



Performance  
Materials

August 1, 2002

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**  
7099 3220 0007 8842 6456

Elaine Brummett  
Nuclear Regulatory Commission  
Mailstop T8-A33  
11545 Rockville Pike  
Rockville, MD 20852-2738

Re: Waste Water Treatment

Docket Number: 40-6940

Dear Ms. Brummett:

Cabot Performance materials was recently granted a Permit by Rule status from the Pennsylvania Department of Environmental Protection for a proposed process change with our on-site acidic waste water treatment process. CPM is looking for concurrence from the Nuclear Regulatory Commission that these proposed changes are within the limits of our source material license.

By way of background, CPM and its predecessors have operated a NRC licensed specialty chemicals production facility in Boyertown since 1950. Production operations result in generation of a wastewater stream which would qualify as a characteristically corrosive hazardous waste (D002). CPM treats this wastewater in an on-site treatment facility prior to discharge pursuant to an NPDES Permit (#PA0011266).

CPM is evaluating a possible modification of its wastewater treatment process by segregating from its composite wastewater stream the "Raffinate" wastewater. Currently CPM combines the Raffinate wastewater stream with other wastewater streams for precipitation of fluoride by lime addition. The segregated Raffinate wastewater stream could be characterized as a mixed hazardous waste based on corrosivity (D002), and gross alpha concentrations in the range of 0.001 - 0.021 uCi/l.

*NMSSol Public*



Recent wastewater treatability studies have shown that the fluoride complexes contained in the Raffinate wastewater stream, when combined with the other wastewater streams at the facility, reduce the effectiveness of precipitation by lime addition. These studies also showed that segregation of the Raffinate wastewater stream and treatment with a combination of lime and dewatered wastewater treatment sludge allows for effective treatment of both the remaining combined stream and the segregated Raffinate stream, and would result in a 40-50% solid stream. (see Proposed Raffinate Treatment Figure).

In addition, the treatability studies have shown the resultant solids would not exhibit any hazardous waste characteristic and the radiological constituents are well below the 10pCi/g (total U and Th) license condition. Therefore, CPM believes that the solids generated by the proposed segregation and on-site treatment of this mixed hazardous waste stream would continue to qualify for ultimate disposal as a residual waste.

CPM would like to begin commencement of this operation by September 1, 2002. If you require additional information, please contact me at (610) 369-8520.

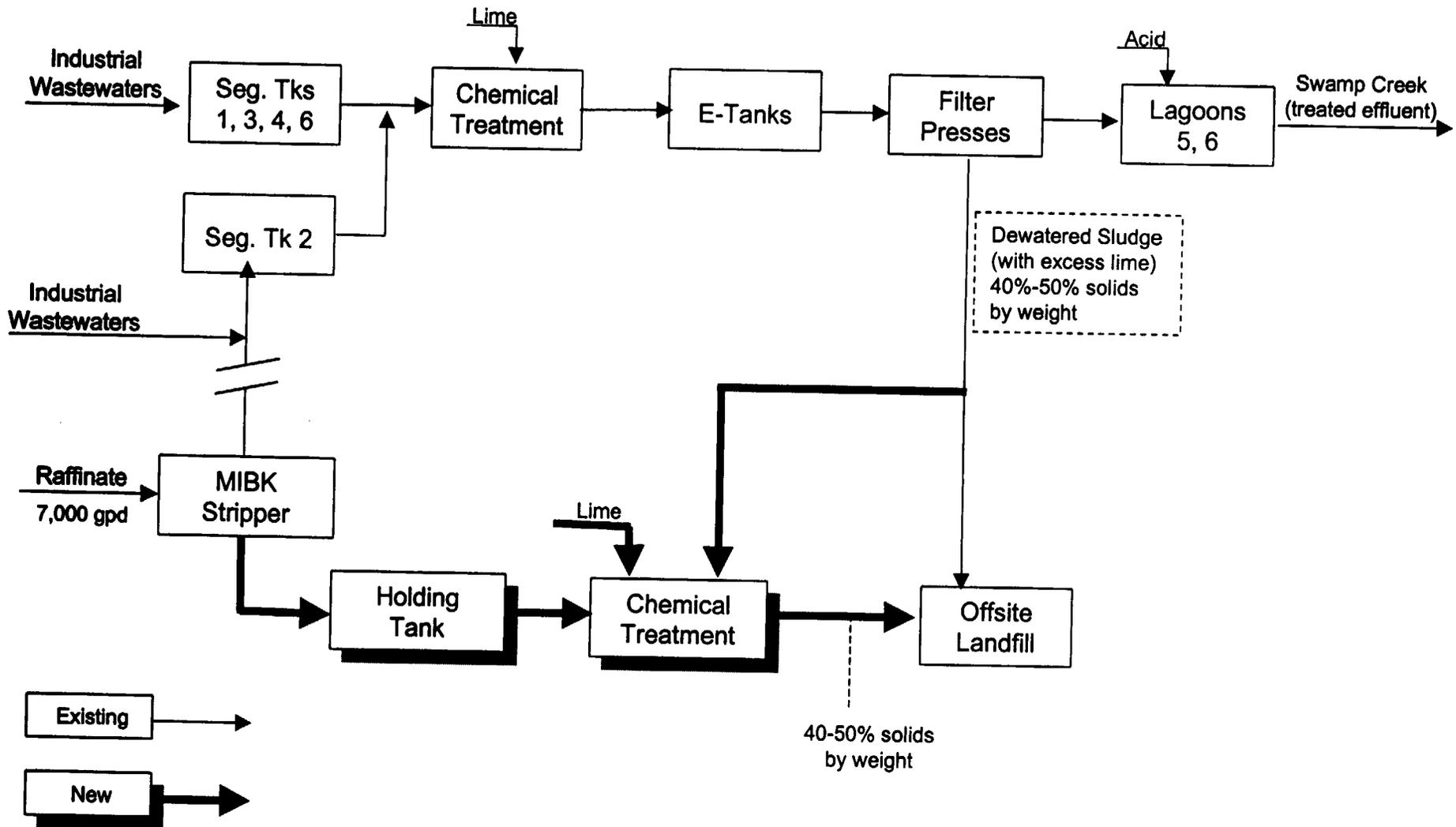
Sincerely,  
CABOT PERFORMANCE MATERIALS

A handwritten signature in black ink, appearing to read "Timothy M. Knapp".

Timothy M. Knapp, Radiation Safety Officer

cc: Martin O'Neill – CPM Director, Safety, Health & Environment  
Elizabeth Cody - CPM  
John McGrath – NRC, Region I

# Proposed Raffinate Treatment (with existing wastewater treatment systems)



**Cabot Performance Materials**  
**Treatability Study: Excess Lime and Dry Sludge Stabilization**  
**Test Results**

Parameters	Sample 1	Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		TCLP Limits (mg/l)
	2X Lime, Dry for 3 hours (mg/L)	Excess Lime (mg/L)	Dry Sludge (mg/L)									
Initial Fluoride (Dist.)	172,000	172,000	172,000	184,000	184,000	173,000	173,000	158,000	158,000	147,000	147,000	
Lime Dosage	723,820	850,360	131,600	828,140	404,520	711,917	656,580	723,970	544,300	779,080	783,400	
Dry Sludge Dosage			744,000		744,320		744,000		743,980		743,460	
Antimony	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Arsenic	0.02	0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02		< 0.02			5.00
Barium	0.62	1.56	0.60	0.81	0.38	0.06	0.05	0.07	< 0.03	0.05	0.04	100.00
Cadmium	< 0.02	< 0.02	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.00
Total Chromium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5.00
Copper	0.26	0.17	0.15	0.06	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Lead	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.00
Mercury	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.001	0.20
Molybdenum	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Nickel	< 0.05	< 0.05	< 0.05	< 0.05	0.49	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Selenium	< 0.04	< 0.04	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.00
Silver	< 0.01	< 0.01	< 0.01	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.00
Zinc	0.12	0.22		0.16	0.42	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Total Thorium (pCi/L)	(1)			0.042	0.051	0.005	0.004	0.004	0.003			
Total Uranium (pCi/L)	(1)			0.028	0.034	0.282	0.204	0.189	0.146			
Total Rad (pCi/g)		4.20	3.6	0.702	0.844	2.871	2.086	1.934	1.499			

(1) No Rad analysis run on these samples  
 Awaiting Lab Confirmation of Raw Data  
 Awaiting for Lab Results  
 Note: Dry Sludge Composition is 35-45% Solids by weight



Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010  
555 North Lane  
Conshohocken, PA 19428

July 8, 2002

Southeast Regional Office

610-832-6212  
Fax 610-832-6143

Ms. Elizabeth R. Codi, P.E.  
Process Engineer  
Cabot Performance Materials  
P.O. Box 1608  
Boyertown, PA 19152-1608

Re: Permit-By-Rule  
Cabot Performance Materials  
Douglass Township  
Montgomery County

Dear Ms. Codi:

The Department of Environmental Protection (DEP) has completed its review of your notification received on May 24, 2002, and supplemental information received on June 20, 2002, for treatment of the raffinate waste stream (D002) in a tank under Permit-By-Rule, pursuant to 25 Pa. Code Section 270a.60(b)(2). The Cabot Performance Materials facility is located in Douglass Township, Montgomery County, and Colebrookdale Township, Berks County.

The existing raffinate waste stream is treated under the existing NPDES permit with dewatered sludge disposed in the Pottstown Landfill. Once the new raffinate holding tank and chemical treatment tank are installed, the raffinate will be neutralized by mixing with dewatered sludge containing excess lime and/or by mixing with virgin lime. After treatment, the raffinate is solidified into a waste stream that is no longer hazardous and is managed as a residual waste. Because of the change in treatment and the potential change in physical and/or chemical characteristics, we believe an updated Form U disposal request should be submitted for the new waste stream for approval prior to disposal in Pottstown Landfill.

Permit-By-Rule status is contingent upon compliance with the requirements listed in the referenced regulation. DEP will periodically inspect the facility to determine compliance with the applicable regulatory requirements. Appropriate enforcement action, ranging from verbal notices to nullification of Permit-By-Rule status, will be taken where noncompliance is noted. Nullification of Permit-By-Rule status requires application for, and acquirement of, a written permit or cessation of the operation.



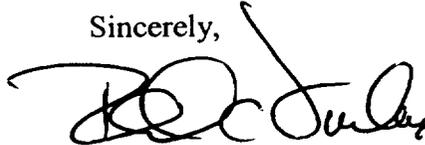
Ms. Elizabeth R. Codi, P.E.

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July 8, 2002

If you have any questions in this matter, please contact Mr. Anil Patel, P.E. at 610-832-6205.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ronald C. Furlan', written in a cursive style.

Ronald C. Furlan, P.E.  
Regional Manager  
Waste Management Program

cc: Douglass Township  
Colebrookdale Township  
Montgomery County Planning Commission  
Pottstown Landfill - WMDS of PA, Inc.  
Re 30 (GJC02WM)182-17