ENERGY/ENVIRONMARINE SYSTEMS DIVISION

April 26, 1993

Mr. Jack Parrot
Division of Low Level Waste Management and Decommissioning, MS 6H3
Nuclear Materials Safety and Safeguards U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: UNC WELL SAMPLES

Dear Mr. Parrot:

This letter provides results of our additional radiological analyses, performed on five previously collected well water samples from UNC Wood River Junction, as per NRC Request for Technical Assistance (RFTA) 93-019A. Further analyses were not possible for the sample from well 519, because this sample initially contained a small volume and the sample was thus consumed in the previous (1990/1991) analyses. Concentrations of Tc-99 in the other 5 samples are as follows:

Well ID	Tc-99 Concentration (pCi/l)
325	113.6 ± 8.9
523	119.2 ± 9.4
642	124.2 ± 9.0
657	68.5 ± 7.0
658	122.3 ± 8.5

Gamma spectrometry indicated possible low concentrations of Cs-137 in several samples:

Well ID	Cs-137 Concentration (pCi/l)
325	13 ± 12
523	<17
642	22.1 ± 9.4
657	<7.6
0272 930426 DOCK 07000820	<11

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There were also small concentrations of some members of the uranium and thorium decay series identified by the gamma spectrometry; however, these identifications and the resulting concentration calculations are not considered reliable, because of the inherent discrepancies introduced when subtracting varying background levels from data accumulated over lengthy (overnight) counts of small volume samples. The presence of significant levels of radionuclides in these decay series would have been identified by high gross alpha concentrations from the early analysis, but this was not the finding of that analysis on those samples.

A request for the additional sampling of the 23 wells (RFTA 93-019B) by USGS was initiated; per my discussions with USGS, some of these wells are currently inaccessible, due to high water conditions. Sampling is anticipated by mid May, however.

If there are questions regarding this information, I may be contacted at (615) 576-3305.

Sincerely,

Jam Merger James D. Berger, Director Environmental Survey and Site Assessment Program

JDB:ttc

CC:

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