

December 23, 2009

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

SUBJECT: ORISE CONTRACT NO. DE-AC05-06OR23100
REVISED LETTER REPORT FOR ANALYTICAL RESULTS FOR EIGHT
WATER SAMPLES FROM THE WESTINGHOUSE HEMATITE
DECOMMISSIONING PROJECT, HEMATITE, MISSOURI
[INSPECTION REPORT NO. 07000036/2009002] (RFTA NO. 10-001)
DCN: 2003-LR-01-1

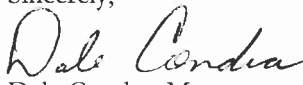
Dear Mr. Snell:

The Oak Ridge Institute for Science and Education (ORISE) received eight water samples on October 13, 2009 from the Westinghouse Hematite Decommissioning Project in Hematite, Missouri. The samples were analyzed according to the information on the NRC Form 303 which accompanied the samples. The sample identification numbers are presented in Table 1. The gross alpha and gross beta results are presented in Table 2. The uranium isotopic data is presented in Table 3. The technetium results are presented in Table 4. The pertinent procedure references are included with the data tables.

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

The original report was issued on December 11, 2009 at which time an error in the matrix type was discovered on Table 4. This report provides the corrected Table 4 heading. All other data and information remain unchanged.

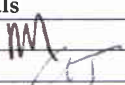
My contact information is listed below. You may also contact Wade Ivey at 865.576.9184 with any questions or comments.

Sincerely,

Dale Condra, Manager
Laboratory

RDC:WPI:jc

Enclosures

c:	T. Carter, NRC/FSME/DWMEP T-8F5	S.Roberts, ORISE
	T. Patterson, NRC/FSME/TWPN 8D42	T. Vitkus, ORISE
	File 2003	

Distribution approval and concurrence :	Initials
Technical Review	
Quality Review	

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RECEIVED DEC 29 2009

TABLE 1

**SAMPLE IDENTIFICATIONS
AND COLLECTION INFORMATION
WESTINGHOUSE HEMATITE DECOMMISSIONING PROJECT
HEMATITE, MISSOURI**

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
2003W0001	H-09-02-01	10/8/09	15:45
2003W0002	H-09-02-02	10/8/09	9:55
2003W0003	H-09-02-03	10/8/09	13:30
2003W0004	H-09-02-04	10/8/09	15:00
2003W0005	H-09-02-05	10/8/09	9:10
2003W0006	H-09-02-06	10/8/09	11:25
2003W0007	H-09-02-07	10/8/09	14:40
2003W0008	H-09-02-08	10/8/09	15:07

TABLE 2

**GROSS ALPHA (GA) AND GROSS BETA (GB) CONCENTRATIONS
IN WATER SAMPLES
BY LOW BACKGROUND GAS FLOW PROPORTIONAL COUNTING
AP1, REVISION 15
WESTINGHOUSE HEMATITE DECOMMISSIONING PROJECT
HEMATITE, MISSOURI**

ORISE Sample ID	NRC Region III Sample ID	GA Concentrations, TPU's, and MDCs^a (pCi/L)	GB Concentrations, TPU's, and MDCs^a (pCi/L)
2003W0001	H-09-02-01	118.8 ± 9.3 ^b , 2.0	174 ± 16 , 3
2003W0002	H-09-02-02	0.2 ± 1.2 , 2.2	3.1 ± 2.1 , 3.3
2003W0003	H-09-02-03	0.5 ± 1.1 , 2.0	2.7 ± 1.8 , 2.9
2003W0004	H-09-02-04	2.9 ± 2.7 , 4.4	7.8 ± 4.2 , 6.7
2003W0005	H-09-02-05	28.5 ^c ± 3.0 , 1.3	449 ± 38 , 2
2003W0006	H-09-02-06	256 ± 21 , 4	3,460 ± 320 , 0 ^c
2003W0007	H-09-02-07	106.5 ± 7.2 , 1.1	1,850 ± 150 , 0
2003W0008	H-09-02-08	1.56 ± 0.68 , 0.89	31.4 ± 3.2 , 1.6

^aThe MDCs are after the comma.

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

^cORISE does not correct for beta into alpha crosstalk. The GA concentrations may be overestimated due to GB contributions.

TABLE 3

CONCENTRATIONS OF URANIUM ISOTOPES
IN WATER SAMPLES
BY ALPHA SPECTROSCOPY
AP11, REVISION 5; CP2, REVISION 15
WESTINGHOUSE HEMATITE DECOMMISSIONING PROJECT
HEMATITE, MISSOURI

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations, TPU's, and MDCs ^a (pCi/L)			
		U-233/234	U-235	U-238	Total U ^b
2003W0001	H-09-02-01	127 ± 11 ^c , 0 ^d	5.45 ± 0.83, 0.22	22.2 ± 2.2, 0.1	154 ± 11
2003W0002	H-09-02-02	-0.05 ± 0.13, 0.39	0.04 ± 0.09, 0.21	0.05 ± 0.06, 0.05	0.04 ± 0.17
2003W0003	H-09-02-03	0.08 ± 0.11, 0.24	0.05 ± 0.07, 0.07	0.04 ± 0.08, 0.19	0.17 ± 0.15
2003W0004	H-09-02-04	0.58 ± 0.26, 0.40	0.07 ± 0.08, 0.07	0.31 ± 0.17, 0.24	0.97 ± 0.32
2003W0005	H-09-02-05	1.66 ± 0.39, 0.06	0.10 ± 0.10, 0.08	0.45 ± 0.19, 0.06	2.22 ± 0.44
2003W0006	H-09-02-06	48.4 ± 4.5, 0.5	2.03 ± 0.50, 0.27	9.2 ± 1.2, 0.2	59.6 ± 4.6
2003W0007	H-09-02-07	0.18 ± 0.17, 0.37	-0.02 ± 0.08, 0.27	0.05 ± 0.09, 0.22	0.21 ± 0.21
2003W0008	H-09-02-08	0.02 ± 0.14, 0.38	0.00 ± 0.09, 0.27	-0.02 ± 0.10, 0.31	0.00 ± 0.20

^aThe MDCs are after the comma.

^bTotal U is the sum of U-234 + U-235 + U-238.

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

^dZero values are due to rounding.

TABLE 4

**CONCENTRATIONS OF TECHNETIUM-99
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP5, REVISION 17; CP4, REVISION 3
WESTINGHOUSE HEMATITE DECOMMISSIONING PROJECT
HEMATITE, MISSOURI**

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations, TPUs, and MDCs ^a (pCi/L)
2003W0001	H-09-02-01	265 ± 19 ^b , 13
2003W0002	H-09-02-02	6.4 ± 7.7 , 12.9
2003W0003	H-09-02-03	9.5 ± 7.8 , 12.9
2003W0004	H-09-02-04	11.5 ± 7.8 , 12.9
2003W0005	H-09-02-05	588 ± 35 , 13
2003W0006	H-09-02-06	6,080 ± 320 , 10
2003W0007	H-09-02-07	2,480 ± 130 , 10
2003W0008	H-09-02-08	49.4 ± 9.1 , 12.9

^aThe MDCs are after the comma.

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