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United States Department of the Interior

MINING ENFORCEMENT AND SAFETY ADMINISTRATION

4800 FORBES AVENUE

PITTSBURGH, PENNSYLVANIA 15213

February 23, 1976

Memorandum

To : District Manager, Metal and Nonmetal Mine Health and Safety,
Northeastern District

From : Mining Engineer, Metal and Nonmetal Mine Health and Safety,
Northeastern District

Subject: History of Asbestos Mining and Milling at Powhatan Mining
Company, Baltimore County, Maryland

The Powhatan Mining Company, Woodlawn, Baltimore County, Maryland, was founded in 1917 by Mr. Fred A. Mett. The operation now consists of a mill, employing four persons at the mentioned location and a quarry near Newdale, North Carolina.

Mr. Mett became aware of the market for asbestos while serving in the Army during World War I. While in the service and immediately after, he prospected for asbestos and found his original supply in Pylesville, Hartford County, Maryland. The deposit was a slip-fiber anthophyllite variety.

The original use of the fibers was for filtration of acids and chemicals. As the use of asbestos fibers grew in varied industries, Mr. Mett found a good market for a special fiber in the chemical field. Working with a Dr. Gooch, the two developed a fiber for laboratory filters that is now used worldwide. The asbestos used for the laboratory filters was tremolite and is imported from Africa.

In 1930, the supply of anthophyllite was depleted in Maryland and the ore is now quarried and trucked from the company-owned mine at Newdale, North Carolina. Other amphiboles are purchased from different localities for blending purposes.

The trucked material is delivered to the mill in Baltimore and stockpiled in the building. If the material has to be crushed, a 1-1/2 yard front-end loader loads the primary hopper. The anthophyllite is hand-shoveled into a 20 x 16 jaw crusher. Materials that do not have to be dried are taken by bucket elevator to storage bins. Materials that have to be dried are



Memo to District Manager, from Mining Engineer, Subject: History of Asbestos Mining and Milling, Powhatan Mining Company

chuted to a wheelbarrow and dumped on a steel plate dryer. Any required blending of materials is added to the anthophyllite while it is being dried.

When drying is completed, the product is hand-shoveled into a chute to the bucket elevator and placed in storage bins.

When an order has been received for a certain grade of asbestos, the ore is drawn from the storage bins and gravity fed to an impact crusher. It is then air-transported to spin classifiers. The coarse material is rejected and returned to the impactor. The usable product is sucked into a cyclone which breaks the air lock. The fibers are gravity fed to the bagging area and the refuse is for waste.

The fibers are used for fillers in paint and plastic products.

The tremolite for the Gooch mill is received at the mill in bags in a processed fibrous state.

Approximately twenty-five pounds of the fiber is placed in a crock and two to three gallons of hydrochloric acid poured over the material. It is then cooked with live steam until the impurities are removed. The fibers are then washed over a screen until all of the acid is removed, placed in a press to remove the water and then into a dryer for complete elimination of all moisture. It is then screened for long fiber A and the Gooch fiber. The finished product is packaged predominantly in one-pound cartons for the market.

The company conducts a strict health and safety program in the production of these fibers. Dust collectors and adequate capturing hoods are abundant on the property. Employees wear respirators and supplied washable work clothing. Clean shower facilities are available and used. The mill, bagging and Gooch operations are vacuumed daily. An eyewash station and deluge shower are in the immediate area where the hydrochloric acid is used. Warning signs are posted throughout the property for the hazards of asbestos fiber. Annual physicals including chest X-ray and pulmonary function are given for the employees.

All stationary machinery is guarded, handrails provided where needed, fire extinguishers placed strategically throughout the mill and electrical motors and switchboxes labeled and property grounded. Employees are trained in current first aid.

The property has been monitored for asbestos fiber and noise. The last two asbestos fiber surveys showed they were in compliance for the TLV for asbestos fibers and the noise levels were well below the TLV level of 90 dBA.

Memo to District Manager, from Mining Engineer, Subject: History of
Asbestos Mining and Milling, Powhatan Mining Company

The present market for their product is very low and the operation is
only producing on a placed-order bases.

Raymond H. Hoffman
Raymond H. Hoffman

cc: F. J. Delimba
R. H. Dickey
✓ R. H. Hoffman
Files

RHHoffman:tjc:2/17/76

Mine ID No.: 1800412 Date: 2/18 & 20/76 Product: Asbestos

Mine Name: Powhatan Mining Company Mill

METHOD OF DETERMINATION

☐ Microprojector Counting

☒ Fiber Counting

TYPE OF SAMPLE ANALYZED

☐ Midget Impinger ()

☐ Total Airborne Dust

Name and Social Security No.	Occupation and Location	Date/Time Sampled	Sampling Time (min.)	Occupancy Time Spent	Concentration	Percent Silica	TLV	TWA Conc
Frank McHenry 234-12-6430	Bagger Mill	<u>2/18/76</u>	-					
		8-8:30 am	30	60	1.1			
		9-9:30 am	30	60	1.5			
		10-10:30am	30	60	0.83			
		11-11:30am	30	60	0.57			
		12-12:30pm	30	60	1.9			
		1-1:30 pm	30	60	0.94			
		2-2:30 pm	30	60	1.4			
Frank McHenry 234-12-6430	Bagger Mill	3-3:30 pm	30	60	1.2		5	1.06
		<u>2/20/76</u>						
		8-8:30 am	30	60	1.1			
		9-9:30 am	30	60	1.4			
		10-10:30am	30	60	0.35			
		11-11:30am	30	60	0.39			
		12-12:30pm	30	60	0.05			
		1-1:30 pm	30	60	0.50			
		2-2:30 pm	30	60	1.0			
		3-3:30 pm	30	60	0.39			

Mine ID No.: 1800412 Date: 2/18 & 19/76 Product: Asbestos

Mine Name: Powhatan Mining Company Mill

METHOD OF DETERMINATION

☐ Microprojector Counting

☒ Fiber Counting

TYPE OF SAMPLE ANALYZED

☐ Midget Impinger ()

☐ Total Airborne Dust

Name and Social Security No.	Occupation and Location	Date/ Time Sampled	Sampling Time (min.)	Occupancy Time Spent	Concentration	Percent Silica	TLV	TWA Conc
Eugene Myer 212-36-0659	Bagger Mill	<u>2/18/76</u>						
		8-8:30 am	30	60	0.12			
		9-9:30 am	30	60	0.53			
		10-10:30am	30	60	0.60			
		11-11:30am	30	60	0.25			
		12-12:30pm	30	60	3.0			
		1-1:30 pm	30	60	0.08			
		2-2:30 pm	30	60	0.26			
		3-3:30 pm	30	60	0.28		5.00	0.64
Eugene Myer 212-36-0659	Bagger Mill	<u>2/20/76</u>						
		8-8:30 am	30	60	0.44			
		9-9:30 am	30	60	0.32			
		10-10:30am	30	60	0.13			
		11-11:30am	30	60	0.17			
		12-12:30pm	30	60	0.38			
		1-1:30 pm	30	60	0.38			
		2-2:30 pm	30	60	0.67			
		3-3:30 pm	30	60	0.25		5.00	0.34

Mine ID No.: 1800412

Date: 2/18 & 20/76

Product: Asbestos

Mine Name: Powhatan Mining Company Mill

METHOD OF DETERMINATION☐ Microprojector Counting☒ Fiber CountingTYPE OF SAMPLE ANALYZED☐ Midget Impinger ()☐ Total Airborne Dust

Name and Social Security No.	Occupation and Location	Date/ Time Sampled	Sampling Time (min.)	Occupancy Time Spent	Concentration	Percent Silica	TLV	TWA Conc
John Carter 230-10-1708	Maintenance All over mill	<u>2/18/76</u>						
		8-8:30 am	30	60	0.47			
		9-9:30 am	30	60	0.12			
		10-10:30am	30	60	0.80			
		11-11:30am	30	60	0.14			
		12-12:30pm	30	60	0.06			
		1-1:30 pm	30	60	0.13			
		2-2:30 pm	30	60	0.24			
		3-3:30 pm	30	60	0.29		5.00	0.28
John Carter	Maintenance	<u>2/20/76</u>						
		8-8:30 am	30	60	0.30			
		9-9:30 am	30	60	0.234			
		10-10:30am	30	60	0.27			
		11-11:30am	30	60	2.6			
		12-12:30pm	30	60	0.13			
		1-1:30 pm	30	60	0.20			
		2-2:30 pm	30	60	0.57			
		3-3:30 pm	30	60	0.34		5.00	0.58

Mine ID No.: 1800412

Date: 2/18 & 19/76

Product: Asbestos

Mine Name: Powhatan Mining Company Mill

METHOD OF DETERMINATION☐ Microprojector Counting☒ Fiber CountingTYPE OF SAMPLE ANALYZED☐ Midget Impinger ()☐ Total Airborne Dust

Name and Social Security No.	Occupation and Location	Date/ Time Sampled	Sampling Time (min.)	Occupancy Time Spent	Concentration	Percent Silica	TLV	TWA Conc
John Bright 215-12-1235	Packer Gooch Plant	<u>2/18/76</u>						
		8-8:30 am	30	60	0.04			
		9-9:30 am	30	60	0.24			
		10-10:30am	30	60	0.57			
		11-11:30am	30	60	0.06			
		12-12:30pm	30	60	0.19			
		1-1:30 pm	30	60	0.28			
		2-2:30 pm	30	60	0.31			
John Bright 215-12-1235	Packer Gooch Plant	3-3:30 pm	30	60	0.08		5.00	0.22
		<u>2/20/76</u>						
		8-8:30 am	30	60	0.31			
		9-9:30 am	30	60	0.21			
		10-10:30am	30	60	0.18			
		11-11:30am	30	60	0.51			
		12-12:30pm	30	60	0.03			
		1-1:30 pm	30	60	0.17			
		2-2:30 pm	30	60	0.23			
		3-3:30 pm	30	60	0.13		5.00	0.22

Line ID No.: 1800412

Date: 2/18/76

Product: _____

Line Name : Powhatan Mining Co. Mill

METHOD OF DETERMINATION☒ X-Ray Diffraction☐ Other _____TYPE OF SAMPLE ANALYZED☐ Welding Fume☐ Total Airborne Dust☒ Respirable Airborne Dust

Line and Social Security No.	Occupation and Location	Date Sampled	Sampling Time (Min.)	Contaminant	Contaminant Amount	Sample Weight (mg)	TLV (mg/m ³)	TWA Conc (mg/m ³)
Frank McHenry 34-12-6430	Bagger Mill	2/18/76	480	Silica	4.2%	0.22	1.61	0.2
Eugene Myer 12-36-0659	Bagger Mill	2/18/76	480	Silica	7.6%	0.16	1.04	0.2
John Bright 15-12-1235	Gooch Plant Gooch Mill	2/18/76	480	Silica	8.4%	0.04	0.96	0.0
John Carter 30-10-1708	Maintenance Mill	2/18/76	480	Silica	*N.D.	0.44	5.00	0.5

* N.D. (Not Detected)

Interference from Anthophyllite.
Based on limit of detection, silica exposure is below the standard.

TABLE - ANALYSIS OF DUST SAMPLES COLLECTED 2/18/76MINE/MILL Powhatan Mining Company Mill COMPANY Powhatan Mining Company STATE MarylandCOLLECTED BY Raymond H. Hoffman SUBDISTRICT OFFICE Pittsburgh, Pennsylvania DATE REC'D 2/27/76

Sample Number	Laboratory Number	Sample Type and Location	Analyses	
			Free Silica	Other
001400	6-00998	Respirable dust - mill-bagger	Quartz - 4.2%	
001402	6-00999	Respirable dust - Gooch Mill, Gooch Plant	Quartz - 8.4%	
001403	6-01000	Respirable dust - Mill maintenance	Quartz - N.D.	
001404	6-01001	Respirable dust - Mill-bagger	Quartz - 7.6%	N.D. (Not Detected) Interference from Anthophyllite. Based on limit of detection silica exposure is below the standard.
			DATE <u>3/8/76</u>	SIGNED <u>Denver Technical Support Center</u>