



The Industrial Commission
Of Ohio
Division Of Safety & Hygiene
246 N. High St., Col., O. 43215

July 30, 1979

Legal Section
Industrial Commission of Ohio
246 N. High Street
Columbus, Ohio 43215

Attn: Guy Sheaffer

RE: Claim #OD12636-22
James C. Wolford

Dear Mr. Sheaffer:

On March 12 and 22, 1979, visits were made to the plant of General Motors Corporation, General Motors Assembly Division, Lordstown Plant, P. O. Box 1406, Warren, Ohio, 44482, to check conditions under which the claimant had worked. Mr. Donald Meeker, Industrial Hygienist, Division of Safety and Hygiene, accompanied the undersigned on these visits. There are approximately 9,750 employees at the Lordstown facilities.

New passenger cars and vans are assembled in the passenger and van plants respectively.

According to employment records, the claimant's experience with General Motors Corporation is as follows:

Passenger Plant -

November 21, 1967. Assembler-General, Department 17.
January 12, 1970. Laid off.
February 12, 1970. Assembler-General, Department 17.
February 27, 1970. Laid off.
August 5, 1970. Assembler-General, Department 17.
July 16, 1971. Leave of absence.
August 16, 1971 to January 13, 1975. Assembler-General, Department 17.

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Van Plant -

January 13, 1975. Assembler, Department 2607.
December 1, 1975. Assembler, Department 2608.
February 10, 1976. Assembler, Department 2607.
August 11, 1976. Off due to illness.
March 31, 1977. Assembler, Department 2607.
April 6, 1977. Off due to illness. Has not returned.

In brief, the claimant's duties consisted of installing new parts on passenger cars and later on vans as the vehicles passed by him via conveyors. Also, in the vicinity of where the claimant worked, in both plants are areas where lead is applied to the vehicles with oxyacetylene torches and subsequently filed and hand sanded. Although forbidden by General Motors Corporation policy, it was alleged by employees that power sanders are occasionally used by some employees to remove lead. The claimant did not file, sand or work with lead.

Breathing zone air samples were obtained for lead with personal sampling pumps in conjunction with mixed cellulose ester filters at a flow rate of 1.5 liters per minute. These samples were obtained on employees performing work similar to that performed by the claimant, on the same assembly lines, and at approximately the same distances from the body shop or areas applying and removing lead. The dates of visit were considered typical workdays according to present conditions. Settled dust samples for percent lead were also obtained at various undisturbed overhead locations. Please see Table I for breathing zone sample results and Table II for settled dust results.

Breathing zone lead sample results are well below the ACGIH limit for those employees sampled in the passenger car plant, and no lead was detected in the breathing zones of those employees sampled in the van plant. All sample results are also well below the current enforceable OSHA standard of 0.2 mg/M³ lead for an 8-hour time-weighted average and the new OSHA lead standard of 0.05 mg/M³ that is to become enforceable soon.

Settled dust sample results indicate that airborne lead was present in the areas where the claimant worked for both the passenger car and van plant. In the passenger car plant, the highest percent of lead in settled dust was found at the body shop where lead is used.

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The percentage of lead in settled dust was found to diminish in samples obtained farthest from the body shop. The claimant worked along the trim conveyor line in the passenger car plant and in the door area of the van plant.

According to Mr. Robert Anderson, Plant Engineer, General Motors Corporation, the only changes in ventilation for both the passenger and van plants consisted of providing additional ductwork (drops) from existing equipment to individual employees for cooling or comfort purposes. Air distribution without a change in air volume allegedly was the only significant change in ventilation. Discharging outdoor air at or into the immediate vicinity of workers would tend to dilute or lessen ambient dust concentrations that may have occurred prior to the installation of the drops; these drops were allegedly installed about 1970. There was no noticeable airborne visible dust in either plant on the sampling dates. However, the claimant stated that there was very noticeable airborne dust in both plants during his employment there.

A lead soldering and a lead grinding booth were in operation from about 1966 to 1970 in the passenger car plant in the area where the claimant worked. They have been removed. These booths were allegedly self-contained; that is, they had their own balanced exhaust and supply air systems and should not have contributed to in-plant air contamination if properly designed and operated.

Other changes noted are that less lead is used at present on both passenger cars and vans in both plants than was used in the past. A plastic body filler replaced some use of lead beginning about 1976. Also, a wall, approximately 9 to 10 feet high, extending along the body shop of the passenger plant where lead is applied and removed, was built about 1977 allegedly to prevent sparks and welding flash from disturbing other employees nearby. This wall now separates part of the body shop from the trim conveyor line where the claimant had worked.

The following excerpts regarding the toxicology of lead were obtained from Chemical Hazards of the Workplace by Nich H. Proctor, Ph.D. and James P. Hughes, M.D.:

Prolonged absorption of lead or its inorganic compounds result in severe gastrointestinal disturbances and anemia; with more serious

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intoxication there is neuromuscular dysfunction, while the most severe lead exposure may result in encephalopathy.

The onset of symptoms of lead poisoning or plumbism is often abrupt; presenting complaints are often weakness, weight loss, lassitude, insomnia, and hypotension. Associated with these is a disturbance of the gastrointestinal tract which includes constipation, anorexia, and abdominal discomfort or actual colic, which may be excruciating. Physical signs are usually facial pallor, malnutrition, abdominal tenderness, and pallor of the eye grounds.

Primary exposure to inorganic lead occurs in the manufacture of batteries and electronic devices, foundry operations, lead burning, automotive manufacture, galvanizing, manufacture of paint, and in the printing industry.

In summary, the claimant worked as an assembler in the passenger plant next to the body shop where lead is used for a period of approximately 6.5 years, and as an assembler in the van plant next to the line where lead is used for a period of about 1.6 years. Current employee exposures to airborne lead in the vicinity of the body shop in the passenger car plant are well below the established limits for this alleged typical date of visit, and no airborne lead was detected in the breathing zones of those employees sampled in the van plant. Settled dust sample results indicate that airborne lead was present in the van plant as well as the passenger plant. The claimant was exposed to unknown and possibly varied concentrations of airborne lead during his employment at General Motors Corporation. Lead is one of the highly toxic elements that can significantly add to the body burden by the route of ingestion as well as by inhalation, and according to a paper presented at the 1979 American Industrial Hygiene Conference, there is a proportional relationship between airborne lead and other sources of exposure.

Threshold Limit Values refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effects. Because of wide variations in individual susceptibility, however, exposure of an occasional individual at or

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even below current TLV's may not prevent discomfort, aggravation of pre-existing conditions, or an occupational illness. Many TLV's are based on acute exposures and do not necessarily represent prolonged exposures after many years of working.

Sincerely yours,

Ronald J. Sherman

Ronald J. Sherman
Industrial Hygienist

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TABLE I

Measurements obtained at General Motors Corporation, Lordstown, on March 13 and 22, 1979.

DATE	EMPLOYEE	LOCATION	AIR CONTAMINANT	EMPLOYEE EXPOSURE, TWA	ACGIH TLV
3/13	Dave Clutter Assembler Passenger Plant	Dept. 1702 Trim Conveyor Col. H-11	Lead	0.002 mg/M ³	0.15 mg/M ³
3/13	John W. Maloy Assembler Passenger Plant	Dept. 1702 Trim Conveyor	Lead	0.006 mg/M ³	0.15 mg/M ³
3/13	Raymond Hall Assembler Passenger Plant	Dept. 1702 Trim Conveyor	Lead	0.004 mg/M ³	0.15 mg/M ³
3/22	Don J. Matircadi Assembler Van Plant	Door Area Col. A-2	Lead	0.000 mg/M ³	0.15 mg/M ³
3/22	Rich R. Kovach Assembler Van Plant	Door Area Bet. Cols. A-2 & B-2 Air gun	Lead	0.000 mg/M ³	0.15 mg/M ³
3/22	James R. Garvin Assembler Van Plant	Door Area Col. C-2 Door retainers	Lead	0.000 mg/M ³	0.15 mg/M ³

TWA-- Time Weighted Average

ACGIH - American Conference of Governmental Industrial Hygienists

TLV - Threshold Limit Value

mg/M³ - milligrams per cubic meter of air

TABLE II

Samples obtained at General Motors Corporation, Lordstown, on March 13 and 22, 1979 (settled dust samples).

<u>Date</u>	<u>% Lead</u>	<u>Location of Sample Obtained</u>
3/13	1.26	Passenger Plant. Body shop I-beam, near column J-10, approximately 8 feet above floor.
3/13	0.75	Passenger Plant. Department 1702, Trim Conveyor. Between columns H-8 and H-9. From I-beam approximately 40 feet from body shop and about 8 feet above floor.
3/13	0.11	Passenger Plant. Department 1702, Trim Conveyor. Column H-11. From I-beam approximately 40 feet from body shop and about 8 feet above floor.
3/13	0.02	Passenger Plant. Between columns G-11 and G-12. From I-beam approximately 55 feet from body shop and about 8 feet above floor. Assembly line adjacent to Trim Conveyor line.
3/13	0.00	Passenger Plant. Leak Test. Between columns D-13 and D-14. From I-beam approximately 250 feet from body shop and about 8 feet above floor.
3/22	0.446	Van Plant. Door Area. Between columns A-3 and B-3. From platform rail approximately 12 feet above floor.
3/22	4.426	Van Plant. Door Area. Column C-3. From platform rail approximately 12 feet above floor.