CABOT

August 31, 2000

U.S. Nuclear Regulatory Commission
Ms. Leslie Fields
Licensing Section
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety and Safeguards, NMSS
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Dear Ms Fields:

Per our discussion on Tuesday, August 22, 2000 regarding the disposal of "unimportant quantities" of material from the Cabot site, the following is a clarification on the columns of the "Summary of Profiles of Waste to be shipped to WCS". In addition I have included a brief description of how this material was generated.

Spreadsheet calculations

The column "Ratio to Total Th" is the sum of the fraction of total thorium activity, relative to the WCS acceptance criteria of 110 pCi/g, weighted by density, for each material type. The total thorium activity is provided elsewhere on the spreadsheet as "Total Th (pCi/g)" for each "Material Type". In short, the density of the material type needs to be included in the derivation of "Ratio to Total Th" and "Ratio to Total U" in order that the lower density material will not be "over-accounted" for in the sum of fraction calculation; i.e. since the material types are physically significantly different, volume by itself would be a biased weighting factor.

The same applies to the column "Ratio to Total U" except the WCS criteria is, respectively, 355 pCi/g.

The columns "Ratio to Total Th" and "Ratio to Total U" are intermediate calculations. They are neither directly nor independently necessary to evaluate compliance. The point of compliance, in this case, is evaluated at the column "Total".

The column "Total" is the sum of the columns "Ratio to Total Th" and "Ratio to Total U". This column is the result of the sum-of-ratios or unity calculation; i.e. when more than one parameter must be simultaneously compared to it's respective limit, the sum of the ratios of the value (in this case concentration) of each parameter compared to it's respective limit (in this case WCS criteria) may not exceed "1".

Cabot Performance Materials
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NMSS01 Public

Material generation

The material being disposed was generated primarily from two operations, the "Ore Residue Project" and Plant processes.

The Ore residue project involved transporting Cabot's ore residue to International Uranium Corporation in Utah. The project took over three months and utilized a large amount of resources and equipment. At the completion of the project all potentially contaminated material was placed into one of the empty storage bins. This material consisted of tarps, structural supports for the tarps, wood, tires, heavy equipment, PPE, tools, etc.

Due to the inherent nature of Cabot's NRC licensed processes, process equipment is often contaminated with low levels of naturally occurring Uranium and Thorium. Some of these items include 1,000 to 10,000 gallon tanks, piping, presses, press plates, ore bags, bag-house bags, concrete, structural metal, and kiln brick. These materials have also been accumulated over time awaiting final disposition.

Please contact me if any further information is needed for the Commissions timely approval of Cabot's submitted Safety Analysis.

Sincerely,
CABOT PERFORMANCE MATERIALS

Timothy M. Knapp
Radiation Safety Officer

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Cabot Perfromance Materials
Tabulation of Waste Streams to be Sent to WCS

Waste Stream / Material Type	Approximate Density (g/cc)	Total U (pCi/g)	Total Th (pCi/g)
Plastic/Fiberglass	1.25	8	2
Steel	7.9	0.8	0.2
Macadam/Soil	1.6	132	26
Other (Trash)	1.25	8	2
Wood	0.9	8	2
Sludge	2	105	29
Brick/Concrete	2.2	78	47
Carbon Brick	2.5	85	13
High Activity Residue	2	800	200

Note: There were several sample values with total U and Total Th that were on the order of several hundred pCi/g. These samples came from individual drums or residues with a total volume less than 200 ft^3. These high activity samples were evenly distributed thrughout each trailer. For the calculation it was conservatively assumed that 1% of each trailer volume included this high activity material. High activity materials that exceeded RCRA TCLP concentrations are not part of this shipment and were not included in the calculations.

		Percent of Total Volume per "Material Type" in Each Trailer												
Trailer #	Volume of material in trailer (m^3)	Plastic Fiberglass	Steel	Macadam/Soil	Other (Trash)	Wood	Sludge	Brick/Concrete	Carbon Brick	High Activity Residues	Total	Ratio to Total Th	Ratio to Total U	Total
55	30.5	70.0%	10.0%	10.0%	3.0%	5.0%	0.0%	0.0%	1.0%	1.0%	100.0%	0.05	0.07	0.12
60	30.5	60.0%	0.0%	20.0%	15.0%	0.0%	0.0%	0.0%	4.0%	1.0%	100.0%	0.10	0.15	0.25
261	15.6	0.0%	0.0%	50.0%	39.0%	0.0%	0.0%	0.0%	10.0%	1.0%	100.0%	0.17	0.27	0.43
51	30.5	0.0%	70.0%	15.0%	11.0%	0.0%	0.0%	0.0%	3.0%	1.0%	100.0%	0.02	0.03	0.05
623	38.2	40.0%	20.0%	0.0%	0.0%	0.0%	0.0%	39.0%	0.0%	1.0%	100.0%	0.14	0.08	0.22
249	15.6	0.0%	0.0%	50.0%	39.0%	0.0%	0.0%	0.0%	10.0%	1.0%	100.0%	0.17	0.27	0.43
619	38.2	79.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	100.0%	0.10	0.14	0.24
179	38.2	0.0%	30.0%	10.0%	15.0%	40.0%	0.0%	0.0%	4.0%	1.0%	100.0%	0.03	0.05	0.08
168	38.2	39.0%	25.0%	25.0%	0.0%	10.0%	0.0%	0.0%	0.0%	1.0%	100.0%	0.05	0.07	0.12
161	38.2	0.0%	30.0%	40.0%	15.0%	10.0%	0.0%	0.0%	4.0%	1.0%	100.0%	0.06	0.09	0.15
171	38.2	0.0%	20.0%	0.0%	0.0%	0.0%	20.0%	59.0%	0.0%	1.0%	100.0%	0.21	0.14	0.35
165	38.2	0.0%	40.0%	0.0%	15.0%	0.0%	0.0%	40.0%	4.0%	1.0%	100.0%	0.10	0.06	0.16
146	38.2	0.0%	30.0%	60.0%	7.0%	0.0%	0.0%	0.0%	2.0%	1.0%	100.0%	0.08	0.12	0.20
447	30.5	49.0%	20.0%	0.0%	0.0%	0.0%	0.0%	30.0%	0.0%	1.0%	100.0%	0.12	0.07	0.19
439	30.5	49.0%	20.0%	0.0%	0.0%	0.0%	0.0%	30.0%	0.0%	1.0%	100.0%	0.12	0.07	0.19
123	38.2	39.0%	0.0%	20.0%	0.0%	0.0%	0.0%	40.0%	0.0%	1.0%	100.0%	0.29	0.22	0.51
100	38.2	39.0%	20.0%	20.0%	0.0%	0.0%	0.0%	20.0%	0.0%	1.0%	100.0%	0.11	0.10	0.21
625	38.2	9.0%	10.0%	40.0%	0.0%	0.0%	0.0%	40.0%	0.0%	1.0%	100.0%	0.23	0.20	0.43
347	38.2	20.0%	40.0%	30.0%	7.0%	0.0%	0.0%	0.0%	2.0%	1.0%	100.0%	0.04	0.06	0.10
365	38.2	30.0%	30.0%	0.0%	7.0%	0.0%	0.0%	30.0%	2.0%	1.0%	100.0%	0.09	0.06	0.16
7181	38.2	19.0%	30.0%	0.0%	0.0%	20.0%	0.0%	30.0%	0.0%	1.0%	100.0%	0.10	0.06	0.15
9254	38.2	19.0%	30.0%	0.0%	0.0%	20.0%	0.0%	30.0%	0.0%	1.0%	100.0%	0.10	0.06	0.15