EMFRPEP-6/PHASE 1

SURVEY OF PERSONAL MAGNETIC FIELD EXPOSURE
Phase I : Pilot Study and Design of Phase II

EMF RAPID PROGRAM
ENGINEERING PROJECT #6

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SUMMARY

The "Survey of Personal Magnetic Field Exposure" is one of several engineering research projects of the EMF Research and Public Information Dissemination (RAPID) Program. The objective of this project is to characterize personal magnetic field exposure of the general population, by performing personal exposure measurements for a sample of the population. The project is in two phases. Phase I was designed to develop survey methodologies and to conduct a small scale survey. Phase II will include a large scale survey using the methodology developed in Phase I. To achieve its goal, Phase I included two separate tasks: (1) A survey of personal magnetic field exposure on a sample of 200 randomly chosen adult individuals in the United States ("200-person statistical sample"), and (2) the development and testing of the protocol for Phase II including selection of instrumentation and exposure metrics, assessment of methods of recruitment of the participants to the survey, and assessment of cost and quality of the data that would be obtained using various protocols. As a part of this task, personal exposure measurements were made on a sample of conveniently chosen individuals, including infants, toddlers, school age children, and adults ("convenience sample").

The recommendations for Phase II are derived from the analysis of the 200-person statistical sample survey, from the experience in conducting the survey, from the work performed to develop the protocol, and from the feedback received from the individuals who were a part of the convenience sample.

200-Person Statistical Survey

The protocol for the 200-person statistical sample consisted of the following steps: (1) Households were randomly selected from listed telephone numbers. (2) An introductory letter was sent and, after a few days, repeated telephone calls were made until a contact was made. The respondent was interviewed in order to select and recruit a household member. (3) The persons who gave an initial consent to participate in the measurements were sent a Consent Form to be signed and returned and detailed explanations about the purpose and the nature of the measurement survey. (4) Upon return of the signed Consent Form, the participants were sent a package containing a personal exposure meter, a diary, a questionnaire, a fifty-dollar check as compensation for their participation, and detailed instructions on how to use, wear, and mail back the meter. (5) The participants wore or kept the meter with them for 24 hours from the moment when they first turned the meter on. Magnetic field values were recorded and stored in the meter's memory every four seconds. The participants wrote on a diary the time when certain activities started or ended. After 24 hours of measurements, the meter was mailed back. (5) Upon return of the meter, the meter's data were transferred to a computer file. The information from the diary was merged with the magnetic field data. The magnetic field exposure for the entire 24 hours and, separately, for different activities were calculated. (6) A letter was sent to the participants with the results of their individual measurements. (7) The data were placed in a database and subsequently analyzed.

Based on the time and event data in the activity diary, the measurements in each data file were partitioned into the following categories: at home not in bed, at home in bed, at work, at school, during travel, and other. The following measures of the magnetic field were extracted for each subject and for each type of activity: time spent for the activity, mean, standard deviation, geometric mean, geometric standard deviation, maximum, 50th percentile (median), 75th percentile, 90th percentile, 95th percentile, 99th percentile, time spent below 0.50 mG, time spent between 0.50 and 1 mG, time spent between 1 and 2 mG, time spent between 2 and 5 mG, time spent between 5 and 10 mG, time spent between 10 and 20 mG, time spent between 20 and 50 mG, and time spent above 50 mG. The data set produced by this project is to be included in the EMF Measurement Database. The available data products are a file with information pertaining to work, residence, and power line; and a file with all the measures of magnetic field. We present here a statistical summary of the 200-person sample. Because the survey is a small pilot study, these data describe only the sample; they are not inferences to the general US population.

The 24-hour time weighted average (TWA) results are in Tables S.1 and S.2

Table S.1 **Number of Survey Participants with TWA Exceeding Given Values**

24-Hour TWA (mG)	Exposures Exceeding Given Value (Number)	Exposures Exceeding Given Value (%)	24-Hour TWA (mG)	Exposures Exceeding Given Value (Number)	Exposures Exceeding Given Value (%)
0.0	201	100	4.0	7	3.5
0.5	162	80.6	5.0	5	2.5
1.0	105	52.2	7.5	2	1.0
2.0	37	18.4	10	1	0.5
3.0	16	8.0			

Table S.2 **Descriptive Statistics of 24-Hour TWAs**

Parameter	Result	Parameter	Result
Minimum	0.17 mG	**Mean**	1.41 mG
5th Percentile	0.29 mG	Standard Deviation	1.70 mG
10th Percentile	0.36 mG		
25th Percentile	0.57 mG		
Median	1.05 mG		
75th Percentile	1.67 mG	**Geometric Mean**	1.02 mG
90th Percentile	2.63 mG	Geometric Standard Deviation	2.17
95th Percentile	3.48 mG		
Maximum	19.6 mG		

The participants were asked to keep a diary of their activities so that magnetic field exposure could be evaluated not only for the total 24-hour period but also for different types of activities. The results for different activities are shown in Table S.3.

Table S.3 **Descriptive Statistics for Different Activity Periods**

Parameter	At home not in bed	At home in bed	At work	During Travel	Other	All activities
Number of Valid Data Sets	181	182	128	158	162	201 Data Sets
Average activity time of the people with valid data for each activity (% of 24 hr)	33.5	33.2	31.5	9.3	13.0	100
Minimum	**0.08**	**0.00**	**0.08**	**0.23**	**0.07**	**0.17 mG**
1st Percentile	0.11	0.02	0.14	0.24	0.15	0.18 mG
5th Percentile	0.19	0.08	0.18	0.47	0.26	0.29 mG
10th Percentile	0.25	0.11	0.25	0.61	0.36	0.36 mG
25th Percentile	0.43	0.25	0.44	0.86	0.53	0.57 mG
50th Percentile (**Median**)	**0.85**	**0.61**	**0.97**	**1.14**	**0.9**	**1.05 mG**
75th Percentile	1.42	1.45	1.93	1.50	1.4	1.67 mG
90th Percentile	2.45	3.00	3.14	2.10	2.37	2.63 mG
95th Percentile	3.83	5.20	5.22	3.33	3.38	3.48 mG
99th Percentile	5.94	12.1	7.23	5.03	7.99	7.05 mG
Maximum	**14.2**	**62.0**	**8.49**	**6.65**	**11.8**	**19.6 mG**
Mean	**1.22**	**1.61**	**1.47**	**1.36**	**1.27**	**1.41 mG**
Standard Deviation	1.46	4.88	1.56	0.92	1.39	1.70 mG
Geometric Mean	**0.8**	**0.61**	**0.94**	**1.15**	**0.91**	**1.02 mG**
Geom. Standard Deviation	2.47	3.83	2.63	1.74	2.20	2.17

The exposure distributions were affected by a number of parameters. The greatest effect occurred for variations of residence type (duplex residences corresponded to the highest exposures during the "at home" time followed by apartments and single family homes), proximity to overhead power lines (the largest exposures at home occurred for power lines closer than 25 feet to the residence and the lowest for residences with no overhead lines nearby), the residence size (the largest exposures at home occurred for residences with a floor area less than 1000 square feet. while residences with floor area greater than 2000 square feet corresponded to the lowest average exposure, which never exceeded 2.5 mG), the floor location of the bedroom (the lowest exposures at home in single family residences occurred when the person's bedroom was on the second floor), and the type of water line (the largest exposures at home occurred when the water line was metallic).

The following conclusions could be drawn from the 200-person sample.

1. The distribution of the time weighted average fields (TWA) during a 24-hour period is estimated to be log-normal with a geometric mean of 1.02 mG (95% CI from 0.88 to 1.16 mG) and a geometric standard deviation of 2.17 (95% CI from 2.09 to 2.26).
2. The distribution of the time during a 24-hour period during which the field exceeded 10 mG has a geometric mean of 1.84 minutes and a geometric standard deviation equal to 7.8. The time above 10 mG exceeded 1 hour for 10% of the people.

3. The distribution of the time during a 24-hour period during which the field exceeded 50 mG has a geometric mean of 0.12 minutes and a geometric standard deviation equal to 4.0. The time above 50 mG exceeded 10 minutes for 2.5% of the people.
4. The largest TWA were recorded "at home, in bed", followed by "at work", "at home, not in bed", and "during travel". The lowest TWA were recorded "at home, in bed". The category of "at home, in bed" has both the lowest and the highest exposures. The distribution of the average field "at home, in bed", has the largest variance.
5. In general, largest TWA were recorded for men than for women. The period "at work" appears responsible for the difference.
6. The following parameters appear to affect the distribution of exposures at home: residence type, proximity to an overhead power line, residence size, location of the floor of the bedroom, and the type of water line. The data were too few to investigate the effect of other parameters, such as occupation and type of overhead power line.

Development of the Survey Method for Phase II

The selection of exposure metrics is an important part of establishing a measurement protocol for personal exposure measurements. The instrumentation for personal exposure measurements that is available and can be used reliably at present is designed to measure a few important quantities of interest, such as time weighted average magnetic field and the field values exceeded for given periods of time, but is not designed to measure all the quantities of possible biological interest. A review of the instrumentation for personal exposure measurements currently available, of the quantities that can be measured by such instrumentation, and of the quantities of potential biological interest has revealed that the choice of instrumentation and corresponding exposure indices is a compromise between conflicting goals.

Two primary sample designs were considered for the process of generating a nationally representative sample of persons: These are as follows: (1) area probability sample in which geographical areas are sampled in a cluster approach, and field interviewers are sent to draw a sample of households and recruit by personal visit the sampled households, and (2) random digit dialing (RDD) sample in which telephone numbers are sampled and households are recruited for the study by telephone call. The relative advantages and disadvantages of the area probability sample design and the RDD sample design were examined. The area probability sample would have to be highly clustered and would be considerably more expensive for a fixed sample size, given the need for travel. On the other hand, the RDD sample design excludes non-telephone households, and would have a lower response rates causing a potential bias.

Different instrumentation selection, sample designs, and survey methods correspond to different costs of data collection.

The primary impact of sample design and sample household contact procedures to deliver the instruments is on cost per person and on sampling error. If the cost per person is lower, then more persons can be measured for the same overall data collection cost. This translates into a greater accuracy of estimated exposures for the total population. However, if the refusal rate is

larger, the bias associated with it is larger. The overall statistical error results from the combination of the statistical error due to the number of participants and the bias due to refusal.

The impact of meter selection is cost and quality of the collected information. An inexpensive meter will lower costs, but will not allow measuring indices that in the future may be found to be better correlated to biological effects, making the information collected less useful.

A cost effectiveness analysis of several different survey methods differing for meter selection, sample designs, and survey protocols was performed considering (1) the cost of the survey. (2) the expected variance in the results, and (3) the quality of the information obtained.

The results of the analysis revealed that area probability sample design overall has better properties if cost is not a serious consideration. The RDD sample design, on the other hand, is recommended if the survey cost has to be constrained. In this case, the most cost effective method is achieved using a random digit dialing sample design (including telephone recruitment), a mailing out of the instruments to the sampled persons, and a utilization of instruments that can be easily worn and do not require much input from the user. This overall design avoids the cost of a visit to the user's residence. It requires, however, recruitment of the participants by phone, which corresponds to a refusal rate significantly greater than that which could be achieved by visiting the user's residence. In addition, a mailing out of the instruments (rather than a personal delivery of the instruments by a field person to the household) will also involve the extra loss of participation by persons who agreed to cooperate at the recruitment stage, but who fail to follow through in agreeing to use the meter.

The personal exposure measurements on a 200-person sample constituted in many respects a pilot program for a much larger sample to be measured during Phase II of the study. There were, however, several aspects of the protocol that were not tested and several others that needed further testing. For example, the 200-person sample consisted only of adults and a detailed debriefing of the participants was not possible. In order to formulate recommendations for the protocol to be used in Phase II, additional personal exposure measurements were made on several infants, toddlers, school age children, and adults chosen among a "convenience sample" consisting of 53 people: 12 infants, 13 toddlers, 16 school age children, 6 adult males, and 6 adult females. Simultaneously to measurements of personal exposure of toddlers, measurements of personal exposure of their mothers were made as well. For each school age child, three different protocols were tested on three different days. The results have little statistical significance because of the small sample. It appears that the adults in the tested sample had considerably greater exposure than children, toddlers, and infants. The toddlers in the tested sample had considerably less exposure than their mothers, whose exposure data could not be used as proxy for the toddlers data.

The results obtained during the 200-person exposure survey, the experience gathered during the tests performed with the convenience sample, and the results of the cost

effectiveness analysis of different survey methods, were utilized to make the following recommendations for Phase II:

- The option of performing special measurements (DC, wave form capture, wire code) should be abandoned because it is too expensive, since it requires visiting the residences of the participants.

- No special stratification is justified.

- The cost of including institutionalized people (hospitalized, nursing homes, military, prison population) is not justified.

- The optimum instrument recommended for Phase II is an instrument with a fast sampling rate (every 0.5 seconds), with permanent memory, small size, and capable of storing in memory frequent (e.g. once every 10 minutes) detailed summaries of the exposure quantities.

- Participants to the survey should be recruited by telephone. The sample design should incorporate a list-assisted random digit dialing method. The phone interviewer should use the same techniques used during Phase I to administer a questionnaire, make the selection and solicit the participation of a member of the household.

- A consent form and a letter that illustrates the reasons and modality of the survey should be sent to all the people that have agreed to participate.

- Upon return of the signed Consent Form the participants should be sent a package containing a personal meter, the instructions for the use of the meter, a small diary to be used to write the type of activities performed, a questionnaire to be filled by the participant, a UPS envelope with prepaid label to be used to return the meter, and a $50 check for compensation for participation in the study. The personal exposure meter should be of the size of a pager and it should be possible to clip the meter to a belt or place it in a pocket. For infants and toddlers the meter should be placed inside a teddy bear that should be kept near them for the day of the measurements. The only action required from the participants should be to turn the meter on at the start of the 24 hours of recording. The participants should be asked to note on the activity diary the time of the day when the meter is first turned on and then the time of the day at every change of the following types of activity: at home, in bed, traveling, at work, at school, and other activities. The participants should be requested to ship the meter, the diary, and the completed questionnaire as soon as possible after the 24 hours of exposure measurements.

SECTION 1

INTRODUCTION

1.1 EMF RAPID Engineering Projects

Increasing public concern about the question of possible harmful health effects from exposure to power frequency electric and magnetic fields (EMF) led the U.S. Congress to address this issue in the Energy Policy Act of 1992 (P.L. 102-486). Specifically, Section 2118, under Subtitle B, Title XXI, (42 USC 13478) authorizes the Secretary of Energy to establish a jointly funded (Federal and non-Federal sources) comprehensive program to:

- determine if exposure to electric and magnetic fields produced by the generation, transmission, and use of electric energy affects human health;
- carry out research, development, and demonstration of technologies to mitigate any adverse human health effects; and
- provide for the dissemination of EMF information to the public

In order to fulfill these legislated responsibilities, the EMF Research and Public Information Dissemination Program (RAPID) was established.

The RAPID program includes engineering research focused on exposure assessment and source characterization. The engineering research of the RAPID program started in 1995 and includes the following eight projects:

1. Development of recommendation for guidelines for field source measurement
2. Development of recommendations for guidelines for environment-specific field measurement
3. Environmental field surveys
4. Development of recommendations for guidelines for personal exposure measurement
5. Development of an EMF measurement database
6. Survey of personal magnetic field exposure
7. Development of field exposure models
8. Evaluation of field reduction technologies

1.2 RAPID Engineering Project #6: Survey of Personal Magnetic Field Exposure

This report describes the performance and the results of the sixth project of the EMF RAPID engineering research in the area of exposure assessment and source characterization. The objective of this project is to characterize personal magnetic field exposure of the general population, by performing personal exposure measurements for a sample of the population. The project is in two phases. This report describes the results of Phase I which is designed to develop survey methodologies and to conduct a small scale

survey. Phase II will include a large scale survey using the methodology developed in Phase I.

Knowledge of individual exposures is important to successfully address EMF health effect issues. As hypotheses for interaction mechanisms are developed, detailed personal exposure characterization will be valuable for evaluating epidemiological studies. Detailed knowledge of personal exposures will be essential to develop risk assessment for the population at large.

Many studies have been conducted to obtain EMF exposure data, such as occupational field exposure studies, residential field exposure studies, school environmental field studies, transportation environmental field studies, and some personal exposure field studies (mostly connected with epidemiological studies). However, much less information is available on personal field exposure than environmental fields. No systematic study of personal field exposure has been conducted and it is difficult to integrate personal field exposure data obtained through epidemiological studies. It is necessary to develop exposure data on a large population sample using a consistent protocol, including as many different types of people as required for statistical representation, and using as many exposure metrics as feasible and practical.

This report describes the work performed and the results obtained during Phase I of a nationwide survey of personal magnetic field exposure whose goal is to obtain accurate information on the distribution of exposures of the general population of the United States. The goal of Phase I is to obtain the information necessary for the planning of Phase II, which is intended to be a more extensive study to characterize exposures within reasonable confidence limits. To achieve this goal Phase I includes two separate tasks:

1. A survey of personal magnetic field exposure on a sample of 200 randomly chosen adult individuals in the United States ("200-person statistical sample"). The distribution of exposures of these 200 individuals provides a basis for estimating the parameters of the distribution of exposures of the US population.

2. The development and testing of the protocol for Phase II including selection of instrumentation and exposure metrics, assessment of methods of recruitment of the participants to the survey, and assessment of cost and quality of the data that would be obtained using various protocols. As a part of this task, personal exposure measurements were made on a sample of conveniently chosen individuals, including infants, toddlers, school age children, and adults ("convenience sample").

The recommendations for Phase II are derived from the analysis of the 200-person statistical sample survey, from the experience in conducting the survey, from the work performed to develop the protocol, and from the feedback received from the individuals who were a part of the convenience sample.

SECTION 2

PERSONAL MAGNETIC FIELD EXPOSURE OF 200 RANDOMLY SELECTED ADULTS IN THE UNITED STATES

2.1 Introduction

One of the purposes of Phase I of the "Survey of Personal Magnetic Field Exposure" is to conduct a pilot study to obtain preliminary information about the distribution of population exposures so that a better plan can be made for a more complete study that will characterize these exposures with reasonable confidence limits. This pilot study is necessitated because little is known about the distribution of population exposures. For any single measure of exposure (e.g. time weighted average, time above a threshold, etc.), the measured median field value of the exposure distribution is an estimate of the field corresponding to a fractile of 0.5 (50%) with an accuracy, at the 95% confidence level, of ±0.07 (±7%), if personal exposure measurements are conducted on a random sample of 200 individuals. Using the distribution of exposures obtained with the 200-person sample, estimates can be made of the sample size necessary to obtain with a given accuracy the different fractiles (e.g. 50^{th} percentile, 90^{th} percentile, 95^{th} percentile, etc.) of the distribution of the population exposures.

Another benefit expected from the 200-person survey is the possibility to identify (from questionnaire data) certain variables related to particular exposure levels, such as the sex and the occupation of the participant, the characteristics of the residence, and the characteristics of power lines nearby.

Although the original intention was to include children in the 200-person sample survey, the testing of the protocol for children was not completed in time for their inclusion in the survey. Therefore the participants may be referred only as a sample of the adult population.

2.2 Survey Protocol

2.2.1 Protocol Steps

The protocol for the personal magnetic field exposure measurements survey with a 200-person random sample consisted of the following steps:

- Households were randomly selected from listed telephone numbers by Westat.
- An introductory letter was sent by Westat to the addresses corresponding to the selected telephone numbers.

- After a few days, repeated telephone calls were made by Westat to the selected numbers until a contact was made. The respondent was interviewed on the phone in order to select and recruit a household member for possible participation in the survey.

- Westat sent to Enertech the list and addresses of the people who gave an initial consent to participate.

- The persons who gave an initial consent to participate in the measurements were sent by Enertech a Consent Form to be signed and returned to Enertech and detailed explanations about the purpose and the nature of the measurement survey.

- Enertech attempted to contact the participants to explain the study, the measurement protocol, and encourage the participants to sign and return the Consent Form.

- Upon return of the signed Consent Form to Enertech, the participants were sent by Enertech a package containing a personal exposure meter, a diary, a questionnaire, a fifty dollar check to compensate people for their participation, and detailed instructions on how to use, wear, and mail back the meter. An 800 number was provided to assist the participants.

- Enertech contacted the participants to explain the use of the meter, diary, and questionnaire. The participants were encouraged to wear the meter as soon as possible during the week Monday-Friday.

- The participants wore or kept the meter with them for 24 hours from the moment when they first turned the meter on. Magnetic field values were recorded and stored in the meter's memory every four seconds. The participants wrote on a diary the time when certain activities started or ended. After 24 hours of measurements, the meter was mailed back to Enertech.

- Upon return to Enertech, the meter's data were transferred to a computer file. The information from the diary was merged with the magnetic field data. The magnetic field exposure for the entire 24-hours and, separately, for different activities were calculated. The meter's calibration was checked and the meters were prepared for new participants.

- A letter was sent by Enertech to the participants with the results of their individual measurements.

- The data were placed by Enertech in a database and subsequently analyzed to obtain the desired results.

A flow chart of the various phases of the protocol is shown in Figure 2.1

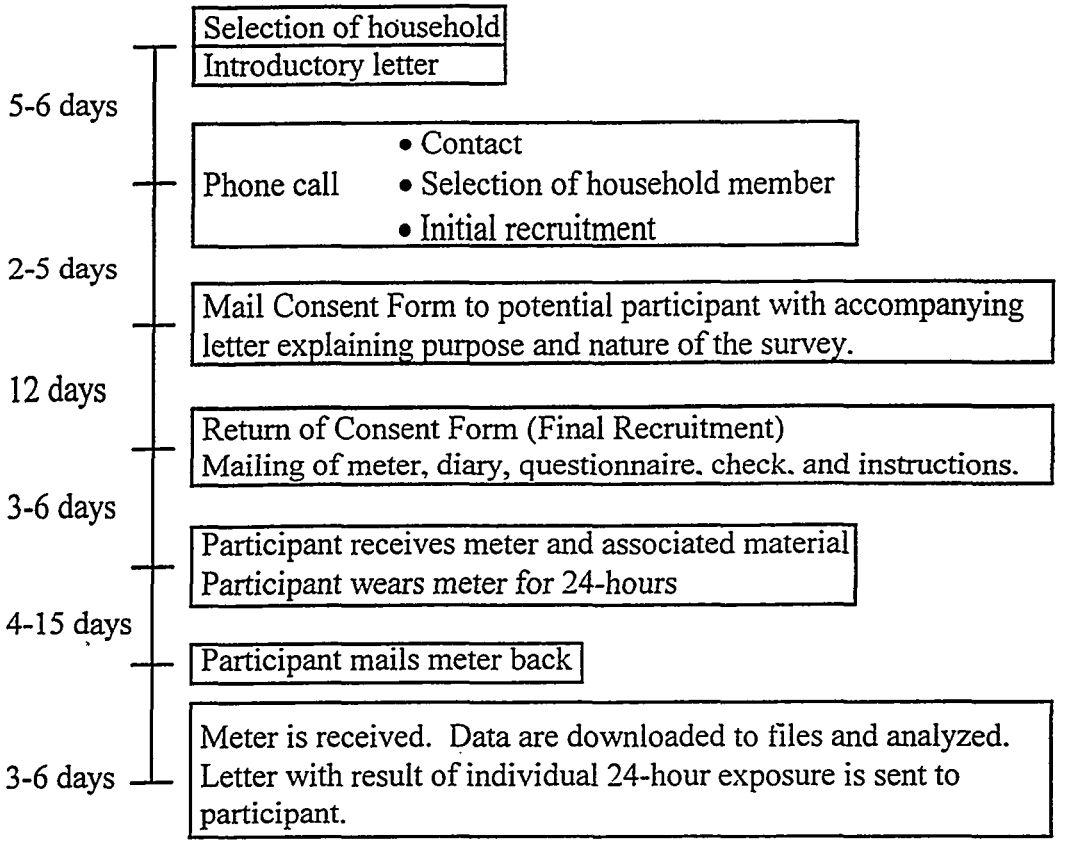

Figure 2.1 Protocol Flow Chart

2.2.2 Recruitment of Participants

In order to meet the study's goal of recruiting at least 200 participants, a sample of 1,616 telephone numbers was drawn; 1,077 of these telephone numbers were the primary sample, the additional 539 numbers were a reserve sample. This large sample was drawn to ensure that recruiting a sufficient number of participants for the pilot study would be possible, regardless of the number of refusals, non-working numbers, or business numbers. The sample was drawn by Genesys Sampling Systems, using their most current list of white page listings. All nationwide exchanges were included except Hawaii, Alaska, and territories. The sample file included area code, telephone number, time zone, name, and address.

Training for the telephone portion of the study took place on January 27, 1997. The training was conducted by a Westat telephone operations manager and project staff. Five interviewers were trained at this session. All of the interviewers had experience working on other Westat studies and were well-versed in general interviewing techniques. Therefore, the focus of this training was project-specific -- interviewers were trained on the screening instrument as well as how to answer questions relevant to the study. An additional five interviewers were trained on May 6, 1997 due to staff changes on the study.

Prior to the start of telephone recruitment, Westat sent sampled households a letter which introduced the study and informed the household that an interviewer would be calling them soon to determine their eligibility for participation in the survey. The letter stressed the importance of cooperation and stated that a monetary incentive would be offered to participants. The introductory letter is presented in Appendix B, Document # 1. Westat mailed these letters on a "flow" basis throughout the data collection period. Household telephone numbers were released for calling approximately five days after the letters were sent, thus ensuring that the household had an opportunity to read the letter before speaking with an interviewer.

Enertech, with Westat's input, developed a telephone screening questionnaire, or "screener". This paper instrument is presented in Appendix B, Document # 2. The main purposes of this instrument were to screen the sample for eligible households, select a respondent for participation in the study, and verify or update the name and address of the respondent. Telephone data collection occurred from January 27 through July 21, 1997.

During telephone data collection, each telephone number was treated as an individual case to be carefully managed and controlled throughout the various steps of the telephone data collection process. In addition to the screener questionnaire, telephone interviewers used a call record form to note the results of all calls and to manage the flow of work.

A total of 1,373 telephone numbers, out of the 1,616 drawn, were released for calling during data collection. The final outcomes of these calls can be categorized into eight groups and are summarized in Table 2.1.

- **Complete** - The screener was completed either by the original person listed on the sample or by another member of the household who was at least 18 years old. Names and addresses of the cases with this status were faxed to Enertech who then sent the respondents a letter explaining the study and a consent form to sign and return to them so that they could send a personal exposure measuring device.

- **Ineligible** - An ineligible status was assigned if there was no one 18 years or older living in the household; the telephone number belonged to a second/vacation home; or the household was planning to move in the next two months.

- **Refusal** - The respondent refused the screener or refused to participate in the study. Common reasons for refusals to either answer the screener or to participate in the study were that the respondent did not have time or simply did not want to participate.

- **Maximum Attempts** - After making at least eight calls, spaced out over different times of the day and days of the week, it was not possible to complete the screener with the household. If the telephone

interviewer got an answering machine, he or she left a message indicating that they were calling from Westat about the study and would call back later. If, after eight attempts. no contact was made, the case was assigned the "Maximum Attempts" code.

- **Non-Working** - The telephone number on the sample list was no longer a working number. No tracing was done for these households.
- **Business Number** - The telephone number on the sample was not for a residence.
- **Language Problem** - The screener could not be completed because no one in the household spoke English.
- **Not Locatable** - Household members were not reachable during the screening period.
- **Other** - This code was used when no other final code applied.

Table 2-1 Telephone Screener Results

Screener Outcome	Number of Cases	Percent of Released Telephone Numbers
Complete	454	33
Ineligible	17	1
Refusal	494	36
Maximum Attempts	236	17
Non-Working	101	7
Business Number	46	3
Language Problem	20	1
Not Locatable	3	< 1
Other	2	< 1
Total	1373	100

2.2.3 Consent Form

Westat supplied Enertech with the names. addresses, and phone numbers in batches of approximately 20 candidate participants per week. After this information was entered into a database, each candidate was mailed an information packet containing:

- a letter from the principal investigators explaining the purpose and methods of the study. A male and female version of this letter was available. (See Appendix B, Documents 3 and 4.)
- a set of photographs demonstrating ways the meter may be worn. A male and female version was available. (See Appendix B. Documents 3 and 4.)

- a consent form to be signed and returned to Enertech. A photocopy of the consent form was provided to the participants for their records. (See Appendix B, Document 5.)
- a self-addressed, stamped envelope to return the consent form to Enertech.

After four business days each candidate was contacted by phone to answer questions and encourage the individual to sign and return the consent form. The caller would briefly explain the purpose of the study and the measurement protocol. Personal phone contacts were attempted a few times during the course of two weeks. The Enertech caller would leave a message on voice mail or answering machines, when available, only after two or three attempts at a direct contact were made.

The total number of names and addresses provided by Westat to Enertech was 454. Consent forms were sent by Enertech to the first 335 addresses received from Westat (185 men and 150 women). It was not necessary to send consent forms to the remaining batches received from Westat containing 119 names and addresses because the survey was already completed (209 people had already received a meter).

Of the 335 consent forms mailed (185 men and 150 women):

- 226 forms were returned (130 men and 96 women). This represents a consent form return rate of 67.5% (70.3% for men and 64% for women). 17 consent forms were received after the survey was completed (203 valid data sets were available).
- Most of the people who did not return the consent forms did not offer any explanation.
- Several candidates declined to participate due to old age.
- Two candidates declined due to the complexity of the protocol.
- One candidate's phone was no longer in service.
- One candidate moved during the study.

Signed consent forms were received in the mail from 7 to 50 days after they were mailed. The average turnaround time for the forms was about 15 days.

2.2.4 Sending the Personal Exposure Meter to the Participants

Each individual returning a signed consent form was sent a kit consisting of:

- a check made out to the participant for $50.
- a set of instructions on the use and return of the equipment (see Appendix B, Document 6),
- an EMDEX Lite magnetic field data logger (This instrument records the magnetic field along three orthogonal components every 4 seconds and stores the measured values in its memory, which is capable of storing a little more than 24 hours of data so obtained. The meter bandwidth is from 30 to 800 Hz and thus is measuring the magnetic field at the power frequency of 60 Hz and its first 13 harmonics.),
- a custom nylon belt pouch with a pocket for the activity diary and pen,
- a small diary for recording times of specific activities (see Appendix B, Document 7),

- a pen imprinted with a toll-free help line,
- a short questionnaire on the subject's occupational and residential environments (see Appendix B, Document 8),
- prepaid shipping materials and documents to return the equipment.

Two to three business days after the kit was shipped, each participant was called to briefly explain the use of the meter and diary and answer any questions the subject might have.

The EMDEX Lite was programmed with a custom operating program and displayed a number corresponding to the number of measurements taken. The meter was designed to make it as simple to use as possible. The participant merely had to turn a single switch "on" to begin data collection, place the meter in the nylon pouch, and record the start time in the diary. The meter automatically stopped collecting data after 24.3 hours. The participants were instructed to record either the number appearing on the display of the meter or the time of day when noting entries in the diary. The participants were instructed to note when they were home, in bed, at work, at school, or traveling. The participants could take the meter off during the day if it was awkward or uncomfortable but they were to keep it near them. They were also instructed to place the meter on a bed stand while they slept but to keep it as far away from an appliance (such as an electric clock) as their head was. A toll-free number was provided to each participant to ask questions and deal with problems using the meter. Several calls were received during the survey. The majority of the calls concerned the use of the meter or questions regarding the protocol.

2.2.5 Receiving the Personal Exposure Meter from the Participants

Of the 209 meters shipped:

- 206 meters were returned. This represents a meter return rate of 98.6%, i.e. a meter loss ratio of 1.4%.
- 203 had usable measurement data.
- One meter was returned with the power switched off resulting in the loss of the data.
- One meter was returned damaged and the data could not be retrieved.
- One meter was returned unused.

Phone contact was attempted with participants with outstanding meters. Three meters have not been returned and were considered lost. Participants with meters outstanding for more than two months were sent a prepaid shipping package to return the meter and a letter encouraging them to return the meter (See Appendix B, Document 9).

Meters were returned to Enertech between 7 and 50 days after shipping them; the average turnaround time was about 12 days. The meter data were downloaded to a file, marked with the activity times found in the diary, and archived. Both the Diary and the Respondent Questionnaire were entered in the database. Following each measurement, the accuracy of the meter was checked for operation within specifications and the meter

was readied for the next participant. No data were lost due to a meter operating out of specification.

Each participant was mailed a form letter (see Appendix B, Document 10) showing their average field measured during the 24.3 hours the meter was operating.

2.3 Data Management and Analysis

The EMDEX Lite Data Logger was programmed to sample the broadband (30-800 Hz) magnetic field every 4 seconds along its x, y, and z axis coils. The meter was programmed to increment a number on its display every third measurement, i.e. every 12 seconds, as a means of providing a time stamp for the activity diary. The time stamp was not entered into the data by the user but recorded in the diary.

Measurement data were transferred from the meter to a computer file shortly after the return of the meter to Enertech. The activity diary time marks were embedded in the EMDEX file.

Based on the time and event data in the activity diary, the measurements in each data file were partitioned into the following categories, corresponding to different types of activity:

- Measurements taken during the 24-hour period
- Measurements taken at home in bed
- Measurements taken at work
- Measurements taken at school
- Measurements taken while traveling
- Measurements taken while neither at home, work, school, nor traveling.

The analyses were performed on the magnetic field calculated from the values of the x, y, and z axis coils, Bx, By, and Bz, respectively. The magnetic field B is given by

$$B = \sqrt{Bx^2 + By^2 + Bz^2}$$

The following measures of the magnetic field were extracted for each subject and for each type of activity:

- Time spent for the activity
- Mean
- Standard deviation
- Geometric mean
- Geometric standard deviation
- Maximum
- 50^{th} percentile (median)
- 75^{th} percentile
- 90^{th} percentile

- 95th percentile
- 99th percentile
- Time spent below 0.50 mG
- Time spent between 0.50 and 0.99 mG
- Time spent between 1.00 and 1.99 mG
- Time spent between 2.00 and 4.99 mG
- Time spent between 5.00 and 9.99 mG
- Time spent between 10.00 and 19.99 mG
- Time spent between 20.00 and 49.99 mG
- Time spent above 49.99 mG

2.4 Database

2.4.1 Introduction

This section describes the data set generated as a result of the 200-person sample personal exposure magnetic field survey performed during EMF RAPID Engineering Project 6 "Survey of Personal Magnetic Field Exposure". The management and analysis of this data are described in Section 2.3.

The data set produced by this project is intended to be included in the *EMF Measurement Database* developed by the Engineering Project #5 of the EMF RAPID Program. DOE's EMF Measurement Database consists of a *database index* and a *database repository*. For each data set, the index contains the *metadata* (i.e. data about data), describing the nature and organization of the data set. The repository contains the *data products* of the data set. The metadata file and the data products of this project are described in this section.

2.4.2 Metadata

The metadata of the data set of the project: "Survey of Personal Magnetic Field Exposure" consists of four parts: data set reference, data set description, data model, and data product description. A metadata file using the Standardized Generalized Markup Language (SGML) was prepared. This file is listed in APPENDIX E. The data model used is described by the entity-relationship diagram of Figure 2.2.

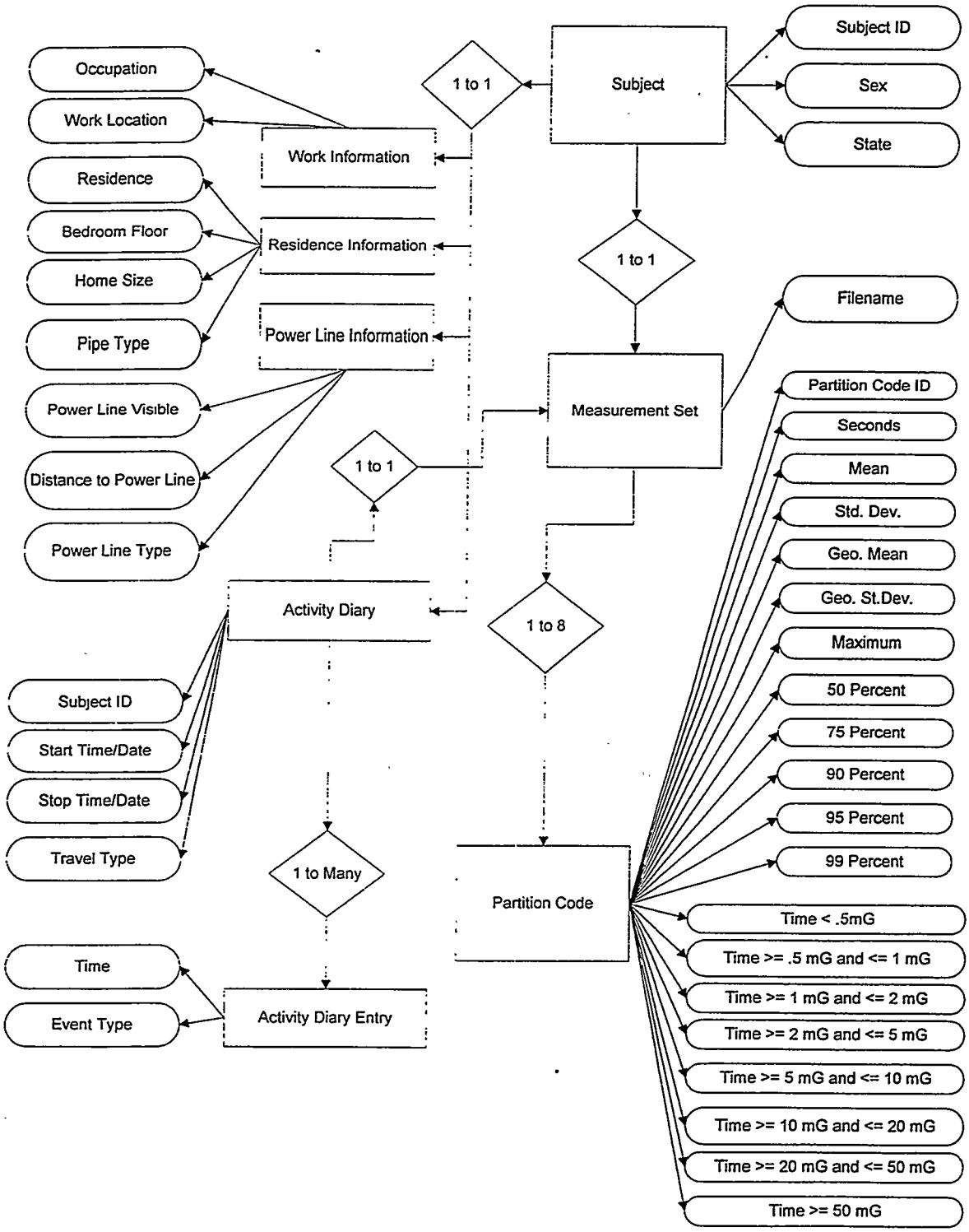

Figure 2.2. Entity - Relationship Diagram

2.4.3 Data Products

The following data products are available from this project:

(ONE) Subject Questionnaire File - File containing questionnaire data filled in by each subject. The questionnaire contains information pertaining to work, residence, and power line information and is used to determine if there is a relationship to magnetic field exposure.

(ONE) Subject Measurement Data File - File containing data of magnetic field levels and exposure bins of each subject based upon certain partition code criteria.

2.4.4 Other Data

The EMDEX Lite files containing the subject measurement data may be of further interest should consideration be given to some aspect of these files other than those used to create the "Subject Measurement Data File", which is the basis of the conclusions of this report. These files are not included in the database.

2.5 Results of the 200-Person Survey

2.5.1 Limitation of the 200-Person Survey

The pilot study has three deficiencies that limit its ability to support statistical inferences. First, being a list telephone sample, the pilot failed to cover non-telephone households (about 6 percent in the US) and households with unlisted telephone numbers (about another 30 percent in the US). Second the response rate was very low, which means that the potential for non-response bias is quite significant. Finally, the sample size is small, only 201 completed cases, which means that the estimates will not be very precise. All this adds up to the fact that the results must be interpreted very cautiously.

The results obtained from the measurements with the 200-person sample are presented in this Section of the report in great details for sake of completeness. However, it must be re-emphasized that any estimate applied to the general population would not be precise for the reasons mentioned above: incomplete coverage, low response, and small sample. Furthermore, estimates of extreme percentiles (e.g. 1^{st}, 99^{th}, etc.) are even less precise than estimates of central tendency. It is common practice to employ weighting adjustments to attempt to compensate for non-response and non-coverage, as well as unequal selection probabilities. However, the development of such weights did not appear justifiable for a pilot study consisting of 200 cases only. Reliable estimates for the general population must wait the execution of Phase II of this project.

2.5.2 Time Weighted Average Magnetic Field. Twenty Four Hour Exposure

The personal exposure meter measured the magnetic field in three orthogonal axes once every four seconds. The magnetic field resultant, equal to the square root of the sum of the squares of the three components, was calculated. This is the

"magnetic field" value used in the statistical evaluations. The knowledge of the individual components does not provide useful information because people wore the meters in a variety of ways and the meter orientation was not defined. In a 24-hour period there were 21600 recorded magnetic field values. The average of the magnetic field values recorded in 24 hours is defined as the 24-Hour Time Weighted Average Magnetic Field or simply the "24-Hour TWA". The 24-Hour TWA was calculated for each survey participant. Two of the 203 participants were excluded from this analysis because they recorded magnetic field exposure for only 12 and 16 hours, respectively. Exposure for the full 24 hours was recorded by 198 participants. Three participants recorded exposure for less than 24 hours but for more than 23 ½ hours; their data were included in the analysis as if the exposure were recorded for the full 24 hours. The 201 values were sorted. The results are shown in Tables 2.2 and 2.3, and in Figure 2.3. Figure 2.4 is the same as Figure 2.3, but with an expanded scale of the percentage of participants with TWA exceeding a given value, in order to show in details the high field portion of the TWA curve.

Table 2.2 **Number of Survey Participants with TWA Exceeding Given Values**

24-Hour TWA (mG)	Survey Participants with Exposure Exceeding Given Value (Number)	Survey Participants with Exposure Exceeding Given Value (%)
0.0	201	100
0.5	162	80.6
1.0	105	52.2
2.0	37	18.4
3.0	16	8.0
4.0	7	3.5
5.0	5	2.5
7.5	2	1.0
10	1	0.5

Table 2.3 **Personal Exposure Survey - Descriptive Statistics of 24-Hour TWAs (201 participants with 24 hour data)**

Parameter	Result	Parameter	Result
Mean 24-Hour TWA	1.41 mG	**Minimum** 24-Hour TWA	0.17 mG
Standard Deviation	1.70 mG	1st Percentile	0.18 mG
Geometric Mean	1.02 mG	5th Percentile	0.29 mG
Geometric Standard Deviation	2.17	10th Percentile	0.36 mG
Median	1.05 mG	25th Percentile	0.57 mG
		50th Percentile (**Median**)	1.05 mG
		75th Percentile	1.67 mG
		90th Percentile	2.63 mG
		95th Percentile	3.48 mG
		99th Percentile	7.05 mG
		Maximum 24-Hour TWA	19.6 mG

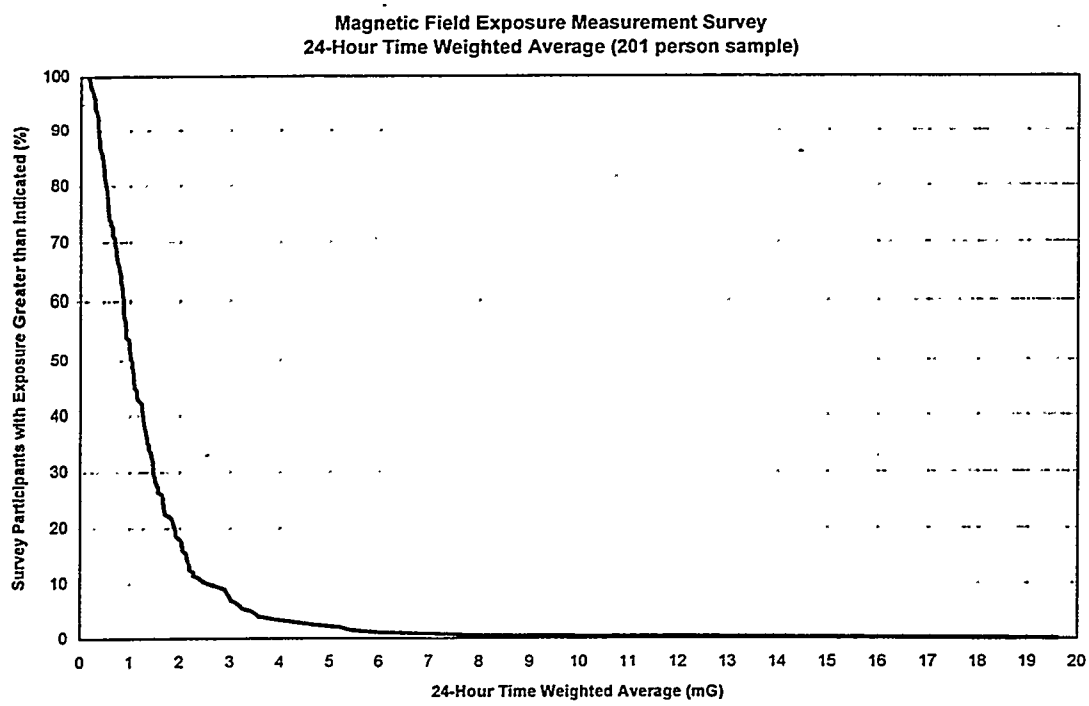

Figure 2.3 24-Hour Time Weighted Average Magnetic Field Obtained from Personal Exposure Measurements of 201 Adults Randomly Selected in the USA. Percentage of Survey Participants with TWA Exceeding a Given Value.

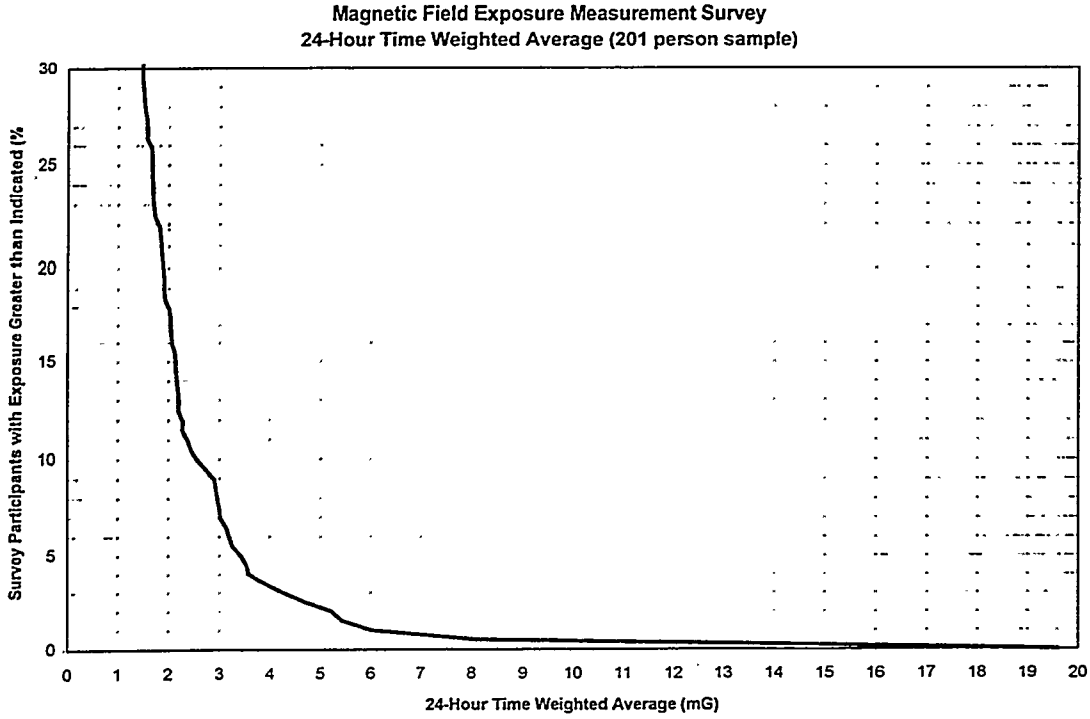

Figure 2.4 Same as Figure 2.3, but with Expanded Vertical Scale.

The mean 24-hour TWA, 1.41 mG, is the average value of all the data obtained and represents the average exposure of the population sample tested.
The distribution of the logarithms of the average field values is plotted in a normal scale in Figure 2.5. The distribution of the 24-hour TWAs is closely described by a log-normal distribution with a geometric mean of 1.02 mG and a geometric standard deviation of 2.17. The comparison between this log-normal distribution and the actual distribution obtained from the 201 persons measured is shown in a linear scale in Figure 5.1 of Section 5.

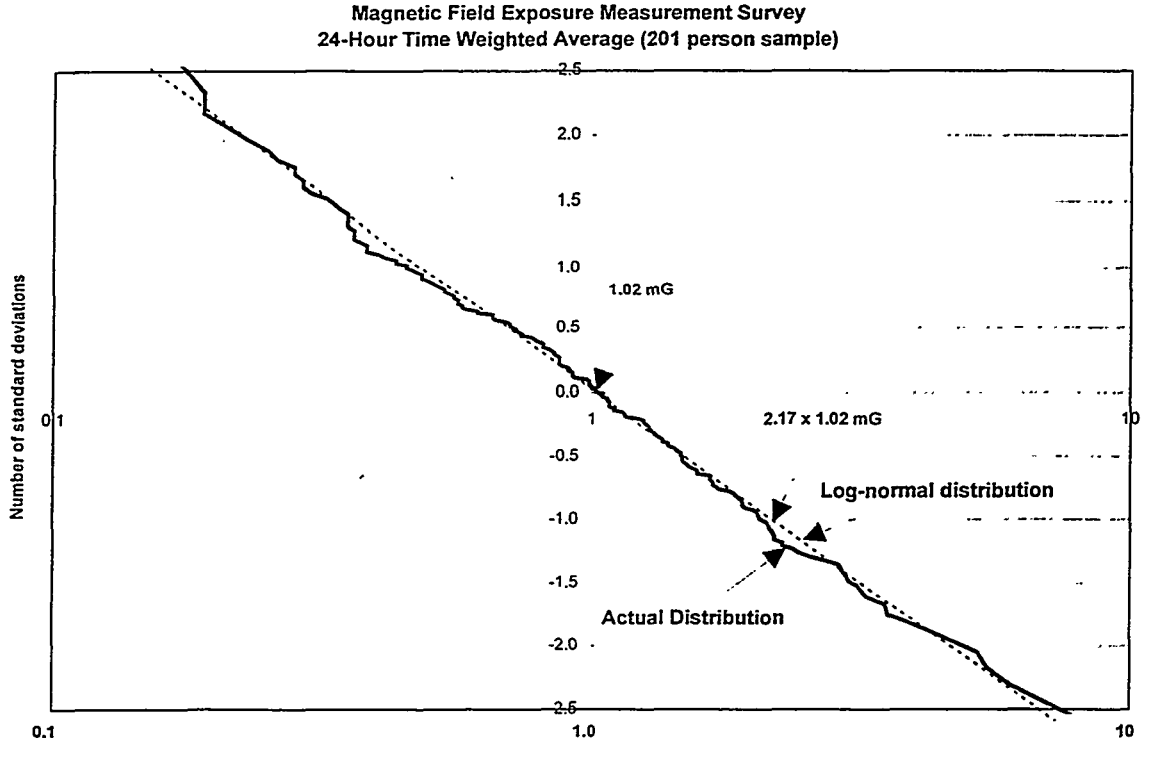

Figure 2.5 Distribution of 24-Hour Time Weighted Averages plotted with a log-normal scale.

2.5.3 Magnetic Field Percentile Levels. Twenty Four Hour Exposure

Figure 2.6 shows the cumulative distribution, among the 201 participants with 24-hour exposure data, of the percentile levels of the individual 24-hour exposures. Figures 2.7 and 2.8 show the same data as Figure 2.6 , but with an expanded scale for the field levels (Figure 2.7) and of the percentage values (Figure 2.8).The nth percentile level of an individual exposure is defined as the magnetic field level not exceeded for "n" percent of the 24-hour period. For instance, a 95^{th} percentile level of the personal exposure of a person equal to 10 mG means that the person's personal exposure meter recorded field values less than 10 mG for 95 percent of the time and field values greater than or equal to 10 mG for 5 percent of the time (i.e. for 1 hour and 12 minutes of the 24 hour measurement period). Figure 2.6 shows how many participants to the survey had an nth percentile level greater than a given value. For example, the figure shows that about 4% of the participants had a 95^{th} percentile level greater than 10 mG.

Of particular interest is the 50th percentile level of the 24-hour exposure data: this is the *median* personal exposure magnetic field level. The distribution of median exposure levels, compared to that of average exposure levels (TWA) is shown in Figure 2.9. Figure 2.9 shows also the distribution of the geometric mean exposure levels. The median values are significantly lower than the average values. This occurs because the distribution of magnetic fields recorded during a 24-hour period is not normal if the field values are considered on a linear scale; in fact, there are times during the 24-hour exposure period when the recorded magnetic field is several times the median value. The distribution of the recorded values in each 24-hour data set is closer to a normal distribution when the field values are considered in a logarithmic scale. For a log-normal distribution, median and geometric mean value coincide. As a demonstration that the field distributions are closer to log-normal than to normal, Figure 2.9 shows that the geometric mean values are very close to the median values.

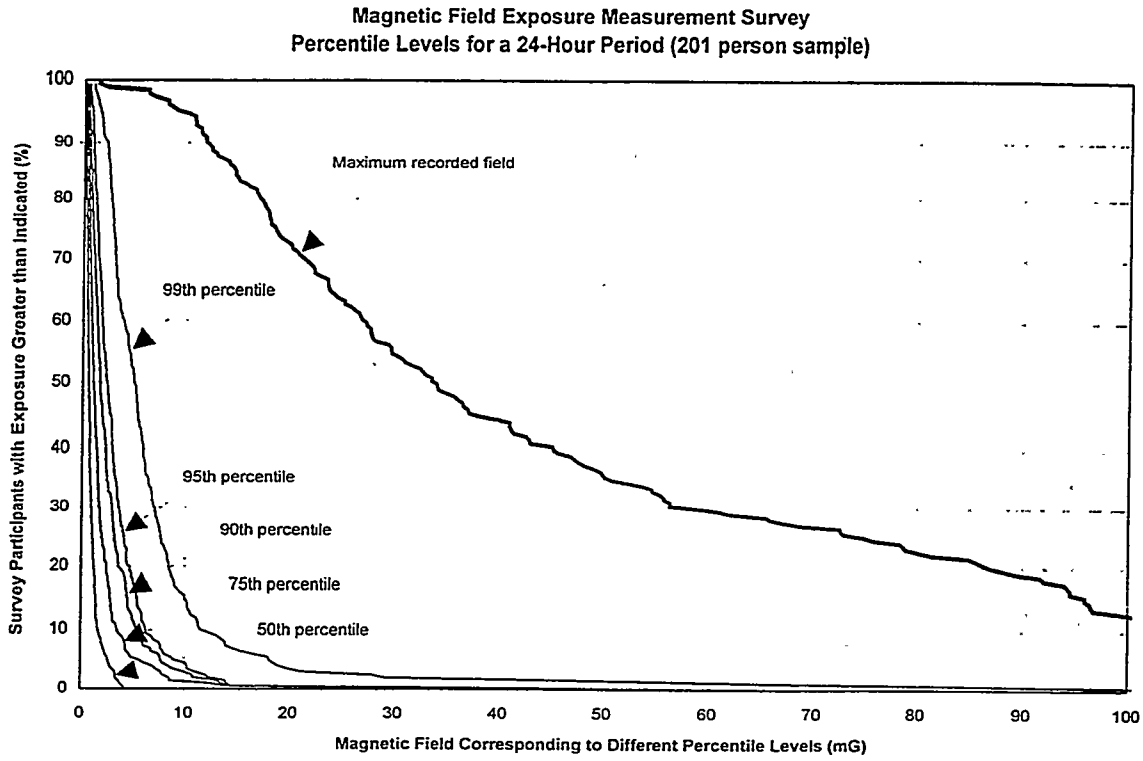

Figure 2.6 Distribution of Percentile Levels Obtained from 24-Hour Personal Exposure Measurements of 201 Adults Randomly Selected in the USA. Percentage of Survey Participants with Magnetic Field Percentile Levels Exceeding a Given Value.

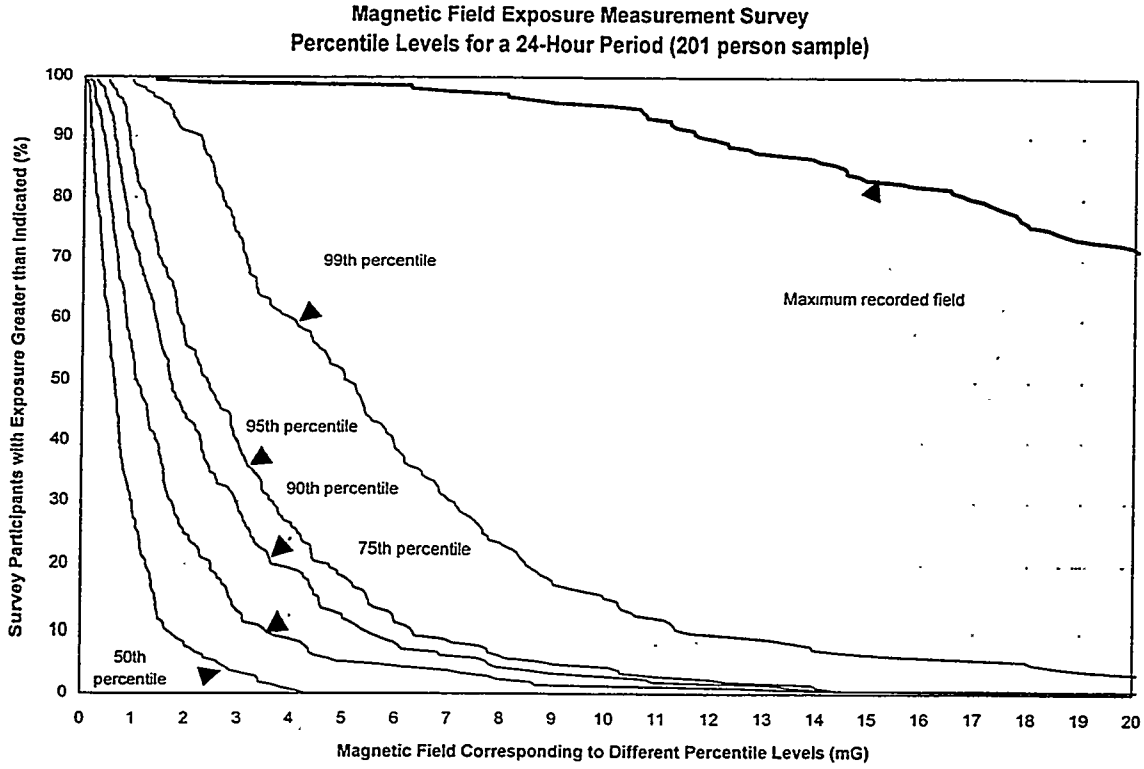

Figure 2.7 Same as Figure 2.6, but with Expanded Horizontal Scale.

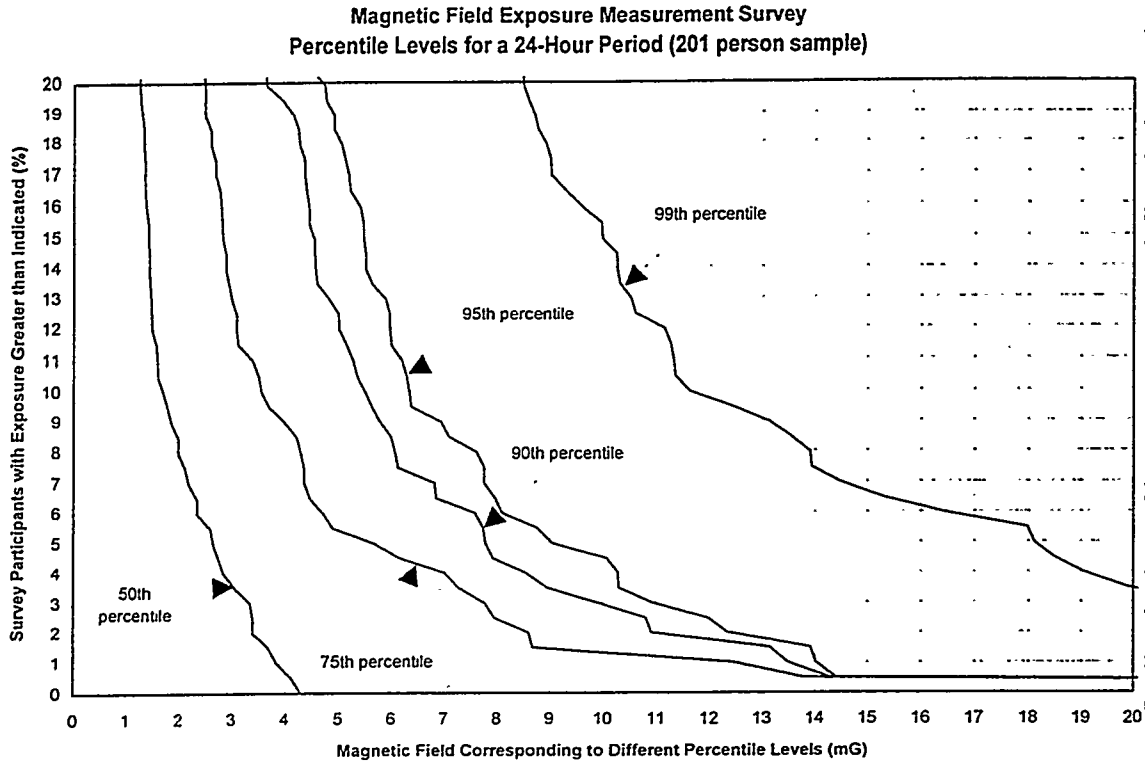

Figure 2.8 Same as Figure 2.6. but with Expanded Horizontal and Vertical Scales.

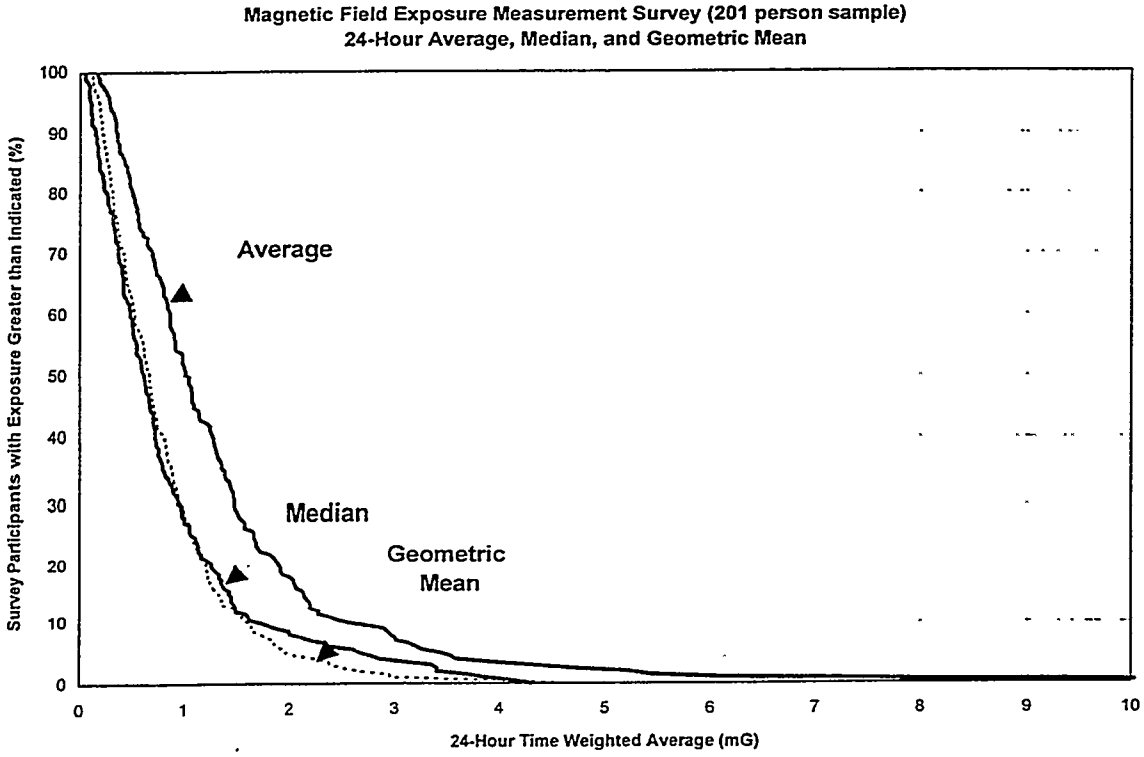

Figure 2.9 Comparison of Average, Median, and Geometric Mean of 24-Hour Magnetic Field Personal Exposure Data

2.5.4 Length of Time with Field Exceeding Specified Levels. 24-Hour Exposure

The percentile data shown in Section 2.5.2 can be expressed as length of time during which the field exceeded specified levels. The levels considered were: 0.5, 1, 2, 5, 10, 20, and 50 mG. Figure 2.10 shows the distribution, among the 201 persons with 24-hour data, of exposure times. The figure shows, for example, that 19 % of the people spent more than one hour in fields greater than 5 mG, and about 50 % of the people spent at least 2 minutes in fields exceeding 10 mG.

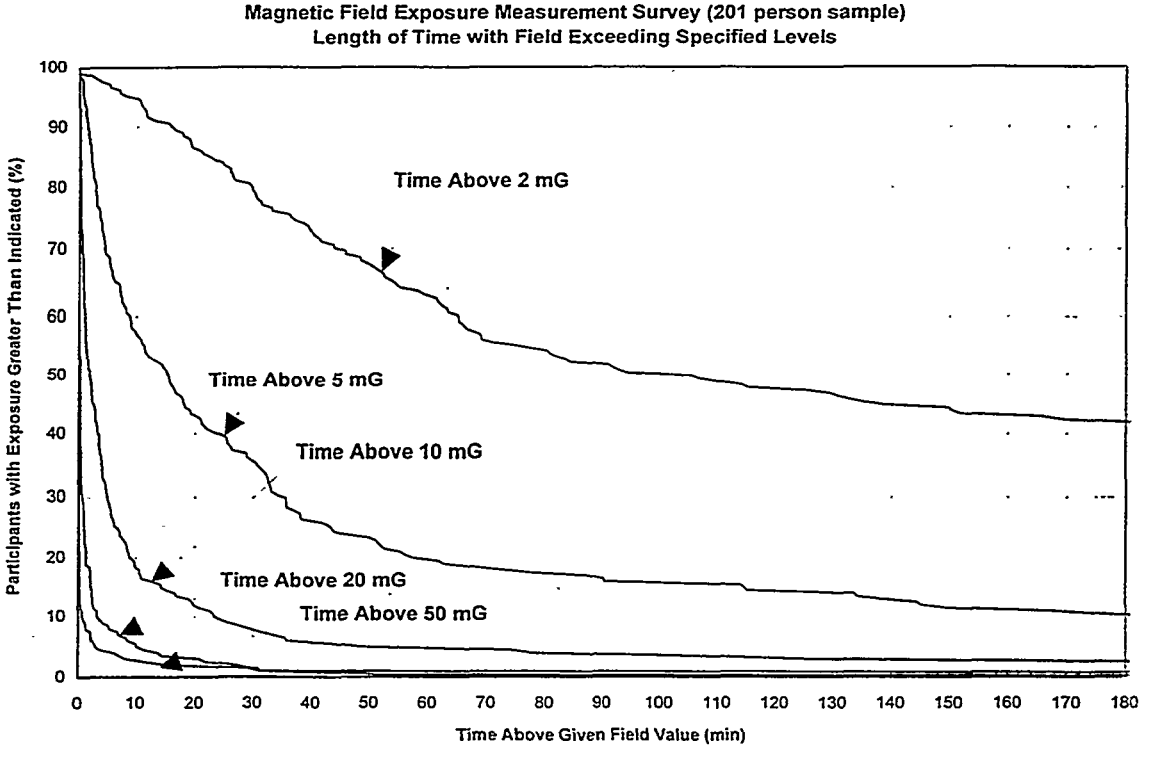

Figure 2.10 Cumulative Distribution of "Time Above Field Value" Obtained from 24-Hour Personal Exposure Measurements of 201 Adults Randomly Selected in the USA. Percentage of Survey Participants with Time Above Field Value Exceeding a Given Length of Time.

2.5.5 Exposure in the Home

The participants were asked to keep a diary of their activities so that magnetic field exposure could be evaluated not only for the total 24-hour period but also for different portions of the day, including the time they were at home. The "at home" data could be evaluated for 199 participants (of the 203 participants, two did not record the magnetic field during the time they were "at home in bed" and two did not fill out the diary).

The cumulative distributions of average and median values of the magnetic field recorded by the personal exposure meter while the participants were at home are shown in Figures 2.11 and 2.12. Figure 2.13 shows the comparison between the cumulative distribution of average fields for the time at home and for the total 24-hour period. The distribution of average field at home shows higher values than the distribution of average 24-hour fields for about 10 % of the participants and for average fields greater than about 2.5 mG.

The relation between average field at home and average 24-hour field is shown in the scatter plot of Figure 2.14. In general the average magnetic field at home is less than the average 24-hour field. For the largest recorded average values, however, exposure at home appears the most important.

Exposure at home defined as the product of average field and exposure time (mG*hour) is shown in Figure 2.15 as a fraction of the total 24-hour exposure. Figure 2.15 shows that at-home exposure varies in a large range. from a small fraction of the total exposure to 100 % of the total exposure.

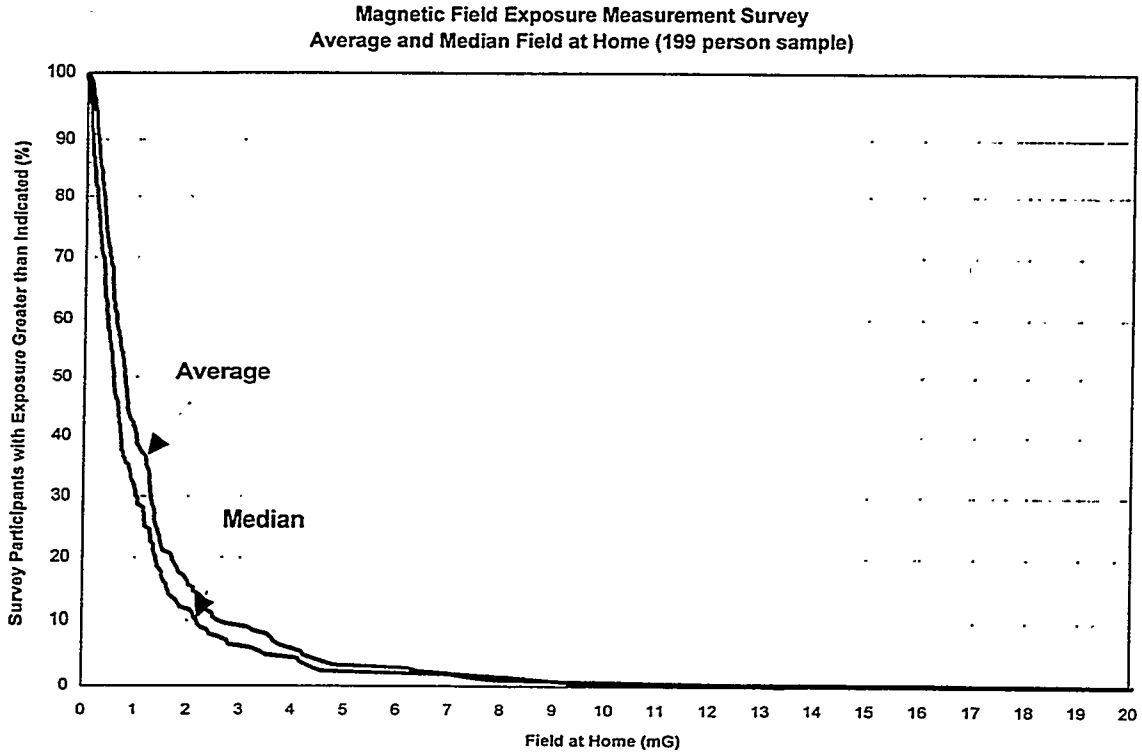

Figure 2.11 Cumulative Distribution of Average and Median Magnetic Field at Home Obtained from Personal Exposure Measurements of 199 Adults Randomly Selected in the USA. Percentage of Survey Participants with Field Exceeding a Given Value.

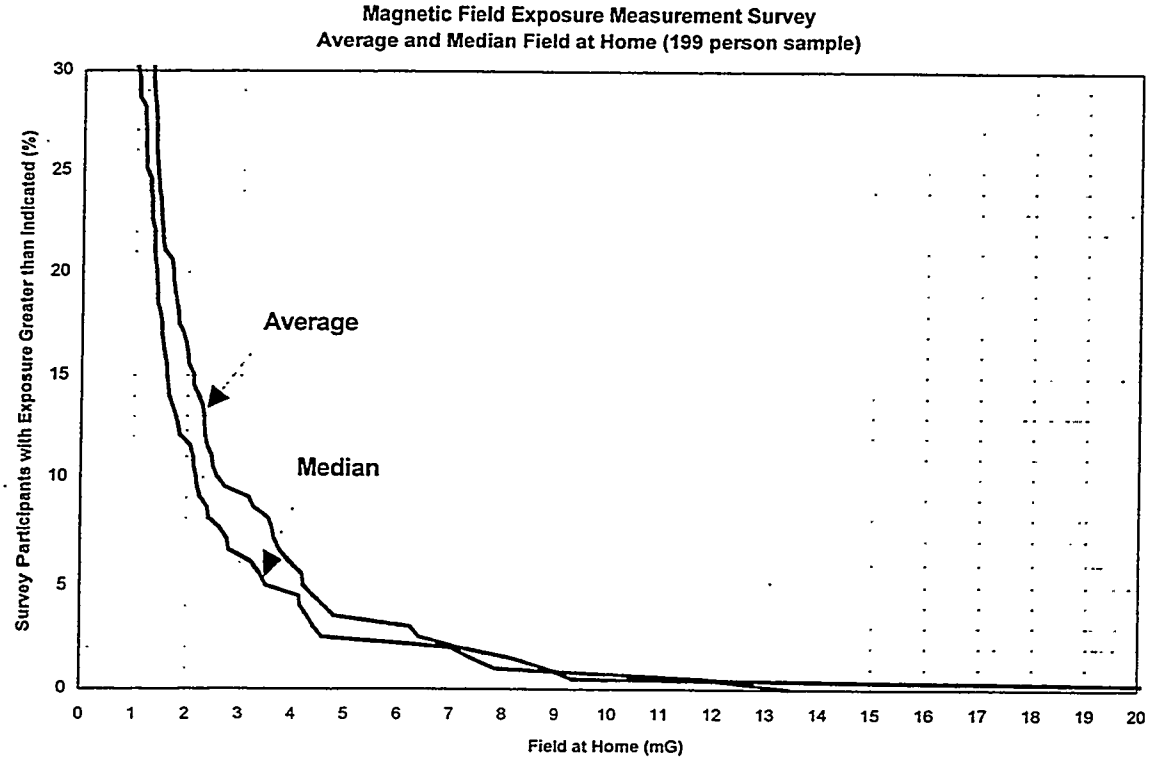

Figure 2.12 Same as Figure 2.11 but with an Expanded Vertical Scale

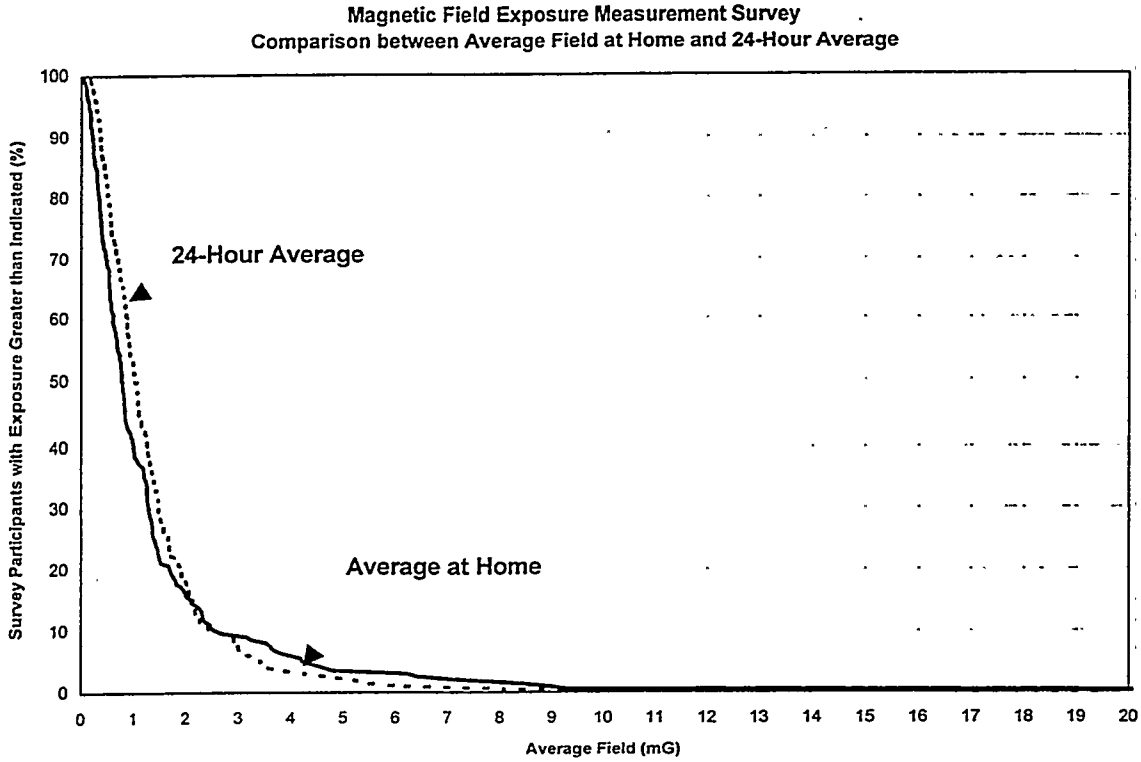

Figure 2.13 Comparison between the Cumulative Distribution of Average field at Home and of the Average 24-Hour Field

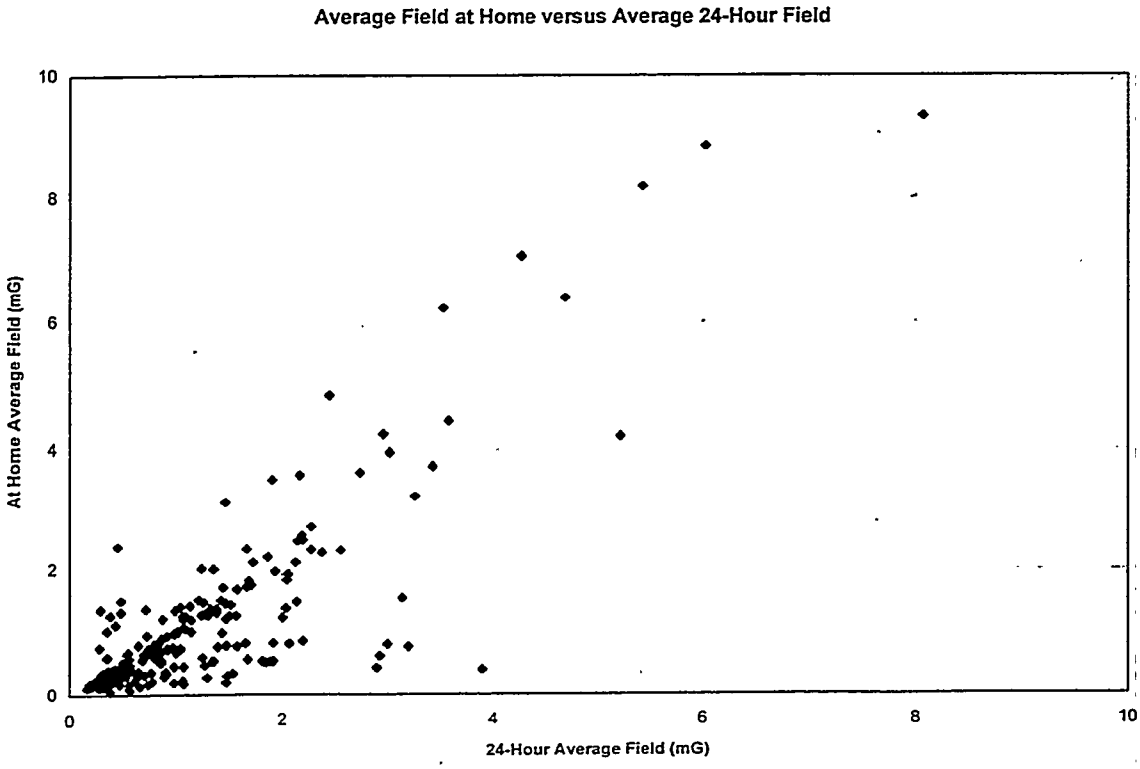

Figure 2.14 Average Field At Home versus 24-Hour Average

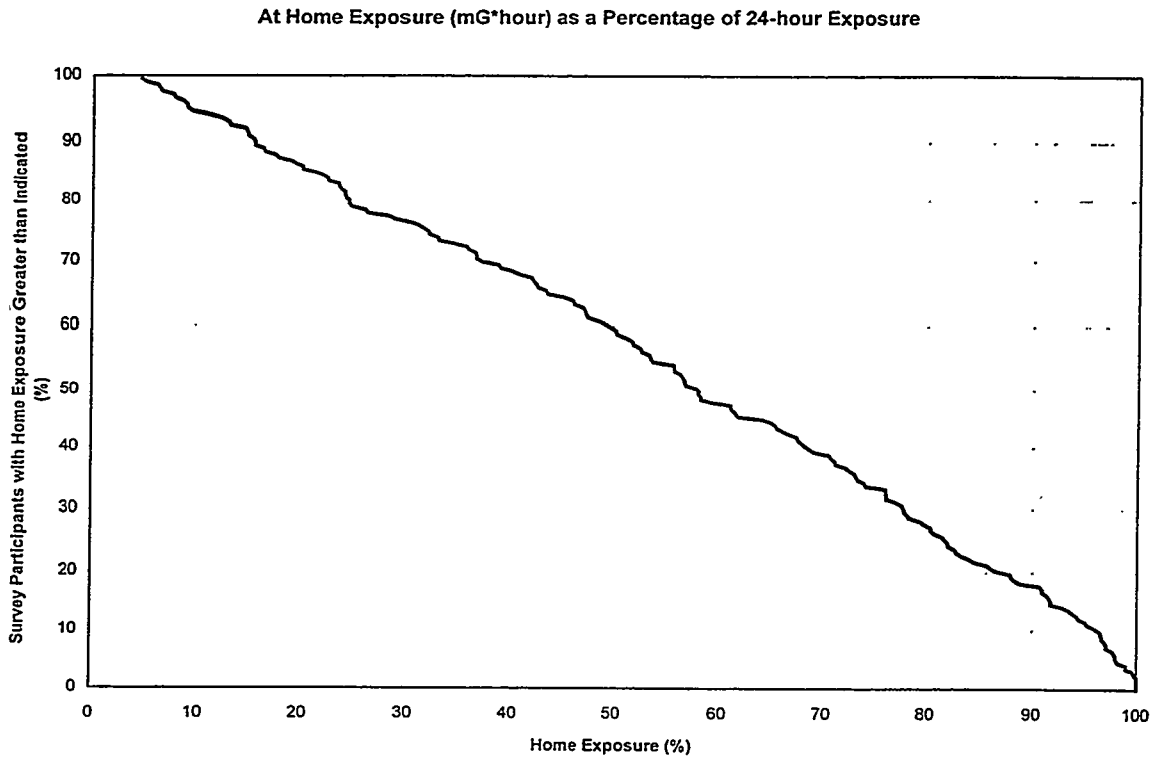

Figure 2.15 Cumulative Distribution of the Percentage of at Home Exposure

2.5.6 Exposure in the Home. In Bed and not in Bed

The portion of the time spent in bed was recorded by the participants in their diary. The period at home was divided among "at home not in bed" and "at home in bed". The results are shown in Figure 2.16 and 2.17 for the portion of the time "not in bed" and in Figure 2.18 and 2.19 for the time "in bed". The number of participants with valid data are less than those for the 24-hour period or for the total at home period, because several participants did not note the time they were in bed and some spent practically all their "at home" time in bed. Average fields greater than 3 mG were recorded by 6.2% of the participants for "at home, not in bed", and by 9.5 % of the participants for "at home, in bed". Average fields greater than 5 mG were recorded by 2% of the participants "at home, not in bed", and by 4.8 % of the participants for "at home, in bed".

Average and median values for the period "in bed" practically coincide, because the field "in bed" has much less variations than the field "at home, not in bed". This is caused by the fixed position of the recording instrument during the "in bed" period. In general the average field "at home, not in bed", is larger than the average field "at home, in bed". However, for average fields greater than about 1.8 mG, corresponding to about 18% of the participants, the largest average fields were recorded during the "in bed" period.

The average field "at home, not in bed" is shown versus the average field "at home, in bed", in Figure 2.20.

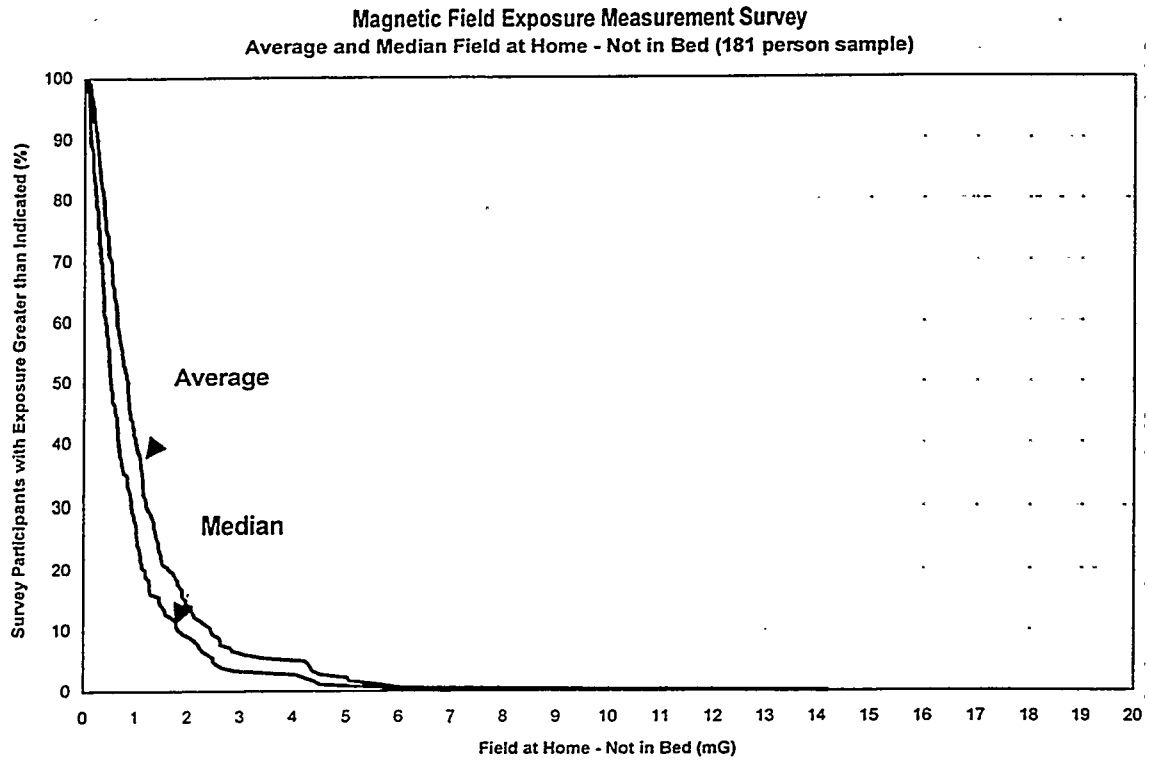

Figure 2.16 Cumulative Distribution of Average and Median Magnetic Field at Home, Not In Bed. Obtained from Personal Exposure Measurements of 181 Adults. Percentage of Survey Participants with Field Exceeding a Given Value.

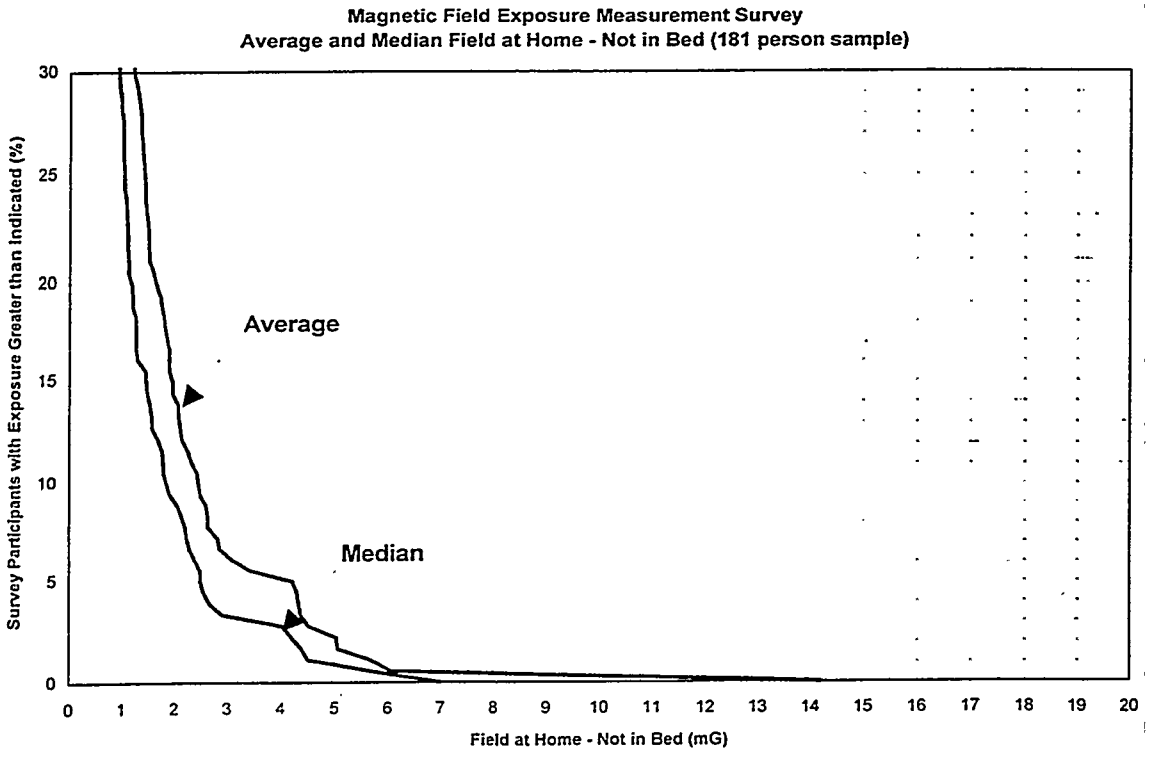

Figure 2. 17 Same as Figure 2.16 but with an Expanded Vertical Scale

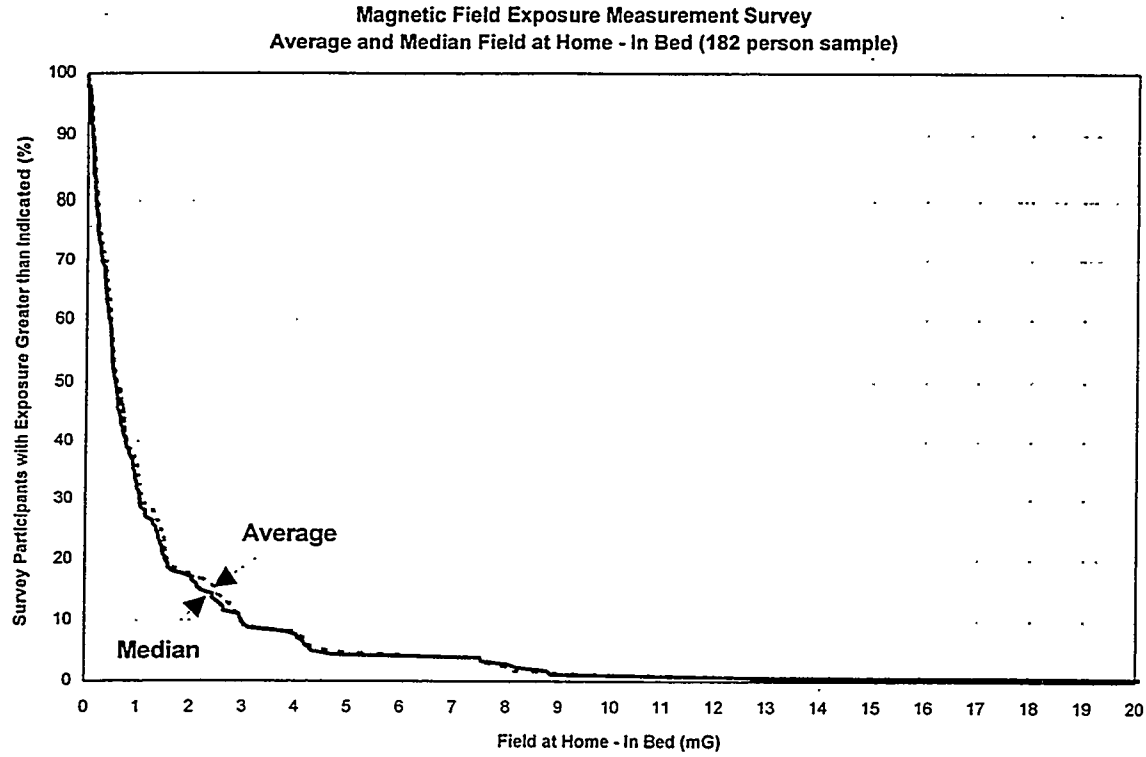

Figure 2.18 Cumulative Distribution of Average and Median Magnetic Field at Home, In Bed, Obtained from Personal Exposure Measurements of 182. Percentage of Survey Participants with Field Exceeding a Given Value.

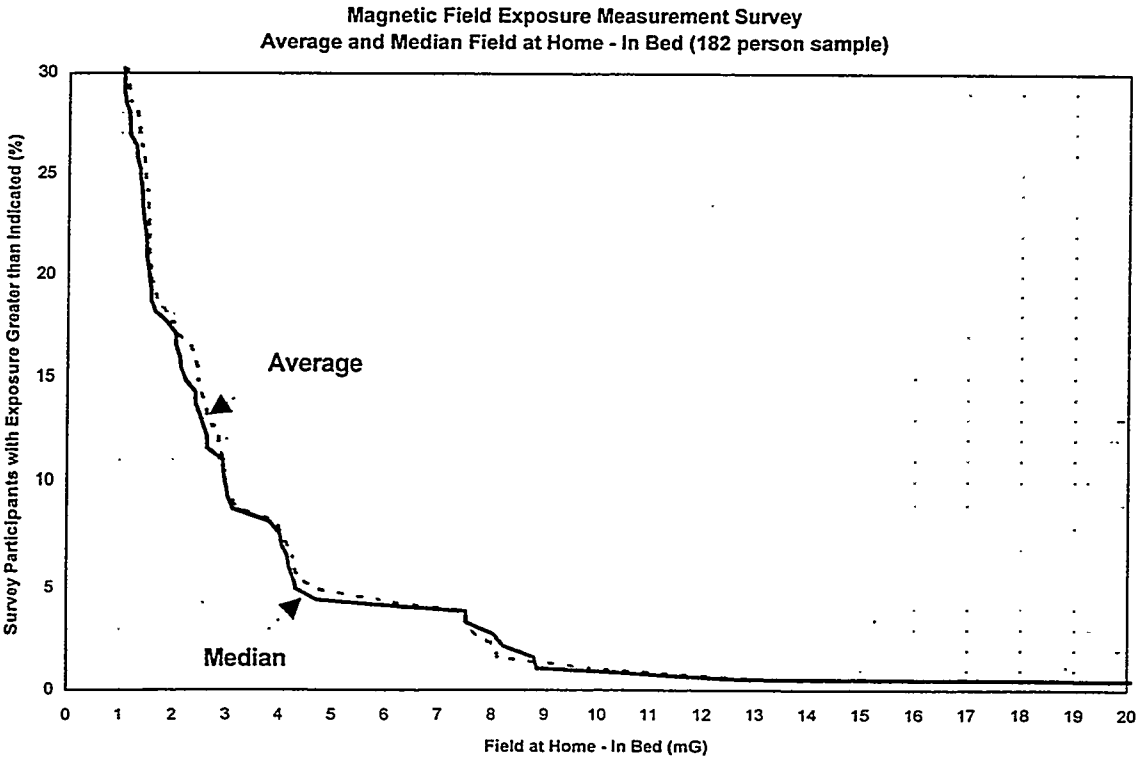

Figure 2.19 Same as Figure 2.18, but with an Expanded Vertical Scale

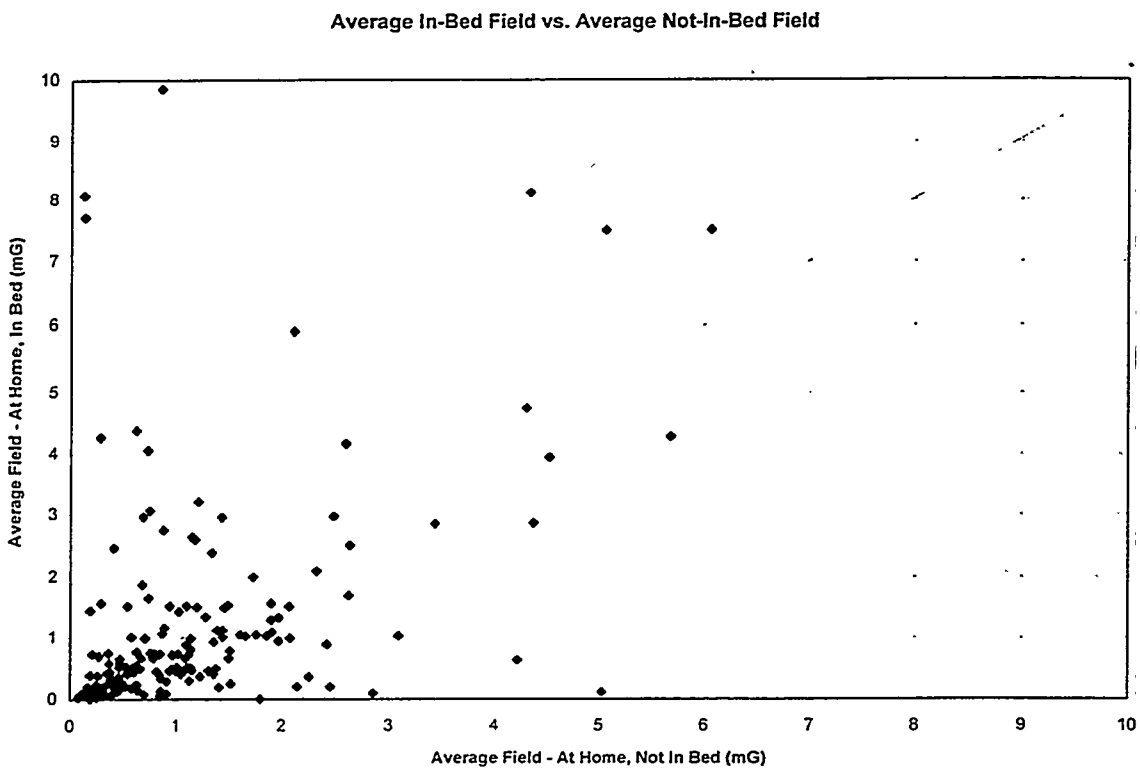

Figure 2.20 Average Field At Home, In Bed, versus Average Field At Home, Not In Bed

2.5.7 Exposure at Work

The portion of the time spent at work was recorded by the participants in their diary. There were 128 valid sets of data for the "at work" periods. These included also 7 adult (> 18 year old) students, for whom the "at school" period was considered as if it were "at work". Figures 2.21 and 2.22 show the cumulative distributions of average and median values for the at work period. The average is significantly greater than the median, because the field during the period at work showed a large variability. Average fields greater than 3 mG were recorded for 6.5 % of the people at work. Average fields greater than 5 mG were recorded by 4.8% of the people at work.

2.5.8 Exposure During Travel

The portion of the time spent during travel was recorded by the participants in their diary. There were 158 valid sets of data for the "during travel" periods. Figures 2.23 and 2.24 show the cumulative distributions of average and median values for the "during travel" period. Average fields greater than 3 mG were recorded for 4 % of the people traveling. Average fields greater than 5 mG were recorded by 0.6 % of the people traveling.

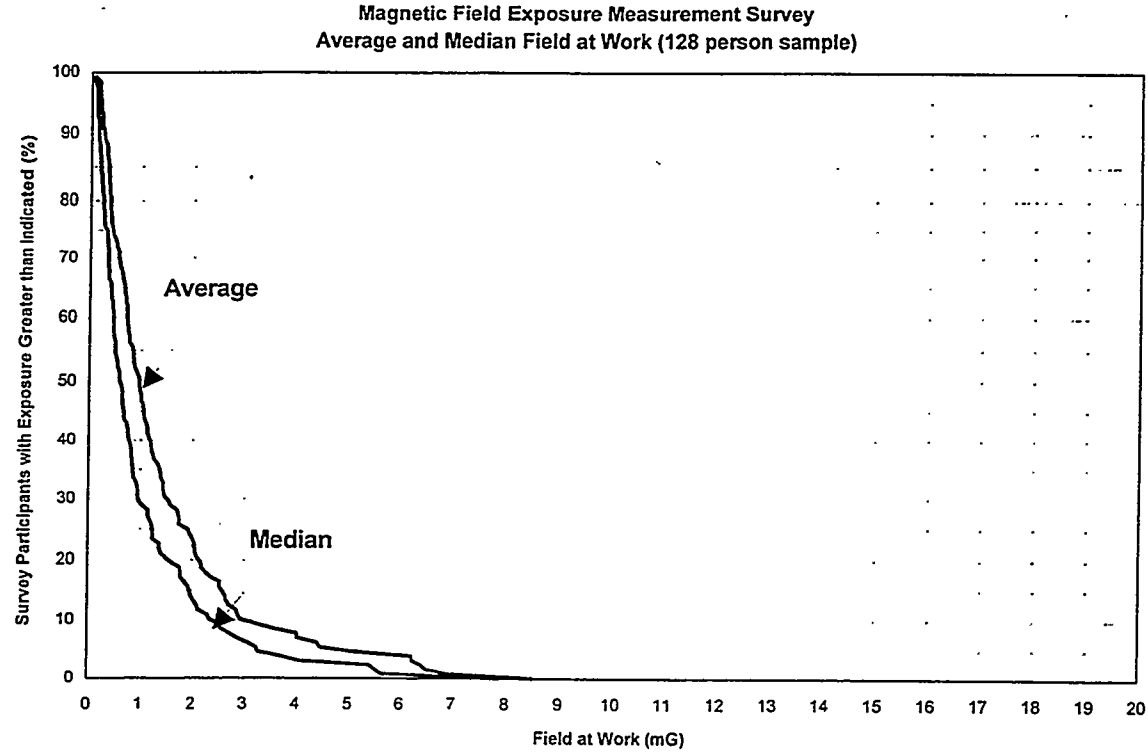

Figure 2.21 Cumulative Distribution of Average and Median Magnetic Field at Work Obtained from Personal Exposure Measurements of 128 Adults Randomly Selected in the USA. Percentage of Survey Participants with Field Exceeding a Given Value.

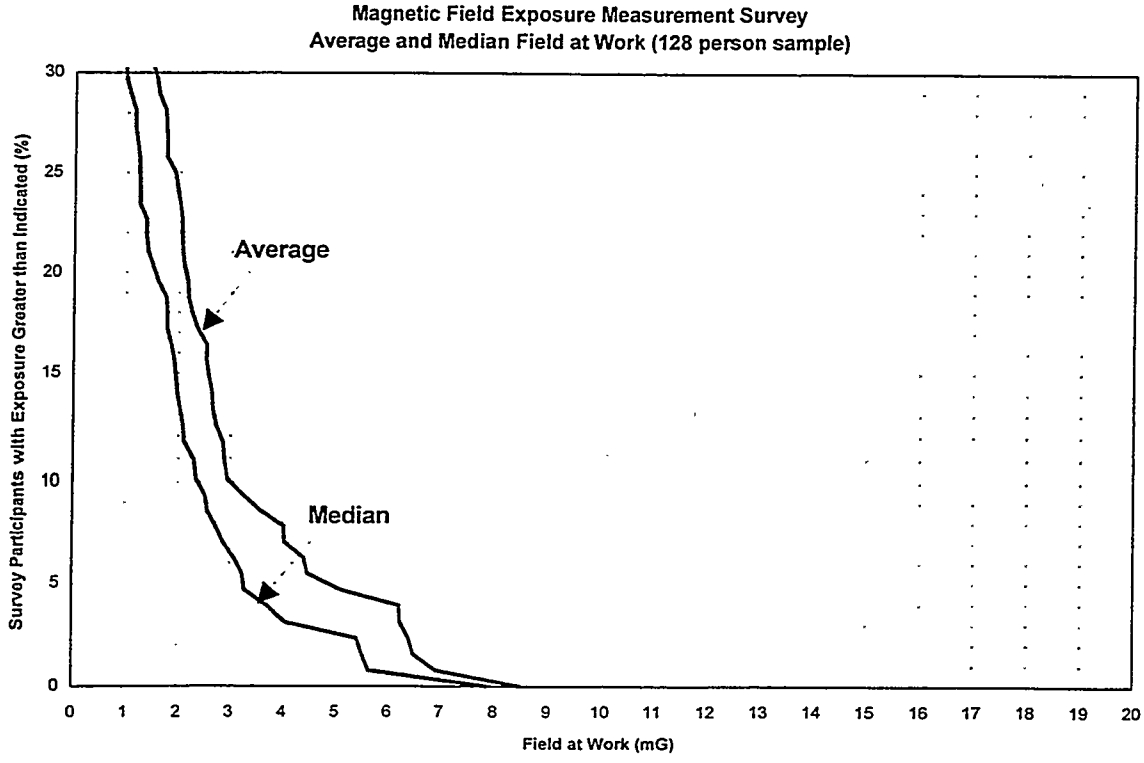

Figure 2.22 Same as Figure 2.21, but with an Expanded Vertical Scale

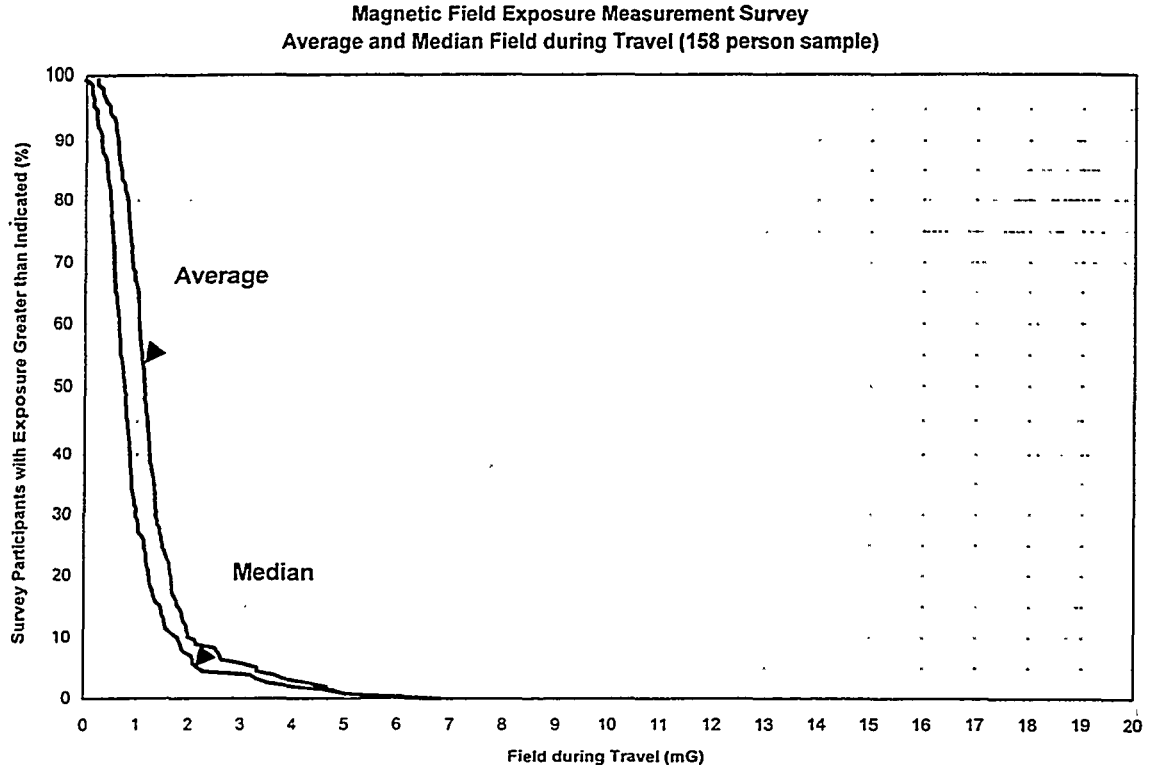

Figure 2.23 Cumulative Distribution of Average and Median Fields during Travel Obtained from Personal Exposure Measurements of 158 Adults Randomly Selected in the USA. Percentage of Survey Participants with Field Exceeding a Given Value.

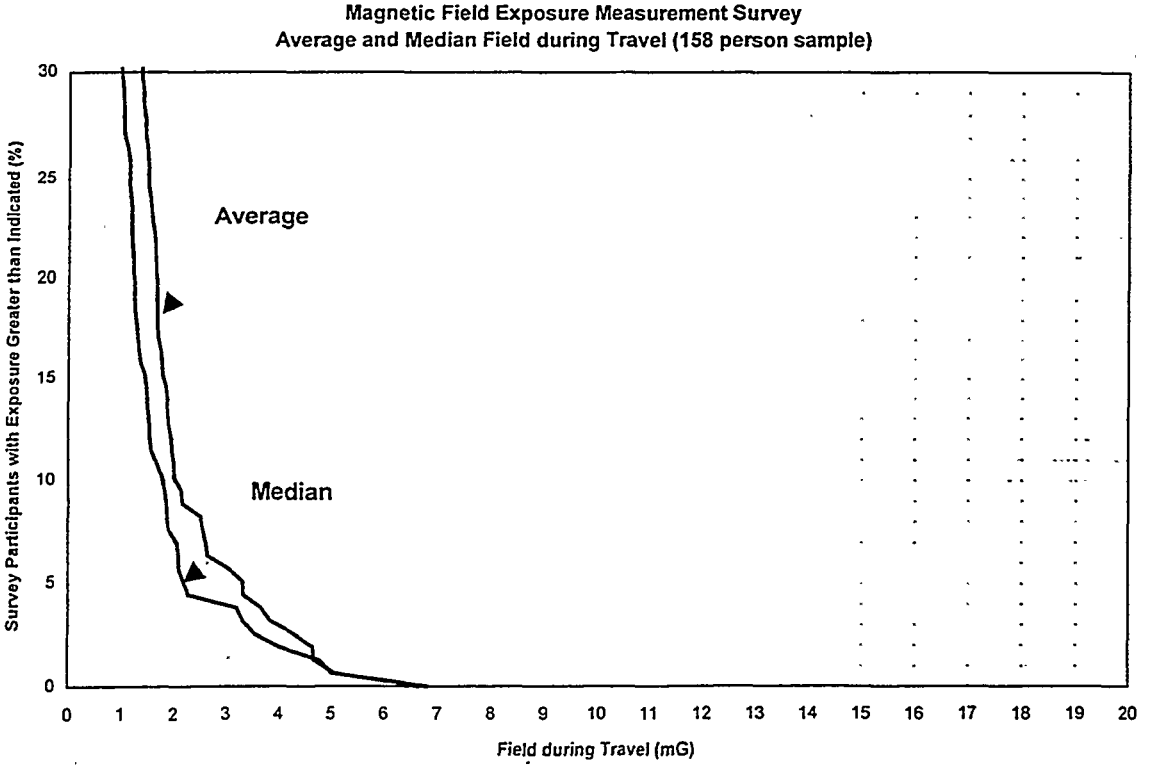

Figure 2.24 Same as Figure 2.23 but with an Expanded Vertical Scale

2.5.9 Comparison Of Exposures During Different Activity Types

Average and median values shown in Sections 2.5.4 to 2.5.7 for different types of activities are shown together in Figures 2.25 and 2.26.

The ranking of the average values depends on the location along the distribution curve. For 60 ~ 70 % of the cases, corresponding to average fields less than 1.2 mG, the lowest fields were recorded "at home in bed", followed by "at home not in bed", "at work", and "during travel". For the high field portion of the distribution curves, the ranking is almost entirely reversed. The lowest fields were recorded "during travel", followed by "at home not in bed", "at work", and "at home in bed". Thus, the category of "at home in bed" has both the lowest and the highest average fields. A detailed comparison between the results for different types of activity is shown in Table 2.4. The table includes also the category "other", which accounted, on average, for about 13% of the 24 hour period.

Table 2.4 **Personal Exposure Survey - Descriptive Statistics for Different Activity Periods and for the Total 24 Hour Period**

Parameter	At home not in bed	At home in bed	At work	During Travel	Other	24-hour
Number of Valid Data Sets	181	182	128	158	162	201 Data Sets
Average time (% of 24 hr) (for the valid data sets)	33.5	33.2	31.5	9.3	13.0	100 %
Minimum	**0.08**	**0.00**	**0.08**	**0.23**	**0.07**	**0.17 mG**
1st Percentile	0.11	0.02	0.14	0.24	0.15	0.18 mG
5th Percentile	0.19	0.08	0.18	0.47	0.26	0.29 mG
10th Percentile	0.25	0.11	0.25	0.61	0.36	0.36 mG
25th Percentile	0.43	0.25	0.44	0.86	0.53	0.57 mG
50th Percentile (**Median**)	**0.85**	**0.61**	**0.97**	**1.14**	**0.9**	**1.05 mG**
75th Percentile	1.42	1.45	1.93	1.50	1.4	1.67 mG
90th Percentile	2.45	3.00	3.14	2.10	2.37	2.63 mG
95th Percentile	3.83	5.20	5.22	3.33	3.38	3.48 mG
99th Percentile	5.94	12.1	7.23	5.03	7.99	7.05 mG
Maximum	**14.2**	**62.0**	**8.49**	**6.65**	**11.8**	**19.6 mG**
Mean	**1.22**	**1.61**	**1.47**	**1.36**	**1.27**	**1.41 mG**
Standard Deviation	1.46	4.88	1.56	0.92	1.39	1.70 mG
Geometric Mean	**0.8**	**0.61**	**0.94**	**1.15**	**0.91**	**1.02 mG**
Geom. Standard Deviation	2.47	3.83	2.63	1.74	2.20	2.17

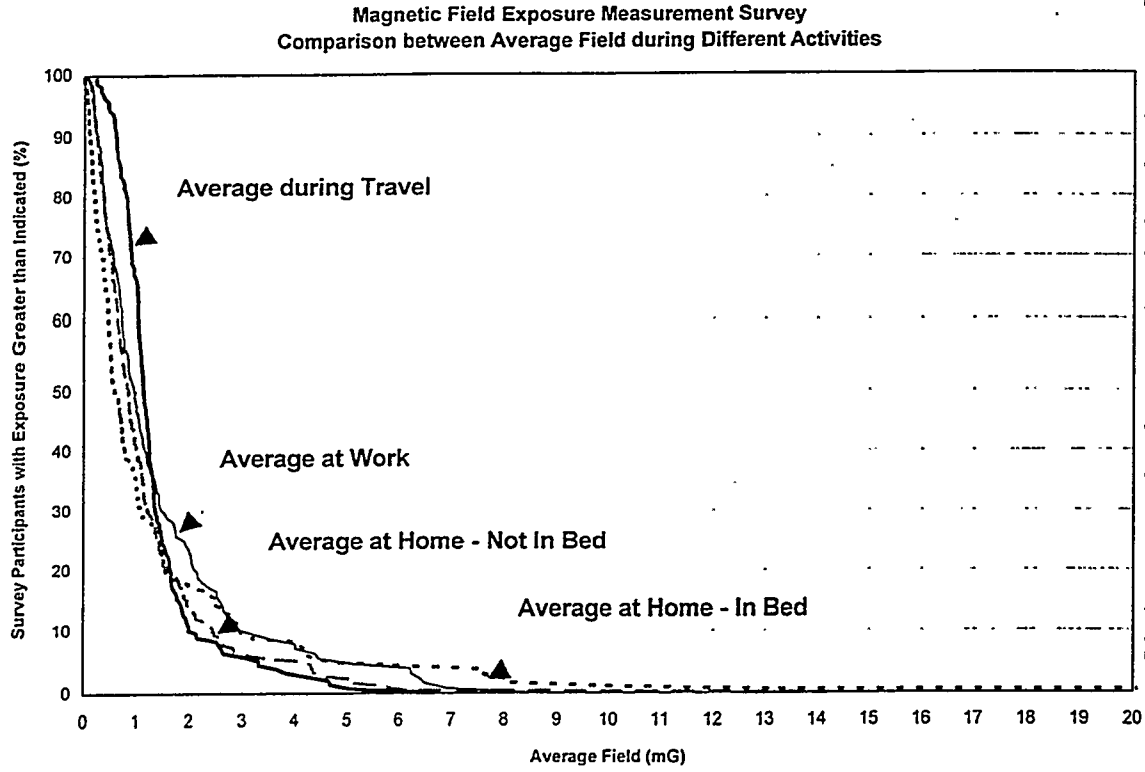

Figure 2.25 Comparison of the Cumulative Distributions of Average Magnetic Fields during Different Types of Activities

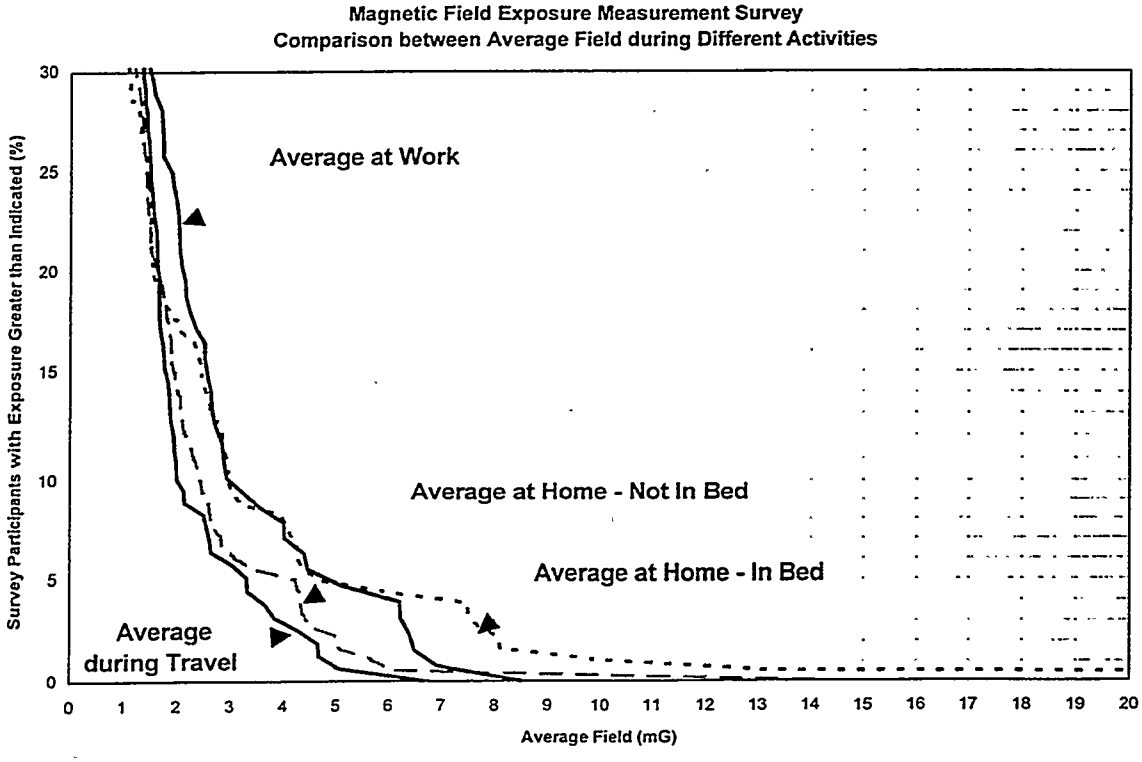

Figure 2.26 Same as Figure 2.25 but with an Expanded Scale

2.5.10 Effect of Parameters

The participants provided several data to characterize themselves and their residence, during the telephone interview with the recruiter and by means of the questionnaire sent with the meter. The parameters that characterize the participants are included in the database provided with this report (see Section 2.3). Not enough data are available to draw reliable conclusions about the effect of these parameters. Confidence intervals of the estimates of the cumulative exposure distribution of the general population derived from the 200-person survey results would show extensive overlapping, such that little significance could be attributed to the differences noticed. The following results are presented in order to give a complete account of the data and show general trends, which must be observed more closely during Phase II of this project. The average exposure was analyzed versus the following parameters: gender, type of residence, bedroom floor, and proximity to power lines.

The distributions of the 24-hour average magnetic field exposures for 86 women and 115 men are plotted in Figure 2.27. The two distribution are practically identical for the less exposed 70% of the population. However, the most exposed men were exposed to average magnetic fields significantly higher than those of the most exposed women. For instance: 10% of the men but only 4% of the women had average magnetic field exposures greater than 3 mG.

Figures 2.28 to 2.31 show the cumulative distributions of exposures for men and women for four different periods of time: at home not in bed, in bed, at work, during travel. The largest differences between the two exposure distributions are for the time at work, during which the largest exposure values were recorded for men. During travel, the two distributions are practically identical.

Figure 2.32 shows the distributions of exposure during the period at home, for each type of residence. The largest average fields were recorded for duplexes, followed by apartments, single family homes, and mobile homes. Caution must be exercised in drawing conclusions, because of the limited amount of data. However, these personal exposure measurements confirm the finding of area measurements performed during the 1000-home study (EPRI, 1993), as shown in the box and whiskers plots of Figure 2.33.

Figure 2.34 shows the exposure distributions for different bedroom floor levels.
Figure 2.35 shows the exposure distributions for different resident sizes.
Figure 2.36 shows the exposure distributions for different types of water lines.

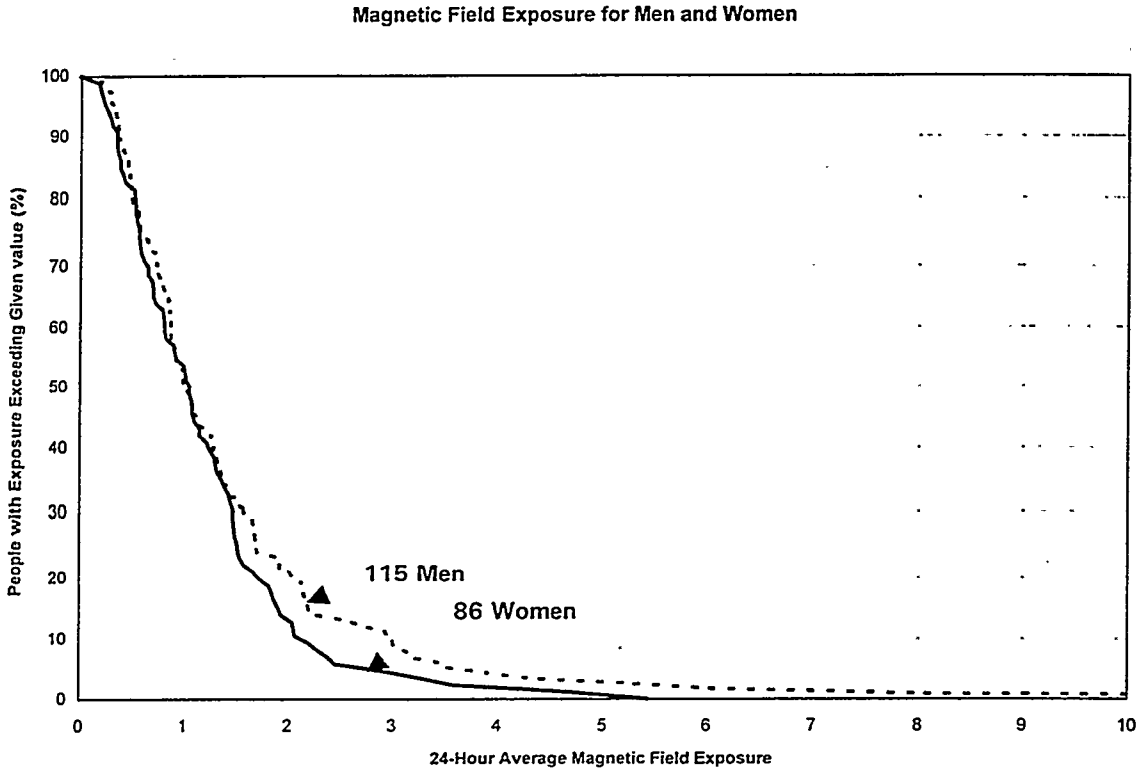

Figure 2.27 Cumulative Distributions of Exposure Data for Men and Women

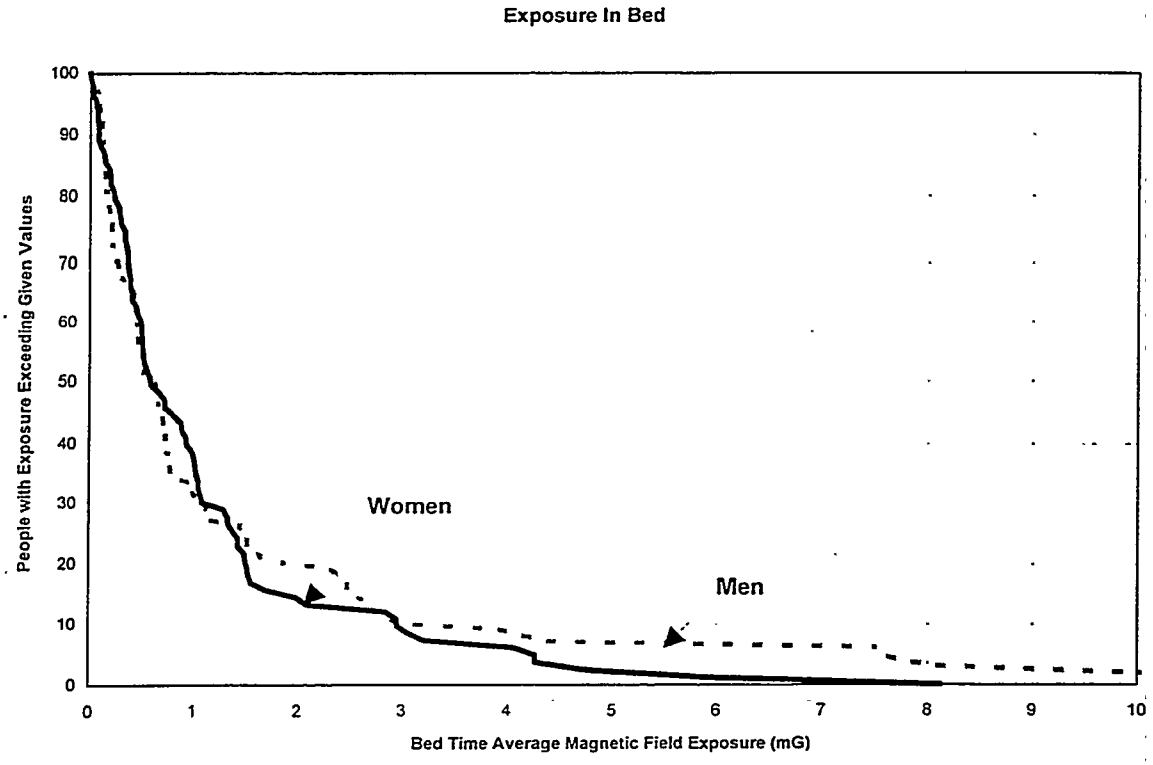

Figure 2.28 Cumulative Distributions of Exposure Data for Men and Women. Period of Time in Bed

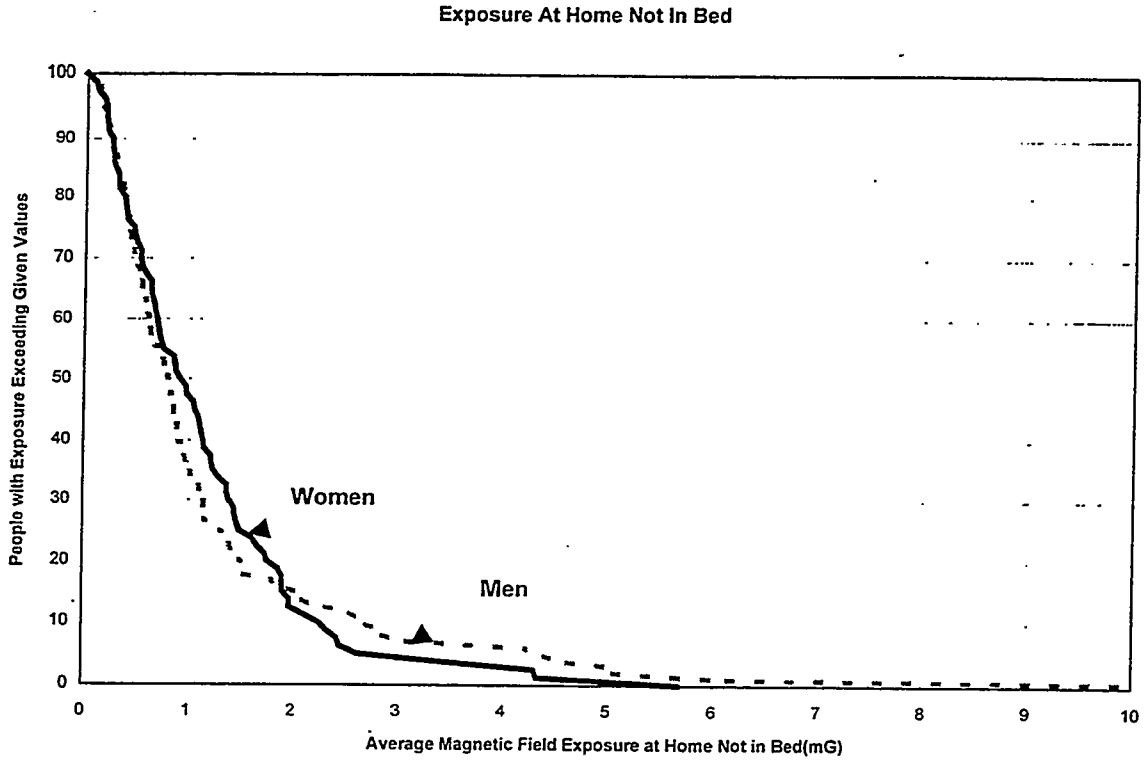

Figure 2.29 Cumulative Distributions of Exposure Data for Men and Women. Period of Time at Home, not in Bed

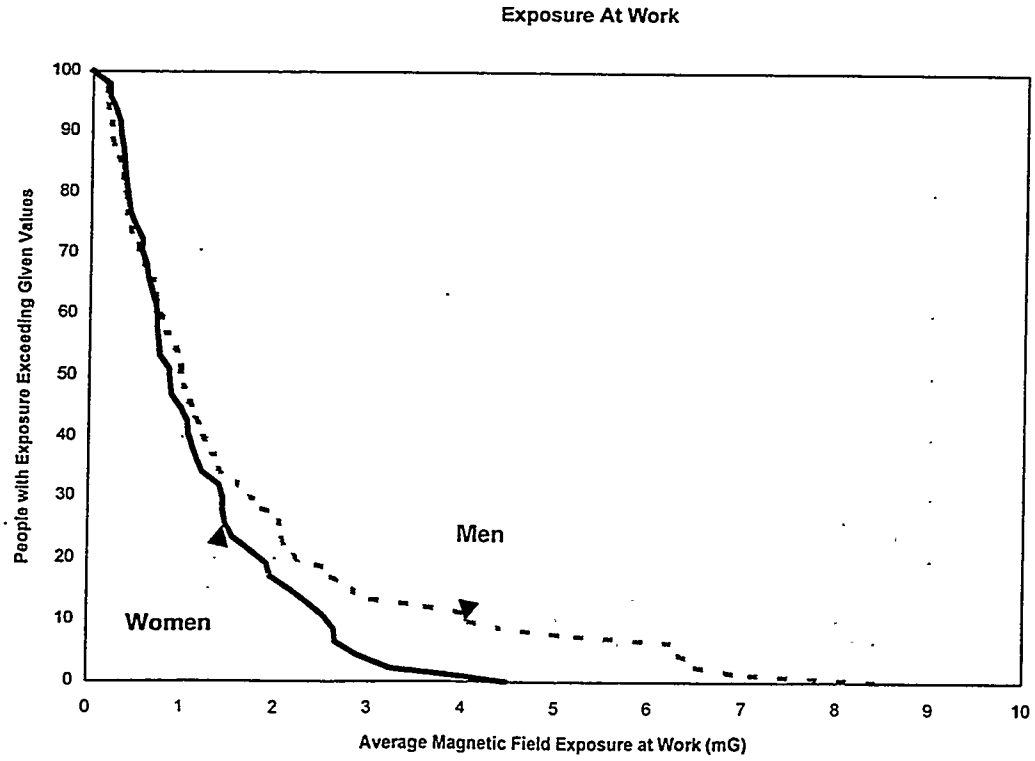

Figure 2.30 Cumulative Distributions of Exposure Data for Men and Women. Period of Time at Work

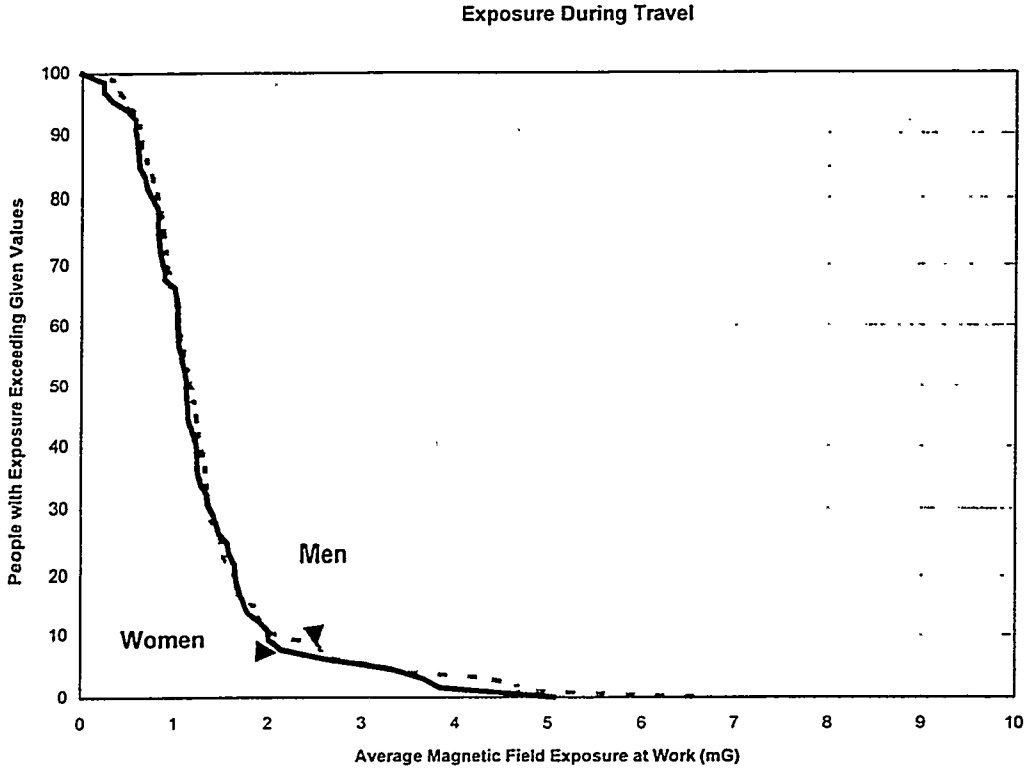

Figure 2.31 Cumulative Distributions of Exposure Data for Men and Women. Period of Time during Travel

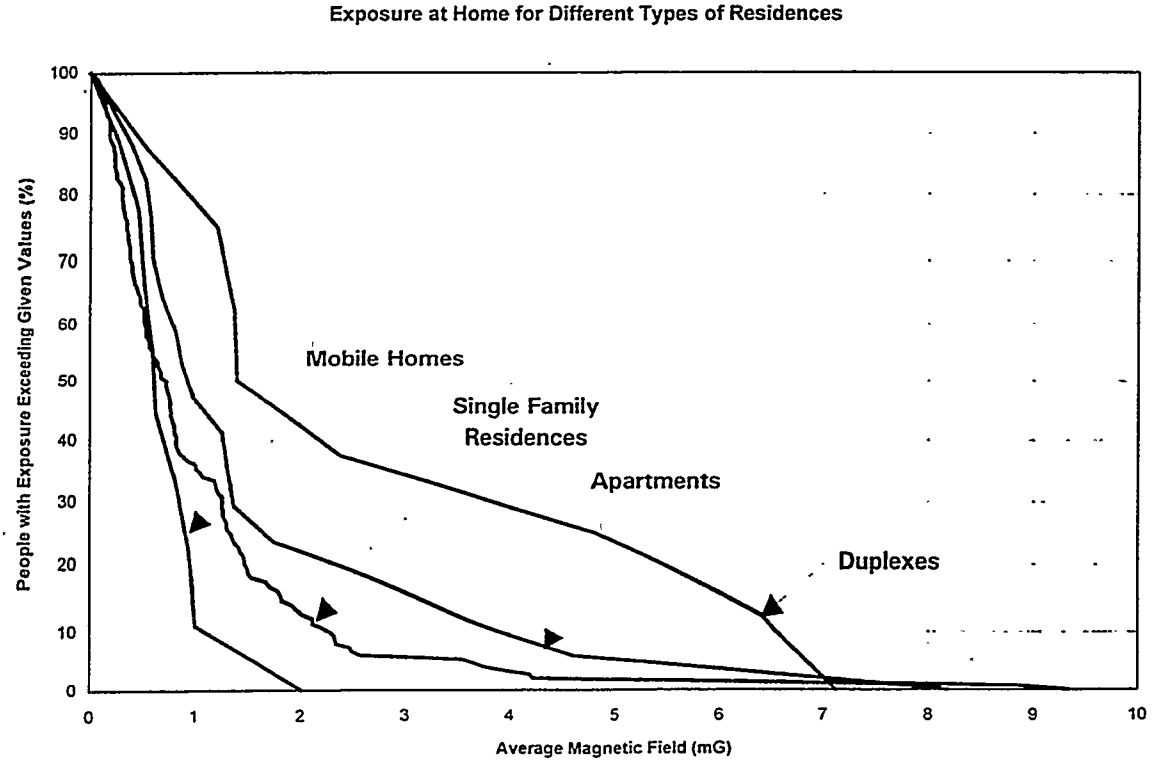

Figure 2.32 Cumulative Distributions of Average Magnetic Field Exposures at Home for Different Types of Residences

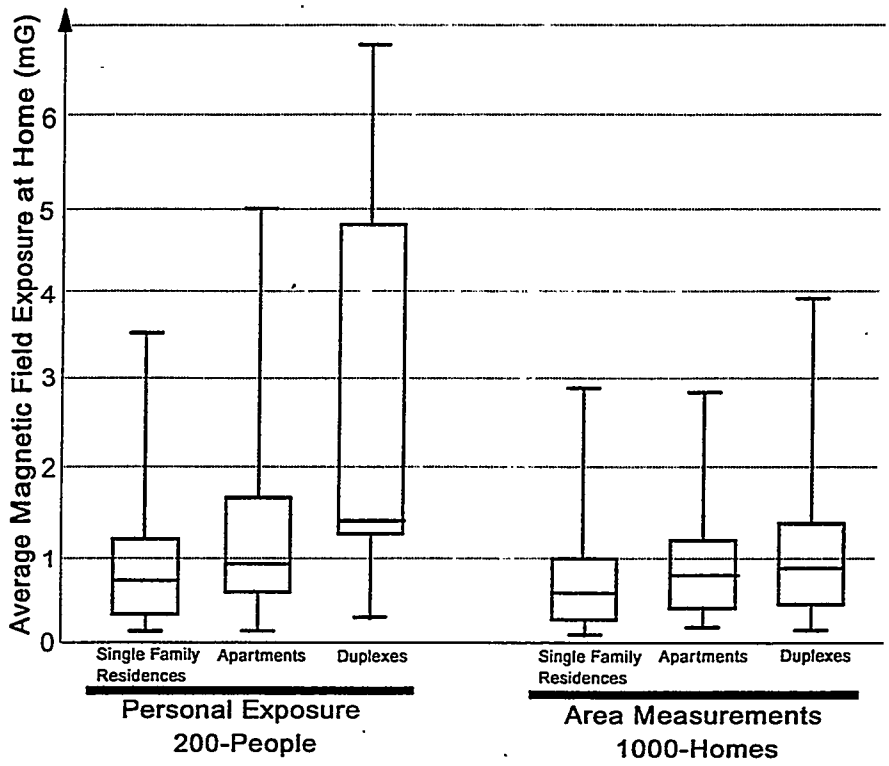

Figure 2.33 Distribution of Average Magnetic Fields for Different Residence Types. Box and Whiskers Plots showing the Field Exceeded in 95% (lower whisker), 75%, 50%, 25% (box), and 5% (upper whisker) of the Residences of a Given Type.

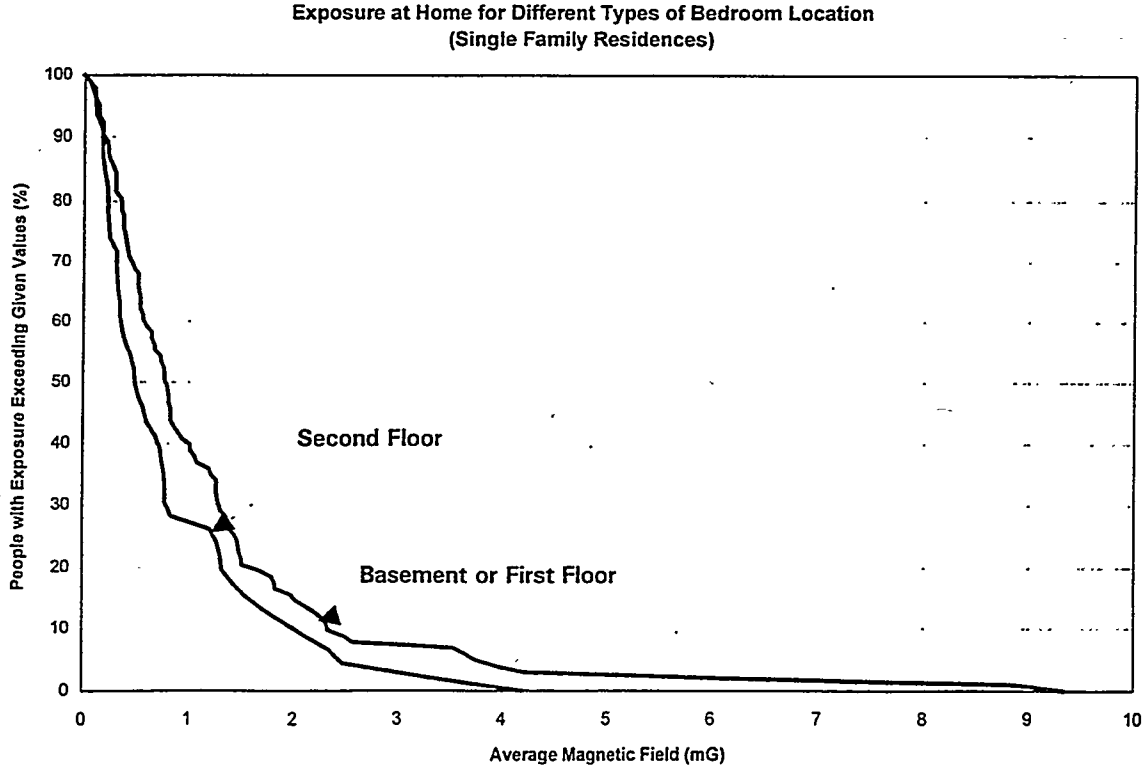

Figure 2.34 Cumulative Distribution of Exposures at Home for Different Bedroom Floors

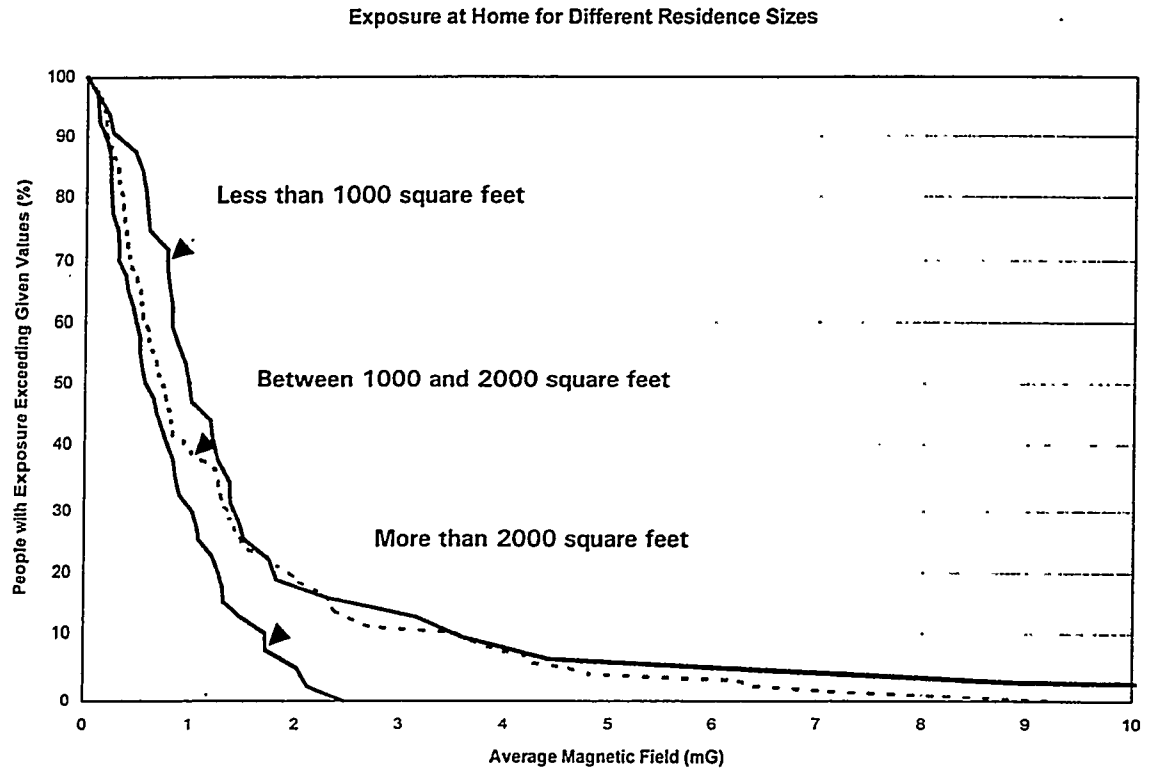

Figure 2.35 Cumulative Distribution of Exposures for Different Residence Sizes

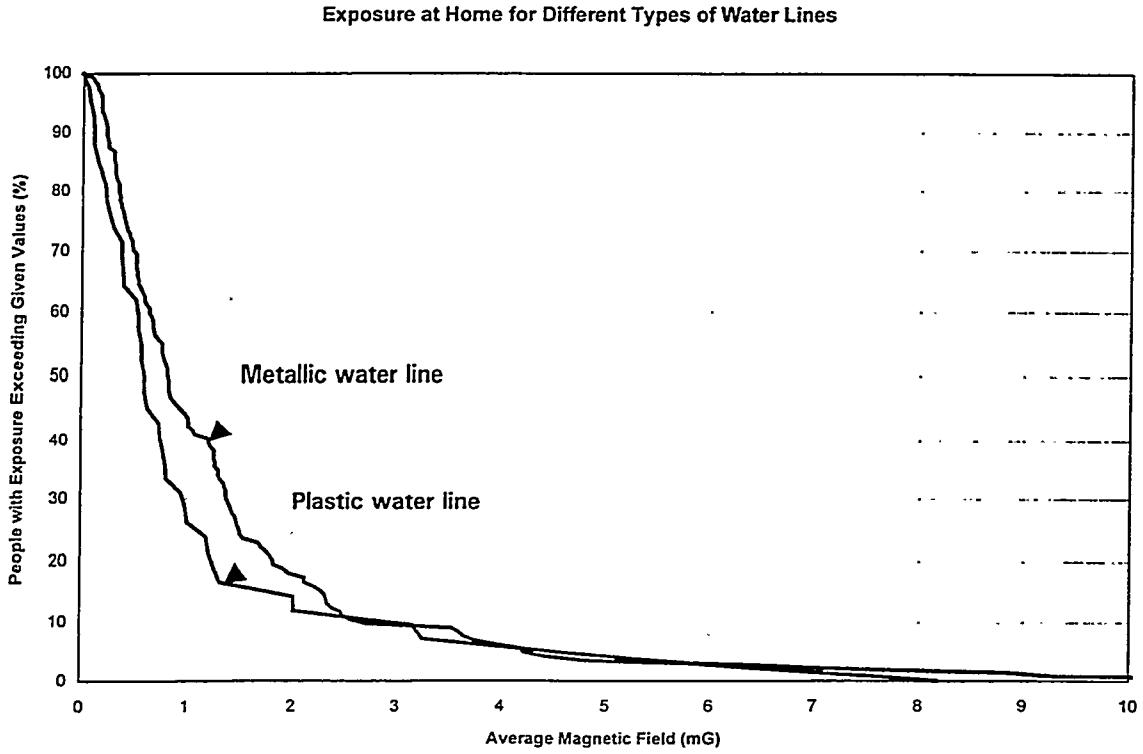

Figure 2.36 Cumulative Distribution of Exposures for Different Types of Water Lines

SECTION 3

OPTIMUM CHOICE OF PROTOCOL FOR EXTENSIVE PERSONAL MAGNETIC FIELD EXPOSURE OF THE GENERAL POPULATION

3.1 Exposure Meters and Instrumentation Selection

3.1.1 Selection of Exposure Metrics

The selection of exposure metrics is an important part of establishing a measurement protocol for personal exposure measurements. In fact the choice of exposure metrics will affect the sampling strategy, which instruments are selected, how the measurements are taken, and the analysis of the data.

Ideally, the suggested mechanisms that link EMF exposure and biological systems should be the basis for the selection of exposure metrics and then the instrumentation that is adequate for those metrics should be selected. However, the instrumentation for personal exposure measurements that is available and can be used reliably at present may not be designed to measure all the desirable quantities. The instrumentation influences the selection of the quantities to be measured.

The following issues are discussed: 1) the instrumentation for personal exposure measurements and the measured quantities, 2) quantities of potential biological interest and corresponding exposure indices, 3) a matrix "instrumentation" / "exposure indices", and 4) the possible choices of exposure metrics and instrumentation from the point of view of project goals, which include providing data for risk assessment and (possibly) for risk management.

3.1.2 Instrumentation Suitable for Magnetic Field Personal Exposure Measurements

Studies that included personal magnetic field personal exposure measurements are listed in Table 3.1. Table 3.1 lists also the instrumentation used in these studies. The characteristics of meters suitable for magnetic field personal exposure measurements are listed in Table 3.2.

Table 3.1 List of studies that have included personal magnetic field exposure measurements

Reference	Setting	Subjects	Meter	Duration
Deadman et al. (1988)	Occupational & residential	Utility workers	IREQ	7 days
Bracken (1990)	Occupational & residential	Utility workers	Emdex-100	24 hours
Kavet, Silva and Thornton (1992)	Occupational & residential	Adults	Emdex-100	24 hours
Kaune and Zaffanella (1992; 1994)	Residential school	Children	Amex-3D	24 hours
Koontz et al. (1992)	Residential	Children	Emdex-100 and Amex-3D	48 hours
Bowman et al. (1992)	Occupational	Utility & non-utility workers	Emdex (3 versions)	1 work day individual tasks
Floderus et al. (1992)	Occupational & residential	Different occupations	Emdex (2 versions)	workday + home
Reiner et al. (1992)	Occupational	Telecommunication industry workers	Emdex-c	1 day
Wenzl (1992)	Occupational	Automobile workers	Emdex-c	half shift
Bracken (1993)	Residential	Adults	Emdex-100, Emdex-C, Emdex II	48 hours (only when subject was at home)
Cartwright et al (1993)	Occupational	Refinery electrical workers	Emdex C	1 day (work day + home)
DelPizzo (1993)	Occupational	Four occupational groups	Amex-3D	2 hours
Guenel et al (1993)	Occupational	Workers in electric power generation plants, office workers, gas workers	Positron	7 days
Sahl et al (1994)	Occupational	Utility workers	Emdex II	8 hours work shift
Merchant, Renew, and Swanson (1994)	Residential	Adults	IREQ, Positron	3 - 7 days
Kaune et al (1994)	Residential & school	Children	Amex-3D	24 hours
Theriault et al. (1994)	Occupational	Utility workers	Positron	8 hours
Bracken et al. (1994)	Occupational	Utility workers	Emdex II (high and low range)	Individual tasks
Bracken et al. (1994)	Residential	Adults	Emdex (3 versions)	One day
Breyesse et al. (1994)	Occupational	Women in offices	Emdex (2 versions)	1 work day
Breyesse et al. (1994)	Occupational	Telephone lineworkers	Emdex C	1 day (work day and off the job)
Savitz et at. (1995)	Occupational	Utility workers	Emdex II Amex-3D	8 hours
Bracken et al. (1995)	Residential	Pregnant women	Amex 1-D	7 days
Levallois et al. (1995)	Residential	Near 735 kV lines	Positron	1 day
Philips et al. (1995)	Occupational	Health care workers	Emdex II, Speclite	work day

Table 3.2 Characteristics of meters for magnetic field personal exposure measurements

Name of meter	Source	Size & weight	Bandwidth	Measurement type	Quantities measured
EMDEX - 100	EPRI. Not commercially available.	15.2 x 11.4 x 5.1 cm^3 454 g	35 - 300 Hz	Record of quantities versus time	x, y, and z components
IREQ	IREQ Montreal Not available commercially	14.3 x 8 x 2.3 cm^3 218 g	48 - 78 Hz	Record of quantities versus time	x, y, and z components. High-frequency transients
Emdex C	Electric Field Measurement Co., West Stockbridge MA			Record of quantities as function of time	x, y, and z components of magnetic field; electric field;
Positron	Positron Industries Montreal, Canada No longer manufactured	15.3 x 8.1 x 2.2 cm^3 weight: 240 g	50 - 70 Hz for magnetic and electric fields	Record of logarithm of quantities as function of time	z, y, and z components of magnetic field; electric field; high-frequency electric-field transients
EMDEX II	Enertech Consultants Campbell, CA	16.8 x 6.6 x 3.8 cm^3 weight: 784 g	40 - 800 Hz or 100 - 800 Hz	Record of measured quantities as function of time	x, y, and z components of magnetic field; electric field (with external sensor)
EMDEX MATE	Enertech Consultants Campbell, CA	12 x 6 x 2.5 cm^3 weight: 130 g	40 - 1000 Hz	Statistical summary of the data	x, y, and z components of magnetic field
EMDEX LITE	Enertech Consultants Campbell, CA	12 x 6 x 2.5 cm^3 weight: 130 g	40 - 1000 Hz	Record of quantities as function of time	x, y, and z components of magnetic field
AMEX-3D	Enertech Consultants Campbell, CA	3 x 5 x 1.5 cm^3 weight: 50 g	40 - 1000 Hz	Total Exposure	Time weighted average magnetic field
Speclite	Innovation Inc., Houston, TX	Small data logger	30 frequency bands	Record of measured quantities versus time	Resultant in 30 frequency bands at one minute intervals

3.1.3 Quantities of Potential Interest

All the epidemiological studies that have shown an association between magnetic field and some health outcome have used the r.m.s. value, obtained using single-axis or three-axis meters operating in a frequency range from a few hertz to several hundreds hertz (therefore including the power frequency), as the measure of the magnetic field. This is a powerful reason for continuing the focus on r.m.s. measurements.

Epidemiological studies, however, have shown several inconsistencies. Some have shown that health outcomes are better associated with indirect field measurements (such as "wire codes") than with direct magnetic field measurements. This has fueled speculations that parameters other than the r.m.s. field value are responsible for the health outcome. Researchers have pointed on various occasions to: intensity of harmonics, direction of the field in space, direction of the field relative to the DC field, polarization, variations of the field with time (intermittence, coherence, window effects), and magnetic field transients. None of these parameters were measured, or if measured were not used to draw conclusions in epidemiological studies. All of these parameters can be measured with instrumentation available today, although the measurement protocol may become complex and cumbersome.

The quantities of potential interest, either because they have been measured in past personal exposure measurements or because they have been the object of investigations or speculations regarding a possible biological significance are listed in Table 3.3.

Table 3.3 Quantities of potential interest

Type of Quantity	Possible Exposure Index
Magnitude of the RMS Magnetic Field	Time Weighted Average (TWA) in mG or time integrated exposure (in mG•hour)
	Median value
	Maximum Value
	A given percentile value (e.g. the 90th percentile)
	Time spent above a given field value (e.g. time above 2 mG)
	Time integrated exposure in a field window (e.g. mG•hour between 2mG and 5 mG)
	Time spent within a field window (e.g. time between 2 mG and 5 mG)
Magnitude of individual field components	Average value of vertical field. Average value of horizontal field
Variability of the magnetic field	Average difference between successive measurements
	Number of sudden field variations exceeding a given value (e.g. number of times the field changes by more than 5 mG between two consecutive readings). A sudden change in field value may indicate a sudden change in electrical load of the equipment or system causing the field. A sudden change in load may correspond to a magnetic field transients.
	Total length of time during which the magnetic field is greater than a given value and does not vary by more than a given amount for at least a given amount of time (e.g. total length of time during which the field is greater than 2 mG and does not change by more than 0.1 mG or 1% for at least 10 consecutive seconds)
Harmonics	Average value of the nth harmonic (e.g. the third harmonic: 180 Hz).
	Average value of the total harmonic distortion
Combination of DC and AC field	Magnitude of the DC field and of the AC 60 Hz (or any other frequency, e.g. 180 Hz) field parallel to the DC field.
	Magnitude of the DC field and of the AC 60 Hz (or any other frequency, e.g. 180 Hz) field perpendicular to the DC field.
Transients	Number of magnetic field transients with given characteristics (e.g. with frequency components between 2 kHz and 250 kHz and with a peak value exceeding 0.5 mG).

3.1.4 Matrix: Meters / Exposure Indices

Table 3.4 presents a matrix whose rows correspond to the possible exposure indices and whose columns correspond to the four most suitable instruments presented in Table 3.2. The other five instruments listed in Table 3.2 are not considered suitable for a variety of reasons: The EMDEX-100 meter, the IREQ meter, and the Positron meter are no longer manufactured. The EMDEX-C also is not readily available. The Speclite has a very narrow function and is not suitable for the survey.

Table 3.4 Meters and Exposure Indices Matrix

	3-Axis AMEX	EMDEX II	EMDEX Lite	EMDEX Mate
TWA	√	√	√	√
Median		√	√	√
Maximum		√	√	√
Percentiles		√	√	√
Time above field value		√	√	√
Exposure in window		√	√	√
Time in window		√	√	√
Complete time series		√	√	
Number of sudden field variations				√
Constancy (duration of periods with constant field)				√
Vertical and horizontal components (*)				
Third harmonics				
Harmonic distortion		√		
DC and parallel AC				
DC and perpendicular AC				
Transients				

(*) All instruments except the AMEX can provide information about individual components. However, the variability in the method of wearing the meters and of the user posture makes it very difficult to attribute much significance to individual components.

The EMDEX MATE is capable of providing information about the frequency of occurrence of sudden load changes (and possible transients) and constancy, because of the fast sampling rate (one measurement on each axis every 0.5 seconds).

- All four meters are capable of measuring the most important quantity, i.e. the time weighted average of the r.m.s. magnetic field. None of the meters in Table 4 is capable of measuring DC fields and transients. An indirect measurement of transients is provided by the measurement of sudden field variations (which is possible using the MATE). Only one meter (EMDEX II) is capable of giving some information on harmonics.

Indices involving a combination of AC and DC field measurements. DOE RAPID Engineering Project #3 has obtained the distribution of DC field measurements and of the angle between AC and DC fields at four sites of each of five different environments (schools, office buildings, hospitals, grocery stores, and metal fabrication shops). A large dispersion of DC field values was found with values ranging from one half to twice the unperturbed geomagnetic field. Furthermore, the distribution of the angle between the DC and the AC magnetic field vectors in space was found to be not significantly different from a random distribution of angles between two vectors in space. These results indicate that the incidence of given combinations of AC and DC magnetic fields can be estimated from random statistics, knowing the unperturbed DC geomagnetic field and the amplitude of the AC field, without the need of personal exposure measurements.

Although there are no practical instruments for personal exposure measurements that combine AC and DC fields, there are portable instruments that could be used for short-term or spot measurements. The Multiwave™ system could be worn in a backpack and provides a recording of AC field waveshape and DC field magnitude along three orthogonal axes. The combination of an AC field meter (such as the EMDEX II) and a DC field meter (such as the F.W.Bell DC meter) can provide the spot measurement of the dc field amplitude and the magnitude of the AC field parallel and perpendicular to the DC field. To fully characterize the DC field components parallel and perpendicular to the DC field, the EMDEX Wavecorder™ in conjunction with a DC meter is preferable for spot measurements.

Indices involving transients. Measurements of transients using personal dosimeters involve considerable uncertainties, because of the need to characterize a complex phenomenon such as magnetic field transients, using portable instrumentation. The experience with the Positron instrument, used for the French - Canadian Utility Worker Epidemiological Study indicates the danger of these measurements. The instrument in fact was sensitive not only to what could be correctly classified as magnetic field transients but also to portable radio communication devices. A transient counter that is sensitive to frequencies from 2 kHz to 250 kHz was developed for EPRI, but was built for stationary measurements and is not small enough to be worn by a person. Current state of the art of instrumentation precludes the measurements of personal exposure to transients. DOE RAPID Engineering Project #3 has found that the number of transients above given thresholds is correlated with the magnitude of the 60 Hz magnetic field. Similar findings were obtained by Guttman (California pilot transient study). Consideration may be given to measurements of transients, using stationary instrumentation at selected locations, for the persons with the highest 60 Hz exposure.

Indices involving harmonics. The first consideration on harmonics is: are they biologically relevant? As with many other issues related to EMF this is still an open question. It is wise, therefore, to continue consideration of harmonics in EMF studies. The next consideration is about the amplitude of the harmonics: if harmonics are biologically relevant, above which amplitude should we start considering them? In most exposure situations, the amplitude of harmonics is considerably lower than that of the 60 Hz field. For instance, DOE RAPID Engineering Project #3 found that the third harmonic rarely exceeded 1 mG, the fifth harmonic rarely exceeded 0.2 mG, and the other harmonics were much smaller. In most situations the value

of the harmonics is correlated to the 60 Hz value. This was shown both in RAPID Engineering Project #3 and in EPRI's 1000 home study. The latter study showed that the residential total harmonic distortion was almost exclusively due to the third harmonic, the third harmonic exceeded 1 mG in about 1% of the residences, but in some residences values in the 5 - 10 mG range were measured. With regard to personal exposure instrumentation, the EMDEX II would measure the total harmonic distortion in addition to the r.m.s. field, while the EMDEX Lite would just measure the r.m.s. field. The cost advantage of using the Lite, however, may outweigh the lack of harmonic recording capability. Harmonic measurements, like measurements of transients, may be considered for a subgroup of the general population after a survey of the personal exposure to 60 Hz magnetic fields, for instance for the subjects with the highest 60 Hz exposure.

Indices involving individual field components. The knowledge of horizontal and vertical field components, while interesting, has not been (yet) considered important in epidemiological or health studies. It is quite difficult to maintain the orientation of the personal exposure meter to make sure that the horizontal and vertical components are measured accurately. Recording and storing the individual field components in addition to the resultant increases the complexity of the instrumentation.

3.2 Alternative Sample Design Strategies

There are two primary sample designs, which can be considered for the process of generating a nationally representative sample of persons. These are as follows:

- Area probability sample: geographical areas are sampled in a cluster approach, with the final geographic area sampling units being Census blocks. Field interviewers are sent to the sampled blocks to enumerate the households in the block, draw a sample of households in the block, and recruit by personal visit the sampled households.
- Random digit dialing (RDD) sample: telephone numbers are sampled from "working banks" (sets of one hundred telephone numbers with the same area code and five digit prefix such as 301-294-44 that have at least one listed residential number). These telephone numbers are called, and any residential household corresponding to these numbers become the sample. Households are recruited for the study by telephone call.

The area probability sample would have to be highly clustered to be feasible at all in terms of cost for a national sample. The sampling process would need to include a first stage sample of primary sampling unit (PSUs), which would be counties or sets of counties, with an enumeration and sampling of Census blocks within the sampled PSU's as the fielded clusters.

The relative advantages and disadvantages of the area probability sample design and the RDD sample design are as follows:

- The area probability sample will be considerably more expensive for a fixed sample size, given the need for travel, enumeration of the sampled Census blocks, and personal canvassing of households. These costs are discussed in Appendix D.
- The area probability sample will be highly clustered compared to the RDD sample design, resulting in samples much more concentrated geographically. This would increase sampling variability relative to the RDD sample design with the same overall sample size.
- The area probability sample will cover non-telephone households. The RDD sample design excludes non-telephone households, causing a potential bias.
- The area probability sample will have higher response rates because the personal door to door recruitment is much more effective than telephone recruitment.
- The area probability sample permits the collection of observational data that cannot be collected without on-site visits (though these data can be collected for recruited households under an RDD sample design if personal visits are used to deliver the meter).

The area probability sample design overall has better properties if cost is not a serious consideration. The RDD sample design on the other hand is recommended if the survey cost has to be constrained.

3.3 Effectiveness of Sample Design and Survey Method

3.3.1 Impact of Sample Design, Survey Method and Meter Choice

Different sample designs and survey methods correspond to different costs of data collection. The lowest cost is achieved using a random digit dialing sample design (including telephone recruitment), a mailing out of the instruments to the sampled persons, and a utilization of instruments that can be easily worn and do not require much input from the user. This overall design avoids the cost of a visit to the user's residence. It requires, however, recruitment of the participants by phone, which corresponds to a refusal rate significantly greater than that which could be achieved by visiting the user's residence. In addition, a mailing out of the instruments (rather than a personal delivery of the instruments by a field person to the household) will also involve the extra loss of participation by persons who agreed to cooperate at the recruitment stage, but who fail to follow through in agreeing to use the meter.

The primary impact of sample design and sample household contact procedures to deliver the instruments is on cost per person and on sampling error. If the cost per person is lower, then more persons can be measured for the same overall data collection cost. This translates into a greater accuracy of estimated exposures for the total population. However, if the refusal rate is larger, the bias associated with it is larger. The overall statistical error results from the combination of the statistical error due to the number of participants and the bias due to refusal.

The impact of meter selection is cost and quality of the collected information. An inexpensive meter will lower costs, but will not allow measuring indices that in the future may be found to be better correlated to biological effects, making the information collected less useful.

3.3.2 Survey Methods

A preliminary analysis of sample designs and survey methods was performed in order to focus the attention to the most cost effective ways to conduct the survey. The sample designs and survey methods listed in Table 3.5 were considered. Survey sample designs considered were: RDD and area probability. The survey methods were characterized by:

- the way the personal exposure meter are delivered to the participants: by mail or by a visiting crew;
- the type of personal exposure meter used: AMEX, EMDEX II, EMDEX Lite, MATE;
- the size of the visiting crew: one or two people;
- the type of visiting crew: hired locally or traveling from one region to another;
- the duration of the personal exposure measurements: one day or one week.

Should the visiting crew be composed of one person only, that person would be responsible for the recruitment efforts (unless the people were previously recruited by phone); for explaining the consent form and obtaining the participant's signature on the consent form; for administering a questionnaire; for instructing the persons on how to wear the personal exposure meter, fill out the diary, and mail the meter back; and for observing the power lines near the residence.

Should the visiting crew be composed of two persons, the additional person would be responsible for additional measurements: spot DC field and AC field waveform capture measurements in different rooms in order to obtain information on DC and AC interaction and harmonics.

Table 3.5. Survey methods

Method (#)	Sample design	Personal exposure meter	Meter delivery to subjects	Size of visiting crew	Local or Traveling Crew	One-day or One-week exposure	Estimated participation rate (%)
1	RDD	**AMEX**[1]	By mail			One day	41
2	"	"	"			One week	40
3	"	**2-AMEXes**[2]	"			One day	41
4	"	"	"			One week	40
5	RDD	**EMDEX II**[3]	By mail			One day	41
6	"	"	By visit	1	Local	"	45
7	"	"	"	2	Traveling	"	45
8	"	"	"	1	Local	"	45
9	"	"	"	2	Traveling	"	45
10	Area probability	"	"	1	Local	"	70
11	"	"	"	2	Traveling	"	70
12	"	"	"	1	Local	One day	70
13	"	"	"	2	Traveling	One day	70
14	RDD	**EMDEX Lite**[4]	By mail			One day	41
15	"	"	"			One week	34
16	"	"	By visit	1	Local	One day	45
17	"	"	"	"	"	One week	44
18	"	"	"	2	Traveling	One day	45
19	"	"	"	"	"	One week	44

Method (#)	Sample design	Personal exposure meter	Meter delivery to subjects	Size of visiting crew	Local or Traveling Crew	One-day or One-week exposure	Estimated participation rate (%)
20	RDD	**EMDEX Lite**[4]	By visit	1	Local	One day	45
21	"	"	"	"	"	One week	44
22	"	"	"	2	Traveling	One day	45
23	"	"	"	"	"	One week	44
24	Area probability	"	By visit	1	Local	One day	70
25	"	"	"	"	"	One week	68
26	"	"	"	2	Traveling	One day	70
27	"	"	"	"	"	One week	68
28	"	"	"	1	Local	One day	70
29	"	"	"	"	"	One week	68
30	"	"	"	2	Traveling	One day	70
31	"	"	"	"	"	One week	68
32	RDD	**EMDEX MATE**[5]	By mail			One day	41
33	"	"	"			One week	34
34	"	"	By visit	1	Local	One day	45
35	"	"	"	"	"	One week	44
36	"	"	"	2	Traveling	One day	45
37	"	"	"	"	"	One week	44
38	"	"	"	1	Local	One day	45
39	"	"	"	"	"	One week	44
40	"	"	"	2	Traveling	One day	45
41	"	"	"	"	"	One week	44
42	Area probability	"	By visit	1	Local	One day	70
43	"	"	"	"	"	One week	68
44	"	"	"	2	Traveling	One day	70
45	"	"	"	"	"	One week	68
46	By visit	"	"	1	Local	One day	70
47	"	"	"	"	"	One week	68
48	"	"	"	2	Traveling	One day	70
49	"	"	"	"	"	One week	68

Notes:

(1) The AMEX is a 3-axis meter that integrates the magnetic field over time. The meter readout ($mG \cdot hour$) is obtained by discharging the E-cell of the meter after the meter is returned. The TWA is obtained by dividing the meter readout by the time of exposure obtained from the diary.

(2) Two AMEXes can be used to collect separately the exposure ($mG \cdot hour$) and the TWA (mG) at home and the exposure outside the home (work, travel, and other).

(3) The EMDEX II can measure every 3 seconds both the r.m.s. value of the magnetic field and the total harmonic distortion for 24 hours. With a lithium battery and an ad hoc program installed on the meter that puts the meter to sleep after 24 hours of recording, there may be enough time to mail the instrument to the participants and receive it back for downloading the data, without excessive risk of losing the data because the battery is exhausted. The use of the EMDEX II for one week was not considered because of insufficient battery life.

(4) The EMDEX Lite can measure every 4 seconds the r.m.s. value of the magnetic field on each axis for 24 hours, or every 30 seconds (and a lithium battery) for one week. The total harmonic distortion is not measured.

(5) The EMDEX MATE measures every 0.5 seconds the r.m.s. value of the magnetic field on each axis. It does not store in memory the time series, but pre-selected quantities every half hour. These quantities may be: minimum, maximum, average, standard deviation; percentage of time above a selected number of field values, from which the various percentiles can also be obtained, number of sudden field changes that correspond to sudden load variations (and possible transients), and total period of time during which field coherence (thoroughly defined) is maintained. It must be noted that detection of sudden load changes and field coherence is possible because of the fast sampling rate (6 times faster than the EMDEX II and 8 times faster than the EMDEX Lite).

3.3.3 Survey Costs

Preliminary cost figures were developed for different survey methods and for different samples. Sufficient care was put in developing these figures in order to make a fair comparison among different methods and then focus the attention on the most cost effective methods. Once the best methods are selected, their costs should be reviewed in much greater detail.

The cost of each element was expressed by generic equations developed to provide a way, although rough and preliminary, to perform quantitative assessment of cost to compare different survey methods. The generic cost equations used for cost assessment are reported in Appendix D.

The survey costs include the costs of the following:

- Selecting the participant pool
- Mailing an introductory letter
- Screening interview and recruitment by phone (if applicable)
- Mailing the consent form and following up with telephone call
- Mailing to the participants or to the visiting crews (whichever is applicable) the personal exposure meter, the diary, the UPS mailers, the shipping boxes
- Mailing to the participants (if applicable) diary, instructions, questionnaire, and check
- Payment to the participants
- Replacing personal exposure meters lost or damaged
- Personal exposure meters required to sustain the required rate of measurements
- Batteries
- Recruiting the visiting crews (if applicable)
- Training the visiting crews (if applicable)
- Salary of visiting crew (if applicable)
- Travel and living expenses of visiting crew (if applicable)
- Standby crew (if applicable)
- Project management
- Data management, data analysis, final report

The cost was calculated for different methods and for different number of people surveyed. The results were expressed in Tables D-1 to D-5 of Appendix D as number of people who could be surveyed for a given cost. For example, with method # 14 of Table 3.5 consisting of an RDD sample design and delivery of an EMDEX Lite by mail for a one day measurement period, 1152 people could be surveyed at an estimated cost of $ 500,000 (see Table D-1), 2815 people with $ 1,000,000 (Table D-2), 4527 people with $ 1,500,000 (Table D-3), 6269 people with $ 2,000,000 (Table D-4), and 9776 people with $ 3,000,000 (Table D-5). The cost for a given sample size is obtained by interpolating between tables. For instance, the estimated cost for a 2,000 people sample is about $ 755,000, which is obtained interpolating between Table D-1 and Table D-2.

3.3.4 Effectiveness Index

For a given budget, and for methods giving the same quantity, for instance TWA, the best method is the method that minimizes the variance in the estimate of parameters of interest (such as the percentiles of the TWA population). If different methods provide indices in addition to

TWA, the additional "worth" of the measured exposure indices should be taken into account. In order to compare different methods an "effectiveness index" was defined as follows:

$$Effectiveness\ \ Index\ \ = \frac{\sum Worth\ \ of\ \ Measurable\ \ Indices}{Variance} \qquad (3.1)$$

The variance depends on sample size and on rate of refusal to participate.

The variance due to sample size is inversely proportional to the sample size and can be calculated from estimates of the distribution of exposures. The calculated standard error, which is equal to the square root of the variance, is shown in Figure 3.1 versus sample size.

The variance associated with the refusal rate is more difficult to estimate, since it depends on the reasons why people may refuse and on the possible relation between the reason for refusal and exposure. It is impossible to calculate the variance due to refusal bias without making assumptions on the differences in exposure among categories of people with a different refusal rate. At one extreme, it may be argued that there is no reason to believe that refusal to participate in the survey is associated with the exposure to magnetic fields. In this case there would be no bias and the variance due to refusal would be zero no matter what is the refusal rate. At the other extreme, it may be argued that those who refuse to participate do so for a reason tied to exposure, for instance because they suspect to be highly exposed in their work and do not want to find out. In this case, the estimates of the general population exposure would be systematically lower than true values. In reality, there could be a variety of reasons why people refuse, many having nothing to do with EMF exposure and some possibly associated with it. In order to quantify the variance due to refusal, a conservative scenario was built as described in Appendix D, which describes the assumptions made and the calculation performed. Calculation were made starting from arbitrary estimates of the true distributions of exposures for different categories of people, each category characterized by a relative rate of refusal. The results are shown in Figures 3.2.

The overall variance is equal to the sum of the variances obtained by squaring the bias, B, obtained from Figure 3.2 and the standard error, SE, obtained from Figure 3.1.

$$Variance = B^2 + (SE)^2 \qquad (3.2)$$

The total worth of the measurable indices is obtained by attributing a worth (relative importance) to each exposure index (See Table 3.4) that is measured and adding all the worth values. For example, compare the measurements with the AMEX-3D, worn for one day, with the EMDEX Lite, also worn for one day. The AMEX-3D can measure only the TWA for the total time of exposure. We attribute to this measurement a worth W_1. The EMDEX Lite, on the other hand, can measure the TWA and several additional exposure indices (See Table 3.4) for different periods of the day (at home, at work or at school, travel, other), to all of which we attribute a worth W_2. The weakness of this approach is the subjectivity of attributing a worth to the exposure indices. The investigators set the worth of the various indices through informal discussions, considering several factors: use in past studies, practical use of the information, and possible relevance to future research. The worth attributed to the various indices are listed in Table 3.6. The worth is referred to that of TWA, which is set equal to 100.

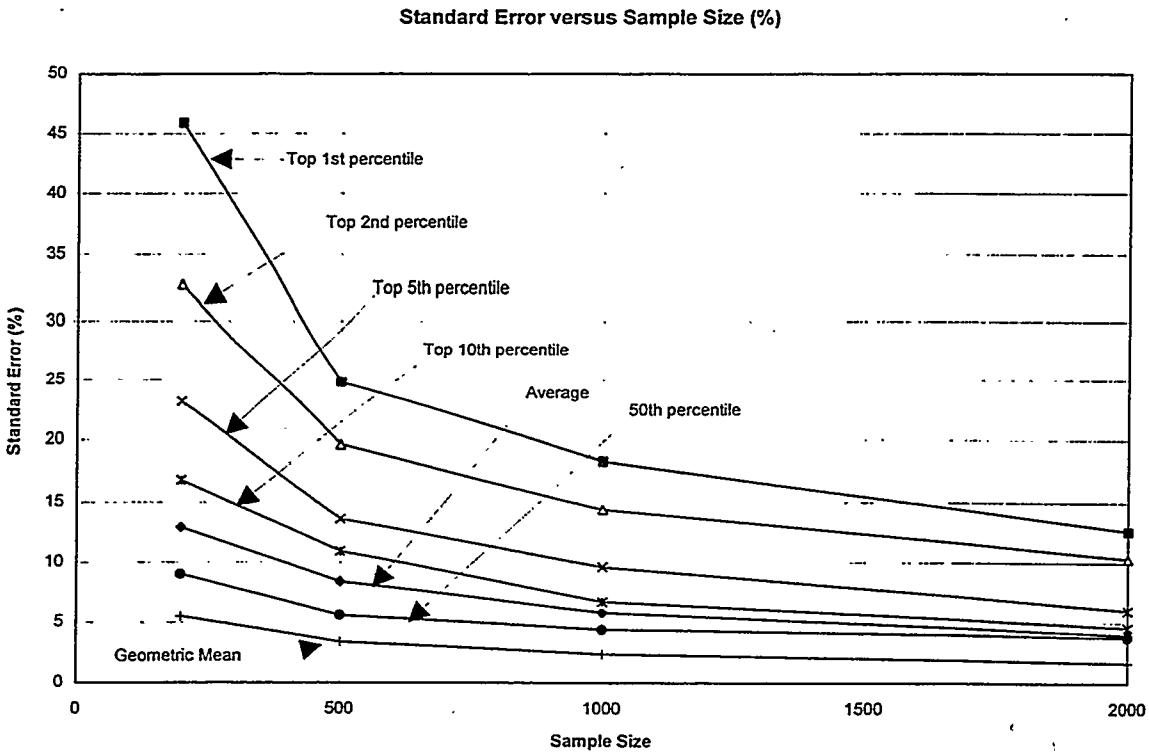

Figure 3.1 Estimated Standard Error in the Determination of the Parameters of the Distribution of the TWA Exposures versus Sample Size

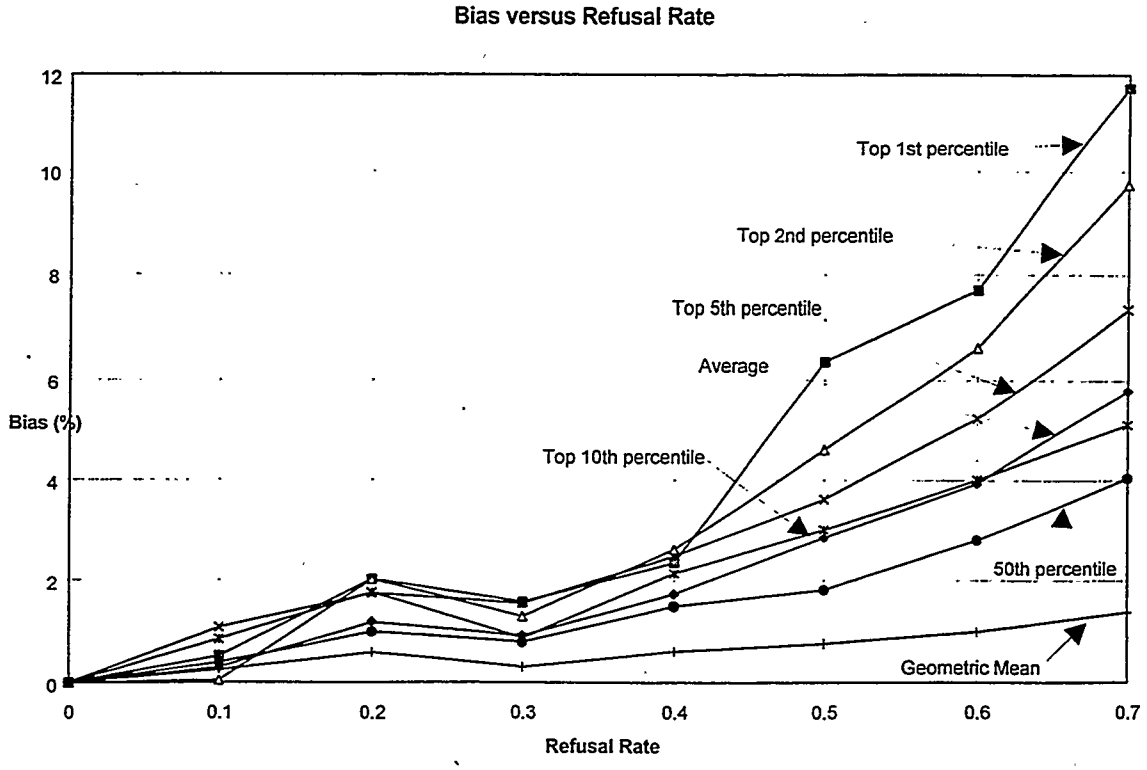

Figure 3.2 Estimated Bias in the Determination of the Parameters of the Distribution of the TWA Exposures versus Refusal Rate

Table 3.6 Worth Assigned to Different Personal Exposure Indices.

Exposure Index	Worth
Time Weighted Average r.m.s. magnetic field (TWA) for one day. This index can be obtained with AMEX, 2-AMEXes, EMDEX II, EMDEX Lite, and EMDEX MATE.	100
Separate measurements of exposure time and TWA for the periods "at home" and "not at home". This index can be obtained using 2-AMEXes. Considering separately home exposure allows studying the effect of variables associated with the home.	Add 40
Separate measurements of exposure time and TWA for the periods "at home", "at work or school", "travel", and "other". For one day. This index can be obtained using the following meters: EMDEX II, EMDEX Lite, EMDEX MATE. This allows studies of the effect of variables associated with the home, or the work, travel, or other activities.	Add 60
R.m.s. magnetic field value: Average and standard deviation. Geometric mean and geometric standard deviation. Minimum, maximum, and different percentiles. Time above given field values. Time in field windows. Each of the above indices is provided separately for the periods "at home", "at work or school", "travel", and "other". For one day. These indices can be obtained using EMDEX II, EMDEX Lite, or EMDEX MATE.	Add 160
Total harmonic distortion: Average, minimum, maximum, and different percentiles. Each of the above indices is provided separately for the periods "at home", "at work or school", "travel", and "other". These indices can be obtained using the EMDEX II.	Add 60
Time series of magnetic field values. This allows to create graphs of field versus time. Allows to evaluate new exposure indices, as long as they can be derived from a time series. The time series can be obtained using the EMDEX II or the EMDEX Lite.	Add 40
Number of sudden field variations caused by sudden load variations. Total duration of the periods during which the field is coherent. Coherence must be thoroughly defined. For example: the field must be greater than a given value, all the three field components must not vary by more than x%, and these conditions must last at least 10 seconds. Because of its fast sampling rate, the EMDEX MATE is a suitable meter.	Add 60
Measurements for a week rather than one day. Without a breakdown by day.	Add 30
Measurements for a week rather than one day. Data available for each of the seven days.	Add 60
Additional measurements at the home of the participants: spot measurements of r.m.s. magnetic field, DC field, and waveform capture in every room of the home. This allows determination of relative orientation of AC and DC fields, and of individual harmonics.	Add 70
Additional data collected at the home of the participants: detailed description of power lines adjacent to the home (including wire code). Spot measurements of ground current.	Add 65

3.4 Comparative Assessment of Cost and Quality of Different Survey Methods

The effectiveness indices of the different survey methods were calculated for different budgets. It must be emphasized that the methodology used to calculate the effectiveness index has several weaknesses: it relies on a subjective judgment of the relative worth of the measured quantities, it makes (conservative) unproved assumptions on the bias due to refusal to participate, and it uses preliminary cost estimates. Nevertheless, this process has a practical importance because it offer guidance on the preferred survey method for a given budget. The detailed results are shown in Appendix D, Tables D-1 to D-5. Effectiveness index versus budget is plotted in Figure 3-3 and in Figure 3-4 for the most cost effective methods.

In all cases the effectiveness index is highest for measurements involving the EMDEX MATE. For budgets up to $1,000,000 the most efficient survey method is method # 32: recruit by phone, mail the meter to the participants, wear the meter for one day, mail back the meter. For a budget of $1,5000,000 the most efficient survey method is still method # 32 if the highest accuracy in the top lowest percentiles of the distribution is desired. However, if the highest accuracy is desired in the 50^{th} percentile of the distribution of exposures, then for a budget of $ 1,500,000 method # 43 (recruitment by visit of a one-person local crew, wear the meter for one week, mail back the meter) is the most efficient. For budgets of $2,000,000 or greater, method # 43 is always the most efficient.

Comparison of Figure 3.3 with Figure 3.4 shows that a better accuracy is achieved in the estimate of the 50^{th} percent than in the 5^{th} percentile. Methods that have a lower refusal rate are the most efficient methods when the budgets are large, methods that have a higher refusal rate but correspond to larger samples for the same budget are the most efficient when the budgets are low. The crossover budget (with the assumptions made to develop these figures) occurs between $1,200,000 and $1,800,000.

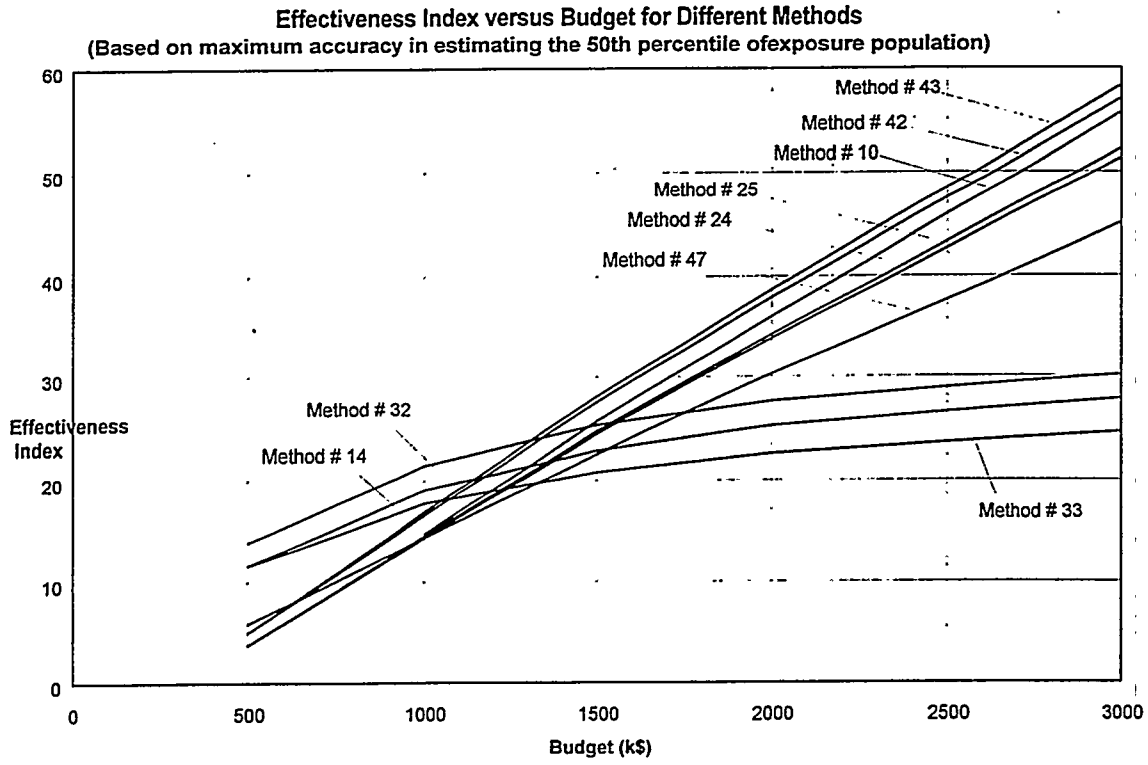

Figure 3.3 Effectiveness Index versus Budget for Different Methods (Calculations based on maximizing the accuracy in the determination of the 50th percentile of the exposure distribution)

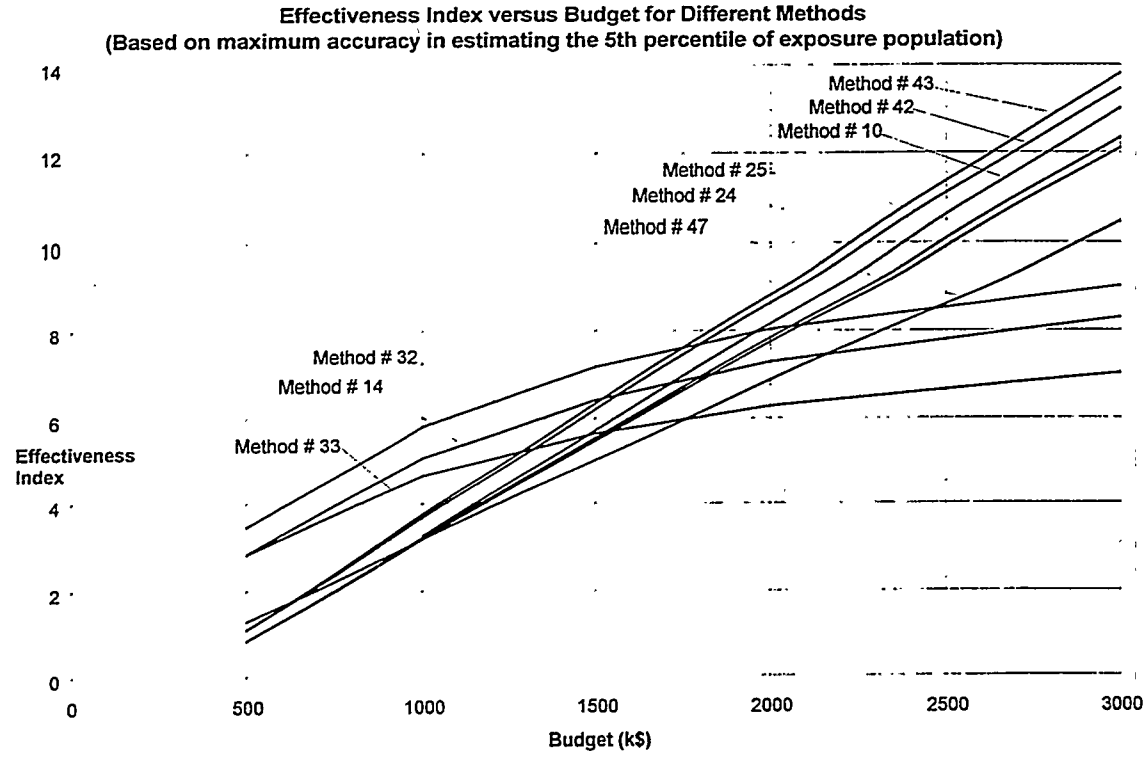

Figure 3.4 Effectiveness Index versus Budget for Different Methods (Calculations based on maximizing the accuracy in the determination of the 5th percentile of the exposure distribution)

3.5 Recommendations for Phase II

3.5.1 General Recommendations

After a review by DOE and ORNL of the preliminary data about the effectiveness of the different survey methods discussed in Sections 3.1 to 3.3, it became clear that the choice of the method for Phase II of the personal magnetic field exposure survey was restricted to the methods that do not require a visit to the participants. The lowest cost of recruiting by telephone and of mailing the meters allows to maximize the number of participants. A target of 1000 participants was set for Phase II.

The option of performing additional measurements (DC, wave form capture, wire code) was abandoned. No special stratification was considered justified. The cost of including institutionalized people (hospitalized, nursing homes, military, prison population) was not considered justified.

The optimum instrument recommended for Phase II is an instrument like the MATE, but modified to include: permanent memory, smaller size, and frequent summaries (e.g. once every 10 minutes) of the exposure quantities.

3.5.2 Phase II Recommended Tasks

Task 1

Participants to the survey should be recruited by telephone. The sample design should incorporate a list-assisted random digit dialing method. Only telephone numbers corresponding to residences should be followed up. A residential telephone rate of about 50% and an eligibility rate of 95% (meaning that 95% of the population can be reached this way) are anticipated. An introductory letter should be sent to all persons that are listed on telephone directories and the letters should be followed up by a telephone interview. The persons corresponding to unlisted numbers chosen for the survey should be contacted directly by phone without a prior introductory letter. Introductory letters should be sent to respondents who request them. These respondents should be contacted again after the letter has been received. The phone interviewer should use the same techniques used during Phase I to administer a questionnaire, make the selection and solicit the participation of a member of the household. An initial telephone agreement rate of about 60% is anticipated. The list of people that have agreed to participate to the survey, their age, and sex should be compiled.

Task 2

A consent form and a letter that illustrates the reasons and modality of the survey should be sent to all the people that have agreed to participate as a result of Task 1. The consent form and the letter should explain why the participant is asked to wear or carry with them for 24 hours a small meter that records the magnetic field existing at the person location. A revised Consent Form approved by the ORAU/ORNL Committee on Human Studies should be used. The consent forms

need to be signed and returned before measurements could be performed. Based on the experience of Phase I, a Consent Form return rate of about 70 % and a Consent Form average turnaround time of about 15 days are anticipated.

Task 3

Upon return of the signed Consent Form the participants should be sent a package containing a personal meter, the instructions for the use of the meter, a small diary to be used to write the type of activities performed, a questionnaire to be filled by the participant, a UPS envelope with prepaid label to be used to return the meter, and a $50 check for compensation for participation in the study. The personal exposure meter should be of the size of a pager and it should be possible to clip the meter to a belt or place it in a pocket. For infants and toddlers the meter should be placed inside a teddy bear that should be kept near them for the day of the measurements. The personal exposure meter should sample the magnetic field at a very rapid rate (once every 0.5 second) that would allow capturing the maximum field values to which a person is exposed and would make possible discriminating between field changes caused by sudden changes in electrical loads and those caused by walking by a field source. The meter should have a permanent memory so that data would not be lost in the event the battery is exhausted before the meter is returned. The only action required from the participants should be to turn the meter on at the start of the 24 hours of recording. The participants should be asked to note on the activity diary the time of the day when the meter is first turned on and then the time of the day at every change of the following types of activity: at home, in bed, traveling, at work, at school, and other activities. Every ten minutes since being turned on, the meter should store in its permanent memory summary statistics: average, standard deviation, minimum, maximum, times in a number of field ranges, number of sudden field changes above selected thresholds, and total length of time during which the field is coherent, i.e. all the field components remain constant for at more than a few (6) seconds. The participants should be requested to ship the meter, the diary, and the completed questionnaire as soon as possible after the 24 hour of exposure measurements. Based on the experience of Phase I a meter turnaround time of about two weeks is anticipated.

Task 4

Upon return of the personal exposure meters from the participants, the data should be downloaded to a PC. Entry routines should be developed. Personal exposure data, diary data, and questionnaire data should be entered in a database.

Task 5

The data analysis should include a detailed statistical analysis of exposure and relationships to variables. Statistics of exposure data will be produced for each exposure metrics in the survey and for each time period (entire day, at home, at home in bed, travel, at work, in school, other). The correlation between exposure factors and exposure should be determined. The data obtained from the survey sample should be used to provide estimates of exposure for the US population and their confidence intervals.

SECTION 4

SPECIAL PERSONAL EXPOSURE MEASUREMENTS FOR PROTOCOL DEVELOPMENT

4.1 Objectives

The personal exposure measurements on a 200-person sample constituted in many respects a pilot program for a much larger sample to be measured during Phase II of the study. There were, however, several aspects of the protocol that were not tested and several others that needed further testing. For example, the 200-person sample consisted only of adults and a detailed debriefing of the participants was not possible. In order to formulate recommendations for the protocol to be used in Phase II (see Section 5.2), additional personal exposure measurements were necessary.

Personal exposure measurements were made on several infants, toddlers, school age children, and adults chosen among people who were living close to the two office locations of Enertech Consultants: in Campbell, California, and in Lee, Massachusetts. This "convenience sample" consisted of 53 people (of whom 52 had complete data) 12 infants, 13 toddlers, 16 school age children (of whom 5 data sets were complete) , 6 adult males, and 6 adult females. Simultaneously to measurements of personal exposure of toddlers, measurements of personal exposure of their mothers were made as well. For each school age child, three different protocols were tested on three different days, two days with actual personal exposure meters and one day with a dummy exposure meter. In total, personal exposure meters were worn on 98 different occasions. In some cases the purpose of the measurements was to observe people's reactions and no data were taken. The sets of 24-hour data obtained was 79.

4.2 Measurements of Personal Exposure of Infants

4.2.1 Protocol

The infant category consisted of children between the ages of 0 to 12 months. Magnetic field exposure measurements were completed on a total of 12 infants.

An Enertech employee known to the infant's parent(s) contacted the mother of the infant by phone or in person to obtain initial consent for participation. If the mother agreed to participate, she was asked to sign a consent form, and was given a box containing a set of instructions (see Appendix B, document 11), a meter, a soft "teddy bear", in which to place the meter, a plastic bag, the activity diary, and the respondent questionnaire (same as for the 200-person statistical sample - see Appendix B, Document #8). The bear was designed with straps which would allow it to be attached to an infant's crib, high chair, car seat, walker, etc. After activating the data collection by turning the switch to the right, the parent was instructed to seal meter in the plastic bag and place it inside the bear meter holder through a Velcro-sealed opening in the back of the bear. The bear with the

meter in it was then kept near the infant for the 24-hour measuring period. The mother was instructed to enter the "start time" (the time she moved the switch to begin the data collection process) in the activity diary. The diary was amended from the adult version to eliminate the "start work", "left work" categories. Mothers were instructed to keep the diary on the refrigerator under a magnet or in any other convenient place. At the end of the 24-hour measurement period, an Enertech employee retrieved the bear with the meter in it, the activity diary and the respondent questionnaire and returned the items to Enertech's offices for data processing.

4.2.2 Results

From each set of 24-hour personal magnetic field recordings the following data were calculated:

For the total 24 hour period: duration of the personal exposure measurements, average, standard deviation, geometric mean, geometric standard deviation, maximum, different percentiles (50^{th}, 75^{th}, 90^{th}, 95^{th}, 99^{th}), and time in specific field windows (< 0.5 mG, between 0.5 and 1 mG, 1 and 2, 2 and 5, 5 and 10, 10 and 20, 20 and 50, and above 50 mG).

Same as above for different types of activities: at home, traveling, in bed, and at a childcare facility.

The detailed results are listed in Appendix C.

The results have little statistical significance because of the small sample. The exposure distribution of infants compared with that of the other categories of people in the convenience sample is shown in Figure 4.1. It appears that the infants in the tested sample had considerably less exposure than the adults.

4.2.3 Observations

The mother of each infant who participated in the measurements was extensively interviewed after the measurements were completed. The most important observations are the following:

- All mothers of the participating infants felt the instructions on getting started, wearing the meter and completing the diary were clear.
- All mothers of the participating infants thought the questionnaire was clear. Two had difficulty with the questions: One was unsure of water pipe type and the other had difficulty matching the power line.
- All mothers wanted to know the results of the personal magnetic field measurements for their infant.
- Two mothers said they would have refused to participate if they were not associated with Enertech.
- Eight mothers felt their infant was too young to care whether the instrument was in the teddy bear.

- Four mothers reported that their infants liked the bear.
- Eight mothers reported that the straps on the bear were a help in attaching the instrument to the infant's crib, car seat, etc. Two did not use the straps. One felt the straps could be dangerous and should be removed.

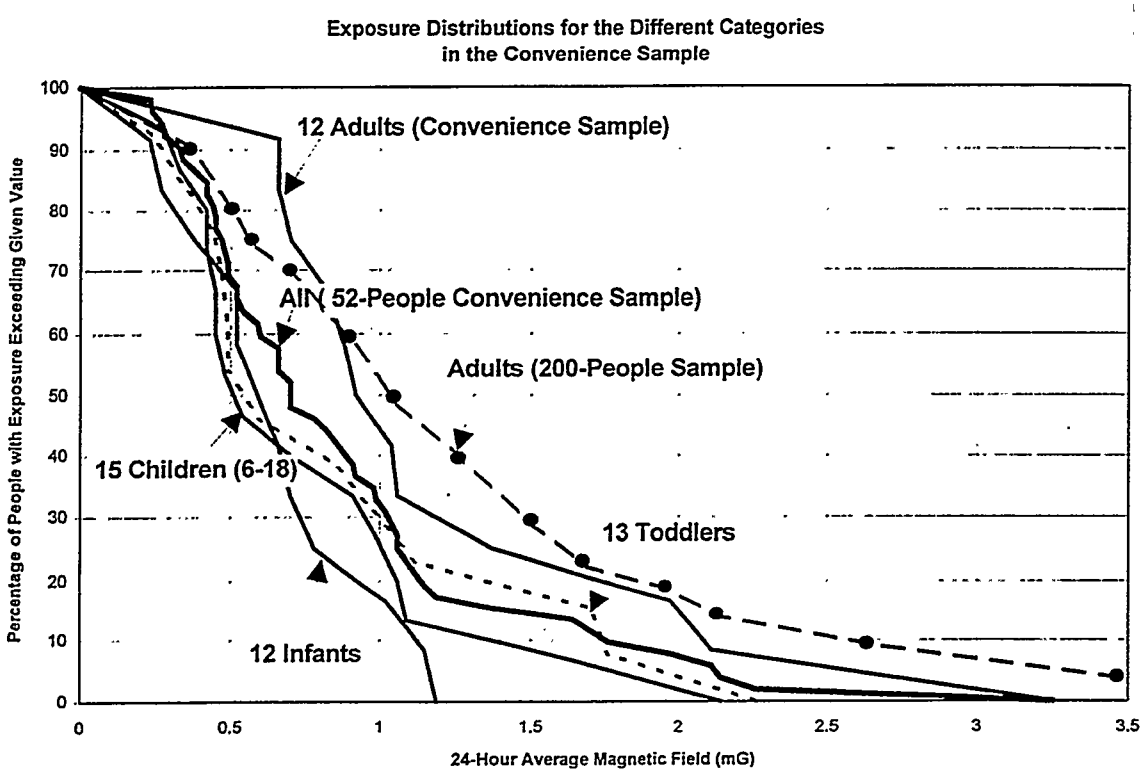

Figure 4.1 Exposure Distribution for Different Categories of People in the Convenience Sample

4.3 Measurements of Personal Exposure of Toddlers

4.3.1 Protocol

Children aged 1 - 5 years were categorized as toddlers. For comparison purposes, each toddler's caretaker (who, in our sample, was always the mother) was asked to wear a meter at the same time as her child. A total of 13 Toddler/Mother pairs were measured. Agreement for participation and consent were obtained by the same method as that for infants. A box containing a set of instructions (see Appendix B, document 12), two meters showing "on" in the display, a plastic bag, a soft "teddy bear (identical to the bear used for infants) in which to place the toddler's meter, a nylon pouch for the mother's meter, one combined or two separate activity diaries, a pen, and a respondent questionnaire was given to the mother. Two toddlers were tested with a plastic belt pack, rather than a teddy bear.

The mother was instructed to move the data collection switch to the right on both meters to begin the measurements and record the time on the front of the diary. The toddler's meter was then placed in the plastic bag and inserted into the bear through the Velcro opening in the back of the bear. The bear was placed on the toddler as a backpack, or the child could carry the bear. The mother's meter was placed in the nylon pouch and could be worn or carried in the same manner as in the adult survey.

Two diary versions were tested for the toddler category. Eight mothers were instructed to keep two separate diaries, one for the mother and one for the child. The diary used for these eight participants was identical to the adult diary. Five mothers used a single diary version which had separate columns for both the mother's and the toddler's activities. The information from this diary was separated by Enertech staff into mother and toddler activities for the purpose of entering information in the individual measurement files.

At the end of the 24-hour measurement period, an Enertech employee retrieved the bear with the meter in it, the nylon pouch with the meter in it, the activity diary (or diaries), and the respondent questionnaire, and returned the items to Enertech's offices for data processing.

4.3.2 Results

From each set of 24-hour personal magnetic field recordings the following data were calculated for both toddler and mother:

For the total 24 hour period: duration of the personal exposure measurements, average, standard deviation, geometric mean, geometric standard deviation, maximum, different percentiles (50^{th}, 75^{th}, 90^{th}, 95^{th}, 99^{th}), and time in specific field windows (< 0.5 mG, between 0.5 and 1 mG, 1 and 2, 2 and 5, 5 and 10, 10 and 20, 20 and 50, and above 50 mG).

Same as above for different types of activities: at home, in bed, traveling, and at a childcare facility.

The detailed results are listed in Appendix C. The exposure distribution for toddlers, compared with that for the other categories of the convenience sample, is shown in Figure 4.1. It appears that the toddlers in the tested sample had considerably less exposure than the adults.

The results have little statistical significance because of the small sample. However, the following conclusions could be derived:

- Maximum readings were, in general, significantly higher for mothers.
- The mothers had, in general, a higher mean than their toddlers. The comparison between toddlers and mothers averages is shown in Figure 4.2.

- The standard deviation was, in general, higher for mothers.

Based on these observations, proxy measurements with a parent instead of direct measurements with the toddler, are not recommended.

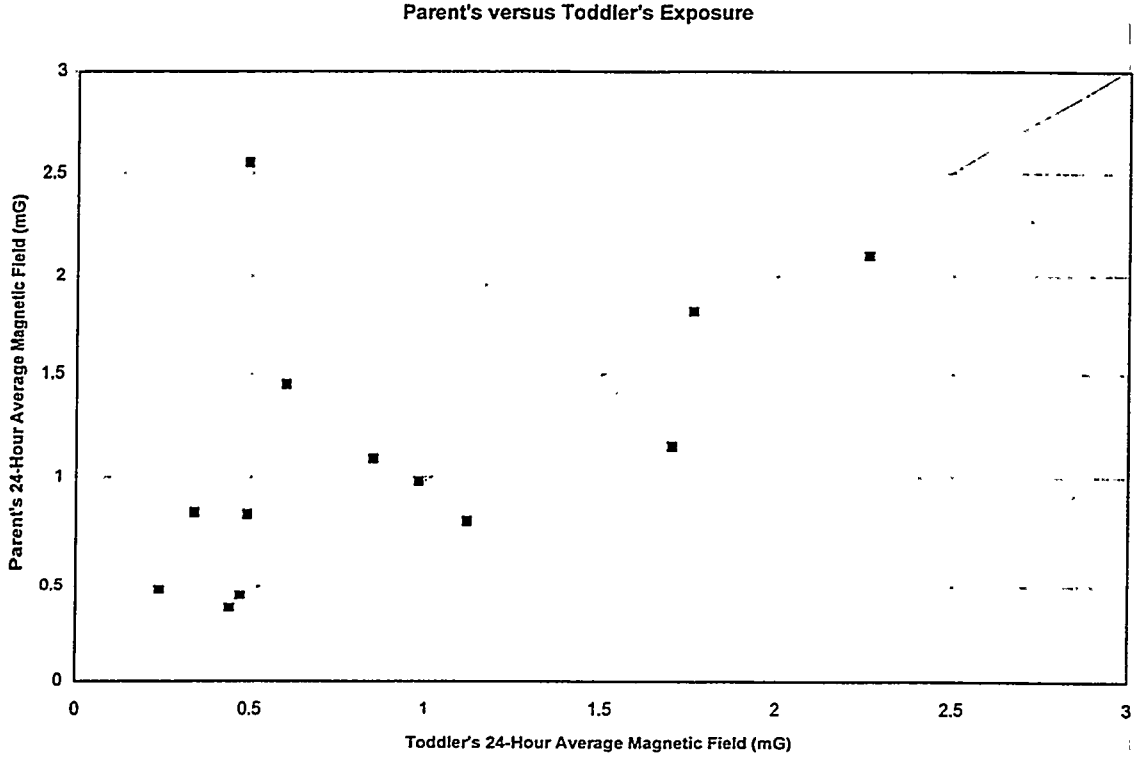

Figure 4.2 Comparison between Toddlers and Mothers Exposures

4.3.3 Observations

The mothers of the toddlers who participated in the measurements were extensively interviewed after the measurements were completed. The following observations are the result of the interviews.

- All mothers felt the instructions on getting started, wearing the meters and completing the diary (or diaries) were clear.
- Two mothers had difficulty completing the questionnaire (Appendix B, Document #8). Both were unsure of the type of water pipe used in their home. One of the two also could not match the power line in front of her house with any of those pictured.
- Most toddlers carried the backpack or fanny pack themselves. One toddler carried the bear approximately 70% of the time, while her mother carried it the other 30% of the time.
- Eight toddlers liked the bear, one was indifferent to it.
- Three toddlers played with the bear during the study; five did not play with the bear, and one mother was not sure.
- Four toddlers attempted to open the bear and extract the meter.

- Six toddlers played with friends during the measurement period. One of the six had difficulty with other children trying to open the bear and extract the meter.
- Most mothers reported that the toddler's meter was sometimes left in one room or location while the child was in another. Six meters were left for 10 minutes or less, one was left for approximately ½ hour, one was left for 1-2 hours, and one mother could not remember the duration.
- Both toddlers who wore the plastic pouch "fanny-pack" liked it.
- Both toddlers who wore the plastic pouch "fanny-pack" used the extra pockets in the pouch to carry toys.
- One mother felt the plastic pouch was too large for a toddler.
- One of the mothers of a child who wore the bear thought her child would prefer the plastic pouch.
- One of the mothers of a child who wore the plastic pouch thought her child would prefer the bear.
- A few mothers indicated they would prefer to wear the meter, rather than have the toddler wear it. Most mothers felt that their toddlers would have to wear or carry with them the meter in order to obtain accurate readings.

4.4 Measurements of Personal Exposure of Children

4.4.1 Protocol

School-aged children between the ages of 6 and 18 were measured for three separate 24-hour periods using three different methods of wearing the meter: (1) a plastic pouch "fanny-pack", (2) a small, beeper-style clip on box, and (3) a nylon pouch.

After agreeing to participate, each child was asked to sign a consent form. The consent form also had to be signed by his or her parent/guardian. A box containing a set of instructions (see Appendix B, document 13), a meter, a clip-on box, a plastic bag, two plastic ties, a plastic pouch ("fanny-pack"), a nylon pouch , pen, respondent questionnaire and 3 activity diaries was then given to the child.

During the first 24-hour period the child wore or carried the meter in a plastic pouch ("fanny-pack"). Start-up was the same as that for infants and toddlers; the time the meter's switch was moved to the right to begin data collection was recorded on the diary. The meter was sealed in the plastic bag and placed in the plastic pouch between foam padding. After zipping the pouch closed, the child was instructed to loop a plastic tie through the zipper tabs and tighten it, thus sealing the meter in the pouch. The child was instructed to record the times he/she came home and left home, went to bed and got out of bed, started and left camp/school/childcare, started travel and ended travel in Diary #1. Seven of the 16 children also recorded when they started and ended activity in their neighborhood. At the end of the 24-hour recording period an Enertech employee picked up the meter, still sealed in the pouch, and Diary #1, downloaded the data at Enertech's offices, reset the meter and returned the it to the participant.

A small, "beeper-style" clip on box was used for the second 24-hour period. This box was a dummy meter which could not collect data. The children were not aware of this. The child was instructed to note the time he or she started wearing the clip-on box on the front page of Diary #2 and to complete the diary in the same manner as for Day 1.

For the third 24-hour period, the meter was worn or carried in a nylon pouch (in the same manner as adult participants). As in the first 24-hour period, the time data collection began was noted on the diary. The meter was inserted in the pouch and could be worn around the waist, over the shoulder, or carried in a purse. Diary #3 was completed in the same manner as for the first and second 24-hour periods.

At the end of the third 24-hour measurement period, an Enertech employee picked up the clip-on-box, the meter, the nylon pouch, diaries # 2 and 3, and the respondent questionnaire and returned them to Enertech's offices.

4.4.2 Results

From each set of 24-hour personal magnetic field recordings the following data were calculated:

For the total 24 hour period: duration of the personal exposure measurements, average, standard deviation, geometric mean, geometric standard deviation, maximum, different percentiles (50^{th}, 75^{th}, 90^{th}, 95^{th}, 99^{th}), and time in specific field windows (< 0.5 mG, between 0.5 and 1 mG, 1 and 2, 2 and 5, 5 and 10, 10 and 20, 20 and 50, and above 50 mG).

Same as above for different types of activities: at home, in bed, school or child care, and traveling.

The detailed results are listed in Appendix C. The exposure distribution for children (day 1), compared with that for the other categories of the convenience sample, is shown in Figure 4.1. It appears that the children in the tested sample had considerably less exposure than the adults.

The results have little statistical significance because of the small sample. The average magnetic field measured during the first 24-hour period was compared with the average magnetic field measured during the last 24-hour period. The results are shown in Figure 4.3.

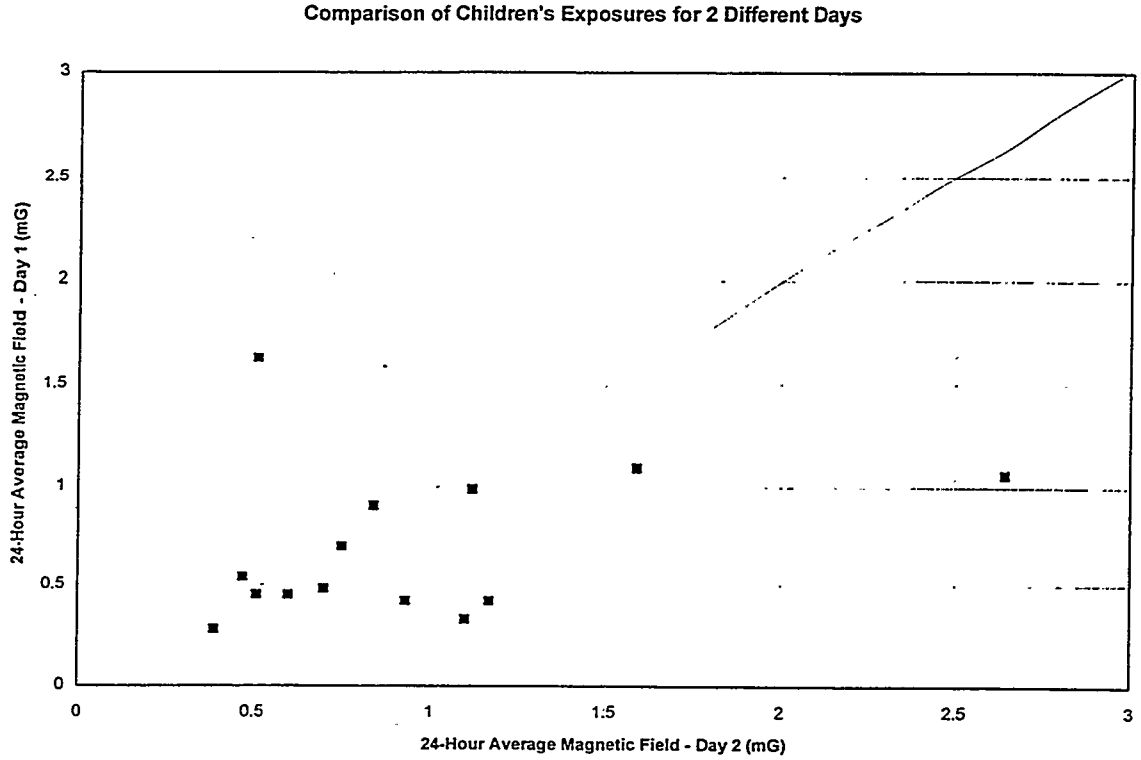

Figure 4.3 Comparison of Average Magnetic Field for Children Measured in Two Different Days (Day 1 in a Plastic Pouch Waist-pack, Day 2 in a Nylon Pouch which could be worn in different ways).

4.4.3 Observations

Each child who participated in the measurements was extensively interviewed after the measurements were completed. The following observations are the result of the interviews.

General observations:

- Of the 16 participants, 10 preferred the clip-on box, 3 preferred the nylon pouch, 2 preferred the plastic "fanny-pack" pouch, and 1 liked both pouches.
- All participants felt the instructions on getting started, wearing the instruments and keeping the diaries were clear.
- Seven of 16 participants filled out their own questionnaires. Five participants completed the questionnaire in five minutes or less. Two participants completed the questionnaire in approximately 10 minutes. All 7 thought the questions were clear.
- Three children found the consent form intimidating.
- Four participants thought they would have had difficulty completing the diary if a pen had not been provided.
- Fifteen children wanted to know their results. One child did not want to know his results.

- One participant failed to begin the data collection correctly and had no readings on the meters.

Wearing the plastic pouch waist-pack:

- Six children found wearing the plastic pouch uncomfortable. Two children did not wear the pouch; they carried it in their purses.
- Six participants left the pouch in one place while they were in another. Of the six, 2 left the meter for approximately 2 hours. Two left it a short time while swimming, and two left the pouch a short time while showering.
- Seven children thought wearing the pouch was embarrassing.
- Nine children received many questions from their friends.
- All 16 children stored the pen in the pouch pocket. Four said they would have had a problem filling out the diary if the pen had not been provided.

Clip-on box:

- Eight children wore the clip-on box on their waistband or belt. Five clipped the box to their pocket and 3 carried the box in a purse or pouch.
- Seven children left the clip-on box in one area while they were in another. Five left the box for 2 to 10 minutes. Two participants left the box for two hours or more.
- One child thought wearing the clip-on box was embarrassing.
- Seven children had many questions from their friends.
- Eight children kept the pen in their pocket. Five kept the pen in the plastic pocket with the diary and 3 children used what ever was available.

Nylon pouch:

- Seven children wore the nylon pouch around the waist, 5 wore it over the shoulder, 2 wore it around the waist and over the shoulder, 1 wore it around the waist and carried it in a purse, and 1 carried it in a purse at all times.
- Five children left the meter in one place while they were in another. One child left the meter for 2 hours while playing sports, 1 forgot the meter in a car for one hour, and 3 left the meter for a short time while swimming or showering.
- Two participants felt wearing the pouch was uncomfortable.
- Two participants thought wearing the pouch was embarrassing.
- Six participants had many questions from their friends.
- All sixteen participants kept the pen attached to the pouch. Fifteen children used the pen, one did not.

4.5 Measurements of Personal Exposure of Adults

4.5.1 Protocol

The same protocol as for the 200-person sample was used. Of the 12 adults in the sample, six were men and six were women, six people lived near Campbell, California, and six near Lee, Massachusetts.

4.5.2 Results

From each set of 24-hour personal magnetic field recordings the following data were calculated:

For the total 24 hour period: duration of the personal exposure measurements, average, standard deviation, geometric mean, geometric standard deviation, maximum, different percentiles (50^{th}, 75^{th}, 90^{th}, 95^{th}, 99^{th}), and time in specific field windows (< 0.5 mG, between 0.5 and 1, 1 and 2, 2 and 5, 5 and 10, 10 and 20, 20 and 50, and above 50 mG).

Same as above for different activities: at home, in bed, at work, at school, and traveling.

The detailed results are listed in Appendix C. The exposure distribution for adults, compared with that for the other categories of the convenience sample, is shown in Figure 4.1. The Figure also compares the exposure distribution for the 12 adults of the convenience sample with that for the 200 adults of the statistical sample. Because of the small size of the convenience sample, it is not possible to detect any significant difference between the two distributions.

4.5.3 Observations

The adults who participated in the measurements were extensively interviewed after the measurements were completed. The following observations were made:

- All of the adults kept the meter with them at all times.
- Five adults found wearing the meter to be uncomfortable.
- None of the adults thought wearing the meter was embarrassing.
- Ten people thought a lighter, clip-on unit would be preferable; one did not.
- All adults kept the pen in the holder in the nylon case. Many reported that they would have had trouble completing the diary if the pen had not been provided.
- Most people entered their activities and times in the diary immediately. One person completed the diary from memory, and one used both methods.
- Half of the participants said the times entered in the diary were accurate to within 1 minute. The other half said the times were accurate to between 1-5 minutes.
- All of the adults thought the instructions for wearing the instrument, getting started, and mailing the instrument back were clear.
- Half of the participants reported that they started the measurements immediately upon receiving the meter. Four people waited between one to twelve hours to start the measurements, and two waited over 24 hours.
- Of the six participants who did not start immediately, two had a social plans and did not want to wear the meter. One received the meter late in the day and wanted to start in the morning. One participant received the meter at work, one forgot about it, and one received the meter while he was away on vacation.
- All adults thought the questionnaire was clear. Two had difficulty matching the power line illustrations to the power lines near their homes.
- One adult found the consent form to be intimidating. Two others thought it was "a bit" intimidating.
- All adults were interested in learning their results.

SECTION 5

CONCLUSIONS

5.1 Results from the 200-Person Sample

5.1.1 Estimates of Exposure Parameters of the General Population

The purpose in conducting the personal exposure measurement survey with a sample of about 200 persons was to obtain information about the distribution of population exposures so that a better plan for a more complete study of the general population could be made. There is no single measure of exposure. However, most epidemiological studies have used the time weighted average (TWA) as the exposure parameters used to study the significance of the association between disease and magnetic field. Therefore, the TWA was selected as the measure of exposure for the purpose of characterizing the distribution of exposures. The sample was randomly chosen. This does not assure that the sample is representative of the general population and thus free of bias. However, it provides information of much higher quality than any previously available.

An important finding of the 200-person survey is that the distribution of exposure can be approximated by a log-normal distribution. This is illustrated in Figure 5.1.

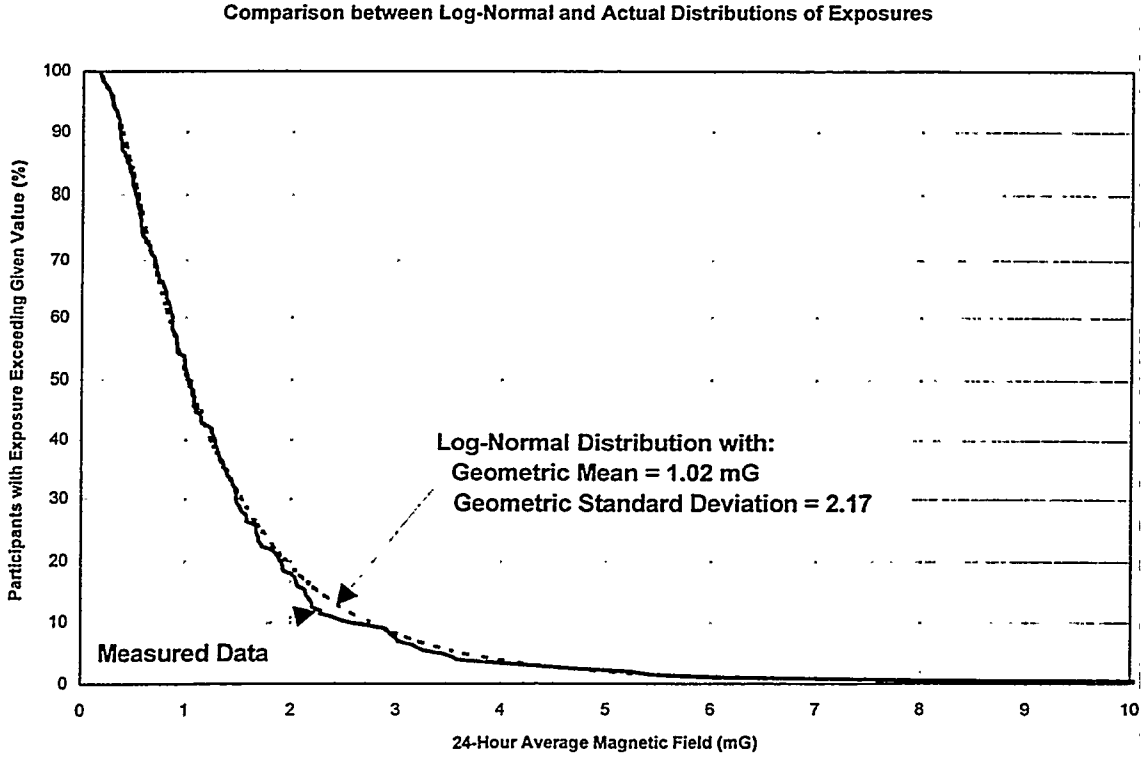

Figure 5.1 Comparison between a Log-Normal and the Actual Distribution of Exposures

The geometric mean (1.02 mG) and the geometric standard deviation (2.17) of the 200-person sample are estimates of those of the general population. Under the assumption that the distribution of exposures is log-normal, the geometric mean coincides with the median, or 0.5 fractile. For a 200-person sample and for purely statistical reasons, the fractile (0.5) is predicted within a ± 7 % range at the 95 % confidence level. This result is obtained from equation (5.1) that gives the standard error, *SE*, of the fractile, *f*, for a sample size *N*, and from equation (5.2) that gives the relation between standard error and the 95% confidence interval (*CI*).

$$SE = \sqrt{\frac{f(1-f)}{N}} \qquad (5.1)$$

$$95\%CI = \pm 1.96 \cdot SE \qquad (5.2)$$

The 200-person sample exposure distribution and the range of estimated values at the 95 % confidence levels, calculated using equations (5.1) and (5.2), are shown in Figures 5.2 and 5.3. From these figures it is possible to derive the ranges within which different fractiles can be predicted. For instance, the field corresponding to the 0.5 fractile, or median (which coincides with the geometric mean for a log-normal distribution) is predicted within the range: 0.885 mG to 1.16 mG, i.e. within a range of approximately ± 14.5 % at the 95 % confidence level. The accuracy of the prediction of other fractiles is considerably worse. For instance, the field exceeded in 5% of the cases (estimated value from the 200-person distribution = 3.65 mG) is predicted within the range: 2.9 mG to 4.5 mG, i.e. within a range of approximately ± 24.5 % at the 95 % confidence level.

The variance of the log-normal distribution is predicted within a ± 10 % range at the 95 % confidence level. Thus the standard deviation of the log-normal distribution is predicted within a ± 5% range. The geometric standard deviation is predicted within the range: 2.09 to 2.26. The lower limit of this range is equal to $2.17/K$ and the upper limit of the range is equal to $2.17 \cdot K$, where k is given by: $K = 10^{0.05 \cdot LOG(2.17)}$.

How large should the sample size be to predict with a reasonable level of confidence the fraction of people with exposure above a given level, for instance above 2 mG, or above 3 mG, or any other value? The answer to this question can be provided under the assumption that the only reasons for uncertainty are statistical and there are no sample selection bias, nor other sources of errors. In this case, it is possible to estimate the magnitude of the range of possible results, starting from the estimates obtained from the 200-person sample: the shape of the exposure distribution is log-normal, the geometric mean is 1.02 mG with a range of ± 14.5 % at the 95 % confidence level, and the geometric standard deviation is 2.17 with a range from 2.09 to 2.26 at the 95 % confidence level.

From Figure 5.3, the estimated percentage of people with an exposure level exceeding 3 mG is 8.1 % with a 95% Confidence Interval between 4.4 % and 11.9 %. If a percentage of 8.1% is found with a survey with 1000 persons, the 95 % Confidence Range would be ±1.7%. The amplitude of the confidence range for different values of exposures and for different sample sizes are shown in Table 5.1.

Table 5.2 95% Confidence Range of the Estimated Percentage of People with Exposures above Given Levels versus Sample Size (N)

Exposure Level	N=200	N=500	N=1,000	N=2,000	N=5,000	N=10,000
2 mG	± 5.5 %	± 3.5 %	± 2.4 %	± 1.7 %	± 1.1 %	± .8 %
3 mG	± 3.8 %	± 2.4 %	± 1.7 %	± 1.2 %	± 0.8 %	± 0.5 %
5 mG	± 1.9 %	± 1.2 %	± 0.9 %	± 0.6 %	± 0.4 %	± 0.3 %
10 mG	± 0.6 %	± 0.4 %	± 0.2 %	± 0.2 %	± 0.1 %	± 0.1 %

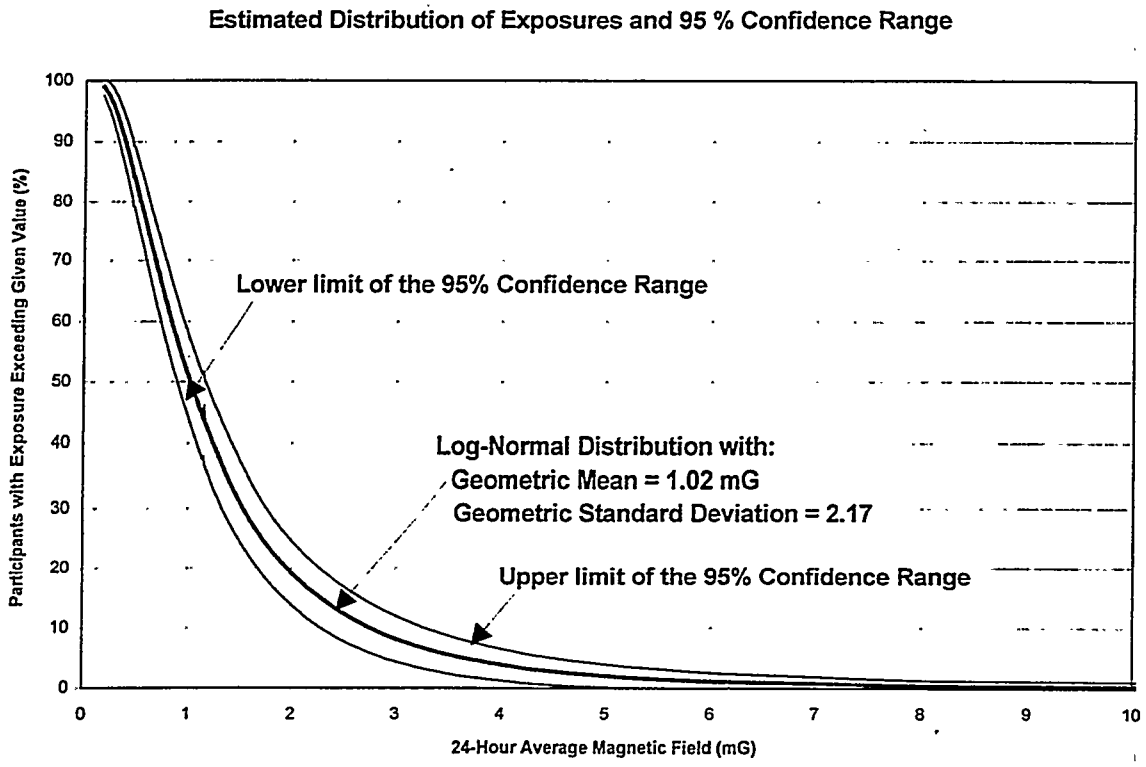

Figure 5.2 Estimated Distribution of Exposures and 95 % Confidence Range

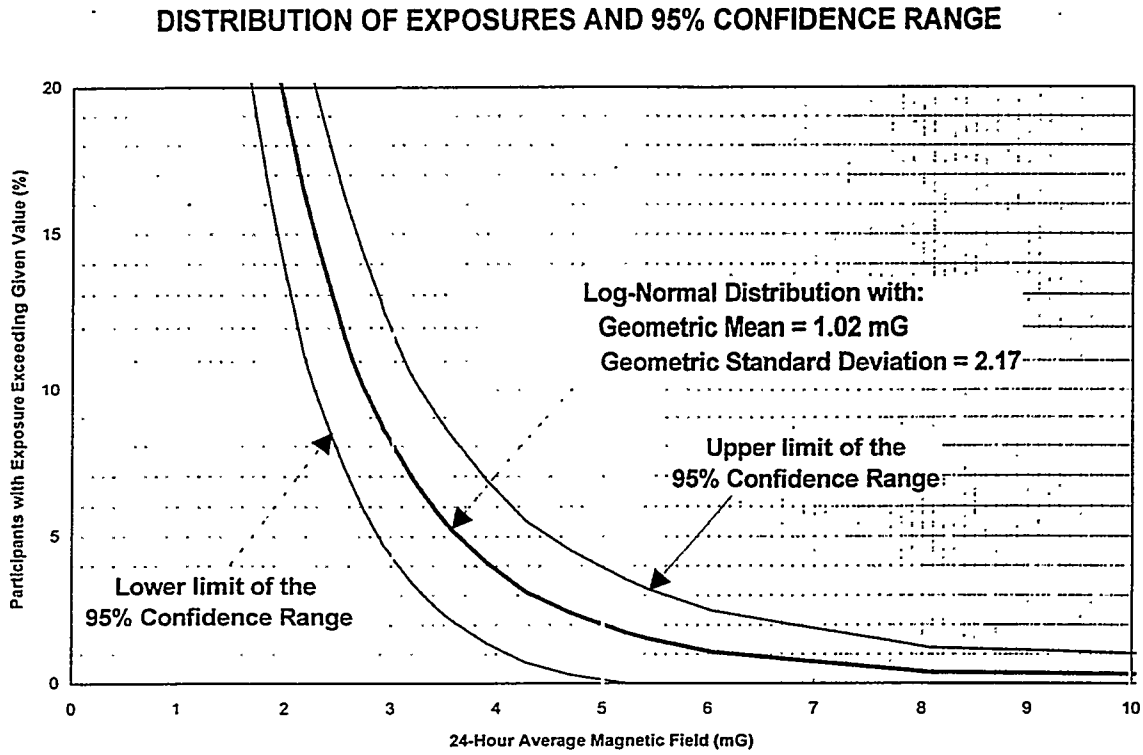

Figure 5.3 Same as Figure 5.2 but with an Expanded Vertical Scale

5.1.2 Comparison with Residential Measurement Survey Data

Figure 5.4 compares the distribution of TWA and median exposures during the period "at home", obtained from personal exposure measurements of the 200-person sample, with the distribution of average and median spot measurements, obtained by the EPRI 1000-home study.

The distributions of personal exposure and spot measurement results are similar. However, the personal exposure measurements show consistently higher values. Several factors may be at play: proximity to appliances that was avoided during the spot measurement survey, the fact that spot measurements were taken in the center of the rooms while the highest field values are generally close to the walls, and the mobility of people and greater variability of field during personal exposure measurements which tends to increase the ratio between average and median field.

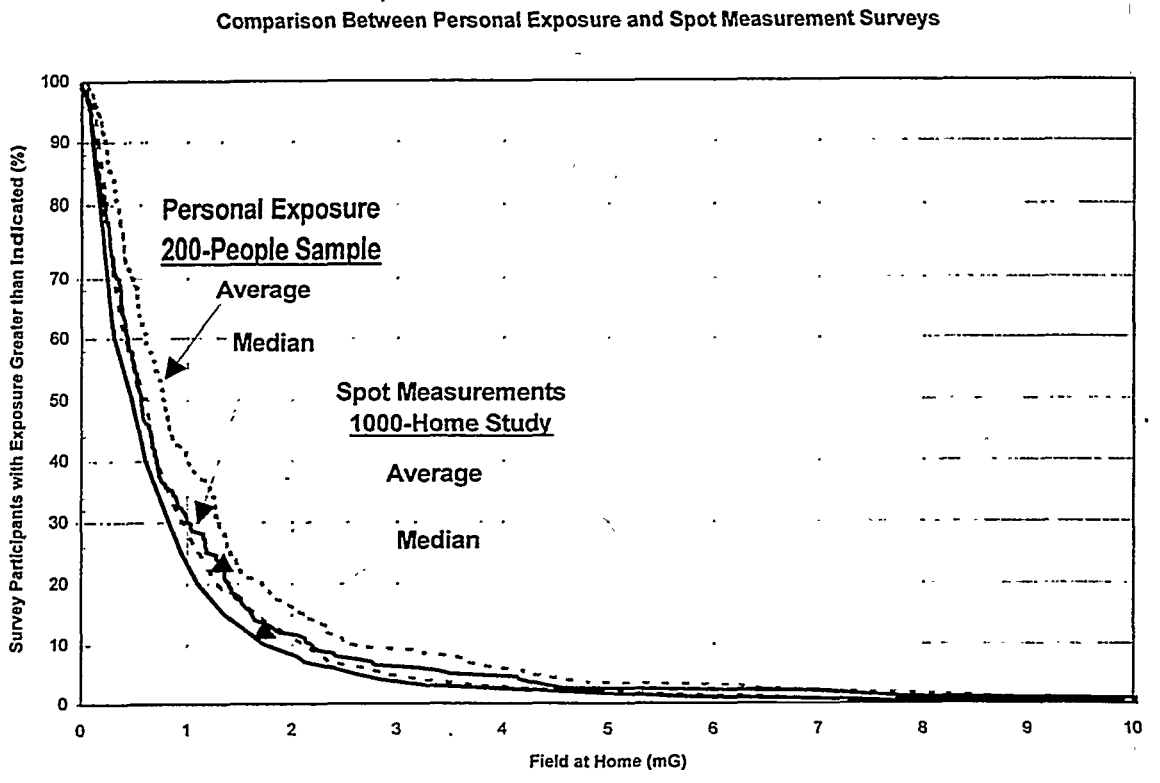

Figure 5.4 Comparison between Results of Personal Exposure and Spot Measurement Surveys

5.1.3 Parameters Affecting Exposure

Section 2.5 reports the exposure distributions for different values of some parameters. The greatest effects occurred for variations of the parameters in the following order:

1) Residence type. Duplex residences correspond to the highest exposures during the "at home" time followed by apartments and single family homes. These data are consistent with observations from spot measurements and may indicate a significant level of net currents in the service drop and water pipes of duplex residences. Mobile home data indicate the lowest level of exposure; however, the data are too few to base a definite conclusion.
2) Proximity to overhead power lines. The largest exposures at home occurred for power lines closer than 25 feet to the residence and the lowest exposure for residences with no overhead lines nearby. The data were too few to draw conclusions on the effect of the type of line.
3) The size of the residence. The largest exposures at home occurred for residences with a floor area less than 1000 square feet. Residences with floor area greater than 2000 square feet corresponded to the lowest average exposure, which in no case exceeded 2.5 mG.
4) The floor location of the bedroom. The largest exposures at home in single family residences occurred when the person's bedroom was in the basement or first floor.

The lowest exposures when the bedroom was at the second floor. This result is consistent with the prevalence of net current field in the lowest floor. However, the result may also be affected by other variables correlated with the number of floors, such as residence size.

5) The type of water line. The largest exposures at home occurred when the water line is metallic. This result is consistent with the fact that a plastic water line would practically eliminate the net current, which may otherwise be a significant field source. However, this result may also be affected by other variables correlated with the presence of plastic water lines, such as underground rather than overhead distribution lines.
6) The largest TWA fields appear to occurred for men rather than women. This particularly occurred during the "at work" period".

5.1.4 Summary Conclusions

The following conclusions can be drawn from the results of the 200-person personal exposure survey.

1. The distribution of the time weighted average fields (TWA) during a 24-hour period for the adult population of the US is estimated to be a log-normal distribution with a geometric mean of 1.02 mG (95% CI from 0.88 to 1.16 mG) and a geometric standard deviation equal to 2.17 (95% CI from 2.09 to 2.26).

2. The distribution of the time during a 24-hour period during which the field exceeded 10 mG has a geometric mean of 1.84 minutes and a geometric standard deviation equal to 7.8. The time above 10 mG exceeded 1 hour for 10% of the people.

3. The distribution of the time during a 24-hour period during which the field exceeded 50 mG has a geometric mean of 0.12 minutes and a geometric standard deviation equal to 4.0. The time above 50 mG exceeded 10 minutes for 2.5% of the people.

4. The largest TWA were recorded during the period "at home, in bed", followed by the periods "at work", "at home, not in bed", and "during travel". The lowest TWA were recorded during the period "at home, in bed". The category of "at home, in bed" has both the lowest and the highest exposures. The distribution of the average field at home, in bed has the largest variance.

5. In general, largest TWA were recorded for men than for women. The period "at work" appears responsible for the difference.

6. The following parameters appear to affect the distribution of exposures at home: residence type, proximity to an overhead power line, residence size, location of the floor of the bedroom, and the type of water line.

7. The data were too few to investigate the effect of other parameters, such as occupation and type of overhead power line.

5.2 Recommendations for Phase II

It is assumed that Phase II will consist of a personal exposure survey of 1000 individuals, including infants, toddlers, school age children, and adults randomly chosen in the United States. It is assumed that, in order to minimize the cost of the survey, the participants will be recruited by phone and the personal exposure meter will be mailed to the participants. As a result of the experience gathered during the 200-person exposure survey and of the special tests performed with the convenience sample, the following recommendations are made for Phase II.

The option of performing additional measurements (DC, wave form capture, wire code) should be abandoned.

No special stratification is justified. The cost of including institutionalized people (hospitalized, nursing homes, military, prison population) is not justified.

The optimum instrument recommended for Phase II is an instrument like the MATE, but modified to include: permanent memory, smaller size, and frequent summaries (e.g. once every 10 minutes) of the exposure quantities.

Participants to the survey should be recruited by telephone. The sample design should incorporate a list-assisted random digit dialing method. Only telephone numbers corresponding to residences should be followed up. An introductory letter should be sent to all persons that are listed on telephone directories and the letters should be followed up by a telephone interview. The persons corresponding to unlisted numbers chosen for the survey should be contacted directly by phone without a prior introductory letter. Introductory letters should be sent to respondents who request them. These respondents should be contacted again after the letter has been received. The phone interviewer should use the same techniques used during Phase I to administer a questionnaire, make the selection and solicit the participation of a member of the household. The list of people that have agreed to participate to the survey, their age, and sex should be compiled.

A consent form and a letter that illustrates the reasons and modality of the survey should be sent to all the people that have agreed to participate. The consent form and the letter should explain why the participant are asked to wear or carry with them for 24 hours a small meter that records the magnetic field existing at the person location. A revised Consent Form, explaining also the procedure to be used for infants and toddlers, should be prepared and approved by the ORAU/ORNL Committee on Human Studies. The consent forms need to be signed and returned before measurements could be performed.

Upon return of the signed Consent Form the participants should be sent a package containing a personal meter, the instructions for the use of the meter, a small diary to be used to write the type of activities performed, a questionnaire to be filled by the participant, a UPS envelope with prepaid label to be used to return the meter, and a $50 check for compensation for participation in the study. The personal exposure meter should be of the size of a pager and it should be possible to clip the meter to a belt or place it in a pocket. For infants and toddlers the meter should be placed inside a teddy bear that should be kept near them for the day of the measurements. The personal exposure meter should sample the magnetic field at a very rapid rate (once every 0.5 second) that would allow capturing the maximum field values to which a person is exposed and would make possible discriminating between field changes caused by sudden changes in electrical loads and those caused by walking by a field source. The meter should have a permanent memory so that data would not be lost in the event the battery is exhausted before the meter is returned. The only action required from the participants should be to turn the meter on at the start of the 24 hours of recording. The participants should be asked to note on the activity diary the time of the day when the meter is first turned on and then the time of the day at every change of the following types of activity: at home, in bed, traveling, at work, at school, and other activities. Every ten minutes since being turned on, the meter should store in its permanent memory summary statistics: average, standard deviation, minimum, maximum, times in a number of field ranges, number of sudden field changes above selected thresholds, and total length of time during which the field is coherent, i.e. all the field components remain constant for more than a few (10) seconds. The participants should be requested to ship the meter, the diary, and the completed questionnaire as soon as possible after the 24-hour exposure measurements.

Upon return of the personal exposure meters from the participants, the data should be downloaded to a PC. Personal exposure data, diary data, and questionnaire data should be entered in a database.

The data analysis should include a detailed statistical analysis of exposure and relationships to variables. Statistics of exposure data will be produced for each exposure metrics in the survey and for each time period (entire day, at home, at home in bed, travel, at work, in school, other). The correlation between exposure factors and exposure should be determined. The data obtained from the survey sample should be used to provide estimates of exposure for the US population and their confidence intervals.

SURVEY OF PERSONAL MAGNETIC FIELD EXPOSURE
Phase I : Pilot Study and Design of Phase II
Volume 2: Appendices A,B,C,D, and E

EMF RAPID PROGRAM
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CONTENTS

VOLUME 1: REPORT

VOLUME 2: APPENDICES

APPENDIX A

DETAILED RESULTS OF SURVEY OF PERSONAL MAGNETIC FIELD EXPOSURE OF 200 RANDOMLY SELECTED ADULTS

Table A-1 contains the results of the analysis of each 24-hour personal exposure recording.
The first column contains the participant identification number.
The activity codes (second column) have the following meaning:
1 = total measurement period
13 = total period at home
5 = period at home, not in bed
9 = period at home, in bed
17 = period at work
33 = period in school
65 = period traveling
129 = all other activities
The third column contains the time, number of seconds, spent for a specific activity.
The next five columns contain: average (mG), standard deviation (mG), geometric mean (mG), and geometric standard deviation, and maximum (mG).
The next five columns contain the values of the magnetic field not exceeded for given percentage of time, i.e. the "percentile levels": 50^{th} percentile (which is the median), 75^{th} percentile, 90^{th} percentile, 95^{th} percentile, and 99^{th} percentile.
The next 7 columns contain the time, number of seconds, in which the magnetic field was in a specified range: less than 0.5 mG, between 0.5 and 1 mG, between 1 and 2, between 2 and 5, between 5 and 10, between 10 and 20, between 20 and 50, and more than 50 mG.

The data contained in Table A-1 were used to generate Tables 2.2, 2.3, and 2.4 and Figures 2.3 to 2.26 of Section 2 of the Report. The data of Table 1 in combination with those of Table A-2 were used to generate Figures 2.27 to 2.36 of Section 2 of the Report.

Table A-1 Analysis of the 24-Hour Personal Exposure Data of Each Participant

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean (mG)	Geom StDev (mG)	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
2	1	86404	4.69	3.35	2.96	3.16	27.6	3.85	7.96	8.54	8.76	9.98	6968	12176	8504	17368	40532	848	8	0
2	5	23784	4.33	2.89	3.23	2.33	14.0	2.91	7.37	8.46	8.77	9.62	536	2564	1760	9600	9308	16	0	0
2	9	28912	8.12	0.57	8.08	1.15	9.87	8.04	8.41	8.69	8.83	9.11	4	72	24	4	28808	0	0	0
2	13	52696	6.41	2.74	5.34	2.09	14.0	7.87	8.21	8.64	8.81	9.31	540	2636	1784	9604	38116	16	0	0
2	65	9456	2.14	1.91	1.39	2.82	13.0	1.57	3.09	4.62	6.33	8.76	1712	1144	3080	2720	764	36	0	0
2	129	24252	1.96	2.39	1.1	2.94	27.6	0.86	2.49	5.1	7.17	10.7	4716	8396	3640	5044	1652	796	8	0
5	1	86404	0.38	0.56	0.19	3.09	6.24	0.16	0.5	0.88	0.88	2.53	64232	18644	900	2504	124	0	0	0
5	5	15604	0.4	0.82	0.17	3.03	6.24	0.09	0.46	0.65	1.19	4.08	12024	2756	96	616	112	0	0	0
5	9	32388	0.07	0.02	0.07	1.34	0.3	0.07	0.09	0.11	0.11	0.14	32388	0	0	0	0	0	0	0
5	13	47992	0.18	0.49	0.09	2.21	6.24	0.07	0.11	0.38	0.53	3.75	44412	2756	96	616	112	0	0	0
5	17	33684	0.55	0.33	0.45	1.94	5.03	0.45	0.86	0.88	0.88	0.88	17724	15784	92	80	4	0	0	0
5	65	2616	1.78	0.83	1.28	3.17	5.58	2.09	2.26	2.48	2.62	3.23	416	12	648	1536	4	0	0	0
5	129	2112	0.65	0.73	0.44	2.19	5.37	0.36	0.42	2.11	2.23	3.17	1680	92	64	272	4	0	0	0
7	1	86404	0.86	2	0.6	1.79	89.5	0.51	0.67	0.8	1.83	11.3	35360	44432	3120	1508	576	1340	40	28
7	5	280	0.59	0.07	0.58	1.14	0.83	0.6	0.63	0.64	0.67	0.83	28	252	0	0	0	0	0	0
7	9	28464	0.51	0.07	0.51	1.14	0.79	0.48	0.51	0.62	0.67	0.71	15332	13132	0	0	0	0	0	0
7	13	28744	0.52	0.07	0.51	1.14	0.83	0.48	0.51	0.63	0.67	0.71	15360	13384	0	0	0	0	0	0
7	17	16260	2.18	4.34	1.07	2.76	89.5	0.78	1.42	6.74	11.4	12.3	1504	10032	1992	760	564	1340	40	28
7	65	1716	0.46	0.08	0.45	1.18	0.72	0.41	0.52	0.6	0.61	0.65	1280	436	0	0	0	0	0	0
7	129	39684	0.6	0.38	0.55	1.44	9.91	0.51	0.65	0.71	0.76	2.25	17216	20580	1128	748	12	0	0	0
9	1	86404	0.25	0.4	0.18	1.82	17.8	0.15	0.2	0.27	0.86	1.72	80452	1896	3364	628	60	4	0	0
9	5	34336	0.3	0.4	0.23	1.82	17.8	0.19	0.23	0.55	1.21	1.49	30524	1260	2416	132	0	4	0	0
9	9	30144	0.15	0.02	0.15	1.15	0.45	0.15	0.15	0.16	0.2	0.21	30144	0	0	0	0	0	0	0
9	13	64480	0.23	0.3	0.19	1.64	17.8	0.16	0.21	0.25	0.6	1.39	60668	1260	2416	132	0	4	0	0
9	33	19344	0.17	0.27	0.13	1.67	4.05	0.12	0.15	0.17	0.19	1.67	18816	68	384	76	0	0	0	0
9	65	2580	1.22	1.28	0.77	2.61	8.36	0.74	1.53	3	4.05	6.1	968	568	564	420	60	0	0	0
11	1	86404	2.01	1.81	1.22	3.09	22.7	1.34	3.09	4.45	5.19	7.57	20912	11408	18140	30692	4956	284	12	0
11	5	24004	0.74	1.08	0.38	2.86	16.3	0.29	0.48	2.53	3.12	4.46	18192	932	1780	2976	120	4	0	0
11	9	28584	1.65	0.97	1.41	1.73	5.02	1.05	2.64	3.11	3.15	4.68	592	7516	12108	8332	36	0	0	0
11	13	52588	1.23	1.12	0.77	2.85	16.3	0.99	1.53	3.07	3.15	4.68	18784	8448	13888	11308	156	4	0	0
11	65	3888	1.84	1.62	1.13	3.15	12.1	1.47	2.77	3.84	3.97	8.58	892	560	1020	1340	56	20	0	0
11	129	29928	3.4	2	2.74	2.12	22.7	3.29	4.5	5.53	6.38	9.7	1236	2400	3232	18044	4744	260	12	0
12	1	86404	1.08	1.26	0.85	2.09	52.3	0.99	1.51	1.58	2.05	3.04	18748	25272	37920	4208	148	28	68	12
12	5	12088	0.54	0.47	0.48	1.49	11.9	0.48	0.56	0.68	0.8	2.53	6700	4936	280	144	24	4	0	0
12	9	24852	1.52	0.1	1.51	1.13	1.96	1.54	1.55	1.58	1.59	1.62	148	12	24692	0	0	0	0	0
12	13	36940	1.2	0.54	1.04	1.8	11.9	1.51	1.55	1.58	1.58	1.62	6848	4948	24972	144	24	4	0	0
12	17	28320	0.86	1.95	0.61	2.22	52.3	0.87	0.98	1.06	1.11	1.62	7216	14756	6116	68	72	12	68	12
12	129	21144	1.18	0.91	0.93	2.09	17.8	1.03	1.31	2.63	2.77	3.78	4684	5568	6832	3996	52	12	0	0
14	1	86404	0.74	0.46	0.67	1.56	15.8	0.69	0.8	1.02	1.29	2.67	15372	61880	7548	1552	32	20	0	0
14	5	86404	0.74	0.46	0.67	1.56	15.8	0.69	0.8	1.02	1.29	2.67	15372	61880	7548	1552	32	20	0	0
14	13	86404	0.74	0.46	0.67	1.56	15.8	0.69	0.8	1.02	1.29	2.67	15372	61880	7548	1552	32	20	0	0
19	1	86404	2.13	1.93	1.78	1.75	25.7	1.87	2.5	3.05	3.87	13.9	1412	13188	33952	35896	780	1052	124	0
19	5	26008	3.09	2.68	2.68	1.54	25.7	2.56	2.89	3.92	5.06	17.9	0	0	4552	20120	480	744	112	0
19	9	23376	1.03	0.19	1.02	1.19	1.87	0.99	1.15	1.31	1.39	1.52	0	12312	11064	0	0	0	0	0
19	13	49384	2.12	2.2	1.7	1.8	25.7	1.65	2.59	3.1	3.93	15.9	0	12312	15616	20120	480	744	112	0
19	17	31644	2.06	0.59	1.99	1.29	12.6	1.95	2.27	2.89	3.12	3.84	24	64	17388	14128	32	8	0	0
19	65	5376	2.65	3.64	1.37	3.18	24.5	1.54	3.25	5.44	11.6	18.4	1388	812	948	1648	268	300	12	0
23	1	86404	0.51	0.65	0.3	2.72	18.5	0.22	0.68	1.49	1.81	2.89	59656	12876	10728	3088	44	12	0	0
23	5	28528	0.64	0.55	0.45	2.28	3.66	0.36	0.86	1.6	1.8	2.34	16196	6484	5052	796	0	0	0	0
23	9	28200	0.14	0.04	0.13	1.25	1.15	0.12	0.15	0.18	0.19	0.22	28180	16	4	0	0	0	0	0
23	13	56728	0.39	0.47	0.25	2.35	3.66	0.18	0.37	1.02	1.6	2.17	44376	6500	5056	796	0	0	0	0
23	65	17532	0.68	0.85	0.36	3.23	10.8	0.23	1.06	1.8	2.73	3.21	11252	1720	3064	1476	16	4	0	0
23	129	12144	0.85	0.86	0.55	2.94	18.5	0.72	1.14	1.8	2.22	3.65	4028	4656	2608	816	28	8	0	0
25	1	86404	2.56	1.7	1.95	2.32	14.9	2.6	2.82	5	5.96	7.99	3896	16276	11628	45936	8636	32	0	0
25	5	7248	1.15	0.77	0.98	1.86	14.9	1.07	1.38	1.68	1.86	2.88	760	2152	4116	192	12	16	0	0
25	9	26832	2.64	0.06	2.64	1.02	2.88	2.64	2.68	2.71	2.72	2.75	0	0	4	26828	0	0	0	0
25	13	34080	2.32	0.71	2.14	1.64	14.9	2.62	2.67	2.7	2.72	2.76	760	2152	4120	27020	12	16	0	0
25	17	31332	4.01	1.75	3.59	1.65	11.5	4.05	5.14	6.18	6.98	8.71	84	416	3620	18604	8592	16	0	0
25	65	8256	0.87	0.34	0.79	1.62	4.47	0.9	1.03	1.17	1.37	1.81	908	4784	2500	64	0	0	0	0
25	129	12736	0.74	0.48	0.61	2.1	7.07	0.7	0.83	1.08	1.32	2.56	2144	8924	1388	248	32	0	0	0
26	1	86404	1.4	1	1.13	1.93	22.2	0.95	2.11	2.6	2.89	4.09	3740	41772	18300	21904	648	32	8	0
26	5	5056	1.02	0.42	0.96	1.46	5.81	0.93	1.13	1.38	1.58	2.64	216	3000	1712	124	4	0	0	0
26	9	32928	0.73	0.14	0.71	1.21	1.17	0.68	0.83	0.95	1.03	1.1	344	30576	2008	0	0	0	0	0
26	13	37984	0.77	0.23	0.74	1.28	5.81	0.71	0.88	1	1.08	1.45	560	33576	3720	124	4	0	0	0
26	65	3024	1.3	1.18	0.83	2.72	7.11	0.93	1.99	2.69	3.66	5.41	1032	548	692	700	52	0	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
26	129	45396	1.93	1.08	1.64	1.9	22.2	1.86	2.49	2.82	3.23	6.03	2148	7648	13888	21080	592	32	8	0
27	1	84552	2.15	1.99	1.3	3.05	54.7	2.13	2.89	5.27	5.47	5.76	23596	9428	6032	32328	12940	172	52	4
27	9	32036	2.47	0.37	2.44	1.16	3.99	2.42	2.77	2.99	3.05	3.18	0	0	2928	29108	0	0	0	0
27	13	32036	2.47	0.37	2.44	1.16	3.99	2.42	2.77	2.99	3.05	3.18	0	0	2928	29108	0	0	0	0
27	65	52516	1.95	2.49	0.89	3.54	54.7	0.55	5	5.42	5.57	5.88	23596	9428	3104	3220	12940	172	52	4
32	1	86404	2.96	4.06	0.51	8.29	78.3	0.14	8.6	8.96	9.05	9.3	52984	1572	2352	2616	26860	8	4	8
32	5	27036	0.13	0.13	0.1	1.86	2.76	0.09	0.12	0.25	0.35	0.48	26776	188	64	8	0	0	0	0
32	9	31720	7.71	2.72	5.65	3.56	9.92	8.79	8.98	9.1	9.21	9.31	2508	0	0	2356	26856	0	0	0
32	13	58756	4.22	4.28	0.93	9.39	9.92	0.64	8.83	8.99	9.11	9.31	29284	188	64	2364	26856	0	0	0
32	17	22752	0.16	0.3	0.11	1.88	4.92	0.11	0.11	0.15	0.44	1.59	21812	420	380	140	0	0	0	0
32	65	852	1.23	7.82	0.17	3.61	78.3	0.11	0.31	0.56	0.86	48.2	728	92	4	8	0	8	4	8
32	129	4044	0.83	0.58	0.59	2.84	6.08	0.98	1.06	1.17	1.39	2.78	1160	872	1904	104	4	0	0	0
35	1	86404	0.23	0.62	0.12	2.66	40.9	0.07	0.19	0.39	0.87	2.87	78608	4000	2020	1536	228	8	4	0
35	5	39904	0.31	0.78	0.15	2.87	40.9	0.12	0.23	0.67	1.25	3.28	34968	2336	1576	824	192	4	4	0
35	9	26820	0.06	0.02	0.06	1.25	0.21	0.05	0.07	0.07	0.09	0.12	26820	0	0	0	0	0	0	0
35	13	66724	0.21	0.61	0.11	2.59	40.9	0.07	0.19	0.35	0.8	2.78	61788	2336	1576	824	192	4	4	0
35	17	18504	0.31	0.61	0.17	2.63	10.2	0.15	0.23	0.64	1.39	3.06	15896	1508	404	656	36	4	0	0
35	65	19680	0.32	0.62	0.17	2.63	10.2	0.15	0.24	0.64	1.42	3.09	16820	1664	444	712	36	4	0	0
44	1	86404	0.61	1.58	0.37	2.43	65.4	0.27	0.7	1.74	1.82	2.25	58276	13424	13152	1316	24	80	112	20
44	5	11212	0.25	0.11	0.24	1.37	2.17	0.23	0.3	0.34	0.37	0.59	11016	148	44	4	0	0	0	0
44	9	29604	0.23	0.05	0.22	1.23	1.24	0.22	0.24	0.29	0.31	0.36	29592	8	4	0	0	0	0	0
44	13	40816	0.23	0.07	0.23	1.28	2.17	0.23	0.27	0.31	0.33	0.39	40608	156	48	4	0	0	0	0
44	17	31056	1.19	2.51	0.84	2.13	65.4	0.86	1.74	1.82	1.84	3.55	6452	11452	12536	380	24	80	112	20
44	65	8412	0.55	0.7	0.26	3.53	4.15	0.15	0.74	2.07	2.21	2.46	5396	1524	564	928	0	0	0	0
44	129	6120	0.26	0.16	0.22	1.66	3.76	0.23	0.32	0.4	0.49	0.73	5820	292	4	4	0	0	0	0
47	1	86404	0.73	3.08	0.23	3.44	18.3	0.11	0.21	0.58	1.42	18.1	76260	5552	792	1168	4	2628	0	0
47	5	17700	2.86	6.33	0.49	5.84	18.3	0.21	0.57	17.9	18.11	18.2	12468	2600	4	0	0	2628	0	0
47	9	39904	0.09	0.13	0.18	1.53	0.9	0	0.21	0.21	0.24	0.76	39356	548	0	0	0	0	0	0
47	13	57604	0.95	3.73	0.28	3.71	18.3	0.14	0.21	0.52	0.83	18.1	51824	3148	4	0	0	2628	0	0
47	17	14400	0.08	0.05	0.1	1.45	0.21	0.11	0.11	0.14	0.14	0.16	14400	0	0	0	0	0	0	0
47	129	14400	0.53	0.76	0.29	3.24	6.61	0.21	0.67	1.53	2.74	2.82	10036	2404	788	1168	4	0	0	0
48	1	86404	1.15	3.45	0.82	1.99	328	0.73	1.02	1.92	2.9	7.43	20692	43540	15256	4776	1804	308	16	12
48	5	16680	0.87	7.28	0.61	1.63	328	0.64	0.79	1	1.21	2.06	4916	10072	1516	128	16	16	4	12
48	9	38224	1.07	0.5	0.97	1.55	2.95	0.84	1.65	1.86	1.94	2.12	1232	25136	10988	868	0	0	0	0
48	13	54904	1.01	4.03	0.84	1.65	328	0.79	0.98	1.83	1.91	2.12	6148	35208	12504	996	16	16	4	12
48	17	27000	1.46	2.11	0.81	2.6	27.5	0.5	1.37	4.26	6.27	9.99	12912	6272	2176	3612	1760	264	4	0
48	129	4500	0.89	1.64	0.63	2.01	27.7	0.6	0.88	1.34	2.04	6.45	1632	2060	576	168	28	28	8	0
49	1	86404	1.71	1.18	1.36	2.01	19.9	1.46	2.49	3.1	3.36	5.23	6848	25928	20204	32524	788	112	0	0
49	5	47680	1.18	1.16	0.94	1.84	14.0	0.85	1.25	2.03	2.98	7.08	5660	23540	13596	4028	764	92	0	0
49	9	31908	2.6	0.52	2.55	1.24	4.35	2.57	2.96	3.3	3.4	3.88	20	76	3848	27964	0	0	0	0
49	13	79588	1.75	1.19	1.4	2	14.0	1.53	2.55	3.14	3.37	5.29	5680	23616	17444	31992	764	92	0	0
49	65	5040	1.31	1.09	1.09	1.8	19.9	1.31	1.57	1.94	2.46	4.67	704	1256	2624	416	20	20	0	0
49	129	1776	0.77	0.75	0.63	1.73	7.98	0.54	0.63	1.44	2.22	3.9	464	1056	136	116	4	0	0	0
61	1	86404	1.26	11.4	0.47	2.99	1310	0.41	0.86	2.15	3.46	12.4	47736	20704	8940	6040	1792	876	144	172
61	5	12628	0.94	0.61	0.82	1.67	8.88	0.77	1.12	1.58	1.95	3.52	2084	6416	3532	572	24	0	0	0
61	9	31428	0.46	0.32	0.37	1.91	3.89	0.35	0.59	0.92	1.06	1.61	20944	8312	2132	40	0	0	0	0
61	13	44056	0.6	0.48	0.46	2.03	8.88	0.47	0.77	1.12	1.49	2.24	23028	14728	5664	612	24	0	0	0
61	17	31548	1.75	18.8	0.33	3.62	1310	0.19	0.44	2.92	3.94	20.0	24080	1972	1348	2916	340	576	144	172
61	65	4488	2.16	1.72	1.54	2.39	11.6	2.1	2.79	4.27	5.8	8.01	528	1072	600	1976	304	8	0	0
61	129	6312	2.78	3.32	1.56	2.76	13.8	1.03	4.34	8	9.54	12.9	100	2932	1328	536	1124	292	0	0
62	9	30600	1.83	0.29	1.81	1.17	2.44	1.87	2.06	2.19	2.26	2.35	0	0	18380	12220	0	0	0	0
62	13	30600	1.83	0.29	1.81	1.17	2.44	1.87	2.06	2.19	2.26	2.35	0	0	18380	12220	0	0	0	0
62	129	55804	2.17	2.34	1.31	2.83	23.7	1.35	2.17	6.2	7.93	8.69	10764	8352	21768	6900	7744	256	20	0
63	1	86404	0.52	0.13	0.51	1.28	2.26	0.51	0.6	0.71	0.77	0.94	41400	44796	204	4	0	0	0	0
63	5	40780	0.53	0.16	0.51	1.34	2.26	0.48	0.63	0.76	0.85	0.96	21104	19476	196	4	0	0	0	0
63	9	40836	0.51	0.1	0.5	1.21	1.84	0.51	0.57	0.67	0.72	0.83	19712	21116	8	0	0	0	0	0
63	13	81616	0.52	0.14	0.5	1.28	2.26	0.5	0.58	0.72	0.78	0.94	40816	40592	204	4	0	0	0	0
63	129	4788	0.58	0.06	0.58	1.11	0.8	0.59	0.61	0.67	0.67	0.7	584	4204	0	0	0	0	0	0
67	1	86404	2.38	3.57	1.97	1.73	102	2.01	2.83	3.63	4.14	5.97	1308	6764	34616	41872	1632	16	12	184
67	5	44884	2.63	1.43	2.42	1.51	102	2.5	3.2	3.97	4.48	6.01	0	1020	12652	29900	1300	8	0	4
67	9	26616	1.69	0.9	1.46	1.75	7.55	1.52	2.17	2.96	3.51	4.16	1036	5416	12228	7816	120	0	0	0
67	13	71500	2.28	1.34	2	1.7	102	2.12	2.95	3.71	4.17	5.62	1036	6436	24880	37716	1420	8	0	4
67	17	12012	2.89	8.93	1.78	1.82	79.7	1.78	1.99	2.23	2.42	74.6	196	196	8672	2736	12	8	12	180
67	65	2892	2.62	1.97	2.11	2	9.97	2.19	3.01	4.12	9.1	9.74	76	132	1064	1420	200	0	0	0
68	1	86404	3.9	4.97	1.03	6.77	75.8	1.14	7.77	13.4	14	14.4	33708	6996	13656	3232	16368	12416	24	4
68	5	14692	0.86	0.71	0.48	3.55	6.22	1.01	1.57	1.6	1.68	2.16	6480	844	6964	396	8	0	0	0
68	9	24452	0.13	0.05	0.12	1.62	0.27	0.16	0.16	0.17	0.17	0.19	24452	0	0	0	0	0	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s).	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
68	13	39144	0.4	0.56	0.2	3.02	6.22	0.16	0.19	1.57	1.57	2.11	30932	844	6964	396	8	0	0	0
68	17	35176	8.49	4.78	5.67	3.27	75.8	7.86	13.4	14.1	14.3	14.6	1236	5396	88	244	15832	12376	0	4
68	65	8544	1.77	1.59	1.21	2.8	23.3	1.33	2.11	3.52	4.8	7.16	1304	288	4672	1928	328	16	8	0
68	129	3540	2.13	2.78	1.49	2.36	45.5	1.47	2.05	4.06	5.83	11.9	236	468	1932	664	200	24	16	0
69	1	86404	1.1	0.44	0.97	1.9	12.7	1.06	1.32	1.4	1.44	2.49	5960	27592	49872	2888	88	4	0	0
69	5	23188	1.03	0.14	1.02	1.14	2.3	1.02	1.1	1.21	1.27	1.37	0	9540	13628	20	0	0	0	0
69	9	28716	1.43	0.3	1.4	1.19	2.58	1.36	1.39	1.44	2.41	2.5	0	48	26220	2448	0	0	0	0
69	13	51904	1.25	0.32	1.22	1.25	2.58	1.27	1.36	1.43	1.47	2.49	0	9588	39848	2468	0	0	0	0
69	17	29520	0.88	0.32	0.72	2.35	4.52	0.94	1.02	1.1	1.17	1.55	2900	17332	9248	40	0	0	0	0
69	65	4740	0.83	1.09	0.52	2.37	12.7	0.41	0.96	1.88	2.76	5.51	2936	664	708	340	88	4	0	0
69	129	240	0.94	0.98	0.42	4.39	4.1	0.41	1.64	2.46	2.56	4.1	124	8	68	40	0	0	0	0
70	1	86404	0.55	1.87	0.31	2.98	175	0.42	0.56	1.32	1.6	2.71	56056	18172	10360	1576	168	44	12	16
70	5	12304	1.15	0.36	1.09	1.4	1.97	1.27	1.44	1.63	1.68	1.76	68	4816	7420	0	0	0	0	0
70	9	28416	0.47	0.06	0.47	1.13	0.79	0.47	0.52	0.53	0.58	0.64	18684	9732	0	0	0	0	0	0
70	13	40720	0.68	0.37	0.61	1.55	1.97	0.52	0.73	1.36	1.57	1.71	18752	14548	7420	0	0	0	0	0
70	17	38136	0.24	2.7	0.12	2.19	175	0.1	0.16	0.35	0.54	1.25	35936	1632	372	84	40	44	12	16
70	65	7548	1.37	1.11	0.99	2.42	8.83	1.17	1.82	2.69	3.08	6.45	1368	1992	2568	1492	128	0	0	0
73	1	86404	2.19	1.89	1.64	2.16	45.1	1.62	3	4.45	5.22	8.31	4320	19444	27084	30136	4924	440	56	0
73	5	27412	2.64	2.05	2.11	1.99	29.9	2.21	3.33	4.56	5.49	10.2	924	2048	9332	13136	1644	292	36	0
73	9	30276	2.51	1.47	2.12	1.8	14.9	2.05	3.41	4.68	5.3	6.3	28	3196	11496	13380	2160	16	0	0
73	13	57688	2.57	1.77	2.11	1.89	29.9	2.13	3.38	4.62	5.39	8.51	952	5244	20828	26516	3804	308	36	0
73	65	5460	1.87	2.4	1.24	2.39	39.2	1.2	2.08	4.4	5.52	9.59	940	1340	1668	1064	400	32	16	0
73	129	23256	1.32	1.72	0.94	2.07	45.1	0.84	1.14	2.69	4.71	7.41	2428	12860	4588	2556	720	100	4	0
75	1	86404	1.05	1.66	0.71	2.23	88.3	0.6	0.91	2.3	3.67	4.36	20896	45136	9140	10688	300	128	108	8
75	5	61144	0.71	0.8	0.61	1.6	26.1	0.59	0.68	0.9	1.47	3.46	13076	42952	2480	2492	72	40	32	0
75	9	4140	0.99	4.78	0.23	2.69	58.4	0.17	0.27	0.62	1.07	31.1	3636	216	152	24	4	28	76	4
75	13	65284	0.73	1.43	0.57	1.76	58.4	0.58	0.68	0.88	1.43	3.7	16712	43168	2632	2516	76	68	108	4
75	65	8520	2	2.54	1.31	2.77	88.3	1.87	2.7	3.92	4.44	7.73	1864	1148	1668	3620	156	60	0	4
75	129	12600	2.05	1.34	1.43	2.78	9.36	1.77	3.55	3.82	3.92	4.25	2320	820	4840	4552	68	0	0	0
76	1	86404	1.28	0.88	1.22	1.33	86.9	1.15	1.46	1.66	1.76	3.12	252	17900	66024	2012	144	56	12	4
76	5	49864	1.39	1.13	1.3	1.38	86.9	1.27	1.57	1.72	1.87	3.85	252	6204	41308	1884	144	56	12	4
76	9	34800	1.12	0.23	1.1	1.2	4.41	1.03	1.26	1.47	1.53	1.71	0	11600	23100	100	0	0	0	0
76	13	84664	1.28	0.89	1.22	1.33	86.9	1.15	1.47	1.66	1.76	3.12	252	17804	64408	1984	144	56	12	4
76	65	1020	1.25	0.21	1.24	1.13	3.66	1.23	1.29	1.35	1.42	2.25	0	0	1008	12	0	0	0	0
76	129	720	1.22	0.38	1.18	1.29	3.91	1.23	1.28	1.34	1.39	3.7	0	96	608	16	0	0	0	0
80	1	86404	0.56	1.8	0.22	4.01	91.7	0.09	0.37	1.28	2.86	6.94	69056	6852	4180	4544	1324	368	68	12
80	5	13060	0.25	0.39	0.17	2.32	8.11	0.17	0.23	0.5	0.76	1.78	11732	904	332	80	12	0	0	0
80	9	28860	0.03	0.03	0.05	1.15	0.2	0.05	0.05	0.05	0.05	0.1	28860	0	0	0	0	0	0	0
80	13	41920	0.1	0.24	0.09	2.29	8.11	0.05	0.07	0.22	0.31	1.02	40592	904	332	80	12	0	0	0
80	65	4200	1.23	1.34	0.93	2.11	19.8	0.84	1.28	2.45	3.52	7.01	508	1992	1144	500	40	16	0	0
80	129	40284	0.98	2.49	0.36	3.99	91.7	0.27	0.72	2.85	4.37	10.4	27956	3956	2704	3964	1272	352	68	12
81	1	86404	6.03	5.96	2.39	5	18.8	3.4	12.44	13.1	13.92	18.4	24896	7364	6764	9524	5096	32760	0	0
81	5	23728	2.82	2	2.16	2.15	14.8	2.14	4.17	5.58	5.92	6.52	728	4056	6220	8520	4044	160	0	0
81	9	33516	13.1	2.17	12.9	1.18	18.8	12.68	13.14	17.7	18.36	18.6	0	0	20	28	868	32600	0	0
81	13	57244	8.84	5.48	6.16	2.76	18.8	11.83	12.83	13.2	18.04	18.5	728	4056	6240	8548	4912	32760	0	0
81	17	6576	0.38	0.42	0.33	1.56	7.99	0.36	0.37	0.42	0.5	2.9	6252	208	16	92	8	0	0	0
81	65	1356	1.63	1.93	0.8	3.46	8.59	0.65	2.06	4.91	6.39	6.51	544	300	172	212	128	0	0	0
81	129	21228	0.48	0.58	0.37	1.86	8.29	0.38	0.46	0.6	0.96	3.47	17372	2800	336	672	48	0	0	0
85	1	86404	1.01	0.85	0.75	2.17	11.7	1.01	1.4	1.54	2.22	4.73	38572	4336	38600	4768	120	8	0	0
85	5	15328	1.23	1.47	0.71	2.66	4.81	0.43	1.08	4.54	4.73	4.75	8248	2824	992	3264	0	0	0	0
85	9	27096	0.37	0.06	0.36	1.17	0.72	0.37	0.4	0.43	0.46	0.5	26632	464	0	0	0	0	0	0
85	13	42424	0.68	0.97	0.46	1.98	4.81	0.37	0.42	1	2.98	4.73	34880	3288	992	3264	0	0	0	0
85	17	37896	1.39	0.21	1.38	1.18	6.9	1.37	1.47	1.56	1.64	2.2	92	20	37000	780	4	0	0	0
85	65	3420	1.4	1.47	0.9	2.54	11.7	0.72	1.84	3.58	4.4	5.91	1068	996	572	660	116	8	0	0
85	129	2664	0.31	0.42	0.24	1.69	4.65	0.22	0.25	0.31	0.5	2.85	2532	32	36	64	0	0	0	0
92	1	86404	1.08	0.94	0.73	2.54	42.4	0.61	1.91	2.24	2.44	2.87	36656	13708	17892	18044	72	20	12	0
92	5	17176	0.54	1.05	0.39	2.01	42.4	0.38	0.52	0.99	1.61	2.23	12292	3204	1284	336	28	20	12	0
92	9	32652	0.41	0.19	0.37	1.63	1.22	0.38	0.52	0.68	0.79	0.95	23308	9100	244	0	0	0	0	0
92	13	49828	0.46	0.64	0.38	1.77	42.4	0.38	0.52	0.72	0.9	1.96	35600	12304	1528	336	28	20	12	0
92	17	32244	2.04	0.36	2.01	1.2	4.1	2.03	2.25	2.49	2.64	2.98	4	72	14776	17392	0	0	0	0
92	65	4332	1.05	0.9	0.77	2.34	9.2	0.94	1.34	1.75	2.66	5.03	1052	1332	1588	316	44	0	0	0
97	1	86404	1.36	1.28	0.76	4.03	12.2	1.12	1.97	3.24	4.02	5	27672	12260	25400	20200	852	20	0	0
97	5	18544	1.34	0.97	1.11	1.81	7.02	1.04	1.66	2.37	3.33	5.52	1484	7280	6796	2776	208	0	0	0
97	9	32940	2.39	1.06	2.18	1.52	6.79	2.05	3.07	4.08	4.53	5.19	0	112	15780	16536	512	0	0	0
97	13	51484	2.01	1.15	1.71	1.8	7.02	1.72	2.58	3.76	4.39	5.21	1484	7392	22576	19312	720	0	0	0
97	17	32580	0.31	0.56	0.17	3.36	12	0.07	0.39	0.88	1.25	2.03	25504	4320	2396	312	40	8	0	0
97	65	2340	1.54	1.72	0.9	3	12.2	0.89	2.07	3.07	4.66	9.64	684	548	428	576	92	12	0	0
105	1	86404	0.88	2.34	0.31	3.52	23.4	0.36	0.8	0.99	1.4	13.5	51736	26324	4612	640	156	2924	12	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
105	5	7936	5.03	6.17	0.91	8.72	23.4	0.43	13.03	13.5	13.59	13.6	4312	400	132	124	68	2888	12	0
105	9	27456	0.11	0.4	0.09	1.46	14.1	0.07	0.11	0.16	0.16	0.21	27392	20	0	4	16	24	0	0
105	13	35392	1.21	3.59	0.15	4.27	23.4	0.11	0.16	0.52	13.32	13.6	31704	420	132	128	84	2912	12	0
105	17	35076	0.72	0.56	0.56	2.24	11.2	0.8	0.94	1.02	1.09	3.3	11520	18812	4224	436	72	12	0	0
105	33	12324	0.52	0.17	0.49	1.48	2.88	0.52	0.63	0.72	0.76	0.84	5456	6848	12	8	0	0	0	0
105	65	19308	0.84	0.47	0.77	1.84	10.2	0.91	0.98	1.05	1.11	1.97	3172	12448	3496	152	36	4	0	0
109	1	86332	1.1	2.08	0.74	2.27	106	0.67	0.94	2.34	3.59	6.16	20884	44464	8772	9932	2184	64	8	24
109	5	22732	1.5	1.46	0.85	3.19	23.2	1.2	2.24	3.59	4.94	5.13	8092	2368	5268	6192	804	4	4	0
109	9	25200	0.66	0.03	0.66	1.05	1.26	0.67	0.68	0.69	0.69	0.73	12	25172	16	0	0	0	0	0
109	13	47932	1.06	1.09	0.75	2.25	23.2	0.67	1.05	2.27	3.59	5.05	8104	27540	5284	6192	804	4	4	0
109	17	34500	1.12	2.99	0.69	2.25	106	0.67	0.86	2.45	3.94	7.32	11996	16172	2172	2796	1284	52	4	24
109	65	3900	1.5	1.34	1.01	2.66	13.7	1.25	2.05	2.83	4.3	5.63	784	752	1316	944	96	8	0	0
119	1	86404	2.06	3.17	1.21	2.86	134	1.45	2.27	4.61	5.51	13.1	21080	8464	31860	18156	5384	1208	180	72
119	5	11104	1.73	1.18	1.45	1.86	14	1.53	2.04	2.66	3.31	7.74	920	636	6656	2732	124	36	0	0
119	9	32460	1.99	0.84	1.84	1.46	5.82	1.65	2.19	3.48	3.53	3.65	0	456	22236	9756	12	0	0	0
119	13	43564	1.92	0.94	1.73	1.59	14	1.63	2.13	3.45	3.52	3.69	920	1092	28892	12488	136	36	0	0
119	17	27900	0.66	1.38	0.4	2.14	29.0	0.35	0.57	0.86	1.52	8.94	19064	6692	884	856	216	180	8	0
119	65	14940	5.06	6.27	3.27	2.82	134	4.78	5.53	8.02	13.43	26.3	1096	680	2084	4812	5032	992	172	72
121	1	86404	1.05	1.15	0.62	3.08	19.7	0.8	1.3	2.45	2.98	5.02	27976	28320	19164	10032	740	172	0	0
121	5	22852	1.97	1.02	1.76	1.6	14.5	1.58	2.76	3.05	3.43	5.03	0	1780	11716	9064	280	12	0	0
121	9	28836	0.94	0.36	0.88	1.38	2	0.83	0.98	1.7	1.79	1.89	104	22356	6372	4	0	0	0	0
121	13	51688	1.4	0.89	1.2	1.69	14.5	1.04	1.74	2.81	3.01	4.91	104	24136	18088	9068	280	12	0	0
121	33	28428	0.36	0.86	0.2	2.54	16.9	0.17	0.37	0.78	0.86	3.78	23976	3400	524	288	172	68	0	0
121	65	6288	1.28	2.23	0.5	3.54	19.7	0.3	1.09	3.89	5.84	11.4	3896	784	552	676	288	92	0	0
130	1	86404	0.65	0.57	0.53	1.77	16.5	0.48	0.64	1.11	1.61	3.06	44376	31976	6096	3920	32	4	0	0
130	5	24188	1.11	0.81	0.9	1.85	6.5	0.84	1.27	2.81	3.02	3.15	3676	11344	5580	3572	16	0	0	0
130	9	27180	0.52	0.12	0.51	1.25	0.95	0.51	0.6	0.68	0.76	0.86	11468	15712	0	0	0	0	0	0
130	13	51368	0.8	0.64	0.67	1.71	6.5	0.57	0.83	1.34	2.78	3.09	15144	27056	5580	3572	16	0	0	0
130	17	31080	0.4	0.21	0.38	1.37	2.68	0.35	0.42	0.59	0.62	0.73	26528	4280	48	224	0	0	0	0
130	65	5660	0.62	0.51	0.49	1.94	8.6	0.49	0.61	1.31	1.52	2.22	2920	1780	884	68	8	0	0	0
130	129	1644	0.53	1.07	0.31	2.58	16.5	0.34	0.52	1.07	1.65	4.28	1176	300	100	56	8	4	0	0
132	1	86404	0.8	0.72	0.67	1.73	22.0	0.6	0.82	1.68	1.71	2.07	28732	40192	16552	616	232	68	12	0
132	9	83320	0.81	0.71	0.68	1.73	22.0	0.61	0.83	1.68	1.71	2.05	27348	38584	16512	588	216	60	12	0
132	13	83320	0.81	0.71	0.68	1.73	22.0	0.61	0.83	1.68	1.71	2.05	27348	38584	16512	588	216	60	12	0
132	129	3084	0.63	0.96	0.53	1.46	18.7	0.51	0.56	0.62	0.84	4.3	1384	1608	40	28	16	8	0	0
135	1	86404	1.69	1.27	1.47	1.74	37.9	1.43	1.77	2.29	2.91	7.63	2188	2364	67500	12052	2104	164	32	0
135	5	7240	1.82	0.57	1.75	1.29	9.05	1.79	1.99	2.19	2.54	4.01	8	64	5708	1432	28	0	0	0
135	13	7240	1.82	0.57	1.75	1.29	9.05	1.79	1.99	2.19	2.54	4.01	8	64	5708	1432	28	0	0	0
135	17	19104	1.38	0.53	1.32	1.3	8.02	1.22	1.32	2.05	2.37	3.01	4	228	16784	2016	72	0	0	0
135	65	11748	1.62	1.15	1.48	1.47	28.0	1.51	1.72	1.88	2.73	6.33	40	1384	9356	764	168	28	8	0
135	129	48312	1.82	1.53	1.48	1.98	37.9	1.46	1.86	2.51	3.83	8.4	2136	688	35652	7840	1836	136	24	0
136	1	86404	1.31	1.06	0.95	2.37	22.1	0.94	1.63	3.09	3.3	4.06	18780	30680	19712	16804	416	8	4	0
136	5	31600	0.94	0.89	0.61	2.62	9.76	0.55	1.4	1.94	2.4	3.91	15188	2992	11180	2076	164	0	0	0
136	9	41592	1.52	0.92	1.31	1.69	4.11	0.94	2.45	3.18	3.28	3.56	20	25672	3976	11924	0	0	0	0
136	13	73192	1.27	0.95	0.94	2.31	9.76	0.92	1.51	2.93	3.23	3.6	15208	28664	15156	14000	164	0	0	0
136	65	2376	1.33	0.86	1.04	2.26	8.41	1.29	1.49	2.46	2.98	4.69	380	152	1560	268	16	0	0	0
136	129	10836	1.58	1.6	0.97	2.85	22.1	1.13	2.05	3.68	4.16	7.7	3192	1864	2996	2536	236	8	4	0
139	1	86404	0.77	2.38	0.36	2.6	45.6	0.29	0.48	1.38	2.55	7.51	65560	8516	6672	4120	904	220	412	0
139	5	21076	0.62	1.27	0.42	1.87	45.6	0.37	0.48	0.72	1.24	7.38	16272	3540	448	368	420	24	4	0
139	9	38376	0.22	0.08	0.2	1.41	1.01	0.19	0.25	0.34	0.39	0.43	38308	64	4	0	0	0	0	0
139	13	59452	0.36	0.78	0.26	1.79	45.6	0.25	0.35	0.47	0.62	3.42	54580	3604	452	368	420	24	4	0
139	65	15276	1.18	1.99	0.66	2.73	31.0	0.5	1.29	3.1	3.69	8.73	7568	2400	3008	1944	228	100	28	0
139	129	11676	2.35	5.47	0.8	4.34	43.1	0.99	1.8	3.97	6.24	31.1	3412	2512	3212	1808	256	96	380	0
149	1	86404	0.56	0.6	0.49	1.56	27.2	0.55	0.57	0.64	0.73	2.29	24576	59312	1532	716	216	40	12	0
149	5	18064	0.63	0.54	0.57	1.41	10.9	0.55	0.62	0.72	0.91	3.15	5420	11828	560	204	44	8	0	0
149	9	35472	0.55	0.03	0.55	1.05	0.82	0.55	0.56	0.59	0.59	0.6	868	34604	0	0	0	0	0	0
149	13	53536	0.58	0.31	0.56	1.23	10.9	0.55	0.59	0.61	0.67	1.34	6288	46432	560	204	44	8	0	0
149	17	10380	0.35	0.41	0.3	1.59	6.72	0.27	0.46	0.54	0.56	1.19	8760	1464	96	24	36	0	0	0
149	33	312	0.91	0.55	0.81	1.58	3.22	0.74	0.94	1.55	1.94	3.22	40	200	60	12	0	0	0	0
149	65	2724	1.44	2.42	0.81	2.61	27.2	0.65	1.45	3.35	5.03	16.0	1024	780	404	372	112	20	12	0
149	129	19452	0.51	0.54	0.43	1.7	18.7	0.53	0.57	0.67	0.79	1.64	8464	10436	412	104	24	12	0	0
152	1	86404	1.58	2.37	0.72	3.48	27.5	0.98	1.5	4.55	8.1	10.5	36048	7448	30628	3968	6956	1340	16	0
152	5	24952	0.85	0.62	0.65	2.11	11.3	0.66	1.27	1.53	2.01	2.7	11904	2900	8888	1248	8	4	0	0
152	9	37992	0.73	0.63	0.42	3.06	1.76	0.25	1.36	1.56	1.61	1.66	20664	8	17320	0	0	0	0	0
152	13	62944	0.78	0.63	0.5	2.74	11.3	0.43	1.35	1.56	1.65	2.36	32568	2908	26208	1248	8	4	0	0
152	17	17700	3.57	4.04	1.2	5.05	14.7	0.46	7.82	9.43	10.29	11.5	9096	1080	420	212	5700	1192	0	0
152	65	13404	1.97	2.17	1.31	2.43	27.5	1.19	2.09	4.99	6.28	9.47	1248	4076	4372	2392	1188	116	12	0
152	129	288	5.18	3.51	4.31	1.81	20.8	3.78	7.54	10.3	11.38	20.8	0	0	16	180	60	28	4	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
177	1	86404	1.89	8.06	0.78	2.75	252	0.49	0.91	5.01	5.4	7.12	45540	19920	3600	8624	7948	164	232	376
177	5	23128	0.53	0.14	0.52	1.21	2.83	0.5	0.56	0.64	0.72	1.13	11792	10976	348	12	0	0	0	0
177	9	11292	0.51	0.61	0.48	1.21	12.5	0.47	0.49	0.52	0.56	0.56	9136	2120	0	4	4	28	0	0
177	13	34420	0.53	0.37	0.51	1.22	12.5	0.49	0.54	0.6	0.67	1.04	20928	13096	348	16	4	28	0	0
177	65	3888	0.69	0.65	0.58	1.7	9.61	0.55	0.72	1.07	1.42	3.51	1152	2248	384	88	16	0	0	0
177	129	48096	2.96	10.6	1.08	3.47	252	0.51	4.55	5.35	5.69	27.8	23460	4576	2868	8520	7928	136	232	376
178	1	86404	1.48	1.19	1.07	2.29	18.0	0.95	2.47	2.89	3.13	4.64	17776	26828	10076	30996	652	76	0	0
178	5	13156	0.97	0.97	0.71	2.11	14.7	0.65	1.11	1.87	2.98	4.64	4668	4668	2632	1080	104	4	0	0
178	9	32820	0.72	0.37	0.65	1.58	13.8	0.65	0.89	1.16	1.34	1.69	8996	18112	5564	140	4	4	0	0
178	13	45976	0.79	0.62	0.67	1.74	14.7	0.65	0.92	1.31	1.62	3.52	13664	22780	8196	1220	108	8	0	0
178	17	29976	2.66	0.65	2.56	1.39	11.9	2.57	2.88	3.15	3.48	4.86	440	32	400	28836	264	4	0	0
178	65	9492	1.04	1.38	0.7	2.18	12.5	0.62	1.04	2.29	2.75	8.61	3420	3632	1304	896	204	36	0	0
178	129	960	1.7	2.76	0.9	2.62	18.0	0.71	1.19	5.43	8.97	12.4	252	384	176	44	76	28	0	0
180	1	86404	2.14	2.07	1.64	1.99	23.4	1.8	1.97	4.15	6.29	11.6	2396	13524	50812	12788	4740	2140	4	0
180	5	12516	0.68	0.23	0.66	1.28	3.4	0.66	0.72	0.81	0.98	1.61	1204	10716	512	84	0	0	0	0
180	9	26388	1.87	0.16	1.85	1.15	2.29	1.88	1.93	1.98	2.01	2.06	80	212	24472	1624	0	0	0	0
180	13	38904	1.48	0.58	1.33	1.68	3.4	1.83	1.9	1.96	1.99	2.05	1284	10928	24984	1708	0	0	0	0
180	17	36648	2.1	1.51	1.71	1.85	12.4	1.4	2.5	4.66	5.94	6.54	728	1708	22868	8336	3004	4	0	0
180	65	5872	1.68	1.15	1.44	1.75	23.4	1.53	2.08	2.54	2.93	5.65	360	888	2928	1620	60	12	4	0
180	129	4980	8.19	3.59	7.19	1.77	17.5	7.72	10.94	12.8	13.84	14.5	24	0	32	1124	1676	2124	0	0
184	1	86404	3.26	1.64	2.95	1.53	8.07	2.76	3.4	6.85	7.09	7.34	0	36	12828	60892	12648	0	0	0
184	5	60304	3.43	1.88	3.04	1.6	8.07	2.67	3.42	6.99	7.17	7.37	0	12	8904	38748	12640	0	0	0
184	9	26100	2.85	0.73	2.75	1.33	5.66	2.94	3.39	3.75	3.94	4.34	0	24	3924	22144	8	0	0	0
184	13	86404	3.26	1.64	2.95	1.53	8.07	2.76	3.4	6.85	7.09	7.34	0	36	12828	60892	12648	0	0	0
185	1	86404	1.48	1.5	0.9	2.84	23.5	0.83	2.49	2.61	4.41	6.1	31308	14572	11480	25596	3288	156	4	0
185	5	31816	0.41	0.21	0.36	1.69	3.3	0.39	0.52	0.63	0.71	1.19	22844	8468	480	24	0	0	0	0
185	9	20172	2.47	0.27	2.42	1.3	3.41	2.5	2.54	2.58	2.61	2.66	240	36	8	19888	0	0	0	0
185	13	51988	1.21	1.03	0.76	2.79	3.41	0.56	2.49	2.54	2.57	2.64	23084	8504	488	19912	0	0	0	0
185	17	21876	2.58	2	2	2.02	23.5	1.76	3.87	5.71	5.98	8.85	132	3764	9588	5088	3172	128	4	0
185	65	7368	0.36	0.38	0.32	1.48	5.79	0.3	0.34	0.44	0.67	1.4	6740	468	112	28	20	0	0	0
185	129	5172	1.22	1.45	0.82	2.4	12.0	0.8	1.35	2.56	3.71	8.63	1352	1836	1292	568	96	28	0	0
187	1	86404	1.51	0.99	1.38	1.46	50.7	1.36	1.79	2.01	2.27	5.52	276	14344	62668	8184	824	92	12	4
187	5	20800	1.66	0.96	1.54	1.37	10.7	1.46	1.6	1.81	2.83	7.18	12	200	19184	884	512	8	0	0
187	9	34476	1.02	0.15	1.01	1.16	1.62	1.05	1.11	1.21	1.25	1.36	0	13224	21252	0	0	0	0	0
187	13	55276	1.26	0.67	1.18	1.36	10.7	1.15	1.39	1.59	1.72	4.87	12	13424	40436	884	512	8	0	0
187	17	25428	1.95	0.63	1.91	1.18	19.5	1.86	2.01	2.22	2.46	3.41	0	0	18812	6532	52	32	0	0
187	65	5700	1.9	2.67	1.4	1.94	50.7	1.19	1.68	3.42	6.28	10.7	264	920	3420	768	260	52	12	4
193	1	86404	0.32	0.42	0.23	2.1	36.4	0.19	0.43	0.7	0.95	1.33	67644	15260	3320	144	28	4	4	0
193	5	20452	0.58	0.32	0.49	1.81	2.7	0.51	0.78	1	1.14	1.47	9556	8700	2116	80	0	0	0	0
193	9	27792	0.18	0.16	0.16	1.56	1.1	0.14	0.14	0.18	0.54	1.03	25388	2052	352	0	0	0	0	0
193	13	48244	0.35	0.31	0.25	2.15	2.7	0.14	0.51	0.83	1	1.4	34944	10752	2468	80	0	0	0	0
193	17	26832	0.26	0.21	0.23	1.58	13.2	0.21	0.27	0.52	0.55	0.62	23908	2900	20	0	0	4	0	0
193	65	11232	0.32	0.56	0.18	2.91	9.9	0.11	0.43	0.92	1.16	1.59	8728	1608	832	40	24	0	0	0
193	129	96	2.87	7.41	0.5	6.22	36.4	0.17	3.65	4.61	5.89	36.4	64	0	0	24	4	0	4	0
196	1	86404	0.56	0.8	0.29	3.02	17.4	0.17	0.87	1.25	1.87	3.94	55616	15056	12600	2868	224	40	0	0
196	5	22504	0.21	0.26	0.16	1.85	4.86	0.14	0.19	0.35	0.61	1.37	21060	984	392	68	0	0	0	0
196	9	21900	0.14	0.08	0.13	1.35	1.62	0.12	0.12	0.17	0.19	0.59	21568	292	40	0	0	0	0	0
196	13	44404	0.17	0.2	0.14	1.64	4.86	0.12	0.16	0.23	0.42	1.09	42628	1276	432	68	0	0	0	0
196	17	27000	1.01	1.05	0.62	3.07	17.4	0.92	1.1	1.83	3.27	4.7	7336	9076	8136	2244	172	36	0	0
196	65	13800	0.9	0.82	0.59	2.8	13.5	0.78	1.28	1.88	1.93	3.56	5144	4244	3804	552	52	4	0	0
196	129	1200	0.63	0.41	0.5	2.02	4.31	0.66	0.93	1.06	1.09	1.84	508	460	228	4	0	0	0	0
199	1	58444	0.55	0.47	0.54	1.43	17.0	0.48	0.62	0.82	0.93	1.69	31876	24616	1464	408	44	36	0	0
199	5	58444	0.55	0.47	0.54	1.43	17.0	0.48	0.62	0.82	0.93	1.69	31876	24616	1464	408	44	36	0	0
199	13	58444	0.55	0.47	0.54	1.43	17.0	0.48	0.62	0.82	0.93	1.69	31876	24616	1464	408	44	36	0	0
213	1	86404	0.48	0.48	0.39	1.74	10.5	0.42	0.47	0.49	0.79	2.65	77864	4480	1684	2272	96	8	0	0
213	5	36004	0.45	0.02	0.45	1.05	0.52	0.47	0.47	0.47	0.47	0.47	35960	44	0	0	0	0	0	0
213	13	36004	0.45	0.02	0.45	1.05	0.52	0.47	0.47	0.47	0.47	0.47	35960	44	0	0	0	0	0	0
213	17	48000	0.51	0.65	0.36	2.07	10.5	0.42	0.47	0.62	1.99	2.97	39504	4436	1684	2272	96	8	0	0
213	129	2400	0.26	0.03	0.26	1.12	0.38	0.27	0.29	0.3	0.32	0.35	2400	0	0	0	0	0	0	0
218	1	86404	2.93	18.1	0.35	3.24	212	0.35	0.52	0.67	1.51	91.2	58732	21088	2904	1468	336	8	4	1864
218	5	22968	0.82	1.03	0.56	2.19	10.3	0.51	0.68	1.51	3.1	5.55	11016	7728	2508	1384	328	4	0	0
218	9	27468	0.45	0.14	0.42	1.51	1.11	0.49	0.53	0.56	0.59	0.61	14928	12532	8	0	0	0	0	0
218	13	50436	0.62	0.73	0.48	1.87	10.3	0.49	0.54	0.82	1.47	4.25	25944	20260	2516	1384	328	4	0	0
218	17	35664	6.22	27.8	0.23	4.8	212	0.17	0.25	0.32	86.54	200	32524	816	364	80	8	4	4	1864
218	129	304	0.26	0.49	0.11	2.74	2.26	0.07	0.09	0.97	1.65	2.26	264	12	24	4	0	0	0	0
227	1	86404	0.35	0.65	0.24	2.03	27.6	0.21	0.32	0.62	1.01	2.53	75232	6792	3028	1108	184	48	12	0
227	5	39148	0.46	0.85	0.32	1.92	27.6	0.27	0.38	0.73	1.3	3.72	32716	3768	1632	824	156	40	12	0
227	9	35136	0.15	0.18	0.14	1.33	16	0.12	0.17	0.22	0.23	0.31	35132	0	0	0	0	4	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
227	13	74284	0.31	0.65	0.22	1.93	27.6	0.21	0.29	0.45	0.77	2.52	67848	3768	1632	824	156	44	12	0
227	129	12120	0.57	0.61	0.41	2.19	10.2	0.4	0.73	1.15	1.5	2.54	7384	3024	1396	284	28	4	0	0
242	1	87372	0.87	0.6	0.68	2.21	14.3	0.8	1.02	1.46	1.96	2.97	17940	46360	18956	4000	108	8	0	0
242	5	42936	0.89	0.2	0.87	1.23	3.78	0.85	0.97	1.12	1.26	1.55	68	33852	8904	112	0	0	0	0
242	9	876	1.16	0.28	1.12	1.36	2.46	1.14	1.32	1.5	1.57	1.94	48	84	740	4	0	0	0	0
242	13	43812	0.9	0.21	0.88	1.24	3.78	0.86	0.98	1.14	1.28	1.57	116	33936	9644	116	0	0	0	0
242	17	35484	0.77	0.81	0.47	2.93	14.3	0.54	1.13	1.82	2.19	3.5	16376	9428	6880	2712	80	8	0	0
242	65	8076	1.15	0.77	0.94	1.91	9.52	0.94	1.51	2.14	2.37	3.52	1448	2996	2432	1172	28	0	0	0
244	1	86404	1.02	1.06	0.65	2.61	17.1	0.71	1.26	2.57	2.84	3.76	36412	22136	10968	16352	464	72	0	0
244	5	46204	1.52	0.94	1.29	1.77	17.1	1.08	2.38	2.76	2.92	3.18	824	19628	10140	15440	148	24	0	0
244	9	30888	0.25	0.08	0.24	1.36	0.59	0.21	0.25	0.4	0.45	0.46	30640	248	0	0	0	0	0	0
244	13	77092	1.01	0.96	0.65	2.61	17.1	0.75	1.32	2.56	2.81	3.1	31464	19876	10140	15440	148	24	0	0
244	65	3912	1.06	1.21	0.75	2.09	9.07	0.6	1	2.21	3.67	6.46	1260	1684	496	372	100	0	0	0
244	129	5400	1.1	1.91	0.52	2.81	14.0	0.33	0.75	3.31	4.98	9.9	3688	576	332	540	216	48	0	0
246	1	86404	0.37	0.82	0.21	2.38	17.5	0.16	0.29	0.78	1.03	5.82	72080	9560	2936	836	912	80	0	0
246	5	34660	0.24	0.7	0.15	2.09	17.5	0.11	0.15	0.59	0.89	1.32	30952	2504	1008	92	44	60	0	0
246	9	11988	0.13	0.06	0.13	1.32	1.16	0.11	0.14	0.19	0.21	0.22	11936	28	24	0	0	0	0	0
246	13	46648	0.22	0.6	0.14	1.92	17.5	0.11	0.15	0.34	0.79	1.22	42888	2532	1032	92	44	60	0	0
246	17	22644	0.39	0.62	0.28	1.92	15.2	0.23	0.37	0.74	0.85	3.95	19520	2388	188	488	52	8	0	0
246	65	10164	0.94	1.6	0.4	3.48	15.8	0.47	0.84	1.73	5.86	5.93	5336	3036	816	164	800	12	0	0
246	129	6948	0.52	0.56	0.36	2.26	6.44	0.33	0.64	1.08	1.3	2.89	4336	1604	900	92	16	0	0	0
254	1	86404	0.57	0.56	0.47	1.7	14.0	0.48	0.62	0.79	1.04	2.96	44508	37308	3016	1292	276	4	0	0
254	5	24424	0.48	0.2	0.44	1.55	4.38	0.58	0.62	0.63	0.64	0.79	9356	15004	36	28	0	0	0	0
254	13	24424	0.48	0.2	0.44	1.55	4.38	0.58	0.62	0.63	0.64	0.79	9356	15004	36	28	0	0	0	0
254	17	30708	0.6	0.63	0.46	1.89	9.82	0.44	0.62	0.99	1.69	3.62	17616	10048	1856	1136	52	0	0	0
254	65	2028	0.61	0.49	0.51	1.81	6.36	0.47	0.64	1.06	1.51	2.38	1112	700	184	28	4	0	0	0
254	129	29244	0.6	0.68	0.51	1.57	14.0	0.45	0.68	0.81	0.92	2.11	16424	11556	940	100	220	4	0	0
259	1	86404	0.98	1.64	0.45	3.35	21.4	0.34	1.08	2.84	3.4	8.23	50336	13212	9404	11720	1100	616	16	0
259	5	24456	1.41	1.3	0.85	2.95	13.9	0.72	2.7	3.21	3.61	4.79	9592	3704	3228	7776	152	4	0	0
259	9	27540	0.19	0.16	0.17	1.67	5.12	0.19	0.23	0.29	0.33	0.42	27348	56	112	20	4	0	0	0
259	13	51996	0.77	1.09	0.36	3.2	13.9	0.26	0.66	2.84	3.2	4.02	36940	3760	3340	7796	156	4	0	0
259	17	24384	1.33	2.28	0.6	3.49	21.4	0.59	1.41	2.95	4.76	13.2	10588	5336	4152	3176	624	496	12	0
259	65	8380	1.35	2.09	0.74	3.03	21.1	0.76	1.28	2.52	5.44	11.7	2192	3428	1600	720	320	116	4	0
259	129	1644	0.72	0.52	0.57	2.07	4.66	0.64	0.9	1.4	1.63	2.07	616	688	312	28	0	0	0	0
288	1	86404	0.43	0.38	0.32	2.16	10.7	0.29	0.72	0.77	0.8	1.71	56064	28448	1268	592	24	8	0	0
288	5	40924	0.21	0.12	0.18	1.62	3.29	0.19	0.26	0.34	0.38	0.48	40580	256	72	16	0	0	0	1000
288	9	27744	0.73	0.11	0.71	1.31	2.58	0.75	0.77	0.78	0.8	0.82	844	26868	24	8	0	0	0	0
288	13	68668	0.42	0.28	0.32	2.18	3.29	0.29	0.73	0.77	0.78	0.82	41424	27124	96	24	0	0	0	0
288	17	8016	0.3	0.05	0.29	1.2	0.51	0.32	0.32	0.35	0.37	0.38	8012	4	0	0	0	0	0	0
288	65	9720	0.6	0.83	0.34	2.71	10.7	0.21	0.75	1.64	2.19	3.56	6628	1320	1172	568	24	8	0	0
302	1	86848	1.45	1.1	1.23	1.81	26.7	1.39	1.88	2.27	2.56	3.66	7220	20096	42836	16252	204	176	64	0
302	5	22624	1.9	0.52	1.83	1.31	6.2	1.92	2.18	2.41	2.96	3.41	8	108	13184	9304	20	0	0	0
302	9	27396	1.56	0.23	1.55	1.15	2.63	1.49	1.76	1.91	2.01	2.12	0	0	25912	1484	0	0	0	0
302	13	50020	1.71	0.42	1.67	1.25	6.2	1.6	1.96	2.23	2.38	3.1	8	108	39096	10788	20	0	0	0
302	33	35772	1.1	1.56	0.8	1.97	26.7	0.64	1.02	2.46	2.64	5.95	7136	19404	3404	5420	172	172	64	0
302	65	888	1.14	1.04	0.98	1.56	10.0	0.87	1.21	1.56	1.84	6.89	4	520	324	24	12	4	0	0
302	129	168	0.74	0.75	0.46	3.14	2.62	0.53	0.93	2.23	2.61	2.62	72	64	12	20	0	0	0	0
313	1	86404	1.02	0.72	0.83	1.93	27.7	0.9	1.31	1.72	2.18	3.32	17076	32008	31760	5380	164	8	8	0
313	5	54004	1.1	0.83	0.89	1.96	27.7	0.92	1.4	2.01	2.6	3.62	10008	19840	18684	5292	164	8	8	0
313	9	32400	0.88	0.43	0.75	1.84	3.99	0.86	1.21	1.43	1.52	1.77	7068	12168	13076	88	0	0	0	0
313	13	86404	1.02	0.72	0.83	1.93	27.7	0.9	1.31	1.72	2.18	3.32	17076	32008	31760	5380	164	8	8	0
331	1	86404	0.81	0.96	0.55	2.38	21.0	0.73	0.79	1.16	2.4	4.7	27216	49324	5048	4472	320	20	4	0
331	5	43504	0.8	1.18	0.43	2.79	15.0	0.35	0.79	1.45	4.59	4.75	23008	13940	3132	3336	76	12	0	0
331	9	32400	0.74	0.06	0.74	1.14	1.13	0.73	0.76	0.8	0.81	0.84	136	32036	228	0	0	0	0	0
331	13	75904	0.78	0.89	0.54	2.28	15.0	0.73	0.78	0.91	1.58	4.7	23144	45976	3360	3336	76	12	0	0
331	17	3600	0.7	0.94	0.39	2.98	13.6	0.46	0.75	2.01	2.5	3.36	2012	1024	196	356	8	4	0	0
331	65	6900	1.18	1.45	0.69	2.99	21.0	0.8	1.31	2.71	4.21	6.64	2060	2324	1492	780	236	4	4	0
366	1	86404	0.74	1.17	0.27	4.58	18.6	0.11	0.8	2.92	3.04	3.58	63084	2244	4172	16732	140	32	0	0
366	5	17100	0.38	0.71	0.18	3	18.5	0.11	0.25	1.31	1.88	3.03	13864	1056	1420	756	0	4	0	0
366	9	29704	0.06	0.08	0.07	1.83	0.31	0.05	0.07	0.23	0.25	0.27	29704	0	0	0	0	0	0	0
366	13	46804	0.18	0.46	0.11	2.64	18.5	0.07	0.11	0.27	0.87	2.37	43568	1056	1420	756	0	4	0	0
366	17	37200	1.44	1.41	0.6	4.55	18.6	0.63	2.9	3.05	3.17	4.15	18308	632	2356	15744	132	28	0	0
366	129	2400	0.9	1.01	0.58	2.45	7.75	0.49	1.05	2.01	3.3	4.5	1208	556	396	232	8	0	0	0
371	1	86404	1.32	3.23	0.84	2.35	85.5	0.71	1.61	2.96	4.03	4.13	32208	19392	19472	14896	300	4	8	124
371	5	24736	2.26	5.79	1.28	2.66	85.5	1.04	3.19	4.08	4.09	4.18	6328	5768	2104	10408	0	0	4	124
371	9	24984	0.36	0.08	0.35	1.25	1.28	0.36	0.42	0.45	0.48	0.59	23920	1060	4	0	0	0	0	0
371	13	49720	1.3	4.2	0.67	2.61	85.5	0.43	1.02	3.73	4.08	4.13	30248	6828	2108	10408	0	0	4	124
371	17	20556	1.43	0.83	1.29	1.56	34.5	1.37	1.64	2.19	2.76	3.63	384	4924	12680	2504	56	4	4	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s).	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
371	65	15960	1.24	0.93	1	1.88	8.17	0.78	1.89	2.09	2.25	5.7	1560	7568	4624	1964	244	0	0	0
371	129	168	1.11	0.71	0.93	1.8	3.09	0.81	1.46	2.07	2.51	3.09	16	72	60	20	0	0	0	0
372	1	86404	1.3	1.46	0.53	4.78	17.2	0.76	2.07	3.31	4.12	5.32	37900	8112	17636	21492	1132	132	0	0
372	5	10324	0.7	1.08	0.36	3	10.1	0.32	0.65	1.52	4.04	4.51	7016	2068	352	884	0	4	0	0
372	9	21360	0.07	0.03	0.07	1.28	1.15	0.07	0.09	0.09	0.09	0.12	21348	8	4	0	0	0	0	0
372	13	31684	0.28	0.68	0.12	2.74	10.1	0.09	0.21	0.54	0.84	4.23	28364	2076	356	884	0	4	0	0
372	17	33432	2.36	1.36	1.92	2.14	17.2	2.09	3.13	4.16	4.6	6.22	2472	1336	11708	16924	924	68	0	0
372	65	7492	1.04	1.19	0.5	3.82	9.43	0.67	1.22	3.04	3.37	4.75	3372	928	1908	1220	64	0	0	0
372	129	13796	1.23	1.34	0.71	3.3	12.1	0.81	1.71	2.55	3.07	8.89	3692	3772	3664	2464	144	60	0	0
378	1	86548	0.87	1.9	0.64	1.99	208	0.55	1.03	1.51	2.47	4.23	35916	27844	16180	6004	472	104	12	16
378	5	6808	1	6.14	0.5	1.99	208	0.47	0.58	0.87	1.27	8.07	3872	2472	212	52	156	20	8	16
378	9	32076	0.46	0.2	0.43	1.48	1.18	0.39	0.54	0.83	0.91	0.99	21200	10728	148	0	0	0	0	0
378	13	38884	0.56	2.58	0.44	1.58	208	0.39	0.55	0.83	0.93	1.18	25072	13200	360	52	156	20	8	16
378	17	31728	0.95	0.58	0.81	1.79	14.4	0.95	1.19	1.41	1.62	3.12	7016	10240	13468	936	64	4	0	0
378	65	4788	1.03	1.07	0.74	2.17	11.2	0.67	1.35	2.07	2.85	5.69	1936	1132	1212	448	56	4	0	0
378	129	11148	1.68	1.55	1.2	2.29	20.8	1.25	2.49	2.58	3.42	8.92	1892	3272	1140	4568	196	76	4	0
384	1	86404	0.53	0.91	0.44	1.64	28.0	0.45	0.53	0.57	0.9	2.87	47248	35240	2108	1548	92	100	68	0
384	5	44668	0.53	1.23	0.38	1.74	28.0	0.34	0.4	0.57	1.32	3.43	39764	2048	1432	1172	84	100	68	0
384	9	34656	0.53	0.03	0.53	1.08	1.41	0.53	0.54	0.57	0.57	0.61	2700	31952	4	0	0	0	0	0
384	13	79324	0.53	0.93	0.44	1.57	28.0	0.47	0.53	0.57	0.72	2.72	42464	34000	1436	1172	84	100	68	0
384	65	3180	0.57	0.69	0.38	2.26	5.46	0.31	0.6	1.29	1.91	3.81	2204	544	296	132	4	0	0	0
384	129	3900	0.61	0.67	0.4	2.37	5.19	0.35	0.7	1.49	2.29	3.03	2580	696	376	244	4	0	0	0
388	1	86404	2.28	1.4	1.85	2.32	94.2	2.36	2.8	3.24	3.75	4.89	7772	1336	21676	54916	588	84	24	8
388	5	83104	2.33	1.38	1.93	2.23	94.2	2.39	2.82	3.25	3.76	4.87	6356	572	21096	54440	528	84	20	8
388	9	600	2.09	0.92	1.66	2.47	5.65	2.12	2.57	2.92	3.34	5.35	72	0	136	384	8	0	0	0
388	13	83704	2.33	1.38	1.93	2.23	94.2	2.39	2.82	3.25	3.76	4.87	6428	572	21232	54824	536	84	20	8
388	65	2628	0.82	1.42	0.5	2.7	27.1	0.52	0.9	1.44	2.32	6.31	1276	764	444	88	52	0	4	0
388	129	72	0.61	0.98	0.44	1.81	4.52	0.38	0.41	0.49	4.52	4.52	68	0	0	4	0	0	0	0
389	1	86404	1.85	2.35	0.85	3.44	20.0	0.59	3.71	5.99	6.37	7.66	30256	31840	1196	5876	17204	28	4	0
389	5	27388	0.47	0.46	0.41	1.6	20.0	0.42	0.51	0.64	0.82	2.29	20048	6532	492	280	32	0	4	0
389	9	22968	0.59	0.07	0.59	1.11	4.55	0.6	0.6	0.6	0.6	0.64	120	22844	0	4	0	0	0	0
389	13	50356	0.52	0.35	0.48	1.48	20.0	0.56	0.6	0.6	0.66	1.42	20168	29376	492	284	32	0	4	0
389	17	28104	4.47	2.42	3.06	3.06	13.6	5.41	6.13	6.54	7.06	8.46	4772	1792	124	4336	17052	28	0	0
389	65	3300	1.47	1.58	0.86	2.86	7.26	0.8	2.07	4.68	4.87	5.52	1276	624	540	760	100	0	0	0
389	129	4644	0.58	1.37	0.14	4.26	8.68	0.07	0.11	3.91	4.4	4.85	4040	48	40	496	20	0	0	0
393	1	86404	0.78	1.32	0.31	3.58	39.6	0.17	0.82	2.43	3.11	6.16	58464	8648	7324	10504	1340	108	16	0
393	5	4032	0.64	0.41	0.47	2.4	2.66	0.62	1.02	1.16	1.17	1.37	1784	1148	1080	20	0	0	0	0
393	9	25200	0.15	0.08	0.14	1.45	0.93	0.12	0.14	0.24	0.34	0.44	25172	28	0	0	0	0	0	0
393	13	29232	0.22	0.24	0.16	1.9	2.66	0.12	0.17	0.43	0.86	1.16	26956	1176	1080	20	0	0	0	0
393	65	9444	1.05	1.86	0.69	2.22	39.6	0.65	0.91	1.81	3.42	10.2	3316	4200	1056	624	144	92	12	0
393	129	47728	1.07	1.46	0.41	4.27	23.3	0.29	1.83	2.86	3.98	6.72	28192	3272	5188	9860	1196	16	4	0
394	1	86404	1.69	7.57	0.81	2.75	180	1.26	1.5	1.94	2.61	6.82	26264	10148	41652	6772	1040	36	64	428
394	5	33136	2.07	12.1	0.45	3.13	180	0.29	0.98	2.01	2.24	78.0	20200	5008	4516	2764	136	28	56	428
394	9	32520	1.51	0.2	1.49	1.12	4.07	1.47	1.54	1.68	1.81	2.46	0	28	31408	1084	0	0	0	0
394	13	65656	1.79	8.64	0.81	2.76	180	1.35	1.51	1.73	2.11	4.85	20200	5036	35924	3848	136	28	56	428
394	129	20748	1.36	1.59	0.82	2.74	22.3	0.86	1.4	3.47	4.28	7.01	6064	5112	5728	2924	904	8	8	0
400	1	86404	1.57	1.15	1.23	2.22	29.5	1.45	1.67	3.21	3.85	5.36	13004	9336	49168	13740	1112	40	4	0
400	5	37720	1.1	0.73	0.9	1.93	17.8	1.1	1.45	1.63	1.78	3.08	8456	6316	21444	1336	144	24	0	0
400	9	23400	1.52	0.25	1.49	1.24	4	1.58	1.67	1.67	1.67	1.71	120	1388	21840	52	0	0	0	0
400	13	61120	1.26	0.63	1.09	1.8	17.8	1.42	1.58	1.67	1.71	2.66	8576	7704	43284	1388	144	24	0	0
400	17	20160	2.72	1.6	2.24	2.64	29.5	2.87	3.69	4.37	4.99	7.06	2408	300	4252	12212	968	16	4	0
400	65	3984	0.61	0.51	0.43	2.48	4.12	0.5	0.69	1.41	1.78	2.28	2020	1324	564	76	0	0	0	0
400	129	1140	1.44	0.37	1.4	1.24	3.29	1.3	1.62	1.71	2.09	3.14	0	8	1068	64	0	0	0	0
402	1	86404	0.46	0.86	0.29	2.2	17.8	0.22	0.39	0.87	1.35	5.09	69328	10332	4328	1412	940	64	0	0
402	5	40788	0.23	0.17	0.21	1.47	3.62	0.21	0.23	0.31	0.42	0.95	39124	1332	284	48	0	0	0	0
402	13	40788	0.23	0.17	0.21	1.47	3.62	0.21	0.23	0.31	0.42	0.95	39124	1332	284	48	0	0	0	0
402	17	20268	0.58	0.75	0.37	2.51	7.16	0.32	0.67	1.21	1.93	3.91	13056	3936	2284	928	64	0	0	0
402	65	12324	1.02	1.77	0.52	2.88	11.9	0.47	0.83	1.87	5.14	7.43	6412	4188	508	308	856	52	0	0
402	129	13024	0.46	0.69	0.32	2.12	17.8	0.27	0.41	1.11	1.6	2.13	10736	876	1252	128	20	12	0	0
407	1	43200	5.29	8.54	2.83	2.65	41.9	2.92	3.25	3.55	31.15	31.7	1208	5936	1844	29992	28	4	4188	0
407	5	1380	0.68	0.11	0.67	1.19	0.95	0.69	0.74	0.79	0.84	0.88	36	1344	0	0	0	0	0	0
407	13	1380	0.68	0.11	0.67	1.19	0.95	0.69	0.74	0.79	0.84	0.88	36	1344	0	0	0	0	0	0
407	17	33660	6.5	9.3	4	2.18	36.5	3.08	3.31	30.7	31.25	31.8	0	56	4	29416	0	4	4180	0
407	65	6960	1.15	1.3	1	1.57	41.9	0.89	1.15	1.75	2.75	3.73	120	4420	1812	572	28	0	8	0
407	129	1200	0.44	0.26	0.41	1.35	4.01	0.39	0.44	0.55	0.69	1.22	1052	116	28	4	0	0	0	0
415	1	86404	1.14	1.12	0.84	2.21	27.1	0.89	1.28	2.31	3	5.34	23116	30632	20828	10776	956	76	20	0
415	5	16048	2.08	1.48	1.7	1.93	25.8	1.8	2.49	3.76	4.65	7.02	804	2348	6332	5988	552	8	16	0
415	9	24228	0.99	0.29	0.96	1.25	3.92	0.92	1.03	1.16	1.76	2.27	12	16712	6940	564	0	0	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
415	13	40276	1.42	1.1	1.2	1.7	25.8	1	1.74	2.49	3.43	5.87	816	19060	13272	6552	552	8	16	0
415	65	42564	0.85	1.05	0.59	2.26	27.1	0.5	0.98	1.54	2.53	5.08	20944	11452	7344	2368	384	68	4	0
415	129	3564	1.55	1.22	1.25	2.87	6.15	2.07	2.46	2.8	3.12	4.51	1356	120	212	1856	20	0	0	0
416	1	86404	2.07	2.91	1.11	2.9	136	0.86	2.78	5.5	6.34	13.9	32956	14308	12032	15516	10056	1368	156	12
416	5	28192	1.08	2.29	0.65	2.13	22.6	0.49	1.01	1.4	2.01	15.5	14460	6396	5916	624	180	588	28	0
416	9	19992	0.46	0.18	0.44	1.3	1.3	0.41	0.45	0.49	1.06	1.22	18088	856	1048	0	0	0	0	0
416	13	48184	0.82	1.78	0.55	1.88	22.6	0.44	0.74	1.21	1.51	13.4	32548	7252	6964	624	180	588	28	0
416	33	9300	3.25	2.4	2.73	1.78	26.3	2.73	3.74	5.5	6.25	14.8	0	836	1216	6020	1032	168	28	0
416	65	24308	3.84	3.39	2.81	2.34	136	4.02	5.52	6.36	7.58	12.1	168	4864	3176	7408	8296	324	60	12
416	129	4612	3.36	4.07	1.99	2.76	40.8	2.07	3.95	8.69	11.12	18.8	240	1356	676	1464	548	288	40	0
418	1	86404	3	15.5	1.07	2.82	907	0.99	1.27	4.57	5.12	53.4	18944	31564	17496	13724	2552	884	324	916
418	5	22612	0.58	0.55	0.49	1.67	9.03	0.48	0.58	0.8	1.21	3.21	12076	9012	952	508	64	0	0	0
418	9	26712	1.01	0.06	1.01	1.06	2.07	0.99	1.03	1.07	1.09	1.16	44	14688	11976	4	0	0	0	0
418	13	49324	0.81	0.43	0.72	1.65	9.03	0.95	1.03	1.07	1.1	2.23	12120	23700	12928	512	64	0	0	0
418	17	30480	6.92	25.6	2.23	3.58	907	3.29	4.59	5.69	15.62	113	2944	6776	4144	12188	2304	884	324	916
418	65	5508	0.63	0.72	0.49	1.77	9.08	0.42	0.56	1.09	1.74	3.82	3856	1052	388	172	40	0	0	0
418	129	1092	4.26	1.18	3.91	1.68	7.87	4.52	4.57	5.09	5.39	6.6	24	36	36	852	144	0	0	0
420	1	86404	8.07	41.5	2.37	2.79	1094	2.2	2.7	6.82	12.34	213	4084	5704	12764	54860	2600	3324	1212	1856
420	5	43180	14.2	58.1	3.59	2.95	1094	2.29	3.21	11.9	39.35	311	0	8	7372	27104	2476	3244	1120	1856
420	9	29904	2.32	0.35	2.3	1.16	3.19	2.15	2.61	2.93	3	3.04	0	0	2996	26908	0	0	0	0
420	13	73084	9.34	45.0	2.99	2.37	1094	2.25	2.85	9.09	14	237	0	8	10368	54012	2476	3244	1120	1856
420	65	9804	1.25	2.07	0.86	2.23	48.5	0.73	1.39	2.04	2.45	10.1	1048	5292	2396	848	120	80	20	0
420	129	3516	0.82	3.29	0.33	2.24	24.5	0.35	0.44	0.51	0.55	24.0	3036	404	0	0	4	0	72	0
421	1	86404	0.81	2.05	0.53	2.17	84.9	0.52	0.68	1.45	2.29	4.49	38384	33884	8680	4764	392	148	124	28
421	5	30140	0.66	0.72	0.52	1.89	20.0	0.52	0.69	1.04	1.7	3.86	13864	13156	1952	1072	80	12	4	0
421	9	20448	0.5	0.1	0.49	1.24	0.88	0.52	0.57	0.6	0.62	0.66	6820	13628	0	0	0	0	0	0
421	13	50588	0.6	0.57	0.51	1.67	20.0	0.52	0.6	0.77	1.14	3.29	20684	26784	1952	1072	80	12	4	0
421	17	18168	1.43	3.51	0.97	2.06	84.9	0.95	1.59	2.51	3.22	4.93	4048	5456	5512	2976	80	20	52	24
421	33	3156	0.17	0.08	0.17	1.26	1.27	0.18	0.19	0.19	0.19	0.29	3132	12	12	0	0	0	0	0
421	65	9948	1.03	3.16	0.4	2.89	51.5	0.3	0.55	1.8	3.66	17.8	7284	1100	616	572	192	116	64	4
421	129	4544	0.62	1.71	0.32	2.74	49.8	0.19	0.58	1.47	1.77	4.93	3236	532	588	144	40	0	4	0
423	1	86404	1.16	2.09	0.62	2.86	145	0.53	1.02	3.46	4.91	7.19	40288	24240	7520	10292	4024	20	12	8
423	129	86404	1.16	2.09	0.62	2.86	145	0.53	1.02	3.46	4.91	7.19	40288	24240	7520	10292	4024	20	12	8
431	1	86404	1.58	1.19	1.26	2.01	13.8	1.31	1.81	2.79	3.78	6.5	7456	15840	45796	15176	2048	88	0	0
431	5	42480	1.97	1.49	1.55	2.03	13.8	1.57	2.52	3.72	4.89	7.62	2484	8904	15052	14024	1948	68	0	0
431	9	36112	1.33	0.33	1.29	1.26	4.17	1.28	1.51	1.76	1.91	2.16	16	5076	30088	932	0	0	0	0
431	13	78592	1.68	1.16	1.42	1.73	13.8	1.36	1.87	2.87	3.88	6.59	2500	13980	45140	14956	1948	68	0	0
431	129	7812	0.64	1.02	0.38	2.42	11.9	0.25	0.8	1.11	1.81	5.45	4956	1860	656	220	100	20	0	0
438	1	86404	0.38	0.69	0.25	3.14	14.7	0.16	0.55	0.64	1.21	3.31	59288	21588	3540	1632	332	24	0	0
438	5	15400	0.08	0.09	0.09	1.88	0.67	0.05	0.1	0.24	0.26	0.32	15384	16	0	0	0	0	0	0
438	9	25332	0.03	0.04	0.06	1.23	1.65	0	0.05	0.07	0.07	0.09	25324	4	4	0	0	0	0	0
438	13	40732	0.05	0.07	0.07	1.68	1.65	0.05	0.05	0.1	0.21	0.3	40708	20	4	0	0	0	0	0
438	17	25812	0.55	0.13	0.54	1.19	2.66	0.55	0.59	0.62	0.64	1.07	6888	18644	240	40	0	0	0	0
438	65	19860	0.82	1.26	0.4	3.08	14.7	0.21	1.08	1.97	3.02	7.09	11692	2924	3296	1592	332	24	0	0
440	1	86404	2.2	1.79	1.55	2.56	56.3	1.72	3.09	4.56	5.63	8.47	8108	17684	22884	30816	6772	136	0	4
440	5	25120	1.21	0.64	1.05	1.73	5.4	1.09	1.55	2.03	2.27	3.55	2404	8256	11780	2672	8	0	0	0
440	9	44676	3.21	1.79	2.71	1.85	11.8	2.93	4.16	5.58	6.35	9	408	3320	7664	26640	6516	128	0	0
440	13	69796	2.49	1.76	1.93	2.11	11.8	2.06	3.4	4.92	5.83	8.69	2812	11576	19444	29312	6524	128	0	0
440	17	8676	1.05	1.39	0.84	1.96	56.3	0.82	1.19	1.96	2.68	3.6	1388	4524	1956	784	20	0	0	4
440	65	2952	1.7	1.71	1.1	2.75	14.3	1.14	2.05	3.61	5.93	7.55	352	984	860	528	220	8	0	0
440	129	4980	0.5	0.75	0.24	3.07	7.54	0.12	0.65	1.48	1.83	3.74	3556	600	624	192	8	0	0	0
441	1	86404	0.55	0.8	0.43	1.84	37	0.42	0.56	0.73	1.18	3.31	58308	22940	2660	2176	284	8	28	0
441	5	37504	0.46	0.74	0.4	1.55	37	0.37	0.47	0.59	0.8	2.4	29736	6360	804	572	20	0	12	0
441	9	29472	0.52	0.14	0.5	1.29	2.88	0.48	0.62	0.69	0.73	0.89	15464	13816	188	4	0	0	0	0
441	13	66976	0.49	0.56	0.44	1.47	37	0.42	0.55	0.67	0.74	1.87	45200	20176	992	576	20	0	12	0
441	65	6624	1.37	1.75	0.9	2.51	28.4	0.86	1.77	2.77	3.77	6.44	1464	2320	1424	1288	104	8	16	0
441	129	12804	0.43	0.85	0.26	2.43	9.2	0.29	0.35	0.47	1.4	5.43	11644	444	244	312	160	0	0	0
443	1	86404	1.25	1.24	0.96	2.07	30.6	1.07	1.29	1.56	3.06	6.49	13020	19848	47124	3668	2668	44	32	0
443	5	33880	1.44	1.15	1.34	1.34	30.6	1.27	1.35	1.57	2.35	4.89	44	760	30992	1756	252	44	32	0
443	9	22872	1.01	0.13	1.01	1.08	3.74	1.02	1.03	1.07	1.08	1.18	4	11044	11760	64	0	0	0	0
443	13	56752	1.27	0.92	1.19	1.31	30.6	1.17	1.3	1.39	1.74	3.95	48	11804	42752	1820	252	44	32	0
443	65	6948	1.24	1.15	0.86	2.43	9.4	0.85	1.59	2.92	3.7	5.12	2076	1864	1772	1156	80	0	0	0
443	129	22704	1.21	1.83	0.58	2.99	7.38	0.54	0.97	5.05	6.35	6.65	10896	6180	2600	692	2336	0	0	0
448	1	86320	0.65	1.24	0.45	1.92	56.3	0.4	0.62	0.83	1.04	7.76	52116	29632	2104	432	1972	48	12	4
448	5	5388	0.49	0.74	0.4	1.67	18.5	0.35	0.5	0.75	1.13	2.05	3980	1108	236	48	8	8	0	0
448	9	29868	0.28	0.06	0.27	1.22	0.56	0.26	0.32	0.37	0.38	0.43	29816	52	0	0	0	0	0	0
448	13	35256	0.31	0.3	0.29	1.36	18.5	0.26	0.32	0.38	0.45	0.86	33796	1160	236	48	8	8	0	0
448	17	28716	0.72	0.94	0.66	1.36	56.3	0.64	0.77	0.9	0.99	1.84	3444	23884	1172	172	0	32	8	4

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
448	65	3084	0.82	1.3	0.62	1.9	25.6	0.53	0.74	1.47	2.1	4.97	1244	1296	380	136	16	8	4	0
448	129	19264	1.16	2.17	0.54	2.59	8.52	0.39	0.52	7.18	7.76	7.81	13632	3292	316	76	1948	0	0	0
451	1	86404	1.82	2.4	0.88	3.5	49.8	0.74	2.26	6.13	7.62	9	39980	5992	15832	14540	9724	300	36	0
451	5	12604	1.13	2.06	0.73	2.46	49.8	0.67	1.56	2.19	2.52	5.45	5000	3208	1756	2496	44	64	36	0
451	9	30000	0.3	0.1	0.29	1.22	6.37	0.29	0.33	0.37	0.39	0.46	29828	152	16	0	4	0	0	0
451	13	42604	0.54	1.19	0.38	1.94	49.8	0.31	0.38	1.02	2.07	2.56	34828	3360	1772	2496	48	64	36	0
451	17	30900	2.64	1.74	2.17	1.93	17.0	1.98	3.11	5.82	6.7	8.12	952	1000	13660	11784	3484	20	0	0
451	129	12900	4.1	3.79	1.73	6.49	17.4	4.87	7.8	8.67	9.07	10.9	4200	1632	400	260	6192	216	0	0
462	1	86404	0.33	1.2	0.16	2.67	53.7	0.09	0.31	0.58	0.96	3.05	76496	5864	2556	944	268	204	68	4
462	5	24936	0.15	0.66	0.08	2.07	30.8	0.07	0.09	0.16	0.46	1.66	23748	748	224	176	24	8	8	0
462	9	25740	0.09	0.02	0.09	1.14	0.24	0.09	0.09	0.09	0.12	0.17	25740	0	0	0	0	0	0	0
462	13	50676	0.12	0.47	0.09	1.67	30.8	0.09	0.09	0.12	0.17	0.89	49488	748	224	176	24	8	8	0
462	17	31272	0.67	1.85	0.38	2.28	53.7	0.34	0.5	1.02	1.64	8.28	23508	4480	2064	720	240	196	60	4
462	65	2520	0.46	0.55	0.3	2.45	5.6	0.27	0.53	1.2	1.47	2.64	1836	368	264	48	4	0	0	0
462	129	1936	0.15	0.24	0.12	2.98	1.16	0.05	0.09	0.64	0.73	0.86	1664	268	4	0	0	0	0	0
469	1	86404	3.58	3.06	2.52	2.36	35.6	2.85	4.36	9.91	10.28	11.3	1520	13260	19104	34432	10548	7532	8	0
469	5	19732	2.11	1.52	1.71	1.93	29.9	1.77	2.73	3.88	4.84	7.9	576	4000	6812	7452	856	32	4	0
469	9	30996	5.9	3.34	5.03	1.76	17.8	4.02	9.95	10.4	10.85	12.5	0	164	228	18240	5080	7284	0	0
469	13	50728	4.42	3.34	3.3	2.23	29.9	3.21	5.23	10.1	10.6	11.6	576	4164	7040	25692	5936	7316	4	0
469	65	3252	2.01	2.12	1.51	2.03	35.6	1.44	2.22	3.91	6.64	8.81	120	836	1228	824	232	8	4	0
469	129	32424	2.41	2.1	1.74	2.22	17.3	1.47	3.49	5.55	6.59	8.67	824	8260	10836	7916	4380	208	0	0
471	1	86404	0.21	0.34	0.14	2.15	8.51	0.12	0.19	0.37	0.79	1.17	79568	5832	576	332	96	0	0	0
471	5	25992	0.2	0.2	0.17	1.6	4.32	0.17	0.21	0.27	0.36	0.86	25192	584	152	64	0	0	0	0
471	9	27000	0.08	0.03	0.07	1.48	0.88	0.05	0.1	0.11	0.11	0.16	26996	4	0	0	0	0	0	0
471	13	52992	0.14	0.15	0.11	1.86	4.32	0.11	0.17	0.22	0.27	0.63	52188	588	152	64	0	0	0	0
471	17	29224	0.25	0.28	0.18	2	5.74	0.15	0.22	0.79	0.84	0.91	25400	3736	36	40	12	0	0	0
471	65	2376	0.7	0.71	0.54	1.94	6.18	0.43	0.78	1.42	1.64	4.29	1388	600	292	84	12	0	0	0
471	129	1812	1.01	1.35	0.68	2.08	8.51	0.57	0.65	2.21	4.65	6.69	592	908	96	144	72	0	0	0
472	1	86404	3.43	5.33	1.19	4.3	29.6	0.76	6.17	10.9	11.97	29.2	30320	18872	9104	5032	11520	9796	1760	0
472	5	51464	0.85	1.2	0.55	2.38	26.4	0.5	0.94	1.9	2.87	4.96	25252	14940	6512	4252	356	128	24	0
472	9	24336	9.86	6.24	7.52	2.55	29.6	8.22	11.59	12.1	29.17	29.5	1152	924	64	36	10804	9620	1736	0
472	13	75800	3.75	5.58	1.28	4.52	29.6	0.8	6.5	11.0	12.01	29.2	26404	15864	6576	4288	11160	9748	1760	0
472	65	3828	1.48	1.66	1.01	2.32	14.2	1.1	1.66	2.56	4.49	9.12	796	928	1516	420	160	8	0	0
472	129	6776	1.01	1.64	0.6	2.37	14.7	0.54	0.97	1.74	4.08	8.99	3120	2080	1012	324	200	40	0	0
474	1	86400	1	1.06	0.72	2.23	14.5	0.76	1.15	1.89	2.65	6.77	26952	30220	21376	6272	1560	20	0	0
474	5	19656	1.61	1.69	1.06	2.51	8.35	1.02	2	3.21	6.65	7.39	3164	6372	5200	3548	1372	0	0	0
474	9	17364	1.05	0.58	0.92	1.69	4.27	0.9	1.31	1.86	2.17	3.08	1572	8204	6324	1264	0	0	0	0
474	13	37020	1.35	1.32	0.99	2.15	8.35	0.97	1.52	2.57	3.39	7.27	4736	14576	11524	4812	1372	0	0	0
474	17	49260	0.74	0.72	0.56	2.09	14.5	0.58	0.97	1.34	1.78	3.62	22172	15640	9804	1436	188	20	0	0
474	65	120	1.34	0.84	0.96	2.6	2.58	1.85	1.96	2.1	2.26	2.58	44	4	48	24	0	0	0	0
475	1	86404	2.04	1.39	1.74	1.78	60.9	1.61	2.61	3.16	5.05	6.25	1928	6012	46508	27596	4288	64	0	8
475	9	33372	1.38	0.27	1.34	1.25	3.37	1.39	1.55	1.68	1.78	1.99	304	1388	31356	324	0	0	0	0
475	13	33372	1.38	0.27	1.34	1.25	3.37	1.39	1.55	1.68	1.78	1.99	304	1388	31356	324	0	0	0	0
475	17	31104	2.53	1.47	2.1	2	12.4	2.52	2.94	5.64	6.04	6.32	1076	2296	7756	16792	3168	16	0	0
475	65	708	1.17	0.79	0.94	1.94	3.75	0.71	1.76	2.52	2.61	3.36	80	336	180	112	0	0	0	0
475	129	21220	2.4	1.82	2.03	1.8	60.9	2.12	2.84	3.73	5.21	8.39	468	1992	7216	10368	1120	48	0	8
494	1	86404	0.84	1.1	0.67	1.82	47.2	0.65	0.95	1.42	1.74	3.34	27648	40040	16408	1780	316	156	56	0
494	5	72376	0.82	1.05	0.68	1.71	47.2	0.67	0.94	1.32	1.66	3.07	22136	35188	13372	1316	224	88	52	0
494	13	72376	0.82	1.05	0.68	1.71	47.2	0.67	0.94	1.32	1.66	3.07	22136	35188	13372	1316	224	88	52	0
494	65	10164	0.94	1.11	0.68	2.1	18.4	0.56	1.4	1.8	2.07	5.27	3860	3260	2492	436	80	36	0	0
494	129	3864	0.81	1.69	0.49	2.82	26.3	0.71	0.94	1.08	1.56	6.56	1652	1592	544	28	12	32	4	0
496	1	86404	1.15	1.94	0.93	1.59	29.2	0.91	1.02	1.27	1.62	10.2	4208	58328	20784	1936	236	396	516	0
496	5	48280	1.36	2.56	1	1.72	29.2	0.91	1.09	1.45	2.19	21.9	760	32116	12748	1524	220	396	516	0
496	9	30084	0.93	0.1	0.92	1.12	1.78	0.92	0.99	1.07	1.11	1.17	0	23144	6940	0	0	0	0	0
496	13	78364	1.19	2.02	0.97	1.54	29.2	0.91	1.03	1.26	1.56	10.3	760	55260	19688	1524	220	396	516	0
496	65	2904	1.14	0.8	0.93	1.87	6.43	0.8	1.38	2.28	2.7	3.89	244	1576	684	384	16	0	0	0
496	129	5136	0.56	0.31	0.5	1.53	3.11	0.47	0.54	0.92	1.27	1.68	3204	1492	412	28	0	0	0	0
497	1	86404	1.33	0.54	1.23	1.53	11.6	1.26	1.53	1.8	1.97	2.9	2932	10100	69460	3724	136	52	0	0
497	5	54844	1.37	0.34	1.33	1.26	7.32	1.27	1.54	1.79	1.95	2.29	12	3652	49264	1904	12	0	0	0
497	13	54844	1.37	0.34	1.33	1.26	7.32	1.27	1.54	1.79	1.95	2.29	12	3652	49264	1904	12	0	0	0
497	17	27144	1.26	0.64	1.1	1.82	11.6	1.23	1.51	1.8	2.06	3.13	2136	4752	18800	1396	36	24	0	0
497	65	4416	1.27	1.33	0.96	1.98	11.3	0.88	1.46	2.38	3.16	8.92	784	1696	1396	424	88	28	0	0
510	1	86404	0.47	0.57	0.26	3	16.7	0.17	0.76	1.14	1.4	2.34	53632	20096	11428	1132	112	4	0	0
510	5	27136	0.24	0.49	0.13	2.32	9.75	0.09	0.18	0.43	0.97	2.64	24772	1068	780	504	12	0	0	0
510	9	23652	0.12	0.04	0.12	1.45	0.23	0.12	0.15	0.15	0.17	0.21	23652	0	0	0	0	0	0	0
510	13	50788	0.18	0.37	0.12	1.95	9.75	0.12	0.15	0.21	0.46	2.02	48424	1068	780	504	12	0	0	0
510	17	30900	0.92	0.46	0.85	1.49	7.99	0.84	1.1	1.39	1.53	2.39	2292	18132	9912	508	56	0	0	0
510	65	3636	0.74	1.04	0.45	2.68	16.7	0.46	0.92	1.47	1.75	5.65	1992	792	696	108	44	4	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
510	129	1080	0.42	0.31	0.36	1.6	2.69	0.34	0.41	0.56	0.95	2.18	924	104	40	12	0	0	0	0
514	1	86404	1.08	0.25	1.06	1.21	14.5	1.06	1.2	1.37	1.44	1.65	16	34904	51356	84	40	4	0	0
514	5	53104	1.14	0.28	1.12	1.21	14.5	1.12	1.27	1.41	1.48	1.7	16	13024	39948	72	40	4	0	0
514	9	32400	0.98	0.15	0.97	1.16	1.54	0.95	1.08	1.19	1.25	1.43	0	21776	10624	0	0	0	0	0
514	13	85504	1.08	0.25	1.06	1.21	14.5	1.05	1.2	1.37	1.44	1.64	16	34800	50572	72	40	4	0	0
514	17	14400	1.04	0.16	1.03	1.16	3.14	1.05	1.12	1.2	1.25	1.51	4	4828	9536	32	0	0	0	0
514	129	900	1.25	0.22	1.23	1.18	2.39	1.26	1.34	1.38	1.59	2.06	0	104	784	12	0	0	0	0
517	1	86404	1.94	1.87	1.53	2	111	1.49	2.6	3.58	4.74	5.81	5156	14396	31304	32392	3084	28	32	12
517	5	58696	2.43	2.08	2.05	1.81	111	2.24	3.08	4.12	5.06	5.92	576	7380	15756	31880	3032	28	32	12
517	9	24720	0.89	0.31	0.83	1.47	5.11	1.04	1.1	1.16	1.19	1.27	3640	5944	15008	124	4	0	0	0
517	13	83416	1.97	1.89	1.57	1.97	111	1.56	2.62	3.61	4.75	5.81	4216	13324	30764	32004	3036	28	32	12
517	65	2988	1.12	1.16	0.81	2.12	8.73	0.65	1.26	2.56	3.59	6.08	940	1072	540	388	48	0	0	0
549	1	86404	1.44	1.25	1.12	1.97	26.6	1.06	1.8	2.95	3.44	5.72	9268	31524	27360	16876	1128	244	4	0
549	5	28396	1.14	1.05	0.86	2.02	12.6	0.73	1.34	2.73	3.1	5.48	6912	11612	5448	4004	404	16	0	0
549	9	24636	0.81	0.26	0.77	1.37	2.43	0.78	0.97	1.15	1.24	1.57	1900	17264	5456	16	0	0	0	0
549	13	53032	0.99	0.81	0.82	1.75	12.6	0.76	1.07	1.72	2.83	4.47	8812	28876	10904	4020	404	16	0	0
549	17	26172	2.05	0.96	1.87	1.53	26.6	1.78	2.66	3.35	3.79	4.54	0	1580	14052	10400	128	8	4	0
549	65	7200	2.57	2.54	1.83	2.26	18.9	1.82	2.98	5.31	7.22	13.3	456	1068	2404	2456	596	220	0	0
551	1	86404	0.92	0.78	0.62	2.61	49.0	0.63	1.58	1.61	1.64	1.71	35788	10856	39056	564	128	8	4	0
551	5	36772	0.29	0.16	0.26	1.58	1.58	0.23	0.31	0.58	0.63	0.71	31064	5476	232	0	0	0	0	0
551	9	38328	1.57	0.11	1.56	1.14	6.53	1.58	1.6	1.64	1.64	1.69	120	4	38200	0	4	0	0	0
551	13	75100	0.94	0.65	0.65	2.61	6.53	1.47	1.58	1.62	1.64	1.69	31184	5480	38432	0	4	0	0	0
551	129	11304	0.73	1.35	0.46	2.48	49.0	0.54	0.63	1.24	2.47	5.13	4604	5376	624	564	124	8	4	0
559	1	86404	2.45	2.3	1.09	4.28	14.4	0.82	4.37	5.63	5.97	6.43	38540	5596	1432	27444	13372	20	0	0
559	5	15184	5.68	0.61	5.66	1.1	14.4	5.69	5.98	6.28	6.41	7.43	0	0	0	2116	13048	20	0	0
559	9	24864	4.27	0.2	4.26	1.05	6.17	4.19	4.37	4.55	4.75	4.81	0	0	0	24840	24	0	0	0
559	13	40048	4.81	0.8	4.75	1.17	14.4	4.42	5.49	5.97	6.22	6.65	0	0	0	26956	13072	20	0	0
559	17	40968	0.34	0.3	0.29	1.65	5.31	0.27	0.35	0.52	0.68	1.5	36192	3764	764	240	8	0	0	0
559	65	4452	1	1.42	0.48	3.6	7.02	0.61	0.98	2.12	5.12	6.57	1820	1544	616	240	232	0	0	0
559	129	936	0.9	1.56	0.5	2.55	7.31	0.47	0.65	1.12	6.45	7.26	528	288	52	8	60	0	0	0
561	1	86404	0.19	0.41	0.12	2.23	11.1	0.09	0.19	0.3	0.48	2.41	82272	1908	1072	1088	60	4	0	0
561	5	48820	0.26	0.52	0.16	2.28	11.1	0.16	0.25	0.36	0.7	3.05	45488	1520	680	1068	60	4	0	0
561	9	34740	0.08	0.04	0.07	1.43	0.44	0.07	0.07	0.12	0.15	0.22	34740	0	0	0	0	0	0	0
561	13	83560	0.18	0.41	0.12	2.18	11.1	0.09	0.18	0.29	0.41	2.45	80228	1520	680	1068	60	4	0	0
561	17	26844	0.19	0.29	0.13	2.14	8.48	0.11	0.19	0.35	0.56	1.27	25224	1028	508	76	8	0	0	0
561	65	504	0.86	0.49	0.65	2.52	3.66	0.88	1.11	1.27	1.32	2.47	100	216	176	12	0	0	0	0
569	1	86404	2.74	1.66	2.06	2.39	16.5	2.66	4	5.15	5.51	5.95	10104	9548	6588	49632	10524	8	0	0
569	5	29200	4.37	1.03	4.24	1.29	8.89	4.51	5.25	5.62	5.76	6.37	0	4	64	19208	9924	0	0	0
569	9	26412	2.86	0.71	2.79	1.25	5.89	2.63	3.03	4.02	4.46	5.01	0	0	380	25720	312	0	0	0
569	13	55612	3.65	1.17	3.47	1.37	8.89	3.39	4.69	5.4	5.63	6.02	0	4	444	44928	10236	0	0	0
569	33	22728	1.01	0.87	0.75	2.1	6.82	0.62	1.28	2.5	2.77	3.8	8140	7408	3464	3680	36	0	0	0
569	65	13824	1.02	1.07	0.72	2.11	7.93	0.55	1.1	2.43	3.36	5.32	5708	4364	1944	1616	192	0	0	0
569	129	2784	1.42	1.26	1.21	1.61	16.5	1.14	1.43	1.88	3.47	7.36	0	1000	1576	108	92	8	0	0
578	1	86404	0.36	0.64	0.28	1.83	59.0	0.26	0.33	0.62	0.98	1.77	74588	7836	3292	440	232	12	0	4
578	5	24660	0.41	0.84	0.32	2.09	59.0	0.27	0.55	0.83	1.04	1.66	17908	5388	1224	128	0	8	0	4
578	9	26704	0.21	0.05	0.2	1.31	0.61	0.21	0.26	0.29	0.32	0.35	26700	4	0	0	0	0	0	0
578	13	51364	0.31	0.59	0.25	1.79	59.0	0.22	0.3	0.59	0.82	1.38	44608	5392	1224	128	0	8	0	4
578	17	29460	0.38	0.64	0.31	1.55	9.49	0.27	0.32	0.43	0.58	2.55	27492	1144	484	128	212	0	0	0
578	65	4884	0.83	0.82	0.54	2.75	11	0.78	1.14	1.48	1.88	4.22	2028	1128	1532	172	20	4	0	0
578	129	696	0.49	0.45	0.36	2.2	3.15	0.27	0.76	0.99	1.07	2.69	460	172	52	12	0	0	0	0
584	1	86404	19.6	27.1	4.65	6.04	81.4	3.07	60.66	62.0	65.85	67.6	2028	23940	8496	22692	1428	3048	216	2455
584	5	27900	0.88	0.23	0.86	1.25	4.76	0.88	0.98	1.11	1.19	1.31	132	21608	6032	128	0	0	0	0
584	9	24700	61.9	5.96	60.2	1.49	69.1	61.62	62.78	66.4	67.38	68.1	32	152	4	0	0	0	4	2450
584	13	52600	29.5	30.7	6.32	8.54	69.1	1.17	61.54	65.2	66.34	67.8	164	21760	6036	128	0	0	4	2450
584	17	30624	4.4	4.54	3.35	2.02	81.4	3.24	3.79	10.4	13.81	18.7	368	1388	2024	22200	1396	2996	204	48
584	65	2676	1.32	2.44	0.72	2.58	24.3	0.56	1.29	2.67	3.66	15.2	1220	612	436	316	32	52	8	0
584	129	504	0.69	0.69	0.53	1.83	2.9	0.49	0.6	0.74	2.78	2.85	276	180	0	48	0	0	0	0
586	1	86404	0.49	2.38	0.12	3.25	95.9	0.09	0.1	0.52	1.44	8.92	77368	2580	2760	1192	2144	168	148	44
586	5	16900	0.91	2.52	0.19	5.43	10.5	0.05	0.18	1.14	8.77	9.18	14836	332	124	32	1568	8	0	0
586	9	29844	0.08	0.01	0.08	1.14	0.38	0.09	0.09	0.09	0.11	0.12	29844	0	0	0	0	0	0	0
586	13	46744	0.38	1.57	0.11	2.66	10.5	0.09	0.09	0.17	0.35	8.9	44680	332	124	32	1568	8	0	0
586	17	32928	0.57	3.34	0.1	3.29	95.9	0.07	0.09	0.18	2.58	10.1	30472	296	308	944	564	156	144	44
586	65	6732	0.89	0.86	0.73	1.8	23.0	0.67	1.13	1.41	1.75	3.52	2216	1952	2328	216	12	4	4	0
591	1	86404	1.39	1.76	1.06	2.06	78.7	1.14	1.7	2.35	2.85	5.27	11068	25724	35052	13472	780	156	148	4
591	5	36268	1.28	1.09	1.1	1.75	35.8	1.19	1.64	2.1	2.4	2.99	3292	11240	17120	4556	16	20	24	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
591	9	35100	1.34	0.96	1.15	1.75	35.9	1.16	1.77	2.39	2.72	3.33	2528	11432	14508	6620	0	0	12	0
591	13	71368	1.31	1.03	1.12	1.75	35.9	1.18	1.69	2.24	2.63	3.19	5820	22672	31628	11176	16	20	36	0
591	65	2904	3.66	6.33	2.03	2.57	49.0	1.78	2.87	7.55	13.98	41.8	116	464	1152	720	248	96	108	0
591	129	12132	1.29	2.24	0.66	3.17	78.7	0.7	1.33	3.46	4.96	7.4	5132	2588	2272	1576	516	40	4	4
595	1	86404	1.29	0.96	1.18	1.45	25.0	1.17	1.49	1.69	1.78	3.32	448	28084	55508	1812	336	148	68	0
595	5	59284	1.2	1.14	1.08	1.47	25.0	1.02	1.24	1.69	1.88	4.63	236	27308	29404	1784	336	148	68	0
595	9	26136	1.5	0.13	1.5	1.1	2.03	1.48	1.53	1.69	1.73	1.78	0	372	25760	4	0	0	0	0
595	13	85420	1.3	0.97	1.19	1.43	25.0	1.17	1.49	1.69	1.78	3.32	236	27680	55164	1788	336	148	68	0
595	65	576	1.03	0.57	0.82	2.18	2.76	1.25	1.37	1.7	1.88	2.66	132	96	324	24	0	0	0	0
595	129	408	0.69	0.29	0.57	2.13	1.52	0.74	0.87	0.95	0.99	1.34	80	308	20	0	0	0	0	0
614	1	86404	1.87	1.93	1.33	2.23	46.8	1.28	2.32	3.96	5.46	6.58	6484	29156	23592	21748	4900	468	56	0
614	5	27736	1.43	2.28	1.09	1.76	46.8	0.97	1.24	2.04	3.65	16.9	152	14716	10028	2292	184	308	56	0
614	9	29376	2.95	1.69	2.59	1.62	15.3	2.23	3.33	5.88	6.45	6.72	0	8	10332	14224	4656	156	0	0
614	13	57112	2.21	2.14	1.7	1.97	46.8	1.61	2.53	4.86	6.16	9.72	152	14724	20360	16516	4840	464	56	0
614	33	24264	1.21	1.23	0.81	2.35	11.9	0.66	1.27	3.67	3.93	4.19	5736	12028	1784	4680	32	4	0	0
614	129	5028	1.13	0.85	0.93	1.82	7.96	0.88	1.31	2.19	2.76	4.33	596	2404	1448	552	28	0	0	0
627	1	86404	0.99	2.79	0.53	2.46	55.8	0.46	0.61	1.52	3.77	9.96	55956	16512	7080	4972	1024	544	280	36
627	5	4924	0.54	0.44	0.41	2.32	4.21	0.41	0.47	1.35	1.52	1.8	3740	416	744	24	0	0	0	0
627	9	24000	0.44	0.03	0.44	1.07	0.51	0.44	0.46	0.47	0.48	0.5	23732	268	0	0	0	0	0	0
627	13	28924	0.46	0.19	0.43	1.42	4.21	0.44	0.46	0.47	0.5	1.43	27472	684	744	24	0	0	0	0
627	17	31680	1.12	1.74	0.63	2.62	17.3	0.5	0.97	3.44	3.99	10.1	15576	8272	3640	3280	580	332	0	0
627	65	8640	0.79	1.09	0.58	2.06	22.0	0.55	0.83	1.37	1.92	4.24	3724	3412	1096	340	44	20	4	0
627	129	17160	1.73	5.65	0.5	3.8	55.8	0.46	0.89	3.13	5.47	42.9	9184	4144	1600	1328	400	192	276	36
643	1	85780	0.85	0.96	0.67	1.92	45.0	0.62	0.98	1.74	2.44	3.18	36444	28408	13160	7588	128	24	28	0
643	5	32548	1.31	1.31	1.09	1.75	45.0	0.94	1.55	2.48	2.61	4.07	968	16632	8016	6844	40	20	28	0
643	9	39372	0.46	0.1	0.45	1.22	1.49	0.41	0.47	0.62	0.63	0.78	30256	9072	44	0	0	0	0	0
643	13	71920	0.84	0.98	0.67	1.83	45.0	0.57	0.89	1.89	2.46	2.96	31224	25704	8060	6844	40	20	28	0
643	65	13860	0.91	0.85	0.65	2.37	10.0	0.9	1.16	1.41	2.27	4.34	5220	2704	5100	744	88	4	0	0
644	1	86404	1.92	2.3	1.01	3.55	116	0.71	3.56	4.27	4.77	5.94	17148	33048	2240	30600	2860	488	4	16
644	5	17100	0.27	0.37	0.19	2.18	8.36	0.17	0.25	0.64	0.66	1.21	13872	2984	188	36	20	0	0	0
644	9	28800	0.7	0.03	0.7	1.04	0.77	0.71	0.71	0.76	0.76	0.76	0	28800	0	0	0	0	0	0
644	13	45900	0.54	0.31	0.43	2.22	8.36	0.66	0.71	0.71	0.76	0.76	13872	31784	188	36	20	0	0	0
644	17	32700	4.03	2.39	3.83	1.31	116	3.71	4.3	4.97	5.25	14.1	4	52	296	29200	2708	420	4	16
644	65	4800	1.68	2.2	1.16	2.4	19.8	1.23	2.12	2.43	3.7	17.6	568	1156	1704	1232	72	68	0	0
644	129	3004	0.45	1.2	0.19	2.59	9.65	0.15	0.23	0.31	2.36	8.24	2704	56	52	132	60	0	0	0
647	1	86404	3.53	3.32	1.67	4.41	101	3.7	7.01	7.59	7.76	11.2	22952	12056	4900	17648	27828	944	72	4
647	5	22060	5.06	2.2	4.78	1.37	39.7	4.39	5.32	6.56	8.37	16.6	0	0	148	14448	6752	692	20	0
647	9	20088	7.5	0.25	7.5	1.04	10.0	7.54	7.62	7.8	7.86	7.93	0	0	4	0	20080	4	0	0
647	13	42148	6.23	2.01	5.92	1.38	39.7	7.01	7.55	7.74	7.86	13.8	0	0	152	14448	26832	696	20	0
647	17	40104	0.73	1.12	0.44	2.72	24.2	0.46	0.76	1.53	2.39	5.11	21508	11600	4364	2192	352	80	8	0
647	65	24024	0.66	0.79	0.48	2.08	18.4	0.49	0.72	1.16	1.87	3.34	12296	8728	1928	968	88	16	0	0
647	129	4152	3.21	5.23	1.4	3.83	101	1.45	4.59	6.79	10.1	30.8	1444	456	384	1008	644	168	44	4
652	1	86404	0.53	1.3	0.21	3.28	32.5	0.12	0.49	1.16	2.17	5.38	65300	11008	5452	3672	496	460	16	0
652	5	59272	0.3	1.23	0.12	2.4	32.5	0.09	0.15	0.43	0.74	4.39	54476	2692	1128	412	164	384	16	0
652	13	59272	0.3	1.23	0.12	2.4	32.5	0.09	0.15	0.43	0.74	4.39	54476	2692	1128	412	164	384	16	0
652	65	10368	0.89	0.76	0.66	2.2	9.22	0.64	1.1	1.74	2.43	3.69	3344	4092	2204	700	28	0	0	0
652	129	16764	1.16	1.54	0.62	3.01	18.5	0.54	1.26	3.31	4.38	7.72	7480	4224	2120	2560	304	76	0	0
659	1	86404	0.57	1.17	0.56	3.57	17.7	0.05	0.82	1.5	1.95	5.44	56632	11080	14552	3184	640	316	0	0
659	5	1380	1.8	1.98	1.02	3.68	12.8	2.06	2.25	2.31	2.35	12.6	400	64	120	756	4	36	0	0
659	9	34500	0	0.01	0.07	1.14	0.15	0	0	0	0	0.07	34500	0	0	0	0	0	0	0
659	13	35880	0.07	0.52	0.31	5.11	12.8	0	0	0	0.07	2.25	34900	64	120	756	4	36	0	0
659	17	36000	0.97	0.88	0.68	2.7	17.7	0.82	1.36	1.67	2.01	4.36	10808	10024	13332	1688	112	36	0	0
659	65	45420	1.03	1.4	0.6	3.41	17.7	0.73	1.34	1.73	2.76	8.21	16848	10844	14400	2412	636	280	0	0
659	129	5104	0.07	0.23	0.15	3	2.72	0	0	0.23	0.4	0.99	4884	172	32	16	0	0	0	0
668	1	86404	0.41	2.35	0.25	1.87	80.2	0.23	0.27	0.39	0.74	3.17	79872	3308	1752	1052	208	88	48	76
668	5	36964	0.25	0.53	0.2	1.72	20.9	0.21	0.26	0.35	0.39	1.06	35820	752	204	140	16	24	8	0
668	9	29880	0.24	0.03	0.24	1.11	0.67	0.23	0.26	0.26	0.27	0.3	29772	108	0	0	0	0	0	0
668	13	66844	0.25	0.4	0.22	1.52	20.9	0.22	0.26	0.31	0.35	0.69	65592	860	204	140	16	24	8	0
668	17	14880	1.06	5.53	0.37	2.54	80.2	0.25	0.46	1.25	2.36	13.7	11408	1620	892	636	144	64	40	76
668	129	4680	0.77	0.94	0.51	2.29	7.36	0.41	0.79	1.64	2.76	5.08	2872	828	656	276	48	0	0	0
669	1	86404	0.34	0.69	0.2	2.5	13.3	0.12	0.43	0.75	0.97	2.32	66612	15812	2908	756	124	192	0	0
669	5	37768	0.44	0.96	0.24	2.54	13.3	0.17	0.44	0.98	1.24	3.46	29404	4824	2604	624	120	192	0	0
669	9	28296	0.12	0.15	0.11	1.27	2.9	0.11	0.11	0.11	0.11	0.15	28052	168	0	76	0	0	0	0
669	13	66064	0.3	0.75	0.17	2.26	13.3	0.11	0.19	0.7	1.03	2.43	57456	4992	2604	700	120	192	0	0
669	129	20340	0.44	0.39	0.38	2.81	5.02	0.62	0.72	0.78	0.82	1.11	9156	10820	304	56	4	0	0	0
682	1	86404	1.05	1.32	0.75	2.15	94.6	0.67	1.15	2.3	3.69	5.22	22804	36744	16912	8868	944	124	4	4
682	5	15960	0.76	0.62	0.68	1.54	14.1	0.69	0.8	1.08	1.19	3.06	3168	10336	2184	216	40	16	0	0
682	9	25728	0.75	0.3	0.69	1.46	1.34	0.61	1.13	1.23	1.25	1.29	4284	13800	7644	0	0	0	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
682	13	41688	0.75	0.45	0.69	1.49	14.1	0.64	0.94	1.21	1.24	1.51	7452	24136	9828	216	40	16	0	0
682	17	31848	1.59	1.93	0.99	2.66	94.6	0.83	2.37	3.93	4.54	6.25	8784	9572	4232	8288	868	96	4	4
682	65	6472	1.13	1.04	0.96	1.69	19.2	0.99	1.21	1.69	2.19	4.3	596	2668	2800	360	36	12	0	0
682	129	6396	0.26	0.16	0.24	1.39	2.6	0.23	0.23	0.26	0.61	0.99	5972	368	52	4	0	0	0	0
684	1	86404	0.92	5.5	0.32	2.42	249	0.27	0.46	0.71	1.27	19.8	67868	12980	2292	1736	280	388	636	224
684	5	15904	0.47	0.64	0.34	2.19	20.9	0.38	0.55	0.81	1.12	2.22	10788	4076	828	172	24	12	4	0
684	9	27300	0.28	0.16	0.24	1.78	1.12	0.24	0.36	0.52	0.59	0.8	23972	3272	56	0	0	0	0	0
684	13	43204	0.35	0.42	0.27	1.98	20.9	0.29	0.45	0.59	0.76	1.57	34760	7348	884	172	24	12	4	0
684	17	33600	1.71	8.74	0.35	2.93	249	0.25	0.33	0.96	3.1	38.8	27552	2852	708	1064	216	352	632	224
684	65	6300	0.76	1.01	0.55	1.99	13.0	0.44	0.7	1.43	2.6	4.71	3728	1676	416	424	32	24	0	0
684	129	3300	0.6	0.59	0.48	1.94	7.58	0.47	0.62	1.05	1.26	3.51	1828	1104	284	76	8	0	0	0
693	1	86404	1.35	2.1	0.69	3.13	72.5	0.63	1.59	3.32	4.42	10.3	36376	20232	13204	12880	2568	1112	24	8
693	5	31708	0.47	0.58	0.37	1.87	16.3	0.36	0.52	0.78	1.08	2.01	22820	7044	1524	260	28	32	0	0
693	9	20496	0.65	0.57	0.42	2.84	2.58	0.56	0.84	1.66	1.87	2.23	9932	6892	3172	500	0	0	0	0
693	13	52204	0.54	0.58	0.39	2.26	16.3	0.38	0.66	1.02	1.66	2.23	32752	13936	4696	760	28	32	0	0
693	17	30096	2.85	2.74	1.99	2.42	48.8	2.12	3.45	5.94	9.22	12.0	1520	4756	8140	12044	2532	1080	24	0
693	65	2280	0.99	3.87	0.63	1.98	72.5	0.66	0.88	1.18	1.6	4.51	732	1148	316	68	8	0	0	8
693	129	1824	0.37	0.28	0.31	1.78	2.64	0.29	0.5	0.59	0.87	1.59	1372	392	52	8	0	0	0	0
697	1	86404	5.22	5.77	3.95	2.22	86.2	4.3	5.68	7.93	10.08	28.0	2752	2732	4108	42592	29788	3116	608	708
697	5	21292	4.52	2.59	3.74	1.99	24.4	4.21	6.01	7.61	8.54	12.7	248	800	2120	9744	7776	588	16	0
697	9	28296	3.94	1.58	3.61	1.58	13.1	4.16	4.22	4.37	5.86	10.6	36	908	40	25412	1240	660	0	0
697	13	49588	4.19	2.09	3.67	1.76	24.4	4.16	4.45	6.55	8.09	10.9	284	1708	2160	35156	9016	1248	16	0
697	65	18552	6.65	11.2	3.16	3.7	86.2	5.02	5.83	9	23.64	58.6	2468	1004	1804	3904	7796	588	284	704
697	129	18264	6.56	3.3	6.06	1.45	50.3	5.53	6.45	9.48	12.43	23.8	0	20	144	3532	12976	1280	308	4
701	1	86404	2.17	3.31	0.68	5.17	31.5	0.49	3.51	6.07	7.76	15.3	43556	6412	4868	20112	9460	1320	676	0
701	5	12028	2.6	2.76	1.39	3.14	12.0	1.1	4.43	6.6	8.33	10.7	4528	1180	1584	2124	2384	228	0	0
701	9	22296	4.16	1.75	3.81	1.53	10.1	3.81	4.91	7.03	7.59	8.37	0	4	1384	15504	5316	88	0	0
701	13	34324	3.61	2.29	2.67	2.46	12.0	3.5	4.79	6.87	7.79	9.91	4528	1184	2968	17628	7700	316	0	0
701	17	32724	0.21	0.26	0.16	1.91	17.0	0.12	0.22	0.49	0.57	0.81	29624	2888	196	12	0	4	0	0
701	65	11904	4.66	6.25	1.84	4.62	31.5	1.91	6.32	11.4	22.71	27.1	2024	2340	1632	2472	1760	1000	676	0
701	129	7452	0.17	0.13	0.14	1.69	1.48	0.17	0.21	0.22	0.26	0.47	7380	0	72	0	0	0	0	0
707	1	86404	0.19	0.35	0.13	1.94	8.06	0.12	0.17	0.23	0.47	1.82	82204	2348	1184	596	72	0	0	0
707	5	46516	0.16	0.24	0.12	1.77	3.87	0.12	0.17	0.23	0.26	1	45232	800	292	192	0	0	0	0
707	9	36840	0.15	0.12	0.13	1.67	0.95	0.12	0.17	0.22	0.27	0.95	36156	684	0	0	0	0	0	0
707	13	83356	0.15	0.2	0.12	1.73	3.87	0.12	0.17	0.22	0.27	0.95	81388	1484	292	192	0	0	0	0
707	65	3048	1.21	1.18	0.76	2.97	8.06	0.87	1.68	2.39	3.46	5.95	816	864	892	404	72	0	0	0
710	1	86404	0.79	2.22	0.45	2.33	110	0.35	0.7	1.2	2.17	7.66	55944	18464	6992	3040	1592	172	164	36
710	5	38740	0.91	2.97	0.52	2.29	110	0.52	0.79	1.26	2.23	6.84	18904	14196	3472	1632	248	88	164	36
710	9	31656	0.29	0.09	0.28	1.38	0.6	0.28	0.35	0.39	0.43	0.53	31200	456	0	0	0	0	0	0
710	13	70396	0.63	2.22	0.39	2.05	110	0.35	0.56	0.9	1.37	4.09	50104	14652	3472	1632	248	88	164	36
710	65	12456	1.58	2.31	0.77	3.28	18.9	0.57	1.74	5.61	7.26	9.87	5724	2392	1632	1280	1344	84	0	0
710	129	3552	1.11	0.55	1.03	1.46	4.72	1.04	1.18	1.25	1.58	4.19	116	1420	1888	128	0	0	0	0
716	1	86404	2.28	1.48	1.87	2	93.9	2.35	2.89	3.56	4.25	6.81	4340	11964	17568	49924	2372	228	4	4
716	5	17332	2.49	0.93	2.29	1.54	6.57	2.49	3.15	3.73	3.96	4.63	44	808	4496	11872	112	0	0	0
716	9	15372	2.97	0.75	2.87	1.32	5.18	3.02	3.37	3.98	4.29	4.67	0	12	1708	13624	28	0	0	0
716	13	32704	2.72	0.88	2.55	1.47	6.57	2.79	3.3	3.83	4.17	4.67	44	820	6204	25496	140	0	0	0
716	17	36756	2.25	1.61	1.84	2.04	93.9	2.35	2.76	2.98	5.02	7.09	3192	1412	8936	21368	1840	4	0	4
716	65	4200	1.88	1.71	1.32	2.44	22.9	1.48	2.47	3.63	5	8.32	616	808	1276	1284	192	20	4	0
716	129	12744	1.38	1.77	1	1.98	17.9	0.82	1.02	2.86	3.13	11.2	488	8924	1152	1776	200	204	0	0
723	1	86404	1.52	1.1	1.27	2.04	40.9	1.43	1.66	2.07	2.39	6.05	5552	9956	59912	9668	1128	176	12	0
723	9	21600	1.43	0.12	1.42	1.09	1.79	1.4	1.46	1.59	1.62	1.77	0	164	21436	0	0	0	0	0
723	13	21600	1.43	0.12	1.42	1.09	1.79	1.4	1.46	1.59	1.62	1.77	0	164	21436	0	0	0	0	0
723	65	18000	1.67	2.26	0.78	3.97	40.9	0.98	2.05	4.01	5.81	9.84	5452	3644	3920	3724	1092	156	12	0
723	129	46804	1.51	0.51	1.45	1.35	17.1	1.48	1.78	2.05	2.17	2.59	100	6148	34556	5944	36	20	0	0
732	1	86404	0.35	0.66	0.28	2.05	17.9	0.19	0.39	0.59	0.85	3.18	72720	10128	1572	1540	436	8	0	0
732	5	6120	1.36	1.73	0.88	2.28	17.9	0.64	1.22	3.22	6.48	7.65	1484	2696	880	724	332	4	0	0
732	9	23752	0.41	0.25	0.37	1.54	7.47	0.39	0.5	0.6	0.64	0.8	17308	6324	88	12	20	0	0	0
732	13	29872	0.6	0.9	0.44	1.89	17.9	0.43	0.57	0.74	1.27	6.56	18792	9020	968	736	352	4	0	0
732	17	21888	0.18	0.03	0.18	1.17	0.86	0.18	0.19	0.22	0.24	0.25	21884	4	0	0	0	0	0	0
732	65	18060	0.23	0.73	0.38	3.31	15.3	0	0.07	0.42	1.91	3.45	16476	408	424	664	84	4	0	0
732	129	16584	0.24	0.26	0.2	1.69	3.01	0.19	0.21	0.35	0.57	1.68	15568	696	180	140	0	0	0	0
735	1	86404	5.43	6.64	1.24	7.04	36.4	0.49	13.8	14.2	14.4	17.9	43540	8052	1708	916	1368	30804	16	0
735	5	48208	8.18	6.68	2.45	8.24	14.6	13.43	14.11	14.3	14.4	14.5	16588	2480	700	180	872	27388	0	0
735	13	48208	8.18	6.68	2.45	8.24	14.6	13.43	14.11	14.3	14.4	14.5	16588	2480	700	180	872	27388	0	0
735	17	28932	0.38	0.5	0.32	1.76	17.3	0.35	0.42	0.52	0.59	1.82	25644	2732	300	188	48	20	0	0
735	65	4188	1.07	1.42	0.81	1.97	27.5	0.68	1.07	2.21	2.92	6.04	728	2304	644	448	56	0	8	0
735	129	5076	11.7	7.11	6.27	4.84	36.4	13.97	17.65	18.0	18.13	18.2	580	536	64	100	392	3396	8	0
740	1	86404	0.91	2.89	0.24	5.17	137	0.1	1.13	1.9	3.59	7.23	51820	10140	16492	4832	2792	204	68	56

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s).	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
740	5	21232	0.85	2.2	0.18	4.61	34.0	0.1	0.29	1.79	6.24	7.06	16908	588	1908	196	1504	80	48	0
740	9	30048	0.05	0.01	0.05	1.15	0.19	0.05	0.05	0.05	0.05	0.1	30048	0	0	0	0	0	0	0
740	13	51280	0.38	1.47	0.09	3.2	34.0	0.05	0.09	0.31	1.77	6.34	46956	588	1908	196	1504	80	48	0
740	17	32640	1.75	4.19	1.16	2.4	137	1.18	1.76	3.13	4.8	8.85	4084	8744	13788	4536	1288	124	20	56
740	65	2484	0.87	0.61	0.6	2.78	3.66	0.88	1.21	1.66	1.91	2.78	780	808	796	100	0	0	0	0
745	1	86404	0.5	0.63	0.35	2.49	11.6	0.32	0.86	0.96	0.96	2.63	57192	25620	1848	1540	112	92	0	0
745	5	40764	0.36	0.48	0.27	2.11	5.36	0.27	0.37	0.53	1.05	2.66	36316	2360	768	1316	4	0	0	0
745	9	27900	0.75	0.31	0.62	2.12	1.01	0.91	0.96	0.96	0.96	0.96	6004	21848	48	0	0	0	0	0
745	13	68664	0.52	0.46	0.39	2.34	5.36	0.35	0.9	0.96	0.96	2.61	42320	24208	816	1316	4	0	0	0
745	17	19644	0.17	0.3	0.16	2.23	11.6	0.11	0.23	0.43	0.54	0.73	18344	1192	56	44	4	4	0	0
745	129	8596	0.68	1.4	0.35	2.92	11.0	0.32	0.58	1.39	1.96	10.1	6276	896	1012	220	104	88	0	0
746	1	86404	0.92	1.5	0.75	1.58	54.5	0.73	0.84	0.94	1.16	7.77	6668	74524	2180	1304	1468	204	44	12
746	5	53284	0.79	1.15	0.72	1.36	54.5	0.76	0.85	0.91	0.95	2.55	5380	46312	832	684	40	8	16	12
746	9	27300	0.67	0.13	0.66	1.2	1.06	0.64	0.76	0.85	0.94	0.99	560	26560	180	0	0	0	0	0
746	13	80584	0.75	0.94	0.7	1.32	54.5	0.72	0.83	0.89	0.94	1.88	5940	72872	1012	684	40	8	16	12
746	129	5820	3.31	3.87	1.76	3.1	40.0	1.27	6.88	8.41	8.98	14.1	728	1652	1168	620	1428	196	28	0
762	1	86404	3.02	4.29	0.62	7.75	11.2	0.32	8.68	10.8	10.92	11.1	48244	5528	8080	348	11348	12856	0	0
762	5	33112	0.12	0.23	0.1	1.96	8.92	0.07	0.12	0.21	0.31	1.08	32272	468	280	88	4	0	0	0
762	9	30732	8.07	3.46	6.76	2.02	11.2	8.86	10.8	10.9	11.07	11.1	20	4	6512	16	11324	12856	0	0
762	13	63844	3.95	4.64	0.84	9.28	11.2	0.37	8.84	10.8	10.95	11.1	32292	472	6792	104	11328	12856	0	0
762	65	22560	0.4	0.44	0.26	2.75	6.65	0.3	0.54	0.83	1.19	2.05	15952	5056	1288	244	20	0	0	0
764	1	86404	0.45	0.66	0.33	1.94	12.2	0.32	0.4	0.73	1.2	3.57	73152	7400	3968	1396	480	8	0	0
764	5	29452	0.41	0.42	0.29	2.2	7.21	0.24	0.59	0.92	1.21	1.94	21152	5676	2368	240	16	0	0	0
764	9	26412	0.28	0.04	0.28	1.17	0.55	0.27	0.31	0.34	0.35	0.39	26400	12	0	0	0	0	0	0
764	13	55864	0.35	0.31	0.28	1.79	7.21	0.27	0.34	0.7	0.96	1.45	47552	5688	2368	240	16	0	0	0
764	17	21840	0.4	0.27	0.38	1.32	9.1	0.4	0.4	0.4	0.43	0.62	21472	212	56	88	12	0	0	0
764	65	8700	1.24	1.69	0.62	3.21	12.2	0.54	1.44	3.33	5.13	8.14	4128	1500	1544	1068	452	8	0	0
766	1	86404	0.66	0.81	0.39	2.96	12.0	0.54	0.84	1.37	1.73	4.4	40340	30772	12388	2084	804	16	0	0
766	5	12168	0.18	0.2	0.13	2.13	5.6	0.11	0.23	0.41	0.47	0.92	11636	480	48	0	4	0	0	0
766	9	19356	0.11	0.03	0.1	1.29	0.23	0.09	0.12	0.15	0.17	0.21	19356	0	0	0	0	0	0	0
766	13	31524	0.14	0.13	0.11	1.69	5.6	0.09	0.12	0.23	0.36	0.77	30992	480	48	0	4	0	0	0
766	17	53352	0.97	0.88	0.8	1.74	12.0	0.74	1.09	1.63	2.08	6.38	8704	29592	12184	2056	800	16	0	0
766	65	708	0.62	0.46	0.44	2.53	2.15	0.58	0.91	1.17	1.35	2.1	336	236	124	12	0	0	0	0
766	129	820	0.64	0.41	0.53	1.91	2.67	0.61	0.9	0.97	1.09	2.26	308	464	32	16	0	0	0	0
768	1	86404	1.28	1.76	0.82	2.5	34.8	0.72	1.54	3.01	3.45	8.07	32712	18580	20924	12056	1548	500	84	0
768	9	38100	0.48	0.17	0.46	1.35	1.09	0.4	0.56	0.72	0.83	1	25936	11852	312	0	0	0	0	0
768	13	38100	0.48	0.17	0.46	1.35	1.09	0.4	0.56	0.72	0.83	1	25936	11852	312	0	0	0	0	0
768	17	39108	2.01	2.17	1.4	2.66	34.8	1.5	2.52	3.45	3.82	12.5	3800	5108	17468	10932	1356	368	76	0
768	65	8928	1.5	2	0.98	2.44	20.7	1.03	1.8	2.34	3.63	13.4	2956	1432	3084	1124	192	132	8	0
768	129	268	0.72	0.26	0.68	1.41	1.32	0.56	0.99	1.07	1.11	1.32	20	188	60	0	0	0	0	0
773	1	86404	1.66	3.01	0.99	2.37	49.6	0.74	1.57	3.65	4.22	21.2	14496	36216	19924	13192	816	116	1644	0
773	5	10756	1.12	0.56	1.02	1.55	9.39	1.12	1.32	1.6	1.84	2.92	988	2988	6472	276	32	0	0	0
773	9	28320	0.72	0.33	0.67	1.43	2.04	0.59	0.73	1.39	1.55	1.73	5612	19092	3600	16	0	0	0	0
773	13	39076	0.83	0.45	0.75	1.54	9.39	0.65	1.05	1.44	1.62	1.94	6600	22080	10072	292	32	0	0	0
773	17	38544	2.53	4.23	1.29	2.92	23.7	1.14	3.09	4.25	6.45	21.4	5972	12068	8084	9984	708	104	1624	0
773	65	3708	2.52	2.37	2.22	1.61	49.6	2.29	2.64	3.4	4.14	7.1	44	52	968	2572	44	8	20	0
773	129	5076	0.88	0.95	0.66	2.07	18.2	0.56	0.95	1.78	2.51	4.6	1880	2016	800	344	32	4	0	0
774	1	86404	1.08	1.99	0.45	3.45	29.5	0.37	0.95	2.99	4.47	8.59	48656	17180	7144	10108	2724	508	84	0
774	5	25368	0.17	0.14	0.15	1.63	2.02	0.12	0.17	0.32	0.45	0.6	24532	736	96	4	0	0	0	0
774	9	8044	0.2	0.7	0.17	1.44	29.5	0.15	0.21	0.23	0.32	0.5	7960	72	4	0	0	4	4	0
774	13	33412	0.18	0.37	0.15	1.59	29.5	0.14	0.18	0.27	0.42	0.59	32492	808	100	4	0	4	4	0
774	17	3600	1.73	1.38	1.1	3	9.77	1.24	2.87	3.41	4.13	5.23	648	912	516	1464	60	0	0	0
774	65	4680	1.74	1.46	1.29	2.09	7.21	0.82	2.8	3.94	4.83	5.83	4	2856	272	1364	184	0	0	0
774	129	44712	1.63	2.49	0.86	2.95	25.1	0.81	1.83	4.14	5.81	15.2	15512	12604	6256	7276	2480	504	80	0
784	1	86404	0.28	0.55	0.14	2.7	15.5	0.09	0.19	0.86	1.32	2.27	73920	5028	6324	1000	116	16	0	0
784	5	42208	0.12	0.16	0.11	1.68	5.56	0.09	0.14	0.19	0.23	0.67	41636	332	140	96	4	0	0	0
784	9	24660	0.08	0.03	0.07	1.29	0.26	0.07	0.07	0.07	0.12	0.21	24660	0	0	0	0	0	0	0
784	13	66868	0.11	0.13	0.09	1.62	5.56	0.07	0.12	0.17	0.21	0.46	66296	332	140	96	4	0	0	0
784	17	828	0.18	0.03	0.18	1.17	0.32	0.19	0.19	0.23	0.23	0.23	828	0	0	0	0	0	0	0
784	65	9600	0.9	0.53	0.76	1.86	9.28	0.86	1.25	1.45	1.62	2.14	2340	3200	3884	164	12	0	0	0
784	129	9108	0.92	1.19	0.51	2.94	15.5	0.52	1.29	1.93	3.05	5.66	4456	1496	2300	740	100	16	0	0
793	1	86404	0.99	1.47	0.53	3.25	47.6	1.13	1.27	1.33	4.2	5.25	39304	1876	40172	3140	1736	96	80	0
793	5	10840	0.3	0.23	0.26	1.75	5.54	0.29	0.38	0.47	0.54	0.66	9868	932	20	12	8	0	0	0
793	9	28200	0.16	0.07	0.14	1.58	0.46	0.15	0.21	0.26	0.26	0.31	28200	0	0	0	0	0	0	0
793	13	39040	0.2	0.15	0.17	1.75	5.54	0.16	0.26	0.33	0.44	0.56	38068	932	20	12	8	0	0	0
793	17	40008	1.24	0.15	1.23	1.17	4.63	1.24	1.29	1.33	1.35	1.39	304	176	39412	116	0	0	0	0
793	129	7356	3.91	3.62	2.49	3.08	47.6	4.76	5.01	5.3	7.06	21.3	932	768	740	3012	1728	96	80	0
795	1	86404	1.67	17.1	0.52	2.19	793	0.52	0.65	1.1	1.88	4.97	41100	35836	5568	3040	212	52	108	488

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s).	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
795	5	23692	4.22	32.5	0.46	2.73	793	0.38	0.48	0.74	1.61	118	18440	3384	948	300	20	8	104	488
795	9	25884	0.63	0.08	0.62	1.14	1.02	0.6	0.65	0.7	0.83	0.92	640	25240	4	0	0	0	0	0
795	13	49576	2.34	22.5	0.54	2.05	793	0.56	0.64	0.7	0.92	47.8	19080	28624	952	300	20	8	104	488
795	17	35100	0.77	1.02	0.49	2.38	21.7	0.41	0.82	1.82	2.85	4.57	21168	6632	4340	2720	192	44	4	0
795	65	1728	0.63	0.47	0.5	2.04	4.74	0.51	0.87	1.23	1.48	2.14	852	580	276	20	0	0	0	0
796	1	86404	0.58	1.09	0.42	1.94	50.1	0.42	0.59	1	1.39	2.42	50972	26668	6988	1288	236	192	56	4
796	5	23160	0.63	1.13	0.47	1.8	50.1	0.38	0.48	1.14	1.96	2.18	17552	2884	1784	792	84	56	4	4
796	9	28920	0.23	0.16	0.22	1.3	2.83	0.21	0.24	0.3	0.31	0.35	28696	8	120	96	0	0	0	0
796	13	52080	0.41	0.79	0.31	1.79	50.1	0.27	0.38	0.53	1.13	2.1	46248	2892	1904	888	84	56	4	4
796	17	29784	0.75	1.37	0.63	1.48	42.5	0.58	0.69	0.99	1.07	2.67	4280	22652	2504	88	96	116	48	0
796	65	4252	1.35	1.27	1.06	2.01	15.9	1.15	1.55	1.87	3.28	6.41	364	996	2528	296	52	16	0	0
796	129	288	1.4	3.19	0.78	2.32	24.1	0.71	1.04	1.7	2.44	24.1	80	128	52	16	4	4	4	0
798	1	86404	1.07	0.91	0.89	1.99	96.5	1.11	1.23	1.74	1.82	3.34	14628	20024	49352	2184	208	0	4	4
798	5	25024	1.44	1.42	1.24	1.74	96.5	1.48	1.76	1.86	3.29	3.35	1752	4632	17056	1572	4	0	4	4
798	9	31488	1.12	0.15	1.11	1.17	1.35	1.15	1.2	1.23	1.27	1.3	0	3348	28140	0	0	0	0	0
798	13	56512	1.26	0.96	1.16	1.48	96.5	1.18	1.42	1.77	1.84	3.33	1752	7980	45196	1572	4	0	4	4
798	17	23052	0.68	0.29	0.61	1.61	2.85	0.76	0.91	1.02	1.07	1.21	8984	11172	2876	20	0	0	0	0
798	65	6156	0.95	1.38	0.35	4.4	9.88	0.22	1.23	2.77	4.2	6.27	3280	800	1280	592	204	0	0	0
798	129	684	0.33	0.14	0.31	1.4	0.95	0.27	0.34	0.51	0.64	0.84	612	72	0	0	0	0	0	0
803	1	86404	1.39	0.33	1.35	1.27	6.21	1.37	1.58	1.8	1.94	2.27	0	9012	74092	3296	4	0	0	0
803	5	71428	1.37	0.33	1.33	1.28	4.41	1.35	1.56	1.78	1.92	2.27	0	8472	60496	2460	0	0	0	0
803	13	71428	1.37	0.33	1.33	1.28	4.41	1.35	1.56	1.78	1.92	2.27	0	8472	60496	2460	0	0	0	0
803	129	14976	1.47	0.3	1.44	1.22	6.21	1.43	1.64	1.86	2.03	2.28	0	540	13596	836	4	0	0	0
807	1	86404	0.83	6.29	0.43	1.94	158	0.41	0.56	0.76	1.07	6.73	55376	26284	2128	1516	872	84	4	140
807	5	52816	1.05	8.02	0.51	1.82	158	0.5	0.6	0.82	1	6.73	25576	24588	1300	372	752	84	4	140
807	9	27996	0.41	0.63	0.32	1.61	5.98	0.29	0.36	0.41	0.46	3.98	26888	316	0	760	32	0	0	0
807	13	80812	0.83	6.5	0.44	1.82	158	0.41	0.56	0.68	0.96	6.73	52464	24904	1300	1132	784	84	4	140
807	65	2268	1.11	1.16	0.74	2.46	6.99	0.75	1.21	2.26	3.66	6.11	800	636	568	204	60	0	0	0
807	129	3324	0.6	0.94	0.27	3.64	8.02	0.29	0.68	1.48	2.42	4.51	2112	744	260	180	28	0	0	0
811	1	86404	0.26	0.31	0.19	2.16	6.91	0.15	0.41	0.54	0.55	1.47	68384	16460	1144	380	36	0	0	0
811	5	57292	0.19	0.29	0.14	1.86	5.95	0.12	0.18	0.27	0.5	1.27	54388	2076	520	280	28	0	0	0
811	9	24216	0.39	0.19	0.32	2.06	0.59	0.5	0.54	0.55	0.55	0.59	10400	13816	0	0	0	0	0	0
811	13	81508	0.25	0.28	0.18	2.11	5.95	0.15	0.39	0.54	0.55	1.02	64788	15892	520	280	28	0	0	0
811	65	3420	0.59	0.65	0.37	2.65	6.91	0.37	0.82	1.5	1.87	2.36	2224	476	612	100	8	0	0	0
811	129	1476	0.22	0.19	0.17	2.12	1.22	0.15	0.33	0.47	0.57	0.99	1372	92	12	0	0	0	0	0
818	1	86404	0.36	0.47	0.25	2.22	12.6	0.19	0.48	0.67	0.94	2.5	67092	15412	2508	1328	56	8	0	0
818	5	15300	0.46	0.28	0.39	1.87	4.18	0.46	0.57	0.72	0.89	1.71	9032	5944	280	44	0	0	0	0
818	9	26704	0.36	0.19	0.3	1.83	1.51	0.35	0.5	0.58	0.64	0.75	20264	6428	12	0	0	0	0	0
818	13	42004	0.39	0.23	0.33	1.86	4.18	0.41	0.53	0.63	0.71	0.95	29296	12372	292	44	0	0	0	0
818	17	36900	0.21	0.41	0.15	1.75	12.6	0.14	0.15	0.17	0.63	2.09	34932	764	808	372	16	8	0	0
818	65	6600	1.07	1.02	0.77	2.59	12.6	0.82	1.39	2.41	3.12	4.51	1924	2208	1552	884	28	4	0	0
818	129	2700	0.96	0.91	0.66	2.43	5.55	0.67	1.27	2.04	2.69	4.77	1112	692	596	280	20	0	0	0
825	1	86404	1.92	2.61	1.05	2.94	41.3	0.79	1.54	5.79	6.19	10.6	13596	41024	12912	2976	14896	864	136	0
825	5	23700	0.97	1.15	0.81	1.65	30.5	0.84	1.06	1.21	1.46	6.48	3524	13032	6328	512	228	60	16	0
825	9	25332	0.71	0.13	0.7	1.18	2.18	0.71	0.76	0.85	0.94	1.19	352	24176	800	4	0	0	0	0
825	13	49032	0.83	0.82	0.75	1.46	30.5	0.71	0.89	1.1	1.22	3	3876	37208	7128	516	228	60	16	0
825	17	19444	5.11	3.03	3.84	2.53	34.1	5.65	6.03	6.57	9.19	17.0	1212	1712	1092	1240	13540	580	68	0
825	65	16920	1.4	2.6	0.59	4.07	41.3	0.51	1.56	3.93	5.49	12.5	8416	1884	4284	1140	920	224	52	0
825	129	1008	2.21	1.84	1.54	2.43	5.89	1.47	4.05	5.32	5.44	5.7	92	220	408	80	208	0	0	0
828	1	86404	1.91	1.87	1	3.3	20.7	0.51	4.22	4.37	4.42	4.53	42892	7528	1732	33784	400	64	4	0
828	5	6232	0.28	0.08	0.27	1.21	1.75	0.27	0.31	0.34	0.35	0.42	6192	28	12	0	0	0	0	0
828	9	28260	4.26	0.21	4.25	1.08	4.63	4.33	4.37	4.44	4.47	4.53	20	0	0	28240	0	0	0	0
828	13	34492	3.54	1.54	2.59	2.9	4.63	4.29	4.37	4.42	4.47	4.53	6212	28	12	28240	0	0	0	0
828	17	4668	0.7	0.18	0.69	1.21	3.37	0.67	0.71	0.78	0.99	1.59	52	4384	224	8	0	0	0	0
828	65	9468	1.25	1.63	0.63	3.22	14.5	0.43	1.98	2.86	3.91	8.23	5148	768	1220	2012	256	64	0	0
828	129	37776	0.74	1.04	0.5	2.02	20.7	0.42	0.47	1.58	3.76	4.1	31480	2348	276	3524	144	0	4	0
835	1	86704	0.87	0.92	0.59	2.68	94.5	0.78	1.42	1.48	1.48	2.66	29200	23748	31012	2660	56	24	0	4
835	5	23788	0.19	0.2	0.16	1.69	3.43	0.18	0.21	0.24	0.25	1.24	23132	252	360	44	0	0	0	0
835	9	28524	1.45	0.13	1.44	1.07	3.41	1.44	1.46	1.48	1.48	1.52	4	0	28392	128	0	0	0	0
835	13	52312	0.88	0.65	0.53	3.18	3.43	1.42	1.44	1.48	1.48	1.52	23136	252	28752	172	0	0	0	0
835	17	30816	0.85	1.26	0.71	1.75	94.5	0.75	0.82	1.27	2.28	2.77	5176	21784	1556	2240	32	24	0	4
835	65	3576	0.91	0.86	0.66	2.38	9.45	0.7	1.05	1.76	2.6	4.07	888	1712	704	248	24	0	0	0
837	1	87148	0.7	1.72	0.42	2.27	73.0	0.33	0.86	1.05	1.27	8.39	54472	22328	7604	1224	932	504	72	12
837	5	24892	0.96	2.57	0.4	2.56	49.9	0.29	0.41	1.32	5.65	12.6	20300	1696	980	572	788	492	64	0
837	9	46512	0.49	0.35	0.37	2.1	1.23	0.27	0.88	1	1.08	1.17	29644	12912	3956	0	0	0	0	0
837	13	71404	0.65	1.56	0.38	2.27	49.9	0.29	0.84	1	1.14	8.84	49944	14608	4936	572	788	492	64	0
837	65	6420	0.76	0.84	0.6	1.8	10.7	0.53	0.69	1.27	2.8	3.69	2736	2768	524	352	32	8	0	0
837	129	9324	1.05	2.9	0.74	1.96	73.0	0.67	1.06	1.54	1.9	6.96	1792	4952	2144	300	112	4	8	12

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
840	1	86404	0.87	1.62	0.51	2.39	72.7	0.55	0.77	0.83	1.27	8.49	35888	45844	692	216	3524	236	0	4
840	5	35400	0.63	1.29	0.43	1.94	13.5	0.46	0.52	0.58	0.82	9.33	23312	10592	616	196	472	212	0	0
840	9	35016	0.77	0.13	0.76	1.11	8.33	0.77	0.77	0.83	0.83	0.87	112	34860	32	4	8	0	0	0
840	13	70416	0.7	0.92	0.57	1.74	13.5	0.72	0.77	0.77	0.83	4.43	23424	45452	648	200	480	212	0	0
840	17	14376	1.36	2.96	0.29	4.37	72.7	0.15	0.22	7.33	7.87	8.78	11700	336	36	8	2268	24	0	4
840	65	4872	4.68	3.62	1.97	5.43	12.9	6.81	7.77	8.25	8.59	9.46	1572	348	28	12	2888	24	0	0
840	129	340	0.18	0.16	0.16	1.58	1.35	0.14	0.17	0.24	0.39	1.35	324	12	4	0	0	0	0	0
849	1	86404	1.47	0.57	1.36	1.49	10.7	1.5	1.88	2.18	2.31	2.6	140	23356	46304	16540	44	20	0	0
849	5	43704	1.86	0.34	1.83	1.21	7.11	1.85	2.11	2.29	2.38	2.63	8	68	27724	15900	4	0	0	0
849	9	40296	1.03	0.32	0.99	1.34	2.7	0.97	1.18	1.55	1.67	1.9	0	22996	17036	264	0	0	0	0
849	13	84000	1.46	0.53	1.36	1.48	7.11	1.51	1.88	2.17	2.3	2.52	8	23064	44760	16164	4	0	0	0
849	65	2400	1.64	1.36	1.35	1.78	10.7	1.26	1.51	2.95	3.86	8.86	132	292	1540	376	40	20	0	0
849	129	4	1.29	.	1.29	1	1.29	1.29	1.29	1.29	1.29	1.29	0	0	4	0	0	0	0	0
855	1	86404	0.36	0.49	0.2	2.93	41.0	0.11	0.66	0.82	0.88	1.19	53304	31500	1284	280	28	4	4	0
855	5	14332	0.11	0.18	0.1	1.44	3.99	0.1	0.12	0.15	0.16	0.23	14252	20	20	40	0	0	0	0
855	9	36972	0.08	0.02	0.08	1.24	0.19	0.09	0.09	0.11	0.12	0.14	36972	0	0	0	0	0	0	0
855	13	51304	0.09	0.1	0.09	1.33	3.99	0.09	0.09	0.12	0.12	0.17	51224	20	20	40	0	0	0	0
855	17	31764	0.72	0.13	0.71	1.2	1.78	0.72	0.8	0.88	0.94	1.04	684	30452	628	0	0	0	0	0
855	129	3336	0.95	1.78	0.6	2.5	41.0	0.56	1.08	1.88	2.58	5.43	1396	1028	636	240	28	4	4	0
857	1	86404	3.2	3.83	1.57	3.6	42.7	1.22	4.9	7.74	10.3	16.4	17260	22192	8412	17576	16276	4272	416	0
857	5	23824	0.77	0.28	0.73	1.38	6.82	0.73	0.88	1.11	1.23	1.53	3724	15908	4144	44	4	0	0	0
857	13	23824	0.77	0.28	0.73	1.38	6.82	0.73	0.88	1.11	1.23	1.53	3724	15908	4144	44	4	0	0	0
857	17	35340	6.24	3.94	4.99	2.19	36.9	5.52	7.62	11.0	13.65	20.0	1012	576	1340	11856	15972	4224	360	0
857	65	25020	1.33	2.38	0.67	3.16	42.7	0.58	1.78	3.87	4.23	4.88	11572	5388	2764	5068	156	16	56	0
857	129	2220	2.01	2.59	0.86	3.98	18.9	0.68	3.89	4.71	5.47	12.8	952	320	164	608	144	32	0	0
858	1	86404	0.35	0.65	0.21	2.5	26.1	0.18	0.32	0.94	1.36	2.23	73024	5500	6820	884	128	40	8	0
858	5	46812	0.32	0.51	0.24	1.92	18.7	0.23	0.34	0.56	0.96	1.32	41592	3052	2048	80	8	32	0	0
858	9	30520	0.11	0.23	0.1	1.53	13.9	0.1	0.11	0.16	0.16	0.25	30472	12	4	20	4	8	0	0
858	13	77332	0.24	0.43	0.17	2.07	18.7	0.16	0.27	0.4	0.66	1.25	72064	3064	2052	100	12	40	0	0
858	65	2928	1.21	1.59	0.84	2.37	26.1	0.9	1.47	2.43	3.52	4.42	708	940	832	432	8	0	8	0
858	129	6144	1.4	0.85	1.24	1.63	8.31	1.37	1.48	1.65	2.6	5.44	252	1496	3936	352	108	0	0	0
871	1	86404	0.4	0.14	0.38	1.36	1.4	0.38	0.47	0.54	0.63	0.93	71192	15100	112	0	0	0	0	0
871	5	54004	0.38	0.14	0.36	1.38	1.4	0.34	0.46	0.55	0.62	0.86	43848	10120	36	0	0	0	0	0
871	9	32400	0.44	0.14	0.43	1.29	1.31	0.43	0.47	0.54	0.84	0.98	27344	4980	76	0	0	0	0	0
871	13	86404	0.4	0.14	0.38	1.36	1.4	0.38	0.47	0.54	0.63	0.93	71192	15100	112	0	0	0	0	0
873	1	86404	0.29	1.79	0.23	1.68	148	0.23	0.29	0.38	0.52	0.98	81732	3820	624	192	12	4	0	20
873	5	27672	0.33	0.3	0.28	1.66	6.01	0.26	0.35	0.5	0.75	1.66	24892	2088	516	164	12	0	0	0
873	9	40908	0.21	0.08	0.2	1.56	1.9	0.21	0.26	0.31	0.35	0.45	40784	116	8	0	0	0	0	0
873	13	68580	0.26	0.21	0.22	1.65	6.01	0.23	0.29	0.37	0.46	1	65676	2204	524	164	12	0	0	0
873	17	1872	0.34	0.38	0.28	1.6	4.37	0.27	0.37	0.49	0.52	2.83	1704	136	12	20	0	0	0	0
873	129	15952	0.43	4.13	0.25	1.77	148	0.24	0.3	0.5	0.68	0.94	14352	1480	88	8	0	4	0	20
890	1	86404	0.72	1.71	0.49	1.95	127	0.42	0.53	0.92	2.64	5.97	59716	18648	2540	4212	1116	136	16	20
890	5	47104	0.85	2.15	0.54	2.08	127	0.46	0.57	1.57	3.55	6.26	29524	11868	1408	3464	704	104	12	20
890	9	25800	0.39	0.21	0.37	1.34	6.82	0.35	0.44	0.51	0.55	0.69	23144	2560	32	56	8	0	0	0
890	13	72904	0.69	1.75	0.47	1.9	127	0.41	0.51	0.78	2.5	5.23	52668	14428	1440	3520	712	104	12	20
890	129	13500	0.92	1.42	0.6	2.15	20.2	0.47	0.78	1.62	3.67	7.73	7048	4220	1100	692	404	32	4	0
894	1	86404	0.17	0.44	0.17	2.68	25.0	0.05	0.17	0.43	0.82	1.33	78352	6096	1628	244	64	16	4	0
894	5	44164	0.19	0.52	0.15	2.27	25.0	0.11	0.23	0.34	0.53	1.53	41720	1644	564	160	56	16	4	0
894	9	33336	0.01	0.02	0.06	1.3	0.24	0	0	0	0.05	0.09	33336	0	0	0	0	0	0	0
894	13	77500	0.11	0.41	0.14	2.29	25.0	0	0.12	0.29	0.37	1.02	75056	1644	564	160	56	16	4	0
894	65	1416	1.13	0.61	1.06	1.46	7.26	1.04	1.15	1.49	1.94	4.4	32	556	764	56	8	0	0	0
894	129	7488	0.53	0.4	0.45	2.67	3.28	0.7	0.84	0.92	0.98	1.34	3264	3896	300	28	0	0	0	0
895	1	86404	0.61	1.31	0.36	2.5	42.9	0.37	0.45	1.36	1.9	5.55	66820	7680	8116	2864	496	400	28	0
895	5	21052	0.38	0.97	0.22	2.13	19.5	0.17	0.23	0.56	1.11	4.83	18696	1116	664	376	156	44	0	0
895	9	25968	0.37	0.03	0.36	1.09	0.62	0.37	0.37	0.4	0.4	0.45	25912	56	0	0	0	0	0	0
895	13	47020	0.37	0.65	0.29	1.77	19.5	0.37	0.37	0.4	0.51	2.43	44608	1172	664	376	156	44	0	0
895	17	32568	0.98	1.91	0.53	3.36	42.9	0.46	1.26	1.96	2.69	10.8	17180	5500	6816	2348	340	356	28	0
895	65	6816	0.48	0.48	0.35	2.21	4.49	0.32	0.52	1.09	1.57	2.44	5032	1008	636	140	0	0	0	0
898	1	86404	0.71	1.47	0.31	3.4	67.2	0.32	0.47	1.84	3.25	7.14	67044	5844	5404	6288	1536	276	8	4
898	5	5680	0.38	0.51	0.3	1.85	6.1	0.31	0.47	0.52	0.67	1.54	4740	868	20	12	40	0	0	0
898	9	27936	0.31	0.14	0.29	1.43	5.91	0.32	0.38	0.44	0.47	0.5	27356	572	0	0	8	0	0	0
898	13	33616	0.32	0.24	0.29	1.51	6.1	0.32	0.38	0.47	0.49	0.67	32096	1440	20	12	48	0	0	0
898	17	33612	1.2	2.15	0.43	4.57	67.2	0.36	1.6	3.62	4.97	8.71	21040	2404	3140	5372	1392	252	8	4
898	129	19176	0.51	0.95	0.18	4.12	14.7	0.09	0.55	1.4	2.1	4.38	13908	2000	2244	904	96	24	0	0
902	1	86404	0.93	1.63	0.69	1.9	55.1	0.64	1	1.41	1.95	5.92	27952	36912	17400	3068	660	252	156	4
902	5	14112	1.14	2.64	0.7	2.07	55.7	0.66	0.9	1.37	2.52	18.8	4756	6660	1848	420	200	196	28	4
902	9	26292	0.51	0.15	0.48	1.36	1.87	0.5	0.57	0.66	0.77	0.94	13664	12556	72	0	0	0	0	0
902	13	40404	0.73	1.6	0.55	1.69	55.7	0.53	0.66	0.89	1.16	5.14	18420	19216	1920	420	200	196	28	4

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
902	17	32532	1.15	1.49	0.94	1.69	29.3	0.96	1.15	1.63	2.13	6.68	2748	15112	12848	1328	376	24	96	0
902	65	11820	1.12	2.03	0.68	2.49	48.5	0.61	1.33	2.31	3.65	5.5	5148	2572	2632	1320	84	32	32	0
902	129	1648	0.41	0.05	0.41	1.15	0.68	0.42	0.46	0.46	0.49	0.49	1636	12	0	0	0	0	0	0
906	1	86404	1.22	1	0.9	2.24	33.9	0.98	1.59	2.36	3.16	4.67	20396	23764	28768	12888	568	16	4	0
906	5	21020	1.49	1.01	1.24	1.82	7.94	1.2	1.87	2.57	3.53	5.48	1488	6268	9068	3888	308	0	0	0
906	9	29980	1.53	0.87	1.33	1.68	9.91	1.35	1.84	2.6	3.36	4.62	596	8460	14472	6328	124	0	0	0
906	13	51000	1.51	0.93	1.29	1.74	9.91	1.3	1.85	2.58	3.38	4.88	2084	14728	23540	10216	432	0	0	0
906	65	30544	0.84	1.01	0.55	2.43	33.9	0.52	1.02	1.85	2.8	4.26	14936	7556	5224	2672	136	16	4	0
906	129	4860	0.47	0.11	0.46	1.26	1.04	0.46	0.52	0.63	0.69	0.76	3376	1480	4	0	0	0	0	0
908	1	86404	1.68	2.66	0.91	3.16	32.2	1.48	2.27	2.56	2.85	19.0	31760	7324	13112	32080	744	552	832	0
908	5	33108	0.57	0.75	0.36	2.34	5.73	0.3	0.47	1.52	2.17	4.61	24992	3168	3092	1708	148	0	0	0
908	13	33108	0.57	0.75	0.36	2.34	5.73	0.3	0.47	1.52	2.17	4.61	24992	3168	3092	1708	148	0	0	0
908	17	33736	2.94	3.54	2.34	1.82	32.2	2.3	2.5	2.72	4.57	24.1	716	392	4784	26260	400	424	760	0
908	65	11352	1.67	2.39	1.08	2.67	30.3	1.19	2.1	2.4	2.79	14.2	2076	2648	2812	3560	56	128	72	0
908	129	8208	0.96	1.01	0.62	2.57	7.39	0.56	1.36	1.92	2.85	5.75	3976	1116	2424	552	140	0	0	0
914	1	86404	1.67	3.01	0.95	2.91	92.1	0.52	3.12	3.14	3.18	3.39	41000	8504	2592	33652	284	148	144	80
914	5	46324	0.75	3.69	0.46	1.71	92.1	0.43	0.47	0.58	0.98	5.06	37172	6932	1180	572	196	88	104	80
914	9	33456	3.06	0.44	2.98	1.36	3.24	3.12	3.14	3.18	3.19	3.23	636	284	4	32532	0	0	0	0
914	13	79780	1.72	3.05	1	2.81	92.1	0.52	3.12	3.17	3.18	3.24	37808	7216	1184	33104	196	88	104	80
914	129	6624	1.14	2.39	0.5	3.57	25.9	0.52	1.52	2.14	2.67	14.3	3192	1288	1408	548	88	60	40	0
920	1	86404	0.99	0.6	0.88	1.62	26.5	0.87	1.16	1.66	1.98	2.47	8880	45896	27596	3940	44	44	4	0
920	5	62520	1.09	0.65	0.98	1.59	26.5	0.98	1.27	1.81	2.07	2.53	4448	28104	26172	3708	40	44	4	0
920	9	21604	0.66	0.18	0.63	1.39	1.2	0.67	0.79	0.9	0.94	1.02	4104	17132	368	0	0	0	0	0
920	13	84124	0.98	0.6	0.88	1.6	26.5	0.87	1.15	1.65	1.97	2.43	8552	45236	26540	3708	40	44	4	0
920	129	2280	1.19	0.78	0.97	2	9.2	1.13	1.49	2.03	2.47	3.62	328	660	1056	232	4	0	0	0
943	1	86404	0.81	0.68	0.65	1.87	20.4	0.64	0.98	1.44	1.8	3.1	29352	36036	17800	2888	300	24	4	0
943	5	57648	0.67	0.49	0.57	1.72	20.4	0.55	0.78	1.18	1.54	2.56	24536	24892	6684	1524	8	0	4	0
943	9	6900	0.67	0.27	0.62	1.49	2.35	0.61	0.89	1.05	1.13	1.39	2088	3800	1008	4	0	0	0	0
943	13	64548	0.67	0.47	0.58	1.7	20.4	0.56	0.79	1.14	1.48	2.51	26624	28692	7692	1528	8	0	4	0
943	65	3108	1.03	1.18	0.54	3.45	8.64	0.67	1.42	2.31	3.4	5.84	1312	632	720	408	36	0	0	0
943	129	18748	1.22	0.95	1.04	1.72	11.7	1.08	1.41	1.79	2.22	6.44	1416	6712	9388	952	256	24	0	0
949	1	86404	4.27	3.02	2.66	3.86	24.4	3.4	7.28	7.79	7.97	8.7	13976	2724	4124	27124	38028	408	20	0
949	5	9900	6.06	2.61	4.91	2.29	24.4	6.96	7.51	7.79	8.02	10.4	384	452	680	764	7488	116	16	0
949	9	27000	7.51	0.58	7.49	1.07	14.1	7.51	7.79	8.03	8.35	9.12	0	0	0	0	26784	216	0	0
949	13	36900	7.12	1.58	6.69	1.6	24.4	7.39	7.76	7.98	8.26	9.44	384	452	680	764	34272	332	16	0
949	129	49504	2.15	1.86	1.28	3.94	20.6	2.3	2.57	4.35	6.42	8	13592	2272	3444	26360	3756	76	4	0
950	1	86404	0.7	1.64	0.43	2.44	65.9	0.41	0.69	1.23	1.8	4.41	53996	19176	9668	2884	336	200	136	8
950	5	30232	0.86	2.33	0.48	2.59	65.9	0.44	0.79	1.63	2.14	4.66	17460	7132	3860	1500	88	60	124	8
950	9	31836	0.34	0.18	0.29	1.79	1.53	0.36	0.44	0.61	0.65	0.76	26892	4720	224	0	0	0	0	0
950	13	62068	0.6	1.65	0.37	2.28	65.9	0.37	0.56	0.92	1.62	3.83	44352	11852	4084	1500	88	60	124	8
950	65	8844	1.65	2.37	1.16	2.05	38.2	0.92	1.51	3.36	4.8	14.4	216	4800	2180	1248	248	140	12	0
950	129	15492	0.57	0.42	0.41	2.42	3.35	0.44	0.97	1.2	1.25	1.84	9428	2524	3404	136	0	0	0	0
953	1	86404	1.73	2.04	0.87	3.38	31	0.55	4.3	4.4	4.4	5.4	40128	9692	6164	29480	436	484	20	0
953	5	36136	0.73	1.66	0.42	2.24	30.8	0.38	0.51	0.98	2.39	10.5	26688	5936	1460	1416	220	400	16	0
953	9	25824	4.06	1	4.06	1.1	5.1	4.06	4.39	4.43	4.5	4.9	36	0	0	25788	0	0	0	0
953	13	61960	2.12	2.88	1.08	3.85	30.8	0.66	3	3.2	3.5	5.1	26724	5936	1460	27204	220	400	16	0
953	129	24444	0.9	1.3	0.51	2.81	30.2	0.43	1.22	2.07	2.78	5.62	13404	3756	4704	2276	216	84	4	0
959	1	86404	0.85	1.11	0.57	2.57	33.4	0.59	1.26	1.66	1.78	3.13	24168	36556	24404	620	412	212	32	0
959	129	86404	0.85	1.11	0.57	2.57	33.4	0.59	1.26	1.66	1.78	3.13	24168	36556	24404	620	412	212	32	0
1008	1	86404	1.43	0.86	1.15	2.2	21.7	1.34	1.62	1.7	3.45	4.37	10896	4996	62996	7368	136	8	4	0
1008	5	16204	1.9	1.65	1.01	3.63	5.21	1.3	3.45	4.33	4.37	4.39	5836	2064	1252	7020	32	0	0	0
1008	9	29700	1.29	0.11	1.28	1.16	1.55	1.29	1.34	1.35	1.38	1.43	268	16	29416	0	0	0	0	0
1008	13	45904	1.5	1.03	1.17	2.19	5.21	1.29	1.34	3.4	4.27	4.37	6104	2080	30668	7020	32	0	0	0
1008	17	32400	1.54	0.3	1.51	1.21	8.45	1.61	1.67	1.7	1.7	1.75	372	44	31780	144	60	0	0	0
1008	65	7200	0.57	0.77	0.3	3.05	8.08	0.15	0.93	1.02	1.39	4.26	4236	2232	496	192	44	0	0	0
1008	129	900	1.01	1.8	0.77	1.73	21.7	0.86	0.91	0.95	1.22	10.6	184	640	52	12	0	8	4	0
1009	1	86404	0.48	0.67	0.36	1.97	33.4	0.34	0.5	0.86	1.22	2.71	64652	15264	5324	540	616	0	8	0
1009	5	18576	0.61	1.23	0.33	2.44	33.4	0.27	0.43	1.86	1.93	6.35	14908	1564	1308	244	544	0	8	0
1009	9	26520	0.45	0.08	0.44	1.2	0.7	0.45	0.5	0.55	0.59	0.64	19684	6836	0	0	0	0	0	0
1009	13	45096	0.52	0.8	0.39	1.83	33.4	0.41	0.49	0.59	0.78	5.75	34592	8400	1308	244	544	0	8	0
1009	17	35208	0.33	0.29	0.27	1.77	7.11	0.22	0.29	0.78	0.89	1.14	28840	5576	740	40	12	0	0	0
1009	65	4236	1.09	0.99	0.74	2.71	9.4	1.03	1.32	1.8	2.62	5.43	1068	956	1912	240	60	0	0	0
1009	129	1864	1.12	0.35	1.02	1.64	2.18	1.19	1.31	1.46	1.55	2	152	332	1364	16	0	0	0	0
1014	1	86404	0.87	1.12	0.64	2.24	95.9	0.73	1.07	1.67	1.99	3.82	30260	33420	18480	3900	312	8	20	4
1014	5	21328	1.51	0.86	1.42	1.4	48.1	1.45	1.72	2.01	2.27	3.46	176	2684	16244	2164	48	8	4	0
1014	9	24012	0.78	0.11	0.77	1.15	2.67	0.77	0.84	0.92	0.94	1.07	68	23372	560	12	0	0	0	0
1014	13	45340	1.12	0.7	1.03	1.49	48.1	0.89	1.42	1.76	2	2.67	244	26056	16804	2176	48	8	4	0
1014	17	32592	0.52	0.96	0.34	2.18	44.5	0.36	0.44	0.85	1.58	4.06	25520	4836	844	1276	104	0	12	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
1014	65	3420	0.7	1.12	0.48	2.26	22.5	0.39	0.72	1.43	2.33	4.65	2140	728	320	212	16	0	4	0
1014	129	5052	0.95	2.95	0.56	2.39	95.9	0.52	0.82	1.64	3.26	7.26	2356	1800	512	236	144	0	0	4
1017	1	86404	0.43	0.68	0.32	1.91	48.1	0.33	0.46	0.58	0.8	2.46	71472	11004	2060	1648	172	40	8	0
1017	5	13092	0.52	1.02	0.36	1.93	23.4	0.35	0.45	0.74	1.11	5.17	10432	1928	396	196	120	16	4	0
1017	9	32416	0.21	0.07	0.2	1.43	0.65	0.21	0.25	0.29	0.32	0.42	32232	184	0	0	0	0	0	0
1017	13	45508	0.3	0.57	0.23	1.72	23.4	0.22	0.29	0.42	0.6	1.54	42664	2112	396	196	120	16	4	0
1017	17	25332	0.44	0.08	0.44	1.17	1.55	0.44	0.49	0.53	0.55	0.62	21088	4200	44	0	0	0	0	0
1017	65	5400	1.44	1.84	0.9	2.99	48.1	1.36	2.11	2.48	2.95	6.82	1808	476	1596	1444	48	24	4	0
1017	129	10164	0.41	0.24	0.36	1.68	5.39	0.36	0.57	0.63	0.7	0.8	5912	4216	24	8	4	0	0	0
1018	1	86404	0.9	1.46	0.67	1.97	78.9	0.57	0.9	2.4	2.52	3.13	29796	37500	8928	9808	284	32	32	24
1018	5	18216	1.38	1.24	0.94	2.52	24.8	0.74	2.47	2.55	2.57	2.62	5324	4984	200	7664	16	12	16	0
1018	9	25668	0.5	0.07	0.49	1.14	0.75	0.49	0.53	0.6	0.61	0.65	14052	11616	0	0	0	0	0	0
1018	13	43884	0.86	0.91	0.64	1.98	24.8	0.52	0.63	2.47	2.54	2.6	19376	16600	200	7664	16	12	16	0
1018	17	21996	0.85	2.45	0.65	1.71	78.9	0.63	0.73	0.97	2.14	4.49	4916	14920	1032	956	120	12	16	24
1018	65	18852	1.08	0.83	0.85	2.09	15.4	0.98	1.3	1.77	2.22	4.52	3876	5944	7692	1184	148	8	0	0
1018	129	1672	0.27	0.22	0.25	1.4	4.29	0.25	0.29	0.33	0.43	0.6	1628	36	4	4	0	0	0	0
1019	1	86404	2.2	1.65	1.86	1.76	68.9	2	2.69	3.61	4.39	6.84	380	16292	26544	40128	2888	120	36	16
1019	5	65524	2.38	1.11	2.17	1.54	12.5	2.2	2.8	3.63	4.39	6.6	48	2820	24028	36380	2232	16	0	0
1019	13	65524	2.38	1.11	2.17	1.54	12.5	2.2	2.8	3.63	4.39	6.6	48	2820	24028	36380	2232	16	0	0
1019	33	14400	1.07	2.29	0.89	1.46	68.9	0.85	0.93	1.02	1.11	5.87	40	12548	1332	308	104	40	16	12
1019	65	3000	3.33	2.63	2.68	2.07	52.3	3.32	4.17	5.56	6.25	9.47	128	108	744	1552	440	24	0	4
1019	129	3480	2.33	3.03	1.67	2.19	42.2	2.12	2.31	3.92	4.84	15.8	164	816	440	1888	112	40	20	0
1025	1	86404	0.45	0.77	0.34	1.88	55.3	0.28	0.44	0.63	1.55	2.5	72684	7944	2880	2708	144	28	12	4
1025	5	47320	0.33	0.38	0.29	1.53	7.37	0.25	0.36	0.47	0.54	2.02	43732	2856	164	496	72	0	0	0
1025	13	47320	0.33	0.38	0.29	1.53	7.37	0.25	0.36	0.47	0.54	2.02	43732	2856	164	496	72	0	0	0
1025	17	64356	0.36	0.38	0.29	1.71	6.34	0.25	0.38	0.46	0.6	2.19	59848	1684	1308	1508	8	0	0	0
1025	65	7068	1.2	2.1	0.87	1.93	55.3	0.76	1.13	2.17	3.43	6.66	1300	3548	1408	704	64	28	12	4
1048	1	86404	0.3	0.8	0.21	2.33	74.9	0.17	0.46	0.46	0.61	1.63	80944	3600	1220	468	80	80	8	4
1048	5	55804	0.26	0.98	0.16	2.3	74.9	0.12	0.23	0.46	0.75	2.13	50768	3176	1220	468	80	80	8	4
1048	9	30600	0.38	0.15	0.34	1.82	0.85	0.46	0.46	0.46	0.46	0.52	30176	424	0	0	0	0	0	0
1048	13	86404	0.3	0.8	0.21	2.33	74.9	0.17	0.46	0.46	0.61	1.63	80944	3600	1220	468	80	80	8	4
1055	1	86404	1.49	1.37	1.01	2.49	61.9	0.67	2.94	3	3.02	3.05	18592	31816	3456	32368	116	40	8	8
1055	5	52204	0.69	1.04	0.59	1.55	61.9	0.55	0.65	0.91	1.47	2.94	16368	31128	3372	1164	116	40	8	8
1055	9	31200	2.96	0.07	2.96	1.02	3.12	2.98	3	3.02	3.03	3.05	0	0	0	31200	0	0	0	0
1055	13	83404	1.54	1.37	1.08	2.35	61.9	0.69	2.95	3	3.02	3.05	16368	31128	3372	32364	116	40	8	8
1055	129	3000	0.29	0.29	0.19	2.45	2.09	0.13	0.5	0.58	0.67	1.52	2224	688	84	4	0	0	0	0
1072	1	86404	3.14	1.81	2.25	2.6	10.0	4.13	4.47	4.83	4.91	5.02	7308	20128	1588	56120	1256	4	0	0
1072	5	27232	0.62	0.22	0.59	1.34	4.42	0.6	0.71	0.8	0.86	1.32	7108	19216	872	36	0	0	0	0
1072	9	57120	4.37	0.44	4.33	1.15	5.32	4.27	4.73	4.87	4.93	5.02	0	48	412	55832	828	0	0	0
1072	13	84352	3.16	1.79	2.28	2.59	5.32	4.13	4.47	4.83	4.9	5	7108	19264	1284	55868	828	0	0	0
1072	65	1308	3.05	2.45	2.07	2.56	10.0	2.06	5.21	6.76	7.32	8.44	48	312	284	240	420	4	0	0
1072	129	744	0.73	0.69	0.63	1.63	6.63	0.67	0.72	0.94	1.02	6.07	152	552	20	12	8	0	0	0
1078	1	86404	1.47	0.81	1.28	1.72	32.8	1.36	1.85	2.45	2.95	3.58	5140	19388	45800	15956	100	12	8	0
1078	5	53056	1.46	0.92	1.22	1.85	32.8	1.26	1.93	2.63	3.03	3.73	4656	13736	22464	12084	96	12	8	0
1078	9	27264	1.49	0.56	1.4	1.43	4.34	1.42	1.75	2.03	2.52	3.44	196	4308	19780	2980	0	0	0	0
1078	13	80320	1.47	0.82	1.28	1.72	32.8	1.35	1.85	2.48	2.99	3.6	4852	18044	42244	15064	96	12	8	0
1078	65	3000	1.56	0.67	1.37	1.8	7.95	1.68	1.9	2.19	2.34	3.4	172	496	1840	488	4	0	0	0
1078	129	3084	1.34	0.6	1.2	1.61	3.74	1.31	1.65	2.31	2.52	2.75	116	848	1716	404	0	0	0	0
1113	1	86404	1.27	1.37	1.08	1.72	99.1	1.01	1.42	2.18	2.85	4.73	3588	38568	33188	10292	700	52	0	16
1113	5	63904	1.26	1.4	1.1	1.62	99.1	1	1.42	2.18	2.81	3.63	2264	29392	23904	8116	188	24	0	16
1113	13	63904	1.26	1.4	1.1	1.62	99.1	1	1.42	2.18	2.81	3.63	2264	29392	23904	8116	188	24	0	16
1113	65	5652	1.34	0.9	1.04	2.19	8.16	1.15	1.6	2.53	3.14	4.39	844	1304	2508	980	16	0	0	0
1113	129	16848	1.3	1.36	1.01	1.91	13.4	1.01	1.35	2.02	3.11	8.44	480	7872	6776	1196	496	28	0	0
1125	1	86404	0.38	0.74	0.29	2.19	36.8	0.27	0.44	0.57	0.89	2.79	71416	11120	2312	1292	128	132	4	0
1125	5	39004	0.35	0.86	0.23	2	18.9	0.21	0.32	0.51	0.71	2.33	34840	2848	756	360	72	128	0	0
1125	9	28200	0.42	0.11	0.4	1.33	1.21	0.42	0.5	0.55	0.59	0.65	21404	6792	4	0	0	0	0	0
1125	13	67204	0.38	0.66	0.29	1.86	18.9	0.3	0.45	0.54	0.61	1.76	56244	9640	760	360	72	128	0	0
1125	65	1500	1.09	1.54	0.71	2.84	18.8	0.63	1.03	3.14	3.93	5.92	568	544	168	192	24	4	0	0
1125	129	17700	0.34	0.91	0.23	3.99	36.8	0.05	0.23	1.24	1.89	3.32	14604	936	1384	740	32	0	4	0
1129	1	86404	0.65	1.15	0.38	2.51	30.2	0.38	0.67	1.08	1.25	6.99	54688	19572	8236	1956	1900	40	12	0
1129	5	12532	1.01	0.16	1	1.21	1.34	1.03	1.12	1.18	1.23	1.28	184	4500	7848	0	0	0	0	0
1129	9	35592	0.52	0.21	0.49	1.38	2.19	0.47	0.6	0.74	0.83	1	20404	14808	132	248	0	0	0	0
1129	13	48124	0.65	0.3	0.59	1.54	2.19	0.54	0.88	1.08	1.15	1.27	20588	19308	7980	248	0	0	0	0
1129	17	33648	0.16	0.08	0.15	1.28	2.8	0.15	0.18	0.22	0.23	0.29	33616	4	12	16	0	0	0	0
1129	65	4632	4.29	2.96	2.78	3.43	30.2	3.54	6.81	7.3	7.88	10.1	484	260	244	1692	1900	40	12	0
1143	1	86404	0.54	0.56	0.38	2.27	10.6	0.37	0.68	1.08	1.53	2.82	51520	24248	8472	1932	228	4	0	0
1143	5	52552	0.58	0.68	0.37	2.5	10.6	0.32	0.83	1.3	1.84	2.97	34128	8936	7408	1848	228	4	0	0
1143	9	31344	0.45	0.23	0.39	1.81	2.23	0.49	0.62	0.79	0.92	1.02	16332	14648	360	4	0	0	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
1143	13	83896	0.54	0.56	0.38	2.25	10.6	0.36	0.67	1.06	1.5	2.81	50460	23584	7768	1852	228	4	0	0
1143	65	420	1.02	0.8	0.75	2.34	3.4	0.84	1.15	1.94	3.3	3.39	80	204	96	40	0	0	0	0
1143	129	2088	0.71	0.56	0.49	2.53	3.12	0.62	1.13	1.5	1.68	2.45	980	460	608	40	0	0	0	0
1145	1	86404	1.36	2.33	0.63	3.3	96.7	0.71	0.96	4.25	5.99	9.02	32916	33304	6368	5768	7504	484	48	12
1145	5	15184	2.46	2.5	1.26	3.46	21.3	0.92	5.76	5.97	6.11	6.63	3616	4468	1512	836	4724	24	4	0
1145	9	26988	0.2	0.1	0.18	1.69	0.69	0.17	0.26	0.36	0.41	0.53	26664	324	0	0	0	0	0	0
1145	13	42172	1.02	1.85	0.36	3.55	21.3	0.26	0.61	5.71	5.92	6.19	30280	4792	1512	836	4724	24	4	0
1145	129	44232	1.69	2.67	1.06	2.3	96.7	0.77	1.22	3.7	6.91	11.5	2636	28512	4856	4932	2780	460	44	12
1155	1	86404	0.35	0.44	0.27	1.79	11.1	0.24	0.34	0.47	1.09	1.8	78068	2452	5232	524	116	12	0	0
1155	5	53160	0.42	0.52	0.33	1.76	11.9	0.31	0.38	0.94	1.12	2.03	46416	1716	4464	436	116	12	0	0
1155	9	27748	0.18	0.05	0.18	1.26	0.52	0.16	0.21	0.25	0.31	0.33	27744	4	0	0	0	0	0	0
1155	13	80908	0.34	0.44	0.27	1.75	11.1	0.25	0.34	0.43	1.09	1.77	74160	1720	4464	436	116	12	0	0
1155	17	3696	0.21	0.07	0.2	1.28	0.76	0.19	0.23	0.26	0.33	0.63	3648	48	0	0	0	0	0	0
1155	65	1596	1.1	0.5	0.98	1.73	4.43	1.02	1.22	1.74	2.06	3.06	104	636	768	88	0	0	0	0
1155	129	204	0.32	0.27	0.25	1.99	0.86	0.17	0.37	0.82	0.84	0.86	156	48	0	0	0	0	0	0
1180	1	86512	1.54	8.01	1.15	1.67	475	1.17	1.59	2.01	2.28	3.03	4080	25304	48148	8556	224	52	20	128
1180	5	23056	1.76	0.84	1.68	1.34	36.1	1.69	1.97	2.25	2.48	3.87	48	580	17248	5048	116	8	8	0
1180	9	29544	1.05	0.46	0.97	1.5	2.7	0.94	1.24	1.73	2.13	2.49	1108	15556	11128	1752	0	0	0	0
1180	13	52600	1.36	0.74	1.23	1.57	36.1	1.29	1.75	2.11	2.31	2.76	1156	16136	28376	6800	116	8	8	0
1180	17	31008	1.91	13.3	1.09	1.7	475	1.14	1.3	1.71	2.1	3.9	1344	8304	19484	1616	80	40	12	128
1180	65	2184	0.89	1.05	0.65	2.02	12.7	0.54	0.9	1.87	2.6	5.57	996	728	288	140	28	4	0	0
1180	129	720	0.37	0.2	0.33	1.6	0.83	0.31	0.35	0.74	0.77	0.82	584	136	0	0	0	0	0	0
1193	1	86404	0.29	0.63	0.19	2.87	34.1	0.11	0.42	0.72	0.89	1.52	68760	14896	2256	340	108	24	20	0
1193	5	18280	0.31	0.42	0.2	2.59	13.2	0.17	0.46	0.67	0.82	1.48	14276	3448	468	72	12	4	0	0
1193	9	31980	0.19	0.31	0.12	2.5	15	0.07	0.21	0.54	0.64	0.83	28192	3584	144	44	12	4	0	0
1193	13	50260	0.23	0.36	0.15	2.61	15	0.1	0.35	0.59	0.71	1.25	42468	7032	612	116	24	8	0	0
1193	17	26940	0.42	0.99	0.34	2.91	34.1	0.33	0.64	0.91	1.04	2.21	18432	6816	1380	196	80	16	20	0
1193	65	9204	0.23	0.36	0.26	2.45	7.65	0.11	0.39	0.55	0.7	1.24	7860	1048	264	28	4	0	0	0
1196	1	86404	1.07	1.13	0.7	2.45	23.4	0.42	1.75	2.27	2.8	5.41	50688	2200	19376	12924	1152	60	4	0
1196	5	22864	0.39	0.12	0.38	1.28	2.18	0.38	0.42	0.47	0.52	0.89	21376	1308	172	8	0	0	0	0
1196	9	29040	0.34	0.07	0.34	1.24	1.6	0.35	0.39	0.43	0.44	0.47	28928	108	4	0	0	0	0	0
1196	13	51904	0.36	0.1	0.35	1.27	2.18	0.37	0.42	0.44	0.47	0.64	50304	1416	176	8	0	0	0	0
1196	17	31200	2.17	1.08	1.98	1.53	16.9	1.92	2.28	3.21	4.59	6.56	276	536	17036	12220	1084	48	0	0
1196	129	3300	1.85	1.57	1.55	1.75	23.4	1.56	1.88	3	4	8.52	108	248	2164	696	68	12	4	0
1207	1	86400	0.91	1.23	0.7	1.82	8.97	0.62	1.03	1.21	1.34	8.77	29044	33464	21708	248	1936	0	0	0
1207	5	14400	1.91	2.7	1.11	2.37	8.97	0.9	1.07	8.65	8.79	8.89	1692	8100	2560	112	1936	0	0	0
1207	9	27000	1.09	0.16	1.07	1.17	1.97	1.07	1.19	1.3	1.36	1.47	0	8028	18972	0	0	0	0	0
1207	13	41400	1.37	1.65	1.09	1.69	8.97	1.04	1.18	1.34	1.93	8.86	1692	16128	21532	112	1936	0	0	0
1207	17	44100	0.48	0.19	0.46	1.34	4.95	0.47	0.56	0.62	0.68	0.94	26968	16820	176	136	0	0	0	0
1207	129	900	0.53	0.07	0.53	1.14	0.67	0.54	0.59	0.62	0.63	0.66	384	516	0	0	0	0	0	0
1220	1	85540	0.72	0.89	0.59	1.93	96.4	0.68	0.79	1.09	1.43	2.82	22760	51832	9364	1436	108	28	8	4
1220	5	60068	0.76	0.31	0.71	1.44	4.69	0.7	0.8	1.06	1.34	1.75	7472	45084	7120	392	0	0	0	0
1220	13	60068	0.76	0.31	0.71	1.44	4.69	0.7	0.8	1.06	1.34	1.75	7472	45084	7120	392	0	0	0	0
1220	17	6180	0.83	2.85	0.54	1.92	96.4	0.5	0.67	1.07	1.67	9.08	3076	2356	560	92	60	24	8	4
1220	65	6212	0.8	0.87	0.57	2.23	13.5	0.58	0.89	1.53	2.31	4.25	2680	2220	952	320	36	4	0	0
1220	129	13080	0.49	0.68	0.28	2.74	6.66	0.23	0.57	1.02	1.93	3.77	9532	2172	732	632	12	0	0	0
1237	1	86404	0.28	0.53	0.19	1.94	19.1	0.19	0.23	0.44	0.6	2.55	79668	4020	1572	980	136	28	0	0
1237	5	29364	0.28	0.64	0.21	1.63	19.1	0.21	0.24	0.29	0.34	2.35	28332	324	352	300	28	28	0	0
1237	9	30724	0.14	0.05	0.13	1.49	0.97	0.12	0.17	0.21	0.22	0.25	30708	16	0	0	0	0	0	0
1237	13	60088	0.2	0.46	0.16	1.68	19.1	0.17	0.21	0.25	0.29	1.21	59040	340	352	300	28	28	0	0
1237	17	10860	0.35	0.51	0.26	1.86	7.1	0.21	0.25	0.69	1.28	2.15	9488	524	696	120	32	0	0	0
1237	65	8196	0.58	0.95	0.3	2.82	9.18	0.21	0.54	1.28	2.86	4.79	5880	1284	396	560	76	0	0	0
1237	129	7260	0.4	0.2	0.35	1.76	1.69	0.44	0.5	0.54	0.78	1.05	5260	1872	128	0	0	0	0	0
1249	1	86404	1.48	1.81	0.83	3.15	35.9	0.68	2.2	3.37	3.51	10.2	24108	29528	6672	23808	624	1660	4	0
1249	5	14404	0.88	0.8	0.69	1.94	7.37	0.64	0.84	1.52	3.45	3.53	2308	10212	724	1156	4	0	0	0
1249	9	22500	2.75	0.59	2.69	1.25	5.65	2.42	3.34	3.47	3.51	3.56	12	0	2036	20448	4	0	0	0
1249	13	36904	2.02	1.14	1.58	2.23	7.37	2.18	3.19	3.47	3.51	3.54	2320	10212	2760	21604	8	0	0	0
1249	17	18000	0.63	0.66	0.5	1.81	8.46	0.52	0.62	0.82	1.62	3.9	8584	8116	516	736	48	0	0	0
1249	65	30600	1.34	2.58	0.51	3.86	35.9	0.55	0.84	2.19	10.04	10.5	12948	11148	2876	1396	568	1660	4	0
1249	129	900	1.01	0.69	0.77	2.25	3.92	1.06	1.14	1.7	2.39	3.4	256	52	520	72	0	0	0	0
1256	1	84600	1.25	24.5	0.29	2.16	931	0.23	0.46	0.85	1.02	1.89	65340	14728	3748	648	8	0	0	128
1256	5	43920	2.15	34.0	0.37	2.22	931	0.31	0.57	0.94	1.12	2.35	30600	9892	2872	420	8	0	0	128
1256	9	32400	0.2	0.22	0.18	1.54	4.29	0.16	0.21	0.21	0.25	1.02	31120	852	352	76	0	0	0	0
1256	13	76320	1.32	25.8	0.27	2.14	931	0.21	0.4	0.85	1	1.73	61720	10744	3224	496	8	0	0	128
1256	17	12600	6.4	63.3	0.46	2.76	931	0.41	0.77	0.91	1.06	89.4	6776	4928	648	116	4	0	0	128
1256	129	2880	0.63	0.46	0.54	1.72	3.48	0.5	0.65	1.07	1.36	3.17	1488	1056	256	80	0	0	0	0
1543	1	86404	0.48	0.43	0.42	1.59	16.9	0.43	0.58	0.63	0.8	3.19	54488	30180	788	872	56	20	0	0
1543	9	30876	0.57	0.11	0.55	1.24	1.77	0.59	0.62	0.64	0.82	0.87	7960	22912	4	0	0	0	0	0

Partic ID #	Act code	Time (s)	Ave (mG)	StDev (mG)	Geom Mean	Geom StDev	Max (mG)	L50 (mG)	L75 (mG)	L90 (mG)	L95 (mG)	L99 (mG)	<.5 mG (s)	.5 - 1 (s)	1-2 (s)	2-5 (s)	5-10 (s)	10-20 (s)	20-50 (s)	>50 (s)
1543	13	30876	0.57	0.11	0.55	1.24	1.77	0.59	0.62	0.64	0.82	0.87	7960	22912	4	0	0	0	0	0
1543	17	19656	0.43	0.58	0.35	1.7	14.0	0.33	0.48	0.61	0.9	1.8	15292	3804	372	124	48	16	0	0
1543	129	35872	0.44	0.49	0.37	1.61	16.9	0.35	0.44	0.52	0.75	3.34	31236	3464	412	748	8	4	0	0
2144	1	86404	0.69	1.31	0.43	2.16	33.9	0.37	0.57	0.86	2.23	6.17	49608	28888	3068	2868	1688	256	28	0
2144	5	49504	0.37	0.54	0.31	1.62	20.0	0.29	0.37	0.52	0.64	2.01	44068	4108	820	404	68	32	4	0
2144	9	22212	0.58	0.05	0.58	1.13	0.7	0.57	0.61	0.62	0.63	0.65	200	22012	0	0	0	0	0	0
2144	13	71716	0.43	0.46	0.37	1.65	20.0	0.36	0.57	0.62	0.63	1.68	44268	26120	820	404	68	32	4	0
2144	129	14688	1.94	2.68	0.88	3.6	33.9	0.81	2.46	5.29	6.64	11.6	5340	2768	2248	2464	1620	224	24	0
2145	1	86404	2.9	2.34	1.62	3.58	24.1	3.35	4.72	5.35	5.89	9.6	23788	9564	4608	32964	14820	656	4	0
2145	5	11524	4.3	2.04	3.87	1.62	13.3	4.04	4.9	6.1	9.52	10.5	0	276	484	8052	2300	412	0	0
2145	9	26916	4.73	0.5	4.71	1.11	9.96	4.72	5.12	5.4	5.54	5.79	0	0	0	18376	8540	0	0	0
2145	13	38440	4.61	1.21	4.44	1.34	13.3	4.58	5.09	5.44	5.67	10.1	0	276	484	26428	10840	412	0	0
2145	17	31556	0.62	0.89	0.42	2.13	24.1	0.35	0.79	0.97	1.65	4.57	21068	7520	1732	1092	100	40	4	0
2145	65	16408	3.32	2.63	2.04	3.18	18.3	3.19	4.98	7.25	8.13	10.1	2720	1768	2392	5444	3880	204	0	0

Table A-2 contains the personal data of the participants derived from the initial telephone interview with the recruiter and from the answers to the "respondent questionnaire", shown in Appendix B (Document # 6).

The first column contains the participant identification number.

The second column describes the sex (male or female) of the participant.

The third column shows the state of the participant.

The fourth column describes the occupation of the participant.

The fifth column contains the code of the work location. The codes have the following meaning:

1 = Office
2 = Grocery store or supermarket
3 = Other store
4 = Health care facility
5 = Electric power plant
6 = Factory
7 = Farm
8 = Restaurant
9 = School
10 = Light industry
-9 = Other
0 = No answer

The fifth column contains the code for the type of residence. The codes have the following meaning:

1 = Single family home
2 = Duplex
3 = Low-rise apartment or condominium (4 floors or less)
4 = Hi-rise apartments or condominium (5 floors or less)
5 = Mobile home
6 = Other
0 = No answer

The sixth column contains the code for the floor where the bedroom is located. The codes have the following meaning:

1 = Basement
2 = First floor
3 = Second floor
4 = Third floor
-9 = Other
0 = No answer

The seventh column contains the code for the size of the home. The codes have the following meaning:

1 = Less than 1000 square feet
2 = Between 1000 and 2000 square feet
3 = More than 2000 square feet
0 = No answer

The eight column contains the code for the type of water supply pipes. The codes have the following meaning:

1 = Metal
2 = Plastic
0 = Unknown

The ninth column contains answer to the question whether any power line is visible within 150 feet from the residence.

1 = yes
2 = no
0 = no answer

The tenth column contains the code for the distance between the power line and the residence. The codes have the following meaning:

1 = Less than 25 feet
2 = Between 25 and 50 feet
3 = More than 50 feet
0 = No answer

The last column contains the code for the type of power line. The codes have the following meaning:

1 = Overhead single-phase distribution primary
2 = Overhead two-phase distribution primary
3 = Overhead three-phase distribution primary
4 = Two overhead three-phase distribution primaries
5 = Overhead transmission line, vertical configuration
6 = Overhead transmission line, triangular configuration
7 = Overhead transmission line, horizontal configuration
8 = Overhead transmission line, double circuit configuration
0 = No answer

Table A-2 Participants Personal Data

Subject ID	Sex (M/F)	State	Q1 Occupation	Q2 Work Location	Q3 Residence	Q4 Bedroom Floor	Q5 Home Size	Q6 Pipe type	Q8 Power Line Visible	Q9a Distance	Q9b Power Line Type
P0002	F	PA	Teacher's Aid	9	2	3	2	12	1	1	1
P0005	F	NM	Teacher	9	1	3	3	1	2	0	0
P0007	M	AL	Staff Analyst	1	1	2	3	1	2	0	0
P0009	M	IN	Training in classroom to be a bus driver	-9	1	3	2	1	2	0	0
P0011	M	WA	Mechanical Insulator (construction)	-9	1	4	2	1	2	0	0
P0012	F	CO	Computer builder	6	1	3	2	1	1	2	2
P0014	M	IN	Hotel General Manager/On disability	9	1	2	2	2	2	0	0
P0019	M	PA	U.S. Social Security Representative	1	1	3	3	1	1	2	7
P0023	F	CO	Flight Attendant	9	3	4	2	2	2	0	0
P0025	M	WI	Auto Repair	9	1	2	1	1	1	1	3
P0026	M	NC		-9	1	2	1	1	1	2	2
P0027	M	DC	Account Coordinator	1	1	3	3	1	1	1	
P0032	M	AI	Counter Top Fabrication	10	1	2	2	1	1	2	1
P0035	F	IL	Bartender/Typesetter at home	9	3	1	1	1	2	0	0
P0044	M	OK	Painter	9	1	2	2	2	1	1	2
P0047	M	CO	Farm Labor	7	5	2	1	2	1	1	1
P0048	F	IL		10	5	2	1	1	2	0	0
P0049	M	CO	Retired employee--Part time self Employee	0	4	3	1	1	1	2	3
P0061	M	NY	Electrician	9	1	3	2	1	1	2	1
P0062	M	WI	Retired	0	1	2	2	1	1	2	1
P0063	F	GA	Homemaker	0	5	2	2	2	1	0	3
P0067	F	MO	Part time at child care center	-9	1	2	2	1	1	2	1
P0068	M	MA	Purchasing Manager	1	1	3	3	2	0	0	0
P0069	F	FL									
P0070	M	WI	Carpenter	9	1	2	2	1	1	3	3
P0073	M	NY	Pipe fitter (unemployed)	6	1	2	2	1	1	2	1
P0075	F	TX	Homemaker	9	1	3	3	1	2	0	0
P0076	M	IN	Retired	0	1	2	2	3	1	2	1
P0080	F	NC	Home maker-Mom at home	-9	1	3	3	2	2	0	0
P0081	M	NE	Truck Driver	9	1	2	1	1	1	1	2
P0085	F	FL	Quality Assurance Technician	1	1	3	3	1	1	3	1
P0092	M	MN	Assembler	6	5	2	1	0	2	0	0
P0097	M	CO	School Bus Mechanic	-9	5	2	2	2	2	0	0
P0105	M	SD	Carpentry-Maintenance	9	1	2	1	2	1	3	2
P0109	M	TN	Design Engineer	1	1	2	3	1	1	3	2
P0119	F	PA	Book editor for a University	1	1	3	2	1	1	3	1
P0121	F	CO	Student	9	2	2	2	1	1	3	5
P0130	F	FL	Accounting Associate	1	1	2	2	2	2	0	0
P0132	F	FL	Retired	0	1	2	2	2	1	2	1
P0135	M	FL	Youth Pastor	1	1	2	1	1	1	3	5
P0136	M	WA	Retired	-9	1	3	5	1	2	0	0
P0139	M	IN	Retired	-9	1	2	2	1	1	1	3

Subject ID	Sex (M/F)	State	Q1 Occupation	Q2 Work Location	Q3 Residence	Q4 Bedroom Floor	Q5 Home Size	Q6 Pipe type	Q8 Power Line Visible	Q9a Distance	Q9b Power Line Type
P0149	F	FL	Actress - currently unemployed	-9	3	3	1	1	1	3	5
P0152	M	CA	Construction Project Manger	-9	1	3	2	1	2	0	0
P0177	M	TN	Retired Coal Miner	-9	1	2	2	1	1	2	6
P0178	F	OH	Nursed	4	1	2	1	1	1	3	3
P0180	M	WI	Sales Man	1	1	2	3	1	1	3	4
P0184	F	PA	None	9	0	3	0	2	1	2	4
P0185	M	IL	Car wash mini mart	9	2	2	3	1	1	3	1
P0187	F	FL	Mental Health Professional	9	1	2	2	1	1	3	5
P0193	M	IA	Teacher Educator	9	1	2	2	1	2	0	0
P0196	M	VA	College Professor	1	1	3	2	1	2	0	0
P0199	M	NM									
P0213	M	MI	Business Owner	1	1	3	3	1	2	3	8
P0218	M	AZ	Mechanic	9	1	4	2	1	2	0	0
P0227	F	DE	Financial Advisor in a Bank	1	9	2	2	1	2	0	0
P0242	M	MN	Captain on research ship	9	1	2	3	1	1	3	4
P0244	M	FL	Autograph Dealer - Home Office	9	1	2	2	2	2	0	0
P0246	M	WI	Construction Supervisor	9	1	2	3	2	2	0	0
P0254	F	MD	Laundry Worker	9	1	2	2	1	1	2	3
P0259	M	WI	Food Service Transportation	8	1	3	2	1	1	3	1
P0288	F	CA	Instructional Assistant	9	1	2	2	1	1	1	6
P0302	F	TX	Attorney	1	1	3	3	1	1	1	4
P0313	F	WI	Retired	10	10	3	3	1	1	1	3
P0331	M	IL	Sales Person	1	1	3	3	2	1	3	1
P0366	M	FL	Warehouse manager	9	1	2	2	2	1	1	1
P0371	F	WA	Animal Care in a Veterinary Clinic	1	1	3	2	1	10	2	3
P0372	F	GA	Engineer	1	1	2	2	0	1	3	1
P0378	M	FL	Banker	1	1	2	1	1	1	1	2
P0384	F	MI	Mail Room Clerk	9	3	2	1	1	1	3	3
P0388	F	OK	Laid off last year	-9	1	2	2	1	1	3	2
P0389	F	MA	Technical Editor	1	1	3	2	1	1	2	1
P0393	M	NY	Retired	-9	1	3	2	1	1	3	3
P0394	M	KY	Retired	-9	1	2	2	1	1	3	3
P0400	M	AL	Helicopter Instructor Pilot U.S. Army aca.	-9	1	2	2	2	1	3	1
P0402	M	GA	Farm Operator	7	1	1	3	1	1	3	4
P0407	M	TX	Human Resources Manager	1	1	2	3	2	1	3	3
P0415	M	MA	Physician	4	1	3	2	1	1	1	1
P0416	F	NY	Student Photography / Household	-9	4	3	1	1	2	0	0
P0418	M	WA	Electrician	9	1	2	2	1	2		2
P0420	M	TN	Computer Operator	9	1	2	2	1	1	2	3
P0421	F	CA	Scientist	10	3	2	1	2	1	3	5
P0423	M	FL		0	0	0	0	0	0	0	0
P0431	F	WI	Retired R. N. / Voluntary in a church	-9	1	2	2	1	1	2	1
P0438	F	NC	Advertising Account Executive	1	1	2	2	2	2	0	0

Subject ID	Sex (M/F)	State	Q1 Occupation	Q2 Work Location	Q3 Residence	Q4 Bedroom Floor	Q5 Home Size	Q6 Pipe type	Q8 Power Line Visible	Q9a Distance	Q9b Power Line Type
P0440	F	UT	Office Staff	1	1	1	2	1	1	2	4
P0441	M	VA	Part time music teacher	9	1	3	2	1	1	3	3
P0443	F	GA	Retired	9	1	2	3	1	1	3	6
P0448	F	IN	Clerical Worker	1	1	3	3	1	1	3	1
P0451	F	KS	Nurse	14	1	2	2	1	2	3	3
P0462	M	MO	Equipment Maintenance Repair	6	1	3	3	1	2	0	0
P0469	F	MN	Home maker	-9	9	2	1	1	1	1	1
P0471	F	MO	Upholsterer	-9	1	2	2	2	1	2	1
P0472	M	WV	Disabled	-9	1	2	2	1	1	1	1
P0474	F	OH	Night Time Cashier & Bagger Supervisor	2	1	2	2	1	1	3	3
P0475	F	CA	Cashier	2	1	2	1	1	1	1	2
P0494	M	ND	Farm	7	5	2	1	1	1	1	1
P0496	F	WA	Homemaker	-9	1	2	1	2	1	1	5
P0497	M	NM	Sales person	-9	2	2	2	1	2	0	0
P0510	M	AL	Screen Printer	10	1	2	2	1	1	1	1
P0514	M	VA	Retired	-9	1	2	3	12	1	1	1
P0517	F	IA	Homemaker	-9	1	2	2	1	1	1	2
P0549	M	CA	Counselor	-9	3	4	2	2	1	3	4
P0551	M	NJ	Auto Parts Sales	-9	1	2	2	1	2	0	0
P0559	F	MO	Telemarketer / Salesperson	3	2	3	2	1	1	2	6
P0561	F	CA	Sales Person	-9	1	3	2	1	1	1	5
P0569	M	TX	Teacher	9	1	2	2	1	1	2	1
P0578	M	MD	Computer Programmer	1	1	3	3	1	2	0	3
P0584	M	OH	Stamper (tire molds)	6	9	2	1	1	1	1	4
P0586	M	OK	Carpenter	-9	1	2	3	2	1	1	1
P0591	F	MA		-9	3	3	3	1	2	1	0
P0595	F	CA	House Keeping Residential	-9	1	2	2	1	1	2	4
P0614	F	MO	Student	9	1	2	2	1	1	3	8
P0627	M	AL	Apprentice air conditioning & refrigeration	6	1	2	2	1	1	1	1
P0643	M	WI	Executive	1	1	3	3	1	2	0	0
P0644	M	SC	Electric Tech	9	1	2	2	2	2	0	0
P0647	M	ID	Truck Driver	-9	1	2	2	2	1	3	7
P0652	F	IA	Homemaker	-9	1	2	3	1	2	0	3
P0659	M	LA	Manager (finance business)	1	1	2	2	2	1	3	3
P0668	F	CA	Volunteer Worker 2 days a week	0	1	3	3	1	2	0	3
P0669	M	CA	Farmer	7	1	2	2	1	1	3	2
P0682	M	IL	Chemist	-9	1	3	2	2	1	2	4
P0684	M	IN	Carpenter	-9	1	3	2	1	1	2	1
P0693	M	WI	School Principal	9	2	2	2	2	2	0	0
P0697	M	OH	Home Maker	-9	1	3	2	1	1	3	1
P0701	M	IN	Warehouse	-9	3	2	1	1	1	1	3
P0707	M	AL	Disabled Worker	-9	1	2	2	1	1	2	1
P0710	F	TN	City Administrator	0	5	2	2	2	1	2	3
P0716	M	OH	Computer aided design drafter	1	3	2	2	1	1	3	1
P0723	F	NH	Unemployed	0	1	2	2	1	1	3	8
P0732	F	IA	Repair person	6	1	2	2	1	1	3	2

Subject ID	Sex (M/F)	State	Q1 Occupation	Q2 Work Location	Q3 Residence	Q4 Bedroom Floor	Q5 Home Size	Q6 Pipe type	Q8 Power Line Visible	Q9a Distance	Q9b Power Line Type
P0735	F	CA	Office Manager	-9	3	3	2	2	2	0	0
P0740	M	SC	Electronic telephone specialist	0	1	2	2	2	2	0	0
P0745	M	NE	Rancher	7	1	2	3	1	1	2	1
P0746	M	LA									
P0762	M	SD	Retired	0	1	2	2	1	1	3	1
P0764	M	NY	Salesperson	-9	1	3	2	1	2	0	0
P0766	M	MN	Auto Mechanic	-9	1	2	2	1	1	2	0
P0768	M	UT	Sales	0	1	3	3	1	2	0	0
P0773	M	FL	Radiological Technologist	4	1	2	2	1	1	2	1
P0774	F	TX	Deputy Director for a non-profit organization	-9	1	2	2	1	2	3	0
P0784	M	NE	Truck Driver-Part Time	-9	1	2	1	2	1	2	1
P0793	M	LA									
P0795	M	WI	Warehouse Supervisor	0	1	3	2	1	2	0	0
P0796	F	AL	Investigative Assistant	1	1	2	2	1	1	3	1
P0798	M	FL	Pastor	1	1	2	2	1	1	2	1
P0803	M	PA		0	0	0	0	0	0	0	0
P0807	F	VA	Retired Teacher	-9	1	2	2	1	2	1	0
P0811	F	IL	Retired (teacher)	-9	1	2	1	1	1	3	6
P0818	M	NY	Quality Engineering Manager	1	1	2	2	1	2	0	4
P0825	M	IN	Health Care Center Administrator	4	1	2	2	1	2	0	0
P0828	F	AZ	Insurance	1	1	2	2	1	2	0	0
P0835	M	WI	Finance Analyst	1	3	2	1	0	1	3	2
P0837	F	IN	Waitress - part time	8	1	2	2	12	1	3	3
P0840	M	ME	Truck Driver - out of work Back injury 3yrs	0	9	2	2	1	1	2	1
P0849	F	DE	Teacher	9	1	2	1	1	1	2	3
P0855	F	AR	Word Processor for a bank	1	1	2	2	1	1	3	1
P0857	M	NJ	Chef	8	1	2	1	1	1	2	1
P0858	F	CA	Family Nurse Practitioner	1	1	3	3	1	1	1	2
P0871	M	OH	House Painter	-9	1	2	2	1	1	2	1
P0873	M	IA	Retired	0	5	2	2	2	2	0	6
P0890	F	FL	Retired	9	3	4	2	1	1	3	4
P0894	F	CO	Teacher	9	1	3	3	2	2	0	0
P0895	F	CO	Clean Homes	9	1	3	2	1	1	1	1
P0898	M	OH	Asst. Superintendent Greens Keeper	-9	1	3	2	1	1	2	1
P0902	F	TN	Sec./ Salesperson	1	1	2	2	0	1	2	2
P0906	F	IA	House Wife	2	1	2	1	1	1	3	1
P0908	M	MI	Vice President	9	1	3	3	2	2	0	0
P0914	F	CA	Applications Engineer	9	9	2	3		1	1	23
P0920	M	CA	Small Business Owner	9	9	3	1	1	1	3	3
P0943	F	WI	housewife	9	1	2	2	1	1	2	3
P0949	M	NJ	Engineer (out of work)	9	2	3	2	1	1	2	3
P0950	F	TX	Accessory Specialist	9	5	2	2	2	1	3	1
P0953	F	IN	Medical transcriptionist	1	1	2	2	1	1	2	1
P0959	M	TX	Inventory Materials Manager	16	11	3	3	1	1	1	7
P1008	F	AR	Secretary	4	1	2	2	1	1	2	2

Subject ID	Sex (M/F)	State	Q1 Occupation	Q2 Work Location	Q3 Residence	Q4 Bedroom Floor	Q5 Home Size	Q6 Pipe type	Q8 Power Line Visible	Q9a Distance	Q9b Power Line Type
P1009	M	ND	Civil Engineer - Mostly retired	1	1	2	2	1	1	2	1
P1014	M	OH									
P1017	M	LA	Government Investigator	1	1	2	2	1	1	3	8
P1018	F	WA	Receptionist/secretary	1	1	2	3	1	2	2	0
P1019	M	PA	Student	9	2	2	2	1	1	1	3
P1025	M	PA	Mechanical engineer	1	1	3	2	1	2	0	0
P1048	F	TN	Home Maker	-9	1	2	2	2	2	0	0
P1055	F	SD	Retired	0	1	23	2	1	1	2	4
P1072	M	OR	None	-1	-9	-9	1	2	1	2	1
P1078	F	WI	Housewife	-9	1	2	2	1	1	2	4
P1113	M	IL	Retired/Volunteer	-9	4	-9	1	1	1	3	4
P1125	M	OR	Retired Sawmill Worker	0	1	2	2	10	1	2	2
P1129	M	TX	Engineer	1	1	2	3	1	1	1	1
P1143	F	CO	Housewife	-9	1	1	3	1	2	0	0
P1145	F	IL	Administrative Supervisor	1	1	2	2	1	1	3	3
P1155	M	CA									
P1180	F	OR	Motor Winder - Electrical Motors	0	1	2	2	12	1	123	34578
P1193	F	NY	Asst. Professor of Clinical Laboratory Science	4	1	3	3	1	1	3	2
P1196	F	TN	Service Advisor	1	1	2	2	1	1	2	1
P1207	F	PA	Nurse Anesthetist	4	3	3	1	1	1	1	1
P1220	M	IL	Insurance Sales	1	1	2	2	3	1	2	1
P1237	M	CA	Teacher Theater Arts	9	1	3	2	1	2	0	0
P1249	M	IL	Carpenter	9	1	2	3	2	1	2	3
P1256	M	WI	Farmer - Dairy - grain	7	1	3	3	2	1	2	2
P1543	M	ME	Machine Operator	6	1	2	2	2	1	2	2
P2144	F	ID	Graphic Artist	-9	1	2	2	1	1	2	3
P2145	F	WA	Nurse	4	3	2	2	2	2	3	4

APPENDIX B

LETTERS AND FORMS USED FOR THE MAGNETIC FIELD EXPOSURE MEASUREMENTS

200-Person Sample

This Appendix contains the following documents:

Convenience Sample

This Appendix contains the following documents:

Document #1 200-People Sample

Dear Friend:

Westat Incorporated, an environmental research firm located in Rockville, Maryland, is working in cooperation with the U.S. Department of Energy and Enertech Consultants of Campbell, California to conduct an important study of people's exposure to magnetic fields.

You may have the opportunity to be part of this study in the near future. One of our interviewers will be calling you soon to ask a few general questions about your household. Based on the answers to the interviewer's questions, you or another member of your household may be invited to take part in this study. If you are selected, the interviewer will explain the study in detail and answer any questions you may have. You will receive a payment of $50 for your participation.

While cooperation is voluntary, we hope you will agree to participate if selected. Being chosen for our study means that you are part of a scientifically selected sample. Your participation is important for the study to produce useful information. The information you provide will contribute greatly to scientists' understanding of people's exposure to magnetic fields.

Please feel free to call me at 1-800-937-8281 if you have any questions or wish to verify the survey. Thank you in advance for your cooperation.

Sincerely,

Karen Della Torre
Senior Researcher
Westat, Inc.

SURVEY OF PERSONAL MAGNETIC FIELD EXPOSURE

DESCRIPTIVE QUESTIONNAIRE

HOUSEHOLD SCREENER and RESPONDENT SELECTION

[Place Label Here]

A1. **Hello, my name is {INTERVIEWER'S NAME} and I'm calling from Westat, Inc. on behalf of the Department of Energy. Have I reached {PHONE NUMBER}?**

YES	1	
NO	2	→ THANK PERSON & HANG UP
REFUSAL	7	
DON'T KNOW	8	

A2. **Are you a full-time resident of the household who is at least 18 years old?**

{FULL-TIME RESIDENT RESIDES IN HH OVER HALF THE YEAR; NOT A VISITOR, BABYSITTER, ETC.}

YES	1	→ CONTINUE
NO, WILL GET ADULT	2	→ GO TO RESTART
REFUSAL	7	
DON'T KNOW	8	

Westat is working on a study sponsored by the Department of Energy to measure daily exposure to electromagnetic fields, which come from power lines and electrical equipment. We recently sent you a letter to introduce you to the study. As the letter said, your participation is voluntary and you will be paid for your time. I would like to ask a few questions to determine if your household is eligible for the study. GO TO A3.

RESTART

Hello, my name is {INTERVIEWER'S NAME} and I'm calling from Westat, Inc. on behalf of the Department of Energy. Westat is working on a study sponsored by the Department of Energy to measure daily exposure to magnetic fields, which come from power lines and electrical equipment. We recently sent you a letter to introduce you to the study. As the letter said, your participation is voluntary and you will be paid for your time. I would like to ask a few questions to determine if your household is eligible for the study.

A3. **Is this phone for:**

Home use	1	
Business and home use or	2	
Business use only?	3	→ GO TO THANK YOU 2

REFUSAL AVOIDANCE/REFUSAL CONVERSION

While cooperation is voluntary, we hope your household will agree to participate if selected. Being chosen for our survey means that you are part of a nationally selected sample. The information you provide will contribute greatly to our nation's understanding of people's exposure to magnetic fields. If it is OK, I'd like to finish the questions to see if you qualify for the study.

If you would like to verify the legitimacy of the study and speak with the project director, please call Karen Della Torre at Westat at (800) 937-8281. What would be a good time to call you back? (SUGGEST SAME TIME TOMORROW NIGHT)

A4. Is your address: {household address including city, state, and ZIP}

CORRECT	1
CHANGES NOTED BELOW	2
REFUSED	7
DON' KNOW	8

CORRECT ADDRESS:_____

Street/RFD Apt. #

_____

City State ZIP Code

A5. Is this property a primary residence or is it a vacation home or second home where you live less than half the year?

PRIMARY RESIDENCE	1	
VACATION/2ND HOME	2	→ GO TO THANK 3
REFUSAL	7	
DON'T KNOW	8	

A6. The purpose of the study is to gather information about daily exposure to magnetic fields. We will be asking a member of your household to wear a monitoring device for a 24-hour period and complete a short questionnaire. The device is about the size and weight of a small pocket calculator or "Walkman." This person will receive a payment of 50 dollars for their participation.

A7. **To begin, I need to list the persons in your household who are 18 years or older so we can select one person to participate. Starting with yourself, would you please give me just the first name, birth date, and gender of each member of the household that is 18 or older. [ENTER SOME UNIQUE IDENTIFIER, I.E., OLDEST SON, IF NAMES ARE REFUSED...INDICATE SCREENER RESPONDENT WITH X AT BEGINNING OF LINE]**

ROSTER #	FNAME	BIRTH DATE	GENDER	FT RESIDENT	SELECTED?
1					
2					
3					
4					
5					
6					
7					
8					

CODES FOR "SELECTED?" COLUMN
S/A = SELECTED & AGREED TO PARTICIPATE
S/R = SELECTED BUT REFUSED
S/M =SELECTED BUT PLANS ON MOVING
IN = INELIGIBLE

A8. **I have recorded ____ member(s) of the household who are 18 years or older. Is there anyone else living here now such as friends, roomers, or other people we might have overlooked? (IF SO ADD THEM TO ROSTER.)**

ASK QUESTION A9 FOR EACH LISTED INDIVIDUAL.

A9. **Are/is {you/FNAME} a full-time resident of this household, that is a person who lives in the residence year round except for short periods of time?**

YES	CONTINUE
NO	IN THE "SELECTED" COLUMN, RECORD 'IN' FOR THAT HOUSEHOLD MEMBER

**** SELECT RESPONDENT ****

NOTE: IF THE RESPONDENT CHOSEN IS AWAY FROM HOME FOR PERIODS OF TIME
(i.e. STUDENT, MEMBER OF ARMED FORCES), CHOOSE THE NEXT ELIGIBLE RESPONDENT.

A10.

a. ROSTER LINE NUMBER OF THE SELECTED PARTICIPANT?

b. FULL NAME OF PARTICIPANT: _____

IF RESPONDENT IS SELECTED, ENTER APPROPRIATE CODE ABOVE AND CONTINUE WITH A11 AND CLOSING. IF OTHER PERSON IS SELECTED, ASK TO SPEAK WITH HIM OR HER, EXPLAIN THE STUDY USING THIS TEXT:

The purpose of the study is to gather information about daily exposure to magnetic fields. We will be asking you to wear a monitoring device for a 24-hour period and complete a short questionnaire. The device is about the size and weight of a small pocket calculator or "Walkman." You will receive a payment of 50 dollars for your participation.

IF A SELECTED RESPONDENT REFUSES, ENTER THE APPROPRIATE CODE IN THE "SELECTED?" COLUMN IN THE ROSTER. THEN DETERMINE THE NEXT SELECTED RESPONDENT AND ASK HIM OR HER TO PARTICIPATE.

IF ANY RESPONDENT REFUSES, EXPLAIN THE REASON FOR HIS/HER REFUSAL BELOW.

REASON FOR RESPONDENT REFUSAL:

ROSTER LINE # _____

_____

_____

_____

A11. **Are you planning on moving out of this household any time in the next 2 months?**

YES	1	→ GO TO THANK YOU 4
NO	2	
REFUSAL	7	
DON'T KNOW	8	

CLOSING

In a few days, you will be receiving a letter explaining the study and a consent form. When you get the form, please read it, sign it, and send it back to us so that we can send you the monitoring device. Thank you for your participation.

Document #3 200-People Sample

Date:
Address:

Survey of Personal Magnetic Field Exposure

Dear _____,

Thank you for agreeing to participate in the Survey of Personal Magnetic Field Exposure. This is an important study conducted for the U.S. Department of Energy.

Participation in this study is easy. We will mail you a small monitoring device, similar in size and weight to a portable "Walkman" tape player. The monitoring device is a "magnetic field personal exposure meter". You simply wear this meter for 24 hours. The magnetic fields measured by this meter are those that exist in your home or place of work as a result of the distribution and use of electric power. You can wear the meter on your waist or in a pocket as shown in the attached photos. You will also be asked to keep a simple diary indicating daily activities such as waking up, going to work, returning home, and going to bed. We will also be asking you to send the meter and the diary back to us, using a shipping box and a prepaid UPS shipping envelope.

You will receive $50.00 for your participation. After receiving the meter back from you, we will extract the magnetic field values recorded while you wore the meter and send you a summary of the results showing the average magnetic field to which you have been exposed in your home and outside your home. These data, without any personal identification, will be pooled with data from many other people to help a team of leading scientists learn about the magnetic fields that people are exposed to across America.

We want to be sure that you are well informed about the objective and the modality of the survey. For this purpose, we ask you to read, sign, and return to us the attached "Consent Form". Please use the attached self-addressed stamped envelope. As soon as we receive the signed Consent Form from you, we will mail you the meter for the exposure measurements, the diary, the instructions, and the $50.00 check.

If you have any question, please call our toll-free number 1-800-866-8144. We look forward to your joining in our research effort and we greatly appreciate your help.

Sincerely,

Luciano E. Zaffanella, PhD
Enertech Consultants

The Magnetic Field Exposure Meter used in the Study

The meter we are asking you to wear comes in a small carrying pouch and is small enough to be worn in a number of convenient ways:

On your waist...

shirt pocket... pants pocket...

Document #4 200-People Sample

Date:
Address:

Survey of Personal Magnetic Field Exposure

Dear _____,

Thank you for agreeing to participate in the Survey of Personal Magnetic Field Exposure. This is an important study conducted for the U.S. Department of Energy.

Participation in this study is easy. We will mail you a small monitoring device, similar in size and weight to a portable "Walkman" tape player. The monitoring device is a "magnetic field personal exposure meter". You simply wear this meter for 24 hours. The magnetic fields measured by this meter are those that exist in your home or place of work as a result of the distribution and use of electric power. You can wear the meter on your waist, or on the shoulder, or in a pocket, or in a purse that you keep near you at all times as shown in the attached photos. You will also be asked to keep a simple diary indicating daily activities such as waking up, going to work, returning home, and going to bed. We will also be asking you to send the meter and the diary back to us, using a shipping box and a prepaid UPS shipping envelope.

You will receive $50.00 for your participation. After receiving the meter back from you, we will extract the magnetic field values recorded while you wore the meter and send you a summary of the results showing the average magnetic field to which you have been exposed in your home and outside your home. These data, without any personal identification, will be pooled with data from many other people to help a team of leading scientists learn about the magnetic fields that people are exposed to across America.

We want to be sure that you are well informed about the objective and the modality of the survey. For this purpose, we ask you to read, sign, and return to us the attached "Consent Form". Please use the attached self-addressed stamped envelope. As soon as we receive the signed Consent Form from you, we will mail you the meter for the exposure measurements, the diary, the instructions, and the $50.00 check.

If you have any questions, please call our toll-free number 1-800-866-8144. We look forward to your joining in our research effort and we greatly appreciate your help.

Sincerely,

Luciano E. Zaffanella, PhD

Enertech Consultants

The Magnetic Field Exposure Meter used in the Study

The meter we are asking you to wear comes in a small carrying pouch and is small enough to be worn in a number of convenient ways:

In your purse...

pants pocket...

or jacket pocket

On your waist...

under your jacket...

or across your shoulder

Document #5 200-People Sample

CONSENT FORM

Project: Survey of Personal Magnetic Field Exposure

Principal Investigator: Luciano Zaffanella
Enertech Consultants
Lee, MA 01238
Phone (413) 243-2800

Co-Principal Investigator: Paul C. Gailey
Oak Ridge National Laboratory
Oak Ridge, Tennessee
Phone (615) 574-0419

Sponsor: U.S. Department of Energy, Oak Ridge National Laboratory

PURPOSE

The purpose of this study is to develop survey methodologies to characterize magnetic field exposures of the general population. A pilot study shall be performed to validate the survey methodologies.

PROCEDURES

As a participant in this study, you will be asked to wear a personal exposure magnetic field meter on your body for one day. The meter is similar in size and weight to a portable "Walkman" tape player. The meter collects and stores magnetic field measurements. You will be asked to keep a simple diary indicating daily activities such as waking up, commuting to work, going to bed, etc. You may be interviewed and asked to recollect at what time you performed certain daily activities.

RISKS AND BENEFITS

At present no health effects can be linked to exposure to EMF at the levels we will be measuring. Although epidemiological studies have suggested an association between possible EMF sources and a risk of disease (e.g. living near power lines and leukemia risk in children), similar studies based on measurements of EMF have found no increase in the risk of disease in adults or children.

You will not be exposed to any additional EMF beyond what currently exists in you home or office. There are no known physical risks associated with wearing the meter or participating in this study. The meter only measures magnetic fields and does not emit any magnetic energy while operating. The meter is fairly lightweight and can be worn comfortably in a pouch.

The benefit of participating in this study is to assist in developing survey methodologies to characterize magnetic field exposures of the general population. At your request, you will receive a summary of you personal EMF exposure measurements as recorded by the meter you wore.

VOLUNTARY NATURE OF THE STUDY

Participation in this study is completely voluntary and there is no penalty for declining to participate. In order for a child to participate, both the child and a parent or guardian must sign this form to document assent.

CONFIDENTIALITY

Your identity will remain confidential. Confidentiality will be maintained on all the measurement data, activity diaries, questionnaires, and individual records obtained from this study. All individual identifiers on the data collection forms will be replaced with a unique study code after the data is collected. We will retain a copy of the master code key until after the analysis is completed. This way we can provide a summary of the readings to you at your request. Once the analysis is completed, we will destroy the master key so the data can no longer be linked to specific individuals. You will never be publicly identified.

PARTICIPANT'S STATEMENT

I _____ (participant's name, printed) have read the information provided above. The purpose, procedures, risks, and benefits of the study have been explained to me by _____. I voluntarily agree to participate in this activity. I have had an opportunity to ask questions. I understand that further questions I may have about the research or about my rights as a subject will be answered by _____ (name) _____ (phone number). I understand that there are no known physical or health risks associated with my participation in this study. I may decide at any time to withdraw my consent and stop participating without any penalty or loss of benefits to which I am otherwise entitled.

Participant's Signature _____ Date _____
or Parent's/Guardian Signature

Child's Signature _____ Date _____

Witness's Name (printed) _____ Date _____

Witness's Signature _____ Date _____

I _____ (name of person obtaining consent, printed) have discussed the above information with _____ (participant's name) and have addressed questions to his/her satisfaction.

Signature of Person Obtaining Consent

_____ Date _____

Consent Form approved by the ORAU/ORNL Committee on Human Studies (IRB #M1394) for a period of up to 12 months. on 3/21/96; revision approved 12/16/96.

INSTRUCTIONS

Survey of Personal Magnetic Exposure
DOE RAPID Engineering Project #6

How to Use the Exposure Meter

Please read and follow the instructions on the following pages.

Because of federal regulations regarding electronic devices on airplanes, do not wear the meter if you expect to be traveling by plane. Please wait until you return from your trip before wearing the meter.

If you have any questions please call us toll-free at 1-800-866-8144 between 7am-5pm Pacific Time.

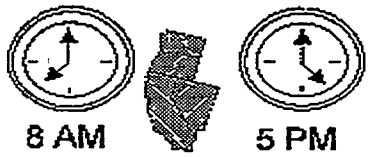
Thank you.

Survey of Personal Magnetic Exposure
DOE RAPID Engineering Project #6

Questions?

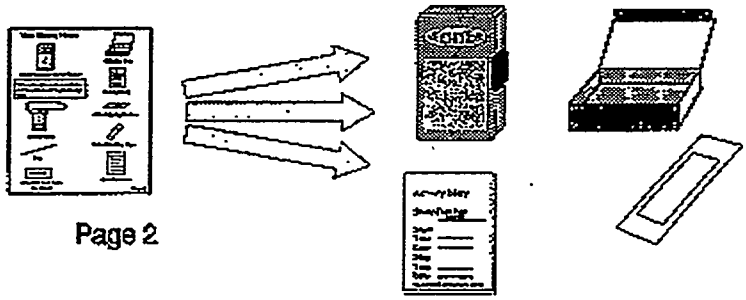
Call between 8 AM - 5 PM
Monday through Friday Pacific Time

(800) 866-8144



Instructions:

1. Please check to see if you have everything shown on Page 2. If you are missing something or have any questions, call (800) 866-8144.



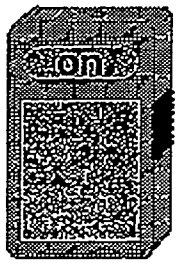
Page 2

2. Please follow the instructions beginning on Page 3. Put the meter on as soon as you can between Monday morning and Thursday evening.

3. Please do not change your usual activity routine while wearing the meter.

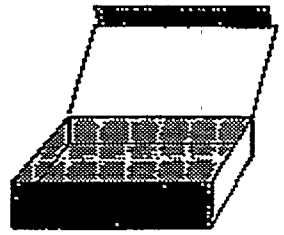
Page 1

You Should Have:

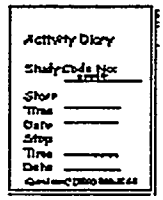


Meter showing "on" in display

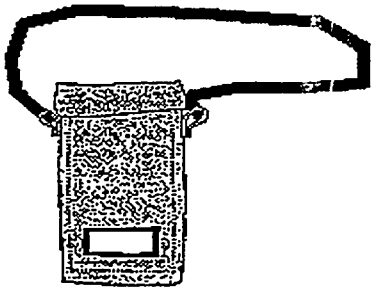
This meter gives off no radiation and is not harmful to you in any way.



Shipping Box

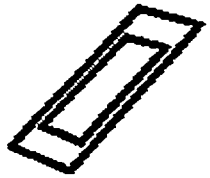


Activity Diary

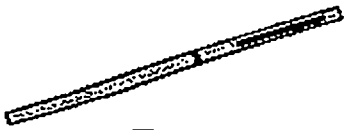


Nylon Pouch

UPS Shipping Envelope and Shipping Label



Strip of Sealing Tape



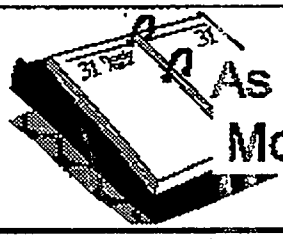
Pen

Respondent Questionnaire

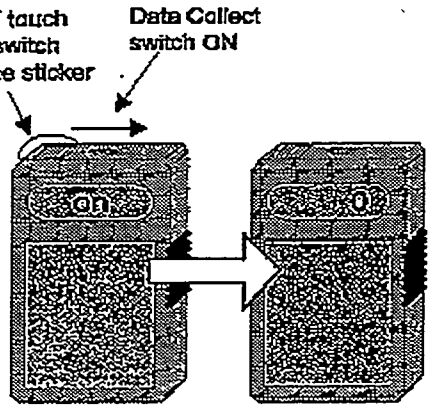
$50.00

Check in your name for $50.00

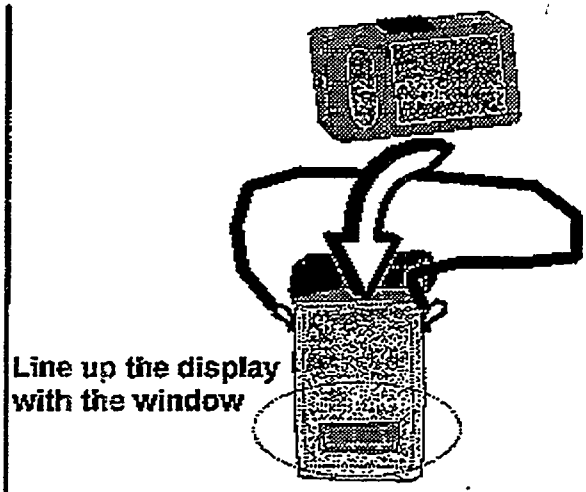
Page 2



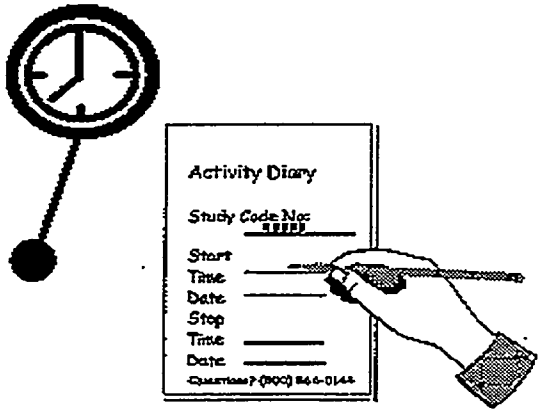
As soon as possible
Monday - Thursday



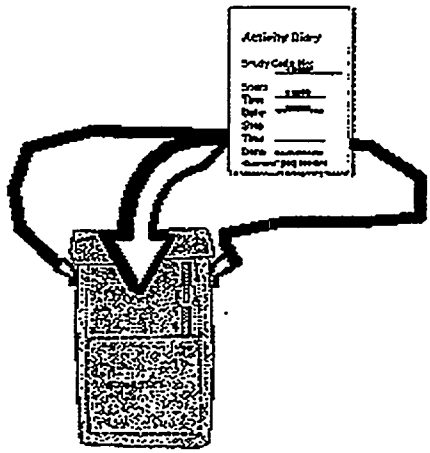
Move switch to the right.
Wait for meter to display "0" on the screen



Please put Meter in the pouch so you can see the display

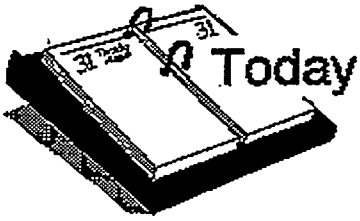


Write the time you turned on the meter on the Activity Diary



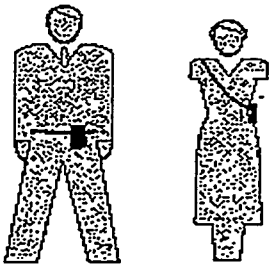
Keep the Activity Diary in the pouch pocket

Page 3



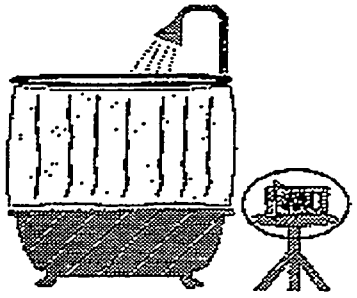
Today and Tomorrow

For the next 24 hours:
Keep the Meter near you all the time

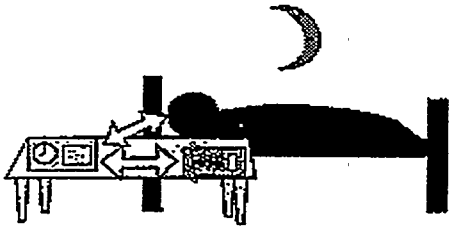


Please wear the meter on the waist, shoulder, in a pocket, or in a purse

You may wear it while exercising or running.



Do not get the Pouch wet

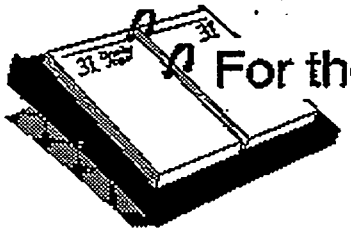


At night keep the pouch as far away from electrical appliances as they are from your head

Take the pouch off but keep it near you if

* It is too uncomfortable to wear
* You take a bath, shower, or go swimming

Page 4



For the next 24 hours...

Write down your activities and times in the Activity Diary ...

... when you enter or leave your home for more than 15 minutes

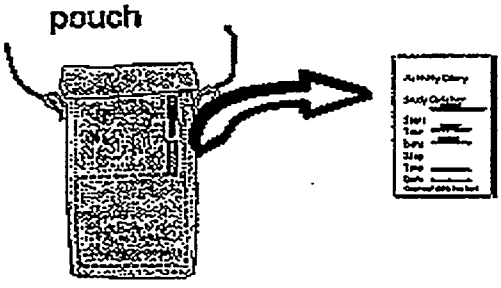
... when you go to bed or get up

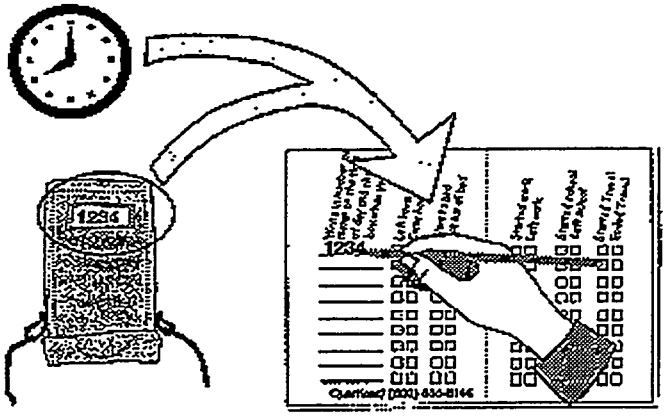
... when you arrive or leave from work or school

... when you travel (except on an airplane)

For example, Let's say you leave home to drive to go shopping:

Take the Diary out of the pouch

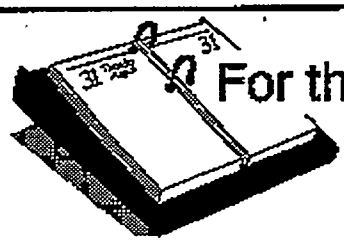




Write down the number displayed on the meter (or the time of day) on the next blank line

If you have a question, please call (800) 866-8144

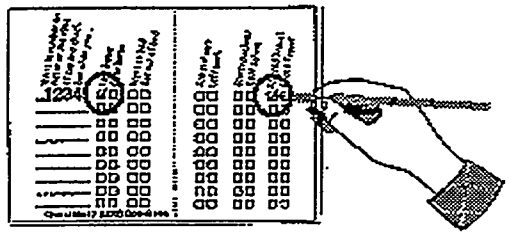
Page 5



For the next 24 hours...

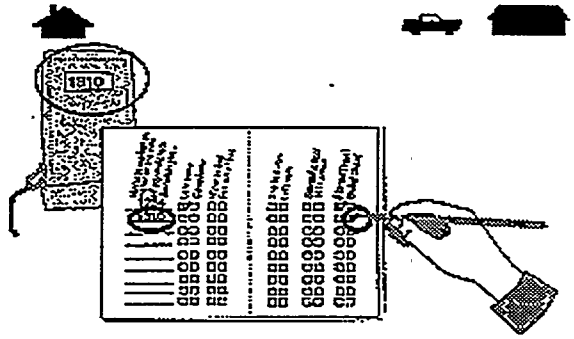
Example continued: leaving home and driving to go shopping ...

When you leave home...



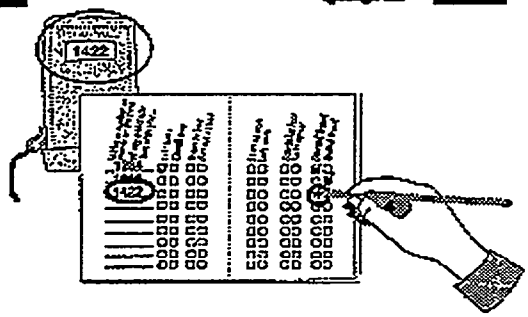
Check the "Left home" box (since you left home) and the "Started Travel" box (since you are going shopping).

When you park your car...



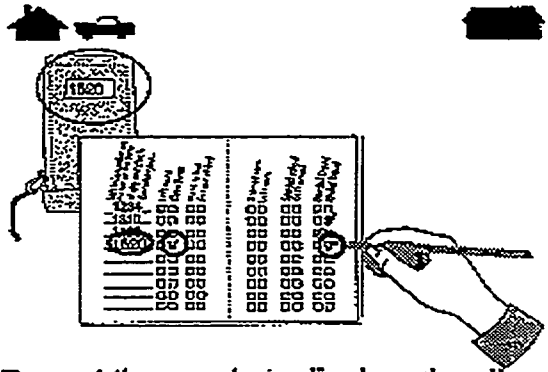
Record the number displayed on the meter and check the "Ended Travel" box

When you go back to your car after shopping...



Record the number displayed on the meter and check the "Started Travel" box

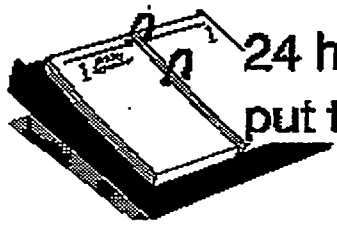
When you arrive back home...



Record the number displayed on the meter and check the "Ended Travel" and "Came home" boxes

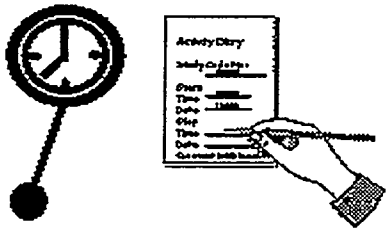
If you have a question, please call (800) 866-8144

Page 6



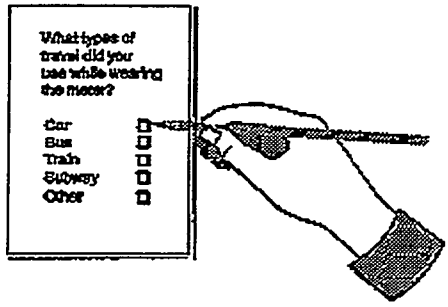
24 hours after you first put the meter on...

24 hours after you first put the meter on ...

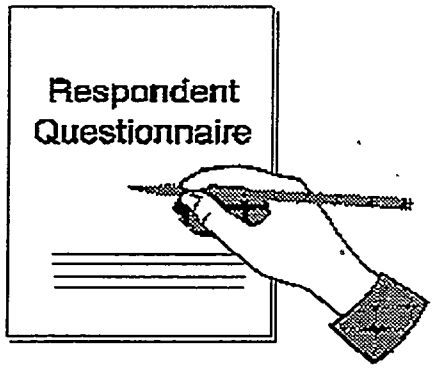


Write the time you stopped using the meter on the Diary.

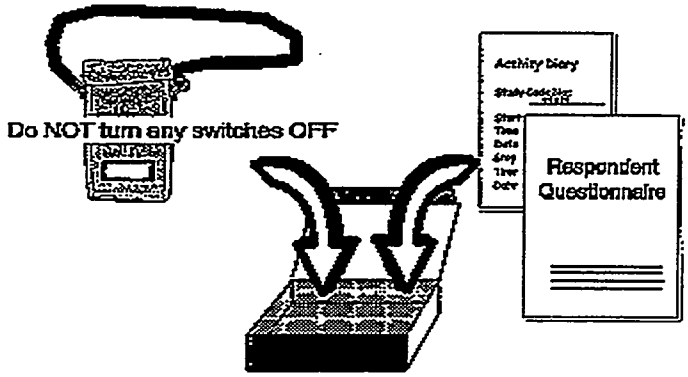
Please do not turn off any switches on the meter; it will turn itself off after about 24 1/2 hours.



Check the boxes showing what kinds of transportation you used while wearing the meter.



Please complete the four-page Questionnaire.



Place the Pouch (with the meter still in it), the Questionnaire, and the Activity Diary in the Shipping Box

Page 7

Document #7 200-People Sample

ACTIVITY DIARY

What types of travel did you use while wearing the meter?

Car ☐
Bus ☐
Train ☐
Subway ☐
Other ☐

Questions? (800) 866-8144

Activity Diary

Name ____________

Start
Time ____________
Date ____________

Stop
Time ____________
Date ____________

Questions? (800) 866-8144

Write in the time of day and check box when you ...	Left home	Came home	Went to bed	Got out of bed
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐

Questions? (800) 866-8144 1

Started work	Left work	Start school/daycare	Left school/daycare	Started Travel	Ended Travel
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

2

Write in the time of day and check box when you ...	Left home	Came home	Went to bed	Got out of bed
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐

Questions? (800) 866-8144 3

Started work	Left work	Start school/daycare	Left school/daycare	Started Travel	Ended Travel
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

4

Write in the time of day and check box when you ...	Left home	Came home	Went to bed	Got out of bed
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐
______	☐	☐	☐	☐

Questions? (800) 866-8144 5

Started work	Left work	Start school/daycare	Left school/daycare	Started Travel	Ended Travel
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

6

Document #8 200-People Sample

Participant's Questionnaire

U.S. DEPARTMENT OF ENERGY
SURVEY OF PERSONAL MAGNETIC FIELD EXPOSURE
RESPONDENT QUESTIONNAIRE

Participant's Name
Address

As part of your participation in the U.S. Department of Energy's Magnetic Field Personal Exposure Survey, please complete this questionnaire. This questionnaire will help researchers establish whether or not there is a relationship between magnetic field exposure measured by the EMF meter and aspects of your work or residence. Please return the questionnaire in the same box that you use to return the meter. If you have any questions, please call 1-800-866-8144.

Work Information - The following questions ask about your job and where you work.

Q1. What is your occupation? (Example: salesperson, teacher, nurse, etc.) Please fill in your primary job or occupation.

_____

Q2. Where do you work most of the time?

Office Building	1
Grocery Store or Supermarket	2
Other Store	3
Health Care Facility	4
Electric Power Plant	5
Factory	6
Farm	7
Restaurant	8
School	9
Light Industry	10
OTHER	11

Specify_____

Residence Information - The next few questions ask about the features of your home.

Q3. What type of residence do you have?

Single Family Home	1
Duplex	2
Apartment Complex	3
Hi-rise Building	4
Mobile Home	5
Other	-9

specify _____

Q4. What floor is your bedroom on?

Basement	☐ 1
First floor	☐ 2
Second Floor	☐ 3
Third Floor	☐ 4
OTHER	☐ 5

Specify _____

Q5. What is the square footage in your home (excluding garage, basement, attic, and open patios)?

Less than 1000 square feet	☐ 1
Between 1000 and 2000 square feet	☐ 2
More than 2000 square feet	☐ 3

Q6. Which type of water supply pipes do you have?

Metal	☐ 1
Plastic	☐ 2

Power Lines - The next questions ask about the power lines near your home.

Q7. What is the nave of your local electric company?

_____

Q8. Is there any Power Line visible within 150 feet from your residence in any direction?

Yes	☐ 1
No	2

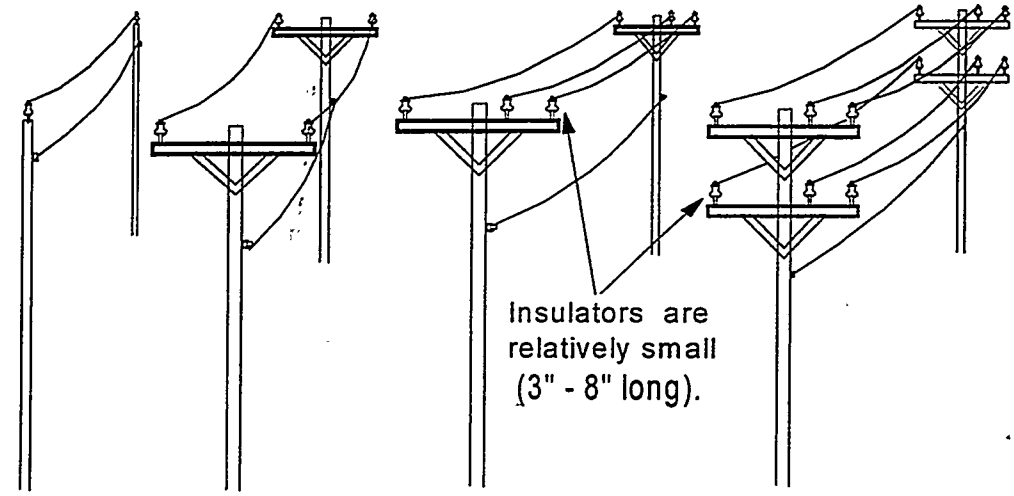
Please note: Only answer Q9a and Q9b if you answered "yes" to Q8.

Q9a. What is the shortest distance between the power line and your residence?

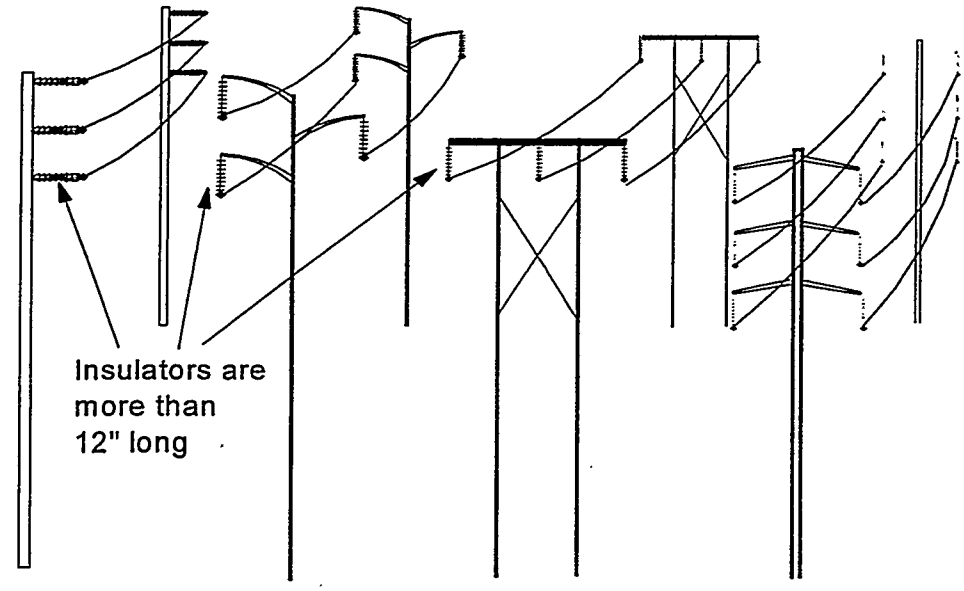
Less than 25 feet	☐ 1
Between 25 and 50 feet	☐ 2
More than 50 feet	☐ 3

Please turn page →

Q9b. Which of the following power lines most closely resembles the power line near your home? Please choose only <u>one</u> type. Check the box underneath the picture.



☐ 1 ☐ 2 ☐ 3 ☐ 4



☐ 5 ☐ 6 ☐ 7 ☐ 8

Document #9 200-People Sample
Letter to solicit return of meter long overdue

Date

Name
and
Address

Dear Mr./Ms Participant:

Thank you for your participation in the United States Department of Energy's Nationwide Survey of Magnetic Field Exposure. The survey is nearly complete and since the meter you wore will store the data you collected for a limited amount of time, we need you to return the meter and the materials as soon as possible. Please return everything in the enclosed postage paid box and put it in the mail. I've enclosed some simple instructions.

If you did not have a chance to wear the meter just return everything anyway; you don't have to wear it.

Once again, thank you for your participation. If you have any questions please call us at 800-866-8144 between 8am and 5pm Pacific time Monday through Thursday.

Sincerely,

Richard N. Iriye

Richard N. Iriye
Enertech Consultants

Document #10 200-People Sample
Letter to participant with the result of the exposure measurement

Date
Name
Address

Dear _____:

Thank you for your participation in the United States Department of Energy's Nationwide Survey of Magnetic Field Exposure. We have extracted the magnetic field data from the meter you sent us and will incorporate this information with that from the other participants in the study. Personal information will be removed from the data file to insure your confidentiality. Scientists will use the information you have provided to gain a better understanding of the types and levels of exposure experienced by the US population to magnetic fields produced by electric utilities.

For the 24 hours you wore the meter your average exposure was:_____ milliguass (mG)

A milligauss is a measure of the strength of the magnetic field. To allow you to put this number in perspective, here is what we know about magnetic fields. A recent survey of 1,000 U.S. homes has found:

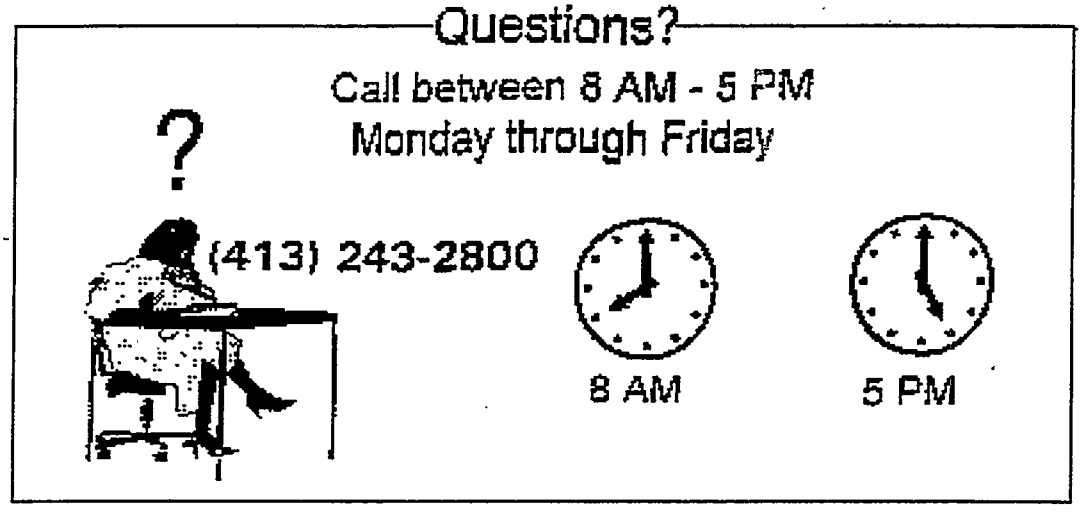
- 28% of all residences had an average field greater than 1 mG.
- 10.4% of the residences had an average field greater than 2 mG.
- 1.8% of the residences had an average field greater than 5mG.

The magnetic field exposures have been measured for some occupations. Exposure during a work shift vary with the type of electrical equipment used, and time spent near the equipment. The range of exposures for various types of workers is shown below (data from the National Institute for Occupational Safety and Health. September 1996).

Job	Range of average magnetic fields
Clerical workers without computers	0.2 - 2.0 mG
Clerical workers with computers	0.5 - 4.5 mG
Machinists	0.6 - 27.6 mG
Electric line workers	0.8 - 4.5 mG
Electricians	0.8 - 34.0 mG
Welders	1.7 - 96.0 mG
Workers off the job (home, travel, etc.)	0.3 - 3.7 mG

Once again, thank you for your participation. If you have any questions concerning your result, please call us at (413) 243-2800 between 8am and 5pm, Monday through Friday.
Sincerely,

Richard N. Iriye
Enertech Consultants



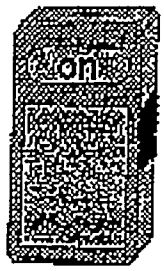
Instructions:

1. Check to see if you have everything on Page 2. If you are missing something, please call (413) 243-2800.

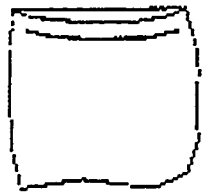
2. Please follow the instructions beginning on Page 3. Place the meter near the child as soon as you can between Monday morning and Thursday evening.

3. Please do not do anything out of the ordinary just because the child is wearing the meter.

You Should Have:

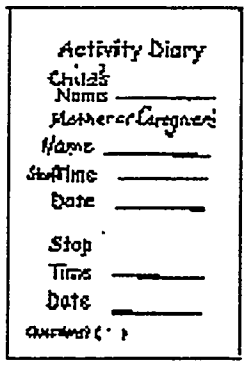


Meter showing "on" in display



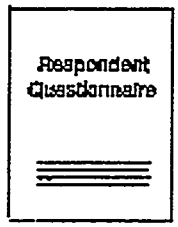
Plastic Bag

This meter gives off no radiation and is not harmful to you or the child in any way.



Activity Diary

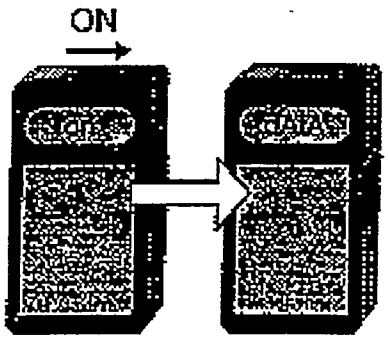
Bear Meter Holder



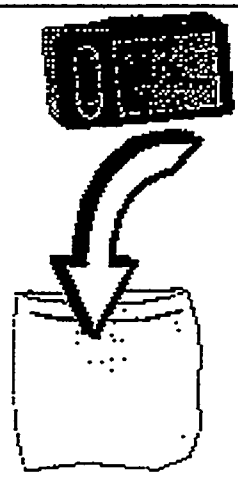
Respondent Questionnaire

Page 2

As soon as possible
Monday - Thursday

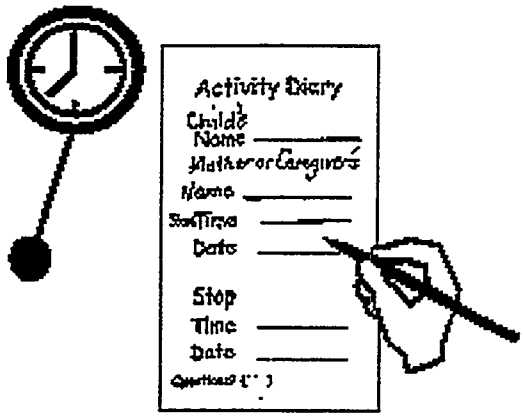


Move the switch to the right. Wait for "on" display to disappear. Other information will be displayed. Disregard it.

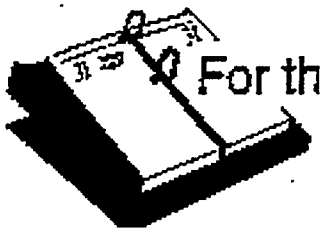


Place Meter in Plastic Bag

Seal the Bag and place Meter in the Bear Holder



Write the time you turned on the Meter on the Activity Diary

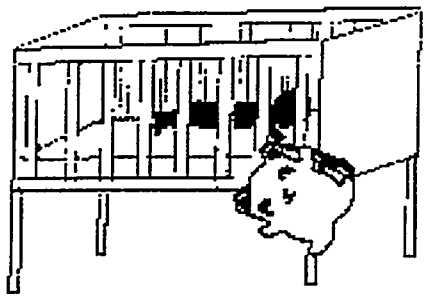


For the next 24 hours...

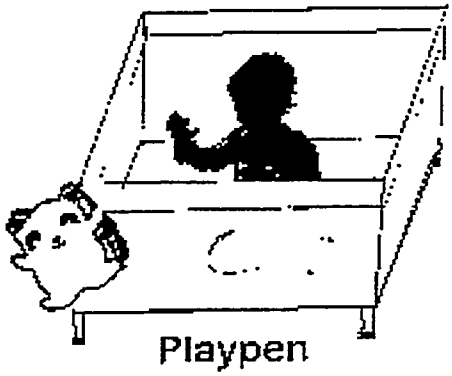
Keep the Activity Diary on the refrigerator under a magnet (or in any other convenient place).

Keep the bear near your child at all times

Examples



Crib



Playpen

Car Seat

High Chair

Page 4

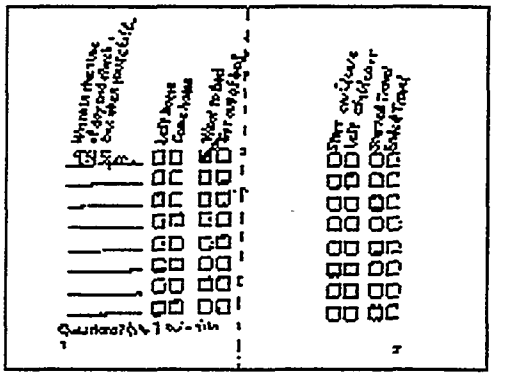
Write down the child's activities and time of day in the Activity Diary when you are at home as soon as the activities start or end. If you are traveling fill out the Diary after returning home to the best of your recollection.

The following activities should be recorded:

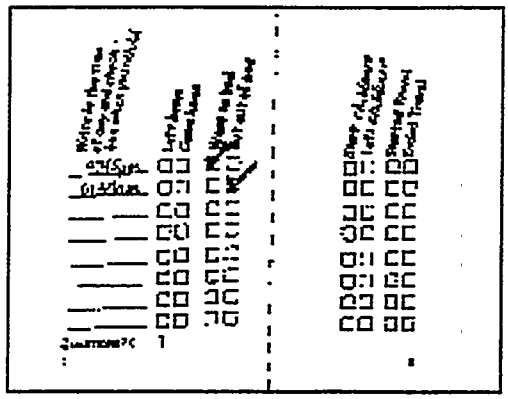
- When the child goes to sleep in the crib or bassinet and when he or she gets up
- When your child starts traveling (e.g. by car) and when your child stops traveling
- When your child is placed in or taken out of a child care setting (daycare, neighbor's or relative's house)

For example:

The child is placed in the crib at 9:45 p.m.
Write the time (9:45 p.m.) in the Activity Diary and check the "Went to bed" box

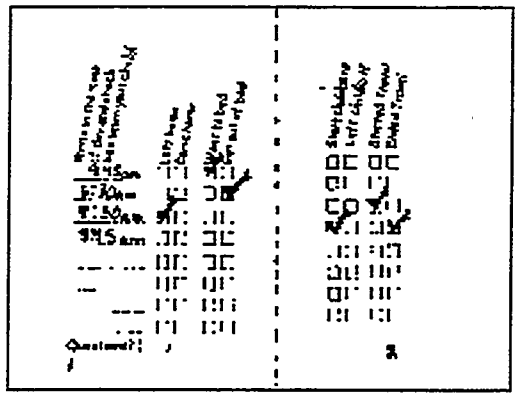


The child wakes up and is brought into the kitchen to be fed at 6:30 a.m.
Enter the time and check the "Got out of bed" box.



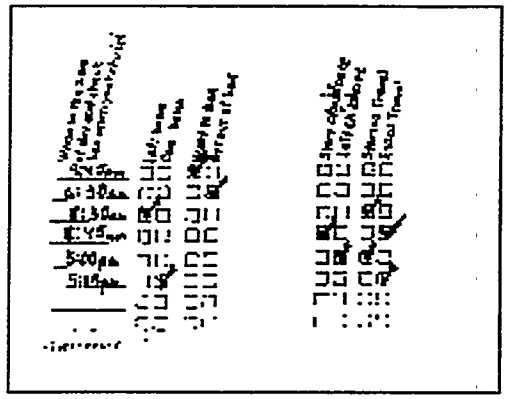
The child is driven to daycare at 8:30 a.m.
Record the time and check both the "Left home" and "Started travel" boxes.

Arrives at daycare at 8:45 p.m.
Enter time and check both the "Ended travel" and the "Start child care" boxes.



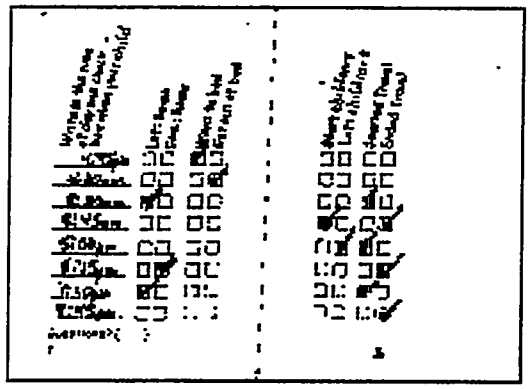
Is picked up and driven home at 5:00 p.m.
Record time and check the "Start travel" and the "Ended child care boxes.

Arrives home at 5:15 p.m.
Write the time and check both the "End travel" and the "Come home" boxes.



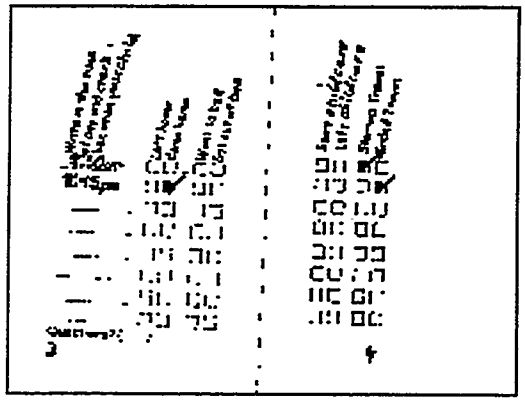
The child goes out shopping with the family at 7:30 p.m.
Record time, check "Left home" and "Started travel".

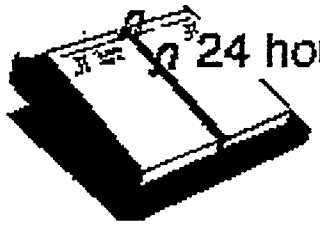
Arrives at shops at 7:45 p.m.
Write time and check the "Ended travel" box.



Leaves shops at 8:30 p.m.
Write time and check the "Start travel" box.

Child arrives home at 8:45 p.m.
Record time and check both the "Ended travel" and the "Came home" boxes.





24 hours later...

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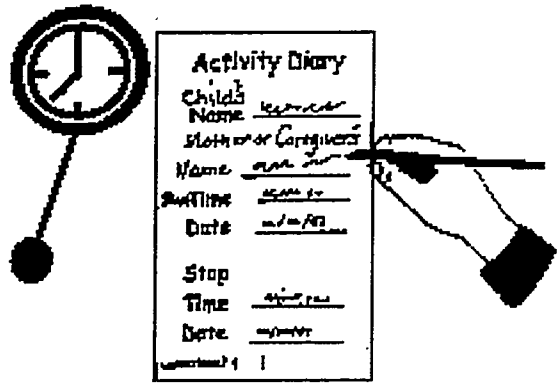
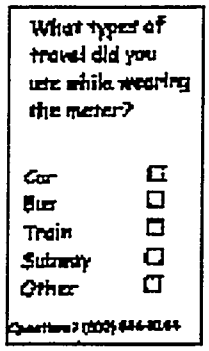
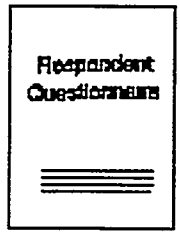
24 hours later ...



Stop using the Activity Diary and write the time an date on the front page of the Diary.

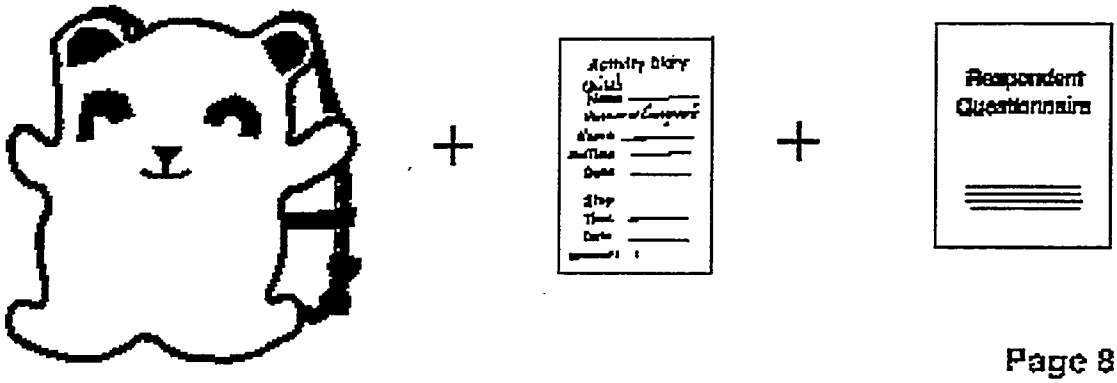




Respondent Questionnaire

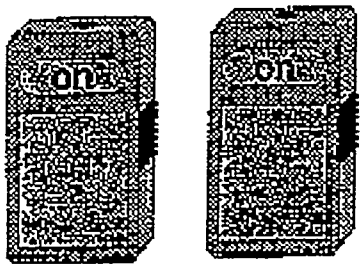
Record the types of travel the child used on the back of the Activity Diary, and complete the Respondent Questionnaire

Place the Bear (with the Meter still in it), the Activity Diary, and the questionnaire in a safe place. Call yourcontact to arrange a convenient pickup time.

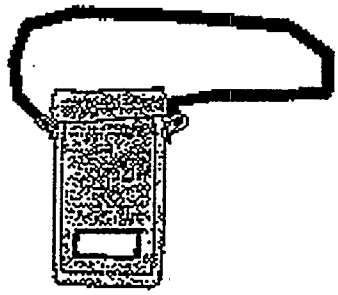


Document #12 Convenience Sample
Instructions for Personal Exposure Measurements for Toddlers

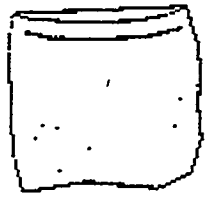
You Should Have:



Two Meters showing "on" in display

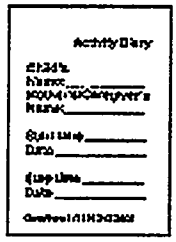


One Nylon Pouch

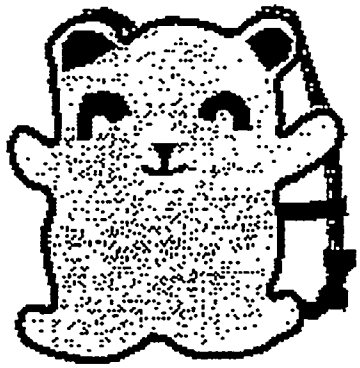


One Plastic Bag

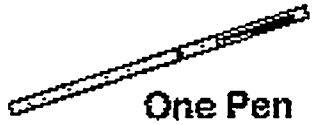
These meters give off no radiation and are not harmful to you or your child in any way.



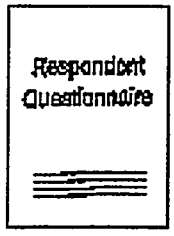
One Activity Diary



One Bear Meter Holder



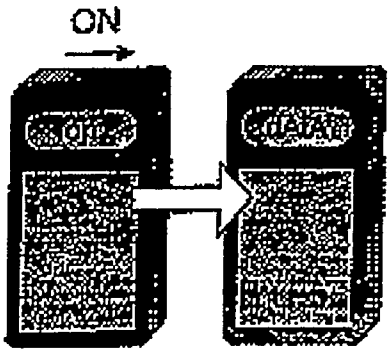
One Pen



One Respondent Questionnaire

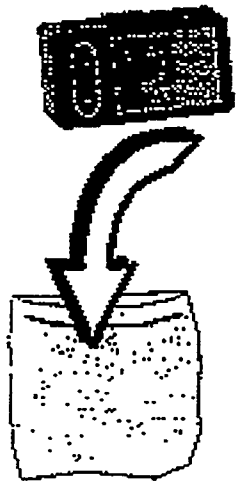
Child Instructions

As soon as possible
Monday - Thursday



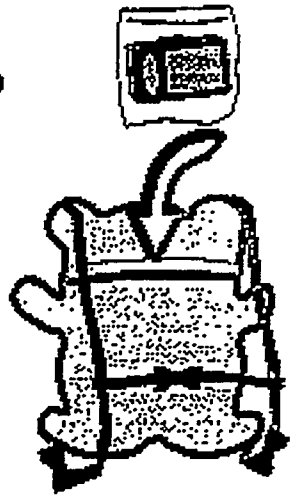
Move the switch on both Meters to the right. Wait for "on" display to disappear. Other information will be displayed. Disregard it.

CHILD

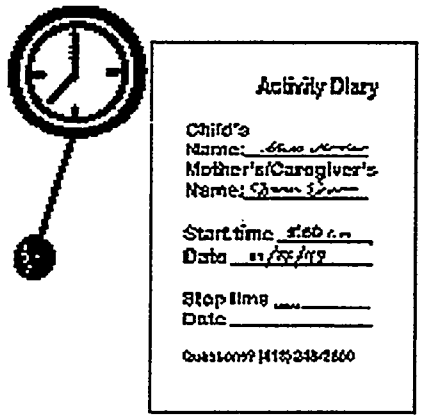


Place the Child's Meter in the Plastic Bag.

CHILD



Seal the Bag and place Meter in the Bear Holder



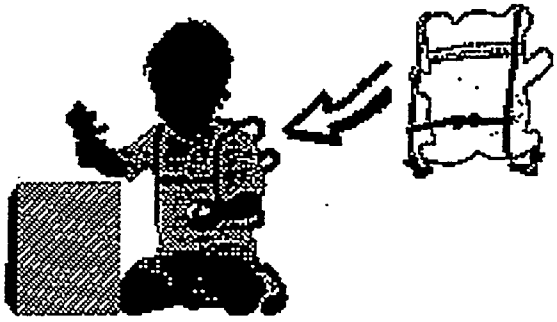
Write the time you turned the Meters on in the Activity Diary.

Page 3

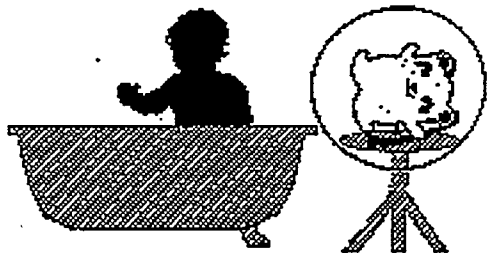
As soon as possible
Monday - Thursday

For the next 24 hours:

Make sure the Child keeps the bear near him or her at all times. The recommended method is to place Backpack on child an adjust until snug. Alternatively, have the Child carry the Bear wherever he or she goes.



Place Backpack on child and adjust until snug



Remove the Backpack during swimming or baths

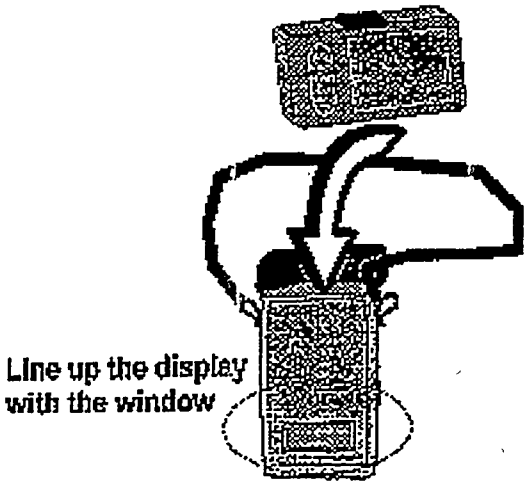
At night or during naps keep the Bear close to the bed. Do Not place the Bear on or near clock radios or other electrical appliances. It is OK if the child wants to sleep with the Bear.

Keep the Backpack near the Child when not worn

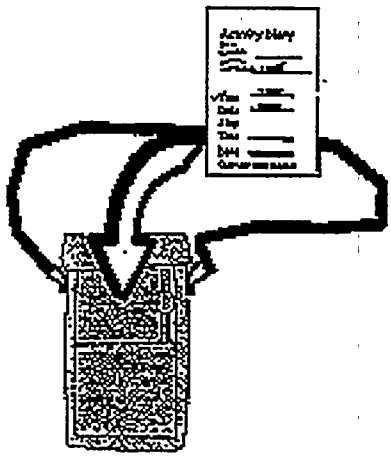
Page 4

Mother/Caregiver Instructions

As soon as possible
Monday - Thursday

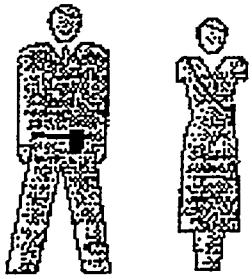


Please put the second Meter in the Pouch so you can see the display.

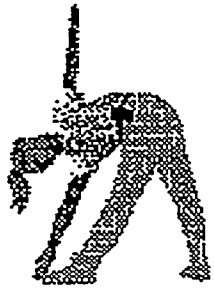


Keep the Activity Diary in the pouch pocket

For the next 24 hours:
Keep the Meter near you all the time



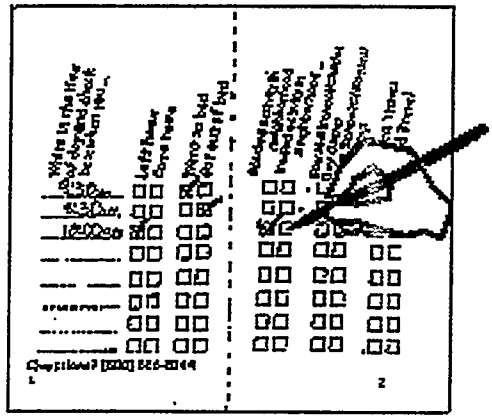
Please wear the meter on the waist, shoulder, in a pocket, or in a purse



You may wear it while exercising or running.

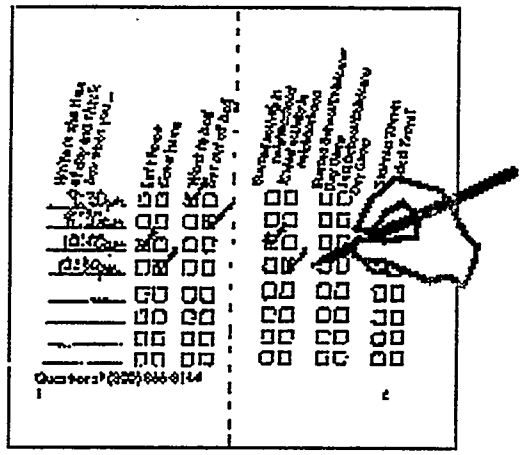
You leave the house to play with your friends at 10:00 a.m.

Write the time and check both the "Left home" and the "Started activity in the neighborhood" boxes



At 12:30 p.m. you return home for lunch

Write the time and check both the "Came home" and the "Ended activity in the neighborhood" boxes.

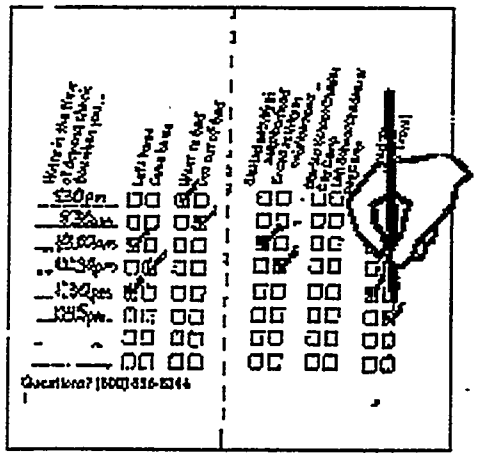


At 1:30 p.m. your friend's mom drives you to the Mall.

Record the time and check the "Left home" and the "Started travel" boxes.

You arrive at the Mall at 1:45

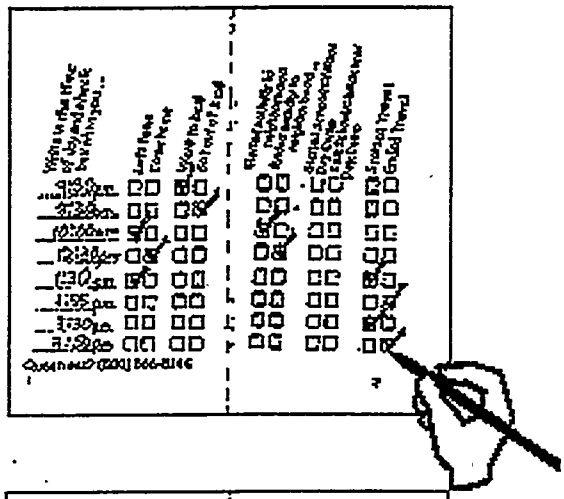
Write the time and check the "Ended travel" box.



Page 6

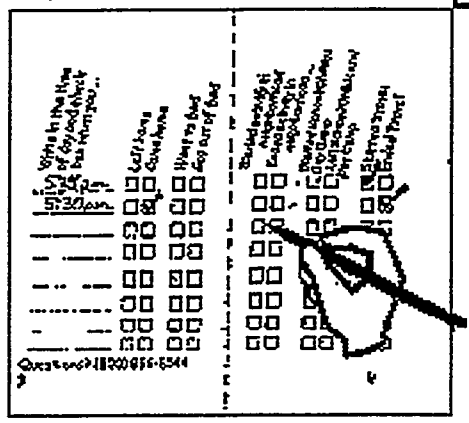
You leave the Mall at 3:30 and go to your friend's house. (Your friend's mom drives you again.)
Write the time and check the "Started travel" box.

You arrive at your friends house at 3:50
Write the time and check the "Ended travel" box.



Your Dad picks you up at 5:15 and takes you home.
Record the time and check the "Started travel" box

You arrive home at 5:30 and stay home for the rest of the evening.
Write the time and check both the "Ended travel" and "Came home" boxes



24 hours after the start of the recording stop using the Activity Diary #1.

Do not remove the Meter from the Pouch. Place the Pouch and Activity Diary #1 in a safe place

You leave to drive your child to child care at 8:15 a.m.
Record the time and check the following boxes: "Adult: Left home", "Child: Left home", Adult: Start travel", Child: "Start travel"

You drop your child off at child care at 8:40 a.m.
Write the time and check the "Adult: End travel with child", "Child: End travel" and "Child' Start child care" boxes

♦ *You do not have to record when you are traveling without your child.*

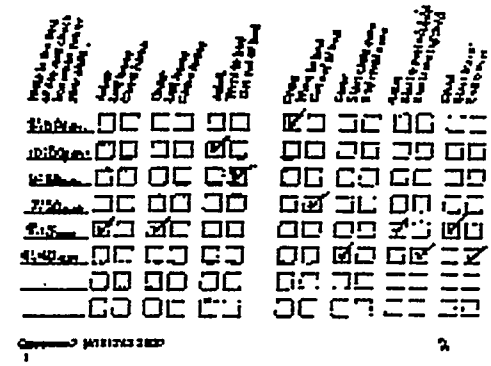
The car pool Mom picks your child up from child care at 4:30 p.m.
Record the time and check the "End child care" and the "Child: Start travel" boxes.

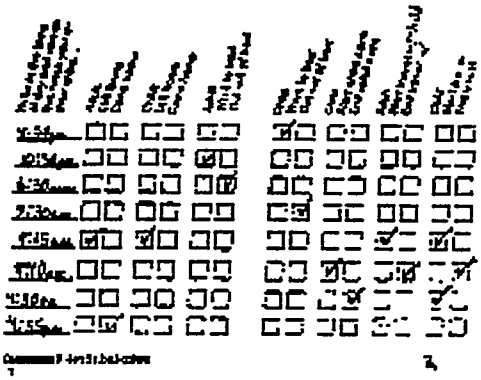
You arrive home at 4:35 p.m.
Record the time and check the "Adult" Came home" box.

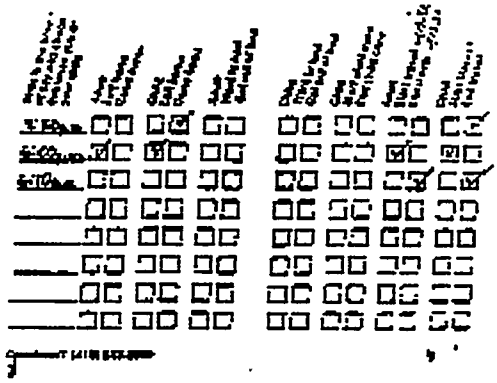
Your Child arrives home at 4:50 p.m.
Write the time and check the "Child: End travel" and the "Child: Came home" boxes.

The family goes out to dinner, leaving home at 6:00 p.m.
Record the time and check the "Adult: Left home", "Child: left home", "Adult: Started traveling with child", "Child: started traveling" boxes.

You arrive at the restaurant at 6:10 p.m.
Write in the time and check the "Adult: End travel with child", and the "Child: End travel" boxes.



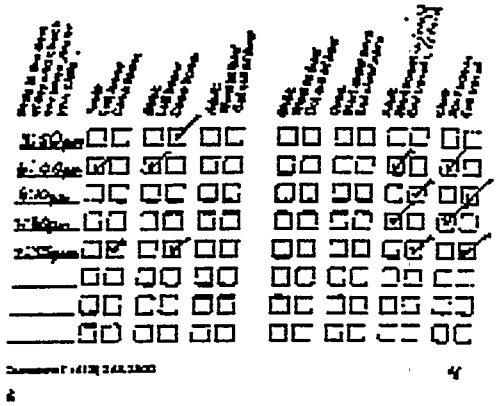


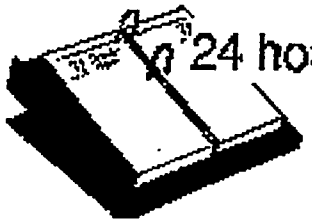


You leave the restaurant at 7:30 p.m.
Note the time and check the "Adult: Start travel with child" and "Child: Start travel" boxes.

You arrive home at 7:45 p.m.
Record the time and check the "Adult: Came home" and "Adult: End travel with child" boxes. Also check the "Child: Came home" and "Child: End travel" boxes

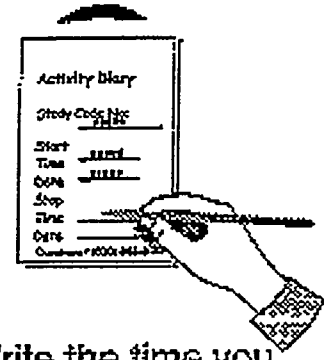
Your child goes to bed at 8:30 p.m.
You do not need to record this as 24 hours have passed since you turned on the Meters.



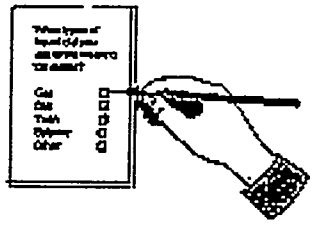


24 hours later...

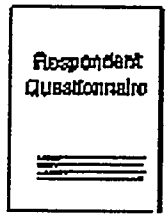
24 hours later ...



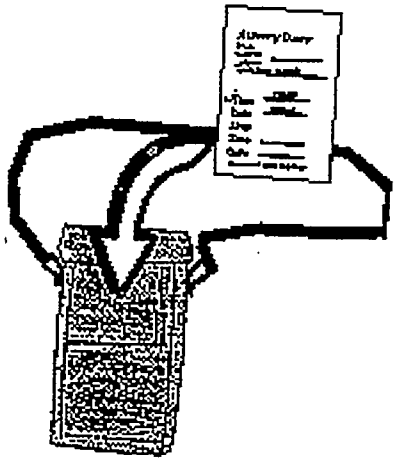
Write the time you stopped using the meter on the Diary



Check the boxes showing what kinds of transportation you and your child used while wearing the Meter.

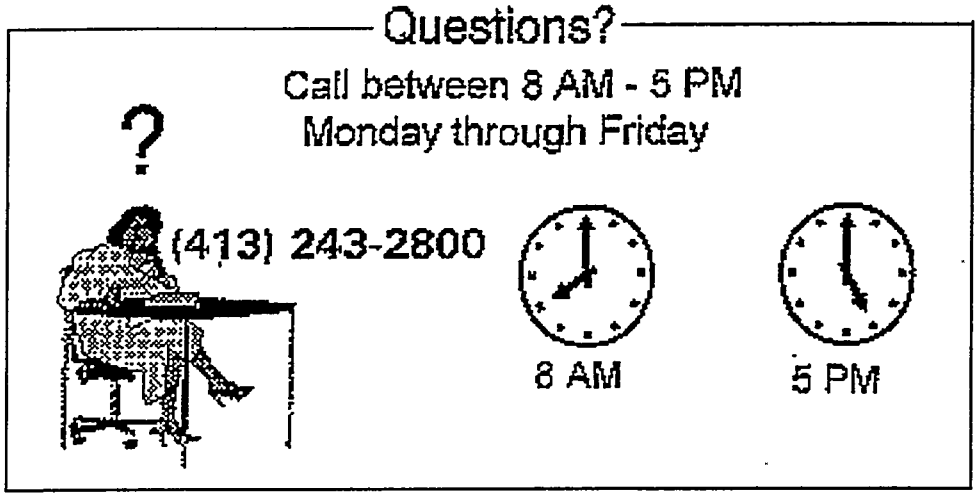


Please complete the two page questionnaire



Place the Bear (with the Meter still in it), the Pouch (with the Meter and Activity Diary still in it), and the Questionnaire in a safe place and call yourcontact to arrange a convenient pick-up time.

Page 10



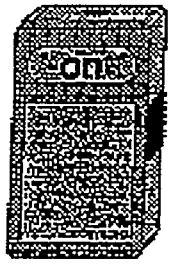
Instructions:

1. Check to see if you have everything on Page 2. If you are missing something, please call (413) 243-2800.

2. Please follow the instructions beginning on Page 3. Begin wearing the meter as soon as you can between Monday morning and Thursday evening.

3. Please do not do anything out of the ordinary just because you are wearing the meter.

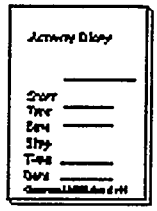
You Should Have:



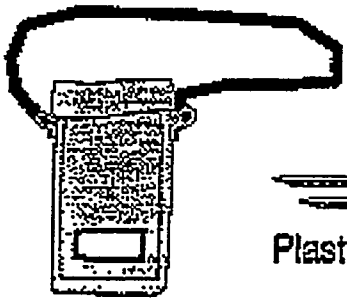
Meter showing "on" in display

Plastic Bag With a Sticker Inside

This meter gives off no radiation and is not harmful to you in any way.



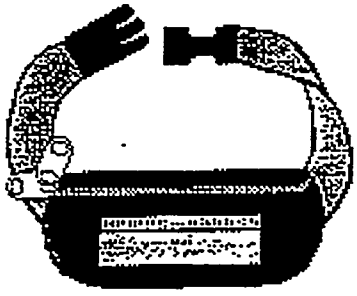
3 Activity Diaries



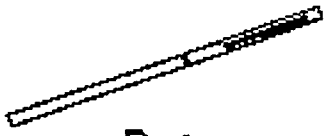
Nylon Pouch

Plastic Ties (1 extra)

1 Clip-on Box



1 Plastic Pouch



Pen

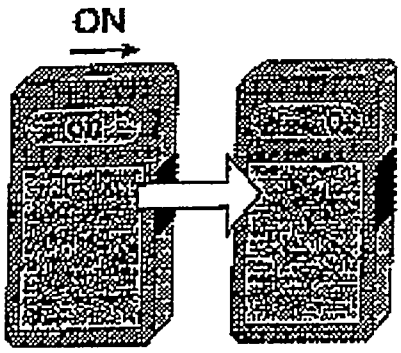
Respondent Questionnaire

Page 2

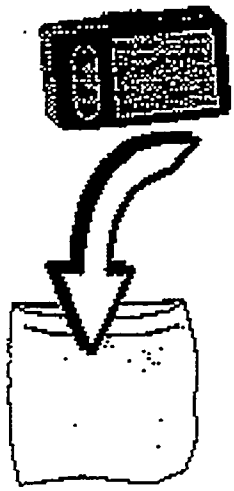
There will be three separate 24-hour measuring periods

FIRST 24-HOUR PERIOD

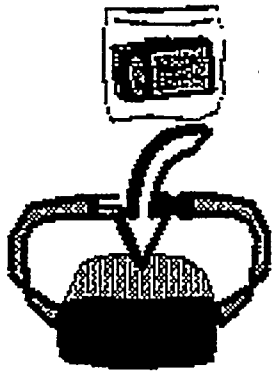
As soon as possible Monday - Thursday



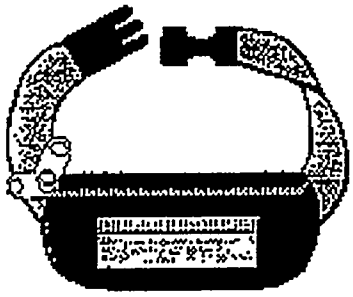
Move switch to the right. Wait for meter to display "0" on the screen



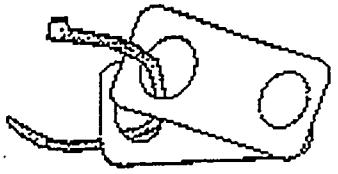
Place Meter in Plastic Bag

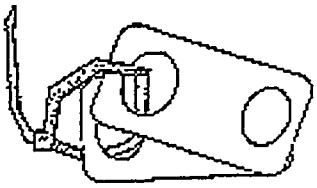


Seal the Bag and place Meter in the Plastic Holder between the foam.



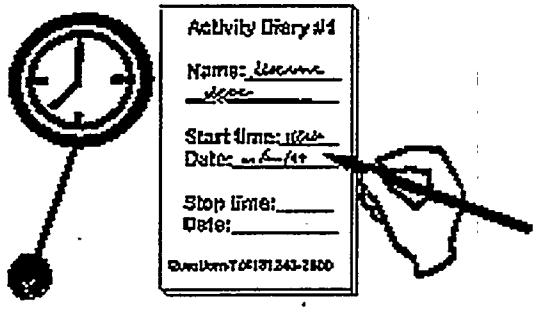
Zip up pouch.





Loop plastic tie through zipper tabs.

and tighten...



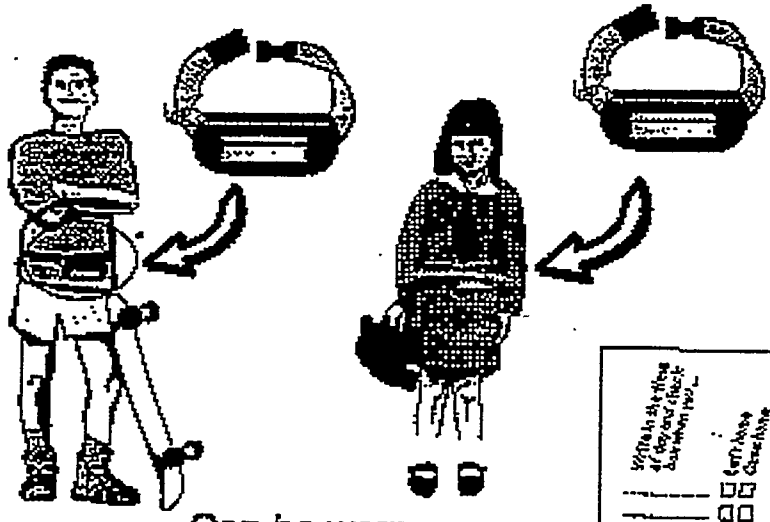
Write your name and the date and time you turned on the meter in Activity Diary #1.

Store the Activity Diary and the Pen in the back pocket of the Plastic Pouch

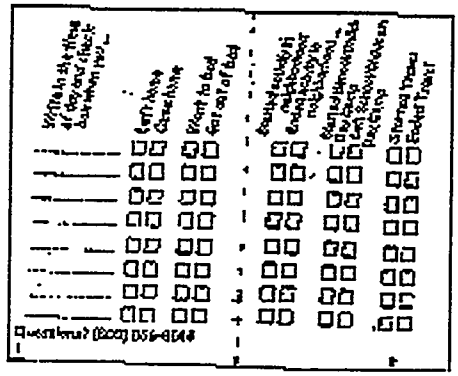
Page 3

Today and Tomorrow

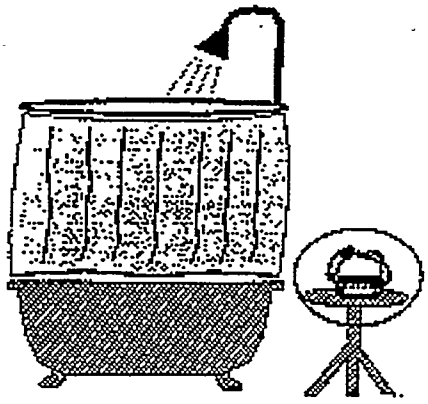
For the next 24 hours:
Wear the Pouch whenever possible



Can be worn
anywhere on waist



Use the Activity Diary to
keep track of your activities.



Do not get the Pouch wet

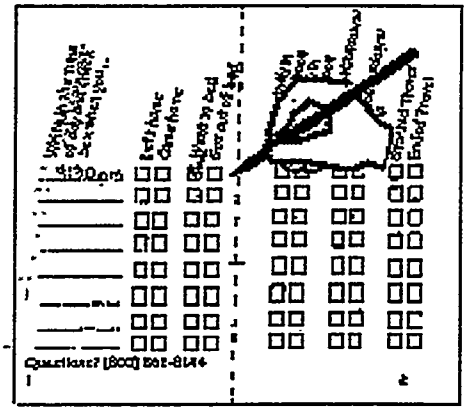
Write down your activities and the time of day in the Activity Diary as soon as the following activities start:

- You go to bed or get out of bed
- You leave the house for more than a few minutes or enter the house
- You start traveling or end traveling
- You start school, childcare, or day camp
- You end school, childcare, or day camp
- You start or end any activity (play, walk, meet with other children, etc.) outside the house in your neighborhood

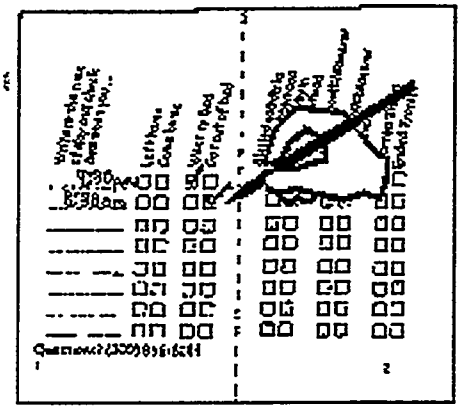
For example:

The meter was turned on at 8:00 p.m. *(You should already have recorded this on the front page of the diary.)*

You get into bed at 9:30 p.m.
Write in the time (9:30 pm) and check the "Went to bed" box.

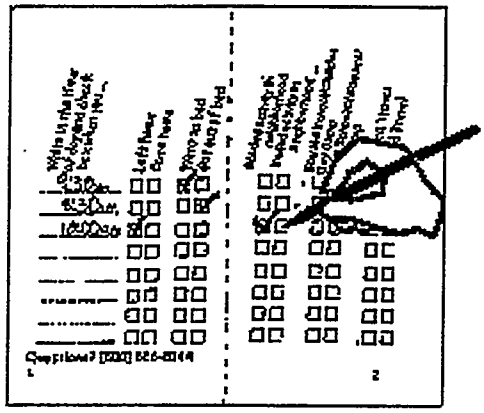


You get up at 8:30 a.m.
Write the time and check the "Got out of bed" box



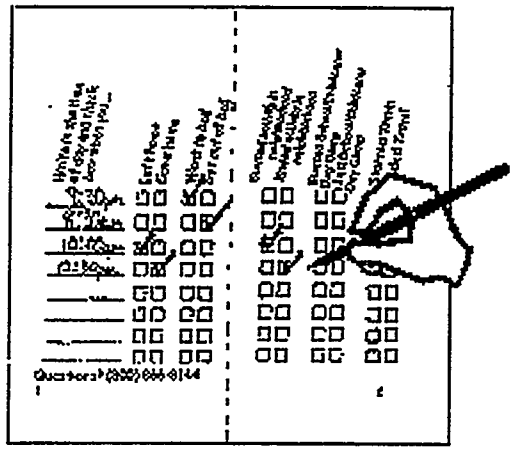
You leave the house to play with your friends at 10:00 a.m.

Write the time and check both the "Left home" and the "Started activity in the neighborhood" boxes



At 12:30 p.m. you return home for lunch

Write the time and check both the "Came home" and the "Ended activity in the neighborhood" boxes.

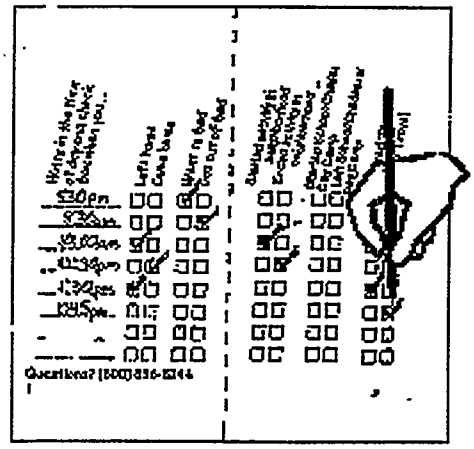


At 1:30 p.m. your friend's mom drives you to the Mall.

Record the time and check the "Left home" and the "Started travel" boxes.

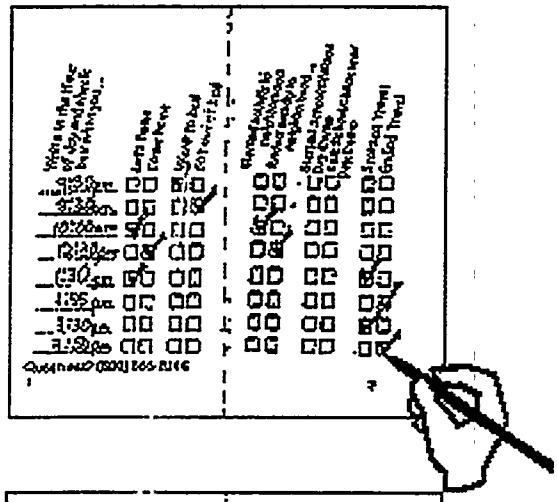
You arrive at the Mall at 1:45

Write the time and check the "Ended travel" box.



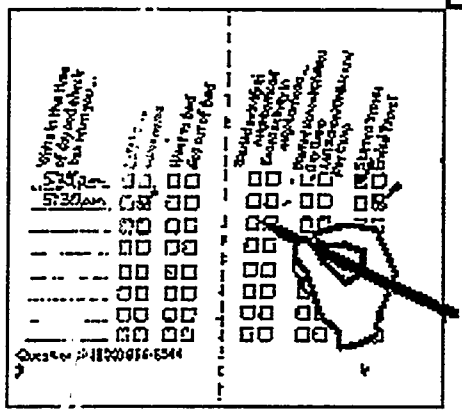
You leave the Mall at 3:30 and go to your friend's house. (Your friend's mom drives you again.)
Write the time and check the "Started travel" box.

You arrive at your friends house at 3:50
Write the time and check the "Ended travel" box.



Your Dad picks you up at 5:15 and takes you home.
Record the time and check the "Started travel" box

You arrive home at 5:30 and stay home for the rest of the evening.
Write the time and check both the "Ended travel" and "Came home" boxes



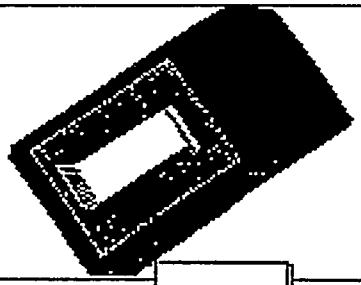
24 hours after the start of the recording stop using the Activity Diary #1.

Do not remove the Meter from the Pouch. Place the Pouch and Activity Diary #1 in a safe place

Second 24-hour Period

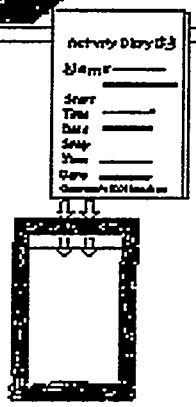
- **Do not start the second period on a Friday, Saturday or Sunday. Wait until Monday.**

Start wearing the Clip-on Box on your belt, waistband, pocket or any comfortable place on your clothing.



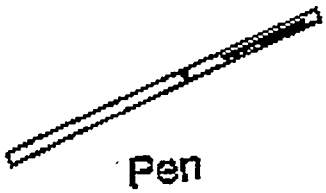
Write yourname and the date and time you began wearing the clip-on box in Activity Diary #2.

Place the Activity Diary #2 in the plastic pocket attached to the box.



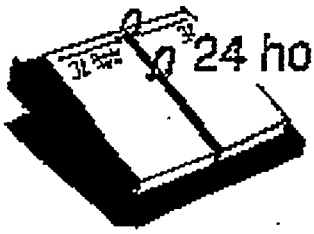
Keep the pen in your pocket or any convenient place.

If you do not carry the pen with you, you will have to fill out the activity diary by memory when you go home.

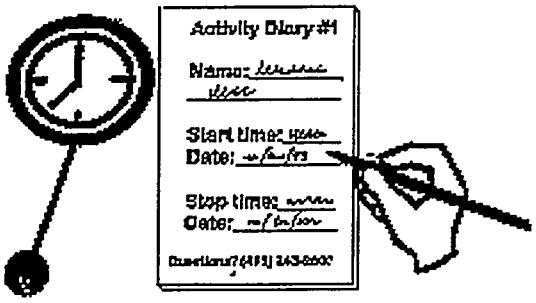


Pen

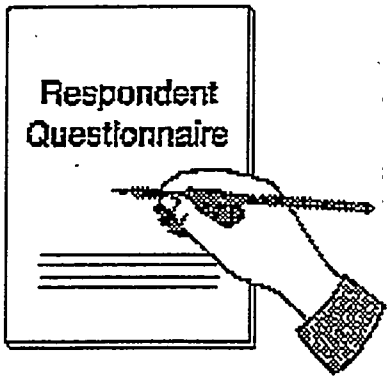
- **Record your activities in Activity Diary #2 in the same way as for Day #1. (See pages 5 to 7.)**



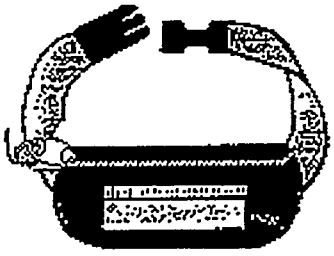
24 hours later...



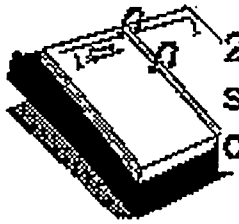
Write the time you stopped using the Meter on the Activity Diary # 1.



Please complete the two-page Questionnaire.

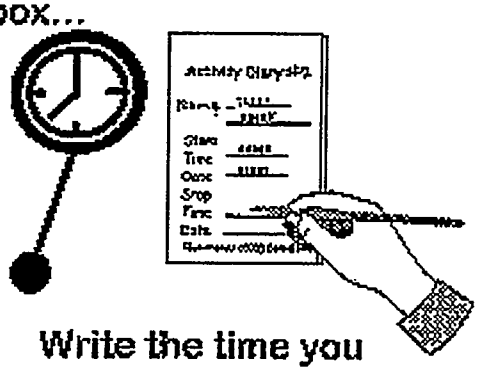


Place the Pouch (with the Meter and Activity Diary #1 still in it) and the respondent questionnaire in a safe place. Keep the pen and use it for the second 24-hour period. (See next page.)

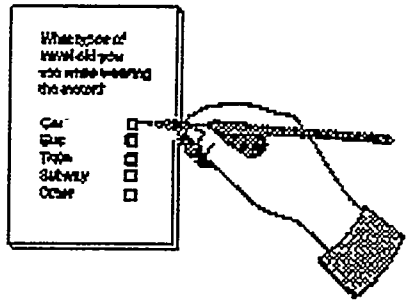


24 hours after you first started wearing the clip-on box...

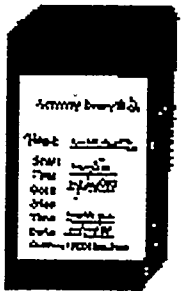
24 hours after you first started wearing the clip-on box...



Write the time you stopped wearing the clip-on box on Activity Diary # 2.



Check the boxes showing what kinds of transportation you used while wearing the clip-on box.

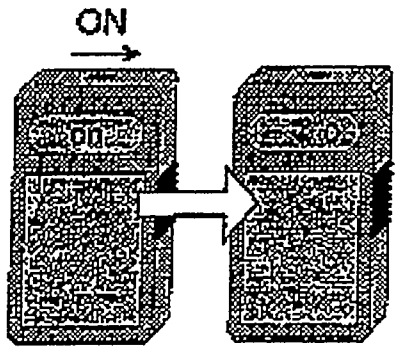


Place the Box and Activity Diary #2 in a safe place.

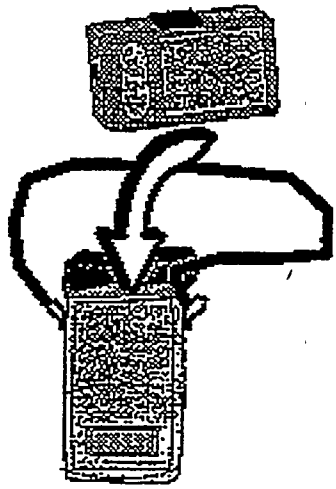
Keep the pen and use it for the third 24-hour period. (See next page.)

Third 24-hour Period

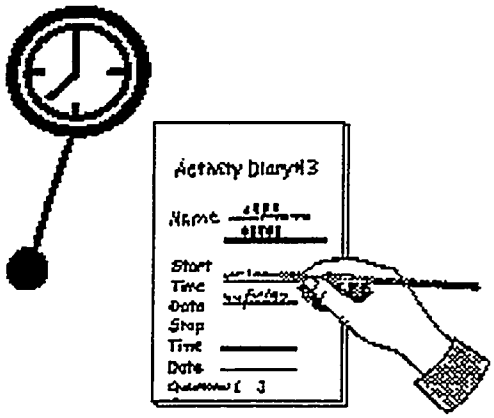
- Do not start the third period on a Friday, Saturday or Sunday. Wait until Monday.



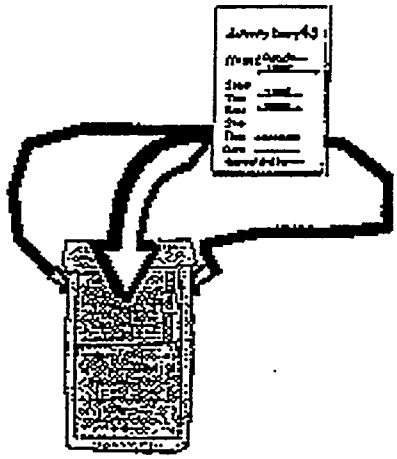
Move switch to the right. Wait for meter to display "0" on the screen



Please put Meter in the pouch



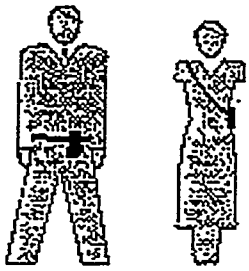
Write the time you turned on the meter on the Activity Diary



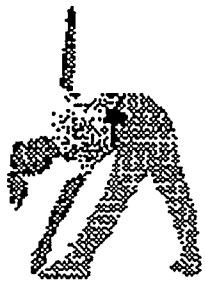
Keep the Activity Diary in the pouch pocket

Today and Tomorrow

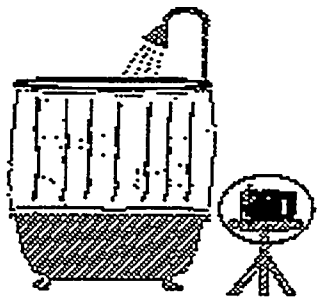
For the next 24 hours:
Keep the Meter near you all the time



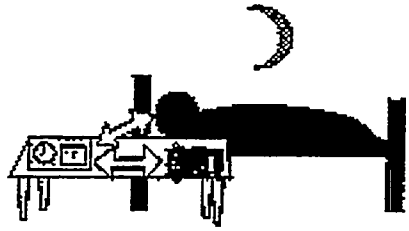
Please wear the meter on the waist, shoulder, in a pocket, or in a purse



You may wear it while exercising or running.



Do not get the Pouch wet



At night or during naps keep the pouch close to the bed. Do not place the pouch on or near clock radios or other electrical appliances.

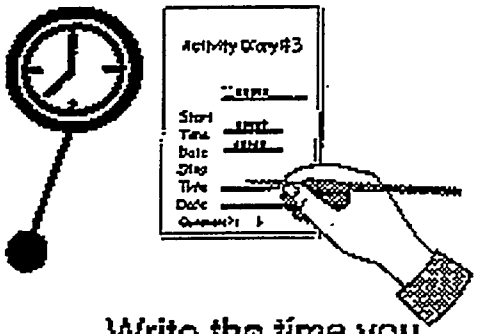
Take the pouch off but keep it near you if

* It is too uncomfortable to wear
* You take a bath, shower, or go swimming

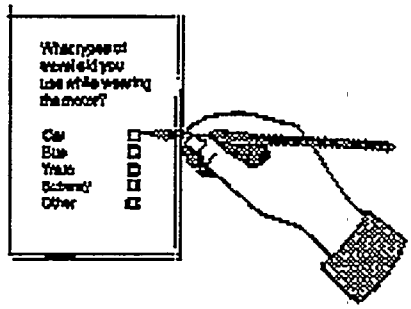
Fill out the Activity Diary #3 in the same way as for Day #1. (See pages 5-7.)

24 hours after you first put the meter on...

24 hours after you first put the meter on ...



Write the time you stopped using the meter on the Diary



Check the boxes showing what kinds of transportation you used while wearing the meter.

Place the Pouch (with the Meter and Diary still in it) in a safe place. Call your contact to arrange a convenient pick-up time.

APPENDIX C

DETAILED RESULTS OF SURVEY OF PERSONAL MAGNETIC FIELD EXPOSURE OF 52 SELECTED PEOPLE (Convenience Sample)

Table C-1 contains the results of the analysis of each 24-hour personal exposure recording.

The first column contains the participant identification number.

The category codes (second column) have the following meaning:

A = Adult (> 18)
I = Infant (< 1)
T = Toddler (2-5)
P = Parent of Toddler (with Subject ID having the same first 4 digits)
C = Child (6-18), First day of wearing the personal exposure meter
C = Child (Same child as above, if Subject ID has the same first 4 digits), Second day of wearing the personal exposure meter

The third column specify the sex (F = female, M = male)

The activity codes (fourth column) have the following meaning:

1 = total measurement period
13 = total period at home
5 = period at home, not in bed
9 = period at home, in bed
17 = period at work
33 = period in school
65 = period traveling
129 = all other activities
3 = total period the meter was worn (this category was not used for all subjects)

The fifth column contains the time, number of seconds, spent for a specific activity.

The next five columns contain: average (mG), standard deviation (mG), geometric mean (mG), and geometric standard deviation, and maximum (mG).

The next five columns contain the values of the magnetic field not exceeded for given percentage of time, i.e. the "percentile levels": 50^{th} percentile (which is the median), 75^{th} percentile, 90^{th} percentile, 95^{th} percentile, and 99^{th} percentile.

The next 7 columns contain the time, number of seconds, in which the magnetic field was in a specified range: less than 0.5 mG, between 0.5 and 1 mG, between 1 and 2, between 2 and 5, between 5 and 10, between 10 and 20, between 20 and 50, and more than 50 mG.

The data of table C-1 were used to generate Figures 4.1 to 4.3 of Section 4 of the Report.

Table C-1 Analysis of the 24-hour personal exposure data of each participant

Subj. ID	Category	Sex	Partition code	Time (sec)	Average	St. Dev	Geom Mean	Geom StDev	Max	50%	75%	90%	95%	99%	<0.5	.5-1	1-2	2-5	5-10	10-20	20-50	>50
2000	A	F	1	86404	2.11	2.04	1.33	3.17	30.88	2.84	3.03	3.17	3.45	4.7	21864	6896	7904	49068	308	124	240	0
2000	A	F	13	55804	2.49	2.18	1.85	2.45	30.88	2.93	3.1	3.17	3.27	4.5	9196	4068	2840	39376	76	8	240	0
2000	A	F	5	20104	1.21	1.3	0.75	2.59	11.74	0.55	1.54	3.36	4.12	4.58	9184	4060	2840	3936	76	8	0	0
2000	A	F	9	35700	3.2	2.25	3.06	1.22	30.88	2.97	3.12	3.16	3.2	3.26	12	8	0	35440	0	0	240	0
2000	A	F	17	18000	2.15	1.55	1.62	2.41	18.24	2.05	2.77	3.79	4.28	7.04	2500	1720	4152	9312	200	116	0	0
2000	A	F	65	10800	0.28	0.38	0.19	2.18	7.09	0.16	0.27	0.56	1.1	1.89	9460	772	468	96	4	0	0	0
2000	A	F	129	1800	1.11	1.08	0.69	2.82	8.08	0.67	1.67	2.36	2.73	5.6	708	336	444	284	28	0	0	0
2001	A	M	1	86404	0.66	1.04	0.29	3.8	25.01	0.23	1.09	1.51	1.99	3.5	50344	11640	20164	3660	348	240	8	0
2001	A	M	13	32704	0.22	0.45	0.11	2.64	8.68	0.07	0.11	0.59	0.85	2.86	28160	3760	324	444	16	0	0	0
2001	A	M	5	8404	0.65	0.72	0.45	2.48	8.68	0.51	0.8	0.92	2.14	3.43	4040	3664	244	440	16	0	0	0
2001	A	M	9	24300	0.08	0.11	0.07	1.36	3.3	0.07	0.07	0.09	0.09	0.15	24120	96	80	4	0	0	0	0
2001	A	M	17	28200	1.43	1.33	1.2	1.76	20.52	1.21	1.47	2	2.32	9.58	1228	5664	18492	2272	300	240	4	0
2001	A	M	65	6600	0.82	1.15	0.44	3.25	25.01	0.43	0.97	2.29	2.79	4.65	3520	1496	732	820	28	0	4	0
2001	A	M	129	18900	0.24	0.32	0.16	2.16	5.03	0.15	0.23	0.41	0.81	1.83	17436	720	616	124	4	0	0	0
2002	A	F	1	86404	1.04	1.28	0.73	2.25	74.8	0.77	1.23	2.03	2.48	6.38	32296	24136	20648	8068	992	252	8	4
2002	A	F	13	43628	1	1.42	0.65	2.38	74.8	0.39	1.6	2.16	2.45	5.05	26100	2124	9244	5716	276	160	4	4
2002	A	F	5	14048	2	2.04	1.66	1.78	74.8	1.72	2.17	2.94	3.98	10.6	392	1404	7716	4092	276	160	4	4
2002	A	F	9	29580	0.53	0.52	0.41	1.77	2.52	0.35	0.39	1.71	2.03	2.29	25708	720	1528	1624	0	0	0	0
2002	A	F	17	33184	1.07	0.95	0.92	1.6	20.46	0.89	1.1	1.43	2.08	5.86	1524	20116	9776	1316	380	68	4	0
2002	A	F	65	7140	1.35	1.75	0.82	2.86	18.62	0.86	1.51	3.03	5	8.33	2456	1860	1516	948	336	24	0	0
2002	A	F	129	2452	0.32	0.6	0.19	2.76	4.63	0.16	0.26	0.44	1.79	3.09	2216	36	112	88	0	0	0	0
2003	A	M	1	86404	3.25	3.33	1.43	4.26	15.83	1.05	7.55	7.6	7.61	7.87	19004	22288	10980	2760	31236	136	0	0
2003	A	M	13	34920	6.78	2.25	5.55	2.41	11.91	7.55	7.6	7.65	7.69	7.98	2380	1476	60	20	30948	36	0	0
2003	A	M	5	4020	0.67	1.19	0.51	1.62	11.7	0.48	0.54	0.61	0.85	7.65	2380	1476	60	16	72	16	0	0
2003	A	M	9	30900	7.58	0.14	7.58	1.02	11.91	7.55	7.6	7.65	7.71	7.98	0	0	0	4	30876	20	0	0
2003	A	M	17	29944	1.02	1.02	0.84	1.7	15.83	0.76	1.08	1.73	2.27	5.46	3488	17320	7020	1792	224	100	0	0
2003	A	M	65	9060	1.14	0.84	0.85	2.46	9.85	1	1.31	2.01	2.62	4.13	1332	3184	3624	868	52	0	0	0
2003	A	M	129	12480	0.22	0.32	0.16	1.81	6.31	0.12	0.17	0.36	0.52	1.69	11804	308	276	80	12	0	0	0
2004	A	M	1	86404	0.88	1.23	0.55	2.55	12.94	0.56	0.99	1.73	2.24	7.44	38976	26060	15800	3180	2300	88	0	0
2004	A	M	13	48424	0.38	0.35	0.3	1.91	7.87	0.31	0.48	0.63	0.76	1.84	37808	9264	1176	136	40	0	0	0
2004	A	M	5	23236	0.57	0.43	0.5	1.59	7.87	0.48	0.6	0.77	1.24	1.87	12652	9232	1176	136	40	0	0	0
2004	A	M	9	25188	0.2	0.08	0.19	1.49	0.65	0.21	0.26	0.31	0.36	0.42	25156	32	0	0	0	0	0	0
2004	A	M	17	30252	1.2	0.6	1.08	1.56	10.49	1.05	1.49	1.92	2.24	2.94	828	13104	13720	2552	40	8	0	0
2004	A	M	65	2088	1.45	1.41	1.05	2.19	12.03	0.99	1.8	2.96	3.91	7.4	304	744	612	360	64	4	0	0
2004	A	M	129	5640	3.32	3.24	1.83	3.09	12.94	0.94	5.99	8.43	9.3	10.0	36	2948	292	132	2156	76	0	0
2005	A	F	1	86404	0.82	0.79	0.62	2.14	20.33	0.57	0.99	1.52	1.9	4.25	16320	48624	17692	3224	504	36	4	0
2005	A	F	13	45076	0.49	0.2	0.44	1.73	12.19	0.53	0.56	0.58	0.6	0.69	9792	35116	152	8	4	4	0	0
2005	A	F	5	11892	0.31	0.32	0.24	2.18	12.19	0.27	0.42	0.6	0.69	1.08	9664	2068	144	8	4	4	0	0
2005	A	F	9	33184	0.55	0.03	0.55	1.07	1.91	0.55	0.57	0.58	0.58	0.6	128	33048	8	0	0	0	0	0
2005	A	F	17	25560	1.22	0.76	1.12	1.49	20.33	1.1	1.39	1.74	2.04	4.19	508	9512	14120	1228	176	12	4	0
2005	A	F	65	8136	1.18	1.3	0.79	2.57	15.96	0.66	1.55	2.82	3.57	5.74	2692	2464	1400	1468	92	20	0	0
2005	A	F	129	7632	1.05	1.28	0.56	3.29	7.77	0.76	1.54	1.97	3.9	6.96	3328	1532	2020	520	232	0	0	0
2036	A	F	1	86404	0.66	0.92	0.5	1.98	33.24	0.45	0.8	1.17	1.38	3.2	47384	25644	11180	1828	224	96	48	0
2036	A	F	3	34368	0.88	1.36	0.61	2.22	33.24	0.67	1.03	1.34	2.12	5.17	15208	9696	7600	1504	216	96	48	0
2036	A	F	13	51012	0.5	0.67	0.4	1.81	20.77	0.37	0.62	0.78	1.26	2.27	35124	12720	2300	716	96	48	8	0
2036	A	F	5	22812	0.71	0.95	0.54	1.97	20.77	0.53	0.75	1.32	1.56	2.85	10696	9016	2232	716	96	48	8	0

2036	A	F	9	28200	0.34	0.14	0.32	1.44	1.36	0.32	0.38	0.54	0.62	0.73	24428	3704	68	0	0	0	0	0
2036	A	F	17	18240	1.07	0.57	1	1.41	7.4	0.97	1.16	1.33	1.65	4.06	60	9820	7608	696	56	0	0	0
2036	A	F	65	7140	1.12	2.29	0.64	2.72	33.24	0.81	1	1.71	2.82	11.2	2464	2872	1232	412	72	48	40	0
2036	A	F	129	10012	0.38	0.11	0.36	1.34	2.42	0.39	0.41	0.45	0.47	0.84	9736	232	40	4	0	0	0	0
2037	A	M	1	86404	1.37	1.1	1.04	2.18	60.86	1.17	1.97	2.6	3.09	4.28	18304	18632	28104	20776	540	44	0	4
2037	A	M	3	86400	1.37	1.1	1.04	2.18	60.86	1.17	1.97	2.6	3.09	4.28	18304	18632	28104	20772	540	44	0	4
2037	A	M	13	51936	0.88	0.75	0.72	1.93	60.86	0.75	1.29	1.6	1.78	2.31	17224	14632	18448	1628	0	0	0	4
2037	A	M	5	28284	0.58	0.46	0.48	1.77	4.78	0.44	0.64	1.03	1.46	2.46	17140	8124	2252	768	0	0	0	0
2037	A	M	9	23652	1.25	0.86	1.18	1.41	60.86	1.26	1.48	1.7	1.86	2.19	84	6508	16196	860	0	0	0	4
2037	A	M	17	27444	2.16	0.81	1.99	1.55	12.35	2.29	2.59	3.11	3.44	4.11	272	1728	7788	17588	64	4	0	0
2037	A	M	65	5040	1.85	1.9	1.27	2.28	14.51	1.06	2.21	4.13	6.02	9.46	436	1900	1356	988	328	32	0	0
2037	A	M	129	1984	1.96	1.91	1.18	3.15	15.54	1.26	2.8	4.38	5.86	8.47	372	372	512	572	148	8	0	0
2038	A	M	1	86404	1.97	2.64	0.81	4.51	118	0.99	3.67	4.62	6.17	8.91	33992	9520	11216	24700	6404	532	24	16
2038	A	M	3	54720	3.01	2.84	2.09	2.62	118	3.03	4.13	5.65	6.96	10.1	4020	7928	11100	24696	6404	532	24	16
2038	A	M	13	32916	0.19	0.16	0.16	1.78	2.97	0.15	0.21	0.36	0.55	0.86	30952	1808	140	16	0	0	0	0
2038	A	M	5	2448	0.37	0.3	0.3	1.93	2.97	0.27	0.54	0.71	0.84	1.1	1756	636	40	16	0	0	0	0
2038	A	M	9	30468	0.18	0.14	0.15	1.71	1.36	0.14	0.19	0.31	0.45	0.83	29196	1172	100	0	0	0	0	0
2038	A	M	17	30288	3.11	2.78	2.68	1.74	118	3.44	3.99	4.39	4.69	6.33	72	932	8004	20432	748	60	24	16
2038	A	M	65	23184	3.02	2.91	1.68	3.29	18.39	1.38	5.23	7.07	8.12	11	2968	6780	3060	4248	5656	472	0	0
2038	A	M	129	16	1.92	0.16	1.91	1.09	2.1	1.92	2.02	2.1	2.1	2.1	0	0	12	4	0	0	0	0
2039	A	F	1	86404	0.92	0.94	0.58	2.73	19.2	0.8	1.37	1.79	1.94	4.27	38424	7912	36360	3216	404	88	0	0
2039	A	F	3	58560	1.26	0.97	0.98	2.2	19.2	1.19	1.64	1.87	2.12	4.68	10596	7912	36352	3208	404	88	0	0
2039	A	F	13	37512	0.37	0.7	0.24	1.99	19.2	0.21	0.21	0.77	1.31	2.06	32860	1364	2892	216	160	20	0	0
2039	A	F	5	9672	0.86	1.25	0.49	2.92	19.2	0.49	1.21	1.66	1.87	7.64	5032	1364	2884	212	160	20	0	0
2039	A	F	9	27840	0.19	0.06	0.19	1.15	4.12	0.21	0.21	0.21	0.21	0.23	27828	0	8	4	0	0	0	0
2039	A	F	17	34932	1.45	0.36	1.41	1.27	4.71	1.37	1.72	1.87	1.99	2.5	12	1420	31828	1672	0	0	0	0
2039	A	F	65	13956	1.05	1.51	0.65	2.49	17.51	0.61	0.95	2.33	4.18	7.99	5552	5128	1640	1324	244	68	0	0
2039	A	F	129	4	2.09	.	2.09	1	2.09	2.09	2.09	2.09	2.09	2.09	0	0	0	4	0	0	0	0
2040	A	F	1	86404	1.06	1.19	0.8	2.04	36.6	0.74	1.23	2.03	2.77	5.23	24948	24724	27844	7928	828	88	44	0
2040	A	F	3	39732	1.43	1.56	1.11	1.93	36.6	1.05	1.68	2.73	3.33	6.81	2392	16688	12820	6948	760	80	44	0
2040	A	F	13	45936	0.57	0.4	0.5	1.56	8.92	0.49	0.65	0.75	1.18	2.35	23220	20172	1400	1120	24	0	0	0
2040	A	F	5	24456	0.75	0.47	0.69	1.46	8.92	0.64	0.72	1.07	1.79	2.35	3000	18912	1400	1120	24	0	0	0
2040	A	F	9	21480	0.36	0.07	0.36	1.19	0.61	0.34	0.4	0.47	0.5	0.55	20220	1260	0	0	0	0	0	0
2040	A	F	17	29040	1.7	1.62	1.46	1.6	36.6	1.21	1.76	2.94	3.5	7.98	52	2260	20228	5732	648	76	44	0
2040	A	F	65	11424	1.39	1.09	1.07	2.24	18.6	1.22	1.66	2.19	3.23	5.75	1676	2292	6212	1076	156	12	0	0
2040	A	F	129	4	1.92	.	1.92	1	1.92	1.92	1.92	1.92	1.92	1.92	0	0	4	0	0	0	0	0
2041	A	M	1	86404	0.7	0.79	0.45	2.46	16.5	0.37	0.79	1.73	1.92	3.74	57120	9052	16696	3408	116	12	0	0
2041	A	M	3	20016	1.85	0.82	1.7	1.56	16.5	1.69	1.86	2.82	3.69	4.09	656	608	15452	3200	88	12	0	0
2041	A	M	13	58020	0.34	0.17	0.3	1.61	2.25	0.3	0.42	0.53	0.64	0.9	50224	7576	212	8	0	0	0	0
2041	A	M	5	3504	0.57	0.23	0.53	1.47	2.25	0.53	0.7	0.9	0.95	1.29	1584	1832	80	8	0	0	0	0
2041	A	M	9	54516	0.32	0.15	0.29	1.58	1.9	0.3	0.41	0.5	0.59	0.79	48640	5744	132	0	0	0	0	0
2041	A	M	17	18132	1.9	0.64	1.83	1.32	8.34	1.7	1.86	2.76	3.68	3.95	40	96	15048	2940	8	0	0	0
2041	A	M	65	5892	0.97	1.2	0.62	2.53	16.5	0.57	1.25	1.96	2.82	6.11	2760	1212	1372	440	96	12	0	0
2041	A	M	129	4360	0.23	0.42	0.17	1.73	7.23	0.15	0.19	0.24	0.64	1.85	4096	168	64	20	12	0	0	0
2014	I	F	1	86404	0.59	0.29	0.54	1.52	3.35	0.55	0.71	0.9	1.08	1.43	36216	44180	5548	460	0	0	0	0
2014	I	F	13	86404	0.59	0.29	0.54	1.52	3.35	0.55	0.71	0.9	1.08	1.43	36216	44180	5548	460	0	0	0	0
2014	I	F	5	35104	0.61	0.36	0.55	1.55	3.35	0.52	0.68	1.06	1.21	2.46	16428	14768	3448	460	0	0	0	0
2014	I	F	9	51300	0.58	0.23	0.54	1.49	1.84	0.56	0.72	0.87	0.96	1.23	19788	29412	2100	0	0	0	0	0
2015	I	F	1	86404	0.27	0.31	0.22	1.73	16.69	0.23	0.29	0.35	0.43	1.91	83628	1500	528	740	0	8	0	0

2015	I	F	13	72004	0.25	0.16	0.23	1.51	16.69	0.24	0.29	0.35	0.4	0.54	71028	932	32	8	0	4	0	0
2015	I	F	5	21304	0.25	0.25	0.22	1.62	16.69	0.24	0.3	0.35	0.39	0.68	20872	392	28	8	0	4	0	0
2015	I	F	9	50700	0.25	0.09	0.23	1.46	1.92	0.23	0.29	0.35	0.4	0.5	50156	540	4	0	0	0	0	0
2015	I	F	129	14400	0.36	0.68	0.19	2.62	15.84	0.17	0.25	0.78	2.03	3.35	12600	568	496	732	0	4	0	0
2022	I	F	1	86404	0.38	0.11	0.37	1.32	0.78	0.37	0.45	0.54	0.58	0.65	71584	14820	0	0	0	0	0	0
2022	I	F	13	86404	0.38	0.11	0.37	1.32	0.78	0.37	0.45	0.54	0.58	0.65	71584	14820	0	0	0	0	0	0
2022	I	F	5	56760	0.43	0.1	0.41	1.29	0.78	0.42	0.5	0.58	0.61	0.66	42012	14748	0	0	0	0	0	0
2022	I	F	9	29644	0.3	0.05	0.3	1.18	0.57	0.3	0.32	0.36	0.4	0.47	29572	72	0	0	0	0	0	0
2026	I	F	1	86404	0.52	0.2	0.5	1.28	5.9	0.46	0.54	0.71	0.74	1.31	54532	30260	1268	340	4	0	0	0
2026	I	F	13	78600	0.51	0.13	0.5	1.21	5.9	0.46	0.54	0.69	0.72	0.77	49396	29108	60	32	4	0	0	0
2026	I	F	9	78600	0.51	0.13	0.5	1.21	5.9	0.46	0.54	0.69	0.72	0.77	49396	29108	60	32	4	0	0	0
2026	I	F	129	7804	0.69	0.5	0.59	1.65	2.7	0.47	0.52	1.31	1.91	2.62	5136	1152	1208	308	0	0	0	0
2031	I	M	1	86404	1.02	1.07	0.68	2.36	10.44	0.53	1.32	2.4	3.5	4.48	41584	17164	15256	12004	308	88	0	0
2031	I	M	3	86404	1.02	1.07	0.68	2.36	10.44	0.53	1.32	2.4	3.5	4.48	41584	17164	15256	12004	308	88	0	0
2031	I	M	13	57420	0.98	1.11	0.61	2.49	10.13	0.41	1.34	2.43	3.65	4.49	33960	6452	8196	8580	228	4	0	0
2031	I	M	5	480	1.99	1.65	1.42	2.35	10.13	1.3	3.58	4.07	4.28	7.66	60	140	108	164	4	4	0	0
2031	I	M	9	56940	0.98	1.1	0.61	2.49	8.93	0.41	1.33	2.43	3.64	4.48	33900	6312	8088	8416	224	0	0	0
2031	I	M	33	36660	1.71	1.08	1.43	1.82	8.93	1.35	2.08	3.56	4.11	4.55	1212	10464	14884	9876	224	0	0	0
2031	I	M	65	1744	2.53	2.45	1.49	3.18	10.44	2.43	3.01	4.86	10.0	10.2	412	168	220	776	80	88	0	0
2031	I	M	129	10740	0.71	0.66	0.55	1.89	2.78	0.47	0.6	2.34	2.43	2.66	6036	3268	132	1304	0	0	0	0
2032	I	F	1	86404	1.15	0.72	0.92	2.25	12.95	1.24	1.49	1.58	1.75	3.26	16320	10244	57356	2064	376	44	0	0
2032	I	F	13	77704	1.11	0.6	0.89	2.29	11.78	1.23	1.46	1.56	1.65	2.68	15776	8456	51824	1496	148	4	0	0
2032	I	F	5	76804	1.11	0.58	0.89	2.28	11.78	1.23	1.46	1.56	1.64	2.59	15252	8412	51620	1408	108	4	0	0
2032	I	F	9	900	1.19	1.66	0.65	2.77	9.52	0.37	1.46	2.93	4.68	8.5	524	44	204	88	40	0	0	0
2032	I	F	65	2700	1	0.99	0.81	1.8	10.94	0.6	1.44	1.7	1.81	5.83	484	1328	804	56	16	12	0	0
2032	I	F	129	6000	1.74	1.35	1.52	1.6	12.95	1.51	1.65	2.27	3.85	8.06	60	460	4728	512	212	28	0	0
2033	I	F	1	86404	1.19	0.89	1	1.75	16.32	0.9	1.47	1.86	2.05	5.07	4284	41948	35684	3596	836	56	0	0
2033	I	F	3	86404	1.19	0.89	1	1.75	16.32	0.9	1.47	1.86	2.05	5.07	4284	41948	35684	3596	836	56	0	0
2033	I	F	13	63064	1.02	0.43	0.94	1.48	2.99	0.8	1.44	1.68	1.87	1.94	304	39408	23204	148	0	0	0	0
2033	I	F	5	19500	1.09	0.44	1.01	1.47	2.66	0.83	1.55	1.82	1.9	1.96	292	12280	6820	108	0	0	0	0
2033	I	F	9	43564	0.99	0.42	0.92	1.48	2.99	0.75	1.4	1.67	1.84	1.93	12	27128	16384	40	0	0	0	0
2033	I	F	65	11940	1.78	1.87	1.06	2.91	16.32	1.12	2.53	4.39	5.1	9.45	3396	2192	2664	3044	596	48	0	0
2033	I	F	129	11400	1.49	0.85	1.35	1.55	16.08	1.35	1.55	1.79	2.25	5.9	584	348	9816	404	240	8	0	0
3001	I	F	1	86400	0.23	0.47	0.13	2.38	14.62	0.11	0.16	0.53	0.87	1.99	77044	6172	2324	608	244	8	0	0
3001	I	F	13	77400	0.19	0.44	0.11	2.12	14.62	0.1	0.12	0.35	0.57	1.59	72520	2936	1472	220	244	8	0	0
3001	I	F	5	22140	0.37	0.7	0.2	2.58	14.62	0.15	0.37	0.82	1.35	4.02	18060	2276	1460	176	160	8	0	0
3001	I	F	9	55260	0.11	0.24	0.09	1.64	5.66	0.07	0.11	0.16	0.17	0.54	54460	660	12	44	84	0	0	0
3001	I	F	65	1920	0.78	0.63	0.49	3.17	3.56	0.62	0.97	1.87	2.1	2.48	760	712	308	140	0	0	0	0
3001	I	F	129	7080	0.54	0.51	0.33	2.87	2.91	0.46	0.81	1.08	1.41	2.38	3764	2524	544	248	0	0	0	0
3002	I	M	1	86404	0.52	0.43	0.38	2.21	7.03	0.3	1.02	1.12	1.14	1.17	56284	7336	22496	268	20	0	0	0
3002	I	M	13	79804	0.54	0.41	0.4	2.15	6.68	0.3	1.06	1.13	1.14	1.17	50808	6476	22332	180	8	0	0	0
3002	I	M	5	33304	0.26	0.24	0.23	1.5	6.68	0.23	0.3	0.34	0.36	0.67	32912	104	100	180	8	0	0	0
3002	I	M	9	46500	0.73	0.4	0.59	2.07	1.91	0.84	1.12	1.14	1.16	1.17	17896	6372	22232	0	0	0	0	0
3002	I	M	65	6000	0.21	0.21	0.16	1.88	2.31	0.15	0.22	0.46	0.64	0.98	5412	532	44	12	0	0	0	0
3002	I	M	129	600	1.23	1.15	0.93	2	7.03	0.7	1.46	3.01	3.71	5.56	64	328	120	76	12	0	0	0
3010	I	M	1	86400	0.7	1.27	0.34	3.14	94.6	0.37	0.37	2.59	3.68	4.43	71692	2084	3452	8884	268	16	0	4
3010	I	M	13	71460	0.29	0.75	0.23	2.16	94.6	0.36	0.37	0.37	0.42	0.58	70332	844	68	184	24	4	0	4
3010	I	M	5	23160	0.17	1.3	0.11	2.25	94.6	0.07	0.14	0.37	0.49	1.15	22064	820	64	180	24	4	0	4
3010	I	M	9	48300	0.35	0.09	0.33	1.54	4.62	0.37	0.37	0.37	0.42	0.42	48268	24	4	4	0	0	0	0

3010	I	M	65	3660	1.42	1.25	0.94	2.58	7.11	0.94	1.67	3.59	3.79	4.52	868	1044	900	828	20	0	0	0
3010	I	M	129	11280	3.03	1.27	2.57	2.09	11.45	3.5	3.77	4.19	4.62	6.46	492	196	2484	7872	224	12	0	0
3013	I	M	1	86400	0.66	0.23	0.63	1.37	4.9[illegible]	0.59	0.8	0.95	1.09	1.36	23712	56544	6088	56	0	0	0	0
3013	I	M	13	76920	0.65	0.22	0.62	1.36	4.9[illegible]	0.58	0.79	0.93	1.02	1.34	22436	50112	4328	44	0	0	0	0
3013	I	M	5	21360	0.68	0.25	0.64	1.42	2.[illegible]	0.61	0.86	0.98	1.11	1.47	6528	13064	1764	4	0	0	0	0
3013	I	M	9	55560	0.64	0.21	0.61	1.34	4.[illegible]	0.58	0.76	0.9	0.99	1.32	15908	37048	2564	40	0	0	0	0
3013	I	M	129	9480	0.74	0.27	0.7	1.39	2.12	0.64	0.91	1.14	1.21	1.68	1276	6432	1760	12	0	0	0	0
3017	I	F	1	83912	0.78	0.49	0.67	1.79	1[illegible]38	0.75	0.92	1.21	1.43	2.94	19808	49412	12580	2068	40	4	0	0
3017	I	F	13	78212	0.75	0.36	0.67	1.71	3.72	0.75	0.91	1.13	1.36	2.09	17440	48096	11736	936	4	0	0	0
3017	I	F	5	32700	0.73	0.44	0.61	1.85	6.72	0.63	0.87	1.31	1.53	2.39	9644	16896	5256	900	4	0	0	0
3017	I	F	9	45512	0.77	0.29	0.71	1.59	4.09	0.82	0.93	1.05	1.26	1.47	7796	31200	6480	36	0	0	0	0
3017	I	F	129	5700	1.16	1.26	0.71	2.8[illegible]	13.88	0.55	1.52	3.15	3.57	4.87	2368	1316	844	1132	36	4	0	0
20123	P	F	1	86404	2.1	1.96	1.55	2.[illegible]	39.24	1.57	2.38	3.36	6.59	11.0	6192	10484	37828	26348	4152	1392	8	0
20123	P	F	3	47568	2.76	2.43	1.87	2.76	39.24	2.27	2.91	6.04	8.3	11.9	6036	2720	7476	25800	4136	1392	8	0
20123	P	F	13	51060	2.07	2.31	1.54	1.[illegible]2	20.44	1.38	1.65	4.83	8.05	11.8	236	9232	34400	2176	3652	1360	4	0
20123	P	F	5	12324	4.5	3.74	3	2.[illegible]7	20.44	2.36	7.6	10.3	11.5	13.1	80	1480	4108	1656	3636	1360	4	0
20123	P	F	9	38736	1.3	0.38	1.24	1.36	5.14	1.32	1.53	1.68	1.78	2.52	156	7752	30292	520	16	0	0	0
20123	P	F	17	27072	2.62	0.95	2.52	1.31	39.24	2.43	2.85	3.39	4.16	5.81	4	36	2752	23820	432	24	4	0
20123	P	F	65	2532	1.07	1.26	0.66	2.64	11.51	0.8	1.15	2.07	3.67	6.77	800	932	520	220	52	8	0	0
20123	P	F	129	5740	0.37	0.56	0.25	2.07	5.75	0.25	0.33	0.51	1.29	3.45	5152	284	156	132	16	0	0	0
20122	T	M	1	86404	2.26	2.22	1.59	2.49	17.35	1.53	2.2	5.21	6.76	11.5	6880	10384	45152	14132	8288	1568	0	0
20122	T	M	3	65760	1.89	2.18	1.31	2.5	17.35	1.41	1.72	3.35	7.19	11.9	6880	10024	38620	5324	3396	1516	0	0
20122	T	M	13	72004	2.5	2.26	1.92	1.95	17.35	1.6	2.63	5.43	7.25	11.8	248	7524	41904	13028	7764	1536	0	0
20122	T	M	5	22204	3.61	3.2	2.6	2.22	17.35	2.15	4.36	8.89	11	13.1	244	1364	8752	6904	3408	1532	0	0
20122	T	M	9	49800	2.01	1.41	1.68	1.74	10.1	1.53	1.86	4.83	5.43	6.09	4	6160	33152	6124	4356	4	0	0
20122	T	M	65	7500	1.54	1.74	0.96	2.69	14.27	0.87	1.78	3.56	5.67	7.92	1512	2552	1860	1076	472	28	0	0
20122	T	M	129	6900	0.46	0.86	0.26	3.68	10.44	0.1	0.55	1.35	1.53	2.35	5120	308	1388	28	52	4	0	0
20182	T	M	1	86404	0.49	1.2	0.28	2.18	23.32	0.23	0.33	0.62	1.53	6.6	76288	4684	1968	1972	1144	336	12	0
20182	T	M	3	45660	0.75	1.61	0.37	2.57	23.32	0.31	0.43	1.35	3.44	9.13	35780	4528	1928	1932	1144	336	12	0
20182	T	M	13	63604	0.28	0.35	0.24	1.56	12.36	0.23	0.31	0.41	0.53	0.82	60372	2928	72	116	108	8	0	0
20182	T	M	5	23100	0.42	0.55	0.36	1.54	12.36	0.34	0.41	0.63	0.74	1.84	20056	2772	44	112	108	8	0	0
20182	T	M	9	40504	0.21	0.07	0.2	1.31	2.01	0.19	0.23	0.29	0.31	0.37	40316	156	28	4	0	0	0	0
20182	T	M	33	17340	0.37	0.87	0.23	2.15	15.37	0.21	0.29	0.51	1.23	2.65	15528	824	460	416	88	24	0	0
20182	T	M	65	5400	3.33	3.24	2.06	2.88	23.32	1.97	4.78	8.1	10.4	13.7	388	932	1432	1384	948	304	12	0
20182	T	M	129	60	3.02	0.72	2.94	1.28	4.1	3.15	3.58	4.05	4.1	4.1	0	0	4	56	0	0	0	0
20183	P	F	1	86404	0.82	1.87	0.35	2.7	29.75	0.25	0.37	1.31	8.08	8.59	68432	7416	4168	1744	4524	104	16	0
20183	P	F	13	37624	1.13	2.54	0.32	3.26	8.73	0.21	0.27	8.15	8.22	8.63	33092	192	112	24	4204	0	0	0
20183	P	F	5	37624	1.13	2.54	0.32	3.26	8.73	0.21	0.27	8.15	8.22	8.63	33092	192	112	24	4204	0	0	0
20183	P	F	17	31404	0.57	0.87	0.37	2.33	25.94	0.29	0.7	1.17	1.66	3.76	21080	6244	2976	884	192	20	8	0
20183	P	F	65	15276	0.64	1.36	0.38	2.15	29.75	0.3	0.37	1.5	2.26	6.57	12604	668	1004	788	124	80	8	0
20183	P	F	129	2100	0.5	0.8	0.38	1.73	14.47	0.32	0.45	0.74	1.17	2.64	1656	312	76	48	4	4	0	0
20202	T	F	1	86404	0.34	0.63	0.22	2.32	22.56	0.23	0.27	0.59	1.17	2.74	75812	5364	3552	1504	132	36	4	0
20202	T	F	3	41400	0.46	0.89	0.21	3.17	22.56	0.15	0.49	1.21	1.82	3.66	31168	5080	3476	1504	132	36	4	0
20202	T	F	13	76504	0.24	0.41	0.19	1.95	22.56	0.23	0.27	0.32	0.46	1.05	73204	2420	540	260	56	20	4	0
20202	T	F	5	35404	0.24	0.6	0.14	2.33	22.56	0.12	0.24	0.47	0.66	1.92	32268	2332	464	260	56	20	4	0
20202	T	F	9	41100	0.24	0.07	0.23	1.4	1.46	0.23	0.27	0.29	0.3	0.38	40936	88	76	0	0	0	0	0
20202	T	F	65	3900	1.1	1.25	0.62	3.25	17.25	0.74	1.68	2.3	2.76	5.33	1616	596	1072	572	36	8	0	0
20202	T	F	129	6000	1.19	1.15	0.93	1.92	19.12	0.84	1.42	2.22	3.32	4.56	992	2348	1940	672	40	8	0	0
20203	P	F	1	86404	0.83	1.34	0.44	3.02	109.3	0.3	1.01	2.59	2.66	3.82	55004	9576	6660	14808	288	60	0	8

20203	P	F	3	71512	0.6	1.28	0.35	2.61	109.3	0.29	0.59	1.41	2.19	4.16	51024	9468	6616	4048	288	60	0	8
20203	P	F	13	76684	0.77	1.28	0.4	2.99	109.3	0.29	0.84	2.58	2.66	3.37	52868	6572	3968	13032	180	60	0	4
20203	P	F	5	50860	1.02	1.51	0.49	3.64	109.3	0.41	2.18	2.63	2.67	3.73	27820	5808	3956	13032	180	60	0	4
20203	P	F	9	25824	0.28	0.07	0.27	1.24	1.34	0.25	0.29	0.33	0.38	0.57	25048	764	12	0	0	0	0	0
20203	P	F	65	3504	1.23	2.4	0.71	2.96	63.87	0.87	1.74	2.45	3.07	4.74	1440	436	964	632	28	0	0	4
20203	P	F	129	6216	1.36	1.07	1.06	1.99	5.92	0.95	1.7	2.93	3.67	5.21	636	2568	1728	1144	80	0	0	0
20242	T	M	1	86404	0.85	0.9	0.61	2.22	26.61	0.71	1.04	1.55	2.07	3.66	31680	30856	19180	4116	624	40	8	0
20242	T	M	13	52444	0.98	0.51	0.86	1.7	3.24	0.88	1.18	1.71	2.1	2.59	7480	24920	16756	3288	0	0	0	0
20242	T	M	5	3600	0.69	0.45	0.56	1.89	3.24	0.62	0.93	1.17	1.41	2.34	1512	1392	612	84	0	0	0	0
20242	T	M	9	48844	1.01	0.51	0.89	1.67	3.15	0.9	1.19	1.75	2.11	2.59	5965	23528	16144	3204	0	0	0	0
20242	T	M	33	31620	0.62	1.2	0.36	2.34	11.36	0.29	0.55	1.04	1.77	8.03	22808	5312	2148	700	620	32	0	0
20242	T	M	65	21180	0.39	0.34	0.3	1.91	4.33	0.25	0.46	0.83	1.03	1.7	16456	3468	1140	116	0	0	0	0
20242	T	M	129	780	1.19	3.05	0.47	3.16	26.61	0.29	0.75	2.95	4.31	24.7	440	192	36	92	4	8	8	0
20243	P	F	1	86404	1.09	1.25	0.72	2.52	28.75	0.79	1.25	2.33	3.59	4.84	28228	26376	21444	9548	644	132	32	0
20243	P	F	13	44464	1.04	0.74	0.87	1.82	26.72	0.93	1.25	1.74	2.17	3.96	8352	17312	16020	2656	112	8	4	0
20243	P	F	5	16264	1.05	1.08	0.75	2.21	26.72	0.75	1.33	2.2	3.13	4.31	5924	4750	3604	1852	112	8	4	0
20243	P	F	9	28200	1.03	0.43	0.95	1.53	4.54	0.98	1.24	1.54	1.83	2.45	2428	12552	12416	804	0	0	0	0
20243	P	F	17	28800	1.15	1.66	0.5	3.57	22.35	0.35	1.22	3.68	4.03	5.84	17396	3648	1436	5860	352	100	8	0
20243	P	F	65	5280	1.57	2.12	1.13	2.14	28.75	1.14	1.63	2.55	3.94	8.69	664	1228	2584	612	156	20	16	0
20243	P	F	129	7860	0.85	0.81	0.71	1.69	20.37	0.61	0.87	1.58	2.1	3.16	1816	4188	1404	420	24	4	4	0
20282	T	M	1	86404	1.76	1.1	1.48	2	87.35	1.71	2.17	2.73	3.11	4.59	7368	5060	44840	28548	516	64	4	4
20282	T	M	3	85084	1.77	1.1	1.48	1.99	87.35	1.71	2.17	2.74	3.11	4.6	7124	5012	44368	27992	516	64	4	4
20282	T	M	13	64024	1.82	0.91	1.72	1.39	87.35	1.73	2.11	2.62	2.97	3.6	32	2584	41060	20284	56	4	0	4
20282	T	M	5	28740	2.1	1.24	1.96	1.43	87.35	2.03	2.53	3.01	3.25	4.04	12	892	12996	14776	56	4	0	4
20282	T	M	9	35284	1.59	0.38	1.54	1.29	2.88	1.57	1.87	2.09	2.19	2.42	20	1692	28064	5508	0	0	0	0
20282	T	M	65	16140	1.43	1.68	0.75	3.32	25.09	0.67	2.27	3.53	4.41	6.87	6964	2296	1852	4508	456	60	4	0
20282	T	M	129	6240	2.06	0.73	1.84	1.8	9.49	2.14	2.47	2.78	3.06	3.78	372	180	1928	3756	4	0	0	0
20283	P	F	1	86404	1.82	1.11	1.49	2.05	22.26	1.59	2.17	3.24	3.99	5.37	6860	5856	47496	24932	1188	68	4	0
20283	P	F	3	85396	1.8	1.1	1.47	2.04	22.26	1.58	2.14	3.14	3.96	5.39	6860	5856	47496	23924	1188	68	4	0
20283	P	F	13	66580	1.8	0.81	1.66	1.47	9.3	1.59	2.03	2.78	3.57	4.68	84	4068	44920	17116	392	0	0	0
20283	P	F	5	32380	2.19	0.96	2.01	1.5	9.3	1.97	2.56	3.59	4.17	5.1	24	1132	15576	15256	392	0	0	0
20283	P	F	9	34200	1.43	0.34	1.39	1.28	4.87	1.4	1.65	1.87	2.02	2.27	60	2936	29344	1860	0	0	0	0
20283	P	F	17	10524	1.99	2.04	1.14	3.09	22.26	1.15	3.09	4.57	5.63	8.64	3304	1580	1580	3236	752	68	4	0
20283	P	F	65	5784	0.96	1.15	0.45	3.53	8.1	0.23	1.82	2.5	3.33	4.5	3472	208	968	1124	12	0	0	0
20283	P	F	129	3516	3.08	0.65	3.01	1.22	5.83	2.9	3.48	3.98	4.21	4.91	0	0	28	3456	32	0	0	0
20342	T	M	1	86404	1.7	1.16	1.42	1.83	13.53	1.41	1.94	2.99	4.1	6.4	2672	18524	45404	17064	2728	12	0	0
20342	T	M	3	48720	1.81	1.43	1.41	2.03	13.53	1.33	2.07	3.82	5.27	6.97	2096	12156	21652	10076	2728	12	0	0
20342	T	M	13	82204	1.74	1.15	1.49	1.7	13.53	1.44	1.96	3.05	4.13	6.4	844	17412	44504	16772	2664	8	0	0
20342	T	M	5	44524	1.9	1.43	1.54	1.84	13.53	1.4	2.15	3.93	5.34	6.98	268	11044	20756	9784	2664	8	0	0
20342	T	M	9	37680	1.56	0.64	1.43	1.53	4.96	1.49	1.87	2.37	2.83	3.6	576	6368	23748	6988	0	0	0	0
20342	T	M	65	4200	0.89	1.14	0.55	2.63	11.82	0.63	1.09	1.66	2.53	5.97	1828	1112	900	292	64	4	0	0
20343	P	F	1	86404	1.15	3.01	0.83	1.91	111.6	0.81	1.16	1.72	2.45	5.83	17648	38800	23440	5156	1004	192	56	108
20343	P	F	3	50880	1.57	3.86	1.16	1.79	111.6	1.06	1.46	2.26	3.3	8.05	1852	20232	22280	5156	1004	192	56	108
20343	P	F	13	79444	1.17	3.12	0.83	1.94	111.6	0.78	1.19	1.77	2.49	5.78	16772	34136	22176	5100	944	152	56	108
20343	P	F	5	43924	1.67	4.13	1.23	1.79	111.6	1.13	1.53	2.39	3.55	8.3	976	15568	21020	5100	944	152	56	108
20343	P	F	9	35520	0.55	0.2	0.51	1.45	1.65	0.53	0.64	0.78	0.92	1.2	15796	18568	1156	0	0	0	0	0
20343	P	F	65	660	0.82	0.45	0.72	1.69	1.78	0.7	1	1.69	1.72	1.78	176	316	168	0	0	0	0	0
20343	P	F	129	6300	0.98	1	0.85	1.57	10.29	0.89	0.96	1.08	1.21	7.36	700	4348	1096	56	60	40	0	0
20422	T	M	1	86404	0.98	0.39	0.93	1.36	10.38	0.96	1.15	1.36	1.42	1.56	112	48164	37544	480	92	12	0	0

20422	T	M	3	84900	0.97	0.39	0.92	1.35	10.38	0.94	1.13	1.34	1.4	1.56	112	48164	36040	480	92	12	0	0
20422	T	M	13	78004	0.96	0.31	0.92	1.35	4.4	0.92	1.18	1.36	1.42	1.51	32	44976	32696	300	0	0	0	0
20422	T	M	5	41400	1.05	0.28	1.02	1.25	4.4	1.02	1.21	1.33	1.38	1.6	32	18636	22432	300	0	0	0	0
20422	T	M	9	36604	0.85	0.3	0.81	1.38	1.61	0.7	1.04	1.4	1.44	1.49	0	26340	10264	0	0	0	0	0
20422	T	M	65	8400	1.14	0.82	1.05	1.37	10.38	1.01	1.03	1.06	1.15	5.25	80	3188	4848	180	92	12	0	0
20423	P	F	1	86404	0.98	0.46	0.9	1.57	12.9	0.9	1.19	1.45	1.55	2.23	4680	47460	33096	1072	84	12	0	0
20423	P	F	3	86388	0.98	0.46	0.9	1.57	12.9	0.9	1.19	1.45	1.55	2.24	4680	47452	33088	1072	84	12	0	0
20423	P	F	13	76704	0.99	0.3	0.95	1.32	9.28	0.92	1.19	1.42	1.53	1.64	324	45064	31224	80	12	0	0	0
20423	P	F	5	40620	1.07	0.28	1.04	1.27	9.28	1.03	1.25	1.41	1.54	1.67	324	17988	22220	76	12	0	0	0
20423	P	F	9	36084	0.89	0.28	0.85	1.32	2.66	0.77	0.99	1.43	1.51	1.6	0	27076	9004	4	0	0	0	0
20423	P	F	65	24360	0.96	0.51	0.91	1.34	10.42	0.9	0.99	1.1	1.29	3.81	524	18208	5152	412	60	4	0	0
20423	P	F	129	7432	0.73	0.86	0.45	2.56	12.9	0.33	0.95	1.89	2.34	3.2	4136	1660	1016	600	12	8	0	0
20442	T	F	1	86404	1.12	2.51	0.38	3.44	14.28	0.27	0.63	2.82	6.91	12.9	58172	15320	2892	4428	3380	2212	0	0
20442	T	F	3	41404	2.06	3.37	0.77	3.86	14.28	0.52	1.64	7.11	12.8	12.9	19512	9292	2712	4304	3372	2212	0	0
20442	T	F	13	73680	1.23	2.69	0.38	3.61	14.28	0.26	0.62	3.98	7.78	12.9	50560	11272	2064	4224	3352	2208	0	0
20442	T	F	5	28680	2.75	3.84	1.03	4.1	14.28	0.6	4.31	9.78	12.9	12.9	11900	5244	1884	4100	3344	2208	0	0
20442	T	F	9	45000	0.26	0.26	0.2	1.87	5.3	0.17	0.26	0.62	0.72	0.85	38660	6028	180	124	8	0	0	0
20442	T	F	129	12724	0.51	0.57	0.38	2.36	12.75	0.43	0.69	0.93	1.21	2.77	7612	4048	828	204	28	4	0	0
20443	P	F	1	86404	0.79	1.13	0.61	1.92	107.6	0.66	0.82	1.11	1.78	4.75	28556	46080	8024	2960	748	24	8	4
20443	P	F	3	43272	0.94	1.56	0.63	2.29	107.6	0.6	0.99	1.78	3.26	6.23	16924	15700	6916	2948	748	24	8	4
20443	P	F	13	70188	0.76	1.11	0.62	1.77	107.6	0.68	0.82	1.03	1.44	4.15	21092	41188	5532	1932	416	16	8	4
20443	P	F	5	27072	0.97	1.74	0.68	2.12	107.6	0.65	1	1.82	3.15	5.99	9460	10808	4440	1920	416	16	8	4
20443	P	F	9	43116	0.64	0.22	0.59	1.51	3.97	0.68	0.8	0.88	0.93	1.05	11632	30380	1092	12	0	0	0	0
20443	P	F	65	4332	1.4	1.67	0.94	2.26	12.7	0.79	1.22	3.62	5.48	8.16	772	1732	1160	416	248	4	0	0
20443	P	F	129	11884	0.71	0.88	0.46	2.44	12.25	0.46	0.79	1.34	2.5	4.57	6692	3160	1332	612	84	4	0	0
30032	T	F	1	86404	0.24	0.13	0.22	1.46	4.44	0.21	0.32	0.38	0.41	0.52	85360	964	24	56	0	0	0	0
30032	T	F	13	81604	0.25	0.13	0.23	1.47	4.44	0.21	0.33	0.38	0.41	0.54	80560	964	24	56	0	0	0	0
30032	T	F	5	31496	0.26	0.17	0.24	1.45	4.44	0.22	0.29	0.37	0.43	0.63	30484	932	24	56	0	0	0	0
30032	T	F	9	50108	0.24	0.1	0.22	1.48	0.57	0.17	0.38	0.38	0.39	0.43	50076	32	0	0	0	0	0	0
30032	T	F	129	4800	0.17	0.03	0.17	1.2	0.37	0.15	0.2	0.21	0.25	0.25	4800	0	0	0	0	0	0	0
30033	P	F	1	86400	0.48	0.62	0.35	2.08	42.4	0.31	0.64	0.96	1.19	1.88	59248	19712	6612	656	136	32	4	0
30033	P	F	13	79800	0.48	0.6	0.36	2	42.4	0.31	0.64	0.96	1.17	1.79	55040	18004	6276	352	92	32	4	0
30033	P	F	5	43800	0.3	0.66	0.25	1.6	42.4	0.23	0.31	0.37	0.46	1.41	41876	1308	324	164	92	32	4	0
30033	P	F	9	36000	0.69	0.44	0.57	1.88	3.22	0.69	0.83	1.17	1.76	1.79	13164	16696	5952	188	0	0	0	0
30033	P	F	65	1200	1.5	1.27	1.11	2.19	7.87	0.98	2.04	3.2	4.01	6.48	116	488	272	292	32	0	0	0
30033	P	F	129	5400	0.3	0.5	0.19	2.35	9.77	0.16	0.47	0.68	0.82	1.1	4092	1220	64	12	12	0	0	0
30062	T	M	1	86400	0.49	1.41	0.24	2.62	69.51	0.16	0.29	1.06	1.86	5.61	70648	6536	5668	2436	644	460	4	4
30062	T	M	13	75000	0.48	1.37	0.23	2.46	16.58	0.16	0.27	0.96	1.66	6.67	62576	5260	4928	1152	624	460	0	0
30062	T	M	5	30000	0.98	2.07	0.45	2.97	16.58	0.32	0.96	1.84	3	14.8	17592	5252	4928	1144	624	460	0	0
30062	T	M	9	45000	0.15	0.05	0.15	1.26	3.61	0.15	0.16	0.2	0.2	0.21	44984	8	0	8	0	0	0	0
30062	T	M	65	3240	1.4	1.08	0.87	3.33	7.1	1.25	2.41	2.81	2.98	3.43	912	460	720	1136	12	0	0	0
30062	T	M	129	8160	0.23	1.69	0.28	3.14	69.51	0	0.32	0.55	0.68	2.84	7160	816	20	148	8	0	4	4
30063	P	F	1	86400	2.55	3.66	0.77	6.13	127.6	0.54	7.35	7.58	7.63	7.72	42440	7696	6988	5708	23324	168	44	32
30063	P	F	13	75000	2.88	3.82	0.81	6.37	127.6	0.81	7.46	7.61	7.63	7.72	34328	5780	5944	5384	23320	168	44	32
30063	P	F	5	39000	1.19	3.16	0.51	3.52	127.6	0.44	1.27	3.03	4.06	7.98	20612	5768	5944	5372	1060	168	44	32
30063	P	F	9	36000	4.7	3.63	1.33	9.24	7.75	7.46	7.57	7.63	7.68	7.72	13716	12	0	12	22260	0	0	0
30063	P	F	65	3240	0.96	0.78	0.62	3.04	5.33	0.84	1.28	1.97	2.5	3.57	972	972	984	308	4	0	0	0
30063	P	F	129	8160	0.15	0.29	0.28	2.64	3.98	0	0.3	0.55	0.67	0.92	7140	944	60	16	0	0	0	0
30092	T	M	1	86400	0.44	0.27	0.44	1.7	5.14	0.45	0.56	0.73	0.86	1.12	56760	28048	1412	176	4	0	0	0

30092	T	M	13	63796	0.5	0.18	0.47	1.4	5.14	0.47	0.56	0.74	0.86	1.02	39728	23328	700	36	4	0	0	0
30092	T	M	5	23896	0.61	0.24	0.57	1.45	5.14	0.59	0.75	0.9	0.97	1.14	7904	15252	700	36	4	0	0	0
30092	T	M	9	39900	0.43	0.1	0.42	1.29	0.83	0.45	0.49	0.54	0.56	0.62	31824	8076	0	0	0	0	0	0
30092	T	M	65	1800	0.55	0.62	0.49	2.79	4.48	0.44	0.98	1.19	1.48	3	1036	348	376	40	0	0	0	0
30092	T	M	129	20804	0.26	0.36	0.31	2.59	3.95	0.07	0.48	0.65	0.78	1.87	15996	4372	336	100	0	0	0	0
30093	P	F	1	86400	0.38	0.73	0.29	2.11	17.35	0.24	0.42	0.76	0.89	2.99	68836	15420	788	1168	84	104	0	0
30093	P	F	13	63876	0.35	0.42	0.27	1.82	12.02	0.25	0.38	0.61	0.76	2.99	54376	8576	116	776	28	4	0	0
30093	P	F	5	31476	0.5	0.55	0.42	1.68	12.02	0.37	0.55	0.76	0.86	3.29	21976	8576	116	776	28	4	0	0
30093	P	F	9	32400	0.19	0.07	0.18	1.39	0.5	0.19	0.23	0.29	0.33	0.39	32400	0	0	0	0	0	0	0
30093	P	F	65	1800	0.52	0.57	0.53	2.59	2.82	0.46	0.86	1.13	1.69	2.43	920	608	196	76	0	0	0	0
30093	P	F	129	20724	0.46	1.29	0.41	3.22	17.35	0.05	0.76	0.91	0.98	3.02	13540	6236	476	316	56	100	0	0
30112	T	M	1	86400	0.6	1.08	0.27	3.23	13.51	0.15	0.37	2.07	3.34	4.74	67328	4960	5264	8260	572	16	0	0
30112	T	M	13	64860	0.35	0.69	0.2	2.34	10.42	0.14	0.27	0.52	1.57	3.46	58180	2004	1936	2544	188	8	0	0
30112	T	M	5	24060	0.69	1.03	0.38	2.69	10.42	0.29	0.55	2.22	3	4.84	17668	1972	1832	2392	188	8	0	0
30112	T	M	9	40800	0.16	0.17	0.13	1.54	3.02	0.11	0.14	0.27	0.29	0.32	40512	32	104	152	0	0	0	0
30112	T	M	65	8640	2.08	1.58	1.49	2.7	13.51	1.74	3.21	4.29	4.8	5.98	1420	1392	1852	3648	320	8	0	0
30112	T	M	129	12900	0.88	1.36	0.58	4.99	8.75	0.05	1.16	3.6	4.1	4.52	7728	1564	1476	2068	64	0	0	0
30113	P	F	1	86400	1.45	1.64	0.75	3.97	52.28	1.05	2.65	2.68	2.75	6.25	35608	6908	9656	32444	1692	44	44	4
30113	P	F	13	64860	1.61	1.77	0.78	4.11	52.28	1.42	2.65	2.68	2.75	6.38	26156	3268	4984	28748	1620	36	44	4
30113	P	F	5	31260	1.02	2.19	0.39	3.53	52.28	0.29	1	2.64	5.23	6.85	20288	3116	3896	2256	1620	36	44	4
30113	P	F	9	33600	2.16	0.98	1.46	3.47	2.79	2.65	2.68	2.68	2.68	2.72	5868	152	1088	26492	0	0	0	0
30113	P	F	65	12840	1.49	1.03	1.16	2.31	17.81	1.27	2.12	2.66	2.99	4.27	1604	3120	4372	3664	72	8	0	0
30113	P	F	129	8700	0.18	0.34	0.17	2.64	4.04	0.07	0.18	0.47	0.8	1.63	7848	520	300	32	0	0	0	0
30162	T	M	1	86400	0.47	0.62	0.32	2.72	51.06	0.5	0.52	0.76	1.06	2.53	43684	38244	2364	1976	116	12	0	4
30162	T	M	13	70800	0.49	0.58	0.35	2.58	51.06	0.51	0.52	0.76	0.99	2.53	31704	35664	1672	1748	8	0	0	4
30162	T	M	5	70800	0.49	0.58	0.35	2.58	51.06	0.51	0.52	0.76	0.99	2.53	31704	35664	1672	1748	8	0	0	4
30162	T	M	65	2640	0.7	0.73	0.46	2.8	5.01	0.53	0.9	1.48	2.04	4.21	1228	856	420	132	4	0	0	0
30162	T	M	129	12960	0.32	0.77	0.18	2.99	16.18	0.17	0.39	0.6	0.78	4.19	10752	1724	272	96	104	12	0	0
30163	P	F	1	86400	0.45	4.28	0.19	3.28	145.6	0.07	0.21	0.65	1.01	3.1	74812	7212	2792	1084	180	52	84	184
30163	P	F	13	78000	0.4	4.49	0.16	3.01	145.6	0.05	0.12	0.46	0.76	2.05	70784	5372	1044	452	36	48	80	184
30163	P	F	5	45180	0.68	5.88	0.17	3.02	145.6	0.11	0.3	0.69	0.94	3.4	38036	5332	1012	452	36	48	80	184
30163	P	F	9	32820	0.01	0.05	0.06	1.73	1.97	0	0	0	0.05	0.07	32748	40	32	0	0	0	0	0
30163	P	F	65	2580	0.92	0.7	0.65	2.65	4.29	0.8	1.2	1.65	2.24	3.72	672	988	772	148	0	0	0	0
30163	P	F	129	5820	0.88	1.38	0.5	3.14	21.91	0.35	1.13	2.18	3.32	6.29	3356	852	976	484	144	4	4	0
20060	1	F	1	86404	2.14	4.64	0.99	2.81	135.5	0.96	1.22	4.05	6.31	23.1	21476	24460	25992	8072	2652	200	3540	12
20060	1	F	13	59764	2.19	5.15	0.97	2.63	23.99	0.98	1.15	1.66	22.5	23.2	11508	19632	23628	1476	20	32	3468	0
20060	1	F	5	15660	4.53	8.42	1.04	4.63	23.99	0.58	1.56	22.6	23.1	23.5	5784	4452	2672	20	0	4	2728	0
20060	1	F	9	44104	1.36	2.85	0.94	1.92	23.11	1.01	1.14	1.23	2.11	22.8	5724	15180	20956	1456	20	28	740	0
20060	1	F	65	26640	2.02	3.2	1.03	3.21	135.5	0.68	3.25	5.12	5.85	9.49	9968	4828	2364	6596	2632	168	72	12
20070	1	F	1	86404	1.06	2.47	0.53	2.81	136.6	0.45	0.86	2.7	4.6	7.84	48220	19000	8136	7496	2924	512	100	16
20070	1	F	3	81420	1.06	2.54	0.52	2.85	136.6	0.43	0.84	2.83	4.75	8.51	47056	16624	7220	6968	2924	512	100	16
20070	1	F	13	57540	0.58	0.68	0.4	2.28	20.31	0.35	0.67	1.22	1.95	3.01	37812	11008	6052	2636	8	20	4	0
20070	1	F	5	57540	0.58	0.68	0.4	2.28	20.31	0.35	0.67	1.22	1.95	3.01	37812	11008	6052	2636	8	20	4	0
20070	1	F	65	26280	2.15	4.15	1	3.3	136.6	0.63	3.15	5.36	6.34	15.8	9044	6772	2084	4860	2916	492	96	16
20070	1	F	129	2584	0.45	0.14	0.43	1.44	0.88	0.49	0.57	0.62	0.64	0.71	1364	1220	0	0	0	0	0	0
20071	2	F	1	86404	2.64	8.7	0.68	4.11	98.7	0.78	1	2.31	5.95	50.0	29472	35232	11396	5076	1460	52	2928	788
20071	2	F	3	33984	5.75	13.3	1.08	5.81	98.7	0.91	2.36	25.4	49.5	50.4	12180	5560	5948	5072	1456	52	2928	788
20071	2	F	13	53352	3.77	10.9	1.08	2.96	98.7	0.87	1.03	2.14	26.5	50.3	6564	31572	9244	2224	32	0	2928	788
20071	2	F	5	12744	13.27	19.35	3.46	5.32	98.7	1.92	25.7	49.69	50.19	50.71	996	1972	3808	2220	32	0	2928	788

20071	2	F	9	40608	0.78	0.21	0.75	1.4	2.17	0.82	0.94	1.02	1.06	1.1	5568	29600	5436	4	0	0	0	0
20071	2	F	65	27600	0.78	1.47	0.27	4.52	18.81	0.25	0.71	2.41	3.68	6.82	18484	3564	2096	2728	676	52	0	0
20071	2	F	129	5452	0.94	2	0.56	5.71	7.24	0	0.17	5.4	5.78	6.19	4424	96	56	124	752	0	0	0
20080	1	F	1	86404	0.33	0.61	0.23	1.99	15.06	0.21	0.32	0.48	0.74	2.93	78684	4576	1508	1272	344	20	0	0
20080	1	F	3	33664	0.52	0.93	0.3	2.49	15.06	0.29	0.46	0.88	1.96	5.11	26652	3888	1496	1264	344	20	0	0
20080	1	F	13	71944	0.24	0.19	0.21	1.63	4.15	0.19	0.29	0.4	0.49	0.83	68616	2888	272	168	0	0	0	0
20080	1	F	5	23764	0.34	0.29	0.28	1.79	4.15	0.29	0.4	0.55	0.75	1.69	20664	2664	272	164	0	0	0	0
20080	1	F	9	48180	0.2	0.08	0.18	1.44	2.1	0.17	0.23	0.3	0.36	0.46	47952	224	0	4	0	0	0	0
20080	1	F	65	14460	0.78	1.34	0.36	3.25	15.06	0.35	0.6	2.01	3.18	7.15	10068	1688	1236	1104	344	20	0	0
20081	2	F	1	86404	1.1	1.98	0.6	2.71	111.8	0.46	1.1	2.72	4.84	7.28	47212	15092	11912	8336	3528	288	20	16
20081	2	F	3	55344	1.53	2.36	0.88	2.71	111.8	0.79	1.63	4.21	5.5	7.88	20536	11112	11616	8228	3528	288	20	16
20081	2	F	13	57504	0.66	0.68	0.47	2.22	15.94	0.39	0.9	1.45	2.11	2.74	35156	9816	9244	3236	32	20	0	0
20081	2	F	5	27360	1.03	0.82	0.79	2.1	15.94	0.9	1.31	2.13	2.52	3.32	8792	6432	8956	3128	32	20	0	0
20081	2	F	9	30144	0.33	0.22	0.29	1.61	2.87	0.27	0.37	0.55	0.7	1.13	26364	3384	288	108	0	0	0	0
20081	2	F	65	27984	2.02	3.14	0.98	3.27	111.8	0.58	3.29	5.45	6.45	10.3	11744	4680	2660	5100	3496	268	20	16
20081	2	F	129	916	0.54	0.08	0.53	1.14	1.34	0.55	0.57	0.57	0.59	0.63	312	596	8	0	0	0	0	0
20090	1	M	1	86404	0.42	0.97	0.26	2.09	18.15	0.21	0.34	0.54	0.86	5.55	76328	6552	1128	1384	808	204	0	0
20090	1	M	3	37984	0.65	1.42	0.33	2.56	18.15	0.29	0.44	0.87	3.09	8.01	30544	3916	1128	1384	808	204	0	0
20090	1	M	13	71944	0.28	0.36	0.23	1.63	11.32	0.21	0.29	0.44	0.55	0.88	66928	4612	128	80	192	4	0	0
20090	1	M	5	27304	0.36	0.54	0.29	1.69	11.32	0.29	0.39	0.5	0.55	2.24	24516	2384	128	80	192	4	0	0
20090	1	M	9	44640	0.22	0.15	0.2	1.51	0.99	0.19	0.23	0.29	0.49	0.86	42412	2228	0	0	0	0	0	0
20090	1	M	65	14460	1.12	2.09	0.43	3.72	18.15	0.37	0.76	3.62	5.31	10.7	9400	1940	1000	1304	616	200	0	0
20091	2	M	1	86404	0.93	3.62	0.4	3.31	408.6	0.34	0.75	2.41	4.31	6.49	54484	13988	7820	7044	2788	212	44	24
20091	2	M	3	47472	1.45	4.82	0.65	3.68	408.6	0.55	1.64	4.11	5.37	7.37	21172	9612	6580	7040	2788	212	44	24
20091	2	M	13	50280	0.39	0.52	0.27	2.23	16.74	0.23	0.46	0.8	1.19	1.76	38936	7948	3036	288	56	16	0	0
20091	2	M	5	13176	0.66	0.84	0.48	2.12	16.74	0.47	0.73	1.23	1.54	4.5	6980	4040	1800	284	56	16	0	0
20091	2	M	9	37104	0.29	0.28	0.22	2.03	2.04	0.19	0.32	0.61	0.85	1.6	31956	3908	1236	4	0	0	0	0
20091	2	M	65	35556	1.7	5.52	0.71	4.17	408.6	0.58	2.23	4.7	5.65	8.81	15268	5756	4780	6756	2732	196	44	24
20091	2	M	129	568	0.51	0.12	0.5	1.22	1.05	0.5	0.52	0.55	0.83	0.91	280	284	4	0	0	0	0	0
20100	1	F	1	86404	0.91	0.97	0.66	2.12	29.74	0.57	1.07	2.22	2.59	3.4	36036	27608	12152	10220	284	88	16	0
20100	1	F	13	53404	0.59	0.39	0.51	1.73	5.55	0.5	0.67	0.99	1.3	2.23	26448	21924	4128	900	4	0	0	0
20100	1	F	5	16924	0.65	0.44	0.57	1.62	5.55	0.54	0.68	1.02	1.5	2.58	6828	8236	1336	520	4	0	0	0
20100	1	F	9	36480	0.57	0.35	0.48	1.76	2.4	0.48	0.67	0.95	1.18	2	19620	13688	2792	380	0	0	0	0
20100	1	F	33	11280	2.23	1.55	2.01	1.53	29.74	2.24	2.62	2.91	3.1	8.95	20	668	3996	6428	68	84	16	0
20100	1	F	65	3600	1.32	1.34	0.88	2.44	7.71	0.78	1.79	2.61	4.13	6.88	1164	908	828	568	132	0	0	0
20100	1	F	129	18120	0.95	0.9	0.7	2.11	19.5	0.55	1.23	2.18	2.53	4.2	8404	4108	3200	2324	80	4	0	0
20101	2	F	1	86404	0.84	1.05	0.52	2.52	31.62	0.39	1.02	2.44	3.01	3.76	50448	14172	10744	10656	296	84	4	0
20101	2	F	13	53212	0.49	0.53	0.36	2	4.56	0.31	0.49	1.01	1.89	2.52	40212	7636	3056	2308	0	0	0	0
20101	2	F	5	13792	1.06	0.77	0.84	1.99	4.56	0.69	1.55	2.48	2.51	2.57	3568	4992	2924	2308	0	0	0	0
20101	2	F	9	39420	0.29	0.14	0.27	1.48	1.12	0.27	0.33	0.43	0.65	0.75	36644	2644	132	0	0	0	0	0
20101	2	F	33	10956	2.45	1.15	2.25	1.5	17.43	2.57	3.12	3.38	3.59	4.47	0	36	3812	7036	32	40	0	0
20101	2	F	65	5196	1.45	1.85	0.93	2.5	31.62	0.98	1.81	3.31	4.16	8.41	1684	992	1396	936	148	36	4	0
20101	2	F	129	17040	0.7	0.78	0.51	2.16	12.57	0.5	0.8	1.52	1.78	3.99	8552	5508	2480	376	116	8	0	0
20110	1	M	1	86404	0.7	0.95	0.45	2.37	29.71	0.37	0.64	1.71	2.15	3.39	58344	9384	13252	5040	284	84	16	0
20110	1	M	13	73624	0.48	0.55	0.36	1.99	10.92	0.34	0.46	0.92	1.73	2.7	57624	8924	4796	2180	96	4	0	0
20110	1	M	5	28864	0.56	0.57	0.46	1.71	10.92	0.42	0.51	0.95	1.58	2.74	20996	5124	1544	1128	68	4	0	0
20110	1	M	9	44760	0.43	0.53	0.3	2.06	6.6	0.25	0.37	0.86	1.74	2.65	36628	3800	3252	1052	28	0	0	0
20110	1	M	33	10800	1.96	1.14	1.83	1.38	16.94	1.63	1.98	3.08	3.16	5.02	0	20	8128	2544	52	56	0	0
20110	1	M	65	1680	1.22	1.77	0.63	3.02	15.32	0.54	1.32	2.9	5.3	7.07	720	404	276	172	96	12	0	0

20110	1	M	129	300	4.77	5.89	3.04	2.44	29.71	2.79	4.33	9.66	22.8	29.7	0	36	52	144	40	12	16	0
20111	2	M	1	86404	0.75	1	0.49	2.34	27.53	0.37	0.78	1.79	2.64	4.15	55064	13440	10704	6712	380	92	12	0
20111	2	M	13	60244	0.5	0.54	0.38	1.91	10.07	0.32	0.52	0.92	1.5	2.9	44008	11348	3172	1604	108	4	0	0
20111	2	M	5	20656	0.87	0.77	0.68	1.95	10.07	0.57	0.97	1.73	2.56	3.22	7592	8368	2984	1600	108	4	0	0
20111	2	M	9	39588	0.31	0.15	0.29	1.47	2.43	0.27	0.35	0.44	0.68	0.78	36416	2980	188	4	0	0	0	0
20111	2	M	33	11064	2.21	1.23	2.02	1.48	27.53	1.82	2.74	3.37	4.04	5.43	0	260	6152	4500	120	24	8	0
20111	2	M	65	4908	1.25	1.79	0.71	3.01	20.1	0.74	1.55	2.38	3.53	9.31	1768	1092	1340	552	112	40	4	0
20111	2	M	129	10188	0.42	0.81	0.34	1.56	15.1	0.35	0.36	0.42	0.67	2.92	9288	740	40	56	40	24	0	0
20160	1	M	1	86360	0.45	0.74	0.19	3.58	13.23	0.17	0.45	1.55	1.77	2.86	66608	6372	11572	1404	364	40	0	0
20160	1	M	3	50640	0.72	0.87	0.42	2.86	13.23	0.37	1.12	1.72	1.86	4.15	30976	6324	11536	1400	364	40	0	0
20160	1	M	13	49920	0.12	0.23	0.08	2.08	6.99	0.05	0.11	0.25	0.36	0.78	48800	768	184	148	20	0	0	0
20160	1	M	5	15720	0.23	0.38	0.15	2.27	6.99	0.17	0.26	0.4	0.6	2.11	14688	720	148	144	20	0	0	0
20160	1	M	9	34200	0.07	0.07	0.06	1.57	2.12	0.05	0.05	0.11	0.16	0.37	34112	48	36	4	0	0	0	0
20160	1	M	33	26100	1.15	0.99	0.85	2.21	13.23	0.96	1.66	1.86	2.32	5.34	8280	4924	11264	1252	340	40	0	0
20160	1	M	129	10340	0.28	0.26	0.24	1.72	9.65	0.23	0.31	0.45	0.62	1.11	9528	680	124	4	4	0	0	0
20161	2	M	1	86404	0.6	1.07	0.24	3.76	12.29	0.21	0.6	1.73	1.98	5.83	62400	5692	14116	3108	972	116	0	0
20161	2	M	3	49968	0.99	1.28	0.57	2.8	12.29	0.47	1.51	1.9	2.81	7.75	26024	5664	14084	3108	972	116	0	0
20161	2	M	13	76132	0.66	1.13	0.27	3.83	12.29	0.23	0.78	1.77	2.03	6.62	52532	5444	13964	3104	972	116	0	0
20161	2	M	5	46036	1.05	1.31	0.63	2.73	12.29	0.52	1.54	1.94	3.09	7.88	22436	5444	13964	3104	972	116	0	0
20161	2	M	9	30096	0.07	0.03	0.07	1.46	0.3	0.05	0.1	0.1	0.11	0.16	30096	0	0	0	0	0	0	0
20161	2	M	33	32808	1.28	1.47	0.77	2.84	12.29	1.13	1.74	2.07	3.56	8.19	12908	2596	13292	2932	964	116	0	0
20161	2	M	129	10272	0.15	0.2	0.1	2.18	2.36	0.07	0.15	0.36	0.44	1.15	9868	248	152	4	0	0	0	0
20170	1	F	1	86404	0.48	0.74	0.23	3.45	12.36	0.19	0.5	1.59	1.76	3.1	64528	8228	10368	3004	232	44	0	0
20170	1	F	3	86404	0.48	0.74	0.23	3.45	12.36	0.19	0.5	1.59	1.76	3.1	64528	8228	10368	3004	232	44	0	0
20170	1	F	13	52440	0.17	0.35	0.11	2.32	7.05	0.07	0.17	0.35	0.51	1.5	49632	2092	328	368	20	0	0	0
20170	1	F	5	20940	0.33	0.51	0.21	2.36	7.05	0.22	0.35	0.59	0.81	3.15	18132	2092	328	368	20	0	0	0
20170	1	F	9	31500	0.06	0.03	0.06	1.3	0.16	0.07	0.07	0.09	0.11	0.12	31500	0	0	0	0	0	0	0
20170	1	F	33	25200	1.08	0.94	0.76	2.4	12.36	0.87	1.66	1.99	2.21	4.32	9092	4336	9288	2312	128	44	0	0
20170	1	F	65	4020	0.5	0.63	0.34	2.31	7.09	0.35	0.49	0.91	1.47	3.2	3044	620	200	140	16	0	0	0
20170	1	F	129	4744	0.71	0.83	0.52	2.06	6.38	0.44	0.76	1.18	2.09	5.21	2760	1180	552	184	68	0	0	0
20171	2	F	1	86404	0.7	1.16	0.34	3.08	13.25	0.23	0.78	1.68	1.95	6.54	59952	6552	15748	2224	1740	188	0	0
20171	2	F	3	11988	0.27	0.46	0.14	2.84	3.48	0.11	0.31	0.51	0.78	2.79	10704	796	172	316	0	0	0	0
20171	2	F	13	53152	0.26	0.32	0.2	2.02	6.47	0.21	0.26	0.45	0.61	1.97	49028	2852	752	516	4	0	0	0
20171	2	F	5	30820	0.29	0.41	0.19	2.37	6.47	0.19	0.29	0.5	0.85	2.48	27680	1868	752	516	4	0	0	0
20171	2	F	9	22332	0.22	0.11	0.21	1.46	0.85	0.21	0.23	0.32	0.48	0.64	21348	984	0	0	0	0	0	0
20171	2	F	33	8052	2.8	2.44	2.08	2.11	13.25	1.67	2.44	6.55	7.72	10.8	92	980	3984	1164	1652	180	0	0
20171	2	F	65	1092	0.3	0.05	0.29	1.16	0.67	0.29	0.31	0.34	0.38	0.53	1076	16	0	0	0	0	0	0
20171	2	F	129	24108	0.96	0.8	0.62	2.9	11.9	0.82	1.63	1.72	1.8	2.41	9756	2704	11012	544	84	8	0	0
20300	1	F	1	86404	0.45	0.48	0.33	2.22	12.16	0.31	0.55	0.9	1.31	2.08	61064	18336	6012	892	92	8	0	0
20300	1	F	3	42900	0.64	0.6	0.49	2.14	12.16	0.49	0.74	1.31	1.63	2.55	22080	14216	5628	876	92	8	0	0
20300	1	F	13	43620	0.37	0.33	0.3	1.78	6.12	0.25	0.42	0.67	0.94	1.72	36208	5504	1748	156	4	0	0	0
20300	1	F	5	10020	0.68	0.51	0.56	1.79	6.12	0.48	0.68	1.53	1.71	2.2	5532	2668	1660	156	4	0	0	0
20300	1	F	9	33600	0.28	0.16	0.25	1.53	1.09	0.22	0.29	0.47	0.67	0.94	30676	2836	88	0	0	0	0	0
20300	1	F	33	1144	0.83	0.69	0.65	1.87	3.86	0.52	0.71	1.96	2.24	3.45	524	372	144	104	0	0	0	0
20300	1	F	65	10800	0.56	0.85	0.35	2.49	12.16	0.4	0.59	0.93	1.56	4.41	6892	2916	556	344	84	8	0	0
20300	1	F	129	30840	0.52	0.45	0.35	2.67	5.88	0.41	0.71	1.09	1.37	1.95	17440	9544	3564	288	4	0	0	0
20301	2	F	1	86404	0.51	0.58	0.34	2.35	16.35	0.3	0.57	1.24	1.8	2.5	61308	13264	8880	2916	28	8	0	0
20301	2	F	3	82008	0.51	0.59	0.34	2.37	16.35	0.29	0.56	1.28	1.81	2.52	58312	12316	8428	2916	28	8	0	0
20301	2	F	13	44352	0.42	0.58	0.26	2.32	16.35	0.19	0.32	1.31	1.87	2.11	35912	3076	3688	1668	4	4	0	0

20301	2	F	5	12336	1.06	0.79	0.81	2.18	16.35	0.92	1.74	2.02	2.07	3.25	3932	3040	3688	1668	4	4	0	0
20301	2	F	9	32016	0.18	0.05	0.17	1.3	0.75	0.17	0.19	0.25	0.26	0.32	31980	36	0	0	0	0	0	0
20301	2	F	33	40020	0.57	0.5	0.45	2.11	9.88	0.42	0.69	1.19	1.48	2.51	24756	9296	5004	956	8	0	0	0
20301	2	F	65	8856	0.64	0.8	0.46	2.13	15.7	0.42	0.64	1.13	2.19	4.08	5688	2140	468	536	20	4	0	0
20301	2	F	129	40	1.09	0.23	1.06	1.25	1.58	1.06	1.15	1.37	1.58	1.58	0	4	36	0	0	0	0	0
30040	1	M	1	86404	0.28	0.44	0.2	2.39	9.74	0.17	0.32	0.61	0.72	2.46	71468	12604	936	1372	24	0	0	0
30040	1	M	13	62104	0.33	0.43	0.23	2.1	5.75	0.19	0.42	0.62	0.72	2.52	49552	11152	412	976	12	0	0	0
30040	1	M	5	22264	0.63	0.61	0.52	1.72	5.75	0.51	0.66	0.79	1.41	4.15	9720	11148	408	976	12	0	0	0
30040	1	M	9	39840	0.16	0.06	0.15	1.42	1.02	0.16	0.17	0.23	0.26	0.32	39832	4	4	0	0	0	0	0
30040	1	M	33	13440	0.07	0.14	0.07	1.85	2.51	0.05	0.07	0.12	0.21	0.7	13196	172	60	12	0	0	0	0
30040	1	M	65	1860	1.06	1.03	0.74	2.75	9.74	0.72	1.34	2.42	3.08	4.79	400	852	312	284	12	0	0	0
30040	1	M	129	9000	0.1	0.33	0.15	3.74	2.61	0	0.05	0.12	0.7	2.03	8320	428	152	100	0	0	0	0
30041	2	M	1	86400	0.39	0.72	0.3	2.27	21.09	0.25	0.51	0.74	0.97	2.28	63832	18544	2984	608	344	84	4	0
30041	2	M	13	68068	0.4	0.57	0.29	2.11	21.09	0.3	0.51	0.71	0.87	1.48	48940	16928	1756	260	124	56	4	0
30041	2	M	5	24244	0.71	0.86	0.61	1.58	21.09	0.57	0.72	0.97	1.16	3.75	7004	15040	1756	260	124	56	4	0
30041	2	M	9	43824	0.22	0.13	0.19	1.71	0.96	0.2	0.3	0.41	0.46	0.72	41936	1888	0	0	0	0	0	0
30041	2	M	65	3392	0.88	0.68	0.68	2.23	5.63	0.74	1.16	1.68	2.12	3.55	1088	1144	972	184	4	0	0	0
30041	2	M	129	14940	0.25	1.14	0.27	4.17	15.11	0	0.05	0.36	0.85	8.36	13804	472	256	164	216	28	0	0
30050	1	M	1	86400	1.64	1.59	0.76	4.44	21.23	0.84	3.2	3.3	3.3	5.32	34128	10804	4616	35740	960	148	4	0
30050	1	M	13	41940	2.71	1.33	1.85	3.43	21.23	3.2	3.3	3.3	3.35	5.27	6884	380	288	33884	404	96	4	0
30050	1	M	5	6928	0.26	0.58	0.15	2.3	11.81	0.12	0.17	0.54	1.05	2.35	6192	356	276	96	0	8	0	0
30050	1	M	9	35012	3.19	0.79	3.04	1.54	21.23	3.25	3.3	3.3	3.35	5.27	692	24	12	33788	404	88	4	0
30050	1	M	65	10380	0.96	1.05	0.66	2.39	11.25	0.65	1.12	1.86	2.8	5.83	3508	3880	2088	752	148	4	0	0
30050	1	M	129	34080	0.53	1.07	0.25	3.18	19.16	0.19	0.59	1.12	1.86	5.75	23736	6544	2240	1104	408	48	0	0
30051	2	M	1	86400	0.51	1.91	0.16	3.29	27.14	0.09	0.27	0.78	1.41	11.2	70816	9456	2836	1568	748	800	176	0
30051	2	M	13	45420	0.12	0.17	0.1	1.79	4.03	0.07	0.12	0.19	0.46	0.63	43616	1596	128	80	0	0	0	0
30051	2	M	5	19808	0.19	0.23	0.14	1.95	4.03	0.12	0.19	0.47	0.52	1.06	18012	1588	128	80	0	0	0	0
30051	2	M	9	25612	0.07	0.03	0.07	1.23	0.87	0.07	0.07	0.09	0.09	0.12	25604	8	0	0	0	0	0	0
30051	2	M	65	3000	0.87	1.11	0.57	2.45	7.45	0.53	0.91	1.57	2.84	6.66	1304	1092	368	164	72	0	0	0
30051	2	M	129	37980	0.96	2.79	0.29	4.2	27.14	0.17	0.64	1.42	4.09	17.1	25896	6768	2340	1324	676	800	176	0
30070	1	F	1	86400	1.09	0.94	0.78	2.51	15.96	0.95	1.18	2.18	2.95	5.04	16444	32616	27668	8736	856	80	0	0
30070	1	F	13	61920	1.24	0.89	1.08	1.6	15.96	0.99	1.17	2.29	2.99	5.13	1260	30228	22808	6768	808	48	0	0
30070	1	F	5	26100	1.49	1.19	1.24	1.73	15.96	1	1.72	2.92	3.31	6.53	48	13080	6884	5236	804	48	0	0
30070	1	F	9	35820	1.06	0.51	0.98	1.45	7.58	0.99	1.13	1.47	1.81	3.46	1212	17148	15924	1532	4	0	0	0
30070	1	F	65	2460	1.73	1.78	1.04	2.94	12.09	0.94	3.17	3.57	3.86	10.7	680	636	276	820	16	32	0	0
30070	1	F	129	22020	0.6	0.74	0.31	3.26	8.12	0.22	1.13	1.53	2.05	3.27	14504	1752	4584	1148	32	0	0	0
30071	2	F	1	86400	1.59	1.34	1.13	2.28	5.43	0.92	2.78	3.84	4.19	4.66	14276	34972	12256	24844	52	0	0	0
30071	2	F	13	59040	0.9	0.5	0.79	1.62	4.77	0.77	1	1.74	2.01	2.5	11132	33172	11652	3084	0	0	0	0
30071	2	F	5	14640	1.44	0.63	1.28	1.68	4.77	1.54	1.96	2.19	2.39	2.69	904	3924	6884	2928	0	0	0	0
30071	2	F	9	44400	0.72	0.26	0.68	1.42	3.76	0.71	0.9	1.01	1.08	1.36	10228	29248	4768	156	0	0	0	0
30071	2	F	65	900	1.08	0.71	0.92	1.76	4.67	0.86	1.27	1.86	2.31	3.9	104	432	288	76	0	0	0	0
30071	2	F	129	26460	3.16	1.33	2.52	2.39	5.43	3.55	4.01	4.35	4.59	4.8	3040	1368	316	21684	52	0	0	0
30080	1	F	1	86400	0.99	1.95	0.45	3.07	56.12	0.26	1.07	2.08	2.8	9.63	51624	4828	20516	6428	2652	304	44	4
30080	1	F	13	52692	0.31	0.49	0.23	1.84	26.76	0.21	0.23	0.37	1.21	2.53	47900	1648	1972	1156	12	0	4	0
30080	1	F	5	19392	0.53	0.75	0.34	2.32	26.76	0.26	0.48	1.36	2.12	2.8	14604	1648	1968	1156	12	0	4	0
30080	1	F	9	33300	0.18	0.04	0.18	1.17	1.93	0.16	0.21	0.21	0.23	0.26	33296	0	4	0	0	0	0	0
30080	1	F	65	3600	1.03	0.84	0.71	2.48	5.5	0.92	1.48	2.19	2.71	3.51	1432	488	1220	448	12	0	0	0
30080	1	F	129	30108	2.17	2.87	1.43	2.26	56.12	1.1	2.03	3.74	8.68	14.3	2292	2692	17324	4824	2628	304	40	4
30081	2	F	1	86400	1.12	2	0.5	3.4	69.44	0.44	1.3	3.06	4.46	8.21	44364	13004	17028	8688	2936	272	104	4

30081	2	F	3	30580	0.16	0.03	0.16	1.16	1.35	0.16	0.16	0.2	0.2	0.21	30536	40	4	0	0	0	0	0
30081	2	F	13	30600	0.16	0.05	0.16	1.18	2.47	0.16	0.16	0.2	0.2	0.21	30536	40	20	4	0	0	0	0
30081	2	F	9	30600	0.16	0.05	0.16	1.18	2.47	0.16	0.16	0.2	0.2	0.21	30536	40	20	4	0	0	0	0
30081	2	F	65	5400	0.83	1.16	0.45	3.47	25.39	0.57	1.06	1.92	2.65	4.03	2380	1588	932	476	16	4	4	0
30081	2	F	129	50400	1.74	2.4	1.04	2.78	69.44	1.11	1.61	4.17	5.67	9.24	11448	11376	16076	8208	2920	268	100	4
30120	1	M	1	86400	0.42	1.07	0.15	3.5	42.24	0.09	0.29	1.28	1.74	4.7	69172	6564	7360	2552	516	228	8	0
30120	1	M	13	62356	0.16	0.7	0.09	2.14	42.24	0.07	0.11	0.21	0.43	1.97	59544	1828	368	392	172	44	8	0
30120	1	M	5	29956	0.28	0.99	0.13	2.43	42.24	0.09	0.16	0.46	0.83	4.38	27144	1828	368	392	172	44	8	0
30120	1	M	9	32400	0.06	0.02	0.06	1.27	0.16	0.05	0.07	0.07	0.11	0.11	32400	0	0	0	0	0	0	0
30120	1	M	65	3540	1.23	1.11	0.88	2.35	9.93	0.87	1.59	2.63	3.21	5.96	896	1124	868	608	44	0	0	0
30120	1	M	129	20504	1.06	1.56	0.49	3.83	17.21	0.59	1.44	1.99	3.05	9.79	8732	3612	6124	1552	300	184	0	0
30121	2	M	1	86400	1.17	12.0	0.12	3.31	162.5	0.07	0.21	0.86	0.9	5.75	73520	9380	1988	620	360	36	4	492
30121	2	M	13	66560	1.31	13.6	0.08	2.6	162.5	0.05	0.09	0.12	0.32	8.19	63856	1376	392	140	296	4	4	492
30121	2	M	5	29120	2.68	19.5	0.14	3.29	162.5	0.1	0.12	0.42	0.89	159	26468	1376	392	140	296	4	0	444
30121	2	M	9	37440	0.26	5.68	0.05	1.36	158.7	0.05	0.05	0.05	0.05	0.1	37388	0	0	0	0	0	4	48
30121	2	M	65	1440	1.5	1.67	1.05	2.21	11.78	0.89	1.75	2.85	4.13	9.77	228	596	304	256	44	12	0	0
30121	2	M	129	18400	0.61	0.62	0.44	2.22	10.93	0.44	0.87	0.92	1.27	2.36	9436	7408	1292	224	20	20	0	0
30150	1	F	1	86400	0.54	0.84	0.25	3.13	21.74	0.21	0.5	1.71	2.46	3.41	64812	7008	7376	6980	212	8	4	0
30150	1	F	13	58344	0.2	0.23	0.15	1.99	8.64	0.12	0.23	0.34	0.66	0.77	54536	3460	224	100	24	0	0	0
30150	1	F	5	21444	0.32	0.34	0.25	1.92	8.64	0.23	0.37	0.72	0.74	1.44	17636	3460	224	100	24	0	0	0
30150	1	F	9	36900	0.12	0.07	0.11	1.64	0.35	0.1	0.19	0.23	0.24	0.29	36900	0	0	0	0	0	0	0
30150	1	F	65	4140	0.96	1.15	0.61	2.55	12.74	0.58	1.23	2.09	2.87	5.74	1916	792	972	400	52	8	0	0
30150	1	F	129	23916	1.31	1.13	0.79	3.08	21.74	1.2	2.11	2.78	3.17	4.28	8360	2756	6180	6480	136	0	4	0
30151	2	F	1	86400	0.47	0.43	0.37	1.94	19.53	0.38	0.46	0.75	1.5	2.14	68660	11260	5048	1404	24	4	0	0
30151	2	F	13	53340	0.35	0.17	0.31	1.7	3.42	0.37	0.41	0.48	0.59	0.9	48352	4624	336	28	0	0	0	0
30151	2	F	5	14280	0.45	0.24	0.39	1.76	3.42	0.43	0.52	0.65	0.77	1.37	10156	3760	336	28	0	0	0	0
30151	2	F	9	39060	0.32	0.11	0.29	1.63	0.63	0.33	0.38	0.41	0.47	0.53	38196	864	0	0	0	0	0	0
30151	2	F	65	1680	0.78	1.08	0.37	3.7	8.83	0.39	0.97	2.07	2.56	5.19	1000	280	220	160	20	0	0	0
30151	2	F	129	31380	0.64	0.59	0.48	2.08	19.53	0.46	0.58	1.65	1.92	2.31	19308	6356	4492	1216	4	4	0	0

APPENDIX D

CALCULATION OF COST EFFECTIVENESS OF DIFFERENT SURVEY METHODS

Generic Cost Equations

Introduction

This Appendix was prepared by Enertech Consultants. The cost figures were developed on the basis of their experience. Cost figures were developed for the purpose of comparing different survey methods and guide the selection of the most cost efficient methods. In order to determine the effect of variables on the cost, cost components were expressed in the form of equations. Because of their narrow scope these cost figures should be considered as rough cost estimates if taken individually; their value resides in the relative comparison between methods.

Assumptions About Various Parameters That Enter In The Cost Equations

Recruitment Refusal Rate (RR). This results from an actual refusal (either to the telephone interviewer or to a visiting recruiter) and to the lack of contacting the subject after several attempts have been exhausted. The rates are listed by recruitment method, meter delivery method, and length of monitoring period.

Recruitment by phone, mail the instrument, wear the instrument one day	0.4
Recruitment by phone, arrange for a visit, wear the instrument one day	0.5
Recruitment by phone, mail the instrument, wear the instrument one week	0.5
Recruitment by phone, visit, wear the instrument one week	0.6
Recruitment by visit, wear the instrument one day	0.3
Recruitment by visit, wear the instrument one week	0.4

Consent Refusal Rate (CR). This is the refusal rate that occurs when people that have previously accepted (when recruited by phone) refuse to sign the consent form (sent to them by mail or shown during the visit). This additional refusal rate does not occur when recruitment is by visit, in which case the recruiter will ask for consent form signature at the time of recruitment. The rate of giving up finding the subject after several unsuccessful attempts was added. The rates are listed by recruitment method, meter delivery method, and length of monitoring period.

Recruitment by phone, mail the instrument, wear the instrument one day	0.3
Recruitment by phone, arrange for a visit, wear the instrument one day	0.1
Recruitment by phone, mail the instrument, wear the instrument one week	0.3
Recruitment by phone, visit, wear the instrument one week	0.1
Recruitment by visit	0.0

Lack Of Contact Rate (LOCR). This is the rate of failure to contact the subjects when their residence is visited (despite a previous arrangement made by phone).

Recruitment by phone, visit	0.1
Recruitment by visit	0.3

Meter Loss Rate (M). Meters may not be returned by the participants or may be returned severely damaged. In these cases, participants will not be asked to repeat the measurements, because the risk of another meter loss is too high. The rates are listed by recruitment method, meter delivery method, and length of monitoring period.

Recruitment by phone, mail, 1 day	0.02
Recruitment by phone, visit, 1 day	0.005
Recruitment by visit, 1 day	0.005
Add 0.02 if 1 week instead of 1 day.	
Recruitment by phone, mail, 1 week	0.04
Recruitment by phone, visit, 1 week	0.025
Recruitment by visit, 1 week	0.025

Rate Of Participation (R). This is a combination of Recruitment Refusal Rate, Consent Refusal Rate, and Meter Loss Rate.

$$R = (1 - RR) \cdot (1 - CR) \cdot (1 - M)$$

Data Loss Rate (L). Meters may be returned with no valid data. This may occur because the personal exposure meter may have no permanent memory and was not returned in time for the batteries to be still charged or was accidentally switched off. The data loss rate depends on the instrument, the type of battery, and on the duration of the measurements. The rates are listed by type of instrument, meter delivery method, and length of monitoring period.

AMEX, 1 day	0.01
2-AMEXes, 1 day	0.02
EMDEX II, mail, 1 day	0.12
EMDEX II, visit, 1 day	0.08
EMDEX Lite, mail, 1 day	0.035
EMDEX Lite, visit, 1 day	0.02
EMDEX MATE, mail, 1 day (This instrument has permanent memory)	0.01
EMDEX MATE, visit, 1 day	0.005
AMEX, 1 week	0.015
2-AMEXes, 1 week	0.025
EMDEX II, mail or visit, 1 week (Not possible, because of battery life)	
EMDEX Lite, mail, 1 week	0.04
EMDEX Lite, visit, 1 week	0.025
EMDEX MATE, mail, 1 week (This instrument has permanent memory)	0.015
EMDEX MATE, visit, 1 week	0.01

Payment To Participants (D). Payments are made as an incentive to participate. Greater incentives are required if the measurements last longer (one week instead of one day) or if they involve an intrusive visit at the residence.

Mail instrument, 1 day of personal exposure measurements	$ 50.00
Mail instrument, 1 week of personal exposure measurements	$ 100.00
Visit, 1 day of personal exposure measurements	$ 100.00
Visit, 1 week of personal exposure measurements	$ 150.00

Management Cost Factor (F1), The cost of personnel to handle consent forms, mail instruments, diary, instructions, boxes, UPS mailers, receive instruments, check and re-calibrate if needed, and basic data management (download and file data) varies as a function of the meter and the method of providing and returning the meters. The base management cost factor is 1.00 is for handling the EMDEX Lite, which is taken as the base case.

Recruitment by phone, EMDEX Lite	1.00
Recruitment by phone, AMEX	0.90
Recruitment by phone, 2-AMEXes	0.95
Recruitment by phone, EMDEX II	1.00
Recruitment by phone, EMDEX MATE	1.00

Cost Of Instruments (T)

AMEX	$ 150
2-AMEXes	$ 300
EMDEX II	$ 2,000
EMDEX Lite	$ 960
EMDEX MATE	$ 475

Cost Of Batteries (B)

AMEX, 1 day (1 battery for 2 sets of measurements)	$ 0.95
2-AMEXes, 1 day (1 battery for 2 sets of measurements)	$ 1.90
AMEX, 1 week (1 battery for each measurement)	$ 1.90
2-AMEXes, 1 week (1 battery for each meter)	$ 3.80
EMDEX II, 1day. Lithium battery.	$ 5.00
EMDEX Lite, 1 day. Alkaline battery.	$ 1.90
EMDEX Lite, 1 week. Lithium battery.	$ 5.00
EMDEX MATE, 1 day. Alkaline battery.	$ 1.90
EMDEX MATE, 1 week. Lithium battery.	$ 5.00

Cost Of Additional Instrumentation (TA)

This is the cost of the instrumentation that a visiting crew of two persons uses to perform additional measurements at the homes of the participants.

2 EMDEX SNAPs	$ 790	One camera	$ 200
One DC meter	$ 1,500	One clamp-on ammeter	$ 200
One Wavecorder	$ 6,000	One measuring wheel	$ 300
One portable computer	$ 1,000		
TOTAL	$ 10,100		

Cost algorithms - No visit at the homes of the participants

The costs were calculated as a function of the following parameters:

P = Sample Size X = Meters mailed to participants per week

Total number of meters required, IT: $IT = \text{int}(P \cdot L + X(k + 1/\sqrt{X})$ (1)

where k=2 for one day exposure measurement and k=3 for one week exposure measurement.

Number of weeks for the measurements, NW: $$NW = P(1+M+L)/X \quad (2)$$

Cost of instruments ,CI: $$CI = IT \cdot T + X \cdot NW \cdot CB \quad (3)$$

Number of letters to be mailed, LTBM:

$$LTBM = \frac{P}{(1-RR)(1-CR)(1-M)} \quad (4)$$

Number of addresses of accepting participants, P_1: $$P_1 = \frac{P}{(1-CR)(1-M)} \quad (5)$$

Recruitment Cost, RC:

$$RC = \$10{,}000 + \$1{,}800 \cdot (\text{int}(LTBM/80)+2) + LTBM \cdot k + 4.7(\$/\textit{accepting participant}) \cdot P_1/(1-RR) \quad (6)$$

where k=21 $/letter for LTBM/NW > 80 letters/week
k=30 $/letter for LTBM/NW < 20 letters/week
and k is calculated by linear interpolation for intermediate values of LTBM/NW.

Survey Management Cost, SMC:

$$SMC = X \cdot NW \cdot f(X) \cdot F_1 + P \cdot (1+M+L) \cdot (k_1 + k_2/(1-CR)) + D \cdot P \cdot (1+M+L) \quad (7)$$

where $f(X)$=80 $/meter for X = 10 meter/week; $f(X)$=70 $/meter for X = 20 meter/week; $f(X)$=63.3 $/meter for X = 30 meter/week; $f(X)$=58.7 $/meter for X > or = 60 meter/week, and $f(X)$ is linearly interpolated for intermediate values.
k_1=25.1 $/(accepting participants) for AMEX, 39.3 $/(accepting participants) for EMDEX II, 32.2 $/(accepting participants) for EMDEX Lite, 27.3 $/(accepting participants) for EMDEX MATE
k_2=3.39 $/(person to whom a consent form is mailed)

Project Management Cost, PMC: $$PMC = 1180(\$/week) \cdot (NW+10) \quad (8)$$

Database, Analysis, and Final Report, DAF: $$DAF = \$33{,}000 + 11(\$/person) \cdot P \quad (9)$$

Contingency, CO, equal to 10%: $$CO = 0.1 \cdot (CI + RC + SMC + PMC + DAF) \quad (10)$$

Total cost, C: $$C = CI + RC + SMC + PMC + DAF + CO \quad (11)$$

Cost algorithms - With visit at the homes of the participants

The costs were calculated as a function of the following parameters:

P Sample Size

NA Number of active crews (that are performing measurements simultaneously in different regions)

Each crew is composed of one person. If additional measurements are made at the homes of the participants, the crews are composed of two persons. The crews may be "local", i.e. hired within each cluster, or "traveling" from cluster to cluster.

Total number of clusters (regions where measurements are made), NC:
Although this is a variable in the cost algorithms, calculations were performed for NC=50

Number of crews to be recruited: N

$$\begin{aligned} N &= NC && \text{if local crews are recruited} \\ N &= \text{int}(NA \cdot 1.1) + 1 && \text{if traveling crews are recruited} \end{aligned} \qquad (12)$$

Addresses visited by a crew per week: HP

HP = 11 if recruitment is made by phone

HP = 12 if recruitment is made by visit (13)

Measurements by a crew per week: MP $$MP = \frac{HP}{(1-RR)\cdot(1-LOCR)} \qquad (14)$$

Total number of meters required, IT: $$IT = \text{int}(P \cdot L + MP(k + 1/\sqrt{MP}) \qquad (15)$$

where k=2 for one day exposure measurement and k=3 for one week exposure measurement.

Number of weeks for the measurements ,NW:

$$NW = \text{int}\left[\frac{P\cdot(1+M+L)}{MP\cdot NC}+1\right]\cdot\text{int}\left[\frac{NC}{NA}+1\right] \qquad (16)$$

Cost of instruments ,CI: same as Equation (3)

Number of letters to be mailed, LTBM: same as Equation (4)

Number of addresses of accepting participants, P_1: same as Equation (5)

Recruitment Cost, RC:

For recruitment by phone:

$$RC = 1.1\cdot[\$10{,}000 + 1{,}800\cdot(\text{int}(LTBM/80)+2) + LTBM\cdot k + 4.7(\$/accepting\ \ person\cdot P_1/(1-RR)] \qquad (17)$$

where k=21 $/letter for LTBM/NW > 80 letters/week
k=30 $/letter for LTBM/NW < 20 letters/week
and k is calculated by linear interpolation for intermediate values of LTBM/NW.

$RC = \$10{,}000$ (18)

Survey Management Cost, SMC:

$$SMC = P \cdot (1 + M + L) \cdot f(X) \cdot F_1 + IT \cdot 13.6 + D \cdot P \cdot (1 + M + L) \quad (19)$$

where: $X = MP \cdot NA$ (number of meter per week) and $f(X)$=80 $/meter for X = 10 meter/week; $f(X)$=80 $/meter for X = 10 meter/week; $f(X)$=70 $/meter for X = 20 meter/week; $f(X)$=63.3 $/meter for X = 30 meter/week; $f(X)$=58.7 $/meter for X > or = 60 meter/week, and $f(X)$ is linearly interpolated for intermediate values.

Crew Recruitment Costs, CRC:

For local crews $CRC = k \cdot NC / 50$ (20)

where: k = $100,000 per group of up to 50 local crews composed of one person each
k = $110,000 per group of up to 50 local crews composed of two persons each

For traveling crews: $CRC = k_1 + k_2 \cdot [\text{int}(NA \cdot 1.1) + 1]$ (21)

where: k_1 = $15,000 for the entire group of 1 person crews, k_1 = 18,000 for the entire group of two person crews to be recruited
k_2 = $1,500 per crew to be recruited (1 person crews), k_2 = 3,000 per crew to be recruited (2 person crews)

Crew Training Cost, CTC:

For local crews: $CTC = k_1 \cdot \text{int}(NC / 15 + 1) + k_2 \cdot NC$ (22)

(Crews are trained in groups of 15 crews per group)

where: k_1 = $ 1,000 per group of 1 person local crews, recruitment by phone
k_1 = $ 2,000 per group of 1 person local crews, recruitment by visit
k_1 = $ 3,000 per group of 2 person local crews
k_2 = $ 800 per crew for 1 person local crews, recruitment by phone
k_2 = $ 1,000 per crew for 1 person local crews, recruitment by visit
k_2 = $ 1,600 per crew for 2 person crews

For traveling crews: $CTC = k_1 + k_2 \cdot (\text{int}(NA \cdot 1.1) + 1)$ (23)

(Crews are trained in one groups)

where: k_1 = $ 2,400 for the group of 1 person traveling crews
k_1 = $ 8,000 for the group of 2 persons traveling crews
k_2 = $ 1,200 per crew for the 1 person traveling crews, recruitment by phone
k_2 = $ 1,000 per crew for the 1 person traveling crews, recruitment by visit
k_2 = $ 2,900 per crew for the 2 person traveling crews

Crew Labor Cost, CLC:

For local crews: $$CLC = k_1 \cdot \frac{P \cdot (1 + M + L)}{MP} \quad (24)$$

where: k_1 = $ 1,750 per week for 1 person local crews
k_1 = $ 3,750 per week for 2 persons local crews

For traveling crews:

$$CLC = k_1 \cdot \frac{P \cdot (1 + M + L)}{MP} + (\frac{NC}{NA} + 5) \cdot k_2 \cdot [\text{int}(NA \cdot 1.1) + 1] \quad (25)$$

where: k_1 = \$ 2,080 per week for 1 person traveling crews
k_1 = \$ 4,420 per week for 2 persons traveling crews
k_2 = \$ 320 per crew for 1 person traveling crews
k_2 = \$ 680 per crew for 2 person traveling crews

Crew Expenses, CE: $$CE = k_1 \cdot \frac{P \cdot (1 + M + L)}{MP} + k_2 \cdot (\frac{NC}{NA} + 5) \quad (26)$$

where: k_1 = \$ 490 per week for 1 person local crews
k_1 = \$ 800 per week for 2 persons local crews
k_1 = \$ 1835 per week for 1 persons traveling crews
k_1 = \$ 2940 per week for 2 persons traveling crews
k_2 = 0 for local crews
k_2 = \$ 300 per set of active crews for 1 person traveling crews
k_2 = \$ 600 per set of active crews for 2 person traveling crews

Standby Crew Cost, SCC: $$SCC = k_1 \cdot P \cdot (1 + M + L) \quad (27)$$

where: k_1 = \$ 16/participant for 1 person local crews
k_1 = \$ 32/participant for 2 persons local crews
k_1 = 0 for traveling crews

Project Management Cost, PMC: same as Equation (8)

Database, Analysis, and Final Report, DAF: same as Equation (9)

Contingency, CO:

$$CO = 0.1 \cdot (CI + RC + CRC + CTC + CLC + CE + SCC + SMC + PMC + DAF) \quad (28)$$

Total cost, C:

$$C = CI + RC + CRC + CTC + CLC + CE + SCC + SMC + PMC + DAF + CO \quad (29)$$

Example of cost calculations

Cost calculations were performed for selected survey methods. The cost for a given sample size is a function of the number of instruments mailed per week or, in the case of a visit to the participants, of the number of active crews. The minimum cost for each sample size and survey method was used to construct Tables D-1 to D-5 and Figures 3-3 and 3-4 of the Report.

Calculation of Standard Error and Bias Due to Refusal

While the standard error due to the size of a randomly selected sample can be readily calculated, there are no easy ways to estimate the bias due to the refusal to participate. An attempt was made to estimate the bias due to refusal in order to perform a comparative assessment of the cost effectiveness of methods with potentially different refusal rates. The assumptions made for the calculations were the following. Data available for residential exposure based on spot measurements in different rooms from the EPRI 1000 home study were used as estimates of a one day exposure. When the 200-person exposure data became available, it was found that the geometric standard deviation (2.17) was lower than the corresponding value of the distribution of residential spot measurements (3.5). A smaller value of the standard deviation would result both in a smaller standard error for the sample size and a smaller refusal bias. It was thought, however, that the basic conclusions of the report would not be affected. The calculations were not repeated.

To calculate estimates of the variance due to refusal bias, it was assumed that certain reasons for refusal may be associated with a different exposure distribution of the category of people who has that reason to refuse. A different exposure distribution was estimated for each category of people, based on the best judgment of the Enertech research team. Each distribution was assumed log-normal. The distribution considered were the following:

Category	Reason for possible refusal	Geometric mean (% of base case)	Geometric standard deviation
A	No reason to refuse (base case)	100	3.5
B	Too busy	100	4.0
C	Sick	80	5.0
D	Suspicious	80	2.5
E	Afraid (residence or work with potentially higher field values)	200	3.5
F	Reason not related to magnetic field	100	3.5

It was assumed that if 100 % of the people were to participate, the people will be distributed according to the following: A = 30% , B = 28%. C = 2.8%, D = 11.2%, E = 5.6%, F = 22.4%. If we assume that only 30% participate, only people of category A will participate. For any other participation rate between 30% and 100% the number of participating people from each category is linearly interpolated between the two extreme conditions.

Calculation were performed using a Monte Carlo approach. For each refusal rate (from 0 to 0.7) and for each sample size (200,500,1000,and 2000), the distribution of exposure was determined 100 times and each time the following parameters were calculated: average, top 1^{st}, 2^{nd}, 5^{th}, 10^{th}, and 50^{th} percentiles, and geometric mean. The geometric mean and the geometric standard deviation of the 100 values of each of the 7 parameters were calculated. The geometric standard deviation was taken as the standard error due to size of the sample, the deviation between the geometric mean and the true geometric mean of the general population (with zero refusals) was taken as the bias due to refusal. The results so obtained are plotted in Figure 3-1 and 3-2 of the Report.

Table D-1 Quality Index of Different Survey Methods for a Budget of $ 500,000

Budget (k$): 500				50th percentile of distribution			5th percentile of distribution			
Method (#)	Relative worth	Number of people surveyed	Standard error (%)	Refusal bias (%)	Variance	Quality index	Standard error (%)	Refusal bias (%)	Variance	Quality index
1	100	1679	3.42	2.97	20.48	4.88	7.35	5.18	80.87	1.24
2	130	2020	3.12	3.06	19.04	6.83	6.70	5.36	73.69	1.76
3	140	2242	2.96	2.97	17.55	7.98	6.36	5.18	67.29	2.08
5	360	759	5.08	2.97	34.63	10.40	10.93	5.18	146.37	2.46
6	360									
7	495									
8	360	245	8.95	2.62	86.92	4.14	19.25	4.47	390.48	0.92
9	495									
10	360									
11	495									
12	360	247	8.92	0.91	80.33	4.48	19.18	1.26	369.60	0.97
13	495									
14	300	1152	4.12	2.97	25.82	11.62	8.87	5.18	105.58	2.84
15	360	936	4.58	3.61	33.97	10.60	9.85	6.55	139.79	2.58
16	300	275	8.44	2.62	78.06	3.84	18.15	4.47	349.46	0.86
17	360									
18	435									
19	495									
20	300	318	7.85	2.62	68.45	4.38	16.88	4.47	304.97	0.98
21	360	248	8.89	2.71	86.44	4.16	19.14	4.64	387.74	0.93
22	435									
23	495									
24	300	245	8.94	0.91	80.75	3.72	19.23	1.26	371.56	0.81
25	360	207	9.74	1.02	95.88	3.75	20.95	1.44	441.10	0.82
26	435									
27	495									
28	300	304	8.02	0.91	65.21	4.60	17.26	1.26	299.64	1.00
29	360	267	8.57	1.02	74.53	4.83	18.44	1.44	342.27	1.05
30	435									
31	495									
32	320	1374	3.78	2.97	23.07	13.87	8.13	5.18	92.85	3.45
33	380	992	4.45	3.61	32.79	11.59	9.56	6.55	134.32	2.83
34	320	354	7.45	2.62	62.33	5.13	16.02	4.47	276.66	1.16
35	380	287	8.27	2.71	75.74	5.02	17.79	4.64	338.22	1.12
36	455									
37	515									
38	320	384	7.15	2.62	57.99	5.52	15.38	4.47	256.57	1.25
39	380	325	7.77	2.71	67.72	5.61	16.72	4.64	301.07	1.26
40	455									
41	515									
42	320	306	8.01	0.91	64.94	4.93	17.23	1.26	298.39	1.07
43	380	259	8.70	1.02	76.77	4.95	18.72	1.44	352.66	1.08
44	455									
45	515									
46	320	348	7.50	0.91	57.14	5.60	16.15	1.26	262.26	1.22
47	380	307	7.99	1.02	64.95	5.85	17.20	1.44	297.94	1.28
48	455									
49	515									

Table D-2 Quality Index of Different Survey Methods for a Budget of $ 1,000,000

Budget (k$): 1000				50th percentile of distribution			5th percentile of distribution			
Method (#)	Relative worth	Number of people surveyed	Standard error (%)	Refusal bias (%)	Variance	Quality index	Standard error (%)	Refusal bias (%)	Variance	Quality index
1	100	2840	2.63	2.97	15.71	6.37	5.65	5.18	58.77	1.70
2	130	2020	3.12	3.06	19.04	6.83	6.70	5.36	73.69	1.76
3	140	2262	2.94	2.97	17.47	8.01	6.33	5.18	66.93	2.09
5	360	2043	3.10	2.97	18.40	19.57	6.66	5.18	71.22	5.05
6	360	922	4.61	2.62	28.15	12.79	9.92	4.47	118.42	3.04
7	495	458	6.55	2.62	49.72	9.95	14.08	4.47	218.30	2.27
8	360	809	4.92	2.62	31.11	11.57	10.59	4.47	132.12	2.72
9	495	410	6.91	2.62	54.65	9.06	14.87	4.47	241.09	2.05
10	360	830	4.86	0.91	24.45	14.72	10.46	1.26	110.96	3.24
11	495	345	7.54	0.91	57.65	8.59	16.22	1.26	264.65	1.87
12	360	705	5.27	0.91	28.64	12.57	11.35	1.26	130.32	2.76
13	495	278	8.40	0.91	71.34	6.94	18.07	1.26	328.01	1.51
14	300	2815	2.64	2.97	15.77	19.03	5.68	5.18	59.05	5.08
15	360	2002	3.13	3.61	22.82	15.77	6.73	6.55	88.16	4.08
16	300	1095	4.23	2.62	24.79	12.10	9.10	4.47	102.86	2.92
17	360	897	4.67	2.71	29.19	12.34	10.06	4.64	122.71	2.93
18	435	522	6.13	2.62	44.42	9.79	13.18	4.47	193.77	2.24
19	495	464	6.50	2.71	49.61	9.98	13.99	4.64	217.28	2.28
20	300	940	4.57	2.62	27.73	10.82	9.82	4.47	116.50	2.58
21	360	798	4.95	2.71	31.88	11.29	10.66	4.64	135.20	2.66
22	435	463	6.51	2.62	49.21	8.84	14.00	4.47	215.93	2.01
23	495	420	6.83	2.71	54.01	9.17	14.70	4.64	237.63	2.08
24	300	975	4.48	0.91	20.93	14.34	9.65	1.26	94.63	3.17
25	360	825	4.87	1.02	24.78	14.53	10.48	1.44	112.00	3.21
26	435	421	6.82	0.91	47.35	9.19	14.68	1.26	216.95	2.01
27	495	375	7.23	1.02	53.25	9.30	15.55	1.44	243.77	2.03
28	300	808	4.92	0.91	25.07	11.97	10.59	1.26	113.82	2.64
29	360	713	5.24	1.02	28.54	12.62	11.28	1.44	129.38	2.78
30	435	337	7.63	0.91	59.01	7.37	16.41	1.26	270.94	1.61
31	495	304	8.04	1.02	65.60	7.55	17.29	1.44	300.96	1.64
32	320	3210	2.47	2.97	14.91	21.46	5.32	5.18	55.08	5.81
33	380	2338	2.90	3.61	21.42	17.74	6.23	6.55	81.66	4.65
34	320	1195	4.05	2.62	23.28	13.74	8.71	4.47	95.91	3.34
35	380	1018	4.39	2.71	26.60	14.29	9.44	4.64	110.73	3.43
36	455	570	5.87	2.62	41.30	11.02	12.62	4.47	179.28	2.54
37	515	505	6.23	2.71	46.17	11.15	13.41	4.64	201.35	2.56
38	320	1016	4.39	2.62	26.17	12.23	9.45	4.47	109.27	2.93
39	380	892	4.69	2.71	29.30	12.97	10.08	4.64	123.27	3.08
40	455	495	6.29	2.62	46.46	9.79	13.53	4.47	203.19	2.24
41	515	447	6.62	2.71	51.15	10.07	14.24	4.64	224.40	2.29
42	320	1059	4.30	0.91	19.34	16.55	9.26	1.26	87.29	3.67
43	380	912	4.64	1.02	22.52	16.88	9.97	1.44	101.53	3.74
44	455	445	6.64	0.91	44.88	10.14	14.28	1.26	205.51	2.21
45	515	406	6.94	1.02	49.26	10.45	14.94	1.44	225.32	2.29
46	320	863	4.77	0.91	23.54	13.59	10.25	1.26	106.73	3.00
47	380	771	5.04	1.02	26.45	14.37	10.85	1.44	119.71	3.17
48	455	357	7.41	0.91	55.75	8.16	15.94	1.26	255.82	1.78
49	515	331	7.70	1.02	60.26	8.55	16.56	1.44	276.24	1.86

Table D-3 Quality Index of Different Survey Methods for a Budget of $ 1,500,000

		Budget (k$): 1500		50th percentile of distribution			5th percentile of distribution			
Method	Relative worth	Number of people surveyed	Standard error	Refusal bias	Variance	Quality index	Standard error	Refusal bias	Variance	Quality index
(#)			(%)	(%)			(%)	(%)		
1	100	3859	2.25	2.97	13.88	7.20	4.85	5.18	50.33	1.99
2	130									
3	140									
5	360	3397	2.40	2.97	14.57	24.70	5.17	5.18	53.53	6.73
6	360	1658	3.44	2.62	18.71	19.25	7.40	4.47	74.71	4.82
7	495	919	4.62	2.62	28.22	17.54	9.94	4.47	118.75	4.17
8	360	1374	3.78	2.62	21.16	17.02	8.13	4.47	86.06	4.18
9	495	762	5.07	2.62	32.62	15.18	10.91	4.47	139.11	3.56
10	360	1480	3.64	0.91	14.07	25.58	7.83	1.26	62.90	5.72
11	495	700	5.29	0.91	28.84	17.17	11.39	1.26	131.25	3.77
12	360	1163	4.11	0.91	17.68	20.36	8.83	1.26	79.60	4.52
13	495	529	6.09	0.91	37.89	13.06	13.10	1.26	173.16	2.86
14	300	4527	2.08	2.97	13.13	22.84	4.48	5.18	46.86	6.40
15	360	3251	2.46	3.61	19.06	18.89	5.28	6.55	70.76	5.09
16	300	1915	3.20	2.62	17.12	17.52	6.88	4.47	67.39	4.45
17	360	1602	3.50	2.71	19.57	18.40	7.53	4.64	78.19	4.60
18	435	1026	4.37	2.62	25.99	16.74	9.40	4.47	108.42	4.01
19	495	913	4.63	2.71	28.81	17.18	9.97	4.64	120.96	4.09
20	300	1562	3.54	2.62	19.43	15.44	7.62	4.47	78.08	3.84
21	360	1349	3.81	2.71	21.86	16.47	8.20	4.64	88.82	4.05
22	435	843	4.82	2.62	30.13	14.44	10.37	4.47	127.59	3.41
23	495	766	5.06	2.71	32.91	15.04	10.88	4.64	139.95	3.54
24	300	1705	3.39	0.91	12.32	24.35	7.29	1.26	54.80	5.47
25	360	1444	3.68	1.02	14.61	24.65	7.93	1.44	64.90	5.55
26	435	800	4.95	0.91	25.34	17.17	10.65	1.26	115.07	3.78
27	495	722	5.21	1.02	28.17	17.57	11.21	1.44	127.68	3.88
28	300	1313	3.86	0.91	15.76	19.04	8.31	1.26	70.72	4.24
29	360	1159	4.11	1.02	17.95	20.06	8.85	1.44	80.38	4.48
30	435	603	5.70	0.91	33.36	13.04	12.27	1.26	152.18	2.86
31	495	553	5.95	1.02	36.49	13.56	12.81	1.44	166.21	2.98
32	320	5068	1.97	2.97	12.67	25.26	4.23	5.18	44.72	7.16
33	380	3723	2.29	3.61	18.30	20.77	4.94	6.55	67.22	5.65
34	320	2037	3.10	2.62	16.51	19.39	6.67	4.47	64.54	4.96
35	380	1749	3.35	2.71	18.54	20.49	7.20	4.64	73.45	5.17
36	455	1086	4.25	2.62	24.94	18.24	9.14	4.47	103.58	4.39
37	515	975	4.48	2.71	27.45	18.76	9.65	4.64	114.66	4.49
38	320	1649	3.45	2.62	18.77	17.05	7.42	4.47	75.01	4.27
39	380	1460	3.66	2.71	20.76	18.30	7.88	4.64	83.72	4.54
40	455	885	4.71	2.62	29.04	15.67	10.13	4.47	122.56	3.71
41	515	808	4.93	2.71	31.59	16.30	10.60	4.64	133.85	3.85
42	320	1812	3.29	0.91	11.64	27.48	7.08	1.26	51.67	6.19
43	380	1566	3.54	1.02	13.55	28.04	7.61	1.44	60.02	6.33
44	455	833	4.85	0.91	24.37	18.67	10.44	1.26	110.57	4.11
45	515	765	5.06	1.02	26.66	19.32	10.89	1.44	120.71	4.27
46	320	1378	3.77	0.91	15.05	21.26	8.11	1.26	67.44	4.75
47	380	1236	3.98	1.02	16.89	22.49	8.57	1.44	75.49	5.03
48	455	627	5.59	0.91	32.09	14.18	12.03	1.26	146.33	3.11
49	515	585	5.79	1.02	34.53	14.91	12.45	1.44	157.15	3.28

Table D-4 Quality Index of Different Survey Methods for a Budget of $ 2,000,000

		Budget(k$): 2000		50th percentile of distribution			5th percentile of distribution			
Method (#)	Relative worth	Number of people surveyed	Standard error (%)	Refusal bias (%)	Variance	Quality index	Standard error (%)	Refusal bias (%)	Variance	Quality index
1	100	4878	2.00	2.97	12.82	7.80	4.31	5.18	45.42	2.20
2	130									
3	140									
5	360	4751	2.03	2.97	12.93	27.84	4.37	5.18	45.92	7.84
6	360	2406	2.85	2.62	15.03	23.95	6.14	4.47	57.70	6.24
7	495	1380	3.77	2.62	21.09	23.47	8.11	4.47	85.75	5.77
8	360	1938	3.18	2.62	17.00	21.18	6.84	4.47	66.82	5.39
9	495	1113	4.20	2.62	24.49	20.21	9.03	4.47	101.51	4.88
10	360	2134	3.03	0.91	10.01	35.96	6.52	1.26	44.11	8.16
11	495	1055	4.31	0.91	19.41	25.50	9.28	1.26	87.62	5.65
12	360	1621	3.48	0.91	12.91	27.88	7.48	1.26	57.55	6.26
13	495	780	5.01	0.91	25.96	19.06	10.79	1.26	117.96	4.20
14	300	6269	1.77	2.97	11.93	25.15	3.80	5.18	41.29	7.27
15	360	4500	2.09	3.61	17.39	20.70	4.49	6.55	63.01	5.71
16	300	2738	2.68	2.62	14.04	21.36	5.76	4.47	53.14	5.65
17	360	2307	2.91	2.71	15.83	22.74	6.27	4.64	60.89	5.91
18	435	1530	3.58	2.62	19.69	22.09	7.70	4.47	79.29	5.49
19	495	1362	3.79	2.71	21.72	22.79	8.16	4.64	88.18	5.61
20	300	2184	3.00	2.62	15.86	18.92	6.45	4.47	61.54	4.88
21	360	1900	3.21	2.71	17.65	20.40	6.91	4.64	69.32	5.19
22	435	1224	4.00	2.62	22.91	18.99	8.61	4.47	94.16	4.62
23	495	1113	4.20	2.71	24.95	19.84	9.03	4.64	103.09	4.80
24	300	2438	2.84	0.91	8.87	33.84	6.10	1.26	38.81	7.73
25	360	2065	3.08	1.02	10.53	34.20	6.63	1.44	46.01	7.82
26	435	1178	4.08	0.91	17.47	24.90	8.78	1.26	78.63	5.53
27	495	1069	4.28	1.02	19.36	25.56	9.21	1.44	86.93	5.69
28	300	1817	3.28	0.91	11.62	25.83	7.07	1.26	51.54	5.82
29	360	1605	3.49	1.02	13.25	27.17	7.52	1.44	58.62	6.14
30	435	868	4.75	0.91	23.40	18.59	10.22	1.26	106.10	4.10
31	495	802	4.94	1.02	25.47	19.43	10.64	1.44	115.21	4.30
32	320	6971	1.68	2.97	11.61	27.55	3.61	5.18	39.83	8.03
33	380	5110	1.96	3.61	16.87	22.53	4.21	6.55	60.61	6.27
34	320	2883	2.61	2.62	13.68	23.38	5.61	4.47	51.47	6.22
35	380	2483	2.81	2.71	15.23	24.96	6.04	4.64	58.10	6.54
36	455	1602	3.50	2.62	19.12	23.79	7.53	4.47	76.65	5.94
37	515	1445	3.68	2.71	20.90	24.64	7.93	4.64	84.38	6.10
38	320	2284	2.93	2.62	15.47	20.69	6.30	4.47	59.72	5.36
39	380	2027	3.11	2.71	17.00	22.35	6.69	4.64	66.32	5.73
40	455	1274	3.92	2.62	22.27	20.43	8.44	4.47	91.21	4.99
41	515	1169	4.10	2.71	24.10	21.37	8.81	4.64	99.19	5.19
42	320	2570	2.76	0.91	8.45	37.85	5.94	1.26	36.90	8.67
43	380	2226	2.97	1.02	9.84	38.61	6.39	1.44	42.85	8.87
44	455	1220	4.01	0.91	16.89	26.94	8.62	1.26	75.95	5.99
45	515	1123	4.18	1.02	18.48	27.86	8.99	1.44	82.86	6.22
46	320	1893	3.22	0.91	11.18	28.62	6.92	1.26	49.52	6.46
47	380	1701	3.39	1.02	12.56	30.26	7.30	1.44	55.43	6.86
48	455	897	4.68	0.91	22.68	20.06	10.06	1.26	102.76	4.43
49	515	839	4.83	1.02	24.39	21.12	10.40	1.44	110.18	4.67

Table D-5 Quality Index of Different Survey Methods for a Budget of $ 3,000,000

		Budget (k$): 3000		50th percentile of distribution			5th percentile of distribution			
Method (#)	Relative worth	Number of people	Standard error (%)	Refusal bias (%)	Variance	Quality index	Standard error (%)	Refusal bias (%)	Variance	Quality index
1	100									
2	130									
3	140									
5	360	7566	1.61	2.97	11.39	31.60	3.46	5.18	38.81	9.28
6	360	3923	2.24	2.62	11.88	30.30	4.81	4.47	43.13	8.35
7	495	2310	2.91	2.62	15.37	32.20	6.27	4.47	59.28	8.35
8	360	3093	2.52	2.62	13.22	27.23	5.42	4.47	49.33	7.30
9	495	1816	3.29	2.62	17.68	28.00	7.07	4.47	69.97	7.07
10	360	3474	2.38	0.91	6.47	55.66	5.11	1.26	27.71	12.99
11	495	1764	3.33	0.91	11.94	41.47	7.17	1.26	53.02	9.34
12	360	2553	2.77	0.91	8.50	42.34	5.96	1.26	37.13	9.70
13	495	1281	3.91	0.91	16.12	30.70	8.41	1.26	72.39	6.84
14	300	9776	1.42	2.97	10.81	27.76	3.05	5.18	36.10	8.31
15	360	7063	1.67	3.61	15.81	22.77	3.58	6.55	55.70	6.46
16	300	4386	2.11	2.62	11.35	26.42	4.55	4.47	40.69	7.37
17	360	3715	2.30	2.71	12.61	28.55	4.94	4.64	45.99	7.83
18	435	2540	2.78	2.62	14.60	29.79	5.98	4.47	55.73	7.81
19	495	2265	2.94	2.71	15.99	30.96	6.33	4.64	61.62	8.03
20	300	3430	2.39	2.62	12.60	23.81	5.14	4.47	46.45	6.46
21	360	3000	2.56	2.71	13.87	25.96	5.50	4.64	51.81	6.95
22	435	1984	3.14	2.62	16.76	25.95	6.76	4.47	65.73	6.62
23	495	1806	3.29	2.71	18.19	27.22	7.09	4.64	71.80	6.89
24	300	3907	2.24	0.91	5.84	51.35	4.82	1.26	24.81	12.09
25	360	3347	2.42	1.02	6.89	52.24	5.21	1.44	29.19	12.33
26	435	1934	3.18	0.91	10.96	39.69	6.85	1.26	48.50	8.97
27	495	1763	3.33	1.02	12.15	40.74	7.17	1.44	53.54	9.25
28	300	2829	2.63	0.91	7.75	38.69	5.66	1.26	33.66	8.91
29	360	2510	2.79	1.02	8.84	40.70	6.01	1.44	38.23	9.42
30	435	1400	3.74	0.91	14.83	29.33	8.05	1.26	66.42	6.55
31	495	1301	3.88	1.02	16.11	30.73	8.35	1.44	71.84	6.89
32	320	10776	1.35	2.97	10.62	30.13	2.90	5.18	35.24	9.08
33	380	7935	1.57	3.61	15.50	24.51	3.38	6.55	54.28	7.00
34	320	4574	2.07	2.62	11.17	28.65	4.45	4.47	39.84	8.03
35	380	3957	2.23	2.71	12.29	30.93	4.79	4.64	44.49	8.54
36	455	2634	2.73	2.62	14.33	31.76	5.87	4.47	54.45	8.36
37	515	2384	2.87	2.71	15.55	33.11	6.17	4.64	59.62	8.64
38	320	3560	2.35	2.62	12.39	25.82	5.05	4.47	45.49	7.04
39	380	3168	2.49	2.71	13.52	28.11	5.35	4.64	50.20	7.57
40	455	2053	3.09	2.62	16.43	27.69	6.65	4.47	64.20	7.09
41	515	1890	3.22	2.71	17.70	29.09	6.93	4.64	69.56	7.40
42	320	4089	2.19	0.91	5.62	56.94	4.71	1.26	23.78	13.46
43	380	3568	2.34	1.02	6.53	58.21	5.04	1.44	27.51	13.81
44	455	1995	3.13	0.91	10.65	42.73	6.74	1.26	47.06	9.67
45	515	1840	3.26	1.02	11.69	44.07	7.02	1.44	51.39	10.02
46	320	2928	2.59	0.91	7.52	42.55	5.57	1.26	32.58	9.82
47	380	2642	2.72	1.02	8.45	44.95	5.86	1.44	36.43	10.43
48	455	1437	3.69	0.91	14.47	31.45	7.95	1.26	64.74	7.03
49	515	1348	3.81	1.02	15.58	33.06	8.21	1.44	69.40	7.42

APPENDIX E

METADATA FILE FOR THE EMF MEASUREMENT DATABASE

```
<!DOCTYPE METADATA PUBLIC "-//DOE RAPID5//DTD EMF Metadata Ver 0//EN">
<metadata>
  <dataset-reference>
    <title>DOE EMF Rapid Program Engineering Project #6
    "Survey of Personal Magnetic Field Exposure,
    Phase I: Pilot Study and Design of Phase II"</title>
    <version>19970906</version>
    <status>Complete</status>
    <revision-history>
    <date>19970906</date>
    <contact>
      <organization>Enertech Consultants</organization>
      <name>Luciano Zaffanella</name>
      <address>
            Main Street
            Lee, MA 01238
      </address>
      <phone-voice>413-243-2800</phone-voice>
      <phone-fax>413-243-4620</phone-fax>
      <email-address>luciano@bcn.net</email-address>
      </contact>
      <description></description>
  </revision-history>
  </dataset-reference>
  <dataset-description>
    <abstract>The goal of this engineering project is to provide data
    for the assessment of personal magnetic field exposure.</abstract>
    <keyword>Magnetic Field, Occupation, Partition Code, Power Line,
    Residence</keyword>
    <producer>
      <contact>
        <organization>Enertech Consultants</organization>
        <name>Luciano Zaffanella</name>
        <address>
            17 Main Street
            Lee, MA 01238
        </address>
        <phone-voice>413-243-2800</phone-voice>
        <phone-fax>413-243-4620</phone-fax>
        <email-address>luciano@bcn.net</email-address>
      </contact>
    </producer>
    <time-period>Measurements were made between February 2, 1997 and
    August 10, 1997</time-period>
    <geographic-location>Subject measurements were made randomly
    selected throughout the United States.</geographic-location>
    <general-location>Personal exposure meters were worn by the subjects
```

```
for a period of 24 hours, the location of the measurements includes
anywhere the subject spent time including home, work, bed, at school,
or travel.</general-location>
<exposure-metric>RMS magnetic field in the frequency range from
40 Hz to 1000Hz measured along three orthogonal axes and combined
to give a resultant value.</exposure-metric>
<sampling-interval> Personal exposure measurements made with
an EMDEX Lite gathered data at a rate of 1 measurement every 4
seconds.</sampling-interval>
<duration-of-measurements>Personal exposure measurements made with
the EMDEX Lite gathered data at a rate of 1 measurement every 4 seconds
and lasted for 24 hours.</duration-of-measurements>
<type-of-measurement>Personal Exposure</type-of-measurement>
<methodology>Measurements were performed according to the survey
protocol described in the Final Report of DOE Rapid Program
Engineering Project #6 " Survey of Personal Magnetic Field
Exposure, Phase I: Pilot Study and Design of Phase II".
The basic components of the protocol are: Household selection,
subject interview, subject consent, personal exposure meter and
instruction delivery, 24 hour personal exposure measurements,
meter download / magnetic field exposure calculations, and database
storage.</methodology>
<selection>Households were randomly selected from listed telephone
numbers and selected based upon their willingness to
participate.</selection>
<sample-size>A 200 subject sample size was used for the
Pilot Study.</sample-size>
<instrumentation>
   <instrument>EMDEX Lite</instrument>
   <manufacturer>
      <contact>
         <organization>Enertech Consultants</organization>
         <address>
            300 Orchard City Drive, Suite #132
            Campbell, California 95008
         </address>
      </contact>
   </manufacturer>
   <version>Version 2.1</version>
   <associated-software>Emcalc95 was used download and
   process the data.</associated-software>
   <discussion>The EMDEX Lite was used to store the personal exposure
   measurements for a period of 24 hours.</discussion>
   <frequency-response>40Hz - 1000 Hz</frequency-response>
   <dynamic-range>Magnetic Field, .1mG - 700mG in each of three
   orthogonal directions.</dynamic-range>
</instrumentation>
<associated-project>
  <project-name>DOE EMF Rapid Program Engineering Project #6
  "Survey of Personal Magnetic Field Exposure,
  Phase I: Pilot Study and Design of Phase II"</project-name>
  <sponsorship>
     <contact>
        <name>US Department of Energy</name>
```

```
        </contact>
      </sponsorship>
    </associated-project>
    </dataset-description>
  <data-model>
     <entity>
        <name>Work Information</name>
        <description>A portion of the respondent questionnaire, a
        questionnaire filled out by a subject answering questions
        pertaining to work, residence, and power line information.
        </description>
        <attribute>
           <name>Occupation</name>
           <description>The occupation of the subject.</description>
           <simple-domain>Free Text</simple-domain>
        </attribute>
        <attribute>
           <name>Work Location</name>
           <description>The location where the subject works most of
           the time.</description>
          <codeset-domain>
             <codeset-code>
                <codeset-value>1</codeset-value>
                <description>The subject's work location is "Office" if
                "Work Location" is represented by "1".</description>
             </codeset-code>
             <codeset-code>
                <codeset-value>2</codeset-value>
                <description>The subject's work location is
                "Grocery Store or Supermarket" if "Work Location" is
                represented by "2".</description>
             </codeset-code>
             <codeset-code>
                <codeset-value>3</codeset-value>
                <description>The subject's work location is "Other Store" if
                "Work Location" is represented by "3".</description>
             </codeset-code>
             <codeset-code>
                <codeset-value>4</codeset-value>
                <description>The subject's work location is
                "Health Care Facility" if "Work Location"
                is represented by "4".</description>
             </codeset-code>
             <codeset-code>
                <codeset-value>5</codeset-value>
                <description>The subject's work location is "Electric
                Powerplant" if "Work Location" is represented by "5".
                </description>
             </codeset-code>
             <codeset-code>
                <codeset-value>6</codeset-value>
                <description>The subject's work location is "Factory" if
                "Work Location" is represented by "6".</description>
             </codeset-code>
```

```
        <codeset-code>
            <codeset-value>7</codeset-value>
            <description>The subject's work location is "Farm" if
            "Work Location" is represented by "7".</description>
        </codeset-code>
        <codeset-code>
            <codeset-value>8</codeset-value>
            <description>The subject's work location is "Restaurant" if
            "Work Location" is represented by "8".</description>
        </codeset-code>
        <codeset-code>
            <codeset-value>9</codeset-value>
            <description>The subject's work location is "School" if
            "Work Location" is represented by "9".</description>
        </codeset-code>
        <codeset-code>
            <codeset-value>10</codeset-value>
            <description>The subject's work location is "Light
            Industry" if "Work Location" is represented by "10".
            </description>
        </codeset-code>
        <codeset-code>
            <codeset-value>-9</codeset-value>
            <description>The subject's work location is "OTHER" if
            "Work Location" is represented by "-9".</description>
        </codeset-code>
      </codeset-domain>
    </attribute>
</entity>
<entity>
    <name>Residence Information</name>
    <description>A portion of the respondent questionnaire, a
    questionnaire filled out by a subject answering questions
    pertaining to work, residence, and power line information.
    </description>
    <attribute>
       <name>Residence</name>
       <description>The type of residence that the subject has.
       </description>
      <codeset-domain>
        <codeset-code>
            <codeset-value>1</codeset-value>
            <description>The subject's residence type is
            "Single Family Home" if "Residence" is represented by
            "1".</description>
        </codeset-code>
        <codeset-code>
            <codeset-value>2</codeset-value>
            <description>The subject's residence type is "Duplex" if
            "Residence" is represented by "2".</description>
        </codeset-code>
        <codeset-code>
            <codeset-value>3</codeset-value>
            <description>The subject's residence type is
```

```
            "Low-rise Apartments or Condominiums (4 floors or less)" if
            "Residence" is represented by "3".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>4</codeset-value>
            <description>The subject's residence type is
            "High-rise Apartments or Condominiums (5 floors or less)" if
            "Residence" is represented by "4".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>5</codeset-value>
            <description>The subject's residence type is "Mobile Home" if
            "Residence" is represented by "5".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>-9</codeset-value>
            <description>The subject's residence type is "OTHER" if
            "Residence" is represented by "-9".</description>
         </codeset-code>
      </codeset-domain>
   </attribute>
   <attribute>
      <name>Bedroom Floor</name>
      <description>The floor that the bedroom of the subject is
      located on.</description>
      <codeset-domain>
         <codeset-code>
            <codeset-value>1</codeset-value>
            <description>The floor of the subject's bedroom is
            "Basement" if "Bedroom Floor" is represented by
            "1".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>2</codeset-value>
            <description>The floor of the subject's bedroom is
            "First Floor" if "Bedroom Floor" is represented by
            "2".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>3</codeset-value>
            <description>The floor of the subject's bedroom is
            "Second Floor" if "Bedroom Floor" is represented by
            "3".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>4</codeset-value>
            <description>The floor of the subject's bedroom is
            "Third Floor" if "Bedroom Floor" is represented by
            "4".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>-9</codeset-value>
            <description>The floor of the subject's bedroom is
            "OTHER" if "Bedroom Floor" is represented by
```

```
            "-9".</description>
          </codeset-code>
        </codeset-domain>
      </attribute>
      <attribute>
         <name>Home Size</name>
         <description>The square footage of the subject's home (excluding
         garage, basement, attic, and open patios)</description>
        <codeset-domain>
          <codeset-code>
             <codeset-value>1</codeset-value>
             <description>The subject's home size is "Less than 1000
             square feet" if "Home Size" is represented by "1".
             </description>
          </codeset-code>
          <codeset-code>
             <codeset-value>2</codeset-value>
             <description>The subject's home size is "Between 1000 and
             2000 square feet" if "Home Size" is represented by "2".
             </description>
          </codeset-code>
          <codeset-code>
             <codeset-value>3</codeset-value>
             <description>The subject's home size is "More than 2000
             square feet" if "Home Size" is represented by "3".
             </description>
          </codeset-code>
        </codeset-domain>
      </attribute>
      <attribute>
         <name>Pipe Type</name>
         <description>The type of water supply pipes in the subject's
         home.</description>
        <codeset-domain>
          <codeset-code>
             <codeset-value>1</codeset-value>
             <description>The subject's pipe type is "Metal"
             if "Pipe Type" is represented by "1".
             </description>
          </codeset-code>
          <codeset-code>
             <codeset-value>2</codeset-value>
             <description>The subject's pipe type is "Plastic"
             if "Pipe Type" is represented by "2".
             </description>
          </codeset-code>
        </codeset-domain>
      </attribute>
   </entity>
   <entity>
      <name>Power Line Information</name>
      <description>A portion of the respondent questionnaire, a
      questionnaire filled out by a subject answering questions
      pertaining to work, residence, and power line information.
```

```
</description>
<attribute>
   <name>Power Line Visible</name>
   <description>Is a power line visible within 150 feet
   of the subject's residence in any direction.</description>
  <codeset-domain>
     <codeset-code>
        <codeset-value>1</codeset-value>
        <description>There is a visible power line within 150
        feet of the subject's residence in some direction.
        </description>
     </codeset-code>
     <codeset-code>
        <codeset-value>2</codeset-value>
        <description>There is not a visible power line within 150
        feet of the subject's residence in any direction.
        </description>
     </codeset-code>
  </codeset-domain>
</attribute>
<attribute>
   <name>Distance</name>
   <description>The shortest distance between the power line
   and the subject's residence.</description>
  <codeset-domain>
     <codeset-code>
        <codeset-value>1</codeset-value>
        <description>The subject's shortest distance to a power
        line is "Less than 25 feet" if "Distance" is
        represented by "1".</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>2</codeset-value>
        <description>The subject's shortest distance to a power
        line is "Between 25 and 50 feet" if "Distance" is
        represented by "2".</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>3</codeset-value>
        <description>The subject's shortest distance to a power
        line is "More than 50 feet" if "Distance" is
        represented by "3".</description>
     </codeset-code>
  </codeset-domain>
</attribute>
<attribute>
   <name>Power Line Type</name>
   <description>The power line configuration type that most
   closely resembles the power lines near the subject's home.
   </description>
  <codeset-domain>
     <codeset-code>
        <codeset-value>1</codeset-value>
        <description>The subject's power line type
```

```
            is "Distribution Line - Single Phase with Neutral" if
            "Power Line Type" is represented by "1".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>2</codeset-value>
            <description>The subject's power line type
            is "Distribution Line - Two Phase with Neutral"
            if "Power Line Type" is represented by "2".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>3</codeset-value>
            <description>The subject's power line type.
            is "Distribution Line - Three Phase with Neutral"
            if "Power Line Type" is represented by "3".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>4</codeset-value>
            <description>The subject's power line type
            is "Distribution Line - Double Circuit Three Phase with Neutral"
            if "Power Line Type" is represented by "4".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>5</codeset-value>
            <description>The subject's power line type
            is "Transmission Line - Vertical Three Phase" if "Power Line Type"
            is represented by "5".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>6</codeset-value>
            <description>The subject's power line type
            is "Transmission Line - Delta Three Phase" if "Power Line Type"
            is represented by "6".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>7</codeset-value>
            <description>The subject's power line type
            is "Transmission Line - Flat Three Phase" if "Power Line Type"
            is represented by "7".</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>8</codeset-value>
            <description>The subject's power line type
            is "Transmission Line - Double Circuit Vertical Three Phase"
            if "Power Line Type" is represented by "8".</description>
         </codeset-code>
      </codeset-domain>
   </attribute>
</entity>
<entity>
   <name>Activity Diary</name>
   <description>The activity diary, filled in by the subject during
   the measurement period, describes the subject's activities.  This file
   merges with the "Measurement Set" entity to produce one of the ASCII
   delimited output files.</description>
```

```
    <attribute>
       <name>Subject ID</name>
       <description>A unique ID assigned to each subject participating
       in the study.</description>
       <simple-domain>Positive Integer</simple-domain>
    </attribute>
    <attribute>
       <name>Start Time Date</name>
       <description>The time and date at which the subject started the
       measurements period.</description>
       <simple-domain>Free Text</simple-domain>
    </attribute>
    <attribute>
       <name>Stop Time Date</name>
       <description>The time and date at which the subject stopped
       logging data (normally after the 24 measurement period)
       </description>
       <simple-domain>Free Text</simple-domain>
    </attribute>
    <attribute>
       <name>Travel Type</name>
       <description>The type or types of travel used while the subject
       wore the meter.</description>
      <codeset-domain>
         <codeset-code>
            <codeset-value>Car</codeset-value>
            <description>Travel by car</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>Bus</codeset-value>
            <description>Travel by bus</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>Train</codeset-value>
            <description>Travel by train</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>Subway</codeset-value>
            <description>Travel by subway</description>
         </codeset-code>
         <codeset-code>
            <codeset-value>OTHER</codeset-value>
            <description>Travel by other</description>
         </codeset-code>
      </codeset-domain>
    </attribute>
</entity>
<entity>
    <name>Activity Diary Entry</name>
    <description>The activity diary, filled in by the subject,
    tells the subject's activities during the measurement period.
    Each entry consists of a time and the type or types of
    activities undergone at that time.  An example might be at 8:05,
    the subject may have started work and ended travel.</description>
```

```
<attribute>
   <name>Time</name>
   <description>The time that an activity diary event occurred
   </description>
   <simple-domain>Free Text</simple-domain>
</attribute>
<attribute>
   <name>Event Type</name>
   <description>The type or types of events that occurred when
   the activity diary event was logged.</description>
  <codeset-domain>
     <codeset-code>
        <codeset-value>Left Home</codeset-value>
        <description>The subject left home</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Came Home</codeset-value>
        <description>The subject came home</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Went to bed</codeset-value>
        <description>The subject went to bed</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Got out of bed</codeset-value>
        <description>The subject got out of bed</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Started Work</codeset-value>
        <description>The subject started work</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Left Work</codeset-value>
        <description>The subject left work</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Started School / Daycare</codeset-value>
        <description>The subject started school / daycare
        </description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Left School / Daycare</codeset-value>
        <description>The subject left school / daycare
        </description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Started Travel</codeset-value>
        <description>The subject started travel</description>
     </codeset-code>
     <codeset-code>
        <codeset-value>Ended Travel</codeset-value>
        <description>The subject ended travel</description>
     </codeset-code>
  </codeset-domain>
```

```
   </attribute>
</entity>
<entity>
   <name>Subject</name>
   <description>A person participating in the US Department of
   Energy's Magnetic Field Personal Exposure Survey.</description>
   <attribute>
      <name>Subject ID</name>
      <description>A unique ID assigned to each subject participating
      in the study.</description>
      <simple-domain>Positive Integer</simple-domain>
   </attribute>
   <attribute>
      <name>Sex</name>
      <description>The sex of the subject</description>
     <codeset-domain>
        <codeset-code>
           <codeset-value>F</codeset-value>
           <description>Female</description>
        </codeset-code>
        <codeset-code>
           <codeset-value>M</codeset-value>
           <description>Male</description>
        </codeset-code>
     </codeset-domain>
   </attribute>
   <attribute>
      <name>State</name>
      <description>The state of residence of the subject</description>
      <simple-domain>Two letters representing a state
      abbreviation</simple-domain>
   </attribute>
</entity>
<entity>
   <name>Measurement Set</name>
   <description>The set of measurement data acquired by the personal
   exposure meter while being worn by the subject.  This measurement
   set represents raw, unprocessed data.</description>
   <attribute>
      <name>Filename</name>
      <description>The name of the file containing the
      measurement data</description>
      <simple-domain>Free Text</simple-domain>
   </attribute>
</entity>
<entity>
   <name>Partition Code</name>
   <description>A set of processed measurement data providing a
   summary of magnetic field levels and magnetic field bin values
   for specific partition codes.  An example of a partition code
   might be measurement periods at home and in bed.  Therefore
   the "Partition Code" entity would provide magnetic field summaries
   of the time spent in these areas.</description>
   <attribute>
```

```
    <name>Partition Code ID</name>
    <description>A code identifying a special section or sections
    of the measurement data from which summary data has
    been calculated into a separate data set.</description>
   <codeset-domain>
      <codeset-code>
         <codeset-value>1</codeset-value>
         <description>The entire measurement period</description>
      </codeset-code>
      <codeset-code>
         <codeset-value>5</codeset-value>
         <description>The entire measurement period and
         at home and at bed</description>
      </codeset-code>
      <codeset-code>
         <codeset-value>9</codeset-value>
         <description>The entire measurement period and
         in bed</description>
      </codeset-code>
      <codeset-code>
         <codeset-value>13</codeset-value>
         <description>The entire measurement period and
         (at home or in bed)</description>
      </codeset-code>
      <codeset-code>
         <codeset-value>17</codeset-value>
         <description>The entire measurement period and
         at work</description>
      </codeset-code>
      <codeset-code>
         <codeset-value>33</codeset-value>
         <description>The entire measurement period and
         at school</description>
      </codeset-code>
      <codeset-code>
         <codeset-value>65</codeset-value>
         <description>The entire measurement period and
         traveling</description>
      </codeset-code>
      <codeset-code>
         <codeset-value>129</codeset-value>
         <description>The entire measurement period and
         at home and at work and at school and traveling
         </description>
      </codeset-code>
   </codeset-domain>
</attribute>
<attribute>
    <name>Seconds</name>
    <description>Time in seconds of the measurement
    period</description>
    <simple-domain>Positive Integer (sec)</simple-domain>
</attribute>
<attribute>
```

```
    <name>Mean</name>
    <description>Mean value of the resultant magnetic field
    of values in the data set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Standard Deviation</name>
    <description>Standard deviation of the resultant magnetic field
    of values in the data set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Geometric Mean</name>
    <description>Geometric mean of the resultant magnetic field
    of values in the data set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Geometric Standard Deviation</name>
    <description>Geometric standard deviation of the resultant
    magnetic field of values in the data set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Maximum</name>
    <description>Maximum resultant magnetic field of values
    in the data set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Fifty Percent</name>
    <description>Shows the values below which lay 50% of
    all the resultant magnetic field values in the data
    set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Seventy Five Percent</name>
    <description>Shows the values below which lay 75% of
    all the resultant magnetic field values in the data
    set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Ninety Percent</name>
    <description>Shows the values below which lay 90% of
    all the resultant magnetic field values in the data
    set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Ninety Five Percent</name>
    <description>Shows the values below which lay 95% of
    all the resultant magnetic field values in the data
```

```
    set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Ninety Nine Percent</name>
    <description>Shows the values below which lay 99% of
    all the resultant magnetic field values in the data
    set.</description>
    <simple-domain>Positive Real (mG)</simple-domain>
</attribute>
<attribute>
    <name>Time < 0.5 mG</name>
    <description>Shows the time in seconds of which
    values of the resultant magnetic field in the data
    set are below 0.5 mG.</description>
    <simple-domain>Positive Integer (sec)</simple-domain>
</attribute>
<attribute>
    <name>Time >= 0.5 mG and < 1.0 mG</name>
    <description>Shows the time in seconds of which
    values of the resultant magnetic field in the data
    set are greater than 0.5 mG and less than 1.0 mG.
    </description>
    <simple-domain>Positive Integer (sec)</simple-domain>
</attribute>
<attribute>
    <name>Time >= 1.0 mG and < 2.0 mG</name>
    <description>Shows the time in seconds of which
    values of the resultant magnetic field in the data
    set are greater than 1.0 mG and less than 2.0 mG.
    </description>
    <simple-domain>Positive Integer (sec)</simple-domain>
</attribute>
<attribute>
    <name>Time >= 2.0 mG and < 5.0 mG</name>
    <description>Shows the time in seconds of which
    values of the resultant magnetic field in the data
    set are greater than 2.0 mG and less than 5.0 mG.
    </description>
    <simple-domain>Positive Integer (sec)</simple-domain>
</attribute>
<attribute>
    <name>Time >= 5.0 mG and < 10.0 mG</name>
    <description>Shows the time in seconds of which
    values of the resultant magnetic field in the data
    set are greater than 5.0 mG and less than 10.0 mG.
    </description>
    <simple-domain>Positive Integer (sec)</simple-domain>
</attribute>
<attribute>
    <name>Time >= 10.0 mG and < 20.0 mG</name>
    <description>Shows the time in seconds of which
    values of the resultant magnetic field in the data
    set are greater than 10.0 mG and less than 20.0 mG.
```

```
      </description>
      <simple-domain>Positive Integer (sec)</simple-domain>
    </attribute>
    <attribute>
      <name>Time >= 20.0 mG and < 50.0 mG</name>
      <description>Shows the time in seconds of which
      values of the resultant magnetic field in the data
      set are greater than 20.0 mG and less than 50.0 mG.
      </description>
      <simple-domain>Positive Integer (sec)</simple-domain>
    </attribute>
    <attribute>
      <name>Time >= 50.0 mG</name>
      <description>Shows the time in seconds of which
      values of the resultant magnetic field in the data
      set are greater than 50.0 mG.</description>
      <simple-domain>Positive Integer (sec)</simple-domain>
    </attribute>
</entity>
<relationship>
  <name>Subject to Work Information</name>
  <description>Relates a "Subject" to a "Work Information".
  Each "Subject" has one "Work Information".</description>
  <relationship-from>Subject</relationship-from>
  <relationship-to>Work Information</relationship-to>
  <Cardinality>1 to 1</cardinality>
</relationship>
<relationship>
  <name>Subject to Residence Information</name>
  <description>Relates a "Subject" to a "Residence Information".
  Each "Subject" has one "Residence Information".</description>
  <relationship-from>Subject</relationship-from>
  <relationship-to>Residence Information</relationship-to>
  <Cardinality>1 to 1</cardinality>
</relationship>
<relationship>
  <name>Subject to Power Line Information</name>
  <description>Relates a "Subject" to a "Power Line Information".
  Each "Subject" has one "Power Line Information".</description>
  <relationship-from>Subject</relationship-from>
  <relationship-to>Power Line Information</relationship-to>
  <Cardinality>1 to 1</cardinality>
</relationship>
<relationship>
  <name>Subject to Measurement Set</name>
  <description>Relates a "Subject" to a "Measurements Set".
  Each "Subject" has one "Measurements Set".</description>
  <relationship-from>Subject</relationship-from>
  <relationship-to>Measurement Set</relationship-to>
  <Cardinality>1 to 1</cardinality>
</relationship>
<relationship>
  <name>Measurement Set to Partition Code</name>
  <description>Relates a "Measurement Set" to a "Partition Code".
```

```
    Each "Measurement Set" has one to one to eight "Partition Code".
    </description>
    <relationship-from>Measurement Set</relationship-from>
    <relationship-to>Partition Code</relationship-to>
    <Cardinality>1 to (1 to 8)</cardinality>
  </relationship>
  <relationship>
    <name>Subject to Activity Diary</name>
    <description>Relates a "Subject" to an "Activity Diary".
    Each "Subject" has one "Activity Diary".</description>
    <relationship-from>Subject</relationship-from>
    <relationship-to>Activity Diary</relationship-to>
    <Cardinality>1 to 1</cardinality>
  </relationship>
  <relationship>
    <name>Activity Diary to Diary Entry</name>
    <description>Relates an "Activity Diary" to a "Diary Entry".
    Each "Activity Diary" has many "Diary Entries".</description>
    <relationship-from>Activity Dairy</relationship-from>
    <relationship-to>Diary Entry</relationship-to>
    <Cardinality>1 to many</cardinality>
  </relationship>
  <relationship>
    <name>Activity Diary to Measurement Set</name>
    <description>Relates an "Activity Diary" to a "Measurement Set".
    Each "Activity Diary" has one "Measurement Set".</description>
    <relationship-from>Activity Dairy</relationship-from>
    <relationship-to>Measurement Set</relationship-to>
    <Cardinality>1 to 1</cardinality>
  </relationship>
</data-model>
<data-products>
  <distributor>
    <contact>
      <name>Luciano Zaffanella</name>
    </contact>
  </distributor>
  <delimited-ASCII-data-product>
    <name>SUBJECT MEASUREMENT DATA FILE</name>
    <description>File containing data of magnetic field levels
    and exposure bins of each subject based upon certain partition
    code criteria. The file has thirty two lines of header information,
    each subsequent line in the file consists of a subject measurement
    data record.  The records are presented first by "Subject ID" and
    then by "Partition Code".</description>
    <level-of-interpretation>Derived Data.</level-of-interpretation>
    <availability>Diskette</availability>
    <record-delimiter>Carriage Return</record-delimiter>
    <field-delimiter>Comma</field-delimiter>
    <missing-value>Blank or "0"</missing-value>
    <filesize>Filesize of a Subject Measurement Data File
    is approximately 112KB.</filesize>
    <number-of-records>Number of records is dependent the number of
    subjects that have been measured in addition to the number
```

```
of partition codes for each subject.  This particular file
contains 1230 records.</number-of-records>
<number-of-fields>21</number-of-fields>
<maximum-record-length>N/A</maximum-record-length>
<delimited-ASCII-field>
  <name>Subject ID</name>
  <field-number>1</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Partition Code</name>
  <field-number>2</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Seconds</name>
  <field-number>3</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Mean</name>
  <field-number>4</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Standard Deviation</name>
  <field-number>5</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Geometric Mean</name>
  <field-number>6</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Geometric Standard Deviation</name>
  <field-number>7</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Maximum</name>
  <field-number>8</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>50 Percent</name>
  <field-number>9</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>75 Percent</name>
  <field-number>10</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
```

```
<delimited-ASCII-field>
  <name>90 Percent</name>
  <field-number>11</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>95 Percent</name>
  <field-number>12</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>99 Percent</name>
  <field-number>13</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time <.05 mG</name>
  <field-number>14</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time >=0.5mG and < 1.0mG</name>
  <field-number>15</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time >=1.0mG and < 2.0mG</name>
  <field-number>16</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time >=2.0mG and < 5.0mG</name>
  <field-number>17</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time >=5.0mG and < 10.0mG</name>
  <field-number>18</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time >=10.0mG and < 20.0mG</name>
  <field-number>19</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time >=20.0mG and < 50.0mG</name>
  <field-number>20</field-number>
  <entity-membership>Partition Code</entity-membership>
</delimited-ASCII-field>
<delimited-ASCII-field>
  <name>Time >= 50.0mG</name>
  <field-number>21</field-number>
  <entity-membership>Partition Code</entity-membership>
```

```
  </delimited-ASCII-field>
</delimited-ASCII-data-product>
<delimited-ASCII-data-product>
  <name>SUBJECT QUESTIONAIRE FILE</name>
  <description>File containing questionnaire data filled in
  by each subject.  The questionnaire contains information
  pertaining to work, residence, and power line information
  and is used to determine if there is a relationship to
  magnetic field exposure.  The file has one line of header
  information, each subsequent line in the file consists of a
  subject questionnaire data record.  The records are presented
  by " Subject ID" .</description>
  <level-of-interpretation>Derived Data.</level-of-interpretation>
  <availability>Diskette</availability>
  <record-delimiter>Carriage Return</record-delimiter>
  <field-delimiter>Comma</field-delimiter>
  <missing-value>Blank or "0"</missing-value>
  <filesize>Filesize of a Subject Questionnaire File
  is approximately 10KB.</filesize>
  <number-of-records>Number of records is dependent the number of
  subjects that have been measured.  This particular file contains
  203 records.</number-of-records>
  <number-of-fields>12</number-of-fields>
  <maximum-record-length>N/A</maximum-record-length>
  <delimited-ASCII-field>
    <name>Subject ID</name>
    <field-number>1</field-number>
    <entity-membership>Subject</entity-membership>
  </delimited-ASCII-field>
  <delimited-ASCII-field>
    <name>Sex</name>
    <field-number>2</field-number>
    <entity-membership>Subject</entity-membership>
  </delimited-ASCII-field>
  <delimited-ASCII-field>
    <name>State</name>
    <field-number>3</field-number>
    <entity-membership>Subject</entity-membership>
  </delimited-ASCII-field>
  <delimited-ASCII-field>
    <name>Occupation</name>
    <field-number>4</field-number>
    <entity-membership>Work Information</entity-membership>
  </delimited-ASCII-field>
  <delimited-ASCII-field>
    <name>Work Location</name>
    <field-number>5</field-number>
    <entity-membership>Work Information</entity-membership>
  </delimited-ASCII-field>
  <delimited-ASCII-field>
    <name>Residence</name>
    <field-number>6</field-number>
    <entity-membership>Residence Information</entity-membership>
  </delimited-ASCII-field>
```

```
      <delimited-ASCII-field>
        <name>Bedroom Floor</name>
        <field-number>7</field-number>
        <entity-membership>Residence Information</entity-membership>
      </delimited-ASCII-field>
      <delimited-ASCII-field>
        <name>Home Size</name>
        <field-number>8</field-number>
        <entity-membership>Residence Information</entity-membership>
      </delimited-ASCII-field>
      <delimited-ASCII-field>
        <name>Pipe Type</name>
        <field-number>9</field-number>
        <entity-membership>Residence Information</entity-membership>
      </delimited-ASCII-field>
      <delimited-ASCII-field>
        <name>Power Line Visible</name>
        <field-number>10</field-number>
        <entity-membership>Power Line Information</entity-membership>
      </delimited-ASCII-field>
      <delimited-ASCII-field>
        <name>Distance</name>
        <field-number>11</field-number>
        <entity-membership>Power Line Information</entity-membership>
      </delimited-ASCII-field>
      <delimited-ASCII-field>
        <name>Power Line Type</name>
        <field-number>12</field-number>
        <entity-membership>Power Line Information</entity-membership>
      </delimited-ASCII-field>
    </delimited-ASCII-data-product>
</data-products>
</metadata>
```