

NUCLEAR WASTE CONSULTANTS INC.

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RS-NMS-85-009  
Communication No. 31

U.S. Nuclear Regulatory Commission  
Division of Waste Management  
Geotechnical Branch  
MS 623-SS  
Washington, DC 20555

Attention: Mr. Jeff Pohle, Project Officer  
Technical Assistance in Hydrogeology - Project B (RS-NMS-85-009)

Re: BWIP Document Review - RHO-BW-CR-150 P

Dear Mr. Pohle:

Please find attached the Nuclear Waste Consultants/Terra Therma Inc. document review of "PORFLO - A Continuum Model for Fluid Flow, Heat Transfer, and Mass Transport in Porous Media" - RHO-BW-CR-150 P. The basic review was performed by Dr. Kraeger-Rovey and Msrs. Marinelli and Galloway of Terra Therma. The document review received an extensive technical review by Mr. Adrian Brown and a management review by Mark Logsdon of Nuclear Waste Consultants.

The review is an extensive one. Because the direction from the Project Officer was to address the extent to which this code could be used to assess performance of a repository in basalt at the Hanford site, the review touches on several key matters of the hydrogeology of the site as well as on specifics of the code. The review concludes that the code, when properly used, could be a useful and relatively easy to apply analytical tool for assessing far-field performance of a geologic repository. However, the review points out several limitations of the code which have to be evaluated with respect to any simulations that are performed using the code. In most cases, these limitations are inherent to all two-dimensional, continuum, finite difference models.

If you have any questions about this matter, please contact me immediately.

Respectfully submitted,  
NUCLEAR WASTE CONSULTANTS, INC.

*Mark J. Logsdon*

Mark J. Logsdon, Project Manager

Att: NWC/TTI Document Review - SD-BWI-TP-040

cc: US NRC - Director, NMSS (ATTN PSB)  
DWM (ATTN Division Director)  
Barry Bromberg, Contract Administrator  
WMGT (ATTN Branch Chief)

WM-RES  
WM Record File  
D1021  
NWC

WM Project 10, 11, 16  
Docket No.

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Distribution:

J. Pohle

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