October 25, 1976

To: J F Wolf, Plant Manager
Goodyear - North Chicago

During my recent visit to the North Chicago Plant, Monitoring was performed to evaluate atmospheric concentrations of lead and vinyl chloride.

Personnel monitors were placed on two billet-room operators to determine airborne lead exposure of these individuals. Monitoring was performed with Bendix C-115 Permissible Air Sampling Pumps and Millipore 0.45 micron filters. Sampling was conducted at a rate of 2 lpm and the system was calibrated before and after sampling.

Vinyl chloride area monitoring was performed in the Banbury Storage Area using Sipin Pumps and charcoal tubes. This system was also calibrated before and after sampling.

Pertinent data and results of the monitoring are shown in the following table.

ATMOSPHERIC CONCENTRATIONS

SAMPLE NUMBER	SAMPLE IDENTIFICATION	SAMPLE PARAMETERS			ATMOSPHERIC CONCENTRATION
		TIME, Minutes	VOLUME, Liters	CONTAMINANT, Weight	
1-73-20	Personal Monitor Malcolm Jones - Billet Room Op. Dept. 752 - 1050 9-16-76; 9:40AM - 10:45AM Pouring, capping, pulling billets (27). Pot temperature 900° F.	65.	130.00	Lead < 0.01mg.	Lead < 0.08mg/m^3

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MPLE MBER	SAMPLE IDENTIFICATION	SAMPLE PARAMETERS TIME, Minutes	VOLUME, Liters	CONTAMINANT, Weight	ATMOSPHERIC CONCENTRATION
-73-21	Personal Monitor Albert Godbolt - Billet Room Op. Dept 742 - 1089 9-16-76; 9:45AM - 10:45AM Pouring, capping, pulling billets. Pot temperature 990° F.	60.	120.00	Lead <0.01mg.	Lead < 0.08mg/m^3
-73-22	Area Monitor Banbury Storage Area Adjacent to P-17852, Pliovic (PVC) Resin, 9-16-76; 2:21PM - 3:59PM	98.	11.12	VCM <0.5mg	VCM <0.018ppm
-73-23	Area Monitor Banbury Storage Area Adjacent to P-17852, Pliovic (PVC) Resin. 9-16-76; 2:23PM - 4:00PM	97.	9.22	VCM <0.5mg	VCM <0.021ppm

No lead or vinyl chloride was detected in the samples. Atmospheric concentration of the two contaminants were thus less than current recommended limits of 0.2 mg/m^3 for lead and 1 ppm for vinyl chloride. Vinyl chloride concentrations were also less than the "action level" of 0.5 ppm.

Considerable effort is being directed by Goodyear to the improvement of occupational health and safety programs throughout the Company. An important part of this effort is embodied in the Chemical Hazard and Toxicity System (CHAT). Time was spent with Mr LaBrecque reviewing aspects of the CHAT system, applicable to North Chicago, and the system was discussed briefly with you. Basically, CHAT compriss a listing of chemical materials used by a particular Goodyear Plant. Many of the materials are now covered by OSHA Standards (29CFR1910; Subpart Z - Toxic and Hazardous Substances) limiting atmospheric concentrations of the materials, as contaminants, in work room air. Some of these materials, on the North Chicago list, are:

PARTICULATES		VAPORS
Lead	Diphenylamine	Vinyl Chloride (From PVC)
Magnesium Oxide	Resorcinol	Odine (benzene content)
Zinc Oxide	Calcium Oxide	Methyl Ethyl Ketone
Titanium Dioxide	Chromates	Acetone
Zinc Stearate	p-Phenylenediamine	Toluene
Calcium Carbonate	Thiram	Hexane
Mica	Oil Mist	Ethanol
Kaolin	Sodium Hydroxide	Formaldehyde
Cadmium	Antimony Trioxide	Dichlorodifluoromethane
Carbon Black	Phenol	Propane
Amorphous Silica	Bis Phenol A (DGE)	Phthalic Anhydride
		Dibutyl Phthalate
		Various cements (solvents)

These materials, of course, present various degrees of hazard, ranging from "nuisance particulates", with a permissible atmospheric concentration of 15mg/m^3 (calcium carbonate, kaolin, titanium dioxide, zinc stearate), to highly hazardous materials such as lead, with a threshold limit value (TLV) f 0.2mg/m^3, and vinyl chloride with a TLV of 1ppm. The actual risk of employee exposure to materials must be evaluated at the Plant under work conditions and to substantiate these evaluations monitoring data must be relied on in nearly every case. Monitoring frequency, in turn, is based on the hazard of th material and the risk of exposure in handling.

Routine monitoring for lead and vinyl chloride must be continued at the N rth Chicago Plant on a semi-annual basis. Monitoring should be performed by Plant personnel and the monitoring samples forwarded to Corporate Industrial Hygiene, in Akron, for analysis. Results of this program will be incorporated into th CHAT system for reference. Personnel monitoring must be conducted to evaluate employee's lead exposure and each employee, with potential lead exposure, should be monitored, at least annually. Area monitoring for vinyl chloride should be conducted in PVC resin storage areas. Personnel monitoring for vinyl chloride should be performed at operations where PVC resin is handled.

Four documents that should be consulted in relation to the lead monitoring program are:

(1) NIOSH Criteria Document, Occupational Exposure to Inorganic Lead (HSM 73-11010),
(2) OSHA Proposed Standard, Occupational Exposure to Lead (F.R. 10-3-75, p. 45934),
(3) OSHA Program Directive #200-45, Lead and Its Inorganic Compounds,
(4) OSHA Program Directive #200-47, Industrial Hygiene Field Operations Manual, Chapter V (OSHA Standardized Method for Sampling Total Dust. Metal Fume and Liquid Aerosols).

Copies of these documents were left with Mr LaBrecque.

In addition to the air monitoring program for lead, proposed here, biologic monitoring of personnel must continue.

To carry on an adequate air monitoring program, the Plant must maintain a basic inventory of industrial hygiene equipment. It is recommended that the following equipment be made available.

1. Two high-flow sampling pumps for use with filters or impingers. Any of the following are satisfactory.
   a. Bendix C115 Permissible Air Sampling Pump. Cat. No. 3650-10; $375.
   b. Bendix BDX-30 Personnel Monitoring System. Cat. No. 2418875-001; $250.
   c. MSA Model S Monitaire Sampler. Cat. No. 459660; $300.
2. Two low-flow sampling pumps for use with charcoal sampling tubes. Either of the following is satisfactory.
   a. MSA Model C-200 Personnel Sampling Pump. Cat. No. 449850; $250.
   b. Sipin Personnel Sampler Pump Model SP-1; $325.
3. One calibration kit for calibrating low-flow sampling pumps. Sipin Field Calibration Kit; $100.
4. One package (50 filters) Aerosol Analysis Monitors, 37mm. Available from Millipore Corporation, Bedford, Massachusetts 01730. Cat. No. MAWP037A0; $45.
5. Two Aerosol Adapters. Millipore Corporation. Cat. No. XX62 000 04; $30.
6. Two packages charcoal sampling tubes. Available from MSA. Cat. No. 459004; $40.

Bendix equipment is obtainable through National Environmental Instruments, Inc. P.O. Box 590, Warwick, Rhode Island 02888 or, through Twyman-Templeton Company, P.O. Box 748, Akron, Ohio 44309. MSA equipment is available from Mine Safety Appliances Company, 400 Penn Center Boulevard, Pittsburgh, Pennsylvania 15235. Sipin equipment is available from Anatole J. Sipin Company, 386 Park Avenue South, New York, New York 10016 or through Twyman-Templeton Company.

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There has been concern over the potential hazards of chloroprene during the past year. DUPIC, a Neoprene latex used at the Sun Prairie Plant may contain residual amounts of chloroprene. There are several Neoprene items listed on the North Chicago CHAT list that should be investigated for the presence of chloroprene monomer but two items specifically require attention. These are GRIMIC and SCIATIC. These codes are designated as chloroprene.

Usage and handling of all these materials must be reviewed and monitoring performed to determine if any airborne chloroprene monomer is present in work areas. The current OSHA TLV for chloroprene is 25ppm. Atmospheric concentration can be determined using a Drager Multi-Gas Detector with chloroprene detector tubes No. 6718901. This equipment is available from National Mine Service Company, 3000 Koppers Building, Pittsburgh, Pennsylvania 15219. Cost is approximately $125.

I am enclosing a copy of the du Pont bulletin on Toxicity and Safe Handling of Neoprene Latexes for your information.

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The development of the CHAT system is essential to the successful operation of a comprehensive health and safety program throughout Goodyear. North Chicago is one of four Plants in which we are concentrating our efforts for initial implementation of the system. We are anxious to cooperate with you in any way possible to assure that the system is workable and of benefit to all of us.

Please contact us if we can be of help.

R. W. Modrell

Manager
Corporate Industrial Hygiene

R W Modrell
ceb

Enclosure

cc: C A Johnson, MD
R G Cummings
E G LaBrecque
G F Comienski
F V Prus