

February 8, 2006

Mr. David Snyder  
Executive Director  
South Dakota Science and Technology Authority  
Rapid City, SD 57709

Dear Mr. Snyder,

The Pacific Northwest National Laboratory (PNNL) is pleased to learn of the efforts by the State of South Dakota to convert the former Homestake Mine for use as a Deep Underground Science and Engineering Laboratory (DUSEL). In particular, the efforts of the State to open the mine earlier are very interesting. Staff at PNNL have a long and rich history of research at the Homestake and are enthusiastic about opportunities such a facility presents for new and continued research and development activities. Please consider this letter as a sincere expression of interest in the use of the DUSEL.

PNNL is one of nine U.S. Department of Energy multiprogram national laboratories with a diverse staff who perform a variety of research and development for many clients, both national and international. Included are applications in environmental science, energy, health, and national security in addition to programs for commercial or industrial partners. The 4200 staff at PNNL execute more than 500 separate scientific and technical programs annually and are routinely recognized as best in class.

My informal consultations with staff at PNNL have identified several scientific or technical topics where access to a deep underground facility is critical. These include:

- biogeochemistry,
- geohydrology,
- geomicrobiology,
- national security applications, and
- basic physics research.

With respect to PNNL staff working in deep underground facilities, my first and principal concern is for the safety of the staff. As the Homestake mine is rehabilitated and converted for use as a laboratory, careful consideration to the overall safety of staff members is crucial. PNNL management requires staff members to work safely whether at a PNNL facility or elsewhere.

Although we do not have specific infrastructure requirements at this time, generally speaking, our scientists would value:

- a safe and secure environment, in compliance with applicable regulation,
- ease of entry and exit for personnel and equipment,
- the ability to restrict access to specific locations,
- flexibility in the configuration of spaces,
- dedicated laboratory-like spaces, and
- the capacity to store and use radioactive materials.

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Further, general expectations include environmental infrastructure that provides a clean, comfortable work space, access to standard means of communication (telephone, broadband digital communications), clean and reliable electrical power and the necessary facilities to accommodate personal needs.

We would like to explore the opportunity for PNNL research further with you, possibly during your February meeting in South Dakota in anticipation of the development of specific proposals for the early use of underground space. The cycle of proposals for fiscal year 2007 is upon us and early discussions could lead to occupancy during the first year of your early occupancy initiative.

Best regards,

Harry Miley  
Laboratory Fellow  
Pacific Northwest National Laboratory  
Richland, WA 99352