



North Carolina Department of Health and Human Services  
 Division of Public Health • Epidemiology Section  
 1912 Mail Service Center • Raleigh, North Carolina 27699-1912  
 Tel 919-733-3410 • Fax 919-733-9555

Michael F. Easley, Governor

Carmen Hooker Odom, Secretary

November 3, 2004

**MEMORANDUM**

**TO:** Evan Kane  
 Underground Injection Control Program  
 Aquifer Protection Section

**FROM:** Luanne K. Williams, Pharm.D., Toxicologist *LKW*  
 Medical Evaluation and Risk Assessment Unit  
 Occupational and Environmental Epidemiology Branch  
 North Carolina Department of Health and Human Services

RECEIVED/DENR/DIV  
 AQUIFER PROTECTION SEC.  
 04 NOV 18 PM 3:26

**SUBJECT:** Use of a Non-Biological Product EHC® by Adventus Remediation Technologies to Enhance Biodegradation of Groundwater Contaminated with Chlorinated Compounds at the BASF Technical Marketing Building Site in Enka, North Carolina.

I am writing in response to a request for a health risk evaluation regarding the use of use of a non-biological product EHC®, by Adventus Remediation Technologies, to Enhance Biodegradation of Groundwater Contaminated with Chlorinated Compounds at the BASF Technical Marketing Building Site in Enka, North Carolina. Based upon my review of the information submitted, I offer the following health risk evaluation:

**PRECAUTIONS DURING APPLICATION**

1. Some effects or hazards reported to be associated with the chemical proposed for use are as follows:
  - Exposure can cause irritation of skin, eyes, nose, throat, and lungs (Medical Management Micromedex TOMEs Plus System CD-ROM Database, Volume 62, 2004)
2. If the products are released into the environment in a way that could result in a suspension of fine solid or liquid particles (e.g., grinding, blending, vigorous shaking or mixing), then it is imperative that proper personal protective equipment be used. The application process should be reviewed by an industrial hygienist to ensure that the most appropriate personal protective equipment is used.



3. Persons working with this product should at least wear goggles or a face shield, gloves, and protective clothing. Face and body protection should be used for anticipated splashes or sprays. Again, consult with an industrial hygienist to ensure proper protection.
4. Eating, drinking, smoking, handling contact lenses, and applying cosmetics should never be permitted in the application area during or immediately following application. Safety controls should be in place to ensure that the check valve and the pressure delivery systems are working properly.
5. The Material Safety Data Sheets should be followed to prevent adverse reactions and injuries.
6. Access to the area of application should be limited to the workers applying the product. In order to minimize exposure to unprotected individuals, measures should be taken to prevent access to the area of application.
7. According to the information submitted, no public or private water supplies were identified within a 1500-foot radius. Hominy Creek is less than 30 feet to the east of the injection areas. The nearest residence is greater than 1500 feet from the injection area, and the nearest workplace is the Buncombe County Offices at 300 feet from the injection area. Both of these are located upgradient from the injection area. Efforts should be made to prevent contamination of existing or future wells and nearby surface waters that may be located near the application area.

Please do not hesitate to call me if you have any questions at (919) 715-6429.

cc: BASF  
Mr. Joe McKeon  
BASF Safety and Ecology  
100 Campus Drive  
Mail Stop F-409A  
Florham Park, NJ 07932

ENSR Consulting and Engineering, (NC), Inc  
Nanjun Shetty, P.E.  
7041 Old Wake Forest Road, Suite 103  
Raleigh, NC 27616

Adventus Remediation Technologies  
Kerry Bolanos-Shaw  
1345 Fewster Drive  
Mississauga, Ontario L4W 2A5