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State of New Mexico  
**ENVIRONMENT DEPARTMENT**

*Ground Water Quality Bureau*  
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SECRETARY  
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DEPUTY SECRETARY

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

July 7, 2004

Steven R. Rae, Group Leader  
Water Quality and Hydrology Group  
Risk Reduction and Environmental Stewardship Division  
Los Alamos National Laboratory  
P.O. Box 1663, MS K497  
(RRES-WQH)  
Los Alamos, New Mexico 87545



**RE: Response to Notice of Intent to Discharge  
Permeable Reactive Barrier (PRB) Installation / Operation / Sampling  
Los Alamos National Laboratory, Mortandad Canyon**

Dear Mr. Rae:

The New Mexico Environment Department (NMED), Ground Water Quality Bureau (GWQB) has reviewed your notice of intent (NOI) and supplemental information, dated February 10 and March 10, 2003 (respectively), for the installation and operation of the PRB in Mortandad Canyon, and the addendum to the NOI dated May 20, 2004, for the discharge of groundwater produced during sampling activities at the PRB monitoring wells. The PRB is located in Section 23, T19N, R6E, Los Alamos County. The notice of intent satisfies the requirements of Section 20.6.2.1201 NMAC of the Water Quality Control Commission (WQCC) Regulations.

Based on the information submitted with your NOI and supplemental information, a discharge permit is not being required for the PRB as long as the installation, operation, and monitoring of the PRB are as described in the notice of intent, supplemental information, and addendum. The Ground Water Quality Bureau has concluded that the proposed discharge of materials and groundwater will not adversely impact ground water quality in Mortandad Canyon, and a discharge permit will not be required. In addition, the operation of the PRB, and the characterization and disposal of all purge water and materials associated with the PRB will regulated by the NMED Hazardous Waste Bureau.

The discharge is briefly described as follows: The PRB incorporates a sequence of four reactive media layers to immobilize or destroy a suite of contaminants present in Mortandad Canyon alluvial groundwater. The contaminants include strontium-90, plutonium, americium, perchlorate, and nitrate. The four media cells consist of lava rock gravel, apatite, a mixture of pecan shells, cotton seed meal and



pea gravel, and limestone. Groundwater flowing through the PRB will be systematically sampled from within each of the individual layers, and from upgradient and downgradient locations as specified in the Sampling & Analysis Plan submitted as Enclosure 1 of the March 10, 2003 NOI supplemental information. Groundwater accumulated during sampling activities (i.e. purging) will be discharged less than 200 feet directly upstream from the PRB in Mortandad Canyon. No portion of the discharged groundwater shall be allowed to bypass the PRB as surface flow. The accumulated groundwater shall be discharged in a manner that allows for infiltration/percolation prior to reaching the PRB, so that all discharged groundwater flows through the PRB treatment cells. The discharge shall be as described in the February 10 and March 10, 2003 NOI and supplemental information, and in the May 20, 2004 Addendum to the NOI.

The NMED GWQB requests that copies of all analytical data and associated reports generated from the monitoring of the PRB be submitted to the GWQB for review.

Although a discharge permit is not being required for this discharge at this time, you are not relieved of liability should your operation result in actual pollution of surface or ground waters. Further, this decision by the NMED does not relieve you of your responsibility to comply with any other applicable federal, state, and/or local laws and regulations.

If at some time in the future you intend to change the materials or the location of your discharge so that it will not be as described in the above referenced NOI, or if observation or monitoring shows that the discharge is not as described, you must file a new NOI with the Ground Water Pollution Prevention Section (GWPPS).

If you have any questions, please contact Curt Frischkorn of the GWPPS staff at 827-0078, or Maura Hanning, Program Manager of the GWPPS at 827-2945.

Sincerely,

  
Jerry Schoeppner, Chief  
Ground Water Quality Bureau

JS:CSF/csf

xc: Mark Haagenstad, Water Quality and Hydrology Group, Los Alamos National Laboratory,  
P.O. Box 1663, MS K497, RRES-WQH, Los Alamos, NM 87545  
Cecilia Williams, District Manager, NMED District II  
John Young, NMED Hazardous Waste Bureau, P.O. Box 26110, Santa Fe, NM 87502  
Brett Lucas, NMED Surface Water Quality Bureau  
NOI File