly outpacing other soluble electron donors as the long-lasting, cost-effective substrate of choice.

Incorporated in 1994, Regenesis is the world's leading developer and distributor of products used to restore contaminated groundwater and soil through accelerated natural attenuation (bioremediation). Regenesis' products, Oxygen Release Compound (ORC®) and Hydrogen Release Compound (HRC®), have been used to remove a wide range of groundwater contaminants, ranging from gasoline, MTBE, and chlorinated solvents to nitroaromatic explosives and heavy metals, from over 7,500 sites across the U.S. and around the world. Readers are invited to call Regenesis at 949-366-8000 or visit their website at [www.regenesis.com](http://www.regenesis.com) to arrange a free site evaluation for the application of ORC and/or HRC.



For more information on HRC please contact Bryan Vigue at (949)366-8000 or by e-mail at [bryan@regenesis.com](mailto:bryan@regenesis.com), or visit [www.regenesis.com](http://www.regenesis.com).

#####