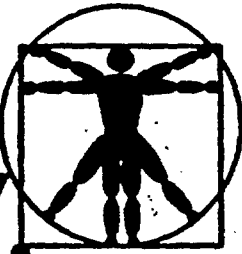


Health by Design



54th All-Ohio Safety Congress
& Exhibit, April 24, 25, 26, 1984

PLAINTIFF'S
EXHIBIT
BRK-94

Richard F. Celeste, Governor

Leonard T. Lancaster, Chairman, The Industrial Commission of Ohio
John A. Pompei, Superintendent, Division of Safety and Hygiene
Mary E. Horvath, Congress Coordinator

March 6, 1984

Legal Section
The Industrial Commission of Ohio
246 North High Street
Columbus, Ohio 43215

RE: OD 20608-22
Mr. Anthony Pikos
General Motors
Corporation
Fisher Body Division
Lordstown, Ohio

Attention: Ms. Judy Spencer

Dear Ms. Spencer:

As per your request, this report has been prepared based on the information obtained from the facsimile file which you have provided. Also, on November 10, 1983, and January 10, 1984, visits were made to the offices of the GMC - Fisher Body Division - Lordstown, Ohio, Plant for the purpose of determining the employment history and working conditions of the above named claimant, Mr. Anthony Pikos. Mr. Pikos believes that his condition, which has been diagnosed as chemical bronchitis, has resulted from alleged exposures to chemical irritants such as lead, copper, zinc, cadmium, and fluorides while employed as a maintenance welder at the GMC-Fisher Body Division, Lordstown, Ohio, Plant.

Interviewed at the GMC-Fisher Body Division, Lordstown, Ohio, Plant were Mr. Ray Hickman, Safety Director; Mr. Stan Root, Union Health and Safety Committee Representative; and Mr. Bob Kopanic, General Supervisor.

According to company records, the claimant's work history prior to his employment with the GMC-Fisher Body Division, Lordstown, Ohio, Plant is listed as follows:

January, 1952, To May, 1958 - William B. Pollock Company,
employed as an electric arc welder.
March, 1954, To February, 1956 - United Engineering,
employed as an electric arc welder.

March, 1959, To June, 1968 - McKay Machine,
fabrication assembly.

June, 1968 to January, 1980 - GMC-Fisher Body Division, Kalamazoo,
Michigan, Plant - maintenance welder.

The claimant was hired January 5, 1970, to work at the GMC-Fisher Body Division, Lordstown, Ohio, Plant as a gas and arc maintenance welder. As a maintenance welder, the claimant was responsible for a specific geographical area of the plant; in particular, the Metal Assembly Department where body panels are automatically welded together by resistance spot welding. The claimant does not perform resistance spot welding but does service (repair and spot welding type functions) the automated machines that do the resistance spot welding. In essence, the claimant is primarily a maintenance welder who performs sporadic repair welding when breakdowns occur on the assembly line.

According to Messrs. Hickman, Root, and Kopanic, the claimant was also involved with installing new assembly lines (i.e., for model changes). This work could occur several times in a period of one year and generally amounted to several days of continuous eight hours of welding. In performing this type of work, the claimant is responsible for new construction welding, such as welding details to shuttle rails and brackets to posts. On a work-overtime basis, the claimant could work on the construction of the tools that do the resistance spot welding. It was indicated that the claimant did no grinding and was not a tool grinder or sharpener. It was also mentioned that the claimant's silver soldering work load was "light" since Mr. Pikos had expressed to Mr. Kopanic that because of breathing problems he did not want to do silver soldering. Fluoride fluxes are used only with silver soldering.

Pre-employment physical exams, which include chest x-rays, are given by the company. If an employee returns from lay-off or sick leave, a physical exam (excluding chest x-ray) is required. Voluntary lung function tests are available if an employee elects to have them. However, the company doctor will question as to the reason such lung function tests are being requested.

It was also mentioned that respirators are made available to employees by the company upon request. The 3M Company disposable type and 3M Company cannister type respirators are provided by the company. It is believed that the claimant did not wear respiratory protection. In addition, ceiling exhaust ventilation exists in the assembly area where the claimant is employed. It is believed that the exhaust ventilation is to provide ten air changes per hour in the assembly area.

Following the original visit on November 10, 1983, several attempts were made to monitor the claimant's exposure to air contaminants during a typical work day. Because of scheduling

problems and other difficulties, finally on January 10, 1984, air monitoring of the claimant's work environment was conducted. Representative time-weighted overage (TWA) breathing zone air samples for metal fumes and also welding fumes-total particulate were obtained on the claimant while he was performing his job as a maintenance welder. In addition, a representative time-weighted average work area sample for fluorides was obtained while the claimant was performing silver soldering using fluoride flux.

The air sample for metal fumes was collected on a mixed cellulose ester filter contained in a cassette which was attached to the employee's collar. The cassette was connected by Tygon tubing to an MSA Model G personal sampling pump which was worn on the worker's belt. The pump was calibrated to pull air at 1.5 liters per minute. The pump was inspected periodically during sampling to ensure that the flow rate of 1.5 liters per minute was maintained. The sample for metal fumes was submitted to an American Industrial Hygiene Association (AIHA) accredited laboratory where it was analyzed by atomic absorption spectrophotometry. The results of this sampling, as reported by the laboratory, can be found in Table I located at the back of this report.

The sample for welding fume-total particulate was collected on a pre-weighed poly vinyl chloride filter contained in a cassette which was attached to the employee's collar. The cassette was connected by Tygon tubing to an MSA Model G personal sampling pump which was worn on the worker's belt. The pump was calibrated to pull at a flow rate of 1.5 liters per minute. The pump was inspected periodically during sampling to ensure that the flow rate of 1.5 liters per minute was maintained. The sample for welding fume-total particulate was submitted to an American Industrial Hygiene Association (AIHA) accredited laboratory where it was analyzed gravimetrically for particulate weight and by x-ray diffraction for crystalline silica. The results of this sampling, as reported by the laboratory, can be found in Table I located at the back of this report.

The sample for fluorides was collected on a mixed cellulose ester filter contained in a cassette and was hand held by this writer to be representative of the employee's breathing zone. The cassette was connected by Tygon tubing to an MSA Model G personal sampling pump. The pump was calibrated to pull at a flow rate of 1.5 liters per minute. The pump was collected in a 20-minute sampling period during the time the claimant was performing silver soldering. The sample for fluorides was submitted to an American Industrial Hygiene Association (AIHA) accredited laboratory where it was analyzed by using the fluoride ion selective electrode method. The results of this sampling, as reported by the laboratory, can be found in Table I located at the back of this report.

The claimant's work day during the air sampling conducted on January 10, 1984, can be summarized as follows:

- (1) Burning and welding on Press MP-25 (repair shuttle rail pedestal)
- (2) Burning scrap metal
- (3) Changing bottles
- (4) Welding-changing details
- (5) Air arcing (stainless steel)
- (6) Silver soldering
- (7) Repair welding on a drive lifter for the shuttle MP-22

A review of the results from Table I indicates concentrations of metal fumes, welding fumes-total particulate, and fluorides which are below the respective OSHA and ACGIH standards.

Also, as provided by the company, attached at the end of this occupational disease claim report is a copy of air sampling data conducted by corporate representatives of the General Motors Corporation. A review of this data indicates concentrations of iron oxide, lead and total particulate which are below the OSHA Permissible Exposure Limits.

Metal fume fever is caused by exposures to oxides of several metals including copper, zinc, and manganese. Typically, the syndrome of metal fume fever begins four to twelve hours after sufficient exposure to freshly formed fumes. The worker first notices the presence of a sweet or metallic taste in the mouth, accompanied by dryness and irritation of the throat. Cough and shortness of breath may occur, along with general malaise, a feeling of weakness, fatigue, and pains in the muscles and joints. Fever and shaking chills then develop. Fever can range from 102° to 104° F. Profuse sweats develop and the fever subsides. The entire episode runs its course in 24-48 hours.¹

Metal fume fever produces rapid development of tolerance or short-lived relative immunity. This may be lost, however, over a weekend or holiday, and the worker may again develop the complete syndrome when he returns to work if fume levels are sufficiently high. There are no sequelae to the attacks.²

The inhalation of iron oxide fumes or dust may cause a benign pneumoconiosis (siderosis). It is probable that the inhalation of pure iron oxide does not cause fibrotic pulmonary changes, whereas the inhalation of iron oxide plus certain other substances may cause injury.³

Cadmium fume causes irritation of the nose and throat. If enough has been inhaled, after a delay of several hours, a person may also develop cough, chest pain, sweating, chills, shortness of breath, and weakness.⁴

Repeated or prolonged exposure to cadmium fume may cause loss of sense of smell, ulceration of the nose, shortness of breath (emphysema), kidney damage, and mild anemia.⁵

Fluoride-containing dust may cause irritation of the eyes and respiratory tract. Swallowing fluoride may cause a salty or soapy taste, vomiting, abdominal pain, diarrhea, shortness of breath, difficulty in speaking, thirst, weakness of pulse, disturbed color vision, muscular weakness, convulsions, loss of consciousness, and death. Kidney injury and bleeding from the stomach may occur.⁶

Repeated exposure to fluoride-containing dust may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis, and spinal column. Stiffness and limitation of motion may result. Repeated or prolonged exposure of the skin to fluoride-containing dust may cause a skin rash.⁷

In summary, this claimant has been employed as a maintenance welder at the GMC-Fisher Body Division, Lordstown, Ohio, Plant since January 5, 1970. As a maintenance welder, the claimant primarily performed sporadic repair welding when breakdowns occurred on the Metal Assembly Department lines. Occasionally, the claimant was involved in heavy welding when new assembly lines were being installed. In addition, the claimant occasionally performed some silver soldering using fluoride flux. Personal monitoring of the claimant's occupation as a maintenance welder indicates exposure to concentrations of metal fumes, welding fumes-total particulate, and fluorides which are below the respective OSHA and ACGIH Standards.

Respectfully submitted,

Richard Zapko

Richard Zapko
Industrial Hygienist

RZ/klp

NOTES

- 1 Occupational Diseases: A Guide to their Recognition, Revised Edition, DHEW (NIOSH) Publication No. 77-181, 1977, p. 409.
- 2 Ibid, p. 409
- 3 Ibid, p. 360
- 4 NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards, Frank MacKison, et al., DHHS (NIOSH) Publication No. 81-123, January, 1981.
- 5 Ibid.
- 6 Ibid.
- 7 Ibid.

CD 20608-22 - Anthony Plikos
 GAC-Fisher Body Division, Lordstown Plant
 Date Sampled: January 10, 1984

TABLE I

(TIV - TWA

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED (HOURS)	CONCENTRATION DETERMINED mg/m ³	OSHA STANDARD mg/m ³	ACGIH STANDARD mg/m ³
Anthony Plikos	Maintenance Welder	Cadmium Zinc Lead Chromium Nickel Iron Oxide	335	0.0026 0.110 0.0084 0.021 0.034 1.70	0.10 5.00 0.05 1.00 1.00 10.00	0.05 5.00 0.15 0.50 0.10 5.00
Anthony Plikos	Maintenance Welder	Welding Fume- Total Particulate	335	4.1*	15.0	5.00
Area Sample taken during silver soldering using fluoride flux		Fluorides	20	0.0062	2.50	2.50

mg/m³ = Milligrams per cubic meter of air

ppm = Parts per million of air

OSHA = Occupational Safety & Health Administration

NIOSH = National Institute of Occupational
 Safety and Health

ACGIH = American Conference of Governmental
 Industrial Hygienists

TIV = Threshold Limit Value

TWA = Time Weighted Average

N.A.S. = No Applicable Standard

*Lab reports less than 25 micrograms quarts.

Fisher Body Division
Lordstown, Ohio

SAMPLE RESULTS FOR TOTAL PARTICULATE, LEAD, AND IRON OXIDE

Sample No.	Date Sampled	Sample time (minutes)	Contaminant	Results	PEL
83A-5254	08/18/83	105	Iron oxide	0.3 (mg/m ³)	10
			Lead	ND (ug/m ³)	50
			Total particulate	1.0 (mg/m ³)	15

BZ of F. Goetz (283-36-3803); Dept. 56; maintenance welder. Employee did gas arc cutting and stick electrode welding, generally under uncontrolled working conditions.

83A-5255	08/18/83	92	Iron oxide	0.3	
			Lead	ND	
			Total particulate	1.0	

BZ sample; Repetition of 5254.

Notes: PEL = OSHA permissible exposure limit, eight-hour, time-weighted average
mg/m³ = milligrams per cubic meter of air
ug/m³ = micrograms per cubic meter of air
ND indicates a none-detected value based on the sensitivity of the method and the specific sample volume.

CERTIFICATE OF AUTHENTICITY

I certify that the microphotographics on this roll of film or microfiche are true and accurate reproductions of records generated by or received by the Ohio Bureau of Workers' Compensation, an agency of the State of Ohio, as required by Ohio Revised Code Section 4123.52 and Section 9.01 which require optimum protection from hazards of accidental destruction of records.

It is further certified that the photographic processes used for microfilming the above records were accomplished in a manner and on microfilm which meets the requirements of the National Bureau of Standards for permanent photographic copy.

William D. Kaye
Supervisor, Microfilming Unit

Date Filmed: _____

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John Frey
(Camera Operator)

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