

July 20, 2006

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

**SUBJECT: ANALYTICAL RESULTS FOR 13 WATER SAMPLES, BATCH TWO, FROM THE VICINITY OF THE CLINTON STATION, CLINTON, ILLINOIS [INSPECTION REPORT NO. 050-00461/2006-004] (RFTA NO. 06-001)**

Dear Mr. Snell:

The Oak Ridge Institute for Science and Education (ORISE) received Batch Two on July 7, 2006, consisting of 13 water samples that were collected in the vicinity of the Clinton Station in Clinton, Illinois. The 13 water samples were analyzed for tritium using a liquid scintillation analyzer. The chain-of-custody identified two water samples to be analyzed by gamma spectroscopy (GS). The sample identifications and collection data are presented in Table 1. The GS data are presented in Table 2. The tritium data are presented in Table 3. The pertinent procedure references are provided in the specific tables.

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

My contact information is listed below. You may also contact Wade Ivey at 865.576.9184 with any questions or comments.

Sincerely,



Dale Condra, Manager  
 Laboratory

RDC:WPI:ess

Enclosure

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TABLE 1

SAMPLE IDENTIFICATIONS  
AND COLLECTION DATA  
CLINTON STATION  
CLINTON, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
1707W0022	C-06-2-01	6/28/2006	8:30 AM
1707W0023	C-06-2-02	6/28/2006	8:40 AM
1707W0024	C-06-2-03	6/28/2006	9:10 AM
1707W0025	C-06-2-04	6/28/2006	9:28 AM
1707W0026	C-06-2-05	6/28/2006	9:45 AM
1707W0027	C-06-2-06	6/28/2006	9:50 AM
1707W0028	C-06-2-07	6/28/2006	9:59 AM
1707W0029	C-06-2-08	6/28/2006	10:31 AM
1707W0030	C-06-2-09	6/27/2006	1:59 PM
1707W0031	C-06-2-10	6/27/2006	2:02 PM
1707W0032	C-06-2-11	6/27/2006	2:10 PM
1707W0033	C-06-2-12	6/27/2006	2:20 PM
1707W0034	C-06-2-13	6/27/2006	2:27 PM

TABLE 2

CONCENTRATIONS OF SELECTED  
 GAMMA EMITTING RADIONUCLIDES  
 IN SELECTED WATER SAMPLES  
 BY GAMMA SPECTROSCOPY CP1, REVISION 15  
 CLINTON STATION  
 CLINTON, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations <sup>a</sup> (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1707W0023	C-06-2-02	4.7 ± 3.2 <sup>b</sup>	1.6 ± 3.0	-0.2 ± 3.3	1.6 ± 2.8
1707W0031	C-06-2-10	1.0 ± 2.3	-1.3 ± 2.6	2.5 ± 2.3	1.4 ± 2.2

<sup>a</sup>The range of MDCs for the selected radionuclides is 3.8 pCi/L to 5.4 pCi/L.

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

**TABLE 3**

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

<b>ORISE Sample ID</b>	<b>NRC Region III Sample ID</b>	<b>Tritium Concentrations, TPUs, and MDCs<sup>a</sup> (pCi/L)</b>			
1707W0022	C-06-2-01	-10	±	100 <sup>b</sup>	(180)
1707W0023	C-06-2-02	40	±	110	(180)
1707W0024	C-06-2-03	-30	±	100	(180)
1707W0025	C-06-2-04	30	±	110	(180)
1707W0026	C-06-2-05	-10	±	100	(180)
1707W0027	C-06-2-06	-60	±	100	(180)
1707W0028	C-06-2-07	-40	±	100	(180)
1707W0029	C-06-2-08	-50	±	100	(180)
1707W0030	C-06-2-09	90	±	110	(180)
1707W0031	C-06-2-10	90	±	110	(180)
1707W0032	C-06-2-11	90	±	110	(180)
1707W0033	C-06-2-12	190	±	110	(180)
1707W0034	C-06-2-13	-80	±	100	(180)

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

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