HETA 86-184-1719
August 1986
AMTRAK
LONG ISLAND CITY, NEW YORK

NIOSH INVESTIGATOR:
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I. SUMMARY

On February 4, 1986, the National Institute for Occupational Safety and Health (NIOSH) received a request for a Health Hazard Evaluation from the International Brotherhood of Electrical Workers Local 817 for evaluation of potential occupational exposure of Engine House employees to polychlorinated biphenyls (PCBs) at the AMTRAK New York Maintenance Facilities in Long Island City, New York.

An environmental evaluation was conducted at the Engine House on April 29-30, 1986. Results of 12 airborne samples collected from the breathing zone of employees and 10 from the general work areas were below the analytical limit of detection (0.03 microgram/sample). Fourteen wipe samples collected from various work surfaces, office areas, locker/lunch room, and tools to determine relative PCB contamination of surfaces were reported at levels from 1.8 to 760 microgram PCB/square meter (ug/m^2). The highest levels of contamination were found on the walls of maintenance and inspection pits.

Based upon results of the environmental air samples collected during this evaluation, there does not appear to be a potential health hazard associated with airborne exposure to PCB within or near the AMTRAK Engine House. However, wipe samples indicate the presence of PCBs on various surfaces, particularly within the maintenance and access pits. Recommendations for the control of potential dermal exposures and methods for limiting the spread of the PCB contamination to other areas of the maintenance facility and to the homes of the employees are made in Section VII of this report. These include clean up of the contaminated areas and use of disposable protective clothing.

KEYWORDS: (SIC - 4011) Polychlorinated biphenyls (PCB), locomotive and rail-car maintenance

II. INTRODUCTION/BACKGROUND

The Engine House at the Sunny Side AMTRAK maintenance and repair yard is a large, open-ended building with two rail tracks running its entire length (tracks #1 and #2) on one side, with the other side housing various mechanical rooms, a locker/lunch area, and offices. These internal tracks are used for entry of self-powered electrical passenger cars maintained under contract by AMTRAK for the New Jersey Transit Authority. Two external tracks (tracks #3 and #4; "inboard inspection pit") parallel the building and are used for inboard or "pre-inspection" of AMTRAK electrical powered locomotives. The tracks within the Engine House were constructed with access pits between the rails running their entire length. These pits are approximately three feet deep, which allows worker access to the underside of cars and locomotives for inspection and repair. The tracks at the inboard inspection site also have access pits approximately three feet deep and 40 feet long. A total of 12 employees, consisting of electrical mechanics, pipefitters, locomotive tenders, and laborers work in and near the Engine House.

Historically, the Engine House area was subjected to PCB contamination through maintenance of PCB-containing capacitors or, as stated in an Environmental Protection Agency (EPA) inspection report, "transformer drippings". A "drop table" is located near the east entrance of the Engine House below track #2 which is used to remove and repair or replace the under carriage (wheel assembly) of the passenger cars. The drop table pit is approximately 15 feet deep, and persistent drainage problems from rain water runoff in the area frequently resulted in as much as three feet of water collecting in the pit. Ground water was contaminated by passing through PCB-contaminated soil, thus contaminating the pit area. The EPA sampled soil and water in this area, and subsequently a large amount of soil near the entrance to the Engine House was removed and replaced.

Remedial efforts to decontaminate and seal the pit area from ground water seepage were recently undertaken by AMTRAK. On February 4, 1986, NIOSH received a request from Local 817 of the International Brotherhood of Electrical Workers for a health hazard evaluation at the Engine House to determine if these remedial efforts were effective in reducing PCB contamination to acceptable levels. Particular concern was expressed for potential airborne and dermal exposures to PCBs within the drop table pit area and at the inboard locomotive inspection site.

III. EVALUATION DESIGN AND METHODS

Environmental monitoring was conducted during the day shift of April 29 and 30, 1986. To determine the potential for airborne exposures to PCBs, general area and breathing zone (personal) air samples werecollected by drawing air through 150 milligram (mg) florisil tubes attached to battery operated sampling pumps at a pre-calibrated flow rate of one liter per minute for the duration of the shift. To determine the potential for dermal exposure from skin contact of contaminated surfaces, a number of wipe samples were obtained from various working surfaces and tools. These samples were collected by using 3"x3" gauze swatches wetted with 8 milliliter (ml) of hexane, and wiping a 0.25 m^2 area. Bulk samples of soil, floor scrapings, and material from within the pits were obtained and analyzed for PCB content.

For analysis, the florisil tubes were separated into their primary and backup sections. Each section was desorbed in one ml of hexane with sonication for one hour. Gas chromatographic (GC) analysis was performed on a Hewlett-Packard Model 5711A GC equipped with an electron capture detector and accessories for capillary column capabilities. A 25m x 0.31 millimeter fused silica WCOT capillary column coated internally with DB-5 was used with temperature programming from 210ºC (held for two minutes) to 310ºC at a rate of 8ºC/minute. Five percent methane in argon was used as the carrier gas. The injector was operated in the splitless mode of operation. The presence of an Aroclor was determined by comparison with standard samples of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260 obtained from the EPA. Quantitation was performed by summing the peak heights of the five major peaks of the standards and comparing those sums of the same peak heights in the sample. The instrumental limit of detection was 0.03 micrograms (ug)/sample.

A bulk oil sample from the drop table pit area was prepared for analysis by initially weighing a 15 milliliter (ml) screw cap test tube. One-tenth ml of the oil was added to the tared test tube. The test tube was weighed a second time and the weight of the oil was calculated. Iso-octane was added to make a 20 mg/ml solution of oil in iso-octane. Two drops of concentrated sulfuric acid were added to the solution and mixed with an evapo-mix for about three minutes. The solution was allowed to stand undisturbed for one hour permitting the sulfuric acid and particulates to settle out. An aliquot of the solution was decanted into a 1 ml GC vial sealed with a Teflon-lined screw cap. The remaining bulk samples (soil, floor scrapings, etc.) were prepared according to Method SW 846 then transferred to GC vials. Subsequent GC analysis was identical to that previously described for the environmental air samples.

The gauze samples were prepared for analysis by extraction in 40 ml of hexane with shaking for 30 minutes. The hexane was transferred to a concentrator tube and the gauze was rinsed twice with 10 ml of hexane. The concentrated hexane eluent was cleaned on a florisil column and the sample was brought to a final volume of three ml. GC analysis was the same as previously described. IV. EVALUATION CRITERIA

A. Toxicology

PCBs are chlorinated aromatic hydrocarbons that were manufactured in the United States from 1929 to 1977 and marketed under the trade name Aroclor.[1] PCBs found wide use because they are heat stable, resistant to chemical oxidation, acids, bases and other chemical agents, stable to oxidation and hydrolysis in industrial use, have low solubility in water, low flammability and favorable dielectric properties. Additionally, they have low vapor pressure at ambient temperatures and viscosity-temperature relationships which were suitable for a wide variety of industrial applications. PCBs have been used commercially for insulating fluids for electrical equipment, hydraulic fluids, heat transfer fluids, lubricants, plasticizers, and components of surface coatings and inks.[2]

The different PCB mixtures marketed under different trade names are often characterized by a four-digit number. The first two digits denote the type of compound, with "12" indicating biphenyl, and the latter two digits giving the weight percentage of chlorine, with the exception of Aroclor 1016. In other commercial preparations the number code may indicate the approximate mean number of chlorine atoms per PCB molecule (Phenoclor, Clophen, Kanechlor) or the weight percentage of chlorine (Fenclor). All positive results of samples collected within the AMTRAK facility were mixtures of Aroclors 1254 and 1260, which had historical use in electrical capacitors, electrical transformers, and hydraulic fluids.

PCB residues are detectable in various tissues of persons without known occupational exposure to PCBs. Mean whole blood PCB levels range from 1.1 to 8.3 parts per billion (ppb), while mean serum PCB levels range from 2.1 to 24.2 ppb.[3] Mean serum PCB levels among workers in one capacitor manufacturing plant studied by NIOSH ranged from 111 to 546 ppb, or approximately 5 to 22 times the background level in the community. Mean serum PCB levels among workers in transformer maintenance and repair typically range from 12 to 51 ppb, considerably lower than among workers at capacitor manufacturing plants.[4]

PCBs' toxicity is complicated by the presence of highly toxic impurities, especially the polychlorinated dibenzofurans (PCDFs)[5], which vary in amount between PCBs from different manufacturers,[6] and PCBs of different percent chlorination,[7] and which are found in increased concentration when PCBs undergo incomplete pyrolysis.[8,9] As well, different animal species, including man, vary in their pattern of biologic response to PCB exposure.[10]Two human epidemics of chloracne, "Yusho" and "Yu-cheng," from ingestion of cooking oil accidentally contaminated by a PCB heat-exchange fluid used in the oil's pasteurization, have been described in detail.[11,12] Although PCBs were initially regarded as the etiologic agent of Yusho, analyses of the offending cooking oil demonstrated high levels of polychlorinated dibenzofurans and polychlorinated quarterphenyls, as well as other unidentified chlorinated hydrocarbons, in addition to PCBs.[13]

The results of individual studies of PCB-exposed workers are remarkably consistent. Among the cross-sectional studies of the occupationally exposed, a lack of clinically apparent illness in situations with high PCB exposure seems to be the rule. Chloracne was observed in recent studies of workers in Italy,[14] but not among workers in Australia,[15] Finland,[15] or the United States.[4,17-19] Weak positive correlations of PCB exposure or serum PCB levels have been reported with SGOT[14,16-18], GGTP(4,14,18,19), and plasma triglycerides.[4,20,21] Correlations with plasma triglycerides[22] and with GGTP[23] are also found among community residents with low level PCB exposures. Causality cannot necessarily be imputed to PCBs in these cross-sectional studies.

The International Agency for Research on Cancer has concluded that the evidence for PCBs' carcinogenicity to animals and to humans is limited. "Certain polychlorinated biphenyls are carcinogenic to mice and rats after their oral administration, producing benign and malignant liver neoplasms. Oral administration of polychlorinated biphenyls increased the incidence of liver neoplasms in rats previously exposed to N-nitrosodiethylamine"[24].

In a mortality study among workers at two capacitor manufacturing plants in the United States[25] a greater than expected number of observed deaths from cancer of the liver and cancer of the rectum were noted. Neither increase was statistically significant for both study sites combined. However, in a recent unpublished update of this study, with follow-up through 1982, the excess in liver/biliary tract cancer was statistically significant (5 observed vs. 1.9 expected)/ whereas, the excess in cancer of the rectum was still elevated but not statistically significant. In a mortality study among workers at a capacitor manufacturing plant in Italy[26] males had a statistically significant increased number of deaths from all neoplasms. When analyzed separately by organ system, death from neoplasms of the digestive organs and peritoneum (3 observed vs. 0.88 expected) and from lymphatic and hematopoietic tissues (2 observed vs. 0.46 expected) were elevated. This study was recently expanded to include all workers with one week or more of employment with vital status follow-up through 1982. In the updated results, there was a statistically singificant excess in cancer among both females (12 observed vs. 5.3 expected) and males (14 observed vs. 7.6 expected). In both groups there were non-significant excesses in lymphatic/hematopoietic cancer and a statistically significant excess in digestive cancer among males (6 observed vs. 2.2 expected). Unfortunately, not enough information is provided to determine the risk specifically for liver cancer.

B. Occupational Criteria

As a guide to the evaluation of the hazards posed by work place exposures, NIOSH field staff employ environmental evaluation criteria for assessment of a number of chemical and physical agents. These criteria are intended to suggest levels of exposure to which most workers may be exposed up to 10 hours per day, 40 hours per week for a working lifetime without experiencing adverse health effects. It is, however, important to note that not all workers will be protected from adverse health effects if their exposures are maintained below these levels. A small percentage may experience adverse health effects because of individual susceptibility, a pre-existing medical condition, and/or a hypersensitivity (allergy). In addition, some hazardous substances may act in combination with other work place exposures, the general environment, or with medications or personal habits of the worker to produce health effects even if the occupational exposures are controlled at the level set by the evaluation criterion. These combined effects are often not considered in the evaluation criteria. Also, some substances are absorbed by direct contact with the skin and mucous membranes, and thus potentially increase the overall exposure. Finally, evaluation criteria may change over the years as new information on the toxic effects of an agent become available.

The primary sources of environmental evaluation criteria for the work place are: 1) NIOSH Criteria Documents and recommendations, 2) the American Conference of Governmental Industrial Hygienists' (ACGIH) Threshold Limit Values (TLV's), and 3) the U.S. Department of Labor (OSHA) occupational health standards. Often, the NIOSH recommendations and ACGIH TLV's are lower than the corresponding OSHA standards. Both NIOSH recommendations and ACGIH TLV's usually are based on more recent information than are the OSHA standards. The OSHA standards also may be required to take into account the feasibility of controlling exposures in various industries where the agents are used; the NIOSH-recommended exposure limits, by contrast, are based primarily on concerns relating to the prevention of occupational disease. In evaluating the exposure levels and the recommendations for reducing these levels found in this report, it should be noted that industry is legally required to meet those levels specified by an OSHA standard.

A time-weighted average (TWA) exposure refers to the average airborne concentration of a substance during a normal 8- to 10-hour workday. Some substances have recommended short-term exposure limits or ceiling values which are intended to supplement the TWA where there are recognized toxic effects from high short-term exposures.

NIOSH recommends that airborne exposure to PCBs in the work place be limited to at or below the minimum reliable detectable concentration of 1 microgram of PCB per cubic meter of air (ug/m^3) (using the recommended sampling methods) determined as a TWA for up to a 10-hr workday, 40-hr workweek. The NIOSH Recommended Exposure Limit (REL) was based upon the findings of adverse reproductive effects in experimental animals, on the conclusion that PCBs are carcinogenic in rats and mice and, therefore, potential human carcinogens in the work place, and on the conclusion that human and animal studies have not demonstrated a level of exposure to PCBs that will not subject workers to possible liver injury.[27]

The Occupational Safety and Health Administration (OSHA) promulgated its permissible exposure limit (PEL) of 1 mg/m^3 for airborne chlorodiphenyl products (PCBs) containing 42% chlorine and 0.5 mg/m^3 for chlorodiphenyl products containing 54% chlorine determined as 8-hr time-weighted average (TWA) concentrations based on the 1968 Threshold Limit Values (TLVs) of the American Conference of

Governmental Industrial Hygienists (ACGIH).[28] The TLVs, which have remained unchanged at 1 mg/m^3 and 0.5 mg/m^3 through 1986, are based on the prevention of liver injury in exposed workers. The ACGIH Short Term Exposure Limits (STEL) for airborne chlorodiphenyls are 2 mg/m^3 and 1 mg/m^3 for 42% and 54% chlorine products, respectively. The OSHA PEL and the ACGIH TLV and STEL values include a "Skin" notation which refers to the potential contribution to overall exposure by the cutaneous route, including the mucous membranes and eyes, by either airborne or direct skin contact with PCBs.

There are no standard evaluation criteria (RELs, PELs, or TLVs) for industrial surfaces contaminated with PCBs. In July of 1985, an advisory panel was convened to provide guideline recommendations for air and surface clean up for PCBs, dioxins, and furans for the State Highway Department Building in Santa Fe, New Mexico. Both NIOSH and the Environmental Protection Agency were represented on this panel. These guidelines were based in part on similar guidelines for other office buildings in Binghamton, New York, and San Francisco, California, and recent scientific estimates of the health risks for exposure to these compounds. They were intended to maintain the risk for developing cancer below one in one million for individuals spending a working lifetime (30 years) in the contaminated building. These guidelines included specifications for PCB concentrations not to exceed 50 ug/m^2 on "working" surfaces. Examples of working surfaces included "high contact" items such as desk tops and chairs. However, application of these guidelines to the industrial environment is difficult. Recent recommendations by NIOSH (June 1986) for surface clean up of PCBs in an aircraft maintenance facility proposed 250 ug/m^2 for low contact surfaces, and 100 ug/m^2 for actual aircraft parts. In interpretation of these guidelines and proposals, it should be noted that there is a great deal of scientific uncertainty about the potential human risks from exposure to PCBs.

C. Environmental Criteria

Prior to September 7, 1973, PCBs were not controlled or listed as "priority" toxic pollutants. At that time, a list of toxic pollutants was published by the Environmental Protection Agency (EPA) (38 FR 24344) and subsequently, proposed toxic pollutant effluent standards affecting that list were published. At the same time, NIOSH published its initial Toxic Substances List which essentially paralleled the EPA effort. In 1976, the EPA published a list of Policies and Procedures for a Continuing Planning Process on which designation of agencies, areas, and standards were set forth. Following this, further standards and definitions were published (1977) in which ambient water criteria in navigable waters were set at 0.001 ug PCBs/liter. In 1978, the PCB section was designated 40 CFR part 761 and expanded to cover capacitors, pesticides, tobacco products, food, drug, food additive, cosmetic or devices that may be contaminated with PCBs. Distribution in commerce, disposal, municipal solid wastes, fluorescent light ballasts, and many other items which might involve PCBs were introduced and elaborated upon.

At roughly the same time, the EPA established the Toxic Substances Control Act (TSCA; PL94-469). The standards set forth in the TSCA (Section 6(e)) prohibit the manufacture, processing, distribution, and most uses of PCBs (40 CFR 761). Distribution and use are permitted for "totally enclosed" transformers and capacitors, chemical substances containing less than 50 ppm PCBs, and certain authorized uses in "non-totally enclosed" systems.

V. RESULTS AND DISCUSSION

Twelve full-shift breathing zone and 10 general area environmental air samples were collected over the duration of the day shifts on March 29 and 30. A representative number of employees working near and in the drop table pit area, the inboard inspection area, and at other areas throughout the Engine House were monitored. All results were reported as below the analytical limit of detection (0.03 ug for the seven aroclors). Based upon the average volume of air sampled, this represents airborne concentrations (if at all present) of less than roughly 0.08 ug/m^3, or less than 10% of the NIOSH Recommended Exposure Limit (NIOSH REL = 1 ug/m^3). Table 1 presents sample locations and volumes of sampled air.

Fourteen wipe samples were collected to determine relative degrees of surface PCB contamination. Table 2 presents sample locations and levels of contamination, in ug PCB/m^2. The areas of highest surface contamination were the wall of the drop table pit, and the wall of the service pit for track #2, near the center of the Engine House, both reported at 760 ug/m^2. These samples were collected from locations which were visibly contaminated with a viscous, oily residue apparently seeping from small cracks and other defects in the walls. A bulk sample of this oily material showed a PCB content of 240 ppm. A wipe sample collected from the drop table pit wall (west side) which was not contaminated with the oily substance showed a contamination level of 172 ug/m^2.

Prior to the NIOSH evaluation, the drop table pit area had undergone clean up, with the pit walls and floor receiving two coats of primer paint and one coat of epoxy. The area surrounding the pit had been pressure grouted and cracks in the pit walls were repaired. However, results of the wipe sampling and visual observation of the drop table pit walls, (particularly the east wall) and certain areas of the service pits for tracks #2 and #3 indicate that PCB contaminated residue is continuing to penetrate into these areas.

One additional wipe sample showed a relatively high PCB level of 252 ug/m^2. This sample was collected on the floor outside the supervisor's office on the second level of the engine house from a visibly dirty area. The PCB contamination was most likely due to a history of tracking contaminated soil and oils from the higher contaminated areas, possibly prior to the clean up efforts.

All other wipe samples collected from the locker/lunch room, mechanical rooms, desk tops, and tools were reported at significantly lower concentrations (less than 100 ug/m^2; Table II).

Results of nine bulk samples are presented in Table III. The only bulk with significant PCB content was the oily substance collected from the wall of the drop table pit (240 ppm). All other samples, primarily scrape and soil samples from the Engine House area, ranged from 10 to 36 ppm.

Based upon the results of the personal and general area environmental air samples, there does not appear to be a hazard associated with airborne PCBs within or near the AMTRAK Engine House. Wipe and bulk sample results indicate that certain areas of the Engine House continue to contain relatively high levels of PCB surface contamination (drop table pit area and access pits between tracks within the building). A wipe sample collected from a visibly dirty hallway indicates that tracking of PCBs from contaminated work areas has contaminated the floors. This is likely to be the case for most of the floor surfaces in the offices, hallways, and equipment rooms within the Engine House.

Recent renovations of the drop table will reportedly reduce or eliminate the necessity for workers to enter the drop table pit area. However, if unusual circumstances or maintenance activities require their entry, appropriate measures for protection against skin exposure must be taken. Routine maintenance activities requiring entry into the access pits for the tracks inside the Engine House will also require protective measures. These protective measures will be pre-empted if the surfaces within the pit areas are decontaminated. Contamination of floors and hallways within the Engine House probably do not present a significant PCB exposure situation to the Engine House employees, because these are primarily considered as low contact surfaces for bare skin. However, unnecessary spread of PCBs to other areas of the Maintenance and Repair facility may result from these contaminated floors, including other offices and automobiles. Also, the possibility of the spread of PCBs to the home environment warrants consideration.

VI. RECOMMENDATIONS

Further clean up efforts of the drop table pit and the access pit for tracks #2 and #3 should be made. Although there is considerable uncertainty surrounding the potential health effects of PCBs, in addition to the problems of assigning an appropriate level of acceptable PCB surface contamination, these clean-up efforts should be made to minimize any unnecessary employee exposures and reduce the potential for spreading PCBs to other work areas and homes of employees. Clean up should be aimed primarily at locations with oily residues seeping from the pit walls, and floors which are visibly contaminated with tracked material. In the interim, disposable coveralls, boots, and gloves made of material impervious to PCBs, such as TyvekT should be provided to employees when entrance to the drop table pit and the access pits inside the Engine House is necessary. Waste receptacles for the disposable garments, placed near the site of use, should protect against the spread of PCBs through tracking and clothing contamination.

VII. REFERENCES

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VIII. AUTHORSHIP AND ACKNOWLEDGEMENTS

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IX. DISTRIBUTION AND AVAILABILITY OF REPORT

Copies of this report are currently available upon request from NIOSH, Division of Standards Development and Technology Transfer, Publications Dissemination Section, 4676 Columbia Parkway, Cincinnati, Ohio 45226. After 90 days, the report will be available through the National Technical Information Service (NTIS), 5285 Port Royal, Springfield, Virginia 22161. Information regarding its availability through NTIS can be obtained from NIOSH Publications Office at the Cincinnati address. Copies of this report have been sent to:

1. AMTRAK
2. International Brotherhood of Electrical Workers Local 817
3. NIOSH, Region II
4. OSHA, Region II

For the purpose of informing affected employees, copies of this report shall be posted by the employer in a prominent place accessible to the employees for a period of 30 calendar days.

TABLE I

AIRBORNE PCBs
AMTRAK - SUNNY SIDE YARD
LONG ISLAND CITY, NEW YORK

HETA 86-184
MARCH 29-30, 1986

Operation/Location	Date	Volume (l)	Concentration
Personal (Breathing Zone) Samples			
Foreman/All Engine House Areas	6/29/86	391	ND*
Machinist/Inboard Inspection	6/29/86	388	ND
Machinist/Inside Engine House	6/29/86	381	ND
Electrician/Inside Engine House	6/29/86	401	ND
Laborer/Inboard Inspection	6/29/86	385	ND
Machinist/Inboard Inspection	6/29/86	383	ND
Pipefitter/Inside Engine House	6/29/86	385	ND
Engine Attendant/Inboard Inspection	6/29/86	382	ND
Electrician/Inboard Inspection	6/30/86	371	ND
Machinist/Inboard Inspection	6/30/86	364	ND
Machinist/Inside Engine House	6/30/86	362	ND

(Cont.)

TABLE I (Cont.)

AIRBORNE PCBs
AMTRAK - SUNNY SIDE YARD
LONG ISLAND CITY, NEW YORK

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MARCH 29-30, 1986

Operation/Location	Date	Volume (l)	Concentration
Electrician/Inside Engine House	6/30/86	367	ND
<u>General Area Samples</u>			
Drop Table/North Side	6/29/86	385	ND
Inboard Inspection/Between tracks	6/29/86	357	ND
Drop Table/North Side	6/30/86	359	ND
Lunch Table/Locker Room	6/30/86	366	ND
Inboard Inspection/Between tracks	6/30/86	356	ND
Inboard Inspection/In #4 pit	6/30/86	354	ND
Inboard Inspection/In #3 pit	6/30/86	355	ND
Near Drop Table/Between Tracks	6/30/86	321	ND
Drop Table/In Pit, South End	6/30/86	325	ND
Drop Table/In Pit, North End	6/30/86	324	ND

*ND = None Detected; based upon sampled air volumes, this corresponds to airborne concentrations of less than 0.08 - 0.09 ug/m^3 (NIOSH REL = 1.0 ug/m^3).

TABLE II

SURFACE SAMPLE RESULTS FOR PCBs
AMTRAK - SUNNY SIDE YARD
LONG ISLAND CITY, NEW YORK

HETA 86-184
MARCH 29-30, 1986

Location	Concentration (ug/m^2)
Administrative Offices - lunch table	7.6
Administrative Offices - desk top	1.8
Engine House - lunch table	5.2
Engine House - refrigerator door in locker/lunch room	10.4
Engine House - upstairs floor outside supervisor's office	252
Engine House - upstairs; supervisor's desk	7.2
Engine House - inspection pit wall (#2 track, west end)	760
Engine House - drop table pit wall (east)	760
Engine House - drop table pit wall (west)	172
Engine House - hand rail to drop pit (not m^2 surface)	64
Inboard inspection - hand rail to upper engine access stand	34.4
Inboard inspection - handle of brush used to wash windows	11.6
Engine House - surface of work bench located between tracks	92
Engine House - electricians work bench	34

TABLE III

BULK SAMPLE RESULTS FOR PCBs
AMTRAK - SUNNY SIDE YARD
LONG ISLAND CITY, NEW YORK

HETA 86-184
MARCH 29-30, 1986

Location	Concentration (PPM)
Floor scrape at East end of Engine House; between tracks	36
Wall of drop table pit; oil seeping from crack	240
Floor scrape in drop table pit - south end near wall	25
Soil from 15' outside east end of Engine House near track #2	16
Soil from 30' outside east end of Engine House near track #2	21
Soil near inboard inspection next to track #3	21
Soil near inboard inspection next to track #4	21
Sediment from inboard inspection pit on track #3	9.6
Sediment from inboard inspection pit on track #4	18