



ETC Group
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Nanotech meets the Environment

Making a Mole Hill out of a Mountain?

ETC Group today released a 6-page *Communiqué* on the use of nanotechnology-based products in the environment – products that are coming to market in the absence of both government oversight and public discussion. A recent large-scale application of a product touted to control soil erosion using nanotechnology highlights regulatory inadequacies and lack of clarity in the nanotech industry.

The full text of the *Communiqué*, “*Mulch ado about nothing?... Or the Sand Witch?*” is available on the Internet at www.etcgroup.org.

Nanotechnology – whose best-known commercial successes have thus far been stain-resistant fabrics, stronger and lighter tennis rackets, and transparent sunscreens – has spawned new environmental products to prevent erosion or to clean up contaminated sites. While the companies claim these products will be beneficial to the ecosystem, in the absence of government regulatory oversight, the unknown short- and long-term implications raise concerns for health and for the environment.

In August and September of this year, a Utah-based company, Sequoia Pacific Research, participated in a \$4 million Bureau of Indian Affairs contract to protect more than 1,400 acres of fire-ravaged land on a mountainside near Taos, New Mexico. Sequoia’s SoilSET™ was used to aid the soil-stabilization effort. SoilSET™ is a unique and reportedly organic and biodegradable product that undergoes a 4 nm-level electrochemical reaction when mixed with water. The reaction causes silicates in the soil and silicates in the product to self-assemble into a kind of crust that remains for up to a year. The crust is claimed to prevent soil runoff and allows seeds blended into the product to establish themselves.

“As far as we know, this is the single largest environmental release involving a nanotechnology product. Hopefully there is no problem, but without government evaluation and greater company clarity, we can’t be sure of the product’s appropriateness or safety,” explains Jim Thomas at ETC Group’s UK office.

Asked by ETC Group for the chemical composition of the product, Paul Clayson, Chief Operating Officer for Sequoia, declined to say citing the need for confidentiality pending patent approval. When ETC Group inquired into the approval process for the product, Clayson said that the company had contacted a regional office of the Environmental Protection Agency (EPA) and was told that no approval was required. Yet the company advertises that the SoilSET™ process involves a unique nano-scale effect, causing the silicate particles in the soil and in the product to self-assemble into a resilient matrix.

Kathy Jo Wetter, an ETC Group researcher based in North Carolina, USA says, “Since existing regulations fail to address the changed behaviour of nanomaterials, many products are coming to

market without adequate testing. Categories do not even exist for companies to classify their new products. Carbon nanotubes, for example, are often classified as graphite, but nanotubes are nanotech's so-called 'miracle molecule' – and their properties are wildly different from graphite – though they're both carbon."

Sequoia, a self-described nanotechnology company, has stressed that they do not use manufactured nanoparticles and say they are simply taking advantage of conventional silicate-binding technology. Says ETC Group's Jim Thomas, "No authorized agency studied this technology before it was deployed. It is quite possible that the active ingredients in the company's process are nothing more than sand, but – sand or not – it is how sand performs at the nano-scale, catalyzing novel reactions in the soil that matters. The product does something unique to the land that hasn't been done before on anything like this scale. The bottom line is that the nanotech industry can drive a truck through current regulations; nano-scale products and processes are entering the market, which could have environmental implications; and nanotechnologists are neither clear nor consistent in presenting their products."

Pat Mooney, Executive Director of ETC Group worries, "The public needs to know how SoilSET™'s matrix forms; how long it lasts; what it does to the living soil; and where the changed particles end up. It is simply unacceptable for this large-scale release to be unregulated." ETC Group's new *Communiqué* includes examples of products in the nanotech pipeline that could involve other large-scale environmental releases.

In July 2002 the ETC Group called for a moratorium on the introduction of new nano-based products until governments can decide on "best practices" in the lab. "Although industry has not accepted the call, policy-makers and companies on both sides of the Atlantic are beginning to acknowledge that regulation is necessary and inevitable," Pat Mooney notes, "but the technology is moving fast. Nanotech's political mold is being cast now. In two years it will be too late. If industry and governments continue as they have, we will see nanotech in the same social and scientific chaos we have today with biotech." But regulating products is not enough warns ETC Group. Society must be fully engaged in a discussion of the socio-economic as well as health and environmental implications of nano-scale technologies. To this end, ETC Group is working with partners to develop an International Convention for the Evaluation of New Technologies (ICENT), which it hopes to bring before the United Nations in 2004.

For further information, see the full *Communiqué* at www.etcgroup.org or contact:

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The Action Group on Erosion, Technology and Concentration, formerly RAFI, is an international civil society organization headquartered in Canada. The ETC group is dedicated to the advancement of cultural and ecological diversity and human rights. www.etcgroup.org. The ETC group is also a member of the Community Biodiversity Development and Conservation Programme (CBDC). The CBDC is a collaborative experimental initiative involving civil society organizations and public research institutions in 14 countries. The CBDC is dedicated to the exploration of community-directed programmes to strengthen the conservation and enhancement of agricultural biodiversity. The CBDC website is www.cbdcprogram.org