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5-YEAR LEAD STUDY

At your request a special statistical analysis has been conducted for data from those urine and blood specimens which have been analyzed for lead through 3/7/72.

A summary of this basic data is given in Table I. The data in this table do not represent the same subjects each year because: (1) some subjects left during the course of the study, (2) replacement subjects were added, (3) specimens were not obtained on every subject every year. It has been shown in analysis of the first three years of this study that differences exist in lead levels according to sex, job classification and location. Because the mix of these factors may not have remained constant in the data as reported in Table I, a second analysis was run on the data from only those subjects with urine lead specimens for all five years. For analysis of blood data, the number of subjects was small to start with and about one third of the 1971 blood specimens have not yet been analyzed for lead. Therefore the blood data was analyzed for those subjects who had blood specimens taken the first four years of the study. Data is also included for 1971 blood lead on those subjects who had blood specimens taken for all five years of the study. Since the subjects remain constant from year to year in this analysis it is assumed that any bias due to sex, job classification or location would be eliminated. The results of this analysis are presented in Table II. Histograms were also obtained indicating distribution of the data in Table II (see enclosure). Tables III and IV present the urine and blood data by location for each year of the study.

It should be noted in dealing with these results that limits have been set at both the lower and upper ends of the data reported. At the lower end of the data the limits were controlled by the sensitivity of the chemical analysis with 10 μgm Pb/liter urine or 10 μgm Pb/100 ml blood reported for all determinations of 10 μgm or less.

The limits set at the upper end of the data are 150 μgm Pb/liter urine and 70 μgm /100 ml blood. Throughout the experiment whenever lead values higher than these limits were obtained a repeat specimen was requested.

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During the five years of the study, 56 repeat urine samples and 18 repeat blood specimens were requested because of high lead values. Table V gives a yearly accounting of number of high values. While repeat specimens were actually obtained for only about half of the number requested, only five subjects had high lead levels on the repeat specimens.

Inquiries about these five subjects revealed extraneous reasons for the high lead values such as consumption of "moonshine". It was assumed that the rest of the high values represented either contamination of the sample or analytical error, therefore these values were all excluded from the current data analysis. A record has been kept of all high lead values and the significance of these will be considered in the final interpretation of the study.

Finally I wish to stress that the data reported here are not complete. For the 1970 and 1971 data, it was necessary to bypass some of the checks normally conducted to assure accuracy of the data in order to meet the deadline. The final analysis of the study may therefore change some of the values reported here, however it is not anticipated that the overall picture would change.

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Enclosures (5)

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