



COLLEGE OF MEDICINE, EDEN AND BETHESDA AVENUES
KETTERING LABORATORY
DEPARTMENT OF ENVIRONMENTAL HEALTH

November 25, 1970

Subcommittee on Surveillance
of Population Lead Levels
c/o Dr. Robert J.M. Horton
Health Effects Research Program
National Air Pollution Control Administration
411 West Chapel Hill Street
Durham, North Carolina 27701

Gentlemen:

Although it had been agreed at our meeting of October 8, 1970, that "Seven-City" data were to remain unpublished at this time, subsequent communications between members of the Subcommittee led to the release of data to the California Air Resources Board. At hearings before the Board on November 9, the Laboratory provided: 1) the annual lead and particulate averages for each Los Angeles site, 2) the lead average at each of our other sites for which there is an associated population study group, and 3) the blood lead levels, uncorrected, for each of these groups.

The air levels, blood levels, and fecal lead levels are presented in Table I. The following comments are warranted: 1) the current air sampling is obviously not completed, and the statements are based on only those samples which have analyzed, 2) the fecal samples represent only a 10-day period out of the year, 3) one Los Alamos and one Okeana metabolic donor was excluded from the group. The Okeana donor excreted more than three times as much lead as did all the other 19 donors together; the Los Alamos donor excreted almost as much lead over 10 days as did all the other 19 women combined in this series. Significant wild game intake was apparently responsible for high lead excretion in Los Alamos, and the Okeana donor utilized a galvanized metal cistern for her water supply.

These metabolic data, while not examined statistically, at least show that blood lead levels in Los Alamos, for example, are not what they are because of a high dietary lead level. At the other end of the spectrum, the Pasadena blood lead levels are not "low" because of low dietary lead which might have "made up for" a high atmospheric lead level. Actually a case could be made for associating the blood lead levels with the dietary lead intake. Those who are mathematically inclined will eventually enjoy manipulating these numbers.

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Page 2
Subcommittee on Surveillance
Durham, North Carolina
November 25, 1970

At the California hearings the point was raised that women who live primarily indoors are not exposed to the atmospheres being examined, i.e., walls and ventilation systems filter out the general neighborhood lead. We have some rather casual data on this point which suggest that indoor air levels are approximately 70% of outdoor air levels, although in some cases indoor levels have been higher than those outdoors. We believe that it would be a relatively simple matter to verify this point through simultaneous indoor-outdoor sampling under various circumstances. If this is not necessary because of work that some of you may have done or know about, please let me know.

At the October meeting there was a request for the heights of each station. We have not measured the heights at this time, but provide an estimate in Table II. These estimates will be verified by measurement when the stations are taken down in the spring.

Blood and metabolic sampling in Chicago went smoothly: Lombard N=208; Bridgeport N=148. All air sampling stations and collections are proceeding without difficulty. The Washington problems have been corrected through the recruitment of a new monitor, who is doing a faithful and accurate job. We are, nevertheless, trying to determine the whereabouts of Washington samples from mid-July through September. The ex-monitor tells us that he put these samples in the mail at various times, but they seem never to have arrived in Cincinnati. This is a little odd since we have never had trouble with loss of any other samples, and the Washington material would fill six or eight mailing tubes, none of which we have seen. If these samples are not received, we have the choice of running through summer 1971 or leaving out data for 2 1/2 summer months. I have some bias in favor of the second alternative.

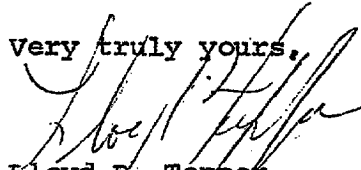
At our last meeting the point was again raised that a population examined in 1961-62 should be re-examined this year. We indicated that Philadelphia and Cincinnati police officers who had been sampled before would be contacted again for the same purpose. The question was raised as to whether or not the Philadelphia suburban data from 1961-62 might be reasonably compared with some of the more recent material from that city. We have looked over the home addresses of 87 persons, men, women, and children, who were classified as Philadelphia suburban in 1961. These people live in the Pennypack Park section of northeastern Philadelphia, and do not seem directly comparable to any groups which we have studied. Their homes are within the city limits, and the atmosphere reflects movement of air from the center of the city. Site 15 is located, as you will recall, at the far side of a small shopping area and playground in the Pennypack area, but all of the people sampled lived to the west of this instrument, up to three miles away.

Page 3
Subcommittee on Surveillance
Durham, North Carolina
November 25, 1970

Whether or not any useful comparisons with this group are possible is a discussable point.

After the first of the year we anticipate having improved access to statistical manpower and should be able to examine age, smoking, and analytical methods in a more satisfactory manner.

Very truly yours,



Lloyd B. Tepper
Associate Director

LBT:pab

TABLE I

Selected Air, Blood, and Fecal Lead Levels

AIR	$\mu\text{G}/\text{M}^3$	N	BLOOD, $\mu\text{G}/100\text{g}$	Feces, mg/10d.
Los Alamos	0.17	204	15.4	1.12
Okeana	0.32	166	15.8	0.98
Port Washington	1.04	203	15.4	1.15
Ardmore	1.15	156	18.0	1.25
Washington	1.50	224	19.2	1.34
Rittenhouse Sq.	1.67	137	20.6	(from Ardmore)
Greenwich vil.	2.26	142	16.5	(from Port Washington)
Pasadena	3.39	209	17.6	1.21

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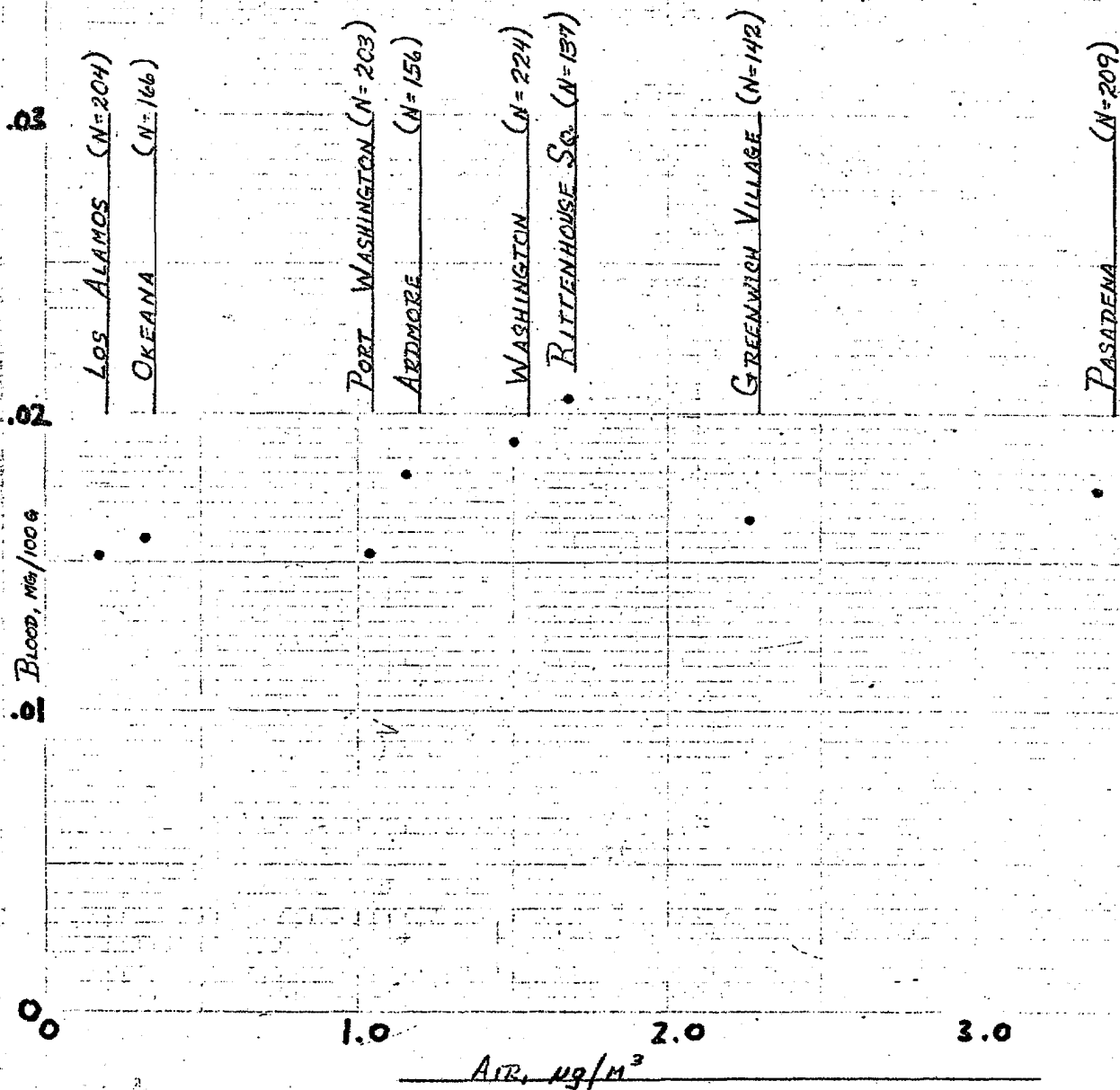


TABLE II

Estimated Height Above Ground Of Base Of Station (feet)

Houston

Site 50	0 feet	FD Cullen
51	40	Health Dept.
52	14	Cathedral
53	20	Coliseum
54	0	FD Market
55	0	FD Settegast
56	0	Latexa Dr.

Chicago

Site 60	36 feet	Fenger High School
61	36	Hyde Park High School
62	24	Lindblam High School
63	24	Benton House
64	110	GSA
65	52	Austin High School
66	14	Hammerschmidt (Lombard)
67	40	Lakeview High School
68	40	Taft High School

Washington

Site 70	16 feet	Health Dept. (Arlington)
71	72	Municipal Building
72	0	CAMP
73	36	Nevel Thomas
74	0	Swiss
75	0	Jarrett Farm
76	0	Children's Conv. Hosp.
77	0	Bethesda

New York

Site 81	48	Bronx High School
82	48	121st St. Lab.
83	48	Jackson High School
84	60	Brooklyn College
85	40	Northern Disp.
86	16	St. Anne (S.I.)
87	0	Mohlenhoff (S.I.)
88	24	South Salem (P.W.)
89	20	Daly School (P.W.)

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