

# ORISE

OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

December 19, 2005

Mr. John House  
U.S. Nuclear Regulatory Commission  
Region III  
2443 Warrenville Road  
Lisle, IL 60532-4351

**SUBJECT: ANALYTICAL RESULTS FOR WATER SAMPLES NEAR THE BRAIDWOOD NUCLEAR GENERATING STATION IN BRAIDWOOD, ILLINOIS [INSPECTION REPORT 456/457/2005-010] (RFTA NO. 06-001)**

Dear Mr. House:

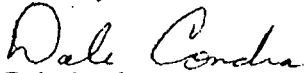
The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received water samples from December 5, 2005 through December 12, 2005 that were collected near the Braidwood Nuclear Generating Station in Braidwood, Illinois. As directed, the residence and lake samples were first analyzed for tritium (H-3) to meet your request for rush processing. The analysis was performed by liquid scintillation (Procedure AP2, Revision 15; Procedure CP4, Revision 3). The sample identifications and collection data are presented in Table 1. The H-3 results are presented in Table 2.

The report containing the gamma spectroscopy data for selected samples and the H-3 data for the remaining samples will follow as soon as the data review process permits.

ESSAP's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

If you have any questions, please call me at (865) 241-3242 or Wade Ivey at (865) 576-9184.



Sincerely,

  
Dale Condra  
Laboratory Manager  
Environmental Survey and  
Site Assessment Program

RDC:WPI:db

Enclosure

cc: T. McLaughlin, NRC/NMSS/T-7E18  
E. Knox-Davin, NRC/NMSS/TWFN T8A23  
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<b>Distribution approval and concurrence:</b>	<b>Initials</b>
Technical Management Team Member	
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**ORISE TABLE 1**

**SAMPLE IDENTIFICATIONS  
AND COLLECTION DATA  
BRAIDWOOD NUCLEAR GENERATING STATION  
BRAIDWOOD, ILLINOIS**

<b>ESSAP Sample ID</b>	<b>NRC Region III Sample ID</b>	<b>Collection Date</b>	<b>Collection Time</b>
1682W0009	NRC-9-R3	12/1/2005	NA <sup>a</sup>
1682W0010	NRC-10-R3	12/1/2005	NA
1682W0011	NRC-11-R3	12/1/2005	NA
1682W0012	NRC-12-R3	12/5/2005	NA
1682W0013	NRC-13-R3	12/5/2005	NA
1682W0014	NRC-14-R3	12/2/2005	2:35 PM
1682W0015	NRC-15-R3	12/2/2005	2:00 PM
1682W0016	NRC-16-R3	12/3/2005	1:28 PM
1682W0024	NRC-24-R3	11/30/2005	NA
1682W0025	NRC-25-R3	11/30/2005	NA
1682W0026	NRC-26-R3	11/30/2005	NA
1682W0027	NRC-27-R3	12/6/2005	NA
1682W0028	NRC-28-R3	11/30/2005	NA
1682W0029	NRC-29-R3	11/30/2005	NA
1682W0052	NRC-52-R3	12/7/2005	4:10 PM
1682W0053	NRC-53-R3	12/8/2005	8:30 AM
1682W0054	NRC-54-R3	12/8/2005	8:40 AM
1682W0055	NRC-55-R3	12/7/2005	NA
1682W0056	NRC-56-R3	12/7/2005	NA
1682W0057	NRC-57-R3	12/7/2005	NA
1682W0058	NRC-58-R3	12/7/2005	NA
1682W0059	NRC-59-R3	12/7/2005	NA

<sup>a</sup>Collection time was not provided.

**ORISE TABLE 2**

**CONCENTRATIONS OF TRITIUM  
IN WATER SAMPLES  
BY LIQUID SCINTILLATION ANALYSIS  
AP2, REVISION 15; CP4, REVISION 3  
BRAIDWOOD NUCLEAR GENERATING STATION  
BRAIDWOOD, ILLINOIS**

ESSAP Sample ID	NRC Region III Sample ID	Radionuclide Concentrations, TPUs, and MDCs <sup>a</sup> (pCi/L)			
1682W0009	NRC-9-R3	240	±	120 <sup>b</sup>	(200)
1682W0010	NRC-10-R3	150	±	120	(200)
1682W0011	NRC-11-R3	300	±	120	(200)
1682W0012	NRC-12-R3	-340	±	120	(200)
1682W0013	NRC-13-R3	100	±	120	(200)
1682W0014	NRC-14-R3	200	±	120	(200)
1682W0015	NRC-15-R3	210	±	120	(200)
1682W0016	NRC-16-R3	1,490	±	140	(200)
1682W0024	NRC-24-R3	200	±	120	(200)
1682W0025	NRC-25-R3	180	±	120	(200)
1682W0026	NRC-26-R3	-250	±	120	(200)
1682W0027	NRC-27-R3	1,020	±	130	(200)
1682W0028	NRC-28-R3	2,480	±	210	(310)
1682W0029	NRC-29-R3	2,490	±	190	(280)
1682W0052	NRC-52-R3	280	±	120	(200)
1682W0053	NRC-53-R3	210	±	120	(200)
1682W0054	NRC-54-R3	150	±	120	(200)
1682W0055	NRC-55-R3	310	±	120	(200)
1682W0056	NRC-56-R3	210	±	120	(200)
1682W0057	NRC-57-R4	190	±	120	(200)
1682W0058	NRC-58-R5	170	±	120	(200)
1682W0059	NRC-59-R6	100	±	120	(200)

<sup>a</sup>MDCs are in parenthesis.

<sup>b</sup>Uncertainties represent the 95% confidence level, based on total propagated uncertainties.