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June 23, 2000

Mr. Steve W. Shaffer, Health Physicist  
Decommissioning and Laboratory Branch  
U.S. Nuclear Regulatory Commission  
Region 1, Mail Control No. 124941  
475 Allendale Road  
King of Prussia, PA 19406

**Re: Final Radiological Sampling Results for Soil Samples Collected from Building 1-5 Excavated Soils Currently Stored Within the Parking Lot Area at the Prometcor Site (NRC License No. STB-1451)**

Dear Mr. Shaffer:

In accordance with your request and on behalf of Prometcor, Inc. (formerly Ronson Metals), McLaren/Hart, Inc (M/H) submits the attached soil sampling results for all composite samples collected from the Bldg. 1-5 excavated soil piles currently stored within the parking area at the Prometcor site. These data include results for the last round of sampling conducted in May 2000 as set forth below.

May 2000 and Combined Sampling

Twenty additional composite soil samples were collected from the subject soil piles in May 2000. Two samples were measured as duplicates. For each composite sample, soil was collected from 3-4 equally spaced sampling locations within each soil pile. At each sampling location, an aggregate soil sample was collected over a depth that either ranged from the surface to the bottom of each pile or from the surface to a depth of four to five feet. The May 2000 results were combined with the December 1999 composite sampling results for the purpose of calculating average concentrations for each radionuclide. The combined data set consists of 30 composite samples. By combining all composite sample results as in accordance with our agreement with the USNRC, each pile is now represented by one composite sample of partial depth and one composite consisting of soil collected over the entire depth (top to bottom). For a given composite, the soil was thoroughly mixed, packaged, and sent to the lab for radionuclide analysis. The purpose of collecting the composite samples over these depths is to closely approximate a three-dimensional concentration signature for each pile. Analytical results (concentration signature) for all composite samples therefore represent a good approximation of the mean concentrations for thorium and radium in each pile.

In accordance with the understanding with the USNRC, all samples were analyzed for  $^{228}\text{Th}$  and  $^{226}\text{Ra}$ . As described in previous data evaluations for the Prometcor site,  $^{228}\text{Th}$  is the only thorium isotope of interest at the site. McLaren/Hart used ThermoRetec (Oak Ridge, Tennessee) to analyze the samples for the above radionuclides.

The average concentrations for Ra-226 and Th-228 based on all 30 composite measurements across all soil piles are:

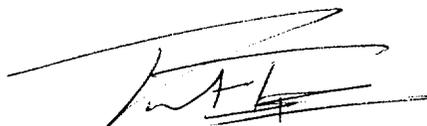
<sup>226</sup> Ra	37.9 pCi/g
<sup>228</sup> Th/total thorium	5.5 pCi/g

The average results for all composite samples demonstrate that thorium levels in the soil piles are below the prescribed regulatory limit of 10 pCi/g. Analytical results for these samples are presented in the attached tables (Tables A-1 and A-2). Included in the tables are the individual sample results and the calculated average concentrations for each pile and across all piles.

Accordingly, Prometcor requests that the USNRC review and approve the final sampling results and provide Prometcor with an approval for release of these materials for unrestricted use. The USNRC's prompt action in this regard is necessary to commence disposal activities and permit Prometcor to undertake further site remediation activities that are presently on hold due to the staging of the subject soil piles.

If you have any questions or comments, please feel free to contact me at (216) 272-7799 or you can elect to use my pager at (800) 416-0949. My fax number is (216) 921-3460.

Sincerely,



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Jack Buddenbaum, CHP  
Supervising Health Scientist

Enclosures (Tables A-1 and A-2)

cc: Daryl Holcomb  
Dr. Edward David  
Mr. Jeffrey Walder  
Ms. Jenny Goodman (NJDEP-BER)  
Tal Ijaz  
Marc Cicalese

**TABLE A-1  
 PROMETCOR, BLDG1-5 SOIL PILES  
 SAMPLING RESULTS FOR RADIUM-226**

PILE DESIGNATION	Estimated Volume * cu. yards.	MAY 2000 SAMPLING		DECEMBER 1999 SAMPLING		PILE AVERAGE Ra-226 (pCi/g)
		Composite Sample-01	Composite Sample-02	Composite Soil Sample		
		Ra-226 (pCi/g)	Ra-226 (pCi/g)	Ra-226 (pCi/g)		
RO-1	30	62.11		46.92		54.52
RO-2	30	102.40		122.97		112.69
RO-3	22	63.04		78.80		70.92
RO-4	22	50.91		32.70		41.81
RO-5	22	30.23		26.16		28.20
RO-6	22	52.83		47.31		50.07
RO-7	22	45.82		32.56		39.19
RO-8	30	29.39		17.19		23.29
RO-9	22	24.21		41.50		32.86
RO-11	30	16.93		13.99		15.46
RO-12/13	44	20.11	23.72			21.92
RO-14	30	14.63	14.84			14.74
RO-10/15	41	21.05	20.04			20.55
RO-16	22	29.87	35.37			32.62
RO-17	22	9.32	10.39			9.86
	<u>411</u>					<u>37.91</u>

NOTE: Ra-226 results are based on an average of Bi-214 and Pb-214 concentrations

\* Estimated volumes based on capacity of Roll-Off Containers

**TABLE A-2  
 PROMETCOR, BLDG 1-5 SOIL PILES  
 SAMPLING RESULTS FOR THORIUM-228**

PILE DESIGNATION	Estimated Volume * cu. yards.	MAY 2000 SAMPLING		DECEMBER 1999 SAMPLING	PILE AVERAGE Th-228 (pCi/g)
		Composite Sample-01 Th-228 (pCi/g)	Composite Sample-02 Th-228 (pCi/g)	Composite Soil Sample Th-228 (pCi/g)	
RO-1	30	11.40		9.37	10.39
RO-2	30	7.22		7.50	7.36
RO-3	22	6.47		8.21	7.34
RO-4	22	7.49		6.24	6.87
RO-5	22	5.10		4.87	4.99
RO-6	22	8.64		7.43	8.04
RO-7	22	7.24		6.21	6.73
RO-8	30	4.38		3.30	3.84
RO-9	22	5.62		6.34	5.98
RO-11	30	2.74		2.61	2.68
RO-12/13	44	3.45	3.99		3.72
RO-14	30	2.68	2.76		2.72
RO-10/15	41	4.35	3.18		3.77
RO-16	22	5.21	6.60		5.91
RO-17	22	1.78	2.78		2.28
	<u>411</u>				<u>5.51</u>

\* Estimated volumes based on capacity of Roll-Off Containers