# INDUSTRIAL HYGIENE WALK-THROUGH REPORT

PLANT NAME: American Talc Co.

LOCATION: Alpine, Alabama

PURPOSE: The National Institute for Occupational Safety and Health (NIOSH) in cooperation with the Mining Enforcement and Safety Administration (MESA) has underway a preliminary study of the talc mining and milling industry. As part of this study NIOSH is conducting walk-through surveys to compile necessary data in an effort to characterize talc compositions in the U.S.

NIOSH PERSONNEL: Paul L. Johnson

PLANT HISTORY AND PROCESS:

The American Talc Company is located in Talladega County, approximately 55 miles southwest of Birmingham, Alabama. The nearest city is Alpine located on Highway 235. Ore for milling is extracted and shipped from the Willow Creek Mine located about 22 miles south of Alder, Montana. Milling operations started in 1953 as a talc dry-grinding process and in 1958 wet-grinding was incorporated to enchance the efficiency of mineral separation and processing. A total of 26 workers are employed during the plant's 3 shifts (16 day, 5 night, 5 morning). All work a 5½ to 6 day week (40 to 50 hours). The major product is talc which is ground for application in the cosmetic and pharmaceutical industries.

PROCESSING:

Rail shipments from the Willow Creek Mine, Alder, Montana, are unloaded (by front end loader) and fed to a primary crusher. Crushed materials, 3/4 inch and less in size, are conveyed to a bucket elevator which feeds a cylindrical wet scrubber. From the scrubber the ore is dropped into a ball mill for additional grinding (minus 40 mesh size), pumped to slurry thickening tanks, and then conveyed back to the plant for treatment. Treated materials are bleached (hydrogen sulfide), filtered, neutralized (hydrochloric acid and water), dried, and then ground. Fine grinding of product is done by both Raymond vertical and Raymond roller mills. Finished products range from 98% - 200 mesh to 99% - 400 mesh in size. All products are shipped in 50 lb bags by either railcar or by truck. Some of the facilities receiving the finished products are: Cheesebrough Ponds Co., Clint, Connecticut, Colgate Palmolive Co., Jersey City, New Jersey and Jeffersonville, Indiana.

HEALTH AND SAFETY HAZARDS:

1. Potential noise exposure.
2. Hazardous working conditions in areas made slippery by combination of water and talc dust particles
3. Potential exposures to talc dust.

PERSONNEL RECORDS:

Personnel records include job descriptions, work histories Social Security numbers, and lost time data. Present records date back to 1965. Only 6 of the plant's 26 total workers have been employed with the plant since the operation began in 1958. All records can be located at the facility.

RECOMMENDATIONS:

1. Noise measurements should be obtained to determine noise exposure during milling operations.

2. Hazardous conditions exist in the travelways and escapeways due to the water and talc dust accumulations. These areas should be maintained as outlined in the Metal and Nonmetal Mine Health and Safety Standards, Part 57.11.

3. Hard hats, respirators, safety glasses, etc., were not being used at time of survey. Personal protective equipment should be made available and properly used as outlined by Part 57.15 of the Metal and Nonmetal Mine Health and Safety Standards.

4. Maintenance programs should be improved. Reapirs are needed on duct systems, control valves, liquid holding tanks, and piping systems.

5. All toxic materials should be properly identified (e.g. acid solutions unmarked near makeup boxes).

6. It is recommended that a safety program, outlined in the Metal and Nonmetal Health and Safety Standards, Part 57.18-1 through 14, be implemented.

Work Sheet

for

Preliminary Industrial Hygiene
Survey of

Plant Name: American Talc Co.

City, State: Alpine, Alabama

Survey Date: August 24, 1976

Survey Conducted By: Paul L. Johnson

Industrial Hygiene Section
Industrywide Studies Branch
Division of Surveillance, Hazard Evaluations and Field Studies
National Institute for Occupational Safety and Health
Cincinnati, Ohio

I. General:

1. Establishment Name American Talc Co

Address Box 21 City Alpine

State Alabama Zip Code 35014 Telephone Number 205/362-9509

2. Persons Interviewed Marvin R. McCume

Title: Vice President and General Manager

Others: Jim Milam - Assistant Manager

3. A) Union Representative: None

Title Telephone Number

B) Name of Union

5. NIOSH Staff Present Paul L. Johnson

II. Plant Description:

1. Is plant a subsidiary _____ independently owned X

Name of parent company American Talc Co.

Legal Owner

2. Date plant built 1953 - dry grinding process

Date of plant additions 1958 - wet grinding (mineral separation process)

3. Acreage of plant site 25

4. Number of major buildings 2 Total Square Feet 22200

5. A) How many people are on your payroll at the present time? 26

B) Of this number, how many are normally in the

Production Area? 18

Administrative Area? 4

Other Areas? 4 Lab

6. Number of Shifts 3/8 hr - 6 days/week

7. Number of employees/shifts? 16 day, 5 night, 5 morning

III. Description of Process:

1. What are your major products or services? (list)

Talc 98% 200 Mesh - color light and dark green

98% 325 mesh (for cosmetics)

99% 400 mesh (for pharmaceuticals)

2. Plant Processes

A) Product

Raw materials and possible contaminants

Production Processes SEE ATTACHED PAGE

B) Product

Raw materials and possible contaminants

PRODUCTION PROCESSES:

Stockpiled ore for processing is fed by conveyor to a rotating hammer mill for crushing. The crushed ore, ½ inch or less in size, is elevated by bucket to ore holding bins. From the holding bins the crushed materials are fed to a cylindrical scrubber (wetting process) and then to a ball mill for grindings of 30 to 40 mesh. Products from this mill are pumped to a Wifflay 30 to 40 mesh gravity screen for grit separation and regrinding. For additional separation the materials are pumped across a James table or wet vibrator. Further processing consists of clarifying units or thickners. To these units polymers are added as filtering agents to aid in settling out the talc. Chlorinators are also added during this process as bactericidal agents. Before final grinding the product is pumped to treaters, where k-brite (hydrogen sulfide), sulfur dioxide, and hydrochloric acid are added as bleaching compounds. Treated materials from these tanks pass through make-up boxes (solidifies product) and then through an acid bath (hydrochloric acid and fresh water) for 45 minutes to lower the pH. The product is then repulped and pumped to storage bins for final milling. Preparation for fnal milling consists of a drum filter (dewaters and cakes materials), an Imp mill (breaks up conglomerates) and a flash dryer. All materials, after being dried, are fed to mills of two types - a Raymond vertical and a Raymond roller (35 inch, 42 rollers). Attached to each mill is a cyclone ventilation system for capturing the reprocessing excess and/or oversized particles. Connected to each mill in addition to the cyclone is a unit for bagging materials (50 lb bags) for shipment.

Finished products for shipment are made by both railcar and by truck. Cheesebrough Ponds Company, Clint, Connecticut and Colgate Palmolive Company, Jersey City, New Jersey and Jeffersonville, Indiana receive a large percentage of the finished products.

Production Processes_____

_____

_____

_____

_____

_____

_____

_____

IV. Description of Safety, Industrial Hygiene, and Medical Programs:

1. A) Does your company employ an industrial hygienist?

Yes, at this location_____

Yes, at corporate headquarters_____

Yes, on a consulting basis_____

Yes, insurance carrier_____

Yes, specify_____

No X

B) Name of I.H._____Telephone Number_____

Address_____

C) What types of measurements are routinely taken? Explain.

_____

_____

_____

D) Were industrial hygiene measurements obtained: Yes_____ No X

2. Do you have an agreement with a physician to give your employees emergency or other medical care?

Yes, at this location--full-time_____

Yes, at this location--part-time_____

Yes, on call X

Name H.B. Campble, M.D. Telephone Number 362-7120

Address Talladega, Alabama

No

3. Do you have a licensed nurse in your facility at a regular time?

Yes, Full-time Yes, Part-time No X

4. Do you have an employee at this facility on each shift with formal first aid training, other than a doctor or nurse, who has been designated to provide emergency treatment?

Yes No X

5. When you hire new employees, do you require them to take a medical examination?

Yes, all employees

Yes, some employees

No X

6. Do you provide any periodic physical examinations for your employees?

Yes No X How Often

7. Do you provide special job related medical tests for your employees, such as:

| | | |
|---|---|---|
| Chest X-Ray | Yes | No X |
| Hearing Tests | Yes | No X |
| Visual Tests | Yes | No X |
| Lung Function Tests | Yes | No X |
| Blood Tests | Yes | No X |
| Urine Tests | Yes | No X |
| Other | Yes | No X |

Specify:

8. A) Does your company have a formal safety program? Yes No X

B) Safety and Health Supervisor

C) How many people are involved in this program? NA

D) How many lost-time accidents did you have last year?

Frequency 3-4/yr Severity Sprains, Cuts

9. Has there been any medical abnormalities among workers which can be attributed to an occupational exposure?

Explain None

10. What protective equipment is required:

| | Equipment Provided by Employer | |
|---|---|---|
| Clothing | Yes ____ | No X |
| Glasses | Yes X | No ____ |
| Shoes | Yes ____ | No X |
| Respirators | Yes X | No ____ |

Type Willson Dust Foe

Where Used Packing Area

Other In process of purchasing MESA recommended full face respirators

11. A) Are there facilities for taking showers?

Yes X No ____

B) Are there facilities for changing clothes?

Yes X No ____

C) Obtained descriptive literature on products?

Yes ____ No X

V. Narrative:

1. Description of Medical, Safety, and Industrial Hygiene Program:

None

2. Potential Health Hazards:

Noise; slippery surfaces from wet processing, leaky valves and lines

3. Have product lines changed over the years? (If they have, include any other raw materials used).

No changes

4. Are waste products reused: (If not, how are they disposed?)

All are reprocessed

5. Briefly describe any past air sampling data.

MESA conducted dust sampling survey in April of 1976.

6. **Completeness of Personnel Records:**

Social Security Numbers - Yes

Work History - Yes

Lost Time Accident Data - Yes

Records Available Since - Yes

Of the 26 total workers 6 have been employed by the plant since it began operation in 1958. All personnel records are kept at the plant.

7. **Ventilation:** (Include type, size, kinds of collectors, H.P. of blowers, history of changes, etc.)

Mechanical ventilation consists of duct systems connected directly to the bagging bins and are used strictly for ore processing. Presently only two of the four mills have operating bag collectors. However the plant is in the process of adding bag collectors to each bagging unit.

8. **Housekeeping:**

In need of cleaning and better maintenance of equipment.

9. **Miscellaneous:**

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15. Supplementary Notes

16. Abstract (Limit: 200 words) As part of a preliminary study of the talc mining and milling industry (SIC-1499) a walk through survey was made at the American Talc Company to gather data needed to characterize talc (14807966) compositions in the United States. Twenty six workers were employed during the three shifts at the facility. All worked a 5.5 to 6 day work week. The major product was talc which was ground for applications in the cosmetic and pharmaceutical industries. Health and safety hazards identified at the site included potential noise exposure, hazardous working conditions in areas made slippery by a combination of water and talc dust particles, and potential exposure to talc dust. Personnel records were available from 1965. Only six of the current 26 workers have been employed with this same company since it began operating in 1958. It was noted that hard hats, respirators, safety glasses and other protective equipment was not being used at the time of the survey. The author recommends that such equipment should be available and its proper use should be explained. Maintenance programs should be improved and all toxic materials should be properly identified.

17. Document Analysis a. Descriptors

b. Identifiers/Open-Ended Terms NIOSH-Publication, NIOSH-Author, NIOSH-Survey, Field-Study, IWS-036-26, Region-4, Mining-industry, Milling-industry, Grinding-mills, Mineral-dusts, Dust-inhalation, Personal-protective-equipment

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