

November 6, 2002

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Ms. Betsy Ullrich
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

29-00139-02

**SUBJECT: ANALYTICAL RESULTS FOR A WATER SAMPLE FROM ER SQUIBB,
NORTH BRUNSWICK, NEW JERSEY (DOCKET NO. 030-05222/2002-00X)
RFTA 02-005)**

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MAY

Dear Ms. Ullrich:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received one water sample on September 9, 2002, that was collected at ER Squibb, on September 5, 2002. The water results for gross alpha and gross beta (Procedures AP1, Revision 13 and CP3, Revision 1), tritium (AP2, Revision 12 and CP4, Revision 1), carbon-14 (Non-routine Procedure AP9, Revision 0, and Procedure CP4, Revision 1), and gamma spectroscopy (Procedure CP1, Revision 11) are presented in Tables 1, 2, 3, and 4, respectively.

ESSAP Quality Control (QC) procedures were followed for these analyses. The daily QC and detector background for the counting instrumentation used in the analyses were within acceptable limits. The QC files are available for your review upon request.

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 should you have any questions.

Sincerely,

Dale Condra

Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC:WPI:ar

cc: G. Purdy, NRC/NMSS/TWFN 7F27
E. Knox-Davin, NRC/NMSS/TWFN 8A23
W. Beck, ORISE/ESSAP

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NMSS/RGNI MATERIALS-004

ORISE TABLE 1

**GROSS ALPHA AND BETA ACTIVITIES
IN A WATER SAMPLE
BY LOW BACKGROUND ALPHA AND BETA COUNTING
AP1, REVISION 13; CP3, REVISION 1
ER SQUIBB
NORTH BRUNSWICK, NEW JERSEY**

ESSAP Sample ID	NRC Region I Sample ID	Concentrations (pCi/L)	
		Gross Alpha ^a	Gross Beta ^b
834W001	Building 124 Tank #1	-0.35 ± 0.75 ^c	51.1 ± 5.3

^aThe average MDC for gross alpha for a 100 minute count using a 0.25 L sample is 1.7 pCi/L.

^bThe average MDC for gross beta for a 100 minute count using a 0.25 L sample is 2.2 pCi/L.

^cUncertainties represent the 95% confidence level, based on total propagated uncertainties.

ORISE TABLE 2

**CONCENTRATION OF TRITIUM
IN A WATER SAMPLE
BY LIQUID SCINTILLATION ANALYSIS
AP2, REVISION 12; CP4, REVISION 1
ER SQUIBB
NORTH BRUNSWICK, NEW JERSEY**

ESSAP Sample ID	NRC Region I Sample ID	Concentration (pCi/L)
		Tritium ^a
834W001	Building 124 Tank #1	370 ± 220 ^b

^aThe average MDC for tritium for a 60 minute count using a 0.01 L sample is 370 pCi/L.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.

ORISE TABLE 3

**CONCENTRATION OF CARBON -14
IN A WATER SAMPLE
BY LIQUID SCINTILLATION ANALYSIS
NON-ROUTINE AP9, REVISION 0; CP4, REVISION1
ER SQUIBB
NORTH BRUNSWICK, NEW JERSEY**

ESSAP Sample ID	NRC Region I Sample ID	Concentration (pCi/L)
		Carbon-14 ^a
834W001	Building 124 Tank #1	-5 ± 18 ^b

^aThe average MDC for carbon-14 for a 60 minute count using a 0.01 L sample is 30 pCi/L.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.

ORISE TABLE 4

**CONCENTRATIONS OF SELECTED
GAMMA EMITTING RADIONUCLIDES
IN A WATER SAMPLE
BY GAMMA SPECTROSCOPY CP1, REVISION 11
ER SQUIBB
NORTH BRUNSWICK, NEW JERSEY**

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a		
		Co-57	Cs-137	Co-60
834W001	Building 124 Tank #1	16.7 ± 2.7 ^b	10.4 ± 6.5	7.4 ± 3.5

^aTypical MDCs for the isotopes in this table ranged from 3 to 7 pCi/L.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.