ESIS, Inc.
a CIGNA company

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PLAINTIFF'S EXHIBIT
JMMC-110

CIGNA

February 4, 1986

Mr. Terry Lohman, Plant Manager
J-M Manufacturing Company, Inc.
Highway 75 North
Denison, TX 75020

RE: ESIS # 51180

Dear Mr. Lohman:

On January 8, 1986, I made a visit to your plant to conduct an Environmental Health Survey. As a result of that visit, I am submitting the attached recommendation which should receive your immediate attention and consideration.

You will find the results of the Environmental Health Report attached. These results are an indication of the environmental health conditions that existed on the day of my visit.

I wish to thank you and your staff for the cooperation that was extended during the couse of this visit.

If you have any questions regarding this report and recommendation, please do not hesitate to call me at (713) 933-1826.

Sincerely,

Aileen Teng/pl

Aileen Teng, CIH
Senior Environmental Health Specialist
CIGNA Loss Control Services, Inc.

cc: Dr. E. Edward Wang, Ph.D., J-M Mfg.
Ms. Beth Ingelston, Alexander & Alexander of New York
John T. Armstrong, J-M Mfg.

AT/pl

D 002337

FEB. 13 1986

NAME: J-M Manufacturing	LOCATION: Denison, TX

EH 86-1

As can be seen from the sample results presented in Table I, the willow operator's exposure to asbestos has been reduced to within the OSHA permissible exposure limit. However, it should be noted that OSHA issued a proposed standard for asbestos to lower the permissible exposure limit to either 0.2 fibers/cc or 0.5 fibers/cc. The willow operator's exposure level (0.21 fibers/cc) exceeded the NIOSH recommended exposure limit of 0.1 fiber/cc.

The willow operator is required to wear a dust mask. The operator wears a heavy beard which will prevent him from getting a good face seal with the mask. A growth of beard, sideburns, a skull cap that projects under the facepieces, temple pieces on glasses or the absence of one or both dentures can seriously affect the fit of a mask. To assure proper protection, workers who are required to wear respiratory protection should be instructed in how to fit the masks properly.

CP-1A98a Ptd. In U.S.A.

ENVIRONMENTAL HEALTH REPORT

PREPARED FOR:

J-M Manufacturing Company, Inc.
Denison, Texas

DATE OF SURVEY:

January, 8 ,1986

CONDUCTED BY:

Aileen Teng, CIH
Senior Environmental Health Specialist
CIGNA Loss Control Services, Inc.

D 002339

INTRODUCTION

On January 8, 1986, an Environmental Health Survey was conducted at your plant in Denison, Texas, to evaluate employee exposures to noise, vinyl chloride monomer, asbestos, and organic solvents. The survey was conducted at the request of J-M Manufacturing Company, Inc. as an ongoing monitoring program.

The standards, guidelines, results and discussion pertinent to this report follow.

STANDARDS AND GUIDELINES

The recommendations made in this report are based on current OSHA standards and/or accepted state-of-the-art industrial hygiene practices to give reasonable protection to the health and well-being of your employees.

The standards pertinent to this report are found in the Appendix Section.

METHODS

Air Contaminants

Air sampling and analyses were conducted using the following.

Air Contaminant	Vacuum Source	Flow Rate Liters/Min	Collection Medium	Analytical Method
Asbestos	Gilian HFS-113UT Pumps, DuPont 2500 Sampling Pumps	1.5	Open face AA filters	Modified NIOSH P&CAM 7400
Vinyl Chloride Monomer	Gilian HFS-113UT Pumps	0.05	2 CT* in series	NIOSH P&CAM 178 GC**
Methyl Ethyl Ketone (MEK)	DuPont p-4000 Sampling Pumps	0.2	CT	NIOSH P&CAM #2500, 1005 GC
Methylene Chloride & MEK	-	-	3M organic vapor monitor	NIOSH P&CAM #2500, 1005 GC

* CT = Activated Charcoal Tubes
** GC = Gas Chromatography

Unless otherwise stated, samples were taken in the workers' breathing zones to obtain samples indicative of actual employee exposure. Pumps were calibrated prior to and after the sampling period.

All analyses were conducted by Environmental Health Laboratory in Hartford, CT, which is accredited by the American Industrial Hygiene Association.

Noise

Sound level measurements were taken in the Permastran & Permalock plant at the various operations in the hearing zones of the employees. General Radio Sound Level Meter, Type 1933, was used for the survey; this meter was acoustically calibrated with General Radio 1562 Sound Level Calibrator before and after use.

Quest Model M-7B and DuPont Mark I noise dosimeters were used to measure cumulative exposure to noise. The noise dosimeter measures and accumulates noise and produces a continuous reading of the allowable exposure to which the wearer has been subjected. The microphone of the dosimeter was clipped to the employee's shirt collar near the ear, thereby receiving and accumulating approximately the same dosage as the ear.

RESULTS

Asbestos

The results of asbestos sampling are presented in Table I. The concentrations are presented in number of fibers (longer than 5 microns) per cubic centimeter. Also included are sample time and sample volume.

Vinyl Chloride

The results of vinyl chloride monomer sampling are presented in Table II. The concentrations are presented in milligrams per cubic meter (mg/M^3), by job description and location along with the applicable OSHA standard.

Organic Solvents

The results of organic solvents air sampling are listed in Table III. The concentrations are presented in parts per million (ppm), by job description and location along with applicable OSHA standards.

When two or more hazardous substances are present, their combined effect, rather than that of either individually, should be given primary consideration. The health effects must be considered additive unless there is evidence to the contrary; thus, exposures are added relative to their designated OSHA standards. When adding these exposures, a value "Em" (Equivalent Exposure for the mixture) is determined by the OSHA formula. Exposure is considered excessive when the value "Em" exceeds unity (1.00).

$$Em = \frac{TWA_1}{PEL_1} + \frac{TWA_2}{PEL_2} + \frac{TWA_3}{PEL_3} \ldots + \frac{TWA_n}{PEL_n}$$

Where: TWA is the Time-Weighted Average concentration of a particular substance and PEL is the corresponding permissible limit for the substance.

Noise

The results of noise level measurements and Time-Weighted Average (TWA) exposures are listed in Table IV.

TABLE I

Account: J-M Manufacturing
Location: Denison, TX

AIR SAMPLING DATA - ASBESTOS

Job Description (J-M No.)	Employee Name	Date Sampled	Air Conc. (fibers/cc)	Federal Standard(1) (fibers/cc)	TWA (2) (fibers/cc)	Sample Time (min.)	Sample Vol. (liters)	Comments
Willow Operator (D-7WE)	Johnny Crain	1/8/86	0.26 0.22 0.15	1.3	0.21	260 225 215	390 337.5 322.5	The TWA exposure level did not exceed OSHA permissible limit.

(1) The OSHA 8-hour TWA permissible exposure limit (PEL) for asbestos is 2 fibers/cc. The PEL for a 12-hour workday is calculated to be 1.3 fibers/cc (2 fibers/cc x 8/12 = 1.3 fibers/cc).

(2) T.W.A. = The Time Weighted Average concentration for a normal 8 or 12 hour workday. This determination is based on the actual exposure time to the air contaminant.

TABLE II

Account: J-M Manufacturing
Location: Denison, TX

AIR SAMPLING DATA - VINYL CHLORIDE

Job Description (J-M No.)	Employee Name	Date Sampled	Air Conc. (ppm)	Federal Standard (ppm)	TWA (1) (ppm)	Sample Time (min.)	Sample Vol. (liters)	Comments
Injection Molding Mixer Operator	Russell Giarraputo	1/8/86	<0.076	1	<0.076	201	10.05	Exposure did not exceed OSHA permissible exposure limi

(1) T.W.A. = The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the actual exposure time to the air contaminant.

TABLE III

Account: J-M Manufacturing
Location: Denison, TX

Date: 1/8/86

AIR SAMPLING DATA - ORGANIC SOLVENTS

Job Description	Employee Name	Air Contaminant	Air Conc. (ppm)	Federal Standard (ppm)	TWA (1) (ppm)	Sample Time (min)	Sample Vol. (liters)	Em	Comments
Permastran Core Coating Operator	Harry Caldwell	MEK	<0.044	200	<0.044	180	36		Exposure level did not exceed OSHA per missible exposure limit.
PVC - Process Operator	Peggy Mitchell	MEK	4.6	200	4.6	342		0.08	Exposure level did not exceed OSHA per missible exposure limit.
		Methylene Chloride	27	500	27				

(1) T.W.A. = The Time Weighted Average concentration for a normal 8 hour workday. This determination is based on the actual exposure time to the air contaminant.

TABLE IV

Account: J-M Manufacturing
Location: Denison, TX

Date: 1/8/86

RESULTS OF NOISE MEASUREMENT

Job Description (J-M No.)	Employee Name	SLM dBA (1)	Dosimeter Test Time (2)	Dosimeter Reading (3)	Full Shift Dose	Equivalent 8-hour TWA dBA (4)	Hearing Protector Worn
PERMASTRAN							
Core Coating Operator	Harry Caldwell	83-85	128 min	13.42%	50.32%	85	Yes
Hydroformer	James Hollingsworth	80-82					Yes
Injection Molding Mixer Operator	Russell Giarraputo	84-85 (background) 90-94 (dumping)	201 min	42.3%	101.01%	90	No
Injection Molding #1 & #2 Operator (N-4IM)	Ray Critens	83-85	195 min	23.24%	57.21%	86	Yes
PERMALOCK		80-85					

(1) SLM dBA: General Radio Sound Level Meter reading in dBA (using "A" weighted scale, slow response).

(2) Test Time: Duration of dosimetry test in minutes.

(3) Dosimeter Reading: Noise dose as the percentage of the daily allowable dose.

(4) 8-hr TWA dBA: 8-hour Time-Weighted Average of dBA noise exposure.

DISCUSSION

An industrial hygiene survey was conducted to reevaluate the willow operator's exposure to asbestos fiber. In addition, air sampling and noise measurements were conducted at Permastran, Permalock, & PVC pipe plants.

Asbestos

The previous sample results (conducted on 9/17/85) indicated that the willow operator was exposed to an excessive level of asbestos fibers. The high exposure level was attributed to improper work practices by an inexperienced worker. The worker has been trained in the appropriate work practices since the last survey. As can be seen from the sample results presented in Table I, the exposure levels have been greatly reduced. The operator was required to wear an approved dust mask. However, the operator has a heavy beard which will prevent him from getting a good face seal with the mask. A growth of beard, sideburns, a skull cap that projects under the facepieces, temple pieces on glasses or the absence of one or both dentures can seriously affect the fit of a mask. To assure proper protection, the workers should be instructed in how to fit the mask properly.

Vinyl Chloride and Organic Solvents

As can be seen from the sample results presented in Tables II & III, the exposure levels to vinyl chloride and organic solvents did not exceed the OSHA permissible exposure limit.

Noise

The results of noise measurements (Table IV) indicate that noise levels in areas measured did not exceed the OSHA permissible exposure limit of 90 dBA (8-hour time-weighted average). The injection molding mixer operator and machine operator were exposed to noise levels exceeding the OSHA action level (85 dBA). These workers have already been included in a hearing conservation program.

CONCLUSION

Implementation of the above mentioned recommendation should assist you in providing a more healthful working environment and reduce the potential for occupational disease.

APPENDIX 1

STANDARDS AND GUIDELINES

A complete listing of the appropriate health standards can be found in the following Appendix. Included in this table are the following:

1. Occupational Safety and Health Standards, Subpart Z, CFR Title 29, Section 1910.1000. These standards represent the legal exposure limits as set by the Department of Labor.

2. The American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV's) refer to exposure limits as set by this organization. These limits, many of which were adopted by the Department of Labor, are the work of professional personnel in governmental agencies and educational institutions engaged in occupational safety and health programs. These TLV's should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations.

3. The National Institute of Occupational Safety and Health (NIOSH) has proposed changes in certain standards based on new evidence in regard to human health. These proposed limits are awaiting review, but should be kept in mind as applicable standards for the near future.

APPENDIX I

STANDARDS AND GUIDELINES FOR AIR CONTAMINANTS

SUBSTANCE	UNITS	Occupational Safety and Health Administration 29 CFR 1910.			American Conference of Governmental Industrial Hygienists (ACGIH)			National Institute for Occupational Safety and Health (NIOSH) Proposed	
		8-hr[1]	Ceiling[3]	Peak[4]	8-hr[1]	Stel[2]	Ceiling[3]	10-hr[1]	Ceiling[3]
Methyl Ethyl Ketone (MEK)	ppm	200	-	-	200	300	-	200	-
Methylene Chloride	ppm	500	1000	2000	100	500	-	75	500
Vinyl Chloride	ppm	1	5	-	5*	-	-	**	-
Asbestos	fibers/cc	2	10	-	2*	-	-	0.1	0.5

* Human Carcinogen.
** Lowest reliable detectable level.

[1] 8-hr or 10-hr - The Time Weighted Average for an 8- or 10-hour work shift in a 40-hour workweek.

[2] Stel - ACGIH's standard maximum concentration to which workers can be exposed for a period up to 15 minutes. (Short Term Exposure Limit).

[3] Ceiling (OSHA) - The concentration that should not be exceeded even instantaneously, except when the standard has a peak value (4).

[4] Peak - Acceptable instantaneous peak exposure above ceiling concentration (4).