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**SAMPLING & ANALYSIS PLAN
AEROVOX, INC.
NEW BEDFORD, MASSACHUSETTS**

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TABLE OF CONTENTS

Section	Page Number
1.0 INTRODUCTION & BACKGROUND	Page 1
2.0 PROPOSED SAMPLING ACTIVITIES	Page 1
2.1 General	Page 1
2.2 First Floor Sampling Activities	Page 2
2.2.1 Main Entrance/Hallway	Page 2
2.2.2 Mens Locker Room	Page 3
2.2.3 Pump Room Area	Page 3
2.2.4 Shipping Dock	Page 3
2.2.5 Main Cafeteria	Page 3
2.3 Second Floor Sampling Activities	Page 3
2.3.1 Tank Room (Impregnation Area)	Page 3
2.3.2 Impregnation Racks/Heat Test Oven/Solder Fill Hole	Page 4
2.3.3 Final Test Area	Page 4
2.3.4 Receiving Area	Page 4
2.3.5 Tank Room #2	Page 4
2.3.6 Vending Machine Rooms	Page 4
2.4 Third Floor Sampling Activities	Page 5
2.4.1 Hallway Samples	Page 5
3.0 SAMPLING & ANALYTICAL METHODOLOGIES	Page 6
4.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)	Page 6

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1.0 INTRODUCTION & BACKGROUND

This document presents a sampling and analysis plan prepared to address the concerns raised by the US Environmental Protection Agency (EPA) relative to the presence of polychlorinated biphenyls (PCBs) on the wooden floor in Tank Room #1 at the Aerovox, Inc. plant located in New Bedford, Massachusetts. The EPA personnel visited the plant on June 25, 1997 and collected samples from *stained areas on the wooden floor*. As a result of analysis of the samples, the EPA recommended that Aerovox, Inc. implement protective measures for workers and a comprehensive sampling plan.

On August 27, 1997, a meeting was held at the EPA Region 1 office to discuss the need for a sampling plan. This plan has been developed as a result of discussions at the meeting.

In general, the sampling plan has been designed based on the presence of PCBs in the wood in Tank Room #1 and on the potential migration pathways from that area. The migration mechanisms considered are transport on shoes or wheels of rolling equipment; transport by fluid passing over the floor and through joints or cracks; transport on the hands of employees; and transport by air (i.e., dust).

Section 2.0 of this plan present a discussion of sampling activities that will be conducted and a rationale for the activities. Section 3.0 discusses the laboratory analyses and Section 4.0 discusses QA/QC methodologies.

2.0 PROPOSED SAMPLING ACTIVITIES

This section presents the proposed sampling plan for the Aerovox, Inc. plant. Section 2.1 presents an overall approach used in developing this plan. Each subsequent subsection discusses a separate area of the plant and the locations and rationale used for sample location selection.

2.1 General

As discussed in Section 1.0, the primary concern in developing this plan is the presence of PCBs in the wood floor in Tank Room #1 and transport from that area. The selection of the sampling

locations in various portions of the plant are based mainly on the ability of PCBs to be transported from the Tank Room to the area in question.

The plant was visited in order to view the areas in question, to interview plant staff and to observe worker traffic patterns. Sampling locations were chosen based on information gathered and observations made.

The particularly relevant traffic patterns of concern are the movement of the "tank room" employees, the interaction of other employees with "tank room" operations, and the traffic patterns of other employees. Drawing PL-1, "Plant Layout", shows the overall traffic patterns schematically. All employees enter and exit at the main entrance located on the first floor of the plant. A time clock is located in the hallway adjacent to the main entrance.

Tank Room employees enter the main entrance, turn left and proceed to the mens locker room (there are no female employees in the Tank Room). From the locker room, Tank Room employees proceed through the "lower pump room" to a stairway in the "pump room" and up into the "tank room" or "impregnation" area. Tank room employees use the vending machine room on the second floor adjacent to the tank room and the adjacent mens room. Tank room employees frequently travel from the tank room to get baskets of capacitors from the "impregnation racks".

Tank room employees have been known to travel from the "impregnation" area to Tank Room #2 and from the "impregnation" area to the "Assembly Room", located on the third floor. The pathway to Tank Room #2 is mostly covered with diamond plate steel except for a stretch through the "Final Test" area and a wooden area at the door to Tank Room #2. The pathway to the Assembly Room involves the use of one of two elevators located on the second floor. The pathway on the second floor to the elevators is covered with steel plating except for a potential "shortcut" to the alternate elevator, through the "receiving" area. The pathway on the third floor from the elevators to the Assembly Room is a wooden floor. The Assembly Room has new floor tiles. The elevators have wooden floors.

Aerovox is not proposing to sample areas that are under consideration for epoxy floor sealant.

2.2 First Floor Sampling Activities

2.2.1 Main Entrance/Hallway

Sampling activities in this area are intended to detect PCBs that may have been carried on tank room employees shoes or on their hands. Three wipe samples will be taken from the floor in the hallway (1MHF1, 1MHF2, and 1MHF3) and one wipe sample will be taken from the wall adjacent to the time clock (1TCW1).

2.2.2 Mens Locker Room

Sampling activities in the mens locker room area are designed to detect PCBs that may have been carried on tank room employees shoes or their hands. Two wipe samples will be taken from the floor (1LRF1 & 1LRF2) and two wipe samples will be taken from lockers (1LRL1 & 1LRL2). The locker samples will be taken from the inside and bottom of the locker.

2.2.3 Pump Room Area

This area includes the "Pump Room", the "lower Pump Room" and a portion of the "Impregnation Oil Storage Stockroom" as shown on Drawing PL-1. The primary concerns in this area are transport of PCBs on shoes and potential movement of PCBs through cracks in the tank room floor.

Four wipe samples will be taken from the ceiling (1PRC1 - 1PRC4); four wipe samples will be taken from the ceiling "I-beams" (1PRB1 - 1PRB4); floor wipe samples will be taken at the door to the mens locker room (1PRF1), at the door to the engineering lab (1PRF2) and at ten other locations throughout the area (1PRF3 - 1PRF12).

Air samples in this area will consist of samples in the "pump room", in the "lower pump room" and at the desk area for the pump room operator for gaseous and particulate analysis.

2.2.4 Shipping Dock

The shipping dock has been identified as an area where PCBs were historically shipped. The floor is an old wooden floor. Four floor wipe samples will be taken at this location (1SDF1 through 1SDF4).

2.2.5 Main Cafeteria

In order to determine whether there has been any movement of PCBs into the cafeteria, four floor wipe samples (1CF1 through 1CF4) and two wipe samples from tables (1CT1 & 1CT2) will be taken.

2.3 Second Floor Sampling Activities

2.3.1 Tank Room (Impregnation Area)

Areas of concern are dust on the beams and ceilings and residual on equipment. Two samples will be taken from the lower ceiling (2TRLC1 & 2TRLC2) and a beam (2TRLCB1 & 2TRLCB2); two from the upper ceiling (2TRUC1 & 2TRUC2) and a beam (2TRUCB1 & 2TRUCB2); from the rim

of an impregnation tank (2TRT1); three from the exterior of impregnation tanks (2TRET1 through 2TRET3); ten from visually stained areas on the floor (2TRF1 through 2TRF10); from one of the desks (2TRD1); and from the door jam to the rack area (2TRDJ1).

An air sample will be taken for gaseous and particulate analysis.

2.3.2 Impregnation Racks/Heat Test Oven/Solder Fill Hole

A concern in this area is the possible transport of PCBs from the impregnation area on the shoes of workers, therefore the sampling in this area will be focused on floor and wall samples. Three floor samples (2IRF1, 2IRF2, 2IRF3) will be taken; a wall sample at the door leading into the final test area (2IRD1); a wall sample at the door leading to the front of the building (2IRD2); and a wipe sample from the plastic curtain leading into the assembly area (2IRC1).

2.3.3 Final Test Area

A concern in this area is possible transport of PCBs on the shoes of workers, therefore samples will be taken on the floor in visibly stained areas. Three wipe samples are proposed (2FTF1 - 2FTF3). In addition, a sample will be taken of the wooden floor at the door leading into Tank Room #2 (2FTF4) and a wall sample at the door to Tank Room #2 (2FTD1).

An air sample will be taken for particulate and gaseous analysis adjacent to the fill hole solder area within the final test area.

2.3.4 Receiving Area

Two floor wipe samples will be taken at the gaps between the steel plating in the receiving area (2RAF1 & 2RAF2); a wipe from the steel plating (2RAF3); and one wipe sample taken from the floor in the hall between Vending Machine Room #1 and the Receiving Area (2RAF1).

2.3.5 Tank Room #2

Two wipe samples will be taken on the concrete floor (2TR2F1 & 2TRF2), a wipe sample on the rail at one of the tanks (2TR2R1), and a wipe sample taken from the wall at the telephone in this area (2TR2W1).

2.3.6 Vending Machine Rooms

There are two vending machine rooms located on the second floor. The first being adjacent to the Tank Room. In the vending machine room adjacent to the Tank Room (Vending Machine Room

#1), a wipe sample will be taken of the floor (2VM1F1), a wipe sample taken from the door leading into the hallway (2VM1D1), a wipe sample from a tabletop (2VM1T1), and a wipe sample taken from the wall adjacent to the bulletin board (2VM1W1). In the vending machine room at the remote end of the building (Vending Machine Room #2), a wipe sample will be taken of the floor (2VM2F1).

2.4 Third Floor Sampling Activities

2.4.1 Hallway Samples

Wipe samples of the floor will be taken in the paths from the two elevators leading to the Assembly Room as well as samples from the elevator floors. A total of seven floor wipe samples will be taken (3HF1 through 3HF7).

TABLE 2-1: Summary of Sampling Locations

Area	Floor Wipe	Wall Wipe	Ceiling Wipe	Beam Wipe	Equipment/Furniture Wipe	Air 8 hr. Part.	Air Gaseous
Main Entrance	3	1	0	0	0	0	0
Locker Room	2	0	0	0	2	0	0
Pump Room	12	0	4	4	0	3	3
Shipping Dock	4	0	0	0	0	0	0
Main Cafeteria	4	0	0	0	2	0	0
Tank Room	10	1	4	4	5	1	1
Imp. Rack Area	3	3	0	0	0	0	0
Final Test	4	1	0	0	0	1	1
Receiving	4	0	0	0	0	0	0
Tank Room #2	2	1	0	0	1	0	0
Vending Machine Rooms	2	2	0	0	1	0	0
Third Floor	7	0	0	0	0	0	0
TOTALS	57	9	8	8	11	5	5

3.0 SAMPLING & ANALYTICAL METHODOLOGIES

Sampling and analysis of surface samples shall be completed in accordance with "Verification of PCB Spill Cleanup by Sampling and Analysis", EPA-560/5-85-026, August 1985. NIOSH Method 5503 shall be utilized for air sampling. Any samples taken from walls will be taken at a height of six feet (6') or less.

4.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Sampling QA/QC shall be accomplished by working with EPA and producing duplicate samples. Laboratory QA/QC shall be in accordance with the laboratory QA/QC manual included with this submittal.