



May 21, 1987

Mr. Michael K. McGinnis
Supervisor, Safety
Truck and Bus Group
Moraine Assembly Plant
General Motors Corporation
2601 W. Stroop Road
P.O. Box 1291
Dayton, Ohio 45401

Dear Mr. McGinnis:

On May 4, 1987 an industrial hygiene survey was accomplished at your facility by Roger Aber, Industrial Hygienist with the Industrial Commission of Ohio, Division of Safety and Hygiene. The purpose of the survey was to evaluate employee complaints within the vehicle start up area. Previous evaluations have been accomplished by outside sources and by General Motors Corporation industrial hygienists. Results were telephoned to Mr. Jim Rittenhouse on May 19, 1987.

SAMPLE METHODOLOGY

Breathing zone samples were collected for total particulates using preweighed PVC filters connected to calibrated Bendix high volume air samplers. Also, breathing zone samples for ethylene glycol using silica gel tubes connected to a calibrated Bendix high volume air sampler and a MDA low volume air samplers were collected. Carbon monoxide was determined using Draeger diffusion tubes with holders attached to several employees. In addition total aldehydes as formaldehyde were collected using a midget impinger containing sodium bisulfite solution connected to a calibrated MSA high volume sampler. The impinger was placed on the ventilation hood where the truck's exhaust is captured. Samples were submitted to an American Industrial Hygiene Association accredited laboratory for analysis. Results are listed in Table I. Formaldehyde and Nitrous Fumes were collected using Draeger direct reading detector tubes.

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Mr. Michael McGinnis
General Motors Corporation
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DISCUSSION OF RESULTS

Examination of the data in Table I indicates that all results are below the standards or recommendations noted. An explanation of formaldehyde should be made. Exposure to low airborne concentrations of formaldehyde causes irritation, especially of the eyes and respiratory tract. Because formaldehyde is soluble in water, the irritant effect is limited to the upper section of the respiratory tract. A concentration of two to three parts per million (ppm) causes slight irritation of the eyes, nose, and pharynx.

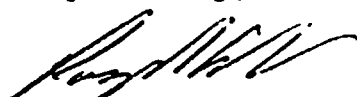
"Threshold limit values refer to airborne concentrations substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. Because of wide variation in individual susceptibility, however, a small percentage of workers may experience discomfort from some substances at concentrations at or below the threshold limit; a smaller percentage may be affected more seriously by aggravation of a pre-existing condition or by development of an occupational illness."
(Threshold Limit Values for Chemical Substances in the Work Environment Adopted by ACGIH with Intended Changes for 1986-87, p. 2.)

SUMMARY

The results indicate no problems on the date of the survey. This follows previous tests completed within the engine start up area. On the day of the survey, the individuals who had registered complaints were not present. These individuals may be more susceptible to the airborne concentrations of substances and may need to be medically evaluated to determine their fitness for working in this area. This may become more apparent in the summer months as the temperature in the area will be higher and an inversion could develop holding airborne concentrations of substances closer to the floor area. Employees in the area noted on warm days a haze over the area which could indicate an inversion.

If there are any questions regarding the contents of this report, or to request additional assistance, please do not hesitate to contact the Dayton District Office by calling (513) 898-3206.

Respectfully,



ROGER ABER
Industrial Hygienist

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GENERAL MOTORS CORPORATION
May 4, 1987

TABLE I

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	SAMPLED (MINUTES)	CONCENTRATION DETERMINED	OSHA PEL	NIOSH REL	ACGIH TLV
Randy Rogers	Start Up	Total Particulate	336	0.19mg/M ³	15mg/M ³	-	10mg/M ³
Willie Ross	ALDL	Total Part.	421	0.20mg/M ³	15mg/M ³	-	10mg/M ³
		Carbon Monoxide	417	4 ppm	50 ppm	35 ppm	50 ppm
Elliott Boyd	Transmission Top Off	Total Part.	409	0.22mg/M ³	15mg/M ³	-	10mg/M ³
Joyce Williams	Line Monitor	Ethylene Glycol	12	< 1.0 ppm	-	-	50 ppm
		Ethy. Glycol	151	< 1.0 ppm	-	-	50 ppm
Tom Bradley	ALDL	Carb. Monoxide	411	4 ppm	50 ppm	35 ppm	50 ppm
Jim Marlow	ALDL	Carb. Monoxide	407	4 ppm	50 ppm	35 ppm	50 ppm
Jim Jackson	Line Monitor	Carb. Monoxide	410	4 ppm	50 ppm	35 ppm	50 ppm

TWA - Time-Weighted Average
TLV - Threshold Limit Value
PEL - Permissible Exposure Limit
REL - Recommended Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH - National Institute for Occupational Safety and Health

ppm³ - Parts per Million Parts of Air
mg/M³ - Milligrams per Cubic Meter of Air
dBA - Decibels A-Scale
N.D. - None Detected
(STEL) - Short-Term Exposure Limit
N.A.S. - No Applicable Standard
< - Less Than

OSHA Standard 29 CFR 1910.20 requires that air sampling and other employee exposure information be made available to employees or employee representatives upon request. We recommend that employees in the areas sampled be provided

TABLE I

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	SAMPLED (MINUTES)	CONCENTRATION DETERMINED	OSHA PEL	NIOSH REL	ACGIH TLV
Area Sample	ALDL	Total Aldehydes	120	0.086 ppm	3 ppm	0.1 ppm	1 ppm
Draeger Tube	ALDL	Formaldehyde	-	N.D.			
Draeger Tube	ALDL	Nitrous Fumes	-	N.D.			

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OSHA Standard 29 CFR 1910.20 requires that air sampling and other employee exposure information be made available to employees or employee representatives upon request. We recommend that employees in the areas sampled be provided a copy of air sampling data.

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RECORDS CERTIFICATION

I, the undersigned, an employee of the Bureau of Workers' Compensation, do hereby certify that the microfilm images on this reel of microfilm or microfiche are complete and accurate reproductions of the original records of the SAFETY & HYGIENE as accumulated during the regular course of business, and that it is the established procedure of this department to microfilm its records for permanent file and to dispose of the original records after microfilm reproductions have been made.

William D. Koye
SUPERVISOR, Microfilming Unit

John Frey
Name Camera Operator

11-20-87
Date

11/30/87
Date